

utility executive

Rolling Out Skill-Based Pay for the Entire Utility

As part of a competitive reorganization plan, the City of Lima (Ohio) Utilities Department implemented skill-based pay for its employees

Gary Sheely, Jennifer Myers, and Dave Hill

In 2002, the City of Lima (Ohio) Utilities Department initiated a leadership development effort as part of its competitive reorganization plan. At the core of the utility's improvement strategy was an unwavering determination to pay employees based on the level of their skills and the merit of their performance, establishing a measurable system of reward and responsibility.

Seven years later, the utility achieved its intended outcome, including an improved and more autonomous middle-management team, an established progression for leadership, and

skill-based pay as a standard employee expectation.

The reorganization plan was the culmination of years of effort to document the path necessary to keep the utility competitive, and it applied best practices from the private and public sectors. The impetus was a 1996 study that presented a \$1.1 million competitive gap when the utility was compared with "best of class" privately operated utilities. Also, several "managed competition" or privatization proposals had been presented to the mayor, city council, and utilities leadership for consideration.

The department's success began with the strategic decision to build a culture of continuous improvement. Starting with the middle managers, the utilities department began optimizing its business practices to improve performance and reduce cost. The utility defined new expectations for managers through facilitated sessions that identified challenges they face, their changing role in the new organization, and the professional skills needed for a successful transition. Outcomes from these sessions included greater

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Are wastewater utility preparations lagging behind in disaster preparedness?

Water and wastewater utilities are vulnerable to wind, flood, earthquake, and other natural disasters. According to the 2009 document "All-Hazard Consequence Management Plan for the Water Sector" compiled by the U.S. Environmental Protection Agency (EPA), other federal agencies, and utilities, natural disasters can lead to loss of power, communications, and supervisory control and data acquisition systems, as well as water contamination and service disruption.

To ensure minimal system damage and limit delay in getting back on-line, water utilities must understand their vulnerabilities, make plans to minimize system impacts, develop emergency response plans, and train staff.

Training, free tools, and federal funding are available. There also are a number of management examples from which to learn. In 2006, only three states had Water and Wastewater Agency Response Network (WARN)

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accountability and enhanced support for managers; a description of the activities required in each position, which allowed skill-based pay efforts to move forward; and improved utility competitiveness.

Approach

The utilities department director and the administrative team developed the plan and proposed it to the city in 2001. It focused on two core areas for improvement: organization as a strategy and performance management applications.

Organization as a strategy. The utilities department merged several functions from various divisions and sections, creating a streamlined department. This included reorganizing the billing and collection division and integrating the meter readers from the water distribution division into one centrally housed unit in 2004 and renaming it the customer service division. The employees also were redesignated to one classification, allowing for a more flexible work force.

Water distribution and sewer maintenance functions, which had been separate divisions, were transferred to the utility field services division. This organizational structure would provide the backbone for developing a flexible, cross-trained work force and enable the utility to “staff for the norm and import for the crisis.”

The formerly separate facilities for water distribution and sewer maintenance needed improvements. The utility decided to build one new building large enough to house staff and equipment for both. This combined the employees into one shop and cross-trained them to perform both functions. Employees moved to the new building in 2005.

Performance management. An organization’s strength is measured by the work it performs. The department’s customers — both external and internal — measure its ultimate success. A good way to ensure that the customers’ needs are met is to develop a set of anticipated actions, or service levels, that are important to customers.

Building on the move toward organizational change, employee classifications were tied to skill sets. The reorganization plan recommended skill-based pay (SBP) for the department in order to achieve a more flexible, multiskilled work force to optimize the utility, and performance-based pay, based on meeting metrics.

SBP was the first step to realizing the department’s goals. It involves compensating employees for demonstrated and defined skills. The utility created three career stages in each division — learner, applier, and mentor — and new job descriptions to go along with the new stages, each of which includes a predefined set of skills. The learner works under supervision, with clear direction; the applier works independently yet still within a team and assumes some responsibility for the team effort; and the mentor takes responsibility for the team or project and directs the actions of others. Employees can ask for an evaluation every 6 months.

Within each stage are different steps that correspond to pay grades. To move within a career stage, such as from the low end to the high end of learner, the employee must demonstrate 75% of the current stage to be advanced to the 3/4 skill step for that career. When the employee demonstrates all the skills in the stage, he or she is automatically moved to the next step in that stage. To move up to the next stage, such as from learner to applier, the employee must demonstrate all the skills in that stage plus 50% of the new stage.

This structure was designed to fairly compensate employees for their services and allow for movement within the structure to promote career development. Central to the execution of SBP was restructuring and redescribing the jobs in each division. Each division manager was asked to detail the employees’ required skills and status. This would be a baseline for demonstrating competence and progress.

Results

After the new facilities were completed, the utility began putting the necessary components of SBP in place. This included documenting the skills in each division, setting the baseline for where the employees stood regarding these skill sets, rewriting the job descriptions to allow for cross-functionality and career development, working closely with local unions, and getting buy-in from the city so that SBP could save the utility resources in the end. The SBP model removed all tenure-based compensation with the SBP methods, which was critical in gaining support from the mayor and the other administrative department heads.

Skills required for the step increases were predefined and agreed to by the department and the union. Matrices were created that included specific skills, education, and pay for each step at each career stage. For example, the learner stage includes two steps, the applier stage includes three steps, and the mentor stage includes three steps. Therefore, an employee has eight chances to move up in pay grade. Supervisors and the union provided the information within the matrices. Once this was agreed on, the city council approved the new classifications, and the employees were given an explanation of how the skills were laid out and how progression worked.

After collaborating with union representatives, division managers, and employees, all departments now have instituted some level of SBP. Some employees have received increases due to SBP, though to date, none has lost pay due to loss of skills.

Piloting SBP in the Customer Service Division

The newly reorganized customer service division was the first major division to experience SBP. The administration focused first on this division, as it was suffering from a high rate of employee turnover. Because this group was the first full division to go through the process of incorporating SBP into its daily operations, it has the most results available for discussion. The staff of 10 has experienced significant

improvements in operations since the pilot program began in 2003.

Decreased turnover. Since SBP was implemented, the division has retained more staff, with an average of 12 years of experience per employee. This decrease in turnover has helped improve knowledge retention, creating a more effective and efficient work force.

More empowered staff with increased initiative. All positions in the division are now customer service specialists. This has enabled much greater flexibility in staffing and handling the various tasks performed. For example, meter readers who were water distribution division employees were integrated with the customer service division, and this integration allows staff to add skills and increase their pay grade.

Increased job flexibility. Employees who once had extremely narrow job descriptions now can perform several functions within the division, from billing to meter reading to office oversight. Each employee now can move from job to job as needed to help coworkers and customers. This decreases downtime while increasing productivity, since multiple employees can take over tasks for one another.

Reduced unnecessary tasks and streamlined office procedures. New office procedures allowed previous tasks to be altered or eliminated, such as moving toward electronic recordkeeping and reducing duplicate forms. Since the staff has acquired numerous new skills, positions that had narrow job requirements and were vacant could be left open rather than filled, thereby allowing staff to complete more work with the same number of employees.

Measured performance indicators. The utility eliminated two probationary employees because they did not meet the expected skills and goals set forth in the SBP. There are 44 skill sets in the division. Of eight employees, four have accomplished 90% of the possible skills.

Other Groups Within the Utilities Department

The data systems group also underwent the SBP initiative. The group main-

tains servers, computers, plant automation upgrades, and peripheral equipment for both the utility and the city. There are 97 skill sets that personnel could acquire. To date, they have achieved 51% of the possible skills.

