Village of Huntley

11704 CORAL STREET P.O. BOX 1018 HUNTLEY, ILLINOIS 60142

Cross-Connection Control Policy Manual

Prepared By:

Backflow Solutions, Inc .
931 Hwy 80 West
Jackson, MS 39204
Tel: 866-222-5356

PREFACE

This is a manual of policies and specifications for the Cross-Connection Control Program as approved and adopted by the Village of Huntley. This manual of policies and specifications serves as a guide to insure that the safety of the potable water system is maintained.

The Village of Huntley:

Urges the review of this manual of policies and specifications before designing or installing a backflow prevention assembly;

Believes the material in this manual will provide the consumer with the understanding of cross-connections and backflow prevention assemblies;

Will ensure that the policies, standards and specifications as set forth in this manual will be uniformly enforced;

Reserves the right to update this manual as necessary due to changes in Illinois Environmental Protection Agency policies and regulations and/or Illinois Department of Public Health regulations.

If there are any questions regarding this manual or policies please call the Public Works Department at (847) 669-3450 ext. 201, Monday through Friday between the hours of 8:30 a.m. and 5:00 p.m.

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Section 1

Purpose and Intent

The purpose and intent of the cross-connection control program is:

1.1 Protection

To protect the public potable water supply from the possibility of contamination or pollution by containing or isolating actual or potential cross-connections in the water distribution system that could allow backflow by back-pressure or back-siphonage into the public potable water supply.

1.2 Elimination of Cross-Connections

To promote the elimination and control of cross-connections (actual or potential) between the potable water system and any other system or plumbing fixture in existing and future buildings and facilities.

1.3 Continuing Program of Cross-Connection Control

To provide for the maintenance and operation of a continuing program of cross-connection control which will systematically and effectively prevent the contamination or pollution of the public water supply distribution system, as required by the Illinois Environmental Protection Agency and the Illinois Department of Public Health.

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Section 2

Definitions

Air-gap separation: A physical separation between the free flowing discharge end of the potable water supply pipeline and the open or non-pressure receiving vessel. An "approved air-gap separation" shall be at least double the diameter of the supply pipe measured vertically above the overflow rim of the receiving vessel, and in no case less than one (1) inch.

Approved: An air-gap separation, or backflow prevention assembly, or methods that meet the requirements of Title 35, Subtitle F, Part 653, Subpart H, of the Illinois Environmental Protection Agency regulations.

Atmospheric Vacuum Breaker (AVB): A backflow prevention device that is operated by atmospheric pressure in combination with the force of gravity to introduce air and seal off the water supply line in the event of pressure loss. AVBs must be ASSE approved and used for isolation only. AVBs must be installed at least six (6) inches above the highest point of use, upstream of any shut off valves, and not subjected to backpressure. AVBs can not be used in continuous use applications (more than 12 hours at a time) or where the substance in the container receiving water is lethal or toxic.

Auxiliary Water Supply: Any water supply on or available to the premises other than the water purveyor's approved public potable water supply. These may include other potable water supplies, wells, ponds, pools, retention areas, creeks, or any other natural or manmade water source.

Backflow: The undesirable reversal of the normal flow direction where water or mixtures of water and other liquids, gases, or other substances flows from the intended point of delivery towards the public potable water supply.

Backflow Prevention Assembly (BPA): An assembly that has been manufactured in full conformance with the latest adopted standards of the American Water Works Association (AWWA), American Society of Sanitary Engineers (ASSE), American National Standards Institute (ANSI), and/or approved by the National Sanitation Foundation (NSF) or University of Southern California Foundation for Cross Connection Control and Hydraulic Research (USC FCCC&HR).

Backpressure: Any elevation of pressure in the downstream piping system (by pump, elevation of piping, steam, or air pressure) above the supply pressure at the point of consideration that would cause, or tend to cause, a reversal of the normal direction of flow.

Backsiphonage: Backflow caused by a reduction in pressure in the water supply distribution system that causes a negative or sub-atmospheric pressure to exist at the point of consideration.

Certified Cross-Connection Control Device Inspector (CCCDI): A person who can prove competency in testing backflow prevention assemblies. The CCCDI must hold a current license issued by the Illinois Environmental Protection Agency and be in good standing with same as well as meet the qualifications for testing backflow prevention assemblies within the jurisdiction of the Village of Huntley.

Certified Test Gauges: Test gauge equipment designed for use in testing and reporting accurate results of tests on backflow prevention assemblies. Certified test gauge equipment will be calibrated annually to University of Southern California Foundation for Cross-Connection Control and Hydraulic Research (FCCC&HR) standards by an approved calibration facility.

Consumer (Customer): The owner or operator of a premise, facility, and /or water system who receives water from the Village of Huntley potable water supply.

Contamination: An impairment of the water quality that creates an actual hazard to the public health.

Cross-connection: A connection or potential connection between any part of a potable water system and any other environment containing other substance(s) in a manner that, under any circumstance, would allow such other substance(s) to enter the potable water system. If the potable water system and non-potable source or substance is not separated by an approved air-gap separation or approved backflow preventer a cross-connection exists. By-pass arrangements, jumper connections, swivel or change-over assemblies, or other temporary or permanent assemblies through which, or because of which, backflow may occur are considered cross-connections.

Controlled Cross-Connection: A connection between the potable water system and a non-potable system with an approved backflow preventer properly installed and maintained so as to continuously afford protection commensurate with the degree of hazard.

