CROSS CONNECTION CONTROL

AUGUST 2015

INTRODUCTION

South Island Public Service District has established an ongoing Cross Connection Control Program. This program was set up to comply with safe drinking water standards. The goal of this program was (and remains) "to protect SIPSD's potable water distribution system and its customers from contamination by cross connection." From this point in the manual forward, South Island Public Service District will be referred to as "SIPSD".

This manual of policies and procedures is part of the cross connection control program adopted by SIPSD. The techniques to be used to prevent cross connection shall be a joint effort of SIPSD, the South Carolina Department of Health and Environmental Control (SCDHEC), and the customers of SIPSD.

The primary method of cross connection control shall be by a backflow prevention assembly on the customer's service line. All commercial, industrial, commercial residential, commercial irrigation, and fire protection customers will be required to install, maintain and test a backflow prevention assembly on their service line.

Due to periodic changes in drinking water regulations, this manual of Cross Connection Control is subject to changes without notice to comply with these regulations. The customer is responsible for periodically obtaining the most current updated copies of this manual. Copies can be obtained from the administrative offices of SIPSD at 2 Genesta Street, Hilton Head Island, SC 29928.

1. PURPOSE

The Commissioners of SIPSD have established a program of Cross Connection Control to:

A. Protect and maintain the potable water supply against actual or potential cross connections by isolating, within a premises, contamination or pollution that may occur due to some undiscovered or unauthorized cross connection on said premises.

B. Eliminate any existing connections between the drinking water supply and other sources of water not approved as safe and potable for human consumption, or process water used for any purpose whatsoever that may jeopardize the safety of the drinking water supply.

C. Prevent the creation of cross connections in the future.

D. Encourage the exclusive use of public sources of water supply.

E. Protect the drinking water supply within premises where plumbing defects or cross connections may endanger the drinking water supply available on the premises.

These regulations are to be reasonably interpreted and are not to be construed as prohibiting other governmental authorities, where circumstances warrant, from establishing a more rigid requirement regarding protection of water supply in addition to the standards indicated herein.

2. AUTHORITY

Authority includes the Federal Safe Drinking Water Act of 1974, the State Safe Drinking Water Act (1976 Code of Laws of South Carolina, §44-55-10, et seq.) and the South Carolina Primary Drinking Water Regulations promulgated by the South Carolina Department of Health and Environmental Control, and the Plumbing Code adopted by the Town of Hilton Head Island, SC. Nothing herein shall be construed to conflict with any applicable federal and state law or regulation or with any other existing ordinance, code or amendments thereto.

3. RESPONSIBILITY

A. SIPSD has the primary responsibility for the protection of the potable water distribution system from potential hazards to the health of the customers by backflow from cross connections. SIPSD shall evaluate connections to the potable water distribution system for cross connections and the customer shall provide and maintain backflow prevention assemblies commensurate with the degree of hazard for each connection. SIPSD is not obligated to provide water service to unprotected cross connections.

B. The customer shall have the responsibility of preventing backflow from entering their water system, and from entering SIPSD's water distribution system. The customer

shall install, maintain and test all backflow assemblies, as necessary, according to all Federal and State codes, SIPSD regulations, and local backflow prevention practices.

4. ADMINISTRATION

A. SIPSD shall operate a Cross Connection Control Program in accordance with the South Carolina Department of Health & Environmental Control laws and regulations. The program will consist of, but not be limited to, conducting on-site inspections, interviews, reviewing of plans, consulting local and state plumbing officials, maintaining files with pertinent customer information, and notifying customers, on an annual basis, of required testing. A manual of cross connection control shall be maintained, which shall be part of this policy and be available from SIPSD.

B. It is unlawful to install, permit to be installed, or maintain any unprotected cross connections. Customers who install or maintain service connections to SIPSD's distribution system that are unprotected, fail to meet requirements, refuse to install protective devices, or refuse to annually test backflow prevention assemblies shall be notified by mail and SIPSD will disconnect the service connection until corrections or tests are approved by SIPSD. All applicable disconnect and reconnect fees shall be paid by the customer.

Notice of Update

This Cross Connection Manual was approved and adopted by the Board of Commissioners of SIPSD, Hilton Head Island, South Carolina, in February of 2001. This document has been reviewed and edited on a regular basis, with this most recent adaptation approved on July 25th, 2015.

