Backflow Valve Update # 22

May 22, 2012

This is *Update # 22*. It reviews many of the laws and statutes that the Florida Department of Environmental Protection (DEP) will be abiding by as it soon moves forward with its revision of Regulation 62-555 (F.A.C.). All of the prior *Updates* are available at www.backflowvideos.org/hide

The revision of 62-555 was scheduled as part of the DEP's 2011-2012 Regulatory Agenda. Since Florida's government operates on a July 1 to June 30 calendar year, the revision process should start to move forward again within the next six weeks, i.e. before the end of June.

The DEP's regulations must abide by the anti-terrorism laws related to the contamination of public drinking water supplies, the cost/benefit of regulations, the shifting of mandated responsibility and by the Florida Statutes. In view of this and the DEP's short timeline to start moving forward, I felt that it would be appropriate to compile a list, complete with check-off boxes, of at least some of the areas of the law affecting the revision. I hope that the DEP will compare their revised regulations against this list.

If you are associated with a city, county or utility, would you also please pass this *Update* along to your ordinance-writing person and your legal department for review. If you or they know of any more areas of the law to be obeyed or would like to correct, improve or comment on what I have written, please feel free to contact me at dbrown28@tampabay.rr.com

I advocate the banning of all **residential** RP and DC backflow valves. I will leave the question of **commercial** backflow valve regulations to the DEP, to the utilities, to commercial enterprises and to the Florida Chamber of Commerce. However, even for commercial and government installations, the DEP's regulations must still respect state and federal laws – particularly those related to anti-terrorism and cost.

Throughout this *Update* are clickable internet links that look something like: "Click here [7] …". To the right of "here" is a cross-reference number to the endnote with the actual internet address (URL).

Types of Valves

There are four (actually five) types of valves that are usually considered for backflow prevention.

Air gap (AG) – Air gap valves are very complicated and very expensive because they also require a pump and controls to maintain a working pressure on the customer's side. They are typically used in industrial settings.

Reduced-pressure Principle Assembly (RP – formerly known as RPZ) – RPs are expensive, complicated and prone to failure. RPs cost $200 to $700 to install and $80 to $840 for annual testing and maintenance. They are easily and often stolen for their metal content. Click here [1] to learn how to steal them and easily melt them down into ingots. The DEP has provided data showing that at any given moment, because of their complexity, one out of eight RP valves is out of compliance. I can't think of any discipline concerned with the safety of individuals, including aviation, railroads, highways, automobiles, etc., that would abide such a horrific failure rate. Click here [2] for a crude, but scholarly, video about that 1-in-8 failure rate. An RP has four test ports that provide direct access for a terrorist to contaminate a public water supply. Click here [3] to view a video about how to easily overcome Test Port Locks.

Double Check valve assembly (DC) – A DC, like the RP above, has four test ports that provide direct access to contaminate a public water supply. And like the RP, it too violates a number of anti-terrorism laws. And just like the RP, a DC can also be quite expensive to install and to annually test and maintain – and its test port locks are also easily defeated. The main difference between the two is that DCs are harder to steal because they're usually in an underground vault.

Dual Check valve (DU) – Note that the valve just above here was called a **DOUBLE** Check. This one is called a **DUAL** Check. A Dual Check does not allow direct access to the public water supply. Nor does it have a high failure rate. Palm Beach County has been using them for many years and has found them to be very reliable because of their simplicity. To their credit, the DEP has already indicated that they "are planning to include in [their] revisions to Rule 62-555.360 provisions to allow use of dual check devices at service connections to residential premises where there is an auxiliary water system."

Although not technically a valve, there is a fifth device which is the best of all possible worlds. It is the **Automatic Meter Reading water meter (AMR)**, preferably installed without a check valve. It is to meter reading and backflow detection what Mozart is to music. Over time, it is less expensive, readings are much more accurate and it provides a compelling protection of a public water supply. They can be a part of a utility's public relations outreach by alerting customers to leaking plumbing or open faucets. They also catch people who are watering illegally.