The wastewater treatment plant has accomplished a 27% reduction in staff since the reorganization plan was implemented. This has increased the responsibilities of the remaining staff and management, such as maintaining 29 lift stations and operating the compost facilities. There are 128 skill sets that 19 personnel at the plant could acquire. To date, they have attained 54% of the possible skills.

At the water treatment plant, a 29% percent reduction in personnel has been realized since the reorganization plan was implemented. To help overcome these losses and move toward fully implementing SBP, staffers are learning many new tasks. Several are ready for increases in pay grade based on their newly learned skills. To date, staff has learned 61% of the 82 possible skill sets.

The streamlined utility field services division has seen an 18% reduction in personnel. Before the merger, only 3% of the employees held dual water and sewer Class II licenses. Since the merger, the number has increased to 45%. There are 132 skill sets that 34 personnel could acquire. To date, they have achieved 51% of the possible skills.

Moving Forward

When the department completed its reorganizational efforts and instituted SBP in each division, it realized a significant portion of its comprehensive reorganization plan and helped employees adapt to changing economic and community needs. Since SBP was initiated, formerly rigid job descriptions that would not allow employees to perform tasks outside their grade are now open and allow those employees to learn new skills that will help the utility be leaner and more competitive and help those employees increase their pay grade.

However, the department must meet additional needs before it can consider the plan fulfilled. The salaried employees

(management) are not eligible for SBP at this time. Providing a means for compensating them based on skills is the next step to achieving a fully competitive work force. Demonstrating that SBP is a two-way street also is important to its integration into everyday use. This would involve removing pay if an employee loses skills. Through lack of regular use or practice, an employee may no longer be able to perform a previously learned skill.

As part of an ongoing effort, the department also is looking to further refine its SBP so it can be linked to the four perspectives of the balanced scorecard: customers, work processes, financial concerns, and employee learning and growth. Doing so would help the department go beyond SBP and move into the realm of performance-based pay.

The utilities department wanted to do everything it could to keep the skilled

people it already had, attract new people to the work force, and encourage those people to develop new skills while, in turn, helping the city build a lean, flexible, highly skilled work force. As part of that journey, the city looked to organizational strategies and performance management to help it find and keep the right people.

The department's reorganization efforts, combined with SBP, have helped the utilities department build a more independent and resourceful work force capable of managing the utility's service demands. This is all the more important in difficult economic times, when city budgets tighten and city employees reach retirement age. Each of these improvements would be significant on its own, but together, they show a utility that is now a truly competitive workplace.

The annual cost savings from the reorganization has been \$1.5 million.

Even with the full-cost application of SBP (setting aside 5% of wages that could be used for performance-based pay when it is established), the reorganizational savings is projected to be \$1.2 million annually.

The considerable effort, required improvements, and "change manager" consulting costs were well worth the resulting efficiency and organizational improvements that the Lima Utilities Department has experienced.

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systems, but today there are programs in 47 states. Utility assistance networks provide training and can shorten recovery time from disasters, according to experts and real-world examples. These networks have been activated in eight recent major disasters and numerous small instances, said Kevin Morley, security and preparedness program manager at the American Water Works Association (Denver), which developed WARN with EPA funding.

However, despite a decade of preparing for disaster, "there have been challenges getting wastewater folks to the table," Morley said.

Emergency Response Planning

More water utilities may be preparing for natural disasters because the Public Health Security and Bioterrorism Preparedness and Response Act of 2002 required all water utilities serving more than 3300 residents to submit to EPA vulnerability assessments — the initial step in preparing hazard mitigation plans. Wastewater utilities have not been tasked federally to do this; however, many states require wastewater utilities

to develop emergency response plans.

The city of Albany, Ore., embarked on hazard mitigation planning following the passage of the Disaster Mitigation Act of 2000. In 2003, the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) provided Albany with almost \$375,000 in disaster mitigation grant funds for planning, and the University of Oregon (Eugene) offered technical assistance.

It took 150 hours to develop the city's comprehensive 2005 hazard mitigation plan and 120 hours for personnel to prepare reports. The 2010 update required 120 hours of staff time to prepare and 30 hours for the city's committees to review. During that time, the steering committee met twice annually to review progress on action items for each hazard outlined in the vulnerability assessment and posted results on the city Web site.

The greatest challenge in developing mitigation plans is getting individuals to understand it's not just another plan that takes a lot of time to develop but then sits on the shelf, said Darrel Tedisch, emergency management specialist with the city of Albany.

Water System Failures

Catastrophic water service disruption caused by various disasters can lead to power outages at facilities, distribution systems that suffer broken pipes and malfunctioning pumps, and water contamination.

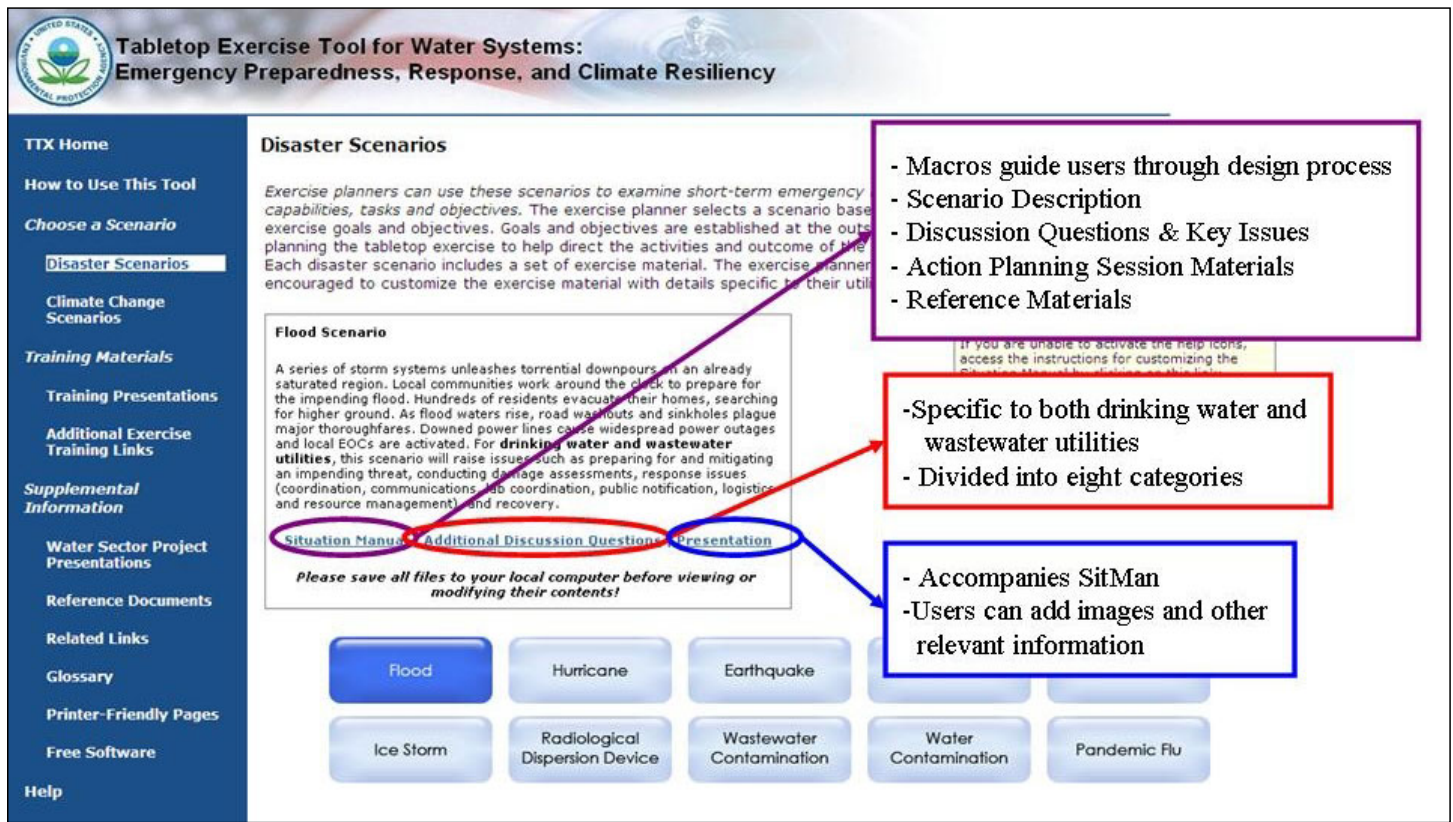
In Albany, due to its layout and hazard risks, water system vulnerability has been greatly reduced with the addition of a second water plant and numerous costly seismic updates. The city staff also advised that routine scheduled maintenance reduces water plant failures, and regular monitoring at water intake locations helps reduce risk of contamination problems.

