

TESTIMONY OF  
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FOR WATER  
U.S. ENVIRONMENTAL PROTECTION AGENCY  
BEFORE THE  
SUBCOMMITTEE ON ENVIRONMENT AND HAZARDOUS MATERIALS  
COMMITTEE ON ENERGY AND COMMERCE  
U.S. HOUSE OF REPRESENTATIVES

June 12, 2008

Introduction

Good morning, Madam Chairwoman and Members of the Subcommittee. I am Benjamin H. Grumbles, Assistant Administrator for Water at the United States Environmental Protection Agency. I welcome this opportunity to discuss EPA's role in water security and preparedness, our specific role in securing chemicals at drinking water treatment facilities, and our shared conclusion with the Department of Homeland Security that an important gap exists in the framework for regulating the security of chemicals at water and wastewater facilities in the U. S.

EPA has worked over the last several years to support the Water Sector in improving water security and preparedness and the sector has taken their charge seriously. EPA has been entrusted with important responsibilities for coordinating the protection of the Water Sector through Congressional authorization under the *Public Health Security and Bioterrorism Preparedness and Response Act of 2002* (the Bioterrorism Act), and through Presidential mandates under Homeland Security Presidential Directives (HSPD) 7, 9 and 10.

Promoting the security and preparedness of the Nation's water infrastructure is a major priority of the Agency in a post-9/11 and post-hurricane Katrina world. A loss of water service can seriously jeopardize the public health and economic vitality of a community. In working with the Water Sector we

have emphasized the need for prevention and detection measures to ensure that they can avoid incidents or quickly identify them if they occur. We have also emphasized the need to be prepared to respond to an incident and to recover quickly in order to protect public health and the local economy.

### **Implementation of Section 1433 of the Safe Drinking Water Act**

Under Section 1433 of the Safe Drinking Water Act (amended by the Bioterrorism Act of 2002), each community water system providing drinking water to more than 3,300 persons must conduct a vulnerability assessment, certify its completion, and submit a copy of the assessment to EPA according to a specified schedule. Each vulnerability assessment is required to include a review of the use, storage, or handling of chemicals, as well as a review of pipes and constructed conveyances, physical barriers, water collection, pretreatment, treatment, storage and distribution facilities, electronic, computer or other automated systems which are utilized by the public water system, and the operation and maintenance of such system. In addition, each system must prepare or revise an emergency response plan that incorporates the findings of the vulnerability assessments and certify to EPA within six months of completing a vulnerability assessment that the system has completed such a plan.

Since 2003, EPA has received 100% of the vulnerability assessments and emergency response plan certifications from large and medium community water systems. Over 99% of small community water systems have submitted their vulnerability assessments and emergency response plan certifications.

### **Implementation of Sections 1434 & 1435 of the Safe Drinking Water Act**

Our focus on prevention, detection, response, and recovery is largely guided by the language in Sections 1434 and 1435 of the Act. Section 1434 of the Act stipulates that EPA shall work collaboratively to review methods to prevent, detect, and respond to the intentional contamination of water systems,

including a review of equipment, early warning notification systems, awareness programs, distribution systems, treatment technologies and biomedical research. Section 1435 requires the review of methods by which the water system and all its parts could be intentionally disrupted or rendered ineffective or unsafe, including methods to interrupt physical infrastructure, computer infrastructure, and the treatment process.

The Safe Drinking Water Act places a premium on ensuring that research is carried out to support our security efforts. To support efforts required by the Act, EPA developed the *Water Security Research and Technical Support Action Plan* which responds to the research requirements under the Bioterrorism Act. It describes the research and technologies needed to better protect against drinking water supply, water treatment, finished water storage, and drinking water distribution system vulnerabilities. Over the past several years we have been implementing this plan, which was vetted with water stakeholders and reviewed by the National Academy of Science. Recently, one of the Agency's projects supporting efforts to promote contamination warning systems was one of six finalists for the 2008 Franz Edelman Award for Achievement in Operations Research which recognizes outstanding projects internationally that transform entire industries and positively impact people's lives.

