

Staff Report

for the Water & Hydroelectric Operations Committee Meeting of June 17, 2020

TO: Water & Hydroelectric Operations Committee

FROM: Chip Close, Water Operations Manager

DATE: June 8, 2020

SUBJECT: Revisions to Section 9 and elimination of Schedule 9A of the Rules and Regulations

OPERATIONS

RECOMMENDATION:

Review and discuss proposed revisions to Section 9, and the elimination of Schedule 9A of the District's Rules and Regulations: Backflow Prevention, and advance a recommendation to the Board of Directors as appropriate.

BACKGROUND:

Title 17 of the California Code of Regulations (specifically Division 1, Chapter 5, Subchapter 1, Group 4) defines that "the water supplier shall protect the public water supply from contamination by implementation of a cross-connection control program". The District has maintained compliance with these regulations through the Backflow Prevention program as defined in Section 9 of the District Rules and Regulations. The regulations have been in place since 1998 and have not been updated since 2007.

In an effort to keep current with Title 17 regulations, and to provide clarification and a uniform approach, Staff is proposing a revised Section 9 of the Rules and Regulations.

The key changes in the proposed Section 9 update include the following:

- Provide definitions
- Specify District and Customer responsibility
- Require all new non-residential connections to have an RP back flow device
- Allow current services to continue unless modifications to the water system are made, or until a change in use at the premises requires increased backflow protection
- Provide better clarification of when residential services will require a backflow device

The current and proposed Section 9 Rules and Regulations are attached for review. Schedule 9A which is proposed to be eliminated, is also attached.

The Revision of Section 9 is in alignment with Goal 1 of the District's Strategic Plan, as it continues the proactive management of our physical resources, and helps to ensure a safe potable drinking water system.

BUDGETARY IMPACT:

There is no budgetary impact at this time.

/ac

Attachment (3):

- Current Section 9 Rules and Regulations
- Proposed Section 9 Rules and Regulations
- Schedule 9A

SECTION 9

BACKFLOW PREVENTION

9.01 GENERAL

The purpose of these Regulations is to provide for the protection of the District's treated water system from actual, or potential contamination by isolating within the water user's premises any possible source of such contamination or pollution.

In accordance with the requirements of the California Administrative Code, Title 17, Chapter V, Sections 7583 to 7605 inclusive, the water supplier has the responsibility to prevent contamination of the public water system by backflow. No water service connection to any premises shall be installed or maintained by the District unless the public water supply is protected, as required by said State regulations and the requirements stated below.

These Regulations supplement and do not supersede local plumbing regulations, codes, ordinances, or other State Department of Health Services' regulations relating to water supply.

9.02 TYPES OF PROTECTION

In general, types of backflow prevention devices to be located at the point of service shall be as follows:

(a) Double Check Valve Assembly

This device is utilized where a lesser degree of protection against backflow is desired.

(b) Reduced Pressure Principle Device

Utilized in situations where a higher degree of protection is required than can be obtained from a double check valve assembly.

(c) Air Gap Separation

Requires an actual separation of the District's water system and the water user's piping. This requirement is only used where a maximum of protection against backflow potential is necessary.

The District has reviewed the degree of hazard, probability of backflow occurring and complexity of piping with possibility of modification for various classes of treated water users. Based on this review, as well as present requirements as indicated in the aforementioned California Administrative Code, the District has established a listing of the minimum protection type of backflow prevention device required for each type of water service. These requirements are listed in Schedule 9-A. Changes to this schedule may be made upon written approval of the Manager.

9.03 DISTRICT RESPONSIBILITY

The District will install and maintain the required backflow prevention device. Only devices selected by the District and approved by the University of Southern California's Foundation for Cross Connection Control and Hydraulic Research, or approved by the California State Department of Health Services will be utilized.

The District shall cause inspections to be made at each backflow prevention device at least once a year. Only personnel certified for testing these devices by the California-Nevada Section of the American Water Works Association, the University of Southern California, or California State Department of Health Services, will perform the required tests. Test results and maintenance records shall be maintained by the District.

9.04 WATER USER'S RESPONSIBILITY

All costs incurred by the District for installation of the backflow prevention devices, as well as maintaining, replacing and testing these devices will be reimbursed by the water user to the District. These costs are shown in Schedules 9-B, 9-C, and 9-D.

The water user may be required to fill out a questionnaire regarding the degree of risk of backflow at the time water service is first requested and at other times deemed necessary by the District.

It is the further responsibility of the water user to inform the District of any change on its premises that might increase the risk of backflow into the District's treated water system.

