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# Profits in People: Training Helps Plants Fill Gaps

**S** *purred by European takeovers and other forms of privatization stressing efficiency and knowledge, U.S. water/wastewater companies are expanding training programs to fill gaps caused by plant closings, cost-cutting and downsizing. Whether they grow their training programs in-house, use outside vendors or a combination of the two, executives say they are able to do a better job filling skill shortages that ensure safer and more efficient plants and that comply with increasingly stringent government regulation.*

Municipalities across the United States are having employees trained. "We're constantly training," said Chris Heelis, safety officer, Littleton Englewood Wastewater Treatment Plant in Colorado, whose agency has hired National Technology Transfer, Inc. (NTT), an Englewood (Colo.)-based training organization that conducts courses onsite.

Out in the East, Massachusetts Water Resource Authority has enrolled most employees in 26 different training courses to combat many early retirements.

In addition, there appears to be no end in sight for this training wave. Charles Hernandez of the City of Flagstaff, Ariz., Municipal Wastewater Treatment Plant, reports that management already has approved a substantial training budget for fiscal 2003.

### Training to Increase Safety

Safety continues to be a major driver of training programs, according to John



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Kolak, division manager for Compliance & Business Systems at NTT. "Skills that create a safe workplace are the same skills that create an efficient, reliable, smoothly running plant," he said.

"Our industry is hazardous, so we safety train people," said Heelis, himself a certified CPR instructor.

Flagstaff's Hernandez, and George H. Denhard, manager of technical training at Massachusetts Water Resource Authority (MWRA), stress safety by offering confined space entry and lockout-tagout training. In addition, MWRA offers air quality and incident command systems courses. All new and current employees are required to participate in training. Denhard promotes employee-to-employee safety by training all employees on diversity, violence and worker protection. Safety training, he states, is all about preventing injuries and avoiding liability problems.

While safety training can prevent accidents, plant breakdowns and lapses in government compliance, plant operators also stress specific skill training in technology, government compliance, prevention of outages and downtime and coping with heavy service demand. They also are offering more cross-training to help fill the gaps caused by early retirement, hiring freezes and cost-cutting.

### Enhancing Technical Skills

"We're getting new technology equipment from the U.K. for tertiary nitrogen removal, and now we need to get the

training on operating it," said Heelis of Littleton-Englewood. Daniel Martin, engineering manager, Onondaga County Water Authority, Syracuse, N.Y., took a programmable logic controller course and is calling for radio communications and fiber optics training at his facility.

MWRA offers a leadership training program, supervisory skills for technical professionals to senior and middle managers. Flagstaff's Hernandez says his facility has provided skills training to him and an electrician colleague on pump maintenance, electrical and programmable controllers. As the 20-year-old Flagstaff facility upgrades its monitoring and level checking technology, employees will get training in basic electronics, calibrating instrumentation, computer, electrical, pump maintenance, oxidation ditches and lagoon treatment.

When MWRA needed electricians, plumbers and HVAC people, they developed an in-house apprenticeship program incorporating training. It included courses on pumps, pumping, chemical feeding, chemical safe practices, valves and electricity. MWRA offers an in-house computer and outsourced communications training programs for clerical and support staff. Since most required training tends to be technical and varied, MWRA relies on outsourcing providers for expertise.

According to Denhard, a plant opening created a need for licensing and certifications. He developed an apprenticeship/licensing/certification program and received state and union approval. Therefore, he was able to adjust the training to specific local needs. Flagstaff's Hernandez also recognizes a need to make training more attuned to plant needs. Currently, training comes from Northern Arizona University, so it is not keyed to his specific site.

### Meeting Requirements

Regulatory compliance also is stimulating training. OSHA regulations govern water/wastewater plants and mandate training and engineering controls of their operation. While regulations are generic, interpretations of the regulations also must be considered when determining compliance with OSHA regulations.

There seems to be a convergence between trainers' goals and governmental regulatory agencies' goals, as both seek to enhance workplace safety and employee operating knowledge. Thus, training managers are focusing on achieving regulatory compliance.

"Compliance often requires annual, effective refresher training," Kolak said. Employees must demonstrate hands-on proficiency to accomplish a task safely. This is why water/wastewater training is hands-on. Regulations are a force behind increasing training, according to Martin of Onondaga County Water. Employees and their employers are recognized for additional training.