Despite this preparation, the potential for widespread failure still exists, according to city staff. For example, in Albany, some areas have only one feeder source for water.

"Distribution is an area of concern," said Richard Weisman, acting team leader for the emergency response team in the Water Sector Division of the EPA Office of Water.

System failures would have a mild to severe impact on Albany residents,

Figure 1. Emergency Response Tabletop Exercises for Drinking Water and Wastewater Systems' Interface



businesses, and industrial plants. Firefighters and the city itself may need to tap reservoirs during major power failures, because no backup power is available at either of the treatment sites. Adding generators would eliminate the power-failure threat.

Albany's vulnerabilities also include source water concerns. While a joint water venture has provided a second source for water, water conveyed from the Santiam River is highly vulnerable to contamination from stormwater runoff. According to EPA, more frequent flooding due to climate change also could cause increased wastewater overflow discharges, and this should be a concern for wastewater utilities.

"The historic record could be unreliable for the future of overflows," said David Travers, director of EPA's Water Security Division.

Albany plans to conduct a vulnerability analysis of its wastewater collection system during the next 2 to 5 years.

Stress-Free Training

Once a system outlines its vulnerabilities and prepares to mitigate hazards, it also must train staff on how to respond to natural disasters to help improve a utility's ability to respond effectively and get affected systems back on-line quickly.

It's crucial to "practice, test, and improve emergency response planning procedures in a stress-free environment," Weisman said.

To aid utilities in training their staff, EPA recently updated its free guide, *Emergency Response Tabletop Exercises for Drinking Water and Wastewater Systems* (see Figure 1, above), which is available on CD. More than 3000 copies of this guide have been released. EPA also worked with the Federal Emergency Management Agency (FEMA) to modify the National Incident Management System (NIMS) and Incident Command System (ICS) courses and offers tailored classes to the water sector.

NIMS and ICS provide a consistent framework, Weisman said. If utilities

have a better understanding of ICS and NIMS, they're going to communicate in a clear and effective manner, he said.

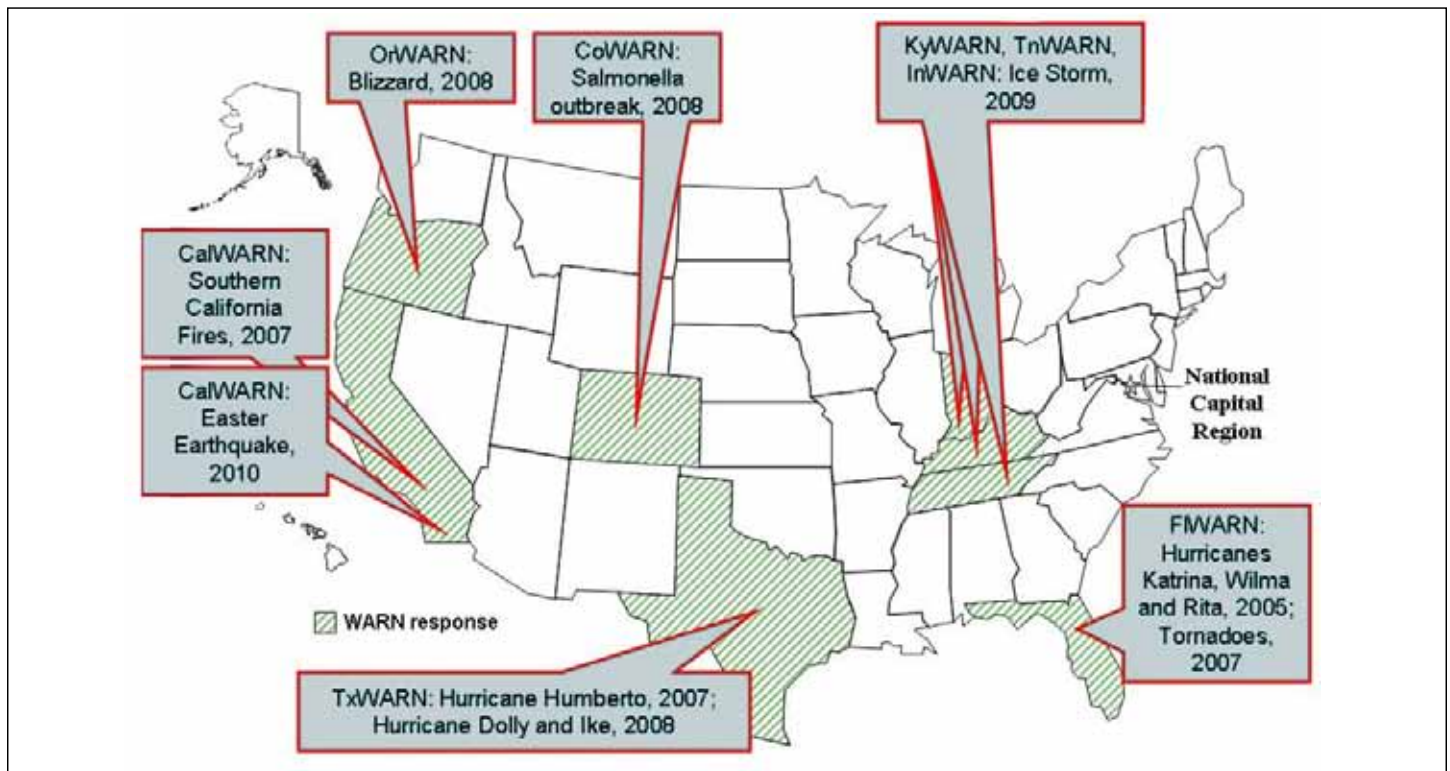
Travers added that during disasters, such as Midwest flooding in 2008, utilities "have relied on their NIMS/ICS training."

Neither FEMA nor EPA has compiled data on the number of water-sector utilities that have gone through the training. However, Travers said the agency has "trained close to 10,000 utilities" since the program began. In 2010, EPA trained at 320 facilities, reached more than 300 through WaterISAC (Washington, D.C.), and performed practice exercises with various state WARN programs. Several more utilities trained online through FEMA's Web site, Travers said.

Weisman also noted that becoming NIMS-certified makes a utility eligible for Department of Homeland Security funding. More than \$3 billion was available in 2009.

EPA's on-location training sessions last 1 to 2 days, depending on the number of courses offered. Staff must pass an online test to achieve certification.