9.05 DISCONTINUANCE OF SERVICE

The District may discontinue service of water to any premises and may physically disconnect the customer's piping from the District's water system if a backflow prevention device required by these Regulations is not installed, or if it is found that a backflow prevention device has been removed or bypassed, or for any other violation of these Regulations.

9.06 RETROFIT PROGRAM

Existing water services will be reviewed and prioritized according to their potential health hazard. On a staged basis, starting with higher risk services, the proper backflow prevention devices will be installed on a schedule to be determined by the District.

9.07 REDUCTION IN DEGREE OF PROTECTION

Where a change in Schedule 9-A, or the degree of hazard allows a customer to downgrade from a reduced pressure principle device to a double check valve assembly, the District, upon determining that the premises requires less protection, will reduce the bimonthly charge to that associated with the double check valve assembly. No refund or partial refund of original installation charges will

be made. If at a later date a reduced pressure principle device must be reinstated, the customer will be charged retroactively the difference between the lower and higher monthly charges, as shown in Schedules 9-C and 9-D, plus an interest factor to be determined by the District.

Where a change in these Regulations or the degree of hazard allows a customer to eliminate the backflow prevention device, the District, upon determining that the premises no longer requires the device and with approval of the customer, will remove the device at District cost and stop charging the bimonthly charge. No original installation charge refund will be made. If future circumstances require the reinstallation of a device, the full installation cost, as shown in Schedule 9-B, will be collected from the customer.

eff. 6/11/03, rev. 04/25/06, rev. 09/12/07

9.08 INCREASE IN DEGREE OF PROTECTION

Where a change in Schedule 9-A or the degree of hazard requires upgrading from a double check valve assembly to a reduced pressure principle device, the customer will be charged the difference between the installation charges of the two devices, as shown in Schedule 9-B and will be subject to the higher bimonthly charges associated with the reduced pressure principle device.

eff. 6/11/03, rev. 04/25/06, rev. 09/12/07

9.09 PRIVATE BACKFLOW PREVENTION DEVICES

At the sole discretion of the District, a privately owned backflow prevention device may be allowed when a reduced pressure principle device is required to protect the public water supply.

If approval from the District is received to install a privately owned device, the customer must sign an agreement which sets forth the terms and conditions deemed necessary by the District. The agreement will cover issues relating to the ownership, installation, operation, maintenance and testing of the device as well as District access.

eff. 7/13/98; rev. 6/11/03, 04/25/06

SECTION 9

CROSS CONNECTION CONTROL & BACKFLOW PREVENTION

9.01 GENERAL

The purpose and objectives of the District's Cross Connection & Backflow Prevention Regulation is to:

- Protect the public water system at the service connection against any actual or potential cross-connection between the public water system and any source or system containing any substance that is not, or cannot be, approved as safe, wholesome and potable for human consumption;
- Outline District and Customer responsibilities for protection of the public water system;
- Outline criteria determining when backflow protection is required;
- Specify requirements for backflow prevention assemblies to protect the water system;
- Comply with federal, state, and local laws and policies and allow the District to meet applicable regulatory requirements and standards.

These Regulations supplement and do not supersede local plumbing regulations, codes, ordinances, or other State regulations relating to water supply.

9.02 DEFINITIONS

9.02.01 Air Gap Separation

A physical vertical separation between the free flowing discharge end of a potable water supply pipeline and an open or non-pressurized receiving vessel. The air gap shall be at least double the diameter of the supply pipe measured vertically above the top rim of the vessel, and in no case less than one inch.

9.02.02 Approved Backflow Prevention Assembly (ABPA)

Any assembly that is currently included on the District's Approved Backflow Prevention Device list and that has passed laboratory and field evaluation tests performed by a recognized testing organization, which has demonstrated their competency to perform such tests to the California

State Water Resources Control Board Division of Drinking Water.

9.02.03 AWWA Standard

An official standard developed and approved by the American Water Work Association (AWWA).

9.02.04 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 distributing pipes of a potable supply of water from any source or sources other than an approved water supply source.

9.02.05 Customer

The owner or operator of a private water system served from the public water system.

9.02.06 Contaminant

A degradation of the quality of 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.

9.02.07 Cross Connection

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. By-pass arrangements, jumper connections, removable sections, swivel or changeover assemblies, or other assemblies through which backflow could occur, shall be considered cross-connections.

9.02.08 Cross Connection Control Technician

A District employee with current AWWA certification or District-approved organization with equivalent certification requirements.

9.02.09 Deactivated Well

Any well in which all pumping components including but not limited to pump, piping, and power supply shall be removed from the well casing. Additionally, the top of the well or well casing shall be provided with a cover that is secured by a lock or by other means to prevent its removal without the use of equipment or tools.