TABLE OF CONTENTS

1. RESPONSIBILITIES

A. THE WATER PURVEYOR

The Water Purveyor (SIPSD) has the primary responsibility for the prevention of backflow into the public water supply system. Such responsibility begins at the water supply, and includes water treatment facilities, water storage facilities, water distribution piping system, and ends at the water service connection. The water purveyor shall evaluate new and existing water service connections to determine the need for installation of backflow prevention assemblies. Files shall be maintained with water customer information, and customers shall be notified of the required annual backflow prevention assembly testing. The Water Purveyor shall cooperate with the Plumbing Official and the Health Official on cross connection control for new construction, or repairs or additions to customer water systems.

B. THE PLUMBING OFFICIAL

The Plumbing Official (Town of Hilton Head Island Plumbing Inspector or Beaufort County Building Inspectors) enforces the provisions of the Standard Plumbing Code as adopted

for the applicable area, including but not limited to those provisions regarding backflow, back-siphonage and/or cross connections from the customer's water service connection to the extremities of the customer's water system. The plumbing official has the primary enforcing responsibility of new installations, alterations, or repairs of customer water systems.

C. SCDHEC

SCDHEC legislates and enforces the laws, rules, and regulations of the state of South Carolina concerning water quality. SCDHEC enforces SIPSD's regulatory required Cross Connection Control Program.

SCDHEC is responsible for certifying testers of backflow prevention assemblies. A list of certified testers is maintained by the Health Official who renews and revokes the certification as necessary. SCDHEC reviews backflow prevention assemblies and provides a current list of approved assemblies for installation and use in South Carolina.

D. THE CUSTOMER

The Customer is responsible for maintaining any special plumbing fixtures or devices designed to accommodate variations in the water pressure. Such devices or fixtures may include but are not limited to thermal expansion tanks, relief valves, and pressure reducing valves. SIPSD water supply is subject to variations in pressure, and is subject to being shut off for repairs, maintenance, and planned or unplanned construction.

The customer shall not install, permit to be installed, or maintain any unprotected cross connections beyond the water service connection point. Auxiliary water systems, industrial fluids, recycled water, product manufacturing, processing, fire protection systems, irrigation systems, and temperature-increasing devices, among other systems, are considered cross connections.

The customer is responsible for obtaining all necessary permits and inspections. They are also responsible for being in compliance with all applicable codes and regulations as required by the Plumbing Official, the Health Official, SIPSD or other official, as required, for changes or alterations, additions, or new construction to their water supply system.

The customer shall assist SIPSD, the Plumbing Official, and the Health Official in surveying or inspecting their existing water supply system, any plans of proposed changes or additions, or new construction to their water supply system.

The customer shall install, test, and maintain all backflow prevention assemblies as required. Prior to purchasing or installing a backflow prevention assembly, the customer should contact SIPSD's Program Administrator to ensure full compliance with the Cross Connection Control Program.

2. REQUIREMENTS

A. NEW CONSTRUCTION

Commercial and Commercial-Residential Properties

i) SIPSD shall conduct on-site evaluation, inspections and review of plans in order to determine the degree of hazard in question, and shall prescribe backflow measures (devices) that are commensurate with the degree of hazard in question. In cases where increased hazards do not dictate the need for greater protection, a double-check valve assembly shall be required, at minimum.

ii) Any newly installed double-check valve assembly, pressure vacuum breaker, or reduced pressure principle assembly shall be tested by a certified tester prior to any final approval of any utility service from SIPSD.

Residential Properties

i) All new residential construction meters shall have double-check valve assemblies installed at the service connection to the premise.

B. EXISTING PREMISES (FACILITIES)

i) All commercial and commercial-residential customers will be required to install a testable backflow prevention device. Identification of commercial and commercial-residential customers will be made utilizing customer billing records, telephone calls, personal interviews and inspections.

ii) Any newly installed double-check valve assembly, pressure vacuum breaker, and reduced pressure principle assembly shall be tested by a certified tester upon installation and once annually thereafter. A firm but reasonable time period is to be established by SIPSD for the completion of the required installation and testing of the prescribed device(s).

iii) No existing cross connection will be allowed to remain unless it is protected by an approved backflow preventer, which is commensurate with the degree of hazard in question.

iv) The owner of the premises shall be responsible for meeting al compliance schedules, as well as for all fees, and required testing.