Cross-Connection Control by Containment: The installation of an approved backflow prevention assembly appropriate for the hazard type at the water service connection to any customers premises. This method provides the most protection for the public water supply.

Cross-Connection Control by Isolation: The installation of approved backflow prevention assemblies appropriate for the hazard type at the point of use where each

actual or potential cross-connection exists, thereby isolating each cross-connection separately. This method provides the most protection for the facility occupants.

Fire Protection System: Any system, public or private, used exclusively for the purpose of having water ready for the extinguishing of fire, (usually sprinkler systems, hose rack systems, or hydrant systems) metered or unmetered, connected to, or independent of the public potable water system.

Hazard (degree): Derived from the evaluation of conditions within a system which can be classified as either a "Health" (High) or "Non-health" (Low) hazard.

Health Hazard (High Hazard): Actual or potential threat of contamination to the public potable water system or the consumers potable plumbing with the potential to endanger the health and well-being of the consumer.

Non-health Hazard (Low Hazard): Actual or potential threat of contamination to the public potable water system or consumers potable plumbing that will not endanger the health of the consumer, but does not meet established water quality standards for public water systems.

Non-potable water: Water that is of questionable quality or is not safe for human consumption.

Plumbing system: The water supply and distribution pipes, plumbing fixtures and traps, soil, waste and vent pipes, building drains and sewers, including their respective connections, devices and appurtenances within the property line of the premises, and water-treating or water-using equipment.

Potable water: Any water which according to recognized standards is safe for human consumption.

Service connection: The terminal end of a service connection from the public potable water system. If a water meter is installed at the end of the service connection, then the service connection shall mean the downstream end of the water meter.

Water purveyor: The public or private owner or operator of the potable water system providing an approved water supply to the public.

Water supply (approved): Any public potable water supply that has been investigated and approved for humans consumption by the Illinois Environmental Protection Agency.

Water system (public): The Village of Huntley water system operates as a public water supply as defined and approved by the Illinois Environmental Protection Agency and the

United States Environmental Protection Agency to supply potable water for domestic purposes. This system includes all sources, facilities, and to the point of delivery to the consumer including valves, pumps, pipes, conduits, tanks, receptacles, fixtures, equipment used to produce, convey, treat, and store potable water for public consumption or use.

Section 3

Authority and Objectives

The following authorities are justification for establishing a cross-connection control program.

3.1 Federal Safe Drinking Water Act

The Safe Drinking Water Act (PL 93-532) was signed into law by Congress on December 16, 1974. The purpose of the law is to assure that the nation's potable water supply systems meet minimum National Health Standards for the protection of public health.

In accordance with the Safe Drinking Water Act (SDWA), the National Interim Primary Drinking Water Regulations were promulgated on December 24, 1975 and became effective on June 24, 1977. These regulations replaced the Public Health Service Drinking Water Standard of 1962. It is stated in Appendix A of the rule that "minimum protection should include programs that result in ….prevention of health hazards, such as cross-connections."

The SDWA and its regulations cover all potable water systems with 15 or more service connections or serving 25 or more individuals. Under Section 1413 of the SDWA, states may obtain primary enforcement authority and responsibility for their water quality program. In Illinois, the Illinois Environmental Protection Agency has this responsibility and authority.

3.2 Illinois Law and Regulations

The State of Illinois is granted primacy over the water program and the Illinois Environmental Protection Agency (Illinois EPA) is designated the implementing agency for all purposes of the Safe Drinking Water Act by the Illinois Environmental Protection Act [415 ILCS 5/4].

Pursuant to the Illinois Environmental Protection Act [415 ILCS 5], the Pollution Control Board (Board) Rules, and the Safe Drinking Water Act (42 U.S.C. 300f et seq.), owners and official custodians of a public water supply in the State of Illinois shall provide continuous operation and maintenance of public water supply facilities so that the water shall be assuredly safe in quality, clean, adequate in quantity, and of satisfactory mineral characteristics for ordinary domestic consumption.

Title 35, Subtitle F, Chapter II, Subpart H, Section 651.102 of the Illinois Administrative Code defines cross-connection as "any physical connection or

arrangement between two otherwise separate piping systems, one of which contains potable water and the other contains water of unknown or questionable safety or steam, gases or chemicals, if there may be a flow from one system to the other". The definition includes any arrangement of piping where a potable water line is connected to non-potable water; it may be a pipe-to-pipe connection where potable and non-potable water lines are directly connected, or a pipe-to-water connection where the potable water outlet is submerged in non-potable water. If the potable and non-potable sources are separated by gate valves, check valves, or devices other than the appropriate backflow preventer as outlined in the regulation, a cross-connection exists. By-pass arrangements, jumper connections, swivel or change over assemblies, or other temporary or permanent assemblies through which, or because of which, backflow may occur are considered to be cross-connections.

The public water system purveyor is required to adopt and enforce an active cross-connection control program that contains the minimum components specified in Title35, Subtitle F, Chapter II, Subpart H, Section 653.801.

3.3 Local Authority

Therefore, in accordance with the Federal and State laws, and consistent with the Illinois Environmental Protection Agency regulations previously described, the Village of Huntley has adopted and approved the cross-connection control policy described herein on the 11th day of April, 2002 and will implement the cross-connection control program accordingly.

3.4 Objectives

Backflow may result in the potable water system becoming a transmitter of diseases, toxic materials, or other hazardous liquids, objectionable tastes and odors. Therefore, it is necessary to establish and maintain a cross-connection control program to protect the customers and users of water from the Village of Huntley public potable water system by controlling actual or potential cross-connections through methods of containment and/or isolation.