9.02.10 Double Check Valve Assembly (DC)

An assembly composed of two single, independently acting check valves, two tightly closing shutoff valves located at each end of the assembly, and four test cocks for testing of the check valves.

9.02.11 Health Agency

The California Department of Health Services, or the local health officer with respect to a small water system

9.02.12 Manual of Cross Connection Control

The most current edition of the Manual of Cross-Connection Control as published by the University of Southern California's Foundation for Cross-Connection Control and Hydraulic Research.

9.02.13 Premise

Any and all areas on a customer's premises which are served or have the potential to be served by the public water system.

9.02.14 Point of Service Connection

The point of connection of a user's piping to the water supplier's facilities.

9.02.15 Pollution

An impairment of the quality of the water to a degree which does not create a hazard to the public health but which does adversely and unreasonably affect the aesthetic qualities of such waters for domestic use.

9.02.16 Reclaimed Water

Wastewater which as a result of treatment is suitable for uses other than potable use.

9.02.17 Reduced Pressure Principle Backflow Device (RP)

A backflow preventer incorporating not less than two check valves, an automatically operated differential relief valve located between the two check valves, a tightly closing shut-off valve on each side of the check valve assembly, and equipped with necessary test cocks for testing.

9.02.18 Unapproved Auxiliary Water Supply

Any water supply on or available to the premises other than the approved water supply. An Unapproved Auxiliary Water Supply includes, but is not limited to, a well, spring, pond, storage tank, or any other water source that is piped or captured in any fashion that would facilitate its use as an Unapproved Auxiliary Water Supply on the premises. An Unapproved Auxiliary Water Supply does not include a decorative or natural water feature that serves solely for aesthetic and/or recreational purposes and lacks piping and/or equipment that would facilitate its use as an Unapproved Auxiliary Water Supply on the premises.

9.03 DISTRICT RESPONSIBILITY

Regulations of the State of California Code of Regulations (CCR), Title 17 – Public Health state that the water supplier has primary responsibility for protecting the public water system from contamination and/or pollution occurring through back flow by preventing water from unapproved sources or any other substances from entering the distribution system. As a water supplier, the District shall protect the public water supply from contamination and/or pollution by implementing a Cross Connection Control Program.

The District fulfills its responsibility by requiring point of service connection protection at all existing service connections that have been surveyed and found to have existing actual and/or potential hazards to the public water system. The District does not recognize internal cross connection protection programs and/or internal backflow protection assemblies in lieu of point of service connection protection as described herein. All new non-residential connections will be required to install District-approved backflow protection at the service connection.

The District shall conduct Cross Connection Control Surveys of existing unprotected premises and premises suspected to have existing inadequate backflow protection. If an actual or potential hazard is determined to exist, a backflow prevention assembly shall be installed by the District in accordance with these regulations. Existing premises not required to install backflow prevention assemblies as a result of a District Survey shall be subject to subsequent regular District Surveys for the purpose of confirming continued compliance pursuant to this program.

The District will install and maintain the required backflow prevention device. Only devices

selected by the District and approved by the University of Southern California's Foundation for Cross Connection Control and Hydraulic Research, or approved by the California State Water Resources Control Board Division of Drinking Water will be utilized.

The District shall inspect each backflow prevention device at least once a year. Only personnel certified for testing these devices by the California-Nevada Section of the American Water Works Association, the University of Southern California, or California State Water Resources Control Board Division of Drinking Water will perform the required tests. Repairs of an ABPA comprised of internal part replacement and flushing shall be performed by the District. The District will attempt to repair an assembly that does not pass annual testing. If the District is unable to repair the assembly, then a new ABPA device will be installed at the District's expense.

Costs incurred by the District for installation of a new backflow prevention devices, as well as maintaining, replacing and testing these devices will be reimbursed by the water user to the District. These costs are shown in Schedules 9-B, 9-C, and 9-D. Test results and maintenance records shall be maintained by the District.

9.04 WATER USER'S RESPONSIBILITY

The water user may be required to fill out a questionnaire regarding the degree of risk of backflow at the time water service is first requested and at other times deemed necessary by the District.

The customer shall provide the District and its agents with unimpeded access to backflow prevention assemblies for routine testing and repairs. Customer shall not, without District's prior written authorization, install any enclosure that impedes access to the assembly.

It is the further responsibility of the water user to inform the District of any change on its premises that might increase the risk of backflow into the District's treated water system.

