

EMERGENCY RESPONSE PLANNING *Ready or Not*

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Planning for emergencies is a requirement of the 1996 Safe Drinking Water Act Amendments and the 2002 Bioterrorism Act. It is also a good business practice.

As a drinking water utility, uninterrupted service is crucial to your mission. An emergency that disrupts water service or causes poor quality water damages your credibility unless you respond quickly to rectify the situation.

The planning process includes describing your system completely, your assets and weaknesses. Once you have done that, you can begin to formulate a plan for how you will respond when an emergency occurs and the types of emergencies you may experience. After the plan is written, employees must be trained, and the plan revised to meet changing needs.

What is an emergency?

An emergency is an unforeseen combination of circumstances that calls for immediate action. For a small drinking water utility, an emergency can be as simple as a water main break or as disastrous as the devastation of a category four

hurricane. Emergencies may be caused by a natural calamity, poor maintenance, or a malicious act. Power loss to a critical pump station may cause customers to lose service and require days to repair. A power outage could be due to a local storm, a vehicle accident near the pump station, faulty or poorly maintained equipment, or sabotage by a disgruntled employee. The cause is less important than the response.

Once an emergency occurs, events become chaotic, and it's too late to plan. In most emergencies, a series of cascading events happen that complicate the response process. For example, the water utility experiences a power loss, the same storm causes a fire in town, the level in the water storage tank is very low due to high water demand, and no fuel is available to run the back-up generator. The emergency response plan (ERP) for your utility provides a prioritized plan for how you respond to these events. If you have carefully prepared your ERP and trained employees to use it, you will be ready.

The Emergency Response Plan

The ERP is a characterization of the system and a plan of action for minimizing damage and quickly restoring services. It contains a complete assessment of the utility with identification of critical components. Roles and responsibilities of all employees during an emergency are defined, including evacuation plans and back-up personnel.

The plan also identifies alternative water sources, including interconnections, dissemination of bulk or bottled water, and



the allocation of stored water for fire fighting. Spare parts, chemical supplies, local contractors, and equipment rental sources should also be identified in the plan. Mutual aid agreements with other utilities must be established in advance to identify the extent of resources available and the cost of services.

Community Involvement

Your utility's ERP should involve other community groups: law enforcement, fire fighters, community health officials, civic leaders, and transportation officials. The first step should be to get in touch with your local emergency planning committee (LEPC). Made up of members from many community groups and usually serving one or more counties, LEPC groups were formed to deal with hazardous materials and natural disasters.

Representatives from the LEPC can help you develop your emergency plans, locate emergency services in your area, and provide logistical support when emergencies occur. In small communities, emergency resources are often severely limited, but the LEPC may be able to enhance your response capabilities.

In fact, some communities have begun county-wide emergency drills in a different section of the county each month. These exercises provide an opportunity

for cooperation and learning about other resources available during an emergency.

When you work with other community groups, remember to involve media representatives. The media will be part of any community emergency so you need to develop a relationship with them based on trust and respect.

(For more information about working with the media during an emergency, see "Crisis Communications: Keeping Your Community Informed During Emergencies" available on the National Environmental Services Center Web site at www.nesc.wvu.edu.)

The Golden Hour

First responders use the term "golden hour" to describe the first part of an emergency. During the golden hour you have more options for response and your chance for minimizing damages is greatest. The ERP will identify the steps in order of priority to be taken during the golden hour. The U.S. Environmental Protection Agency (EPA) has prepared a *Protocol Toolbox for Emergency Response* that describes the steps to be taken in the case of various emergencies. (See the end of the article for more information about this toolbox.)

On March 1, 2004, the National Incident Command System (NIMS) was adopted as the standard operational protocol for all federal, state, local, and tribal emergency responders. Basically, NIMS provides a common terminology and operational structure

to manage an emergency event.

The incident command structure was first used by firefighters in the 1970s to establish clear procedures when multiple fire stations were called in to fight a fire. The incident command structure provided a clear and universally understood chain of command and terminology for communications.

The unified command structure was developed to provide an organized framework in the event of a major disaster involving multiple agencies. The unified command structure allows the incident command position to be shifted among the multiple agencies as needed to respond to the emergency. This model also provides input from the various agencies into the incident command process.

