



ATCAVE 2018 February 27, 2018

8:30-3:30pm

Radisson Hotel

100 Berlin Road, Cromwell, CT

Get the most out of ATCAVE 2018 by earning Training Contact Hours (TCH) toward your Connecticut Treatment and Distribution System Operator Certification. Select from tracks in Water Quality and Treatment, Distribution and Storage, or Management.

ATCAVE Vendor Expo

8:00 AM – 3:00 PM Location:

Grand Ballroom

Join us for coffee/pastries and visit the vendor expo before the morning technical sessions begin. The 2018 Vendor Expo is your chance to see the latest in water supply related technologies and equipment from among dozens of vendors and specialists in the water supply industry. For many attendees, the knowledge gained and the contacts made at the Vendor Expo add significant value to their attendance at ATCAVE.

SESSION A-1: WATER QUALITY AND TREATMENT

2.0 TCH* (.20 CEU)

8:30 a.m. to 10:30a.m.

OCCT in Response to Lead and Copper Rule Exceedance in Small Systems

Adam Wing, Project Engineer, Connecticut Water Company

This presentation will provide a detailed description of how the USEPA Optimal Corrosion Control Treatment Evaluation Technical Recommendations were applied in the wake of a lead action level exceedance for three groundwater systems owned and operated by Connecticut Water Company. Each of the three water systems had unique source conditions and treatment operations, resulting in different approaches to OCCT including aeration and/or chemical addition for pH adjustment. The presentation will demonstrate how the Excel-based OCCT Evaluation Templates can be used and how field measurements and titrations were performed to aid in design of the treatment system. A brief summary of lead and copper sample results following completion of the OCCT will be provided

Are You Leaving Water on the Table? Let's Talk Backup Wells

Steven P. Robbins, P.E., LEED AP, Project Manager, Woodard & Curran

Many of Connecticut's water utilities heavily rely on groundwater sources. The groundwater wells in the state are aging and a significant percentage will reach an age of approximately 50-70 years by 2020. The existing aging groundwater sources will need backup and/or replacement to provide water to the customers without compromising quality and quantity. Backup wells are a beneficial option for utilities, where applicable, as the total registered amount of water for the source could be utilized while the existing source can be rehabilitated. Most of the existing well sites are located such that siting a replacement well could be a tedious task, but providing a backup well in close proximity to the existing source can solve this problem in a more cost-effective manner. This presentation will provide an overview of design considerations and permitting tasks involved in construction of a backup well and use two recent Connecticut backup well projects as examples.

Connecticut Department of Public Health: Section Initiatives and Important Items

Lori Mathieu, Public Health Section Chief, CT DPH Drinking Water Section

A discussion of the present and future public drinking water initiatives that the DPH Drinking Water Section is emphasizing for 2018/2019. Important items such as drought triggers, municipal ordinances, water efficiency, WUCC process finalization and Statewide WUCC Plan, EPA's revised Lead & Copper Rule concepts, Legionella and CMS, DPH Safe Drinking Water Assessment Fees, Emerging Contaminants, regionalization and use of DWSRF, State Water Plan, FOI and Asset Management will be highlighted.

SECTION B-1: DISTRIBUTION AND STORAGE

2.0 TCH* (.2 CEU)

9:00 a.m. to 11:00 a.m.

Advances in Spray in Place Pipe Lining

Adam Szczesniak, Water Systems Consultant, SUEZ Advanced Solutions
Robert Drake P.E., Senior Associate, BETA Engineering

Advances in technology have created a new generation of NSF approved pipe lining technology. Coatings that could only be applied manually in large diameter structures can now be applied robotically in systems from 2"- 48". This new process minimizes the disruption to the community, reinforces existing structures while also reducing leaks, main breaks and improving overall water quality. This presentation will focus on a recent project executed in Milton, Massachusetts with project development, oversight and engineering along with cleaning and lining of 1500 feet of a 10" cast iron pipeline.