Figure 2. Incidences in Which Water and Wastewater Agency Response Networks (WARNs) Were Activated



Utilities Helping Utilities

Prepared and well-trained utility staff may still need more hands when disaster strikes. This has led many to participate in WARN programs (see Figure 2, above).

Clarence Warnstaff, chairman of the Virginia WARN Committee and business development manager for water programs at Michael Baker Corp. (Moon Township, Pa.), said Virginia WARN’s 19 signers represent the state’s largest utilities. In the year since being established, “half the state is covered, but there is still a lot of work to do,” he said.

Travers said the benefits of the WARN program were illustrated in March 2008. After a substantial salmonella outbreak in Alamosa, Colo., — the state’s worst outbreak in 20 years — a number of Colorado WARN utilities got together to manage sampling, flushing, and disinfection of the afflicted water system.

Once called, partnering utilities had “boots on the ground in 24 hours,” Morley said.

Alamosa was not a participant in the network at the time and was not yet aware of the newer program, said Don Koskelin, Alamosa public works director

and assistant city manager.

In the 10 weeks following the Alamosa outbreak, CoWARN membership increased from 33 to 61 utilities, according to the American Water Works Association 2008 white paper “Economic Benefits of WARN.”

Without CoWARN, “things would have been much worse,” Koskelin said. “It was vital to addressing the situation we were faced with,” because, as a small utility, Alamosa does not have the personnel required to develop and execute an effective response plan for a situation on the order of the outbreak’s magnitude, he added.

Often, small utilities hesitate to sign mutual-aid agreements and participate in WARN programs because they think they can’t afford it, Morley said. “They could also be under the illusion they can’t help anybody,” he said.

However, Ken Pollock, superintendent of water treatment at Denver Water, a CoWARN member that responded to the Alamosa outbreak with staff, supplies, and financing, noted how important it is for large utilities to connect with smaller ones through the program.

At some point, if Denver water needed assistance, it could borrow people from smaller utilities who have experience, Pollock said. While Denver spent thousands of dollars on labor, staff accommodations, and use of equipment in responding, it asked Alamosa to reimburse only \$4600 for consumable supplies.

Many natural disasters causing large water system breaches were ultimately self-contained. “There were a lot of dress rehearsals,” Morley said. He agreed that larger water utilities at times will need to tap outside staff.

Many of the experts interviewed said smaller utilities perhaps stand to gain the most benefit. There is no cost to sign mutual-aid agreements — other than staff time to perform due diligence, there is no obligation to respond to requests, and training is free.

The onus is on small utilities to realize before disaster strikes that “these are the rules of the sandbox,” Morley said. “Ideally, you don’t want to be signing this on the hood of a truck,” he said.

—Andrea Fox, UE

Build a Successful Mentor Program for Your Utility

Any organization can benefit from a mentor program, but it must be planned carefully, and participants must fully understand their responsibilities

Stuart Karasik

In recent years, it has become more evident that utilities will face significant challenges recruiting new employees to replace retiring baby boomers. With increased technical requirements and a decreasing employment pool, developing employees from within to promote to newly vacant positions has become one reasonable solution.

In other industries, mentorship programs have increased the success of internal promotion processes. According to a Center for Creative Leadership (Greensboro, N.C.) survey, 77% of respondents from U.S. companies that implemented mentorship and formal coaching programs improved their retention and performance metrics. Research has shown that organizations with successful mentor programs have a higher overall value within their professional communities.

Many organizations have attempted to create formalized mentorship programs but failed due to a lack of understanding of what a mentorship program is and what is required to succeed. So an organization considering one of these programs has to be well prepared.

The greatest benefit of a successful mentorship program is that it helps the organization develop a viable pool of future job candidates and leaders. This “volunteer breeding ground” of mentors and protégés enables the organization to select people who are the most knowledgeable, skilled, and prepared for future vacancies, from all levels within the organization.

In the process of setting goals, mentors’ and protégés’ tangible job opportunities can be explored and future candidates identified and groomed. This process has the added benefit of increasing job satisfaction and retention. When highly motivated and qualified employees identify promotional pathways within

the organization and get assistance in following them, they tend to remain and get promoted rather than leave. This steady growth and commitment benefits everyone involved.

This process also enhances and formalizes internal professional networking opportunities for both new and senior employees. It also enables mentors to leave a legacy to the organization.

Mentorship programs also help effect positive change in corporate culture. Many utilities are seen as having formal, inflexible, unchanging cultures in which information is guarded and not shared. Employees must learn the hard way — by trial and error. Successful mentorship programs force corporate cultures to become more open and collegial.

Mentors and Protégés

Mentorship programs establish formal relationships in which one employee acquires practical knowledge and experience from another. The transfer may occur through formal and informal feedback, guidance, support, and counseling.

In reviewing the results of past mentor programs, one of the most common reasons for failure was the lack of understanding of the participants’ roles and responsibilities. Recruitment of potential participants cannot be just a broad request for volunteers.

The mentor. This person provides guided autonomy to another employee. He or she encourages the protégé to develop goals, ideas, and aspirations. He or she helps the protégé go outside his or her comfort zone in identifying professional issues, opportunities, and barriers. The mentor provides varied learning opportunities and gains valuable formal and informal teaching experience.

Employees become mentors to increase their own personal development and organizational commitment.

Mentors renew their confidence in their own professional knowledge, skills, and abilities. By helping others reach their professional goals, mentors understand that they can reach goals they have set for themselves.

Mentors must be willing to invest time in the process. A minimum of 4 to 6 hours per month must be set aside to prepare for meetings, meet with the protégé, and research and follow up on questions that the protégé identifies as critical to attaining goals.

Mentors must be open and accessible. They must freely and truthfully share personal and professional resources and experience.

They must be able to communicate verbally and nonverbally. They must be tolerant — they cannot get frustrated with their protégés’ “silly” questions or unrealistic goals. They have to encourage the exploration of new ideas and options. Mentors also should listen carefully; preaching and lecturing should not be the primary method of interaction. Most important, they must be willing to openly confront negative intentions and behaviors.

The protégé. This person may or may not be new to the organization. The protégé learns the benefits and challenges associated with being a productive employee in the organization. He or she learns how to trust the mentor–protégé relationship so that personal and professional accomplishments and failures can be discussed openly. He or she receives encouragement and support in a non-threatening, professional environment.

Protégés want to acquire knowledge and professional skills. They seek encouragement from other professionals with whom they may not normally interact. They also are interested in learning organizational and industry best practices.

Protégés must be able to set a few specific, measurable, attainable, realistic, and timely (SMART) goals and follow through on them. Protégés who are not able to work toward these goals, modify them, and attain them should not be included in the program.

Protégés must be able to express their feelings and discuss any dilemmas openly. They must be receptive to feedback and open to extensive self- and peer examination. Most important, they must have the courage to try new approaches that are critical to attaining their SMART goals.

Matching the pairs. A successful program must have structured guidelines for establishing mentor–protégé pairs. The first requirement is that mentors and protégés be peers, meaning that one should not be a direct supervisor of the other.

There may be a varying level of education between the two people. Levels and areas of experience should vary. The pair should be created based on each person's requested growth areas. This may frequently require the pair to be from different parts of the organization, such as a mentor from the operating division and a protégé from the support division.

The mentor and protégé may not have a lot in common, either professionally or personally, except for the strong desire to grow and learn by working closely with others. Both members must have the time and ability to respond positively to challenges that may arise, such as frustrations identifying or meeting goals, lack of direction or commitment, and lack of support by other supervisors.

Mentors and protégés must understand that they need to communicate early and often and that the mentoring relationship is based on mutually decided goals and actions. The mentor is not a job coach or tutor, and neither person is a clinical psychologist or counselor.