C. LAWN IRRIGATION SPRINKLER SYSTEMS

i) All lawn irrigation sprinkler systems installed after June 13, 2000 shall be protected with an approved backflow prevention device. Simple underground irrigation systems may be protected by a dual-check valve, DCVA, PVB or RPPA. If chemical concentrates are aspirated into the system, or an unapproved auxiliary water supply is tied into the system, a reduced pressure assembly shall be installed, and tested in accordance with Section 8 of the Cross Connection Control Manual.

ii) A dual-check valve assembly shall be installed by SIPSD at the time of meter installation. The minimum change out frequency for these assemblies shall be fifteen (15) years.

iii) Customers with double-check valve assemblies or other SCDHEC approved backflow prevention assemblies may either elect to remove or leave in place the customer-owned assemblies. Removing the working parts of the assembly will be considered to be a removal and will be performed at customer's expense. The customer must inform SIPSD of the removal of the device, at which time a dual-check valve will be installed at the meter.

iv) Customers electing to leave in place existing testable backflow prevention devices will be exempt from annual inspections and repairs, providing a dual-check valve assembly is installed at the meter.

D. RESIDENTIAL POOLS & SPAS

Residential properties with a pool or spa installed on the premises shall have an approved backflow prevention assembly installed and tested as required in Section 8 of this manual.

3. TYPE OF PROTECTION

The protective device required shall depend on the degree of hazard as tabulated below:

A. At the service connection to any premises where there is an auxiliary water supply handled in a separate piping system with no known cross connection, the public water supply shall be protected by an approved double-check valve assembly.

B. At the service connection of any premises on which a substance that would be objectionable (but not necessarily hazardous to health if introduced into the public water supply) is handled so as to constitute a cross connection, the public water supply shall be protected by an approved double-check valve assembly.

C. At the service connection on any premises that uses an auxiliary water supply and cross connections are known to exist. If these cross connections cannot be presently eliminated, an approved reduced-pressure principle assembly shall protect the public water supply system.

D. At the service connection to any car wash facility using re-circulating pumps, an approved reduced-pressure principle assembly shall be installed.

E. At the service connection to any medical facility, mortuary, or funeral home an approved reduced-pressure principle assembly shall protect the public water supply system.

F. At the service connection to any premises on which any material dangerous to health or toxic substance in toxic concentration is or may be handled under pressure, the public water supply shall be protected by an air-gap separation. The air-gap shall be located as close as practicable to the service cock and all piping between the service cock and receiving tank shall be entirely visible. If these conditions cannot reasonably be met, the public water supply shall be protected with either an approved reduced pressure principle assembly or an approved double-check valve assembly, providing the alternative is acceptable to both SIPSD and SCDHEC.

G. At the service connection to any sewage treatment plant or sewage pumping station, the public water supply shall be protected by an air-gap separation. The air-gap shall be located as close as practicable to the service cock and all piping between the service cock and receiving tank shall be entirely visible. If these conditions cannot be reasonably met, the public water supply shall be protected with an approved reduced-pressure-principle assembly, providing this alternative is acceptable to SIPSD. Final decision in this matter shall rest with SCDHEC. Sewage pumps shall not have priming connections directly off any drinking water system.

H. At the service connection to any commercial or residential system where a dock is present, a reduced pressure principal assembly shall be installed and tested.

4. INSTALLATION REQUIREMENTS

A. HAZARD APPLICATIONS

Reduced pressure principle assemblies shall be used for cross connection control of the high hazard category.

Pressure Vacuum Breakers shall be used for cross connection control of the high hazard category for back siphonage conditions only, and should not be used if back pressure could develop in the downstream piping.

Double-check valve assemblies shall be used for cross connection control of the low hazard category.

Dual-check valve assemblies shall be used for cross connection control on all residential lawn irrigation systems not protected by any other backflow prevention device.

B. LOCATION

Installation of these assemblies will usually be near the water meter or inside a building in a mechanical area, and prior to the first connection off the service line. The standard procedure will be cross connection control by containment.

C. Installation of DCV Assemblies, RP Assemblies and PVB Assemblies must be installed according to the manufacturer's specifications.

5. FIRE SUPPRESSION/SPRINKLER SYSTEMS

An approved double-check valve assembly shall protect fire line sprinkler systems, except those in a high hazard category. High hazard fire sprinkler systems shall include but not be limited to antifreeze systems, foam systems, and systems charged from (or tied into) ponds, lakes, streams, or any water source other than the approved public water supply. High hazard systems shall be protected by a reduced pressure principle assembly. Any fire line sprinkler systems with single/alarm checks must be retrofitted immediately.