Rehab or Replacement – a Long Term Approach to Water Storage

Leah E. Stanton, P.E. Vice President, Weston & Sampson

With the high costs of labor and the increasing costs of re-painting, it may not always make sense to rehabilitate your existing steel tank. The current coating system technologies have a lifespan of 15- to 20-years which could require 3 or more re-paints over the course of the tank's life. We have been running 50 and 60 year life-cycle economic analysis for many of our clients to compare the cost to re-paint steel storage tanks with the cost to replace the tanks with a lower maintenance tank alternative such as a composite, concrete, or glass fused to steel tank. Many times, the high cost of re-painting these steel tanks, especially when teamed with the inconvenience to neighbors of the construction project, are costing out higher than the cost of replacing the tank with a low maintenance tank alternative.

Large Scale Buried Pump Station Design and Construction - Greenwich, CT

William J. Grant, E.I.T., Tata and Howard

Tata & Howard, Inc. was commissioned by the Aquarion Water Company of Connecticut to design and provide construction phase services for the Anderson Road Replacement Pumping Station. The existing undersized station was a prefabricated steel vessel built in 1983 in the Anderson Road right-of-way. Aquarion and Tata & Howard worked with the Town of Greenwich to incorporate a new, large capacity pump station in a residential area with restrictive zoning. The decision was made to construct the new replacement station as a buried concrete structure to avoid most zoning issues. The new station includes four vertical turbine can type pumps with a total capacity of 11 MGD, and a 250 kW generator, all installed below grade. The station was built into the hillside with a walk-in entrance. Due to fluctuating gradients in the service areas on either side of the station, the layout of the yard piping and installation of a control valve allow Aquarion personnel to manipulate operation to allow flow in two directions, and by either pumping or gravity flow. The presentation will focus on the design challenges the project team faced including station siting, meeting town requirements, and piping layout.

SESSION C-1: MANAGEMENT

2.0 TCH* (.2 CEU)

9:00 a.m. to 11:00 a.m.

Connecticut Department of Public Health: Why Regulations Are Important: a Recap of 2017 PWS

Mandy Smith, Supervising Sanitary Engineer, CT DPH Drinking Water Section

A review of incidents, water quality and other operational issues that occurred at PWS throughout the state of Connecticut during the year of 2017 and the associated regulations that are in place to help prevent these incidents and protect public health.

Are You Ready for the New DEEP General Permits for Discharging Residuals?

Paul E. Malmrose, P.E., Vice President, Tighe & Bond, Inc., Middletown, CT

On March 29, 2018, the General Permit for the Discharge of Water Treatment Wastewater (WTW GP) will expire and be replaced by the General Permit for Miscellaneous Discharge of Sewer Compatible (MISC) Wastewater (Misc GP) and the Comprehensive General Permit for Discharges to Surface Water and Groundwater (Comprehensive GP). This means that water utilities will no longer have their own general permit but will have to meet the requirements set for other industries. The Residuals Committee of the CT Section on AWWA has been negotiating the requirements of these general permits with the CT Department of Energy and Environmental Protection (DEEP) since October 2016 and believes the revised Misc GP and Comprehensive GP are the best options for water utilities that DEEP would accept but will include more restrictive requirements. The presentation will include the requirements for the discharge to wastewater treatment plant (WWTP), surface water and groundwater, including effluent limits for water residuals, sampling requirements, and electronic reporting of data. Requirements for management plans to discharge water residuals to WWTPs and requests for variances, if effluent limits cannot be met will also be discussed. If you discharge water residuals to WWTP, surface water or groundwater, you should attend this presentation.

Next Steps for the Connecticut State Water Plan

Elaine Sistare, P.E., CDM Smith
Kirk Westphal, P.E., Kleinfelder, Inc.