It is the objective of the Village of Huntley to provide the safest and highest quality water to its customers at all times. By establishing this program, the Village of Huntley continues toward that objective and toward the protection of the public health.

Section 4

Responsibilities

4.1 Water Purveyor

4.1.1 Cross-Connection Control Program - The Village of Huntley is primarily responsible for the prevention of contamination and pollution of the public water mains. Such responsibility begins at the point of origin of the public water supply and ends at the point of entrance to the consumer's water system. This includes protecting the public potable water system from contamination or pollution due to backflow. Therefore, the Village of Huntley has adopted and will enforce the cross-connection control program described herein in accordance with state law, regulation, and guidelines.

4.1.2 Cross-Connection Surveys - The Village of Huntley or its authorized agent will conduct surveys and on-site inspections as necessary to locate cross-connections. All non-residential facilities to which Village of Huntley supplies potable water will be included in the survey and inspections. All other connections served by Village of Huntley will be included if there is reason to believe a cross-connection exists. .

Surveys will be conducted periodically, but not less than every two (2) years, to determine if new cross-connections have been installed or maintained, and to ensure that existing protection has not been by-passed, removed, or otherwise rendered ineffective.

4.1.3 Right to Entry - The Village of Huntley, or its authorized agent, will have the right to enter any non-residential building, facility, or premise, during reasonable hours, to inspect the plumbing system for cross-connections. Entry into any single family dwelling will require consent of the owner.

4.1.4 Classification of Hazard - Each cross-connection found will be classified as High Hazard or Low Hazard by the Village of Huntley or its authorized agent in accordance with Illinois EPA regulations.

4.1.5 Selection of Appropriate Backflow Preventer - The Village of Huntley or its authorized agent will determine the type of backflow preventer required at each cross-connection and the location where the backflow preventer is to be installed.

4.1.6 Approved Backflow Prevention Assemblies - Only cross-connection control devices which are approved by the Research Foundation for Cross-

Connection Control of the University of Southern California, American Water Works Association, American Society of Sanitary Engineering, or American National Standards Institute or certified by the National Sanitation Foundation to be in compliance with applicable industry specifications shall be used.

4.1.7 Existing Backflow Preventers - Any backflow prevention device or assembly installed to protect the public potable water system against the possibility of backflow from the consumer's water system prior to the adoption of this policy and discovered during any survey by the Village of Huntley or its authorized agent, shall be governed by this policy. Existing backflow preventers discovered will be inspected and tested by an approved CCCDI within 90 days of discovery unless a valid test report is available documenting the valve passed a test by a CCCDI within the previous 12 months.

4.1.8 Review of Meter Applications - All applications for new water service (meters) will be reviewed by Village of Huntley to determine if a cross-connection will be created. The appropriate backflow preventer will be required at all new connections where a cross-connection will be created. The appropriate backflow preventer will be properly installed, tested and certified in accordance with this policy prior to initiation of water service. All construction plans for any proposed new facility will be made available to Village of Huntley to determine compliance with this policy.

4.1.9 Record Keeping - The Village of Huntley will maintain records of the type, size, manufacturer, model, serial number and location of each backflow preventer installed in the system, when each backflow preventer is due to be tested, and the results of each test. These records will be maintained for five (5) years from the date of test or inspection.

4.1.10 Notification - The Village of Huntley will send written notification to the owner of each backflow preventer 30 days prior to the due date that the backflow preventer is due to be tested.

4.1.11 List of Certified Cross Connection Control Device Inspectors (CCCDIs) - The Village of Huntley will maintain a list of those CCCDIs approved to test backflow prevention assemblies protecting the Village of Huntley public potable water system. The list will be made available to all owners of backflow prevention assemblies protecting the Village of Huntley public potable water system.

4.2 Consumer (Customer)

The consumer has the prime responsibility of preventing contaminants and pollutants from entering his water supply system, and from entering the public potable water supply from his water system. The consumer will protect his water supply system against actual or potential cross-connection, back-pressure or back-siphonage, as required by this policy and the plumbing code (Illinois Plumbing Code, 77 Ill. Adm. Code 890). The consumer will assure that new water supply system installations are reviewed and approved by Village of Huntley and that alterations or repairs to existing systems comply with the requirements of the Village of Huntley cross-connection control program and the plumbing code

4.2.1 Right to Entry - The consumer must allow the Village of Huntley, or its authorized agent, access to inspect for cross-connections. Refusal to allow inspection of any water using equipment, plumbing, or other cross-connections may result in termination of water service until such time as the consumer complies. In any case, if a consumer refuses to allow an inspection of any portion of the consumer's water system, a reduced pressure principle backflow prevention assembly will be required at the water service connection to insure containment.

4.2.2 Elimination and Protection of Cross-Connections - Cross-connections identified within the jurisdiction of the Village of Huntley will be eliminated or protected with the appropriate backflow preventer. Cross-connections are eliminated by establishing an acceptable air-gap separation between the potable water and non-potable source. Cross-connections are protected by installing the appropriate backflow preventer. It is the responsibility of the owner of the cross-connection to eliminate or protect the cross-connection.

4.2.3 Connections to Sewer - Direct connections, permanent or temporary, between the Village of Huntley public potable water supply and a sanitary or storm sewer are expressly prohibited.