AMR's record the amount of forward and backflow every 15 minutes, or oftener, and transmit the data to a passing vehicle or central antenna, i.e. they detect and report backflow incidents either instantaneously or within days, depending on the utility's protocol. They cut the cost of reading a meter from 54¢ to 4¢ per. When installed without a check valve, an AMR also allows for the safe ebb-and-flow of water heater pressure cycles caused by thermal expansion.

Please continue on to the next page…

Contamination Methods

Some of you may be bothered by the explicit nature of the following information. But residential RP and DC backflow valves are extremely dangerous! And this is the only way that I know of to call attention to the fact that these valves do provide direct access into the utilities' drinking water mains.

Here are three ways to contaminate a drinking water supply using backflow valves!

Method 1

Method 1 is called "Over Pressurization". The red container is partly filled with a toxic chemical, pathogen or a slurry of poo and then pressurized. Upon release, the pressure forces the contaminate through the valve and the service connection to the left in the photo into the utility's public drinking water mains and to the rest of the community. This is the demo rig that I take around to public meetings. It only backflows a couple of cups of contaminate. The AWWA suggests using "a drum of toxic chemicals" for this method. This over pressurization method seems to be common knowledge. A utility director wrote: "From a water system perspective, your demonstration is informative, but not new to the professionals who operate our systems." An Environmental Administrator

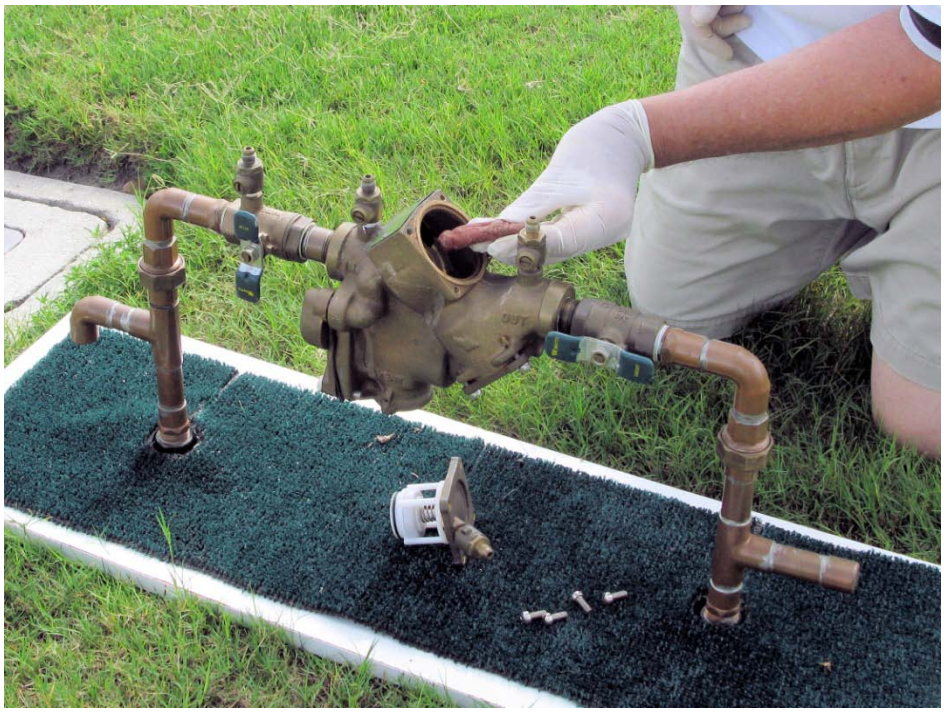
with the Health Department wrote: "The problem with this demonstration of his is not for coaching terrorists, as they have no doubt already conceived this procedure, but rather of vandals and disgruntled staff or neighbors that hadn't yet figured out how to harm a few people with water." It was my public demonstrations with this rig that caused several government officials to turn me into law enforcement. If you're plumbing savvy, please ignore the stubs. They are part of the demo setup. Click here [4] to view a demonstration of this method.

Method 2

Method 2 utilizes a refrigerator ice water filter cartridge from Home Depot. The filtering medium is replaced with a toxic granular pesticide or herbicide which then contaminates the drinking water as it flows on into a home, school, commercial building or a government facility to the right.

