



A POLICY PROCEDURE OF
LIBERTY UTILITIES APPLE VALLEY
INSTITUTING A CROSS-CONNECTION CONTROL PROGRAM
TO PROTECT THE PUBLIC WATER SYSTEM

THE LIBERTY UTILITIES APPLE VALLEY WATER CO. DOES HEREBY ADOPT AS FOLLOWS:

SECTION I - PURPOSE

The purpose of this policy procedure is (1) to protect the public water supply against actual or potential cross-connection by isolating within the premises of a customer, contamination that may occur because of some undiscovered or un authorized cross-connection on the premises; (2) to eliminate existing connections between drinking water systems and other sources of water that are not approved as safe and potable for human consumption; (3) to eliminate cross-connections between drinking water systems and sources of contamination; (4) to prevent the making of cross-connections in the future.

These regulations are adopted pursuant to the State of California Code of Regulations, Title 17 – Public Health, entitled “Regulations Relating to Cross-Connections”.

It is unlawful of any person, firm, or corporation at any time to make or maintain or cause to be made or maintained, temporarily or permanently, for any period of time whatsoever, any cross-connection between plumbing pipes or water fixtures being served with water by Liberty Utilities Apple Valley and any other source of water supply. It is also unlawful to maintain any sanitary fixture or other appurtenances or fixtures which by reason of their construction may cause or allow backflow of water or other substances into the water supply system of Liberty Utilities Apple Valley or the service water pipes or fixtures of any consumer of Liberty Utilities Apple Valley.

SECTION II - DEFINITIONS

- A. Air-Gap Separation: a physical break between a supply pipe and a receiving vessel. The air-gap shall be at least twice the diameter of the supply pipe measured vertically above the top rim of the vessel, in no case less than one inch.
- B. Approved Backflow Prevention Device: devices which have passed laboratory and field evaluation tests performed by a recognized testing organization which has demonstrated their competency to perform such tests to the California Department of Health Services.
- C. Approved Water Supply: any water supply whose potability is regulated by a state or local health agency.
- D. Auxiliary Supply: any water supply on or available to the premises other than the approved water supply.

- E. AWWA Standard: an official standard developed and approved by the American Water Works Association (AWWA).
- F. Backflow: a flow condition, caused by a differential in pressure, that causes the flow of water or other liquids, gases, mixtures or substances into the distribution pipes of a potable supply of water from any source or sources other than an approved water supply source. Backsiphonage and backflow are the two causes of backflow.
- G. Contamination: a degradation of the quality of the potable water by any foreign substance which creates a hazard to the public health or which may impair the usefulness or quality of the water.
- H. Cross Connection: as used in this policy procedure, means any unprotected actual or potential connection between a potable water system used to supply water for drinking purposes and any source or system containing unapproved water or a substance that is not or cannot be approved as safe, wholesome, and potable. Bypass arrangements, jumper connection, removable sections, swivel or changeover devices, or other devices through which backflow could occur, shall be considered to be cross-connections.
- I. Double Check Valve Assembly: an assembly of at least two independently acting check valves including tightly closing shut-off valves on each side of the check valve assembly and test cocks available for testing the water tightness of each check valve.
- J. Health Agency: the California Department of Health Services.
- K. Local Health Agency: the San Bernardino County Department of Health Services
- L. Person: an individual, corporation, company, association, partnership, municipality, public utility, or other public body or institution.
- M. Premise: any and all areas on a customer property which are served or have the potential to be served by the public water system.
- N. Public Water System: a system for the provision of piped water to the public for human consumption which has five or more service connection or regularly serves an average of 25 individuals daily at least 60 days out of the year.
- O. Reclaimed Water: a wastewater which as a result of treatment is suitable for uses other than potable use.
- P. Reduced Pressure Principle Backflow Prevention Device: a device incorporating two or more check valves and an automatically operating differential relief valve located between the two checks, a tightly closing shut-off valve on each side of the check valve assembly, and equipped with necessary test cocks for testing.
- Q. Service Connection: the point of connection of a user's piping to Liberty Utilities Apple Valleys' facilities.
- R. Water Supplier: Liberty Utilities Apple Valley
- S. Water User: any person obtaining water from an approved water supply system.



SECTION III – CROSS-CONNECTION PROTECTION REQUIREMENT

A. General Provisions

1. Unprotected cross-connections with the public water supply are prohibited.
2. Whenever backflow protection has been found necessary, Liberty Utilities Apple Valley will require the water user to install an approved backflow prevention device by and at his/her expense for continued service or before a new service will be granted.
3. Wherever backflow protection has been found necessary on a water supply line entering a water user's premises, then any and all water supply lines from Liberty Utilities Apple Valley mains entering such premises, buildings, or structures shall be protected by an approved backflow prevention device. The type of device to be installed will be in accordance with the requirements of this policy procedure and in no case be less strict than the regulations relating to cross-connections as defined in Title 17 of the California Administrative Code.

