South Carolina
Office of Regulatory Staff

THE WATER WELLSPRING

A Flowing Source of Information for Water and Wastewater Utilities

Spring 2015

Workshop Reminder

The Water/Wastewater Department will be offering a workshop on Friday, April 17, 2015, from 8:45am – 3:00pm in the hearing room of the Public Service Commission of South Carolina, 101 Executive Center Drive, in Columbia. This year's workshop theme is "Protecting Valuable Resources: Water, Energy and Employees." Topics include *Health and Safety*; *Energy Savings and Cost of Energy*; a *Case Study in Tank Assessment*; and *Water Meter Management*. In addition, DHEC will present information on wastewater regulatory updates and compliance. There is an optional session from 1:45 – 3:00pm on Benchmarking/Best Practices Work Session presented by Dawn Hipp and Willie Morgan of the ORS. The registration information can be found on the ORS' website at: http://www.regulatorystaff.sc.gov/waterwaste/Pages/WaterWastewaterWorkshop.aspx

Smartphone App Helps Consumers Reduce Water Usage

An article in the *Wall Street Journal* states that utilities are using technology, including mobile apps, to inform households of the amount of water they are using and how that usage compares to their neighbors. Also, sensors exist as part of leak-detection systems for homes that can send alerts and shut off the water when problems are suspected. The use of mobile apps or technology is cheaper and easier than building new dams, wells, or water-treatment plants.

However, getting consumers to use less water is a challenge. Consumers are not motivated to conserve water to save money. Why? Because water is one of the cheapest resources, and it is practically everywhere. Companies such as WaterSmart Software, H2OScore, and DropCountr have developed tools that rely heavily on peer pressure, coupled with things like conservation tips and rewards. WaterSmart's software creates bimonthly home-

water reports from meter data that provide consumers with a clear picture of how much water they use and how their usage compares with that of neighbors living in similar-size homes. The reports, which can be delivered by mail or electronically, also provide recommendations on how households can save water—e.g., by watering a yard manually instead of with sprinklers during certain seasons.

Sentinel Hydrosolutions, LLC of California has developed a leak-detection system that is placed on the main water pipe into the home, an approach that eliminates the need for a sensor for toilets and sinks. Sentinel's system is programmed to monitor water flow into a home. When the flow persists past a time frame set by the homeowner, it automatically shuts off the water and sends an alert to a home alarm system. The company is working on delivering the alerts via text and email, as well.

Reference: Wang, U. (2014, May 27). New technology tool aims to reduce water use. *The Wall Street Journal*. Retrieved from http://stream.wsj.com/story/latest-headlines/SS-2-63399/SS-2-534705/?mod=wsj_streaming_latest-headlines

Maintaining Distribution System Water Quality

Tips for keeping high quality water flowing through your system

by Jeff Oxenford, Training and Technical Services Specialist (RCAP)

Just because you produce high quality water at the treatment facility doesn't mean that your job is done. Maintaining water quality throughout your distribution system is also essential. Studies have shown that over 1/3 of waterborne illness originated from problems in the distribution system.

Water quality in the distribution system can degrade for a variety of reasons including, contamination from an uncontrolled cross connection, contamination during storage, or high water age leading to degradation of water quality. Events such as a main break or loss of system pressure can also allow contaminated water to enter the distribution system. So, as an operator, what should you do? Below are 11 items for you to consider.

1. **Ensure that you are maintaining a disinfectant (chlorine or chloramine) residual throughout your distribution system.** While regulations only require that residual samples be taken at the same time as coliform samples, taking additional non-regulatory samples can help you identify a problem or just better understand your distribution system. Placing data on a map helps you identify potential problem areas with low residual.

2. **Manage the water age in your system.** AWWA recommends that water age should not exceed 5-7 days. In essence, the longer the water sits in your distribution, the greater the chance it can degrade. Develop strategies to keep water moving in your system.

3. **Routinely inspect your storage facilities.** A missing screen on a vent, an improperly closed hatch, a crack in the tank wall, or any other unscreened opening can allow for an insect, snake, birds or other critters to enter your storage facility. If anything or anyone tries to access

your tank, you want to know.

4. **Maintain system pressure.** Pressure in your system keeps contamination out. Average pressure should be above 35 psi, and during emergencies above 20 psi. If you lose pressure, contaminated water can enter through any leak or cross connection. Requirements vary from state to state, but, in most cases, if you lose pressure, you must issue a boil water notice. Routinely monitor pressure throughout your system.

5. **Have a cross connection control plan and implement it.** Cross connections are one of the leading causes of contamination in the distribution system. You need to be vigilant to control cross connections as new cross connections occur every day. Backflow prevention devices need to be routinely inspected.

6. **Flush your system.** Flushing is a valuable way to clean your water lines by removing deposits and reducing water age in dead ends. Develop a unidirectional flushing program, which is a systematic method of flushing that cleans water lines from the plant outward (large pipes to small pipes).

7. **Listen to your customers.** When customers complain, more often than not, something is going on in the distribution system. Investigate and keep track of customer complaints.

8. **Plan for emergencies.** Water main breaks or pump failures often happen at the worse times (middle of the night, during holidays, etc.). Having an emergency response plan and exercising it can help you save valuable time in an emergency. Always ask yourself, *"What if. . .?"*

9. **Listen.** Any time you touch a valve or hydrant, listen for leaks. The more you listen, the better you understand your system. Leaks don't get smaller, so if you hear something, schedule a repair. Consider the implementation of a leak detection program to find non-surfacing leaks and to reduce unaccounted for water loss.

10. **Have standard operating procedures for all your routine and emergency procedures.** Procedures should include preventive maintenance programs, such as valve exercising as well as a hydrant inspection and maintenance program.

11. **Be proactive**. Water quality only gets worse with time in the distribution system. Collecting, analyzing, and maintaining data allows an operator to stay ahead of problems.

Thank you to RCAP for allowing us to include their article in our newsletter. For more information, visit RCAP's website at www.rcap.org.

Reference: Oxenburg, J. (2015, March 09). *Maintaining distribution system water quality tips for keeping high quality water flowing through your system*. Retrieved from http://www.rcap.org/node/1553

EPA Finance Project Update

The U.S. Environmental Protection Agency has launched the new ***Water Infrastructure and Resiliency Finance Center*** designed to help communities, municipal utilities, and private

entities improve their wastewater, drinking water, and storm water systems, particularly through innovative financing and increased resiliency to climate change.

The ***Water Infrastructure and Resiliency Finance Cente***r will:

- Explore innovative financial tools, public-private partnership opportunities, and non-traditional finance concepts to better leverage existing federal funding programs.
- Explore ways to increase financing climate-resilient water infrastructure projects through integration of water efficiency, energy efficiency, water reuse, and green infrastructure.
- Support communities to develop sustainable sources of funding for water infrastructure, particularly through storm water utilities and green infrastructure projects.
- Collaborate with the U.S. Department of Agriculture's Rural Utility Services and other federal agencies to maximize its support for small community drinking water and wastewater systems and increase small systems' technical, managerial and financial capacities.

The initiatives of the Center will be closely coordinated with and build upon the EPA-supported Environmental Finance Centers across the country. The Environmental Finance Center at University of NC Chapel Hill (www.efc.sog.unc.edu) currently serves **EPA Region 4** (serving Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, **South Carolina**, and Tennessee).

For more information contact the Water Infrastructure and Resiliency Finance Center by email at: WaterFinanceCenter@epa.gov

Source: http://water.epa.gov/infrastructure/waterfinancecenter.cfm; NARUC Winter Meetings – Committee on Water.

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