In July of 2017, a draft of the Connecticut State Water Plan was presented to the Connecticut Water Planning Council (WPC). The Plan represented the culmination of efforts from committees, work groups, state agencies, and stakeholders from all sectors of Connecticut's water environment. It includes consensus-based recommendations for water policy to be considered by the state legislature, programs of steps to advance knowledge and understanding of issues that require further study, and the first comprehensive summary of water needs and availability throughout the state. The talk will include an overview of the plan, a discussion of current steps being taken by the WPC to engage public citizens in the planning process, and the ways in which the Plan can be put into action in the years ahead.

ATCAVE LUNCHEON

11:30 a.m. – 1:30 p.m.

Between the morning and afternoon technical sessions, tour the Vendor Expo, participate in the Vendor Booth Raffles and enjoy the ATCAVE Luncheon Buffet.

SESSION A-2: WATER QUALITY AND TREATMENT

2.0 TCH* (.2 CEU)

1:00 p.m. to 3:00 p.m.

Design, Permitting and Installation Considerations of High Yield Replacement Wells in Connecticut

Greg Smith, PG, CG, Wright-Pierce
Mariusz Jedrychowski, P.E., Senior Project Manager with Wright-Pierce

The presentation will discuss the Connecticut Department of Public Health and Connecticut Department of Energy and Environmental Protection regulatory requirements for a design and installation of replacement wells with a pumping capacity greater than 50,000 gpd. A case study for an installation of two replacement wells with a combined capacity of 1.2 MGD for a Connecticut Town will be presented.

One Size Does Not Fit All: Which Filter Underdrain Is Right For You?

Paul Moran, P.E., Senior Engineer, Tighe & Bond

This presentation will describe and summarize various styles of filter underdrains including operating principles, advantages, and disadvantages of each. Discussion will include flow balancing techniques, impacts on system hydraulics, compatibility with existing infrastructure, impacts on filter operation and maintenance, construction considerations, and system repairs. The presentation will include several examples of recently rehabilitated underdrains that highlight how different scenarios result in different underdrain selections.

PFCs – An Emerging Concern for Drinking Water in New England

Stephanie Hubli, Staff Engineer, Tighe & Bond

Perfluorinated compounds (PFCs) are a group of man-made chemicals widely used in manufactured products including firefighting foams, non-stick surfaces, food packaging, carpets, clothing, and furniture. Since 2000, the EPA has focused on reducing PFCs at the source by working with manufacturing companies to phase out the use of PFOA and PFOS in products, the two most prevalent forms of PFCs. Still, the persistent nature of these contaminants means that PFCs already released into the environment may pose long-term health and environmental risks. PFCs' persistence in the environment, and improved analytical techniques that provide detection down to the parts per trillion level, have led to their detection in drinking water supplies around the country. Removal of PFCs from drinking water requires advanced treatment technologies such as granular activated carbon (GAC), Ion Exchange (IX), and high-pressure membranes. This research-based presentation will cover the occurrence of PFCs and their regulation and treatment in drinking water throughout New England, with an emphasis on the potential effects of PFCs in Connecticut and how the state and water utilities should prepare to deal with these contaminants.

Section B-2: Distribution and Storage

2.0 TCH* (.2 CEU)

1:30 p.m. to 3:30 p.m.

Connecticut Department of Public Health: DWS Regulatory Reminders to Keep PWS in Compliance

Chris Roy, Supervisor of the Safe Drinking Water Rule Implementation Unit, CT DPH Drinking Water Section

A discussion of the most common compliance issues PWS within the state continue to face. It will include helpful reminders and any new information with respect to water quality monitoring, reporting and notification regulatory requirements aimed at helping certified operators and system owners keep their water systems in compliance.

Construction of a Spheroid Storage Tank in Mystic, CT

Lesley Milligan, P.E., Tighe & Bond

The Fieldcrest water level serves the northwestern portion of Aquarion Water Company's (AWC's) Mystic System in Mystic, Connecticut. AWC identified the need for a new tank in this water level as part of an Alternatives Analysis Study completed in 2014. At the time of the study, there was only one atmospheric storage tank serving the Fieldcrest water level, which was constructed in 1959. Based on the condition of this existing tank and additional storage requirements in the Fieldcrest water level, a new tank was recommended. Construction of a new spheroid water storage tank began in 2016. This presentation will cover selection of the elevated spheroid tank style and the details of

construction including site work, water main and valve installation, foundation installation, tank construction, and tank painting.