Click here [5] to view a video of how to modify the cartridge. (The animation in the video shows the cartridge's being connected between test ports 2 and 4 of the valve. Actually, it should be connected between ports 1 and 2 as in the above photo. Then turn the first shutoff valve slightly closed so that part of the safe drinking water from the mains is shunted through the cartridge to pick up the contaminate and carry it into the building.)

Method 3



Method 3 is the simplest of all and just involves inserting *e coli* (dog, cat or human poo) or a baggy of toxic chemicals into a valve to contaminate the drinking water flowing into a home, business or government facility. Click here [6] to view a video of how to prepare and then insert the poo or chemical bag into the valve.

All of that security that surrounds reservoirs and water treatment plants seems kind of silly, doesn't it, given that a lone terrorist can access a utility's distribution system through any residential RP or DC valve on any back street in the middle of the night.

Please continue on to the next page...

Review of Laws and Statutes.

The hierarchy of laws in the United States is:

U.S. Constitution.
Federal laws.
Florida Constitution.
Florida Statutes.
Florida Administrative Code.
Florida Building Code.
Local governments' laws & ordinances (using Section 553.73(4), F.S.).
AWWA Manual M14.

Federal Anti-Terrorism Laws – of which there are many, like:

Bioterrorism Act,
U.S. Patriot Act,
U.S. Critical Infrastructure Protection Act of 2001.

There are many federal anti-terrorism laws that prohibit infrastructure devices that provide direct public access to the public drinking water supply. Many of these laws came into being after "9-11". The DEP's regulations **must** respect these federal anti-terrorism laws and therefore **must not** specify infrastructure devices, like RPs and DCs, that have test ports that provide direct access to a public drinking water supply and can be used for contamination purposes. A number of utility, county, state and federal officials, water professionals and the American Water Works Association (AWWA) have acknowledged the vulnerability of water distribution systems to contamination via backflow valves.

For example, consider the mandates in some of the federal anti-terrorism laws. RPs and DCs amount to "delivery systems for bio-toxins", which are prohibited by 18 U.S.C. 175. Likewise, RPs and DCs violate the Patriot Act in that they provide "material support or resources… including **weapons**" to terrorists. Section 1016 of the U.S. Patriot Act recognizes the water sector as being part of our country's critical infrastructure and requires actions necessary so that "any physical or virtual disruption of the operation of the critical infrastructures of the United States be rare, brief, geographically limited in

effect, manageable, and minimally detrimental to the economy, human and government services, and national security of the United States." The Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (Bioterrorism Act) requires water utilities to "defend against adversarial actions that might substantially disrupt the ability of a system to provide a safe and reliable supply of drinking water." Getting rid of residential RPs and DCs is a primary defense against terrorists' being able to contaminate a public water supply.

In addition, there are such things as the National Infrastructure Protection Plan (NIPP), the Water Sector of the Critical Infrastructure Partnership Advisory Council (CIPAC) and the Florida Bureau of Water Programs, to name a few, that are concerned with the vulnerability of water distribution systems and thus would condemn any device that permits a terrorist to directly access a utility's drinking water distribution system.

A number of utility, county, state and federal officials, water professionals and the AWWA have publically recognized the vulnerability of the utility's mains to be contaminated by terrorists, disgruntled people, pranksters and even high-school kids. Some of this recognition came in the form of internal communications. Other forms of this recognition came in the actions of government officials' who went out of their way to contact law enforcement to silence those would dare speak out about the dangers of residential backflow valves – such as this old fart. Have you ever had an early morning, unannounced visit from the FBI about backflow valves? I have!

I consider the actions of these officials as ***confirmation beyond the shadow of a doubt*** that RP and DC backflow valves are dangerous and do not belong in residential areas.

In particular, I cherish two of these "referrals" because they were by officials who are very familiar with backflow valves.

> The first was by Bob DiCecco, the Cross-Control Manager of Hillsborough County, who referred Homeland Security to me. It's great to have a Cross-Control Manager, who was also formerly a plumber, confirm that RPs and DCs are dangerous. Click here [7] to learn more about Bob DiCecco.

