



South Carolina
Office of Regulatory Staff

THE WATER WELLSPRING

A Flowing Source of Information for Water and Wastewater Utilities

Winter 2018 – Extended Edition

Spring Workshop Registration Open

Registration for the 2018 water/wastewater workshop is now open. Registration forms can be found on our website at <http://www.regulatorystaff.sc.gov/waterwaste/Pages/WaterWastewaterWorkshop.aspx>. The workshop is scheduled for **April 20, 2018**, at the Public Service Commission Hearing Room, 101 Executive Center Dr. Columbia, SC. The theme is “Effective Tools for an Effective Utility.” Topics for the workshop include use of drones in the water/wastewater industry, cybersecurity, successful utility consolidation, Inflow, Infiltration, and InfoMaster: an Advanced Approach to Developing Sanitary Sewer Renewal Programs, and DHEC updates. We encourage everyone to attend and feel free to pass along the invitation to others who may be interested. Professional Development Hour credits will be offered to those in attendance.

Annual Report Filings

Letters were sent out on January 30, 2018, regarding annual report filings. Annual reports are available for download on our website at <http://www.regulatorystaff.sc.gov/waterwaste/formsandresources/Pages/default.aspx>. If your utility operates both water and wastewater systems, a separate report must be submitted for each system. Annual Reports are due no later than April 1, 2018. If you need to request an extension to file no later than May 1, contact Hannah Majewski in writing at hmajews@regstaff.sc.gov. Any requests to file later than May 1 must be submitted to the PSC for approval.

This is the first in a series of short articles designed to highlight the benefits that the best of today's advanced automation systems can bring to water and wastewater utilities.

A Changing World

Water and wastewater utilities are facing an increasingly diverse set of operational challenges. Population growth, source water management, increasing regulations, overflow violations, consent order compliance and aging infrastructure – and now the specter of cyber security threats - are all straining the ability of water and wastewater utilities to serve their communities. Understandably, few authorities are positioned to handle these issues, especially when complicated by tax base reductions, the retirement of experienced industry managers, engineers and operators, and a host of other factors. Water and wastewater utilities across the country – big and small – need help. One of the most often overlooked sources of relief can be found in the many advances which have been made in the development of automation solutions.

BUT WE ALREADY HAVE A CONTROL SYSTEM!

Whether you call them control systems, SCADA, DCS or PLCs, most utilities now utilize automation to some degree. However, few take advantage of all of the features and benefits that today's advanced automation solutions can provide – and many don't grasp the importance of what they already have. The investment that most authorities have already made in their plant control and SCADA systems can often serve as the foundation on which an advanced automation system can be built.

PATCHWORK CONTROL SYSTEMS AND ISLANDS OF AUTOMATION

It's been a common practice among many water and wastewater utilities to install control systems without much in the way of overall strategy or planning. To make matters worse, as time goes by, control system components are often replaced piecemeal as they become obsolete. This leaves many utilities with a patchwork of PLC subsystems – islands of automation - that don't easily communicate with each other. They become expensive to maintain, and make expansion to meet growth or changes to accommodate new treatment, conveyance or storage processes difficult. Moreover, the patchwork of control components makes it very difficult to achieve a common, facility-wide database, a critical foundation for many of today's best advanced automation solutions. The absence of a unified, comprehensive database makes it difficult to implement many of the new, high-value applications which are now available. For most utilities, the data is there -- it's just not easily accessible to the higher level applications.

THE BENEFITS OF ADVANCED AUTOMATION SOLUTIONS

Only a few years ago automation meant basic control and monitoring. Advanced automation solutions have now enabled forward-thinking water and wastewater authorities to improve their operations significantly by addressing some of the greatest challenges facing the industry.

Let's review some of the new technologies available:

- **Process optimization**
 - Process optimization technologies allow authorities to find the most efficient operating parameters for a particular process. A case in point might be a scenario involving a large pumping station which consists of three (3) pumps, each with variable frequency drives (VFDs). Pumping stations such as these can be huge energy consumers. A question often arises as to how to allocate these pumps to serve a given flow demand. Should all 3 pumps be operated at 25% capacity? Should one pump be run at high

capacity and the other two idled? Some other combination of pumps and capabilities? What if one of the pumps has a degraded seal, bearings or some other problem? Advanced process optimization software can take all of these factors, and many more, into account and help determine the best, most energy-efficient operating point automatically, while protecting valuable assets.