4.2.4 Home or Private Wells - Connection to any source of water, other than the Village of Huntley public potable water supply system, is prohibited unless the appropriate approved backflow prevention assembly is installed and maintained in accordance with this policy.

4.2.5 Installation of Appropriate Backflow Preventer - If the Village of Huntley or its authorized agent determines that a backflow prevention device or assembly is required, the consumer will install the type of approved backflow preventer specified at the location designated, within the required time frame. The consumer will ensure that the backflow preventer is properly installed and tested as required by this policy. The owner of the premise where the backflow preventer is required is responsible for all costs associated with the installation and testing of the backflow preventer.

4.2.6 Testing of Backflow Preventers - All backflow prevention assemblies will be tested immediately after installation, after repairs of any kind, and annually. Any backflow preventer found to be non-functional shall be repaired and retested within 14 days of the initial test. Only CCCDIs approved by the Village of Huntley will test backflow preventers protecting the Village of Huntley water system. The owner of the premise where the backflow preventer is required is responsible for all costs associated with testing and maintaining the backflow preventer.

4.3 Certified Cross Connection Control Device Inspectors (CCCDIs)

4.3.1 Approved CCCDIs - Only those CCCDIs certified by, and in good standing with, the Illinois EPA will test backflow preventers located within the jurisdiction of Village of Huntley. Each CCCDI or testing company that wants to test backflow prevention assemblies within the jurisdiction of the Village of Huntley must submit a copy of their current CCCDI license, a copy of their current *Certificate of Calibration* for test equipment to be used, and a *Certificate of Insurance* with General Liability amounts of no less than One Million Dollars ($1,000,000) aggregate to the Village of Huntley prior to testing or certifying any backflow prevention assembly. This information must be kept current in order to remain on the list of approved CCCDIs.

4.3.2 Test Reports - All tests conducted on backflow prevention assemblies will be recorded on forms provided by or approved by the Village of Huntley. Test reports will be completed by the CCCDI performing the test and all required information will be included on the test form or the test will be considered invalid. The CCCDI will affix a copy of the test report (or a tag) listing the date of the most recent test, test results (pass or fail), CCCDI name and license number, type and date of any repairs. A legible copy of the completed test report must be submitted to the Village of Huntley, or its agent, not later than seven (7) days after completion of the test. The CCCDI will include his/her daytime telephone number on all copies of the test form (or tag).

4.3.3 Fraudulent information - If it is determined that a CCCDI has misrepresented the test results of any backflow prevention assembly, has purposefully submitted fraudulent information, is not testing backflow prevention assemblies in accordance with established methods approved by the Illinois EPA, or in any other way misrepresents or fraudulently submits information to the Village of Huntley, that CCCDI will be removed from the list of acceptable certified testers and all test reports submitted to Village of Huntley will be considered invalid. Additionally, the Village of Huntley will submit any and all information regarding that tester to the Illinois EPA for appropriate enforcement action.

Section 5

Degree of Hazard and Type of Protection

5.1 Degree of Hazard

5.1.1 Non-Potable Water Supply - When an auxiliary water supply is present, the Village of Huntley public potable water system will be protected by an approved air-gap separation or an approved reduced pressure principle backflow prevention assembly.

5.1.2 Objectionable, but Not Hazardous - When water or a substance(s) is present that would be objectionable but not hazardous to public health if introduced into the public potable water system, the public potable water system will be protected by an approved double check valve assembly.

5.1.3 Actual or Potential Hazard - When any material dangerous to health is handled in such a fashion as to create an actual or potential hazard to the public potable water system, the public potable water system will be protected by an approved air-gap separation or an approved reduced pressure principle backflow prevention assembly.

5.2 Facilities Where Backflow Prevention Assemblies Are Required

The following is a reference list of facilities where backflow prevention assemblies are required and the minimum type of protection required for containment. **The list is not all-inclusive**, but is a guide to determining the appropriate degree of protection required. Under the column *Minimum Type of Protection:* "RP" indicates an approved reduced pressure principle backflow prevention assembly ; "DC" indicates an approved double check valve assembly; and "AV" indicates an approved atmospheric vacuum breaker.

TYPE OF FACILITY	MINIMUM TYPE OF PROTECTION
AIRCRAFT AND MISSILE STORAGE/MFG. FACILITY	RP
AUTOMOTIVE REPAIR OR MANUFACTURING FACILITY	RP
AUXILIARY WATER SYSTEMS	RP
BEVERAGE BOTTLING FACILITY	RP
BEAUTY/BARBER FACILITY	DC
BREWERIES AND DISTILLERIES	RP

