

## **Backflow Valve Update # 16**

May 8, 2011

This is Update # 16. The full series of Updates is available at [www.backflowvideos.org](http://www.backflowvideos.org)

This issue of Update covers two topics. First is the terrorism impact of the death of Osama bin Laden on public drinking water supplies. And second is my humble correction about backflow prevention devices.

### **The death of Osama bin Laden**

The killing of the terrorist Osama bin Laden in Pakistan has triggered statements by the Al-Qaida movement that it will seek revenge by targeting U.S. infrastructure.

The *Tampa Tribune* reported:

“Al-Qaida’s plots are often large-scale and involve planning over months or even years. But Western intelligence officials say they are seeing increased chatter about cheap, small-scale attacks – perhaps by individuals or small extremist groups inspired to take revenge for the killing of bin Laden.”

Infrastructure targets that have been mentioned on the news include train tracks, dams, reservoirs and drinking water supplies. Obviously, terrorists find drinking water supplies very attractive, especially since residential RP and Double-check valves provide direct and easy access to the public drinking water supply. The fear factor impact from just one water supply attack is mind-boggling. Consider how many billions of air travelers have had to take off their shoes in airports just because of that “shoe bomber” back in 2001. To see three easy ways to contaminate the public drinking water supply by way of residential RP valves, please view the video at [www.backflowvideos.org/methods.wmv](http://www.backflowvideos.org/methods.wmv)

The Florida Department of Environmental Protection, the Florida Department of Health and maybe even the feds, need to take emergency actions **now** to ban RP and Double-check valves from residential areas!

### **My humble correction**

In the DEP’s latest revised regulations of Chapter 62-555.360, “Cross-Connection Control for Public Water Systems” from July 1, 2009 (Draft #3), the DEP sets out

backflow prevention device options in table form. See the top-right block of Table 1 of the Attachment to this Update.

The Florida Statutes, as in Sections 120.52(8)(f) and 120.54(1)(d), establishes that when an agency's regulations set forth devices, they must specify the "less costly alternative that accomplishes the statutory objections".

Here is my humble correction...

For over a year, I have been advocating an AMR (Automatic Meter Reading) water meter with an attached Dual-check valve as the ultimate solution to detect and prevent backflow. Because I am technically oriented, and a ham radio operator, I saw this as a beautiful technical solution that also has many financial benefits for water utilities. However, if I'm going to advocate something that is in accordance with the Florida Statutes and hold the DEP accountable to obey those same laws, then **I must start with the "less costly" Dual-check valve (\$12)** and only then, add on a Premises Inspection, an AMR or a Customer Agreement, depending on the less costly of the three.

I apologize for my prior recommendation that ignored the law.

Henceforth, I will try very hard to keep in mind that "less costly" is the overriding law for the Florida Department of Environmental Protection, the Florida Department of Health and for all of Florida's water purveyors!

As usual, I appreciate your positive responses to these Backflow Valve Updates.

Thank you,



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<sup>1</sup> Please note that for these Updates, I am "just" a concerned citizen who is speaking out about regulatory wrongs. I do not speak for the DEP. Nor do I speak for the Hillsborough County Cross-connection & Backflow Control Board, of which I am the Citizen Representative.

# Attachment

The following two pages of device tables are from the latest revision draft (July 1, 2009) of Chapter 62-555.360, F.A.C. (Florida Administrative Code), “Cross-Connection Control for Public Water Systems” prepared by the Florida Department of Environmental Protection.

The full document is available at [www.suncitydave.info/DEP Draft 3.pdf](http://www.suncitydave.info/DEP%20Draft%203.pdf)

<u>TABLE 1</u>		
<u>TYPE OF AUXILIARY OR RECLAIMED WATER SYSTEM AT PREMISES</u>	<u>TYPE OF BACKFLOW PREVENTER<sup>1</sup> REQUIRED AT SERVICE CONNECTION TO PREMISES</u>	
	<u>COMMERCIAL OR INDUSTRIAL PREMISES</u>	<u>RESIDENTIAL PREMISES</u>
<u>Auxiliary water system that is used for irrigation</u>	<ul style="list-style-type: none"> <li>• <u>AG</u>; or</li> <li>• <u>RP</u></li> </ul>	<ul style="list-style-type: none"> <li>• <u>AG</u>; or</li> <li>• <u>RP</u>; or</li> <li>• <u>DC, or DuC, plus any one of the additional backflow protection measures described in Table 2 below<sup>2</sup></u></li> </ul>
<u>Auxiliary water system that is used for purposes other than irrigation</u>	<ul style="list-style-type: none"> <li>• <u>If the CWS determines that the auxiliary water system constitutes a high hazard:</u> <ul style="list-style-type: none"> <li>○ <u>AG</u>; or</li> <li>○ <u>RP</u></li> </ul> </li> <li>• <u>If the CWS determines that the auxiliary water system constitutes a low hazard:</u> <ul style="list-style-type: none"> <li>○ <u>AG</u>; or</li> <li>○ <u>RP</u>; or</li> <li>○ <u>DC</u></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <u>If the CWS determines that the auxiliary water system constitutes a high hazard:</u> <ul style="list-style-type: none"> <li>○ <u>AG</u>; or</li> <li>○ <u>RP</u>; or</li> <li>○ <u>DC, or DuC, plus any one of the additional backflow protection measures described in Table 2 below<sup>2</sup></u></li> </ul> </li> <li>• <u>If the CWS determines that the auxiliary water system constitutes a low hazard:</u> <ul style="list-style-type: none"> <li>○ <u>AG</u>; or</li> <li>○ <u>RP</u>; or</li> <li>○ <u>DC or DuC</u></li> </ul> </li> </ul>
<u>Reclaimed water system</u>	<ul style="list-style-type: none"> <li>• <u>AG</u>; or</li> <li>• <u>RP</u></li> </ul>	<ul style="list-style-type: none"> <li>• <u>AG</u>; or</li> <li>• <u>RP</u>; or</li> <li>• <u>DC, or DuC, plus any one of the additional backflow protection measures described in Table 2 below<sup>2</sup></u></li> </ul>