- **Machinery health and predictive diagnostics**

- Water and wastewater utilities operate some large and expensive machinery including pumps, centrifuges, mechanical separation and filtration equipment, and a host of other assets. With advanced, predictive machinery health solutions, it's possible to better monitor the health of large rotating assets and predict problems before they occur. This simple shift from emergency, reactive repairs to preventative diagnostics and maintenance can save money, reduce unplanned service outages, protect critical assets and improve the safety of both workers and the public.

- **Cybersecurity**

- The fear of cybersecurity vulnerabilities, whether through malicious attacks, viruses or simply poor software maintenance, is a constant threat in nearly every walk of life. When the threat compromises critical infrastructure such as water and wastewater utilities, safety, health, financial resources and the ability to provide the most essential of community services are on the line. The best of today's automation systems can provide the ability to help strengthen security. Features of these systems focus on countering threats and protecting system network integrity. Real-time antivirus protection guards workstations and servers against viruses and malware. Application control effectively mitigates malware threats. Device control secures and centralizes management of storage devices associated with Windows-based workstations and servers. An agent-based solution determines patch needs within workstations and servers. Tools are provided for backup and recovery.

- **Pump efficiency monitoring**

- Large pumps are the lifeblood of many water and wastewater utility operations and their operation accounts for a large portion of a utility's energy expense. However, pump efficiency often degrades over time due to seal or other problems. Poor pump efficiency increases energy use, reduces capacity and poses a hazard of catastrophic pump failure. Automation solutions can now provide continuous, real-time monitoring of pump efficiency vs. pump design parameters. This essential automation provides continuous monitoring of how far the pump has diverged from its design "curve."

- **Remote visualization**

- Being responsible for water and wastewater utilities requires constant awareness. Many facilities operate 24/7. Many managers, engineers and supervisors would relish the idea of being able to stay in touch with their operations no matter where they may be, at any time of the day or night. The best of automation systems can provide that, securely, to an authorized user's cell phone, tablet, or computer.

- **Emergency backup offsite control centers**

- Since most facilities need to be able to operate 24/7, the prospect of having to shut down operations for any reason is almost unthinkable. Shutting a facility down to evacuate personnel due to weather emergencies, civil disturbances, wildfires or other problems needs to be avoided if possible. Modern automation systems can provide the

ability to maintain a secure, offsite, back-up control center which will allow for the continued operation of the facility in the event that an evacuation is ordered.

- **Simulation**

- Education can only take us so far, and on-the-job training is limited. For example, teaching operators how to handle highly dangerous situations is risky – you wouldn't want to turn the controls over to a rookie if people could be hurt or equipment damaged by a mistake. Simulators provide a great way to extend training into a safe environment, where making a mistake can't cause any damage. In fact, simulators provide a great way to train operators regardless of experience levels, especially in how to handle infrequent but dangerous situations. However, simulators of the past were expensive and difficult to maintain. They were usually reserved to train pilots and nuclear power plant operators. Today's automation systems, at least the best of them, can be utilized as the foundation for simulators which mirror the actual control system in a very cost effective, easy-to-maintain manner. These simulators bring the added advantage of allowing operators to train on the exact equipment that they will be using to control the plant.

GETTING FROM HERE TO THERE - THE IMPORTANCE OF AUTOMATION MASTER PLANNING

Since integrated, unified plant controls and SCADA systems provide the enabling foundation for many advanced technologies, it's important to plan for unification so that the resulting system gives operators and engineer's access to all plant data.

An integrated district-wide approach to automation allows for monitoring and control of all elements of water and wastewater operations – treatment plants, CSO basins, pump stations, water distribution and wastewater collection, weather monitoring stations, etc. This is where the investment in automation really pays off.