TYPE OF FACILITY	MINIMUM TYPE OF PROTECTION
CANNERIES	RP
CAR WASH FACILITY	RP
CHEMICAL PROCESSING STORAGE OR MFG. FACILITY	RP
CHEMICALLY CONTAMINATED WATER SYSTEMS	RP
CIVIL WORKS AND GOVERNMENT FACILITIES	
CONTAMINATION HAZARD	RP
POLLUTION HAZARD	DC
CLINICS	RP
COLD STORAGE FACILITY	DC
COMMERCIAL RENTAL UNITS WHERE MAY VERY WITH TENANT	RP
DAIRIES	RP
DENTIST OFFICES	RP
DOCKS AND DOCKSIDE FACILITIES	RP
DRY CLEANING FACILITY	RP
DYE PLANTS	RP
ELECTRICAL TRANSMISSION OF GENERATING FACILITY	RP
FERTILIZER STORAGE/MFG. FACILITY	RP
FILL STATIONS FOR CHEMICAL MIXING	RP*
FILM PROCESSING FACILITY	RP
FIRE SYSTEMS	
CLASS 1	DC
CLASS 2	DC
CLASS 3	DC
CLASS 4	RP
CLASS 5	RP
CLASS 6	RP
FOOD PROCESSING FACILITY	RP
HOSPITALS	RP
ICE MANUFACTURING FACILITY	RP
IRRIGATION SYSTEMS	
SINGLE ZONE - NO DOWNSTREAM VALVES	RP
MULTI-ZONE	RP
WITH FLUSH MOUNTED POP-UP SPRINKLERS	RP
WITH CHEMICAL INJECTOR, ASPIRATOR, OR VENTURI	RP
WITH CHEMICAL INJECTOR PUMP	RP
IF SUBJECT TO BACKPRESSURE	RP
IF AV OR PV CANNOT BE INSTALLED 12" ABOVE HIGHEST POINT	RP
LABORATORIES	RP
LAUNDRIES	RP
MACHINE TOOL MFG. FACILITY	RP
MANUFACTURING FACILITY	RP
MARINE REPAIR OR MANUFACTURING FACILITY	RP
MEDICAL BUILDING	RP
METAL MFG. FACILITY CLEANING AND FABRICATION	RP
MORGUES AND MORTUARIES	RP
MULTIPLE SERVICES INTERCONNECTED	
CONTAMINATION HAZARD	RP
POLLUTION HAZARD	DC

TYPE OF FACILITY	MINIMUM TYPE OF PROTECTION
MULTI-STORY BUILDINGS, UP TO 4 FLOORS	DC
MULTI-STORY BUILDINGS, OVER 4 FLOORS	RP
NURSING HOMES	RP
OIL AND GAS PRODUCTION OR STORAGE FACILITY	RP
PACKING HOUSE OR RENDERING FACILITY	RP
PAPER AND PAPER PRODUCTS FACILITY	RP
PESTICIDE OR EXTERMINATING COMPANY OR FACILITY	RP
PHARMACEUTICAL OR COSMETIC FACILITY	RP
PHOTO PROCESSING FACILITY	RP
PHOTOGRAPHIC STUDIO	RP
PLASTIC INJECTION AND MOLDING FACILITY	RP
PLATING FACILITY	RP
PLEASURE BOAT MARINA	RP
POWER GENERATING FACILITY	RP
PREMISES WHERE INSPECTION RESTRICTED	RP
PREMISES WITH BOILERS	RP
RADIOACTIVE MATERIAL PLANT OR FACILITY	RP
RESTAURANTS	DC
RESTRICTED, CLASSIFIED, OR CLOSED FACILITY	RP
RUBBER PROCESSING FACILITY (NATURAL OR SYNTHETIC)	RP
SAND AND GRAVEL PROCESSING FACILITY	RP
SCHOOLS AND COLLEGES	RP
SEWAGE AND/OR STORM WATER COLLECTION AND PUMPING FACILITY	RP
SEWAGE AND/OR STORM WATER TREATMENT PLANTS	RP
SOLAR HEATING SYSTEM	RP
STEAM BOILER PLANT OR FACILITY	RP
SWIMMING POOL (PUBLIC)	RP
VETERINARY CLINICS OR ESTABLISHMENTS	RP
WAREHOUSE AND STORAGE FACILITY	RP
WATERFRONT FACILITY OR INDUSTRY, MARINA	RP

* An approved atmospheric vacuum breaker may be used if application warrants

5.3 Guide for Assessment of Hazard and Selection of Assemblies for Isolation Protection

The following is a guide to be used in determining the appropriate backflow preventer for specific applications when isolating an internal cross-connection.

CROSS-CONNECTION	DEGREE OF HAZARD	RECOMMENDED ASSEMBLY
ASPIRATOR	HIGH	AV
BEDPAN WASHER	HIGH	AV
AUTOCLAVE	HIGH	RP
SPECIMEN TANK	HIGH	AV
STERILIZER	HIGH	RP
CUSPIDOR	HIGH	AV
LAB BENCH EQUIPMENT	HIGH	AV
AUTOPSY AND MORTUARY EQUIPMENT	HIGH	AV
SEWAGE PUMP	HIGH	AIR GAP
SEWAGE EJECTORS	HIGH	AIR GAP
FIRE FIGHTING SYSTEM (TOXIC FOAM)	HIGH	RP
CONNECTION TO SEWER PIPE	HIGH	AIR GAP
CONNECTION TO PLATING TANK	HIGH	RP
IRRIGATION SYSTEM WITH CHEMICAL ADDITIVES	HIGH	RP
CONNECTION TO SALT WATER COOLING SYSTEM	HIGH	RP
TANK VATS OR VESSELS WITH TOXIC SUBSTANCE	HIGH	RP
DYE VATS OR MACHINES	HIGH	RP
COOLING TOWERS WITH CHEMICAL ADDITIVES	HIGH	RP
TRAP PRIMERS	HIGH	AIR GAP
STEAM GENERATORS	LOW	RP
HEATING EQUIPMENT (COMMERCIAL)	LOW	RP
HEATING EQUIPMENT (DOMESTIC)	LOW	DC
IRRIGATION SYSTEMS	LOW	RP
SWIMMING POOL (PUBLIC)	LOW	RP OR AIR GAP
SWIMMING POOL (PRIVATE)	LOW	RP OR AIR GAP
VENDING MACHINE	LOW	RP
ORNAMENTAL FOUNTAIN	LOW	DC
DEGREASING EQUIPMENT	LOW	DC
LAB BENCH EQUIPMENT	LOW	AV
HOSE BIB	LOW	AV
TRAP PRIMER	LOW	AV
FLEXIBLE SHOWER HEAD	LOW	AV
STEAM TABLE	LOW	AV
WASHING EQUIPMENT	LOW	AV
SHAMPOO BASIN	LOW	AV
KITCHEN EQUIPMENT	LOW	AV
ASPIRATOR	LOW	AV
DOMESTIC SPACE HEATING BOILER	LOW	RP