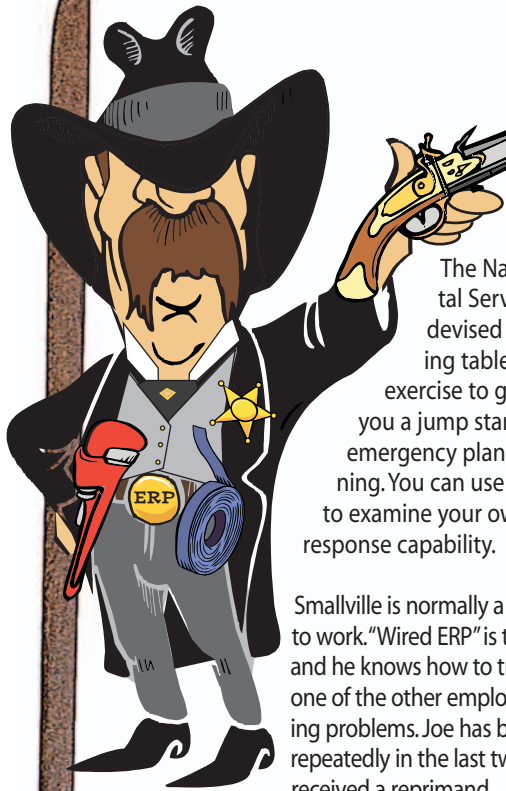
In a malevolent act or a widespread disaster involving multiple emergency agencies, the unified command structure, as described in NIMS, will be adopted to deal with the emergency. Water utility personnel normally fit into the unified command structure at the operational level, depending upon

EPA Requirements

The U.S. Environmental Protection Agency (EPA) has developed guidance for emergency response plans.

- Develop or revise emergency response plans (ERP) to incorporate results of vulnerability assessments (VA). The ERP should include plans, procedures, and identification of equipment that can be implemented or used in a terrorist or other intentional act on the public water system.
- Certify completion of ERP to EPA. Community water systems serving more than 3,300 people are required to certify to EPA, no later than six months after completing the VA, that the ERP has been completed. For systems serving between 3,300 and 50,000 people, VAs should have been completed by June 30, 2004 and ERPs by December 30, 2004.
- Coordinate with local emergency planning committees (LEPCs). The Bioterrorism Act calls for systems to coordinate, to the extent possible, with LEPCs established under the Emergency and Community Right-to-Know Act.

Source: National Environmental Services Center training curriculum *Preparing for the Unexpected*.



Emergency 101



The National Environmental Services Center has devised the following tabletop exercise to give you a jump start on emergency planning. You can use this to examine your own response capability.



Smallville is normally a pleasant, quiet place to work. "Wired ERP" is the chief operator and he knows how to treat water. But lately, one of the other employees has been creating problems. Joe has been late to work repeatedly in the last two months and has received a reprimand.

On Monday, he caused an accident with a city truck and got into a heated argument with the city manager. Later that day, the city manager tells Wired ERP to fire Joe and make sure he is gone by Tuesday afternoon.

After Joe gets word that he is fired, he storms back to the plant, slamming doors and banging tools. On his way to pick up his gear and clear out, he stops in the chlorine room

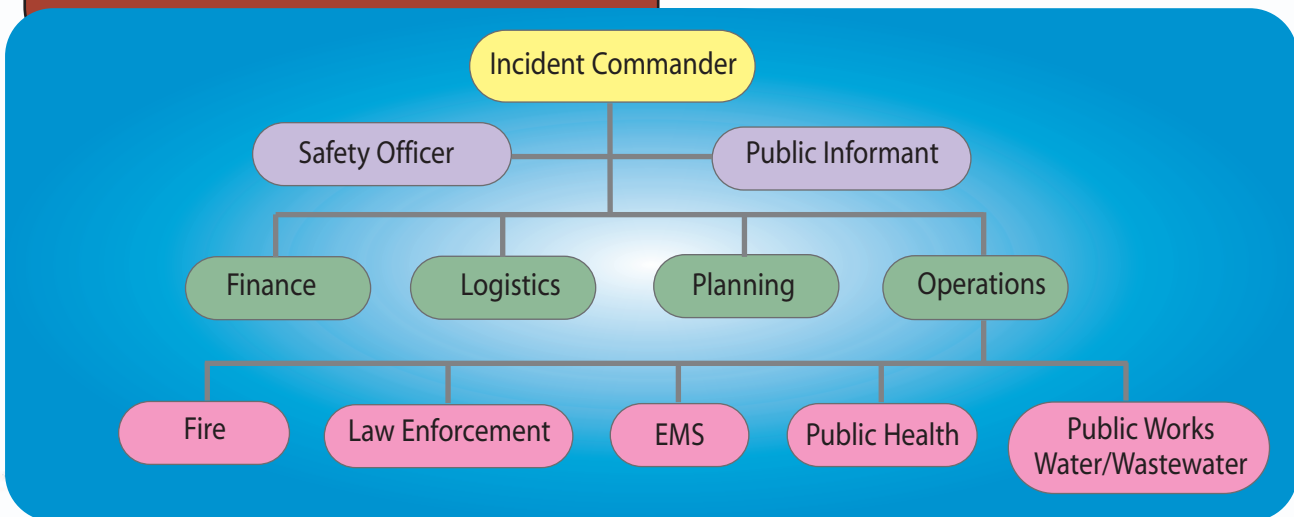
long enough to open the valve on a 150-pound chlorine cylinder that is not in use. Then he immediately leaves the plant and the area.