<sup>1</sup> AG = air gap; RP = reduced-pressure principle assembly; DC = double check valve assembly; and DuC = dual check device.

<sup>2</sup> Upon discovery of any cross-connection between the customer's potable water system and the customer's auxiliary or reclaimed water system, the CWS either shall ensure that the cross-connection is eliminated; shall ensure that the backflow preventer at the service connection is upgraded to the type required for a commercial or industrial premises; or shall discontinue service until the cross-connection is eliminated or the backflow preventer at the service connection is upgraded.

TABLE 2

ADDITIONAL BACKFLOW PROTECTION MEASURES FOR USE AT  
CERTAIN RESIDENTIAL PREMISES AS SPECIFIED IN TABLE 1 ABOVE

Premises Inspections

Under this additional backflow protection measure, the CWS shall ensure that the customer premises is inspected for cross-connections between the customer's potable water system and the customer's auxiliary or reclaimed water system. Such an inspection shall be conducted at the time a backflow preventer is initially installed and at least every five years thereafter by appropriately trained CWS staff or contractors or by a licensed plumbing contractor. The CWS shall develop an inspection protocol and an inspection form to be completed and signed by the inspector, and the CWS shall keep in its records a copy of the latest completed and signed inspection form for the customer premises. Upon discovery of any cross-connection, the CWS shall do one of the following: (1) ensure that the cross-connection is eliminated; (2) ensure that the backflow preventer at the service connection is upgraded to the type required for a commercial or industrial premises; or (3) discontinue service until the cross-connection is eliminated or the backflow preventer at the service connection is upgraded.

Automatic Meter Reading (AMR)

Under this additional backflow protection measure, the CWS shall utilize AMR at the service connection. Such AMR shall have the ability to detect reversal of flow through the service connection and either provide immediate notification of the flow reversal event or record the flow reversal data for transmittal or retrieval on at least a monthly basis. If flow reversal is detected, the CWS shall ensure that the customer premises is inspected in accordance with "Premises Inspections" above, except the inspection shall be on a onetime basis. Upon discovery of any cross-connection, the CWS shall do one of the following: (1) ensure that the cross-connection is eliminated; (2) ensure that the backflow preventer at the service connection is upgraded to the type required for a commercial or industrial premises; or (3) discontinue service until the cross-connection is eliminated or the backflow preventer at the service connection is upgraded. Also, if flow reversal is detected and if the backflow preventer at the service connection is not upgraded, the CWS shall ensure that the backflow preventer at the service connection is in-line field tested or is overhauled or replaced.

Customer Agreement

Under this additional backflow protection measure, the CWS shall ensure that the customer signs an agreement and shall keep in its records a copy of the signed agreement. Such an agreement shall prohibit the customer from creating any cross-connection between the customer's potable water system and the customer's auxiliary or reclaimed water system; shall discuss the potential health implications associated with such a cross-connection; and shall stipulate penalties if any such cross-connection is discovered at the customer premises. Upon discovery of any cross-connection, the CWS shall do one of the following: (1) ensure that the cross-connection is eliminated; (2) ensure that the backflow preventer at the service connection is upgraded to the type required for a commercial or industrial premises; or (3) discontinue service until the cross-connection is eliminated or the backflow preventer at the service connection is upgraded. Also, upon discovery of any cross-connection, the CWS may choose to levy fines.

Managed Premises

Under this additional backflow protection measure, the CWS shall ensure that the customer premises is under the jurisdictional control of a third party, such as a homeowners association, with established restrictions regarding the use and modification of the premises. Such restrictions shall prohibit the customer from altering or tampering with the customer's potable water system and the customer's auxiliary or reclaimed water system. The CWS shall keep in its records a copy of the third-party's legal instrument establishing such restrictions. Upon discovery of any cross-connection at such a premises, the CWS shall do one of the following: (1) ensure that the cross-connection is eliminated; (2) ensure that the backflow preventer at the service connection is upgraded to the type required for a commercial or industrial premises; or (3) discontinue service until the cross-connection is eliminated or the backflow preventer at the service connection is upgraded.

1 (II) CWSs need not, but may, ensure that a backflow preventer is installed at service connections to premises

2 where there is an undeveloped auxiliary water supply (i.e., an auxiliary water supply but no auxiliary water system).

3 b. Fire Protection Systems.

4 (I) At commercial, industrial, or residential premises where there is a fire protection system that is connected