> The second referral is even more cherished! It was by Van Hoofnagle, **the** Administrator of the DEP's Drinking Water Section, who instructed the Chief of DEP's Bureau of Emergency Response to contact law enforcement about my public statements and demonstrations. Van Hoofnagle happens to also be **the** person who is overseeing the revision of these very regulations.

If the valves were not a true danger, these officials, acting in their official capacities, would not have behaved as they did towards my speaking out and my demonstrations. They would not have gone out of their way to cause a citizen to have the lifetime stigma of an FBI record.

But God bless them anyway for making it ***officially clear and beyond a shadow of a doubt***, that residential backflow valves are downright dangerous.

The dangers of residential RP and DC backflow valves are also recognized by the American Water Works Association (AWWA). For example, in a well written, peer-reviewed article titled "The Who, What, Why, and How of Counterterrorism Issues" in the Journal of the AWWA, Vol. 93, No. 5, pp78-85, May 2001, AWWA staff member Gay Porter Denileon wrote:

> "Almost every home and building within a public water system has unprotected access to the distribution system; one sociopath who understands hydraulics and has access to a drum of toxic chemicals could inflict serious damage pretty quickly to a water supply system in a neighborhood or pressure zone without detection in most communities."

You have to be logged into the AWWA's website at www.awwa.org to view the full archived copy of this Journal article.

If you would like to see a demonstration of the AWWA's backflow contamination process, though on a somewhat smaller scale of a couple of cups instead of "**a drum of toxic chemicals**" as the AWWA's Journal's article suggested, please click here [8].

Florida Statutes: Section 120.52(8)(e,f).

The second area of the law that all regulations and ordinances **must** adhere to is Section 120.52(8)(e,f) of the Florida Statutes which forbids rules that are "arbitrary, capricious or not supported by competent substantial evidence." No one in Florida has ever died from any backflow incident. And according to the Health Department, no one in Hillsborough County, FL (population: 1.2 million) has ever even gotten sick from a backflow incident. The DEP's own data suggests that there is just one residential backflow incident every twenty years in Florida.

The chances of a residential backflow incident in Florida are extremely slim. The DEP cited federal EPA data on their Slide 17 at the 2/18/2009 Sanford, FL workshop showing that on average, Florida experiences just one backflow incident per year. And a case history study, published by the Watts Valve Company, documents that the overwhelming majority of backflow incidents (95%) are caused by commercial and government activity, while the remaining 5% are usually caused by residential pest control contractors when mixing their chemicals. Taken together, these two pieces of data work out to just one residential backflow incident every twenty years in Florida.

Residential backflow valves are the solution to a problem that simply doesn't exist. Their benefit approaches zero compared to their cost. Several states exempt all residential customers from backflow prevention devices, with the most notable being Wyoming, who found that: "The prevention of one death in 143 years at a cost of $1.3 billion dollars does not justify the mandatory installation of backflow devices on residential and domestic non-residential services."

Florida Statutes: Sections 120.52(8)(f) & 120.54(1)(d).

The third area of the law that the DEP's regulations **must** adhere to are Sections 120.52(8)(f) and 120.54(1)(d) of the Florida Statutes which mandate that only the one "less costly alternative" is to be imposed on a regulated person. The specific language in these two Sections is:

> Section 120.52(8)(f): "A proposed or existing rule is an invalid exercise of delegated legislative authority if the rule imposes regulatory costs on the regulated

person, county, or city which could be reduced by the adoption of less costly alternatives that substantially accomplish the statutory objectives."

Section 120.54(1)(d): "In adopting rules, all agencies must, among the alternative approaches to any regulatory objective and to the extent allowed by law, choose the alternative that does not impose regulatory costs on the regulated person, county, or city which could be reduced by the adoption of less costly alternatives that substantially accomplish the statutory objectives."

Air gaps, RPs and DCs are not the "less costly alternative". They are expensive to install, test and maintain because of their complexity. And because of their complexity, they are also prone to failure. As the DEP has indicated: At any given moment, one out of eight RP valves fails to meet operating standards. Objective data from Palm Beach County shows that the Dual Check valve is very reliable. It is the singularly "less costly alternative". Therefore, it is the only one that can be specified in the DEP's regulations. To their credit, the DEP has already accepted residential Dual Checks as an option.

