

Is Our Water Supply Safe?

As a member of the water board of a small water district west of Denver, Colorado, I feel safe from the threat of terrorism to our water supply. Our water district serves approximately 1,200 customers with 500 taps. We do not have any large commercial customers, hospitals, industrial complexes or other potential targets of terrorism. Our largest concern has been the prolonged drought, which is in its fifth year. We have five board members, an administrator and a water treatment plant operator.

Our district is located far from either the west coast or east coast, long known to be potential targets of terrorism. We are not connected to any other water supply system, such as the much larger City and County of Denver Water System operated by the Denver Water Board. We are one of an estimated 40,000 community water systems (CWS) in the United States, as defined by the Environmental Protection Agency, which serve between 25 and 3,300 customers.

Part of the response to the September 11, 2001 attacks was the Public Health Security and Bioterrorism Preparedness and Response Act of 2002, otherwise known as “the Bioterrorism Act.” This act required water suppliers to conduct Vulnerability Assessments (VA) and update Emergency Response Plans (ERP) to take into account the findings of the Vulnerability Assessments. It was applied to water suppliers with 3,300 customers and above. Specific dates were given for the certification of the completion of these reports to the Environmental Protection Agency.

Guidelines for Vulnerability Assessments and Emergency Response Plans have been defined by the Environmental Protection Agency, Department of Homeland Security, American Water Works Association and others. While these guidelines are very good, they seem far too complex and extensive for our small water system (as they were defined for far larger systems). The resource requirements seem to be beyond the scope of those available to our small district and its customers. Even though we have a long delivery pipeline (12 miles), and three reservoirs, our system is relatively straightforward and simple as water systems go. Why would any self-respecting terrorist bother with us as a target?

However, incidents like Walkerton come to mind. In May 2000 the municipal water system of Walkerton, Ontario, Canada had an E. coli outbreak, due to well contamination from surface water. This system served about 5,000 customers. 2,600 people got sick and 10 deaths occurred in a period of a few days. This outbreak, even though it was apparently due to operator error, had very significant impact on the town’s water supply and water customers. Even four years later there is a mistrust of the water system. One resident notes, “When I turn on the tap, I will always wonder if it is safe.” Many of the residents of Walkerton still suffer the psychological trauma of the event.

An incident in Pakistan in spring 2004 gives another idea of what can happen when a water supply is contaminated biologically or chemically. Nine people died, and 1,600 were sickened by the water supply originating out of a large reservoir. The water supply customers physically attacked those in charge of supplying the water. The exact source of the contamination is not known.

With the media so prevalent, persuasive and influential in our lives and society, the news of a problem with a water supply, especially one producing illness or death, will be publicized. As in the Walkerton incident, this publicity will prompt concern and in some cases panic. When Walkerton happened the September 11, 2001 attacks had not yet occurred, so terrorism was not yet thought about to any large extent, if at all.

What would happen today, if another Walkerton tragedy were to occur? I suspect that one of the first thoughts would be that it was caused by a terrorist attack. The coverage of the Blackout of 2002 was a good example. The media did its best to discount the idea of terrorism, but it still was one of the first things that most of us thought about.

Say, for example, a number of people suddenly become ill and die in a small community in Kansas. The source of the illness is not immediately known but the water supply is suspected. The number of illnesses and deaths increase steadily over the next week or two. The news media picks up the story. The small community has a very hard time coping with the increasing publicity and media coverage. The Emergency Response Plan is several years old and does not take into account changes and upgrades in the water system. They have not done a vulnerability assessment, and it turns out that several of the key components of the water system were not even locked or secured. As a variety of local, state and federal health agencies try to determine the source of the problem and come up with an effective solution, answers are still elusive. Several people involved with the water system, as well as the local town government and the local town police force, respond to the media with differing information and replies. Adjacent communities are clearly uneasy about the situation and may give their own fact scenarios and suppositions to the media.