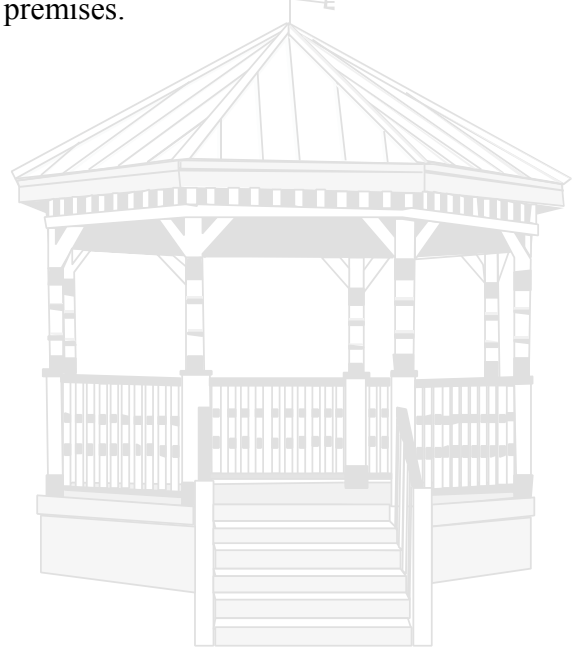
Atmospheric Vacuum Breakers (AV) may be used to isolate high hazard cross-connections under backsiphonage situations only. If subject to backpressure, an approved Reduced Pressure Principle Backflow Prevention Assembly is required.

5.4 Actual or Potential Cross-Connection

Any uncontrolled cross-connections, either actual or potential, to the public potable water supply will be protected by an approved air-gap separation or an approved backflow prevention assembly at the service line meter.

5.5 Restricted Premises

Where security requirements or other prohibitions or restrictions exist and it is impossible or impractical to make a complete on-site inspection or survey to determine compliance with the cross-connection control program, the public potable water system will be protected against backflow by an approved air-gap separation or an approved reduced pressure principle backflow prevention assembly. The air-gap or backflow prevention assembly will be installed in accordance with this policy manual and immediately downstream of each service meter to these premises.



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Section 6

Approval, Testing and Repairs of Backflow Prevention Assemblies

6.1 Approved Backflow Prevention Assemblies and Device

Any backflow prevention assembly or device required herein will be of a manufacture meeting the approval requirements of the Illinois EPA and the Village of Huntley.

Backflow prevention assemblies or devices used to protect the Village of Huntley public potable water supply must comply with the latest adopted standards of the American Water Works Association (AWWA), American Society of Sanitary Engineers (ASSE), American National Standards Institute (ANSI), and/or approved by the National Sanitation Foundation (NSF) or University of Southern California Foundation for Cross Connection Control and Hydraulic Research (USC FCCC&HR). for the application, configuration, and installation.

6.2 Testing of Backflow Prevention Assemblies

It is the responsibility of the consumer at any premise where backflow prevention assemblies are installed to have certified inspections and operational tests made at least once every 12 months. Consumers will be notified in writing at least 30 days in advance of the anniversary date of the annual certification test. In those instances where the Village of Huntley responsible officials believe the hazard to be exceptional, additional certified inspections and tests may be required at more frequent intervals. These inspections and tests will be at the expense of the consumer and will be performed by a Certified Cross-Connection Control Device Inspector (CCCDI) currently in good standing with the Village of Huntley. The tester will use appropriate test equipment that has been calibrated within 12 months of the test date. A list of approved CCCDIs will be provided by the Village of Huntley upon request.

Before each test of a backflow prevention assembly the CCCDI will complete the following steps:

1) Notify the owner and/or user of the backflow preventer that the water service will be shut-off during the test. If a fire prevention system will be affected, the fire department and alarm monitoring company will also be notified.

2) Identify that the proper assembly is being tested by checking the type, model, size, and serial number.

3) Inspect the assembly for minimum clearances and properly located shut-off valves and test cocks.

4) Observe the assembly and surrounding area for signs of leakage, vandalism, alterations, safety hazards, or installation deficiencies.

5) The CCCDI will document any noted deficiencies on the test report form, to include: safety hazards, installation abnormalities, and accessability problems.

6.2.1 Test/Certification Requirements for Reduced Pressure Principle Assemblies

Test 1 The operation of the pressure differential relief valve will maintain a zone between the two check valves at least two (2) psi less than the supply pressure.

Test 2 The number 2 shut-off valve will close fully and be leak tight against back pressure and back siphonage.

Test 3 The number 2 check valve will maintain a static pressure drop across the check valve of at least one (1) psi in the direction of flow. The check valve will permit no leakage in a direction reverse to the normal flow.

Test 4 The number 1 check valve will maintain a static pressure drop across the check valve of 3.0 psi or greater than the recorded opening point of the relief valve. The check valve will permit no leakage in a direction reverse to the normal flow.