Florida Statutes: Section 403.851(3).

The fourth area of the law that the DEP's regulations **must** adhere to is Section 403.851(3) of the Florida Statutes (Florida's Safe Drinking Water Act). Its mandates to the DEP and the utilities that they are "to provide for safe drinking water at all times throughout the state, with due regard for economic factors and efficiency in government."

The DEP **must** give due regard to providing for safe drinking water at all times:

The DEP has stated and acted in many ways that demonstrate their full knowledge that residential RPs and DCs provide direct access to a utility's distribution system for drinking water contamination by a terrorist. This violates Florida's Safe Drinking Water Act and also a number of federal anti-terrorism laws.

But, the DEP **must** also give due regard to economic factors:

No one in Florida has ever died from any backflow incident. No one in Hillsborough County, FL (population: 1.2 million) has ever even gotten sick from a backflow incident. The DEP's own data suggests that there is just one

residential backflow incident every twenty years in Florida. Residential backflow valves are the solution to a problem that simply doesn't exist. Their benefit approaches zero compared to their cost. Several states exempt all residential customers from backflow prevention devices.

The Utilities' Responsibility.

The fifth area of the law that the DEP's regulations **must** adhere to is to hold the utilities, not the homeowners, responsible for the "purity" of the water in their mains. The anti-terrorism laws and the state and federal Safe Drinking Water Acts require utilities to supply safe drinking water to their customers. Utilities cannot transfer the responsibility to citizens to maintain safe drinking water in the utility's own distribution system. If that were so, I would be allowed to freely wander around my utility's water treatment facilities to confirm that everything was going OK. Pigs will fly before that happens! Requiring any and all backflow prevention devices to be owned and maintained by the utilities ensures that they assume the responsibility that applicable state and federal laws mandate which is to defend their mains against contamination in order to deliver a safe product to their customers' service connections.

I liken the responsibility of utilities to defend their mains against contamination to that of how you protect your own home against intruders. You lock all your doors from the inside! You don't put the key in the lock on the outside of the front door with a note to the criminals that says: "Shame on you if you trespass!" Likewise, the military has internal infrastructure, including nasty weapons, to secure their bases. Airports have considerable internal infrastructure to insure the safety of passengers. Even the Hillsborough County Commissioners have their own internal infrastructure to protect the security of their meetings. I am no more responsible for the security of MacDill AFB, Tampa International Airport or the County Commissioners' meetings than I am for the security of the water moving through the utility's mains. In each case, the security has been assigned to a particular organization. In the case of the drinking water distribution systems, that responsibility has been assigned by the Safe Drinking Water Acts to include water sources, treatment facilities **and** distribution systems. The utilities' responsibility to defend their infrastructure does not end at the barbed-wire fence surrounding the waterworks. They are responsible for the defense of their entire infrastructure to prevent contamination of the public drinking water supply into their mains in order to deliver safe drinking out of those same mains.

The overwhelming causes of back-siphonage events, i.e. backflow events, are broken water mains and incorrectly set pump valves on fire trucks, neither of which can be controlled by the homeowner nor are they even the homeowner's fault. The utilities, cities and counties must decide how aggressively, moneywise, they want to defend their own distribution system against their own contamination events. Since residential backflow and back-siphonage are such very rare events, I would hope that utilities would actually spend their revenues on more productive causes – like installing AMRs.

Even with such rare events, it doesn't take a rocket scientist to figure out who is responsible for the installation, testing and maintenance of residential backflow valves.

Consider these two scenarios:

> For the first scenario, my neighbor, dear old Mrs. Smith, is in her flower garden mixing up a bucket of pesticide when there is a back siphonage event caused by a main break and dear old Mrs. Smith's pesticide ends up in my public drinking water supply and causes one of my family members to die. Whom do I sue: Mrs. Smith **or the utility that is mandated by a number of state and federal laws to defend their public water supply mains against contamination in order to provide safe drinking water to my service connection?**
>
> The second scenario is that a terrorist, disgruntled person, prankster or some high school kids intentionally contaminates the drinking water supply and causes one of my family members to die. Whom do I sue: the terrorist, disgruntled person, prankster, high school kids **or the utility that is mandated by a number of state and federal laws to defend their public water supply mains against contamination in order to provide safe drinking water to my service connection?**

What do you think?