### ***Promoting Early Detection of Contamination***

Sections 1434 and 1435 of the Safe Drinking Water Act and Homeland Security Presidential Directive 9 (HSPD-9) (which establishes a national policy to defend the agriculture and food system against terrorist attacks, major disasters, and other emergencies) recognize the importance of developing approaches to allow for the early detection of contamination so that communities can respond in a timely manner. EPA's Water Security Initiative and Water Laboratory Alliance programs support the development of water surveillance and monitoring systems to provide early detection of contamination.

The Water Security Initiative involves the design, deployment, testing and evaluation of contamination warning system pilots at drinking water utilities serving major metropolitan areas. The goal is to promote the voluntary national adoption of sustainable drinking water contamination warning systems. In addition to online water quality monitoring, warning system components include public health surveillance, distribution system sampling and analysis, enhanced security monitoring, and consumer complaint surveillance. When integrated in a monitoring and surveillance system, these components allow utilities to attain faster detection of a broader range of potential contaminants than a single-component system. In addition, these components were chosen specifically because of their long-term operational sustainability and their capacity to provide “dual-use” benefits to utilities, such as improved water quality management.

These pilots are critical to providing real world information on the design of contamination warning systems and the process for deploying monitoring and surveillance components. EPA has completed deployment of the first pilot and is in the process of establishing four additional full-scale contamination warning system pilots in selected public water systems throughout the nation.

The Water Lab Alliance provides a network of laboratories that can analyze contaminants that routine water laboratories generally lack the capability or capacity to handle, including chemical and biological warfare agents. Eleven Regional Laboratory Response Plans coordinate the national support of regional laboratories, state public health and environmental laboratories to analyze water samples when needed. The Water Lab Alliance is also a part of our Environmental Response Laboratory Network (ERLN) which includes analyses of all environmental matrices.

*Promoting Active and Effective Security Programs in the Water Sector*

In addition to meeting responsibilities outlined in the Safe Drinking Water Act, EPA has also been designated as the Sector Specific Agency responsible for infrastructure protection activities for the nation's drinking water and wastewater systems under HSPD 7, entitled *Critical Infrastructure Identification, Prioritization, and Protection* (December, 2003).

We have engaged in several activities to fulfill our responsibilities to support the Sector, including the development of a framework to define the *Features of an Active and Effective Protective Program* which was developed in 2005 and updated in 2008. These Features include organizational, operational, infrastructure, and external security and preparedness measures that can be voluntarily adopted and tailored by drinking water treatment facilities to respond to their greatest threats and vulnerabilities.

EPA developed the Water Contaminant Information Tool (WCIT) to help utilities plan for and respond to water contamination incidents. WCIT is a secure, on-line database that provides responders with information on fate, transport, and health effects of chemical, biological, and radiological contaminants of concern. WCIT can be used as a planning tool to support vulnerability assessments, emergency response plans, and site-specific response guidance, and as a response tool to help responders make appropriate response decisions.

We are also working with the Water Sector to promote Intrastate Mutual Aid and Assistance Agreements, formally known as Water and Wastewater Agency Response Networks (WARNs). These agreements include both public and private drinking water and wastewater utilities; and enhance response and recovery efforts after an incident by expediting the sharing of personnel and resources. They can play a particularly important role in helping water utilities to quickly recover after a natural disaster. The "utilities helping utilities" concept has been very well received by the Water Sector. Twenty five (25) states currently have active WARN programs and the number is increasing monthly.