Since some of the basic regulations are more than seven years old, the industry has had time to become familiar with their requirements, train current employees and enter a phase of refresher training for all but new hires. OSHA regulations require that management and employees identify hazards and are familiar with equipment and systems to protect themselves from injury and illness. Regulations mandate training assuring safety in the workplace and retraining for process changes and new tasks.

The goal of Heelis is to meet all OSHA requirements—particularly the OSHA Lockout/Tagout standard, 29 CFR 1910.147. While OSHA does not regulate the MWRA facilities, Denhard said his organization has adopted OSHA standards.

OSHA is not the only regulatory game in town. Trainees at MWRA must meet state-mandated requirements for certification or licensing in drinking water/wastewater treatment, hazardous waste site work, harbor chemicals off-loading and electrical work. A state "right to know" law also requires informing employees about workplace hazards. The training program handles compliance with this law.

Colorado requirements make Heelis certify his operations staff. This is accomplished through training. Flagstaff's plant is governed by regulations of the Arizona Department of Environmental Quality. EPA training also is important. Heelis is proud of his plant's EPA awards. In addition, many local district attorneys are leveling criminal penalties against those

## EMPLOYEE OPTIMIZATION

organizations with egregious violations of health and safety standards.

### Training as Prevention

The worst thing that can happen at a water/wastewater plant is to stop running. "Training helps prevent outages and downtime," Kolak said. "It combats outages resulting from human error and helps restore service faster." Knowledge of better ways to do things safely, he believes, provides employees with additional tools and more creative ways to use them to keep service up and running.

Martin and Hernandez say increased training helps water/wastewater facilities handle problems caused by outages and downtime. Martin believes in training people at the site where a breakdown might occur.

"The closer you are to what needs fixing," Martin said, "the easier it is to fix."

Hernandez believes training will help his people avoid or shorten service interruptions by troubleshooting and recognizing potential problems.

According to Heelis, Littleton has an emergency response plan as well as back-up equipment for power outages and other catastrophic incidents. All employees are tested under that plan so the plant is prepared. MWRA is instituting an in-house reliability-centered maintenance-training program for group leaders and maintenance people. Measurable increases in productivity and reliability are expected from the preventive/predictive maintenance-based program.

### Cross Training

In a water/wastewater industry characterized by resizing, downsizing, layoffs and turnover, cross training is broadly used to help do more with less. Training across a skill line (e.g., teaching a mechanic to do electrical work) can help water/wastewater facilities become more efficient, but cross training is a double-edged sword. It can promote safety or compromise it. Assigning work that is too complex for a cross-trained person to complete safely is a danger. The challenge is to know when a cross-trained person can safely perform a task and when a specialist must be used.

Denhard of MWRA will soon learn what doing more with less means. The state has offered early retirement to 150, or 10 percent, of the Authority's 1,500 employees. He expects 130 or more retirements by operators, chief operators, maintenance, electricians, area supervisors, white collar and others.

Kolak sees value in cross training operations and maintenance people and a way for the MWRA to survive with fewer workers. MWRA management reached an accord with the unions for a productivity improvement program allowing operator-maintenance cross training. Operators attend valve, lubrication and pump classes. Maintenance people take introduction to water/wastewater systems and disinfection classes. Flagstaff's Hernandez sees operations as the most important function where cross training is needed. Functions include temperature and sludge depth checks, taking reads, changing chlorine and SO<sub>2</sub> tanks and doing light maintenance such as greasing and oiling.

Onondaga County Water's Martin and Flagstaff's Hernandez use cross training to develop a broadly skilled worker. Hernandez's facility is developing skill-based pay to offset privatization, reemphasizing cross training. At Littleton Englewood all employees are cross trained on safety, specific skills, wastewater treatment, chemistry, administration, lab and facility goals to gain knowledge needed to maintain an award-winning record.

### Training: A Management Tool

The water/wastewater industry has turned to training as a solution to a skilled personnel crisis created by privatization and ownership changes. Training managers seek a safer, more regulation-compliant industry with facilities running smoothly and reliably. Outsourcing is a strategy for organizations that do not want huge in-house training staffs. Tomorrow's successful and profitable water/wastewater facilities will be those that learn to use the new investment in training most effectively to meet the challenges of change.

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