

Grumbles on Water



WATER & CHEMICAL SECURITY

By Benjamin H. Grumbles

*Protecting and improving
critical infrastructure
in today's world*

For decades, drinking water and wastewater utilities have been protecting human health and the environment. In a post-9/11, post-Katrina world, agencies and communities not only must protect critical infrastructure but also improve the sustainability and resiliency of those systems like never before.

The U.S. Environmental Protection Agency (EPA) has been making water security a national priority by working with its partners across the nation. In some cases, water utilities have addressed security concerns in response to statutory or regulatory requirements. Many utilities have voluntarily implemented critical infrastructure protection activities to better protect their customers' public health and sustain economic viability from both intentional and naturally occurring events; however, concern is growing over chemical storage and security.

Recent measures

In 2006, Congress passed the Chemical Security Act to ensure that facilities using chemicals address potential threats posed by a terrorist attack.

Yet drinking water and wastewater utilities were exempt from the requirements of the law. Concerns have been raised about this exemption by Secretary Michael Chertoff of the Department of Homeland Security (DHS) and members of Congress because they do not believe that existing chemical regulation authorities will offer the same level of protection as the Chemical Security Act. Some members of Congress and advocacy groups have suggested that all water utilities that use chlorine gas as a disinfectant to inactivate pathogens, maintain water quality and protect public health should consider the use of alternate disinfectants.

The Bioterrorism Act of 2002 required that all community water systems serving more than 3,300 people complete a vulnerability assessment. As part of that assessment, systems were required to address the use, storage and handling of chemicals. Systems also had to update or develop emergency response plans to address vulnerabilities identified during the assessment.

While there are no statutory requirements related to security at wastewater plants, a 2006 report by the Government Accountability Office reported that most of the surveyed wastewater utilities serving more than 100,000 people had completed or were in the process of completing a vulnerability or security assessment. The report also noted that about half of the respondents had taken steps to transition from the use of gaseous chlorine to alternatives or, where gaseous chlorine was still used, had taken steps to better secure their chlorine storage sites.

In addition to the EPA, the Occupational Safety and Health Administration, the Department of Transportation and the DHS all play a role in regulating the production, transportation and use of chlorine gas.

When Congress passed the Clean Air Act Amendments of 1990, it required the EPA to publish regulations for chemical accident prevention at facilities that use extremely hazardous substances, including gaseous chlorine. Utilities with processes containing more than 2,500 lb of chlorine gas are required to develop a risk management program that includes a hazard assessment, prevention program and emergency response program. While other chemical substances are used in the water sector, chlorine gas accounts for about 99% of chemicals stored at wastewater plants.

Recognizing that every form of disinfection has its own advantages and disadvantages, the EPA understands that each utility needs to balance the public health and environmental protection benefits of gaseous chlorine against security risks. When gaseous chlorine is used, utilities should take extra steps to protect employees and communities against accidents and incidents.

Steps to prevention

For the past six years, the EPA has been working closely with states and water utilities to provide information, training and tools on security-related matters to help them prevent, detect, respond to and recover from adverse events. Here are some examples of recent activities and tools regarding chemical storage and security:

- The EPA has provided funds to national associations to develop water sector risk assessment tools (e.g., vulnerability self-assessment tool, risk assessment methodology and security and environmental management system) to address chemical storage vulnerabilities for water and wastewater utilities.
- The EPA has worked with DHS and the National Association of Clean Water Agencies to create a chlorine gas decision tool for water and wastewater utilities that provides a means of evaluating alternatives to chlorine gas disinfection.
- The EPA has created a series of security product guides with recommendations on physical security, such as chemical storage, the use of barriers, placement and security of above-ground equipment, selection of fencing materials and the use of visual surveillance monitoring systems.
- The EPA has supported development of voluntary physical security standards for water sector utilities. The Water Environment Federation, the American Society of Civil Engineers and the American Water Works Association together developed these standards, which include chemical storage.

The EPA commends utilities for their efforts to date but believes that more should be done, particularly for chemical security at water and wastewater plants. Since we all rely on clean and safe water, our mutual goal is to better protect water sector infrastructure and safeguard public health and the environment while maintaining economic viability. Properly managing and securing chemical storage sites assists in achieving that goal and must be a prime area of focus for utility managers across the country. **WWD**

Benjamin H. Grumbles is assistant administrator for the U.S. EPA. He can be reached at 202/564-7000 or by e-mail at grumbles.benjamin@epa.gov.

For more information, write in 1103 on this issue's Reader Service Card.

LEARN MORE

For additional articles on this topic, visit:
www.WWDmag.com/lm.cfm/wd090703