### *Importance of Collaboration*

Collaboration with the Water Sector has been critical to our success. Using the National Infrastructure Protection Plan's (NIPP) partnership framework, we established the Water Government Coordinating Council (GCC) to serve as a government counterpart to the self-governing Water Sector Coordinating Council (SCC). The Water GCC and SCC meet on a quarterly basis, but work together throughout the year, to create a coordinated national framework for Water Sector protection. Over the past 3 years, the Water GCC/SCC have worked together on the NIPP and the Sector-Specific Plan, consequence and vulnerability analysis, decontamination, threat and interdependency analysis, risk analysis, and Water Sector performance metrics.

EPA also supports the Water Information Sharing and Analysis Center (WaterISAC), which was originally recommended by Presidential Decision Directive 63 (PDD-63) in 1998 and additionally required under HSPD-7. The WaterISAC was established by the Association of Metropolitan Water Agencies and provides America's drinking water and wastewater systems with a source of information about water system security for early warning of potential threats.

Finally, collaboration has played a critical role in supporting training to prepare the Water Sector to respond to accidental or intentional contamination incidents. To that end, EPA has worked with national water organizations to provide training to several thousands of Water Sector water utility personnel in conducting vulnerability assessments, emergency response planning, and accessing and using the National Incident Management and Incident Command Systems to enable responders from a variety of jurisdictions and disciplines to work together effectively when responding to an emergency.

## EPA's Role in Chemical Security for Drinking Water Utilities

Chemical security in the Water Sector is currently implemented through voluntary measures by drinking water and wastewater utilities. We recognize the complexities associated with balancing public health and security, and recognize that the use of gaseous chlorine as a disinfectant is a decision for utilities and states after carefully considering Safe Drinking Water Act regulatory requirements, public health, the characteristics of their source water, weather patterns, and community and worker safety, in addition to other factors.

### *Tools and Technical Assistance*

EPA has worked closely with the Water Sector to study the risks associated with hazardous chemicals and develop tools, training and technical assistance to help utilities assess and mitigate those risks. A few examples of these activities accomplished within the past five years are as follows:

1. We provided funds to develop risk assessment tools consistent with Section 1435 of the Safe Drinking Water Act that address vulnerabilities including chemical storage and handling. Examples of the tools include:
  - The *Vulnerability Self Assessment Tool (VSAT™)* software to support water and wastewater utility vulnerability assessments using a qualitative risk assessment methodology.
  - The *Risk Assessment Methodology for Water Utilities (RAM-W)* to assist large water utilities and security professionals in assessing the risks from malevolent threats by balancing risk reduction measures.

- The Security Vulnerability Self-Assessment Guide for Small Drinking Water Systems to help these systems complete vulnerability assessments required under the Bioterrorism Act of 2002.
  - The Security Vulnerability Self-Assessment Guide for Very Small (<3,300) Systems is targeted for drinking water systems serving less than 3,300 people and is designed to help these systems assess their critical components and identify security measures that should be implemented.
2. The Bioterrorism Act of 2002 directed EPA to create a document to “provide baseline information to community water systems required to conduct vulnerability assessments regarding which kinds of terrorist attacks or other intentional acts are the probable threats to: (A) substantially disrupt the ability of the system to provide a safe and reliable supply of drinking water; or (B) otherwise present significant public health concerns.” The baseline threat document included suggestions for reviewing vulnerabilities related to the use, transfer and storage of chemicals, including gaseous chlorine and anhydrous ammonia. The document was completed in 2002 and shared with drinking water treatment facilities to assist in conducting their vulnerability assessments.
  3. The National Association of Clean Water Agencies (NACWA) has worked with the Department of Homeland Security (DHS) and EPA to create a Chlorine Gas Decision Tool for Water and Wastewater Utilities. The Tool is designed to provide utilities with a user-friendly, but thorough, means of evaluating alternatives to chlorine gas disinfection.
  4. We created a series of Security Product Guides on the web to assist treatment plant operators in reducing risks and providing protection against man-made and naturally occurring events. EPA’s guides provide recommendations regarding physical security, such as the use of barriers, placement and security of aboveground equipment, selection of fencing materials, and the use of



visual surveillance monitoring systems, all of which can help to secure hazardous and toxic chemicals, such as chlorine gas, used by water utilities.