Because this involves a possible “terrorist” incident, local, state and federal law enforcement agencies become involved. This may well become a federal crime scene until proven conclusively otherwise. The analysis of water samples and disease cultures from victims need to be “certified” by specific labs approved by the Centers for Disease Control (CDC) and Homeland Security.

This also adds a layer of security on top of the local law enforcement jurisdiction. Communications that might be okay to release to the media and the public under local law enforcement guidelines may not be okay under federal or state guidelines. While an incident command post will probably be set up early into the event, it may appear to be very confused or chaotic for several hours or even days into the event. The sheer amount of information that needs to be processed and organized may come from many different sources such as the local law enforcement agency, the Federal Bureau of Investigation, the State Health Department, the Federal Centers for Disease Control and the Department of Homeland Security. All of these agencies may well have different requirements on how to handle a crime scene, public information releases and the media. One of the first problems may be to establish the “pecking” order of the local incident command center.

The information that does get out to the media and the public will probably be technical in nature. Chemical, radiological or biological incidents all involve scientific and/or medical information. All three of these incident types are also affected by the environment into which they are released. For example, the local weather has a dramatic impact on the incident. While the local weather forecast on the news seems simple, there is a lot of information and data that is collected, analyzed and condensed for presentation in a short period of time.

The situation at the site of the incident can change sometimes on a minute to minute basis. Temperature, humidity, precipitation, wind and atmospheric pressure all can have an impact on the scene of the incident. An incident like the one hypothesized above may well involve significantly more complex data than that of the September 11 attacks.

Another problem with any of these three types of incidents is containment. For example, how many people left the area prior to the establishment of a site perimeter? Where did these people go? How far should the containment perimeter extend. Since a terrorist incident involving one or more of these three types may not be ruled out for a significant period of time, the containment may need to be expanded outside the service area of the local water supplier affected. This would be especially true if other people using different water sources also fell ill or died.

As we found out in the September 11, 2001 attacks, the information that got out to the media and the public was very confusing to the listener. New information came in sporadically that changed and often contradicted the information presented just a short time before. This attack took on “a life of its own.” America was “glued to its television set.” Rumors abounded, multiplied and spread like wildfire. Several months passed before we began to understand the scope and magnitude of the incident.

As I noted in my book Understanding Water and Terrorism, most Americans get their news from television. According to a poll of 1,000 adults between August 5, 2003 and August 11, 2003, 57% said they would turn to television first to receive information. Fifteen percent would turn to radio first. Nearly 25% would like to have a warning system created for wireless phones and pagers. Nearly 18% would like alerts via email.

The technology for notifying people of an incident via cell phones, pagers, email and the internet does exist. However, it is expensive and requires more technical resources than most small water suppliers in the United States can afford. So how do small water suppliers notify customers about an incident? Phone notification is probably the most common method. However, as with our water district of 1,200 customers, it would take our administrator quite awhile to notify everyone. Then there is the problem of people not being at home or near a phone. At our last board meeting, we discussed the idea of getting the email addresses of our customers and implementing an emergency notification program, in addition to the existing phone notification plan.

Water suppliers, large and small, across the United States and in other countries around the world are asking questions like;

“How would we respond to a major incident involving our water supply system and our customers? How would the rest of the United States react, given the media coverage? How safe are we?”

While we in the United States have one of the safest water supply systems in the world, these systems are vulnerable to attack. Many dedicated people are working very hard to prevent any incident involving the public water supply. If an incident involving a water supply system occurred, what would happen if a known representative of a terrorist organization claimed responsibility?

One thing that many water suppliers agree upon is the concept of a better educated consumer. The better educated the water customer, the easier it is to resolve any crisis, (whether with a problem like the drought in the western United States or an incident involving a contaminated

water supply). For our safety, public education about our water system and supply is almost a requirement for most small and medium sized water suppliers in the United States. As noted in an American Water Works Association report,

“In many cities and small towns, the public is the first line of defense, serving as an extra set of eyes watching over key utility assets such as tanks, reservoirs and even fire hydrants.”

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