6.2.2 Test/Certification Requirements for Double Check Valve Assemblies

Test 1 The number 1 and number 2 shut-off valves will close fully and be leak tight.

Test 2 The number 1 check valve will maintain a static pressure drop across the check valve of at least one (1) psi in the direction of flow. The check valve will permit no leakage in a direction reverse to the normal flow.

Test 3 The number 2 check valve will maintain a static pressure drop across the check valve of at least one (1) psi in the direction of flow. The check valve will permit no leakage in a direction reverse to the normal flow.

6.2.3 Test/Certification Requirements for Pressure Vacuum Breakers

Test 1 The number 1 shut-off valve will close fully and be leak tight.

Test 2 The air inlet valve will open when the pressure in the body is no less than one (1) psi above atmospheric pressure. The air inlet valve will be fully open when the water drains from the body of the assembly.

Test 3 The check valve will maintain a static pressure drop across the check valve of at least 1 psi in the direction of flow.

After each field test, the CCCDI will supply the Village of Huntley with a legible copy of the report within seven (7) days after completion of the test. The CCCDI will affix to the backflow preventer, either a copy of the test report form (or a tag) listing the date of most recent test, test results, name and license number of the CCCDI, and type and date of any repairs.

6.3 Repairs to Backflow Prevention Assemblies

It is the responsibility of the consumer to conform to scheduled and required testing/certification of the backflow preventer. If deficiencies are noted during the test, the assembly will be repaired, overhauled, or replaced and retested within 14 days of the date the deficiency was noted or discovered. Only original manufacturer parts will be used. All repairs are at the expense of the consumer. If an existing assembly needs to be repaired or replaced, the assembly and associated piping, valves and fittings will be brought up to current standards. Records of such test, repairs and overhauls will be furnished to Village of Huntley by the consumer. Upon completion of any repairs, overhauls, or replacement of an assembly an operational test will be conducted to insure the valve is functioning properly before the system is put back into service. All repairs will be documented on the test report form by the CCCDI.

6.4 Existing Backflow Prevention Assemblies

All existing backflow prevention assemblies which do not meet the requirements of this policy but were approved devices for the purposes described herein at the time of installation and which have been properly maintained, will, except for the testing and maintenance requirements under sections 6.2 and 6.3, be excluded from the requirements of this policy so long as the Village of Huntley is assured they will satisfactorily protect the public potable water supply. Whenever the existing assembly is moved from the present location or requires more than minimum maintenance or when the maintenance of the assembly constitutes a

hazard to health, the assembly will be replaced by an approved backflow prevention assembly meeting the requirements of this policy.

6.5 Records, Test and Repair Reports

Copies of all test reports, repair summaries, or other communications relating to this cross-connection control program will be kept by the Village of Huntley for a period of not less than five (5) years.

Section 7

Installation of Backflow Prevention Assemblies

Only licenced contractors will install backflow prevention assemblies or devices protecting the Village of Huntley public water supply. Licenced plumbers may install assemblies or devices on fire sprinkler systems. Licenced lawn irrigation contractors and licenced plumbers may install assemblies or devices on lawn irrigation systems. Licenced plumbers may install assemblies or devices for all other applications. A permit for work will be obtained from the Village of Huntley Building Inspector's Office before work commences. All backflow prevention assemblies or devices will be installed in strict accordance with the manufacturers installation instructions , the Illinois Plumbing Code, and the following minimum guidelines unless otherwise approved by the Village of Huntley.

7.1 Location

The assembly will always be installed in an accessible location to facilitate testing and servicing. This location will be within a minimum of 12" and a maximum of 24" from the water service meter unless otherwise specified or approved by the Village of Huntley. There will be NO connections or tees between the water service meter and the backflow prevention assembly.

7.2 Support

The assembly will be adequately supported to prevent the assembly from sagging.

7.3 Flushing

Pipe lines will be thoroughly flushed to remove any and all foreign materials and debris before installing the assembly.

7.4 Reduced Pressure Principle Backflow Prevention Assembly

Reduced Pressure Principle Backflow Prevention Assemblies (RP) will be installed in a horizontal position unless otherwise recommended by the manufacturer and approved by the Village of Huntley. The RP will not be installed in a pit or enclosure below ground level. If the RP is installed inside a building, an adequate drain will be provided and there will be an approved air-gap separation between the relief port of the RP and the drain or maximum flood level in the building, whichever is highest. The RP will be installed in a location that provides adequate access for testing and servicing of the assembly. The bottom of the RP will be located a minimum of 12 inches and a maximum of 30 inches above the ground, floor, or permanent working platform. In any case, the RP will

be installed so sufficient space exists between the bottom of the assembly and the ground, floor, or permanent working platform to allow for disassembly and servicing of the relief valve if required.

7.5 Double Check Valve Assembly

Double Check Valve Assemblies (DC) will be installed in a horizontal position unless otherwise recommended by the manufacturer and approved by the Village of Huntley. The DC will not be installed in a pit or enclosure below ground level. If the DC is installed inside a building, an adequate drain will be provided so as to maintain a dry location. If the DC is installed in a location susceptible to flooding, the assembly will be of the top entry type and the test cocks will be plugged. The DC will be installed in a location that provides adequate access for testing and servicing of the assembly. The bottom of the DC will be located a minimum of 12 inches and a maximum of 30 inches above the ground, floor, or permanent working platform.