The DEP is certainly aware of the responsibility and liability of utilities to protect their mains. For example, at the Sanford workshop in February of 2009, the DEP's John Sowerby said:

> “I know that we have a lot of water system personnel in the audience. Don’t be offended but it’s obvious that there is a dis-incentive for water systems to make public these incidents even when they’re aware of them because of liability and consumer confidence issues.”

My concern is that if utilities are not responsible for defending their mains against contamination, then why did the DEP’s John Sowerby say on the record that a backflow incident could cause liability issues for them?

Residential backflow events are extremely rare. However, there is an anecdotal event from back in 1979 that highlights the responsibility of a utility to provide quality drinking water to all of their customers.

> "Chlordane was siphoned through a hose by an exterminator at a residence in Roanoke, Virginia, contaminating the water supply of an entire neighborhood. The cost to the water purveyor to replace water mains, valves, meters, service lines, water heaters, ice makers, and other plumbing was about $200,000. In addition, lawsuits totaling several million dollars were filed. Since these suits were settled out of court by the water purveyor and the exterminator, no records are available on the actual amount paid, but it was probably considerable."

According to one internet site, the unconfirmed out-of-court settlement was around $12,000,000 (1979 dollars).

The U.S. EPA’s Cross-Connection Control Manual’s recommendation.

The sixth area of interest isn’t really a law but rather a recommendation by the United States Environmental Protection Agency (EPA). They publish a "Cross-connection Control Manual" which is freely available for download from their website by clicking here [9].

In Chapter Six on page 31 at the lower right, it states:

> "A recommended plan of action for a cross-connection control program should include the following ... (10) As water meters are repaired or replaced at residences, insure that a residential dual check backflow preventer is set with the new or reworked water meter. Be sure to have the owner address thermal expansion provisions."

The federal government considers a Dual Check valve, set with the water meter, as sufficient for cross-connection control. Since the Florida DEP has already indicated that they "are planning to include in [their] revisions to Rule 62-555.360 provisions to allow use of dual check devices at service connections to residential premises where there is an auxiliary water system", it seems like a win-win situation for everybody if the DEP simply accepts the federal EPA's recommendation and makes the Dual Check be the one and only residential standard.

Executive Order 11-72.

The seventh area of the law that the DEP's regulations must adhere to is that their regulations **must** be reviewed by the Office of Fiscal Accountability and Regulatory Reform (OFARR). The first official act of our current Governor was to issue Executive Order 11-01 which established OFARR.

> OFARR's mission is 'to reduce the regulatory burden on the citizens of Florida, by determining whether existing rules and regulations remain justified and necessary, and to determine whether such existing rules and regulations are duplicative or unnecessarily burdensome or no longer needed and impose needless costs and requirements on businesses, local government, and citizens.'

The creation of OFARR was part of the Governor's campaign promise to stimulate growth by eliminating burdensome regulations. The original Order was written to apply to all state agencies, but was later modified by Order 11-72 [10] to apply only to the administrative agencies under the Governor's direct control, which **does** include the DEP. The Order establishes a review procedure and also mandates that if a regulation is going to be particularly burdensome, cost-wise, that it is to be treated as a bill and has to formally move through the full legislative process.

Conflicts between the Florida Statutes and documents "included by reference".

The eighth area of the law that all regulations and ordinances **must** adhere to concerns any conflicts between the Florida Statutes and any document "included by reference". Cities, counties, agencies and utilities exist at the pleasure of the Florida Statutes. The Florida Statutes is a codified document. One of the characteristics of a codified document is that it cannot have conflicting sections. An engineering document 'included by reference', like M-14, cannot conflict with or supersede the Florida Statutes. For example, if the Florida Statutes mandate that the "less costly alternative" must be specified, it cannot be superseded by a more costly alternative in some engineering manual – otherwise the Florida Statutes become moot. It's that simple! I would presume that an engineering reference only has standing when no higher authority addresses a particular matter. And if any regulation does present a conflict between the Florida Statutes and some engineering manual, my dumb-as-dirt judicial guess is that the Florida Statutes win every time! What would be your judicial guess?