Sample Program Timeline

The following is a timeline from one mentorship model that has been successful in some professional organizations. This mentorship program was

designed to be approximately 5 months long, but planning activities add an additional 5 months. This timeline assumes that the program will begin in June.

Between November and January of the year preceding the program, the organization identifies a staff person who will serve as a mentorship coordinator and will assume responsibility for the program overall. This person then forms a steering committee of five to eight other staff members. The coordinator establishes steering committee guidelines, schedules, roles, and responsibilities.

Mentors and protégés must understand that they need to communicate early and often and that the mentoring relationship is based on mutually decided goals and actions.

The coordinator creates job descriptions for key positions that the steering committee must fill. These include lead mentors, who serve as a resource for three to five mentors. The lead mentors ensure that mentor–protégé pairs meet when they have arranged to meet and are on track with their activities. They also must be available to resolve any conflicts that arise. Other positions include a recruitment coordinator, events coordinator, and marketing coordinator (if desired).

The recruitment coordinator creates the mentorship orientation program. From February to April, the steering committee focuses on training committee members to present the program to employees.

The mentorship orientation program should be offered often and at rotating times and locations to be sure that all employees have an opportunity to attend. The steering committee tracks

participation in this program and follows up on employees' interest in becoming mentors or protégés. Employees with specific skills or potential may be recruited as either mentors or protégés. Steering committee members may contact prospective mentors and protégés individually, and past mentors and protégés may recommend others they feel would be appropriate for the program or would benefit from participation.

The events coordinator develops a matching preparation questionnaire and an interest questionnaire that are distributed at the orientation.

Next, the events coordinator begins planning for the matching event. He or she creates an agenda, focusing on

- an icebreaker;
- the matching; and
- a formal training session explaining the program's goals, the requirements of each participant, timelines, and the level of commitment that is required for success.

The matching event is held in mid-May. The protégés identify the top three mentors they would like to be matched with, and vice versa. At the event's conclusion, steering committee members collect these matching preferences and announce the mentor–protégé pairs. Then the mentors and protégés are encouraged to schedule their first meeting within 2 weeks. The marketing coordinator disseminates information about the program after the matching event.

The June through October period is the summer meeting time. During this timeframe, the pairs are encouraged to meet at least once per month to establish SMART goals and assess progress toward them.

The steering committee schedules two mandatory meetings for all mentors and protégés. These meetings facilitate roundtable networking among all mentors, protégés, and steering committee members. They afford the participants the opportunity to interact with others who may be of assistance with goal setting and achievement.

During these meetings, mentor–protégé pairs are asked to formally report to the group on goal progress, impediments,

and resources by giving 5-minute presentations.

October is graduation month. The graduation ceremony enables each member to celebrate individual successes and relate them to the program. The organization's executive manager is encouraged to attend and participate. Alumni and other resource staff also are invited. During the graduation, each pair addresses the group to share their feelings about the program, and lead mentors are encouraged to present their personal observations about the pair.

Finally, mentors and protégés are told that they will receive an in-depth program evaluation to return to the steering committee. Recommendations from these evaluations are incorporated into the next program cycle.

Lessons Learned

Incorporating suggestions from past

events can improve the quality of subsequent programs. Some suggestions for improvement relating to the program previously discussed have included

- formally identifying the role of the lead mentor in guiding the mentor-protégé pair,
- giving the steering committee the authority to ask mentors or protégés who are not meeting program goals to leave the program, and
- eliminating the group "report outs" of mentor-protégé progress at each group meeting.

Large and small organizations have different needs and constraints that must be considered before adopting a mentorship program. You must first review your organization's strategic business plan to see if a mentorship program would fit. If so, ensure complete alignment. Share program goals with executive management and pro-

vide details on the program's content, required commitments, and benefits — including improved job satisfaction, retention, career-path and succession planning, and retention planning.

Another lesson learned is that employees must be encouraged to be mentors to others outside of their work groups, just as protégés must ask for mentors outside of their work groups.

Planning is critical to the success of this program, and the matching event is the most important element. If the matching is not planned diligently, the program may not succeed.

A mentorship program is challenging yet fulfilling. All organizations are encouraged to develop one that meets their needs.

Stuart Karasik is training program manager in the City of San Diego Public Utilities Department.

Raising the Bar

DC Water plans upgrades and breaks ground on new facility to meet stricter nitrogen discharge standards

In an effort to reduce nitrogen runoff to the Chesapeake Bay and Potomac River, DC Water is about to initiate a monumental improvement plan. The utility plans to upgrade its massive Blue Plains Advanced Wastewater Treatment Facility in Washington, D.C., and break ground on a \$950 million enhanced nitrogen-removal facility.

The Blue Plains facility, which handles wastewater from D.C. and neighboring Montgomery and Prince George's counties in Maryland and Fairfax and Loudoun counties in Virginia, treats 1.4 million m³/d (370 mgd) of wastewater and has a peak wet weather capacity of 4.073 million m³/d (1.076 billion gal/d). According to a DC Water press release, the facility currently operates under one of the most stringent National Pollutant Discharge Elimination System permits in the United States. Under the existing permit, the facility has a discharge limit

of 3.9 million kg (8.5 million lb) of nitrogen annually. But DC Water and the U.S. Environmental Protection Agency have agreed that under the facility's new operating permit, the discharge limit will nearly be cut in half to 2.1 million kg (4.7 million lb) of nitrogen annually. DC Water must reduce its nitrogen discharge to these levels by 2015.

Leading the Charge

"These reductions are critical to protecting the health of the Chesapeake Bay as well as the Potomac River," said Shawn M. Garvin, U.S. Environmental Protection Agency Region 3 administrator, in a press release. "By significantly reducing nitrogen pollution from the Blue Plains plant, we're taking a major step on the road to restoring the Bay for future generations. DC Water, through its early actions to enhance treatment levels at this facility, is clearly a leader in the Bay restoration."

Though the timeline to achieve these levels may seem daunting, it is not impossible, said George S. Hawkins, general manager of DC Water. "We are intending to achieve this," he said. "We plan to get [the nitrogen removal facility] up and running by 2015."

DC Water continually has been a successful performer when it comes to meeting goals to restore the bay and Potomac River, Hawkins said. He pointed out that D.C. was the only jurisdiction in the Chesapeake Bay watershed (D.C., Virginia, West Virginia, Maryland, Delaware, Pennsylvania, and New York) that met its goals for 2010.

"We've met the existing goals for nitrogen," Hawkins said. "And we even exceeded it for an extended period of time."

But the utility still faces challenges in meeting its next set of objectives, Hawkins said. DC Water is anticipating an

Sarasota Bay Leads the Way in Nutrient Reductions

While efforts continue to restore Chesapeake Bay to its cleaner past, waterbodies like Sarasota Bay have made major strides during the past two decades in reducing nutrient levels. According to a study conducted by the Sarasota Bay Estuary Program (Sarasota, Fla.) — reported in *State of the Bay 2010: Celebrating Paradise, Staying the Course* — nitrogen runoff to Sarasota Bay has been reduced by 64% since 1988, and all Sarasota Bay waters now meet state water quality standards for nutrient pollution.

These improvements are due largely to controlling discharges from wastewater treatment plants, said Mark Alderson, director of the Sarasota Bay Estuary Program.

According to the *State of the Bay* report, wastewater discharge to the bay decreased by 95% between 1988 and 2010. The bay area had determined almost 20 years ago through modeling that wastewater treatment plants had been the largest contributors of nutrient pollution, Alderson said.