So how can unification be accomplished if most utilities already have some degree of automation? Few utilities can afford to implement a complete replacement of their existing control subsystems. It is feasible, however, to develop a master automation plan which will result in a best-in-class automation system over time, and the payoffs can begin almost immediately. By clearly identifying the features needed, subsystems can be replaced over time with systems that will enable a unified database which will act as the enabler to the advanced applications which can reduce costs, protect assets, reduce energy costs and strengthen security.

CONCLUSION

It's easy to see that today's automation systems can provide tremendous value compared to the systems of just a few years ago. The good news is that the investment that an authority has already made in automation can be leveraged to build the advanced automation solution needed to implement the high-value applications that can really make a difference.

In future articles, we'll dig deeper into some of the individual solutions, and how your control system can be transformed into the automation system that you need to operate in today's complex and challenging environment.

Submitted by: Doug Johnson | Marketing Director, Water | Power & Water Solutions
Emerson Automation Solutions

How to Demonstrate Your Confidence: 7 Apologies to Avoid

By Melanie K. Goetz, MBA

As kids, we all learned it was the “Go To” thing to say, no matter what our transgression. But as adults, this simple phrase can really backfire, especially in a business situation. It seems innocuous enough. Yet, “*I’m Sorry*” often undercuts your message and can erode your credibility. So, when are you better off not apologizing? Here are seven no-doubter situations to not state “I’m sorry”:

1. **It’s fake.** When you’re not really sorry, don’t pretend you are. Whether you’ve actually not done the work or didn’t prepare for a meeting, a half-hearted apology is the worst. It’s usually pretty obvious when someone offers a half-hearted mea culpa for a lack of performance. Yet, even in a simple argument or workplace debate, we often hear something like: “*I’m sorry you believe I didn’t do my job, but...*” The key faux pas here is invoking the “but clause.” It’s a sure-fire signal of a non-apology — positively *screaming* insincerity — and a guarantee that you aren’t really sorry. No matter what you may think, the notorious “but clause” actually strengthens the other person’s stand and douses your credibility. In a business setting when you’re not sorry, it’s best to own up to your point of view, and cut the apology altogether.
2. **Upfront apology.** Even when you’re not prepared to give a business presentation, never start by apologizing. Sure, you’re nervous. You’ve not committed due diligence to the long-upcoming presentation or maybe you have. But (there’s that word again), “*I’m sorry, I didn’t have much time to prepare for this talk*” only communicates a sense that you didn’t think it was worth your time. Studies reveal this type of preemptive apology eliminates any confidence your audience may have had in you to begin with. Here, a proactive apology does nothing but set you up for failure.¹
3. **To be forgiven.** Using an apologetic phrase to beg forgiveness for lack of performance won’t boost people’s confidence in you. Saying something like “*I’m really sorry, but I didn’t have time to complete the report before this meeting*” doesn’t absolve you of your job responsibilities. It’s better to avoid using any type of an apology in this situation and just stick to the facts, “*I’m working on the report you requested, and it will be done before the end of the day.*”
4. **No reason.** Sometimes people use an apology because they think it’s polite. “*I’m sorry, but I have to step out of the room*” is *not* the best way to initiate a smooth exit. Instead, just try “*Excuse me, I need to step out of the room.*”
5. **It’s out of your control.** I travel a lot giving talks. One of my flights recently was delayed by bad weather, and I couldn’t get back home. The gate attendant kept apologizing for the delay. Same with the flight attendants. When we eventually took off, the pilot keyed the intercom to apologize for the delay. Why were these people ALL apologizing? After all, the weather was causing the flight delay, and the airline was taking on an unnecessary burden of responsibility ... saying “*I’m sorry*” conjures precisely the *opposite* effect intended. Rather than apologize for the weather, it would be better for the airlines to stress that their number one goal is to get people safely to their destination and thus the weather delay. Don’t apologize when it’s not your fault.