B. Where Protection is Required

1. Each service connection from the Liberty Utilities Apple Valley water system for supplying water to premises having auxiliary water supply shall be protected against backflow of water from the premises into the public water system unless the auxiliary water supply is accepted as an additional source by Liberty Utilities Apple Valley and is approved by the public health agency having jurisdiction.
2. Each service connection from Liberty Utilities Apple Valley water system for supplying water to any premises on which any substance is handled in such fashion as may allow its entry into the water system shall be protected against backflow of the water from the premises into the public system. This shall include the handling of process waters and waters originating from the Liberty Utilities Apple Valley water system which have been subjected to deterioration in sanitary quality.
3. Backflow prevention devices shall be installed on the service connection to any premises having (a) internal cross-connections that cannot be permanently corrected and controlled to the satisfaction of the appropriate health agency and Liberty Utilities Apple Valley or (b) intricate plumbing and piping arrangements or where entry to all



portions of the premises is not readily accessible for inspection purposes, making it impracticable or impossible to ascertain whether or not cross-connections exist.

C. Type of Protection Required

1. The type of protection that shall be provided to prevent backflow into the approved water supply shall commensurate with the degree of hazard that exists on the consumer's premises. The type of protective device that may be required (listing in an increasing level of protection) includes: Double Check Valve Assembly (DC), Reduced Pressure Principle Backflow Prevention Device (RP), and an Air-Gap separation (AG). The water user may choose a higher level of protection than required by Liberty Utilities Apple Valley. The minimum types of backflow protection required to protect the approved water supply at the user's water connection to premises with varying degrees of hazard are given in Table I. Situations which are not covered in Table I shall be evaluated on a case by case basis and the appropriate backflow protection shall be determined by Liberty Utilities Apple Valley or the appropriated health agency.

Table I
TYPE OF BACKFLOW PROTECTION REQUIRED

<u>Degree of Hazard</u>	<u>Minimum Type of Protection</u>
(a) Sewage and Hazardous Substances	
1. Premises where the public water system is used to supplement the reclaimed water supply	AG
2. Premises where there are wastewater pumping and/or treatment plants and there is no inter-connection with the potable water system. This does not include a single family residence that has a sewage lift pump. An RP may be provided in lieu of an AG if approved by the health agency and Liberty Utilities Apple Valley.	AG
3. Premises where reclaimed water is used and there is no interconnection with the potable water system. An RP may be provided in lieu of and AG if approved by the health agency and Liberty Utilities Apple Valley.	AG

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| 4. Premises where hazardous substance are handled in any manner in which the substances may enter a potable water system. This does not included a single family residence that has a sewage lift pump. An RP may be provided in lieu of an AG if agreed by the health agency and Liberty Utilities Apple Valley. | A |
| 5. Premises where there are irrigation systems into which fertilizers, herbicides, or pesticides are, or can be, injected. | RP |

(b) Auxiliary Water Supplies

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| (1) Premises where there is an unapproved auxiliary which is interconnected with the public water system. An RP or DC may be provided in lieu of an AG if approved by the health agency and Liberty Utilities Apple Valley. | AG |
| (2) Premises where there is an unapproved auxiliary water Supply and there are no interconnections with the public water system. A DC may be provided in lieu of an RP if approved by the health agency and Liberty Utilities Apple Valley. | RP |

(c) Fire Protection Systems

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| (1) Premises where the fire system is directly supplied from the public water system and there is an unapproved auxiliary water supply on or to the premises (not interconnected) | DC |
| (2) Premises where the fire system is supplied from the public water system and interconnected with an unapproved auxiliary water supply. An RP may be provided in lieu of an AG if approved by the health agency and Liberty Utilities Apple Valley. | AG |
| (3) Premises where the fire system is supplied from the public water system and where either elevated storage tanks or fire pumps which take suction from the private reservoirs or tanks are used. | DC |

- (d) Premises where entry is restricted so that inspections from cross connection cannot be made with sufficient frequency or at sufficiently



Short notice to assure cross-connections do not exist.

RP

(e) Premises where there is a repeated history of cross connections being established or re-established.

RP

(1) Two or more services supplying water from different street mains to the same building, structure, or premises through which an interstreet main flow may occur, shall have at least a standard check valve on each water service to be located adjacent to and on the property side of the respective meters. Such check valves shall not be considered adequate if backflow prevention is deemed necessary to protect Liberty Utilities Apple Valleys mains from pollution or contamination; in such cases the installation of approved backflow devices at such service connections shall be required.