The effort to reduce the impact of wastewater discharges on the bay started in 1990, Alderson said, when the state passed legislation mandating that wastewater treatment plants discharging into the bay had to meet certain advanced treatment levels. He said that almost 4 years later, the Sarasota Bay area discovered that it was overpumping its aquifer.

“Suddenly, wastewater was seen as a commodity,” Alderson said. According to the report, “the recurrence of prolonged droughts in Southwest Florida has led to the emergence of reclaimed wastewater as a valuable alternative source for irrigation.”

So, wastewater treatment plants had more of an incentive to reclaim wastewater rather than to discharge it, Alderson said.

“All partners within the watershed have developed reclaimed water systems that have resulted in nearly 60% of wastewater now being reclaimed as alternative supply,” according to the report.

As of now, only two wastewater treatment plants — one operated by the City of Sarasota, the other by Siesta Key Utilities Authority (Sarasota) — still discharge to the bay, Alderson said. But they perform advanced wastewater treatment and only discharge intermittently.

Some water that cannot be reclaimed is injected using deep-well technology.

Alderson said Sarasota Bay area has encountered some problems with deep well-injection and recovery. Specifically, arsenic coagulation occurs when drawing water from the wells, but the estuary program and other stakeholders are working on that problem by either flushing the well lines or bringing up water from the wells in a different way, he said.

increase in population in the next decade, which could pose obstacles to proper wastewater treatment, he said.

Providing Solutions

To combat these challenges, the utility is building the new enhanced nitrogen-removal facility and making upgrades to the existing treatment plant.

“The biggest single challenge is high-flow events,” Hawkins explained.

Currently, the Blue Plains facility performs tertiary treatment on wastewater before it is discharged. “But during high-flow events, a portion of the flow is diverted,” he said. The diverted portion undergoes primary treatment and then is mixed with the tertiary effluent. Mixing primary effluent during high flows has made it almost impossible to reduce nitrogen discharge to the levels required under the new permit.

DC Water cannot add more secondary or tertiary treatment technology to its Blue Plains plant to treat all of its influent during high-flow events, because it lacks the land for the equipment. But it can store the water for later treatment, thanks to the Anacostia River Tunnel Project, Hawkins said.

According to the DC Water Web site, the tunnel system is designed to capture and provide storage for combined sewer overflows being discharged to the Anacostia River. The tunnel system consists of a series of three tunnels from the Blue Plains Advanced Wastewater Treatment Plant to the northeast boundary area in the vicinity of Brentwood Reservoir. Hawkins said the extra capacity in the tunnel will hold the overflow from high-flow events. The stored water will receive tertiary treatment later at Blue Plains.

The utility also will improve its nitrogen removal capability with the addition of an enhanced clarifier that will be put in the corner of the Blue Plains facility. “It will definitely improve the process,” Hawkins said. DC Water chose to go with the enhanced clarifier because of its footprint and performance.

The enhanced clarification process uses high-rate settling equipment that employs chemicals to remove 85% or more of the suspended solids in wastewater and has a footprint much smaller than primary clarifiers. Hawkins said that while primary clarifiers will treat 3785 L (1000 gal) in a certain time, this process will treat 37,850 L (10,000 gal) in that same time. “It’s like a turbo-charger,” he said.

Of course, all these upgrades come with a price.

Hawkins said the fundamental source of funding for these projects is going to be through rates, and DC Water will have to raise rates to do this. (DC Water’s customers are split into two categories: retail customers in D.C. and wholesale service areas in Maryland and Virginia.) He said some of the funding will come through federal grants, but that amount is expected to be minimal.

—LaShell Stratton-Childers, UE

How To Find and Keep Good People in a Bad Economy

Becoming the Bear Bryant of the utility industry

Rob McElroy

Those in the utility industry may never get a ticker-tape parade for their efforts or have statues erected in their honor. But they absolutely can build a winning team by taking the same approach used by top sports coaches like the University of Alabama's legendary Paul "Bear" Bryant.

Coach Bryant recruited only the very best people to work for him, in good times and bad, and played to win with them over the long haul. Applying his lessons to a utility can yield huge wins for the utility team.

Lesson No. 1: Quit Hiring and Start Recruiting

You will never see a "Help Wanted" sign posted for a winning sports team. These teams have recruiters scouting for new talent constantly. They understand that at any time, a key player could be recruited to another team, get injured, or just retire. Smart coaches do not wait until they have an opening to start looking. They go looking for great players, even when there are no open positions on the team. It is called "developing your bench."

Utility managers should do the same thing so they constantly have a list of good people they could recruit in short order should openings become available. Developing the bench of a utility operation should involve the following:

- **Always be looking.** Utilities should keep their eyes open and keep notes on great workers they run across day-to-day, no matter where these workers may be now.
- **Advertise even when there are no openings.** Utilities should let their



communities know they are always looking to identify great people for that "call back" file. They should accept applications even when they do not have an opening.

- **Talk to employees.** Employees can be some of the best recruiters. Let them know the importance of attracting great workers in good and bad times.
- **Have a great reputation.** Recruiting means getting someone to quit what they are doing to work for you instead. Utilities should ask themselves, "Does my utility have such a great reputation that people would be willing to leave their current employer to work for me?" If not, the utility needs to work to make this a reality.

Bad attitudes spread like wildfire, and one of the first things a good coach looks for is the right attitude toward the game and the team as a whole. A good coach never rushes the wrong person onto the team just to fill a gap.

In the utility industry, the only thing worse than an unfilled job opening is filling it with just a warm body to get through a short-term workload crunch. Do not allow supervisors to hire anyone who lacks the necessary skills to be successful for you in the long term. To guard against this happening, management must meet with supervisors and managers regularly and remind them to hire only the best workers, even if it takes longer than it would to hire the next "not-so-objectionable" person who walks in off the

street. Insist on holding out for only the very best.

Lesson No. 2: Teach the Player How To Be a Coach

Playing on a sports team for years does not automatically qualify you to coach later. Watching someone else do something does not make you an expert in how to do it. For example, if a child watches his or her parents drive for 16 years, does that qualify him or her for a driver's license?

To become a great coach, an athlete must be trained. Likewise, train every supervisor and manager in proper interviewing techniques. Do not assume that managers and supervisors know how to interview job candidates effectively just because they have been interviewed themselves.

Remember, the best workers do not want to work for lousy managers. When they see an unprepared and mediocre interviewer, it makes them shy away from wanting to work for that manager. Let job candidates experience only great interviewers. It is one of the most important tasks a manager does.

Lesson No. 3: Great Players Welcome a Tough Tryout

To a great athlete, a brutally tough tryout is a welcome sight because it quickly and effectively weeds out mediocre players. The best players are anxious to show off their superior skills.

Likewise, the very best utility workers will not be afraid of a tough interview. In fact, they welcome it because it makes it easier for them to distinguish themselves from average applicants. Interviewers should be trained to ask tough, probing questions and dig until they get straight answers to all of the questions from the job candidate.

Lesson No. 4: Tailor-Fit Jobs to the Candidate

Does a good coach only look for a player who will fit the jersey the team already has? Of course not! A coach will fit the jersey to the player. A football coach looking for a good passer may come across a phenomenal runner.

When that happens, a good coach will change the offense to match the new player's strength.

Job descriptions are similar. A utility may find someone who fits a job description perfectly. But more likely, they will have to alter the job description slightly to match the abilities of the new hire.

Job descriptions are not sacred. Be open to minor alterations. Be open to including extra strengths in the selected candidate or de-emphasizing inconsequential weaknesses if the total package still looks good.