6. PROCESS WATERS

Potable water pipelines connected to equipment for industrial processes or operations shall be disconnected. Where disconnection is not practicable, a suitable backflow prevention device located beyond the last point from which drinking water may be taken shall be provided on the feed line to process piping or equipment. In the event the particular process liquid is especially corrosive or apt to prevent reliable action of the backflow prevention device, air-gap separation shall be provided. The water user shall test these devices at least once a year or more often in those instances where successive inspections indicate repeated failure. The devices shall be repaired, overhauled or replaced whenever they are found to be defective. Records of test repairs, and replacement shall be kept by SIPSD and made available to the SCDHEC.

7. PIER AND DOCK HYDRANTS

Backflow protection by a reduced pressure principle device shall be provided on drinking water used to supply potable water to vessels at piers or waterfronts. These assemblies must be located where they will prevent return of any water from the vessel into the drinking water pipeline or any other adjacent vessel. This will prevent such practices as connecting the ship fire pumping or sanitary pumping system with a dock hydrant and thereby pumping contaminated water into the drinking water system, into adjacent vessels, or back into the public mains.

8. TESTING

A. NEW ASSEMBLIES

All new assemblies shall be tested upon installation, and prior to use by the customer. The customer shall contact a SCDHEC certified tester to test the device. The completed test report shall be forwarded to SIPSD Program Administrator. Water service will be initiated upon receipt of the test report by SIPSD's Program Administrator.

B. EXISTING ASSEMBLIES

All existing assemblies shall be tested a minimum of once annually. Customers with existing backflow prevention assemblies will be notified by letter from SIPSD to have the annual test performed. The customer will be responsible for contacting a certified tester and having the test completed within 30 DAYS of notification. The completed report shall be returned to SIPSD within 7 DAYS of the test. SIPSD shall receive all test forms within 37 DAYS.

If the assembly fails the required tests and cannot be repaired immediately (i.e., repair parts are on order) the tester shall return a copy of the test report explaining the test failure to SIPSD the same day. After the assembly is repaired, the assembly shall be tested immediately and the completed report shall be returned to SIPSD the same day.

C. TESTING NON-COMPLIANCE

Customers failing to return completed test reports to SIPSD within the 37-day given period shall be considered in non-compliance. At that time, SIPSD will proceed with terminating service until property owner is back in compliance.

9. MARKING SAFE AND UNSAFE WATER SERVICES

Where premises contain dual or multiple water systems and piping, the exposed portions of the pipe lines shall be painted, banded, or marked at sufficient intervals to distinguish clearly which water is safe and which water is not safe for drinking purposes. The only dual systems allowed with SIPSD are those that utilize reclaimed water for

irrigation. In all areas where reclaimed water is utilized for landscape irrigation, a system that is separated from the potable system is required. Any exposed piping within that system shall be painted purple. Reclaimed water meters and other appurtenances within the meter box shall also be painted purple. All landscaped areas being irrigated with reclaimed water shall be clearly posted with signs having a red background with lettering reading as follows:

RECLAIMED WATER USED FOR IRRIGATION
DO NOT DRINK
(SOUTH ISLAND PUBLIC SERVICE DISTRICT)

10. RECORDS AND REPORTS

The following records and reports will be maintained in the administrative building of SIPSD'S Reclaimed Water Treatment Plant:

i) Inventory of all backflow prevention devices within SIPSD's distribution system.

ii) Initial and annual test reports

iii) Reports of repair and maintenance completed

iv) Record of all correspondence

v) List of all licensed testers and approved backflow prevention devices.

11. POLICY STATEMENTS

A. INSPECTION OF CUSTOMER PREMISES

Each customer, as a condition of continued delivery of water to their premises, shall be required to consent for inspectors to enter upon their premises for the purpose of inspection. An appointment will be made for routine surveys or inspections. Emergency inspections or investigations may be conducted without advance notice.

B. EXISTING BACKFLOW PREVENTION ASSEMBLIES

If SIPSD has determined that an existing assembly will provide adequate backflow protection to the potable water supply it shall be permitted to remain in service. However when it becomes necessary to replace or change the size of a backflow prevention assembly, the procedures and requirements of the most current Cross Connection Control Manual shall be met. Routine maintenance and repairs are not included under this requirement. However, if SIPSD determines that the existing assembly or its location no longer ensures adequate backflow protection the assembly shall be replaced with an assembly meeting current SIPSD Cross Connection Control requirements.