

Backflow Valve Update # 2

February 24, 2010

Thank you for your enthusiastic response to *Update #1* published last month! ¹

You'll recall that these *Updates* started out in lieu of the Florida Department of Environmental Protection (DEP) providing periodic status reports on their revision of 62-550 & 62-555 (backflow valves and cross-connections) regulations.² These *Updates* are also now a clearinghouse for information that you would like to share with your 150 colleagues around Florida interested in backflow valve regulations.

Based on an email from the DEP, they have had to shift their backflow valve rulemaking effort to this fall in order to work on federally mandated rules governing "disinfection byproducts, surface water treatment, groundwater monitoring, and revisions to the lead and copper rules."

This particular issue of *Updates* is devoted entirely to the relationship between the DEP's regulations and Section 120.52(8) of the Florida Statutes.

Be assured that the following discussion is not intended to detract from the excellent effort by DEP to revise the regulations. However, the continued inclusion of RP (RPZ) and Double-check backflow valves ³ on the menu of devices in the current and revised regulations does raise a number of legal and critical safety concerns that endanger human life.

Section 120.52(8) of the Florida Statutes is a check on the promulgation of regulations by agencies. It prohibits regulations that are arbitrary, capricious, not supported by logic or fact, are without thought or reason or that are more costly than alternatives.

¹ Update # 1 is available at www.backflowvideos.org

² The DEP is aware of the contents of this *Update* and any corrections that they may have supplied have been incorporated. They have asked me to make it perfectly clear to you that I am just a concerned citizen and am "not authorized to communicate on their behalf."

³ To conserve space in this Update, the acronym "RP" will be used to represent Reduced Pressure Zone backflow valves (known as RPs & RPZs) and Double-check valves.

Here is the exact language (with emphasis) of that Section:

Florida Statutes - Section 120.52(8)

“Invalid exercise of delegated legislative authority” means action which goes beyond the powers, functions, and duties delegated by the Legislature. **A proposed or existing rule is an invalid exercise of delegated legislative authority if any one of the following applies:**

- (a) The agency has materially failed to follow the applicable rulemaking procedures or requirements set forth in this chapter;
- (b) The agency has exceeded its grant of rulemaking authority, citation to which is required by s. 120.54(3)(a)1.;
- (c) The rule enlarges, modifies, or contravenes the specific provisions of law implemented, citation to which is required by s. 120.54(3)(a)1.;
- (d) The rule is vague, fails to establish adequate standards for agency decisions, or vests unbridled discretion in the agency;
- (e) **The rule is arbitrary or capricious. A rule is arbitrary if it is not supported by logic or the necessary facts; a rule is capricious if it is adopted without thought or reason or is irrational; or**
- (f) **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.**

Internal emails and the violation of Section 120.52(8) :

I have a dog-and-pony show about the vulnerabilities of backflow valves that is presented to various groups. It includes an actual demonstration of just how easily bio-toxins and lethal chemicals can be backfed into a neighborhood’s drinking water supply. You can view the demonstration by going to www.backflowvideos.org and clicking on “Demonstration”.

A number of government officials from my County, the Florida Department of Health and the Florida Department of Environmental Protection were very upset by my presentations that questioned the wisdom of putting RPs at the front of lawns in

residential areas. These officials exchanged a number of internal emails among themselves about my activities. The pattern that emerged was that county and state officials publicly preached the virtues of RPs while using every conceivable tactic to squelch any comment to the contrary. A number of the “smoking gun” emails is included at the end of this *Update*, starting on page 7.

When the emails are reviewed, they paint a very clear picture that a number of agencies’ officials recognize the dangers of RPs. Their private expressions of their concerns certainly indicate that RPs don’t belong on lawns in residential areas - nor in the DEP’s rules and regulations.

And you'll note that a number of the emails deal with contacting law enforcement in order to silence speech about the dangers of RP valves in residential front yards. The fact that so many government officials at various agencies resorted to using such tactics is a powerful indication that RPs don’t belong on residential lawns or in the DEP’s rules and regulations.

Writing to her colleagues, Stacy Williams, Hillsborough County Community Relations Coordinator, summed up the controversy as:

'Brown's reasoning is if above-the-ground backflow valves are that dangerous that we don't want him showing it, then they shouldn't be in people's yards.'