Lesson No. 5: Tell Great Players You Want Them on Your Team

When a team is trying to get a great player to sign, the coach always personally makes the offer. There is something incredibly powerful about the statement, "I want you to join my team." It makes it hard to say no.

When making offers to job candidates, hiring managers should remember this lesson. The hiring manager has interviewed the candidates and formed an opinion about them. He or she has a vested interest in picking just the right person to become a long-term, stable, and successful part of the team.

Why then would the hiring manager sit out on making the job offer to the candidate of choice? The chosen candidate deserves to hear the words, "I want you" from the person to whom he or she will be reporting.

Lesson No. 6: Make Complete Offers

A coach trying to recruit a great player would never say, "Would you like to take the job of running back for a salary of [fill in blank]?"

Instead, a good coach lays out every powerful but intangible item that goes along with the offer. Sure, the subject of money comes up, but it does not rule the conversation, and money is certainly not the opening bid.

When job offers are thought about in the utility industry, the focus too often is on money. An effective offer should focus on four key areas instead:

- **Total investment.** This is the full compensation package, including pay, vacation, company-paid health benefits, sick leave, and other benefits. A utility manager might say, "Our company is willing to spend more than \$55,000 per year in salary and benefit costs to have you come work for us. It can be broken down this way. ..."
- **Personal growth.** Explain what the company will invest in their personal development. For example, "We're going to keep investing time and money in your professional development every year you work with us, because it is good for both you and the company."
- **Work life.** What's the mood or vibe of the utility? What kind of events do employees at the utility participate in at work and after hours? Softball? Bowling? Company outings? "Our company is tight-knit, like a family," a utility manager might say. "If you like working on a team where everyone pulls together to win, you're going to love working for us."
- **Corporate future.** Are company prospects good? Is the utility in a stable business environment, or are they doing layoffs? Is the utility offering a career or just a job? "We've never had a layoff here, and we don't want to ever get so overstaffed that one is necessary," the utility manager should explain. "Sound business decisions by our top management and board of directors have positioned us well to ride out this downturn in the economy." What prospect does not want to hear that?

Lesson No. 7: Welcome New Employees Aboard

Smart coaches never hire players and let them figure out on their own what they should be doing. They carefully manage the transition of a new player to a productive team member. Often, that means assigning the new player a roommate who can help acclimate him or her to the team and what is expected. It can involve introductions to all of the coaching staff, trainers, and team.

In the utility industry, it is equally criti-

cal to transition from finding to keeping great employees. The orientation process helps introduce a new hire to the company family. Match new hires to staff that can look after them during those first few critical days, weeks, and months. Help them fit in as soon as possible. Never leave it to chance.

Lesson No. 8: Play to Your Strengths

One of the greatest quarterbacks of all time was Joe Namath. Namath made a name for himself as one of the best passing quarterbacks in the game, despite having knee problems throughout his career. Those problems did not stop him from achieving greatness, because he and his coaches focused on putting his strengths to work in every game. Namath would have been a failure if his coaches focused on fixing his weaknesses instead. Similarly, a utility should focus primarily on the strengths its employee brings to the table. The utility will get much further turning his or her natural talents into star quality than trying to fix every weakness.

When workers' natural strengths match their job descriptions, success will come easily and will encourage a great worker to remain committed to a utility. By playing to an employee's strengths, a utility also can hold on to great people and retain the knowledge base that is so vital to the utility industry's effectiveness.

Lesson No. 9: Develop Great Players Into All-Stars

Once new players come on board, the work is far from done. Specialty coaches and trainers carefully evaluate them in minute detail. They decide on a training regimen that will hone their skills further. Coaches review their stats and talk with them regularly so they understand where they are improving and where more effort is required. They ensure that their players' overall performance is improving in measurable ways.

By developing the individual members of the team, the team also becomes better. A utility must do the same thing

with its workers. A utility cannot hire people and expect improvement by meeting with them annually and showing them a list of things they did wrong in the previous 12 months. Conversation must be ongoing so there is measurable improvement all year long that both the manager and the worker are fully aware of and are monitoring. Constant feedback is key.

The annual review process should do little more than document a conversation that is occurring all year long. There should never be a surprise in someone's annual evaluation. If there is, managers are not doing their jobs properly.

Lesson No. 10: There Is No Substitute for Winning

Bear Bryant's winning record proved he was one of the best coaches in the business. His teams generated pride in every player and respect from every competitor. The very best players always want to play for the best team and the best coach. That gave Coach Bryant an edge in recruiting year after year.

In business, the same occurs. The best people will not flock to a losing business. Businesses must demonstrate they have a winning game plan to attract the best workers. They have proof of their greatness. There are many environmental awards and operational excellence awards that utilities can compete for, as well as other award programs outside the utility industry.

Winning moments are as important for utility workers as they are for football players. Long-term recruiting will benefit from public "wins" that will attract the very best workers over time.

For example, both the *Wall Street Journal* and *Inc.* magazine have named Daphne (Ala.) Utilities one of the "Top Small Company Workplaces in America." These are great honors for any business. But it means even more to the utility and the author, since, traditionally, utilities are not known for their great workplace conditions, customer focus, or business-like practices.

In fact, Daphne Utilities is the only utility company ever to make the list in

the history of the program. While it made us proud to receive this recognition, we are more excited by the prospect of great workers gravitating to us over time because of this honor. We believe this honor will yield recruiting advantages for years to come. It instills pride in our current workers, as well as in the community we serve.

Lesson No. 11: Play To Win Over The Long Haul

The week after winning the national championship, Coach Bryant and his staff were back at work looking ahead to the next game they would play months down the road. After all, there was much to do:

- Planning for players who would be graduating soon.
- Recruiting great talent for the future.
- Signing talented players before others had a chance to sign them.
- Incorporating new players into the team.
- Strength training for every person on the team.
- Training the coaching staff on how to do their jobs more effectively.
- Tending to the needs and career aspirations of the team's players and coaches.
- Evaluating every player's performance.
- Deciding who was delivering performance worthy of a place on the team.
- Deciding pay raises for staff members to reward their performance.

All these tasks have parallels in the utility industry. If a utility wants to remain strong, effective at what it does, and capable of meeting the challenges of tomorrow, it will follow this example and look to build a solid, winning team.

Performance was a good enough measure for Coach Bear Bryant. It is probably good enough for utilities as well. Utilities applying these simple suggestions stand a good chance that they could be on their way to a national championship.

Rob McElroy is general manager of *Daphne (Ala.) Utilities*.

in brief

U.S. EPA Seeks New Timetable for Finalizing Boiler and Incinerator Regulations

In a motion filed Dec. 7 in the United States District Court of the District of Columbia, the U.S. Environmental Protection Agency (EPA) is seeking an extension in the current court-ordered schedule for issuing rules under Sec. 129 of the Clean Air Act designed to reduce harmful air emissions from boilers and solid waste incinerators.

Read a copy of the motion at www.epa.gov/airquality/combustion/docs/20101207motion.pdf.

According to the EPA, this additional time is needed for the agency to repropose the maximum achievable control technology regulations based on a full assessment of information received since the rules were put forward. EPA is under a court order to issue final rules by Jan. 16. The agency is seeking to extend the schedule to finalize the boiler emission rules by April 2012 and the sewage sludge incinerators by July 15, 2011.

In order to meet a court-ordered timeline of Jan. 16, the agency proposed standards in April 2010. While EPA requested and received some information from industry before the proposal, the comments EPA received following the proposal shed new light on a number of key areas, including the scope and coverage of the rules and the way to categorize the various boiler types. After reviewing the data and the more than 4800 public comments including more than 80 comments for the sewage sludge incinerators proposal, EPA now believes it is appropriate to issue a revised proposal that reflects the new data and allows for additional public comments.