7.6 Pressure Vacuum Breaker

Pressure Vacuum Breaker Assemblies (PVB) will be installed in a vertical position unless otherwise recommended by the manufacturer and approved by the Village of Huntley. The Critical Level (CL) or bottom of the PVB will be installed at least 12 inches above all downstream piping and water outlets. If the PVB is installed in an enclosure or building, adequate drainage will be provided. The PVB will be installed in a location that provides adequate access for testing and servicing of the assembly. If installing the PVB would require the CL to be more than 60 inches above the ground level or working platform, or if the PVB will be subject to backpressure, then a RP will be required instead of the PVB.

7.7 Atmospheric Vacuum Breaker

Atmospheric Vacuum Breakers (AVB) will be installed in a vertical position unless otherwise recommended by the manufacturer and approved by MSDH and/or USC. The Critical Level (CL) or bottom of the AVB will be installed at least six (6) inches above all downstream piping and water outlets. There will be no downstream valves or shut-offs and the AVB will not be installed where it will be in continuous operation for more than 12 hours. If the AVB is installed in a building or enclosure, adequate drainage will be provided. The AVB will be installed in a location that provides adequate access for servicing of the device.

7.8 Standards

The assembly or device will meet the latest adopted standards of the American Water Works Association (AWWA), American Society of Sanitary Engineers (ASSE), American National Standards Institute (ANSI), and/or approved by the National Sanitation Foundation (NSF) or University of Southern California Foundation for Cross Connection Control and Hydraulic Research (USC FCCC&HR).

7.9 Pads

A pad will be placed under all RPs and DCs installed outside. The width of the pad will be a minimum of 24 inches, or four times (4 x) the diameter of the piping, whichever is greater. The length of the pad will be a minimum of 12 inches or two times (2 x) the diameter of the piping, whichever is greater, longer than the length of the entire assembly. Pad material will be such that it provides a substantial platform for the support of any enclosure and made such that it provides a reasonably substantial platform for working. The pad will be designed and made of material that prevents erosion. If poured concrete, adequate reinforcing will be used and all piping passing through the pad will be sleeved.

7.10 Protection from Freezing

It is the customer's responsibility to insure that any backflow prevention assembly or device installed is protected from freezing. The type or method of protection may vary, so long as it does not interfere with the normal and intended operation of the assembly or device, or the testing and/or maintenance of the assembly or device.

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Section 8

Compliance and Enforcement

8.1 Customer Compliance with this policy.

All customers of the Village of Huntley will comply with the requirements established in this policy manual. Specific violations and subsequent enforcement actions include:

8.1.1 Failure to allow inspection - Any customer of the Village of Huntley who refuses to allow the inspection or survey of any portion of any premise served by the Village of Huntley for the purpose of determining the presence of cross-connections and/or the degree of hazard associated with a suspected cross-connection will be required to install an approved reduced pressure principle backflow prevention assembly (RP) in accordance with the requirements set forth in this policy manual. The RP will be installed, tested, and certified within 90 days of effective receipt of written notification from the Village of Huntley.

8.1.2 Failure to eliminate a discovered cross-connection or failure to install the appropriate backflow prevention assembly - Any customer of the Village of Huntley who fails to eliminate a discovered cross-connection or who fails to install the required backflow prevention assembly in accordance with this policy will be subject to the termination of all water service from the Village of Huntley until such time as the customer complies with these requirements.

8.1.3 Failure to maintain and have tested a required backflow prevention assembly - Any customer who fails to properly maintain and/or have a required backflow prevention assembly tested by a certified and approved CCCDI in accordance with the requirements of this policy will be subject to the termination of all water service from the Village of Huntley until such time as the customer complies with these requirements.

8.1.4 By-passing, removing, or otherwise rendering a required backflow prevention assembly ineffective - Any customer who has, or has allowed, the by-passing of a required backflow prevention assembly, has removed a required backflow prevention assembly, or has deliberately rendered a required backflow prevention assembly ineffective will be subject to the termination of all water service from the Village of Huntley until such time as the by-pass has been eliminated or the required backflow prevention assembly has been restored to a full working condition.

8.2 Compliance of Certified Cross-Connection Control Device Inspectors

8.2.1 Failure to complete and submit required test report forms to the Village of Huntley - Any backflow prevention assembly test report form that is not properly completed or is not submitted to the Village of Huntley or their authorized agent in accordance with this policy (Section 4, Paragraph 4.3.2) will be considered invalid. Should a certified CCCDI continue to violate this policy, that tester will be removed from the list of approved CCCDIs maintained by the Village of Huntley.

8.2.2 Submitting false or fraudulent information or reports - Any CCCDI found to be misrepresenting backflow prevention assembly test results or otherwise purposefully submitting false or fraudulent information to the Village of Huntley will be removed from the list of approved CCCDIs. Furthermore, the Village of Huntley will submit any and all information regarding that tester to the Illinois EPA for appropriate enforcement action and the Village of Huntley will pursue and invoke any remedy provided to it in law or in equity.

8.2.3 Failure to provide a copy of Certificate of Calibration, or Certificate of Insurance - Any CCCDI who fails to provide either a copy of their *Certificate of Calibration* or a copy of their *Certificate of Insurance*, demonstrating General Liability amounts of no less than One Million Dollars ($1,000,000) aggregate, when requested by the Village of Huntley will be removed from the list of approved CCCDIs.

Section 9

Certification of Adoption

This is to certify that this cross-connection control policy was approved and adopted by the Village of Huntley on April 11, 2002 and is effective as of the date of adoption.

Jim Schwartz, Public Works Director