¹ Smith, Jacquelyn, May 26, 2016, Business Insider, <http://www.businessinsider.com/when-you-shouldnt-apologize-at-work-2016-5/#-1>, sourced January 2018

6. **Sorry favors.** Asking somebody at work for a favor should never involve an apology. *“I’m sorry, but would you mind helping me with this program?”* just doesn’t work. Trying to weasel your way into a coworker’s good graces is irritating and often the favor will be denied. Just ask — and if your co-worker really is good at the task you’re seeking help with, you can even filter in a compliment: *“I know you’re good with this program ... Would you mind helping me get it running?”*
7. **Interrupting excuse.** It’s rude to interrupt, but using an apology to interrupt a business meeting can seem even ruder. Instead of saying, *“I’m sorry to interrupt, but...”* get people to focus on the point you’re trying to make. You can usually take the floor at a meeting with something like, *“In connection to your point, I would like to add ...”* Likewise, suppose someone has grabbed the floor from you, and you want it back. Try interjecting something like *“Yes, I agree. But to finish my point, let me add that ...”* instead of ceding the high ground with a lame *“Sorry, but I wasn’t finished making my point.”*

The use of an apology in a business setting has become more common than you might think. To avoid being apologetic, become aware of how often you use apologetic phrases. Review your emails carefully before sending them out, and edit out any apologies. And if you need a little help, Gmail offers a plug-in (Just Not Sorry) that identifies apologetic words and phrases to help keep your emails professional. It looks for words like: “Just,” “I’m no expert,” and the basic “Sorry.” When these apologetic words show up in your emails, they are highlighted as if they are typos. Then when you mouse over the highlighted words, it explains how such wording can be perceived by the reader.

If an apology isn’t warranted, you’re better off standing up for your performance and leaving the apologies for when you really mean them (and if you really *should* be apologizing, by all means *do so!*) In any of the above situations, it’s better to demonstrate your confidence and avoid diminishing your voice. Don’t be rude, of course, but think twice before diluting your message with gratuitous contrition. In other words, if you have something to say...say it!

About Melanie K. Goetz, MBA: Melanie is a consultant, speaker and author of two AWWA books: “Communicating Water’s Value, Part 1 and 2.” She conducts workshops on risk communications, media training, and how to get and keep the public’s trust. She welcomes input: Melanie@HughesStuart.com.

Accounting for Interest on Long-Term Debt (“LTD”)

What is interest expense on LTD?

- The cost of borrowing money where the principal is due in more than one year. A utility usually borrows funds to pay for construction, equipment, vehicles, and other long-lived assets.

How is interest on LTD accounted for on the books and records of utilities?

- Per books Interest Expense on LTD is booked in Account 427, which is considered a “below-the-line” account, and is excluded from the calculation of net income.

How does a utility recover its costs of borrowing?

- In lieu of per book interest expense, regulatory bodies typically allow a concept called Interest Synchronization. This concept allows the utility to recover financing costs by multiplying the LTD portion of rate base times the weighted average cost of debt. In a “Rate Base” filing, the company

receives coverage in its rate of return for interest costs. In an "Operating Margin" filing, the company receives an allowance in the calculation of the margin to cover synchronized interest costs.

Why is interest expense used for the computation of income taxes?

- Interest expense is an allowable deduction for the calculation of income taxes and is therefore used to compute the proper taxes for ratemaking purposes.

Questions – Please contact Jay Jashinsky (803)737-1984 or Daniel Sullivan (803)737-0476 of the ORS Audit Department.

Sources: Public Utility Accounting: Theory and Application – Suelflow; NARUC Uniform System of Accounts.

ORS Staffing Changes

Dukes Scott, ORS executive director, officially retired January 15, 2018. Dukes was the first Executive Director at ORS and was responsible for guiding the agency's establishment and growth since 2004. Nanette Edwards is serving as Acting Executive Director.

Chad Campbell was promoted to Consumer Services Manager effective January 1, 2018, replacing April Sharpe who retired December 31, 2017.

The staffing changes do not affect the contacts within the Utility Rates & Service Department. Please contact Anthony Sandonato (803.737.0221/asandonato@regstaff.sc.gov) with any questions regarding filing Applications for rate adjustments and Hannah Majewski (803.737.0898/hmajews@regstaff.sc.gov) with any questions regarding filing annual reports, performance bonds, or gross receipts.

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