The emails’ contents support the contention that the regulations are arbitrary, capricious, not supported by logic or fact and are without thought or reason. The inclusion of RPs in the menu of devices in the regulations is a violation of Section 120.52(8) of the Florida Statutes and indicates that DEP has wandered outside of its regulatory authority.

With AMRs as a less costly alternative, inclusion of RPs violates 120.52(8) :

The wholesale cost of a water meter plus an RP is about the same as an AMR plus a dual-check.

However, the RP installation will then have an additional testing and maintenance cost of between \$60 and \$840⁴, year - after - year - after – year!

⁴ These figures are courtesy of the University of Florida’s TREEO Center. Next month’s *Update* #3 will probably be devoted to the high cost to test and maintain RP backflow valves.

On the other hand, an AMR installation will probably only require a \$10 Dual-check valve every 10 years, i.e. one dollar per year! An AMR installation will also save the utility the cost of meter readers and will detect customers who may be watering outside of their allotted times during droughts.

An AMR installation with a Dual-check valve is a less costly alternative that substantially accomplishes the same thing - actually it accomplishes much more - than an RP when considering the statutory objectives. Because of the superiority of the AMR/Dual-check and its lower cost compared to the RP, the inclusion of the more costly RP in the menu of devices in the regulations fails to satisfy the requirement that the less costly alternative be put forth. Such inclusion of RPs is a violation of Section 120.52(8)(f) of the Florida Statutes and indicates that DEP has wandered outside of its regulatory authority.

Inclusion of the inherently bad RP is a violation of Section 120.52(8) :

There are no federal rules requiring how a Cross-Connection Control program must be administered.⁵ No Floridian has ever died from a backflow incident. No Hillsborough County resident has ever gotten sick from a backflow incident.

RPs have a number of inherent disadvantages including:

- Dreadful cost/benefit ratio,
- High installation cost - \$500 to \$700,
- Annual testing costs of \$60 to over \$840⁶,
- Very complicated with many parts that can fail⁷,
- May go 364 days before failure is detected,
- High pressure drop across the valve,
- Easy to steal - to be sold as scrape metal,
- Vulnerable to backflow pranks and terrorism,
- Easily damaged by lawn care crews, cars, hurricanes and freezing,

⁵ Email from Les O'brien, now retired from the University of Florida's TREEO Center, to Bob DiCecco, Hillsborough County's Cross-connection Control Manager - 9/5/07.

⁶ These figures are courtesy of the University of Florida's TREEO Center. Next month's *Update* #3 will probably be devoted to the high cost to test and maintain RP backflow valves.

⁷ Because of their complexity and the effects of Florida's water and heat, RPs are so unreliable that they must be tested every twelve months. By contrast, AMRs are typically warranted for ten years.

- Cause injury to walkers and joggers,
- Increase the utility's liability after backflow pranks and terrorism,
- Afford an attractive opportunity for a kickback scheme,
- Aesthetically ugly,
- Manufacturing consumes millions of pounds of copper,
- Florida heating causes chloramines to lose their effectiveness.

Given their many disadvantages, particularly when compared with an AMR/Dual-check valve, one sees that RPs are an inferior device and their inclusion in the menu of devices in the regulations is arbitrary, capricious, not supported by logic or fact and is without thought or reason. Such inclusion is a violation of Section 120.52(8) of the Florida Statutes and indicates that DEP has wandered outside of its regulatory authority.

RPs failure to detect backflow is a violation of Section 120.52(8) :

One of the requirements for a routine cross-connection program is that it detects backflow caused by cross-connections. The current and proposed regulations provide stand alone device options that do not detect backflow, i.e. RPs and Double-check valves. The failure of an RP or Double-check to control backflow isn't even known until the next annual testing with a worst case detection period of as long as 364 days.

Compare that grime fact with the instant detection or within 29 days (depending on the utility's RFID system) to detect the failure of a Dual-check backflow valve⁸ attached to an AMR (Automatic Meter Reading) water meter. Because of their pathetic detection cycle, the inclusion of the inferior RP in the menu of devices in the regulations is arbitrary, capricious, not supported by logic or fact and is without thought or reason. Such inclusion is a violation of Section 120.52(8) of the Florida Statutes and indicates that DEP has wandered outside of its regulatory authority.

