Company Offers Customized Training Service for Water Utilities

Technologies like electronic documentation, databases, web-based operating systems with interactivity and animated graphics are all tools that once seemed foreign. As they have evolved, the water industry has looked for ways to put these new tools to work. Significant brain drain, information silos, staff reductions, and outdated O&M information distributed in an inefficient way are all glaring issues in the water industry. A trend over the past few years is to develop online digital delivery systems to consolidate that information and use it for continuing education and knowledge transfer.

Two companies actively involved in that process are 360water and OM360, both founded by Laura Tegethoff. In 2002, she began working on a program to offer custom operations and maintenance training for water utilities. The City of Columbus and Southwest Licking Sewer (Ohio) adopted customized O&M one year later. Today, more than 60 municipal and manufacturing clients use the customized training services.

"The reason I created the business was straightforward: I wanted to change the way we collect information from one group that knows and make it available for the group that needs to lmow," Tegethoff said.

Formulated through a team of writers and project managers, 360water's customized training focuses on operation and maintenance courseware to support capital improvement projects. Since 2003, the courseware has expanded to include anything that has standard procedures and a manual that needs to be distributed. This includes courses on facility equipment, processes, asset management, flood protection, laboratory, SPCC, ICP, and safety.

The materials and training programs are facility specific, online, and on demand. The learning management system is designed to deliver accurate information to staff whenever they need it and wherever they are instead of requiring the staff to leave the office to attend training at limited times at set locations that create scheduling conflicts.

Web-based training courses provide a faster, more comprehensive opportunity to operators and engineers who need to understand new or updated equipment, to receive certification, and, most importantly, to retain the information learned in the process.

With the goal of reducing operator error in all types of scenarios, 360water created an interactive learning environment to familiarize the user with course materials and increase comprehension.

The company, based in Columbus, OH, is not the only supporter of interactive education in the country. In the spring of 2010, a study conducted by Dr. Carl Wieman, a Nobel Prize winning physicist, tested the effects of lecture-based teaching against

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interactive learning among college students. Those who participated in the interactive sessions used remote-control-like devices to engage in the class sessions. After the 12-week study period, students who used the interactive method scored twice as high on a test compared to those who heard a lecture.

"It's really what's going on in the students' minds rather than who is instructing them," Dr. Wieman said.

Tegethoff sees similarities between Dr. Wieman's work in the classroom and 360water's work in the utility industry. For example, start-up training at a treatment plant typically is lectured right out of an operations and maintenance manual without much interaction between facility staff and the person giving the lecture. These days, no one is completely satisfied with this approach to th transfer of information from the manufacturer/engineer to the plant staff who have to live with the equipment.

360water uses the O&M manual, but adds interactive elements to the training experience. Those elements include video, graphics, audio, operator input, intermittent quizzes, immediate feedback, and a comprehensive test. Like Dr. Wieman's students, water facility staff increase their understanding of an equipment upgrade when they use interactive online training.

Case Study

The Municipal Sewer District of Greater Cincinnati (MSDGC) has been a client since 2006, when the district contracted with 360water to create courses to distribute to staff in various locations. Subsequently, top operations people at MSDGC became eligible for retirement, which was a potential loss of significant institutional knowledge. As a remedy, 360water built a library of facility specific courseware to capture and sustain the experienced staff's lmowledge base.

To show the efficacy of the program, MSDGC began a study on the retention of knowledge of the district's High Temperature Fluid Bed Incinerator. The study will examine two sets of operators who learn the same subject matter but in different learning environments. One group will learn only through traditional, lecture-based teaching, and the other will learn only through the web-based interactive training. Both groups will be tested at one month, three month, and six-month intervals to determine which learning style helps operators better retain the lmowledge.

Project Training

When facilities have a capital project, they can specify 360water's

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training services as part of that project. The service becomes a deliverable in the contract to ensure the facility's equipment operates as it was designed. The service includes an online examination to demonstrate operator proficiency.

Examinations are another change in the industry to improve training programs. It's not enough to provide training without also testing the staff to verify what they have learned. Examinations measure proficiency and this protects municipal budgets.

Based on what each facility requires for its employees, 360water can customize specific programs according to those needs. The online materials also ensure that new employees receive the most up-to-date training on the operation of equipment, as well as the practices and procedures of an individual plant. Clients can be assured that their specific programs

are well preserved and distributed. If updates are necessary, the changes are made and the most current version is the one online. There is never a partial or redlined version floating around the facility with the potential to void a warranty.

Statewide Training

Municipalities are more willing to accept innovation when they see it happen with a statewide project for a government agency. 360water was contracted by the Ohio Environmental Protection Agency in 2006 to create a Class A water operator training and licensure program. The company wrote the curriculum, programmed the online version, and held face-to-face sessions. The program had 1,495 candidates that were required to earn Class A water licenses. The program achieved a 93% pass rate from the candidates, which was the highest in the country.

The program also provided the Ohio EPA with an additional benefit: the digital component remains online and available for future use even though the program is technically over. For all the new candidates to the industry, or those that missed the notices of the original Class A water program, the Ohio EPA can direct them to the online version at no additional cost. **WW**

For more information on 360Water and its programs, visit www.360water.com.