Replacement of the Burwell Hill Water Storage Tank in West Haven, CT - A Successful Project Completion Despite the Challenges of a Limited Site

Doug Belfiore, Project Manager, South Central Connecticut Regional Water Authority

Brian Messner, P.E., Lead Project Engineer, Wright- Pierce

Christopher Hodgson, Vice President DN Tanks

Water storage is an essential part of any functioning water distribution system, but how do you undertake replacement of an aging steel tank on a congested site with limited area for new tank construction? This program presents an overview of the process to replace a 1930's steel tank with a new pre-stressed concrete tank, from initial investigation, to conceptual design, through project completion. The program will highlight the specialized construction process to accommodate the site restrictions, as well as all the "fun" which comes with tank construction in a limited space.

SECTION C-2: MANAGEMENT

2.0 TCH* (.2 CEU)

1:30 p.m. to 3:30 p.m.

The Importance of Construction Experience in Developing Design Skills as a Young Engineer

Amanda Ziegler, P.E., Project Engineer

The presentation will discuss how assisting with construction projects expands a young engineer's knowledge to develop design expertise. Two case studies will be presented: the Upper Albany Sewer Separation Project and the Water Supply Facilities Emergency Generator Replacement Project.

Future-Proof Your Utility Staff: Thriving Despite the Coming Retirement Boom

Julie Silva, Staff Engineer, Woodard & Curran

An aging work force and a looming retirement boom are threatening to reduce the utility workforce by as much as 50 percent in the coming years. This "demographic tsunami" represents one of the most important issues confronting water and wastewater utilities. The sheer quantity of institutional and historic knowledge of systems and operations that aging staff represent is staggering. For some utilities, losing a key member of staff could make what had been simple maintenance projects a logistical nightmare. This knowledge can't be transferred without proper training and guidance to other employees. And yet this issue is one of the least talked about outside of association events and industry gatherings.

Utilities need to take action to set themselves up to thrive during this period of transition by creating strong data management systems and recruiting, retaining, and developing the next generation of utility leaders. Fortunately, there are a number of concrete things they can do, such as offering competitive compensation, and implementing strong training and development programs for existing staff, and aggressively leveraging technology. This presentation will discuss these strategies and provide examples that show how they can be implemented.

Practical Steps to Improve Your SCADA Cybersecurity Today

Jonathon Grant, P.E., CISSP, Technical Manager, Woodard & Curran

With the recent hacking headlines invading the national news stream, utilities are facing an increased pressure to ensure that their SCADA systems are thoroughly protected from all possible cybersecurity threats. By developing a robust SCADA cybersecurity program, utilities can protect themselves from infections by ransomware, denial of service (DOS) attacks, actions by malicious hackers, intentional damage by disgruntled employees, and even mistakes by employees

with good intentions. However, creating a robust cybersecurity program can be a time and resource intensive activity. Utilities should not allow the process of creating a ‘perfect’ cybersecurity approach in the future stand in the way of making small improvements to their system immediately.

This presentation will focus on the cost-effective steps that utilities can take today to improve the security stance of their system. The suggestions offered in this presentation will transcend all layers of SCADA architecture to cover the low-hanging vulnerabilities that can be addressed in each system. Some of the suggestions will be physical in nature, because SCADA cybersecurity can be affected by the physical security of the device, while some suggestions will leverage existing equipment already present in all systems and demonstrate ways to set them up more securely. Other suggestions focus on areas that touch on aspects of the system that rely on good policy development and enforcement—addressing (in part) the human factor inherent in SCADA systems.

At the time of publication, DPH Training Contact Hour Applications for technical sessions were pending.

ATCAVE Throughout the Day

VENDOR EXPO

8:00 a.m.-3:00 p.m. Grand Ballroom

FREE ADMISSION

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