9.05 MINIMUM CROSS CONNECTION PROTECTION REQUIREMENTS

The type of protection that shall be provided to prevent backflow into the District water supply system shall be a minimum of a Reduced Pressure Principal Backflow Prevention Assembly (RP) for all non-residential connections and Reduced Pressure Principle Detector Assembly (RPDA) for all non-residential fire suppression system connections, upgrades, and new installations. Service to premises that pose an actual or potential health hazard (contaminant) shall be protected

with an air gap separation unless the District determines that based upon the level of hazard a RP is sufficient to protect the public water system. The customer may install a higher level of protection than specified by the District following prior written District approval.

9.06 MINIMUM BACKFLOW PROTECTION LEVELS

Minimum protection levels shall be determined by the District. The following list of circumstances shall require a minimum of a RP for backflow prevention and is not exclusive:

- All new non-residential connections;
- Premises determined by the District to have unusually complex plumbing configurations that cannot be adequately evaluated;
- Premises with limited access or that deny access to the District for internal inspections;
- Existing non-residential connections where the Districts water facilities and connections are modified, upgraded or improved;
- Each service connection that supplies water to Premises on which any substance is or may be handled in such a manner as to permit entry into the public water system, including water originating from the public water system which is or may be subjected to deterioration in sanitary quality;
- Premises where there are irrigation systems into which fertilizers, herbicides, or pesticides are, or can be injected;
- Premises with internal pressure boosting systems;
- All sewage/wastewater treatment facilities and sewage lift stations.

The following list of circumstances shall require a minimum of a DCV for backflow prevention and is not exclusive:

- Residential premises with any Auxiliary Water Supply, whether or not it is interconnected with the public water system, except those premises with a Deactivated Well;
- Parcels having more than one service connection;
- Residential Premises where a cross connection exists, or the potential for one that could result in the pollution or contamination of the public water system.

Nothing in this Program shall be construed as affecting the customer's responsibility for meeting the

local fire districts fire system flow requirements. Nothing in a local fire districts fire flow system requirements shall be construed as affecting customer's responsibility for meeting the requirements of this Program.

9.07 NEW NON-RESIDENTIAL SERVICE CONNECTIONS

A minimum of a RP shall be installed at all new nonresidential service connections.

9.08 EXISTING NON-RESIDENTIAL SERVICE CONNECTIONS

Existing unprotected non-residential connections are subject to District evaluation and onsite cross-connection control surveys. The District must be provided unimpeded access to perform internal inspections for the purpose of determining cross connection hazards. If District access is impeded for any reason, then the District will install a minimum of a RP at the customer's expense to protect the public water system.

9.09 NEW NON-RESIDENTIAL FIRE SUPPRESSION SYSTEM CONNECTIONS

All new non-residential fire suppression system connections shall be protected with a District approved RPDA installed according to District specifications.

9.10 EXISTING NON-RESIDENTIAL FIRE SUPPRESSION SYSTEM CONNECTIONS

Non-residential fire suppression systems currently protected with a minimum of a single detector check valve will be allowed to continue in service until such system is modified, updated, improved, or hazard classification is determined to require an RPDA. If existing protection is determined inadequate or is modified, improved, or updated as identified under this Program, the customer shall install a RPDA at the point of connection to District water system according to District specifications.

9.11 TEMPORARY METER CONNECTION

Temporary meter connections to District hydrants, blow-offs, or other District infrastructure shall be protected with a minimum of a RP. The location of the installed temporary meter connection shall be determined by the District in its sole discretion following review of request.

also be subject to periodic evaluation by District staff to verify no reactivation has occurred. Nothing in this Program shall be construed to affect Customer's responsibility to comply with any other applicable regulations related operation and/or destruction of the well, including but not limited to those requirements of the County and the State of California.

New customers requesting District water service who also have a private water well on the parcel will be required to install a minimum of RP prior to initiation of water service or deactivate the well as defined by this program. In circumstances where the private water well is serving an existing structure for domestic purposes and the Customer has notified the District that he/she intends to destroy or deactivate the well upon receipt of District water service, a District Cross Connection Control Specialist must be present to observe physical disconnection of the well from its source prior to unlocking the installed District water service. Upon unlocking and initiation of water service, the Customer will be responsible for completing deactivation or destroying the well in accordance with current County requirements no later than sixty days following initiation of District water service.

9.15 RESIDENTIAL SERVICE CONNECTIONS

Any residential parcel determined to have a cross-connection hazard as defined in this Program shall be required to install an ABPA

9.16 DISCONTINUANCE OF SERVICE

The District may discontinue service of water to any premises and may physically disconnect the customer's piping from the District's water system if a backflow prevention device required by these Regulations is not installed, or if it is found that a backflow prevention device has been removed or bypassed, or for any other violation of these Regulations.