Approximately four hours later, a call comes into the city hall. The caller says a bomb had been planted at the electrical substation that provides power to the drinking water plant. The caller says that the bomb will be detonated when they least expect it.

Here are some things to consider with this scenario:

1. Identify the equipment/controls in your plant to detect the chlorine leak.
2. Once the chlorine leak is detected, describe the steps needed to handle the situation. Make a list of who you will call and in what order. Describe how the leak will be contained and what type of disruption of service may occur while the leak is being eliminated.
3. In the midst of the chlorine leak crisis, the city clerk calls to tell you about the bomb threat. Once you know about it, what do you do and who do you call? Is it a credible threat? How will you decide that?
4. How can you revise your ERP to better deal with emergencies like this one? What did you learn about your response effort?
5. What could have prevented or minimized the effect of this situation?

Figure 1 - Incident Command Structure



the nature and severity of the event. As a utility worker you need to understand how the unified command structure will be used and your role in the process. (See the diagram on the facing page.)

Under the unified command structure, the incident commander directs the response and mitigation activities. The commander is the most senior or critical agency person on site. Incident command is passed to members of different agencies as the emergency unfolds.

For example, during a fire, the incident commander would be the fire chief. However, if a bomb caused the fire, the incident command would be passed to law enforcement as soon as the fire was under control. Local fire fighters and law enforcement officers can provide more information about how this process is used during an event. You should become familiar with the terminology and process so that you can work with others during an emergency.

Communication During an Emergency

Communication during an emergency involves internal personnel, the public, and regulatory agencies. An emergency call list must be included with current phone numbers. The call list should be updated annually or as frequently as changes occur.

Most state regulatory agencies require 24-hour notice of conditions affecting water quality or service. Some states, however, have implemented more stringent requirements. In Florida, for example, utilities must notify the state agency within two hours after an event is documented that might affect water quality.

When developing the ERP, consult the requirements of the Public Notification Rule and be sure that all of your communications meet the requirements of this regulation. Remember to update your own customer contact lists especially if you plan to use an automatic dial system to notify customers. Be sure that those dialers are using the correct area code. That sounds like a simple idea, but some utilities have been caught off guard with

calling information that is out of date. Don't let this happen to your utility.

Internal communication with your own personnel is the most common problem reported during an emergency. In a widespread emergency, telephone lines or even cell phones may not be useable. Old fashioned two-way radios are an inexpensive, reliable back-up for internal communication. Just be sure that you have good batteries and keep them charged.

Work the Plan

By now, all drinking water systems serving 3,300 people or more have submitted a certification to EPA that their ERP has been updated based upon the previously conducted vulnerability assessment. To be effective, the ERP must be practiced, revised, and practiced again. The ERP must be continually updated and revised or it becomes obsolete.

Practice drills should be conducted that include other local emergency response groups. After these drills, the ERP should be revised to strengthen weak areas and eliminate procedures found to be ineffective. In addition to practice drills, conducting a tabletop exercise with utility personnel is an effective tool to train employees and keep the ERP up to date.

Emergency response planning is as important as budgeting for your utility. Emergencies occur in all shapes and sizes. Having an ERP will help you respond quickly to minimize damage and restore services. Take the time to plan carefully, practice the plan, and revise it often.

References

- Massachusetts Department of Environmental Protection. 2001. *Handbook for Water Supply Emergencies*. Boston, MA.
- National Environmental Services Center. 2004. *Small Drinking Water System Security*. Morgantown, WV.

Ten Inexpensive Ways to Improve Security

Installing high-tech security features, such as cameras and computer systems, is too expensive for many small water systems. There are, however, 10 inexpensive things utilities can do to improve security.

1. Lock the doors of buildings and vehicles
2. Enlist the neighbors to watch for suspicious activity
3. Post signs that tampering with a water utility is a federal offense
4. Clear vegetation so that there are fewer places to hide
5. Pick up debris and other items that could be used to interfere with operations
6. Install lighting to increase visibility
7. Control who has keys
8. Change locks when necessary
9. Perform employee background checks
10. Talk with local law enforcement



Source: Adapted from Wisconsin Rural Water Association

U.S. Environmental Protection Agency. 2003. *Emergency Response Protocol Toolbox*. Washington, DC.

For More Information

The National Environmental Services Center's ERP notebook contains general information about emergency planning, a sample template, the Emergency Response Protocol Toolbox, and the Emergency Response Planning Guide for Public Drinking Water Systems. Call (800) 624-8301 or e-mail info@mail.nesc.wvu.edu to order the ERP notebook.

EPA's Protocol Toolbox for Emergency Response is available online at www.epa.gov/safewater/security.

The complete NIMS manual is available online at www.dhs.gov.

Lorene Lindsay has 26 year's experience in water and wastewater treatment and is a certified operator in the state of Missouri.