Read the comments the Water Environment Federation (Alexandria, Va.) submitted at www.wef.org/WEF_MACT_SSI_CommentLetter_112910.

U.S. EPA Releases List of Drinking Water Contaminant Candidates for Regulation

At the Dec. 8 meeting of the National Drinking Water Advisory Council, U.S. Environmental Protection Agency (EPA) officials said the agency had developed a list of nearly 20 groups of water constituents that would be considered for regulation, with three of these groups considered for regulation sooner than others. The three groups are carcinogenic volatile organic compounds, nitrosamines, and disinfection byproducts from the chlorination of drinking water systems.

Of the carcinogenic volatile organic compounds, eight are currently regulated and eight are unregulated. According to the council, regulations for the carcinogenic group are likely to build on what EPA has plans to do with two regulated compounds in that category: trichloroethylene and tetrachloroethylene.

Of the nitrosamines, five are being considered as candidates for regulation. Other nitrosamines will remain unregulated but will be monitored under EPA's second Unregulated Contaminant Monitoring Rule.

U.S. EPA Seeks Public Comments On Petition To Ban Triclosan

The U.S. Environmental Protection Agency announced in the Dec. 8 *Federal Register* that it is seeking public comments on a petition submitted by Beyond Pesticides (Washington, D.C.) and Food & Water Watch (Washington, D.C.) to regulate triclosan.

Read the announcement at <http://edocket.access.gpo.gov/2010/pdf/2010-30850.pdf>.

Triclosan is an antimicrobial substance used in pesticide products, hand sanitizers, toothpaste, and other consumer products. The petitioners claim that the "pervasive and widespread use" of triclosan poses significant risks to human health and the environment. In addition, the petitioners claim that the agency failed to address the impacts

posed by triclosan degradation products on human health and the environment, failed to conduct separate assessments for triclosan residues in contaminated drinking water and food, and is complacent in seriously addressing concerns related to antibacterial resistance and endocrine disruption.

Comments must be received by Feb. 7, 2011.

U.S. EPA Announces 2010 Enforcement and Compliance Results

The U.S. Environmental Protection Agency (EPA) announced Dec. 6 the release of its annual enforcement and compliance results. In fiscal year 2010, EPA took enforcement and compliance actions that required polluters to pay more than \$110 million in civil penalties and commit to spend an estimated \$12 billion on pollution controls, cleanup, and environmental projects that benefit communities.

According to EPA, these actions when completed will reduce pollution by more than 635 million kg (1.4 billion lb) and protect businesses that comply with regulations by holding noncompliant businesses accountable when environmental laws are violated. EPA's civil enforcement actions for violations of the Clean Air Act alone will account for the reduction of an estimated 181 million kg/yr (400 million lb/yr) of air pollution. These reductions will represent between \$6.2 billion and \$15 billion annually in avoided health care costs. As a result of water cases concluded in fiscal year 2010, EPA is ensuring that an estimated 454 million kg/yr (1 billion lb/yr) of water pollution will be reduced, eliminated, or properly managed and investments in pollution control and environmental improvement projects from parties worth approximately \$8 billion will be made. EPA's civil enforcement actions also led to commitments to treat, minimize, or properly dispose of more than an estimated 5.35 billion kg (11.8 billion lb) of hazardous waste.

Read more about the annual enforcement and compliance results at www.epa.gov/compliance/resources/reports/endofyear/eoy2010/index.html.

U.S. EPA Revises Stormwater Waste Load Allocations for NPDES and TMDL Framework

On Nov. 12, the U.S. Environmental Protection Agency's (EPA) Office of Wastewater Management and Office of Wetlands, Oceans, and Watersheds released a memo on stormwater waste load allocations in the National Pollutant Discharge Elimination System and total maximum daily load framework.

Read a copy of the memo at www.epa.gov/npdes/pubs/establishingtmdlwla_revision.pdf.

This memo is an update from the 2002 memo on the same topic. It is directed to EPA regional offices and provides an updated view of how stormwater discharges should be permitted and accounted for in the regulatory environment. The policy changes that are suggested by EPA headquarters in the memo focus on

- conditional allowances for numeric water quality based effluent limitations associated with stormwater discharges;
- disaggregating stormwater sources in the total maximum daily load setting;
- the use of surrogates, such as runoff volume or flow, for pollutants; and
- the potential expansion of residual authorities granted to regulating agencies on stormwater discharges.

While this updated memo does not act as official guidance or policy from EPA, it does provide insight into the continued march toward enhanced regulation of stormwater discharges in EPA's view.

The Water Environment Federation's (Alexandria, Va.) Government Affairs Committee Stormwater Work Group has reviewed this document and is preparing to submit comments.

Aspen Institute Issues Report Showcasing U.S. EPA's Achievements During Past 40 Years

On Nov. 29, the Aspen Institute (Washington, D.C.), an international nonprofit dedicated to fostering enlightened leadership and openminded dialogue, unveiled a report listing 10 ways the U.S. Environmental Protection Agency (EPA) has strengthened the United States during the past 40 years. The unveiling of the list kicked off a week of events to commemorate the 40th anniversary of EPA.

The list was compiled by a group of more than 20 environmental leaders, including several former EPA officials. The group included people with backgrounds in government, nonprofit organizations, and private sector companies that interact with EPA. The group was brought together through the Aspen Institute's Energy and Environment Program.

In the report, several initiatives in EPA's 40-year history were highlighted, such as

- removing lead from gasoline and from the air,
- removing acid from rain,
- clearing secondhand smoke,
- implementing vehicle efficiency and emissions control,
- controlling toxic substances,
- banning widespread use of dichlorodiphenyltrichloroethane,
- rethinking of waste as material,
- providing a clean environment for all/ environmental justice,
- ensuring cleaner water, and
- passing the "Community Right to Know" Act.

Read the full report at www.aspeninstitute.org/sites/default/files/content/docs/events/EPA_40_Brochure.pdf.

U.S. EPA and National Academy of Sciences Announce Groundbreaking National Research Council Study

At an event held on Dec. 1 recognizing the U.S. Environmental Protection Agency's (EPA) 40th anni-

versary, EPA Administrator Lisa P. Jackson and President Ralph Cicerone of the National Academy of Sciences (Washington, D.C.) announced that EPA has commissioned a National Research Council (NRC) study that will help the agency build upon its expertise in protecting human health and the environment. EPA has asked the NRC to develop the Green Book, an effort to incorporate sustainability into the way the agency approaches environmental protection. This tool will assist EPA in its work to find links and coordinate among its various functions, including air, water, and land protection.

According to EPA, the announcement signifies an important step toward building a society that can meet its needs while preserving the ability of future generations to meet their needs. The effort parallels the 1983 Red Book, published by NRC in an effort to systematize risk assessment and risk management into EPA's work. Then-EPA Administrator William D. Ruckelshaus delivered a landmark speech to the National Academies, calling for the development of the risk framework while emphasizing its critical role in improving the agency's effectiveness.

According to an EPA press release, historically, environmental programs have focused largely on reducing air pollution and water pollution, and how to identify and monitor chemical and environmental risks to human health and the environment. Today's challenges depend on the sustainable use of energy, water, materials, and land; and require solutions that stress the links among energy use, water use, environmental protection, human health, quality of life, and the global economy. The Green Book will provide recommendations to EPA that will support the agency's shift toward viewing this complex set of modern-day environmental challenges through a sustainability lens.

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