5. We funded a cooperative agreement with the American Society of Civil Engineers, the American Water Works Association, and the Water Environmental Federation to develop Voluntary Physical Security Standards for drinking water and wastewater treatment facilities. Completed in December 2006, these voluntary standards address storage of hazardous or toxic chemicals, including chlorine and ammonia gas.

### ***Risk Management Plans***

The Clean Air Act Amendments of 1990 required EPA to publish regulations and guidance for chemical accident prevention at facilities using listed extremely hazardous substances, including chlorine. Our Risk Management Program Rule, which built upon existing industry codes and standards, was written to implement sections of these amendments. The rule requires facilities of all sizes that use certain flammable or toxic substances above specified threshold quantities to develop a Risk Management Program, which includes a hazard assessment, accident prevention program, and emergency response program.

The EPA Risk Management Program regulation (40 CFR Part 68), developed under the authority of the Clean Air Act, Section 112(r), states that utility processes containing more than 2,500 pounds of chlorine gas are required to implement an accident prevention program, conduct a hazard assessment, prepare and implement an emergency response plan, and submit a summary report known as a risk management plan (RMP) to EPA. The RMP must include an executive summary that provides a brief description of the facility's accidental release prevention and emergency response policies, the regulated substances handled at the facility, chemical-specific accident prevention steps, the 5-year accident history

of the facility, the facility's emergency response program, and planned changes to improve safety at the facility (see 40 CFR Part 68). Other chemicals that may be present at Water Sector utilities, including ammonia, sulfur dioxide, and chlorine dioxide, also trigger RMP regulatory requirements if they exceed certain threshold quantities.

### ***Hazardous Chemical Measures***

In February 2008, the Water Sector Coordinating Council and Government Coordinating Council approved a suite of 22 voluntary performance measures related to security for the Water Sector, including a series of measures for individual utility owners and operators. Three utility measures deal with hazardous chemicals. One measure asks utilities who use hazardous chemicals to identify the security practices they have in place to protect the public from their release or theft. The measures reporting tool will be administered by a non-governmental third party and an aggregate version of the security progress data will be provided to EPA once collected and analyzed. We expect to see data on security practices by the end of 2008. Collection of this data will inform EPA and the broader Water Sector of the progress being made across the water sector in chemical security to reduce risks.

### **H.R. 5577, 5533, and the CFATS Rule**

The Department of Homeland Security and the Environmental Protection Agency believe that there is an important gap in the framework for regulating the security of chemicals at water and wastewater treatment facilities in the United States. The authority for regulating the chemical industry purposefully excludes from its coverage water and wastewater treatment facilities. We need to work with the Congress to close this gap in the chemical security authorities in order to secure chemicals of interest at these facilities and protect the communities they serve. Water and wastewater treatment facilities that are

determined to be high-risk due to the presence of chemicals of interest should be regulated for security in a manner that is consistent with the CFATS risk and performance-based framework while also recognizing the unique public health and environmental requirements and responsibilities of such facilities. DHS and EPA look forward to working with the committees to address this issue.

## **CONCLUSION**

Over the past several years, we have made great progress in ensuring the security of our nation's drinking water and wastewater systems. We have produced a broad array of tools and assistance that the Water Sector is using to assess its vulnerabilities, reduce risk, and prepare for emergencies, including chemical theft and release. In developing these tools, we have worked effectively with our partners within the sector and also reached out to build new relationships beyond the sector to ensure that water utilities receive the information and support they need to be prepared to prevent, detect, respond and recover from intentional incidents and natural disasters.

With respect to chemical security, we look forward to working with our partners at DHS, members of the Committee and the Water Sector to develop an appropriate approach to safeguard the public from potential hazards posed by chlorine and other chemicals used at water and wastewater facilities.

Thank you again for the opportunity to testify about our role in water security. I will be happy to answer any questions you may have.