⁸ At several of the DEP's workshops, the Palm Beach County water utility presented the findings of their empirical testing of Dual-check valves which found that Dual-check valves were routinely preventing backflow ever after ten years.

Failure to protect is a violation of Section 120.52(8) :

I presume that all Florida water utilities accept the responsibility to deliver a safe product to its customers, as has Hillsborough County:

“... as system operators we have the safety and well being of our customers at the top of our list. Thus, we fully accept the responsibility to police our operating systems and stand accountable for the system's operation. ... I would not expect our customers or other external agencies to be responsible for the operational issues, to include water quality, safety, etc., associated with the operation of the County's potable water system.”⁹

The DEP's regulations do not require utilities to provide an infrastructure device to protect me from deadly chemicals or biotoxins emanating from my neighbor's property, either inadvertently or intentionally, which would then be propagated through the utility's infrastructure and delivered to my property. But, an AMR with a Dual-check just outside of my neighbor's property, i.e. on the utility's easement, would be an infrastructure device that would indeed protect me. An RP on my neighbor's property that has been failing for the better part of a year doesn't even come close!

If the ultimate goal is to provide the delivery of safe drinking water to my premises, who should be held responsible for the integrity of that goal – the utility or my neighbor?

The failure of the regulations to require utilities to provide infrastructure to detect or protect me from others is arbitrary, capricious, not supported by logic or fact and is without thought or reason. As such, the inclusion of RPs in the menu of devices in the regulations is a violation of Section 120.52(8) of the Florida Statutes and indicates that DEP has wandered outside of its regulatory authority.

And here are some of those "smoking gun" emails...

⁹ Email from Paul Vanderploog, Director, Hillsborough County Water Resource Services to David Brown, 10/10/2007.

Internal emails

Here are four pages of county and state internal emails about my speaking out. They show the recognition by the various government agencies' officials that wrote them of the dangers of RPs in residential areas.

Where possible, the agency and title of the sender and recipients have been included to demonstrate just how widespread the knowledge is that RPs are dangerous.

Stacy Williams¹⁰ to Lori Hudson¹¹, Michelle VanDyke¹² - 7/2/07.

"Bob DeCecco¹³ of Building Services is contacting FDLE [Florida Department of Law Enforcement] and Homeland Security and reporting [Brown] to them, because he continues to publish these demonstrations."

Cindy Morris¹⁴ to Bob Vincent¹⁵, Ed Bettinger¹⁶ - 6/5/07.

"... we will be speaking with this individual [Brown] at the next cross connection control meeting to ensure our concerns are voiced regarding his e-mail & possible FDLE [Florida Department of Law Enforcement] involvement if he should continue this effort."

¹⁰ Stacy Williams, Community Relations Coordinator,
Hillsborough County.

¹¹ Lori Hudson, Communications Director,
Hillsborough County.

¹² Michelle VanDyke, Community Relations Coordinator, Water Resource Services,
Hillsborough County.

¹³ Bob DiCecco, Cross-Connection Control Coordinator,
Hillsborough County.

¹⁴ Cindy Morris, Environmental Administrator,
Hillsborough County Health Department.

¹⁵ Bob Vincent, Environmental Administrator, Environmental Health Division,
Florida Department of Health.

¹⁶ Ed Bettinger, Environmental Health Program Consultant,
Florida Department of Health.

Van Hoofnagle¹⁷ to Ed Bettinger¹⁶, Kenyon Carter¹⁸ - 6/5/07.

"I would also refer the email to Law Enforcement as I have done by copy of this email to our DEP contact at Emergency Response. Van P.S. Phil [Wieczynski²³] would [you] take a look at this and forward to the appropriate contacts you have in law enforcement?"

Cindy Morris¹⁴ to Van Hoofnagle¹⁷, Bob Vincent¹⁵, Ed Bettinger¹⁶ - 6/8/07.

"Van, I informed them [HCHD: Alfsen¹⁹, Shiflett²⁰, Becken²¹, LaDouceur²²] your office was going to contact FDLE. Could you please keep me informed if this occurs & outcome."

Van Hoofnagle¹⁷ to Cindy Morris¹⁴ - 6/8/07.