9.17 REDUCTION IN DEGREE OF PROTECTION

Where a change in Schedule 9-A, or the degree of hazard allows a customer to downgrade from a reduced pressure principle device to a double check valve assembly, the District, upon determining that the premises requires less protection, will reduce the bimonthly charge to that associated with the double check valve assembly. No refund or partial refund of original installation charges will

be made. If at a later date a reduced pressure principle device must be reinstated, the customer will be charged retroactively the difference between the lower and higher monthly charges, as shown in Schedules 9-C and 9-D, plus an interest factor to be determined by the District.

Where a change in these Regulations or the degree of hazard allows a customer to eliminate the backflow prevention device, the District, upon determining that the premises no longer requires the device and with approval of the customer, will remove the device at District cost and stop charging the bimonthly charge. No original installation charge refund will be made. If future circumstances require the reinstallation of a device, the full installation cost, as shown in Schedule 9-B, will be collected from the customer.

9.18 INCREASE IN DEGREE OF PROTECTION

Where a change in Schedule 9-A or the degree of hazard requires upgrading from a double check valve assembly to a reduced pressure principle device, the customer will be charged the difference between the installation charges of the two devices, as shown in Schedule 9-B and will be subject to the higher bimonthly charges associated with the reduced pressure principle device.

eff. 6/11/03, rev. 04/25/06, rev. 09/12/07, rev. ??/2020

SCHEDULE OF RATE AND CHARGES
BY NEVADA IRRIGATION DISTRICT

SCHEDULE 9-A
EFFECTIVE: JANUARY 1, 2006

BACKFLOW PREVENTION REQUIREMENTS

Minimum requirements for backflow prevention devices for various types of potable water users are listed below. These requirements have been determined based on state regulations and industry-wide experience of the probability of backflow occurring, taking into consideration such factors as the degree of hazard and complexity of piping associated with various types of District water customers.

The District reserves the right to install a more stringent device than listed if, in its sole judgement, the particular circumstances of that water user requires a higher degree of backflow protection. All meters serving the same parcel will be subject to the highest degree of backflow protection appropriate for that parcel. The District will determine the need for and the type of device for all classes of services not listed below.

Requirements Abbreviations

AG - Air gap separation
RP - Reduced pressure principle device
DC - Double check valve assembly
DCD - Double check detector assembly

WATER USE

REQUIREMENTS

1. Aircraft and missile plants	RP
2. Automotive plants	RP
3. Beauty Salons	DC
4. Board and care facilities, skilled nursing facilities	DC
5. Bottling plants	DC
6. Breweries	DC
7. Buildings – commercial/industrial multi-story over 50' in elevation above street level to ground floor	DC
8. Canneries, packing houses, and reductions plants	RP
9. Car wash	RP
10. Chemical processing or storage facilities	RP
11. Chemical treated potable water system	DC
12. Dairies and cold storage plants	DC
13. Dye works	RP
14. Film processing laboratories	RP
15. Fire systems – Class 3, 4, and 6, as defined in California Department of Health Services Manual of Cross Connection Control	DCD
16. Fire systems – Class 5	AG or RP
17. Food processing plants	DC
18. Fertilizer processing plants	RP
19. Hospitals, sanitariums	RP
20. Irrigation services served from treated water mains	DC
21. Laboratories	RP

SCHEDULE OF RATE AND CHARGES
BY NEVADA IRRIGATION DISTRICT

SCHEDULE 9-A
EFFECTIVE: JANUARY 1, 2006

BACKFLOW PREVENTION REQUIREMENTS (continued)

<u>WATER USE</u>	<u>REQUIREMENTS</u>
22. Laundries, commercial	DC
23. Medical/dental buildings, clinics or veterinary clinics	RP
24. Metal manufacturing, cleaning, processing and fabricating plants	RP
25. Mobile home parks	DC
26. Mortuaries, morgues, or autopsy facilities	RP
27. Oil and gas production, storage or transmission properties	RP
28. Paper products manufacturing plants	RP
29. Plating operations	RP
30. Premises with piped auxiliary water supplies	DC
31. Pumped sewage, sewage pumping station and/or treatment plants. (Excluding individual premises)	RP
32. Radioactive materials or substances	RP
33. Restricted classified or closed facilities	RP
34. Restaurants with automatic dishwashers or steam tables	DC
35. Sand, gravel, cement and ready mix plants	DC
36. Secondary schools and colleges	DC
37. Tank or Construction Water	AG or RP*
(*Customer maintained & certified; District inspected)	