And obviously, all engineering manual recommendations **must** comply with the federal anti-terrorism acts, particularly when it comes to providing direct access to drinking water mains. Any engineering manual's recommendations that conflict with **any** of the federal anti-terrorism laws, such as recommending devices like RPs and DCs that provide direct access to the public drinking water supply, are without merit.

Rulemaking Participation.

The ninth area of interest concerns participation in the rulemaking process as it moves forward.

In a very recent email to me, Amanda Bush, the Senior Asst. General Counsel for the Florida DEP wrote:

> "With respect to the Department's Cross-Connection Control rules, the "regulated person, county, or city" is the regulated community water systems."

That statement makes absolutely no sense! The regulations are not telling the utilities the type of valves they have to install on the utility's own property. Instead, the regulations are spelling out precisely what homeowners are to install on our own individual properties. And I certainly challenge her statement on behalf of all homeowners who

may be forced into a very treacherous liability situation by the content of regulations that could force them to install on their own property, a valve, which it has to be said, provides direct access to the public drinking water supply in violation of a number of federal anti-terrorism laws.

The DEP's regulations also include references to the Florida Building Code which imposes regulations and costs on individual homeowners. Individuals are the regulated and can enter into the procedure to change the Florida Building Code. Therefore, I would guess that we can enter into the DEPs rulemaking for the regulations that include external references.

I am already a "substantially affected person" to participate in the rulemaking process as it moves forward by virtue of being the duly-appointed Citizen Representative on the Hillsborough County Cross Connection, Backflow and Back-Siphonage Control Board, wherein I represent 1,229,226 people living in 536,092 housing units (Sections 1.01(3), 1.01(7), 120.52(13)(d) & 120.54 F.S.). Click here [11] to view the Board's resume.

And perhaps most telling of all is that when I complained about portions of the current regulations, the DEP's Van Hoofnagle, **the** person who oversees these regulations, instructed the Chief of the DEP's Bureau of Emergency Response to contact law enforcement because a citizen questioning the regulations. That contact did occur and I did get an unannounced, early morning visit from the FBI about backflow valves. I'll bet that's never happened to you! If the regulations only apply to utilities, why would Van Hoofnagle be so concerned about the exhortations of a citizen?

But the reason that I bring all of this up is that I strongly believe that all homeowners, cities, counties, businesses, civic groups, home owner associations, environmental groups, etc., must be allowed to formally participate in the rulemaking process as it moves forward. And certainly every homeowner is a substantially affected person considering that, according to the University of Florida, RPs can cost anywhere from $200 to $700 to install and $80 to $840 for annual testing and maintenance. That's a sizable chunk of money when one's elderly and trying to get by on Social Security. Surely that makes one an affected person.

Personally, I think Ms. Bush is grasping at straws and just trying to finesse the DEP's way out of having to justify their regulation's content, particularly with respect to obeying the federal anti-terrorism laws (related to the contamination of public drinking

water supplies), to obeying the Florida Statutes (particularly with respect to specifying the one "less costly alternative"), to considering the cost/benefit of their regulations, and to shifting the mandated responsibility. When you think about it, the DEP has never had to justify their regulations. At the four workshops, they did present a PowerPoint presentation of the regulations' content, but have dodged almost all questions concerning their legality. Of course, a minor legal action against DEP that elicited discovery, depositions, admissions and testimony would certainly remedy that shortcoming. ;-)

Type of Review.

The final area of interest concerns the external review of the regulations.

Part of Florida's regulatory process is that all proposed regulations are subjected to review. There are two types of review boards depending on the nature of the regulations. One type of review is an internal Secretarial Hearing and is conducted by DEP staff. My understanding is that a Secretarial Hearing is for rubberstamping DEP's regulations as being OK. And that such a hearing is only appropriate for internal regulations, like the reorganization of a department or how paperwork is to be routed.