"I did so by copying Phil Wieczynski²³ in our DEP Division of Law Enforcement and not FDLE. I have attached that email."

¹⁷ Van Hoofnagle, Administrator, Drinking Water Program,
Florida Department of Environmental Protection.

¹⁸ Kenyon Carter, Professional Engineer,
Florida Department of Environmental Protection.

¹⁹ Gregory Alfsen, Professional Engineer,
Hillsborough County Health Department.

²⁰ Tom Shiflett,
Hillsborough County Health Department.

²¹ Arnold Becken, Water Resource Services,
Hillsborough County.

²² Therese Ladouceur,
Hillsborough County Health Department.

²³ Phil Wieczynski, Chief, Bureau of Emergency Response,
Florida Department of Environmental Protection.

Wally Hill ²⁴ to Ken Griffin ²⁵ , Lori Hudson ¹¹ , Edith Stewart ²⁶ - 7/3/07.

"I asked the Sheriff's Office this weekend to contact Homeland Security regarding Mr. Brown's activities."

Bob Vincent ¹⁵ to Cindy Morris ¹⁴ , Ed Bettinger ¹⁶ - 6/4/07.

"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."

Ed Bettinger ¹⁶ to Van Hoofnagle ¹⁷ , Kenyon Carter ¹⁸ - 6/5/07.

"David Brown is delving into a territory that he shouldn't."

Ed Bettinger ¹⁶ to Cindy Morris ¹⁴ - 6/4/07.

"However, what really bothers me are Mr. Brown's questions to Andy Reich ²⁷ concerning the capacity of aquatic toxins to induce damage within the Hillsborough County's water system. It appears he is asking and willing to spread information to others concerning the vulnerability of the Hillsborough County water system."

Cindy Morris ¹⁴ to Bob Vincent ¹⁵ , Ed Bettinger ¹⁶ - 6/4/07.

"His web site is pretty accurate."

Lori Hudson ¹¹ to Wally Hill ²⁴ , Edith Stewart ²⁶ - 6/29/07.

"FYI...while he didn't succeed in telling the Commission how to tamper with it, he's gotten it in the press."

²⁴ Wally Hill, Assistant County Administrator,
Hillsborough County.

²⁵ Ken Griffin, Manager of Plans, Programs and Properties,
Hillsborough County.

²⁶ Edith Stewart, Public Affairs Administrator,
Hillsborough County.

²⁷ Andy Reich, Coordinator, Aquatic Toxins Program,
Florida Department of Health.

Stacy Williams to Lori Hudson ¹¹ , Carl Conte ²⁸ , Bob DiCecco ¹³ , Jerry Sparks ²⁹ , Michelle VanDyke ¹² - 6/29/07.

"FYI on this article that came out in Observer News on backflow preventers. As expected, it's not very pretty, in fact it even gives some detail how they can be opened which is what we were attempting to prevent."

Stacy Williams ¹⁰ to Lori Hudson ¹¹ , Michelle VanDyke ¹² - 7/2/07.

"What concerns us the most is that his demonstrations of how to open the preventers continue, and he proudly gave me a copy of the Sun City Center Courier with the same story in it from the Observer News. It even disturbingly has a picture of him introducing a foreign substance into the device to show how easy it is."

Stacy Williams ¹⁰ to Lori Hudson ¹¹ , Michelle VanDyke ¹² - 7/2/07.

"[Brown's] reasoning is if [above-the-ground backflow valves] are that dangerous that we don't want him showing it, then they shouldn't be in people's yards."

²⁸ Carl Conte, General Manager, Inspectional Services, Building Services Division, Hillsborough County.

²⁹ Jerry Sparks, Director, Building Services Division, Hillsborough County.

Again, thank you for your positive response to *Update #1*. I hope you found this *Update* just as informative.

Three of the topics that will be covered in future *Updates* will be the paperwork burden of the proposed regulations, the cost of testing and maintaining RPs, and the question of who is ultimately responsible for insuring that safe drinking water is delivered to a customer's premises.

If you have anything that you (with credit or anonymously) would like to share with your colleagues around Florida who are also interested in backflow valves, please send it along.

A handwritten signature in black ink that reads "David Brown". The signature is written in a cursive style with a long, sweeping underline that extends to the right.

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