SECTION IV – BACKFLOW PREVENTION DEVICES

A. Approved Backflow Prevention Devices

1. Only backflow prevention devices which have been approved by Liberty Utilities Apple Valley shall be acceptable for installation by a water user connected to the Liberty Utilities Appel Valley potable water system.
2. Liberty Utilities Apple Valley will provide, upon request, to any affected customer a list of approved backflow prevention devices.

B. Backflow Prevention Device Installation

1. Backflow prevention devices shall be installed in a manner prescribed in Section 7603, Title 17 of the California Code of Regulations. Location of the devices should be as close as practical to the user's connection. Liberty Utilities Apple Valley shall have the final authority in determining the required location of a backflow prevention device.
 - a. Air-Gap Separation (AG) – The air-gap separation shall be located on the user's side of and as close to the service connection as is practical. All piping from the service connection to the receiving tank shall be above grade and be entirely visible. No water use shall be provided from any point between the service connection and the air-gap separation. The water inlet piping shall terminate a distance of at least two pipe diameters

above the overflow rim of the receiving tank and in no case shall that distance be less than one inch.

- b. Reduced Pressure Principle backflow prevention device (RP) – The approved Reduced Pressure Principle backflow prevention device shall be installed on the user’s side of and as close to the service connection as is practical. The device shall be installed a minimum of twelve inches (12”) above grade and not more than thirty-six inches (36”) above grade measured from the bottom of the device and with a minimum of twelve inches (12”) side clearance. The device shall be installed so that it is readily accessible for maintenance and testing. Water supplied from any point between the service connection and the RP device shall be protected in a manner approved by Liberty Utilities Apple Valley.
- c. Double Check Valve assembly (DC) – The approved double check valve assembly shall be located as close as practical to the user’s connection and shall be installed above grade, if possible, and in a manner where it is readily accessible for testing and maintenance. If a double check valve assembly is put below grade it must be installed in a vault such that there is a minimum of six inches (6”) between the bottom of the vault and the bottom of the device, so that the top of the device is no more than a maximum of eight inches (8”) below grade, so there is a minimum of six inches (6”) of clearance between the side of the device with the test cocks and the side of the vault, and so there is a minimum of three inches (3”) clearance between the other side of the device and the side of the vault. Special consideration must be given to double check valve assemblies of the “Y” type. These devices must be installed on their “side” with the test cocks in a vertical position so that either check valve may be removed for service without removing the device. Vaults which do not have an integrated bottom must be placed on a three inch (3”) layer of gravel.

C. Backflow Prevention Device Testing and Maintenance

The owners of any premises on which, or on account of which, backflow prevention devices are installed, shall have the devices tested by a person who has demonstrated their competency in the testing of these devices to the local health authority and Liberty Utilities Apple Valley. Backflow prevention devices must be tested at least annually and immediately after installation, relocation or repair. Liberty Utilities Apple Valley may require a more frequent testing schedule if it is determined to be necessary. No device shall be placed back in service unless it is functioning as required. A report in a form acceptable to Liberty Utilities shall be filed with the company each time a device is tested, relocated, or repaired. These devices



shall be serviced, overhauled, or replaced whenever they are found to be defective and all costs of testing, repair, and maintenance shall be borne by the water user.

Liberty Utilities Apple Valley will supply affected water users with a list of persons acceptable to Liberty Utilities Apple Valley and the health authority to test backflow prevention devices. Liberty Utilities Apple Valley will notify affected customer by mail when annual testing of a device is needed and also supply users with the necessary forms which must be filled out each time a device is tested or repaired.

D. Backflow Prevention Device Removal

1. Approval must be obtained from Liberty Utilities Apple Valley before a backflow prevention device is removed, relocated, or replaced.
 - a. Removal: the use of a device may be discontinued and the device removed from service upon presentation of sufficient evidence to Liberty Utilities Apple Valley to verify that a hazard no longer exists or is not likely to be created in the future.
 - b. Relocation: A device may be relocated following confirmation by Liberty Utilities Apple Valley that the relocation will continue to provide the required protection and satisfy installation requirements. A retest will be required following the relocation of the device.
 - c. Repair: A device may be removed for repair, provided the water use is either discontinued until repair is completed and the device is returned to service, or the service connection is equipped with other backflow protection approved by Liberty Utilities Apple Valley. A retest will be required following the repair of the device.
 - d. Replacement: A device may be removed and replaced provided the water use is discontinued until the replacement device is installed, All Replacement devices must be approved by Liberty Utilities Apple Valley and must commensurate with the degree of hazard involved.