The other type of review is done by the Environmental Regulation Commission (ERC) which the Florida Statutes specify as the reviewing body for regulations that have an effect outside of the DEP's organization. The ERC was created as a check on the DEP. It is a "non-salaried, seven-member board selected by the Governor, who represents agriculture, the development industry, local government, the environmental community, citizens, and members of the scientific and technical community."

Click for the ERC's Mission Statement [12] and membership [13].

My understanding is that when the DEP uses a Secretarial Hearing for matters that affect the public, they're trying to do an end run around the ERC in order to force through their own agenda! During the four 2009 workshops that the DEP held around the state, they noted that the review would be a Secretarial Hearing. However, the DEP is now indicating that the hearing will be done by the ERC – which complies with the Florida Statutes and is the way that the regulations **must** be reviewed.

So there you are - ten areas of federal and state laws, the Florida Statutes and a U.S. EPA recommendation, that the Florida Department of Environmental Protection must take into consideration as they proceed with the revision of the backflow valve regulations.
Stayed tuned…

I truly appreciate your positive response to these *Backflow Valve Updates* and welcome your feedback.

Thank you,

David Brown [14]
1805 Burlington Circle
Sun City Center, FL 33573-5219
Phone: 1-813-634-6048
Email: dbrown28@tampabay.rr.com

[1] www.backflowvideos.org/video20H.wmv

[2] www.backflowvideos.org/fail1in8.wmv

[3] www.backflowvideos.org/video17H.wmv

[4] www.backflowvideos.org/video10H.wmv

[5] www.backflowvideos.org/method2.wmv

[6] www.backflowvideos.org/method3a.wmv

[7] www.suncitydave.info/dicecco.htm

[8] www.backflowvideos.org/video10H.wmv

[9] www.epa.gov/safewater/pdfs/crossconnection/crossconnection.pdf

[10] www.flgov.com/wp-content/uploads/2011/04/Executive-Order-11-72.pdf

[11] https://www.hillsboroughcounty.org/bocc/boardscouncils/commdetail.cfm?rcd=558

[12] www.dep.state.fl.us/legal/ERC/default.htm

[13] www.dep.state.fl.us/legal/erc/members.htm

[14] Please note that for these *Updates*, I am "just" a citizen. I do not speak for the DEP. Nor do I speak for the Hillsborough County Cross-Connection & Backflow Control Board, although I am the Citizen Representative.

TABLE 1		
TYPE OF AUXILIARY OR RECLAIMED WATER SYSTEM AT PREMISES	TYPE OF BACKFLOW PREVENTER[1] REQUIRED AT SERVICE CONNECTION TO PREMISES	
	COMMERCIAL OR INDUSTRIAL PREMISES	RESIDENTIAL PREMISES
Auxiliary water system that is used for irrigation	• AG; or • RP	• AG; or • RP; or • DC, or DuC, plus any one of the additional backflow protection measures described in Table 2 below[2]
Auxiliary water system that is used for purposes other than irrigation	• If the CWS determines that the auxiliary water system constitutes a high hazard: ○ AG; or ○ RP • If the CWS determines that the auxiliary water system constitutes a low hazard: ○ AG; or ○ RP; or ○ DC	• If the CWS determines that the auxiliary water system constitutes a high hazard: ○ AG; or ○ RP; or ○ DC, or DuC, plus any one of the additional backflow protection measures described in Table 2 below[2] • If the CWS determines that the auxiliary water system constitutes a low hazard: ○ AG; or ○ RP; or ○ DC or DuC
Reclaimed water system	• AG; or • RP	• AG; or • RP; or • DC, or DuC, plus any one of the additional backflow protection measures described in Table 2 below[2]

[1] AG = air gap; RP = reduced-pressure principle assembly; DC = double check valve assembly; and DuC = dual check device.

[2] 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.

(II) CWSs need not, but may, ensure that a backflow preventer is installed at service connections to premises where there is an undeveloped auxiliary water supply (i.e., an auxiliary water supply but no auxiliary water system).

b. Fire Protection Systems.

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