SECTION V – USER SUPERVISION

At each premises where it is necessary, in the opinion of Liberty Utilities Apple Valley, a user supervisor shall be designated by and at the expense of the water user. This user supervisor shall be responsible for the monitoring of the backflow prevention devices and for avoidance of cross-connections. In the event of contamination or pollution of the drinking water system due to a cross-connection on the premises, Liberty Utilities Apple Valley shall be promptly notified by the user supervisor so that appropriate measures may be taken to overcome the contamination. The water user shall inform Liberty Utilities Apple Valley of the user supervisor's identity on, as a minimum, an annual basis and whenever a change occurs.

SECTION VI – ADMINISTRATIVE PROCEDURES

A. Water System Survey

1. Liberty Utilities Apple Valley shall review all requests for new services to determine if backflow protection is needed. Plans and specifications must be submitted to Liberty Utilities Apple Valley upon request for review of possible cross-connection hazards as a condition of service for new service connections. If it is determined that a backflow prevention device is necessary to protect the public water system, the required device must be installed before service will be granted.
2. Liberty Utilities Apple Valley may require an on premise inspection to evaluate cross-connection hazards, Liberty Utilities Apple Valley will transmit a written notice requesting an inspection appointment to each affected water user. Any customer which cannot or will not allow an on premise inspection of their piping system shall be required to install the backflow prevention device that Liberty Utilities Apple Valley considers necessary.
3. Liberty Utilities Apple Valley may, at its discretion, require a repeat inspection for cross-connection hazards of any premise to which it serves water. Liberty Utilities Apple Valley will transmit a written notice requesting an inspection appointment to each affected water user. Any customer which cannot or will not allow an on premise inspection of their piping system shall be required to install the backflow prevention device that Liberty Utilities Apple Valley considers necessary.



B. Customer Notification - Device Installation

1. Liberty Utilities Apple Valley will notify the water user of the survey finding, listing corrective action to be taken if required. A period of 60 days will be given to complete all corrective action required including installation of backflow prevention devices.
2. A second notice will be sent to each water user which does not take the required corrective action prescribed in the first notice within the 60 days period allowed. The second notice will give the water user a two week period to take the required corrective action. If no action is taken within the two week period, Liberty Utilities Apple Valley may terminate water service to the affected water user until the required corrective actions are taken.

C. Customer Notification – Testing and Maintenance

1. Liberty Utilities Apple Valley will notify each affected water user when it is time for the backflow device installed on their service connections need to be tested. This written notice shall give the water user 30 days to have the device tested and supply the water user with the necessary form to be completed and resubmitted to Liberty Utilities Apple Valley.
2. A second notice shall be sent to each water user which does not have his/her backflow prevention device tested as prescribed in the first notice within the 30 day period allowed. The second notice will give the water user a two week period to have his/her backflow prevention device tested. If no action is taken within the two week period, Liberty Utilities Apple Valley may terminate water service to the affected water user until the subject device is tested.

SECTION VII – WATER SERVICE TERMINATION

A. General

When Liberty Utilities Apple Valley encounters water uses that represent a clear and immediate hazard to the potable water supply that cannot be immediately abated, Liberty Utilities Apple Valley shall institute the procedure for discontinuing the Liberty Utilities Apple Valley water service.

B. Basis for Termination

Conditions or water uses that create a basis for water service termination shall include, but are not limited to, the following items:

1. Refusal to install a required backflow prevention device
2. Refusal to test a backflow prevention device.
3. Refusal to repair a faulty backflow prevention device
4. Refusal to replace a faulty backflow prevention device.
5. Direct or indirect connection between the public water system and a sewer line.
6. Unprotected direct or indirect connection between the public water system and a system or equipment containing contaminants.
7. Unprotected direct or indirect connection between the public water system and an auxiliary water system.
8. A situation which presents an immediate health hazard to the public water system.

C. Water Service Termination Procedures

1. For conditions 1, 2, 3, or 4, Liberty Utilities Apple Valley will terminate service to a customer's premise after 2 written notices have been sent specifying the corrective action needed and the time period in which it must be done. If no action is taken within the allowed time period, water service may be terminated.
2. For conditions 4, 5, 6, 7, or 8, Liberty Utilities Apple Valley will take the following steps:
 - a. Make reasonable effort to advise the water user of intent to terminate water service;
 - b. Terminate water supply and lock service valve. The water service will remain inactive until correction of violation(s) has been approved by Liberty Utilities Apple Valley.



SECTION VIII - SEVEREABILITY

If any section, subsection, subdivision, paragraph, sentence, clause, or phrase of this Policy Procedure, or any part thereof, is for any reason held to be invalid, such decision shall not affect the validity of the remaining portions of the Policy Procedure or any part thereof. The Board of Directors hereby declare that it would have passed each section, subsection, subdivision, paragraph, sentence, clause, or phrase thereof, irrespective of the fact that any one or more sections, subdivisions, paragraphs, sentences, clauses, or phrases be declared invalid.