2011 Statewide Medical and Health Exercise

# Water Loss Scenario

Disruption of the public water system may come from a variety of sources. Disruption may come from power failures that interrupt the distribution or treatment systems, contamination from ground water or through the introduction of toxic substances, or a natural disaster that compromises the infrastructure. Exercise planners for the organization/jurisdiction should work with local water systems to identify a cause of the water disruption or a threat that will provide the opportunities to test the plans and procedures and meet the objectives identified for the exercise.

The scenario will be introduced as a threat to the State’s water system, with events occurring prior to November 17 to heighten concerns. There are three types of public notifications issued by a water system or regulatory agency in water emergencies: “Boil Water”, “Do Not Drink”, and “Do Not Use” based on the type of emergency and impact on drinking water supplies. Organizations/jurisdictions can simulate a water disruption and utilize one of the three notices.

A “Boil Water” notice is when there is concern regarding biological contamination that can be remedied by either boiling or treating with a disinfecting agent.

A “Do Not Drink Water” notice is issued due to the presence of a known contaminant when there is no identified risk due to inhalation, skin irritation or flammability. This notice may also be issued for bacterial contamination when boiling or disinfection is not available or practical. An alternate source of drinking water is needed. In this case the water is not to be used in food preparation however it can be used for bathing, washing clothes or dishes and other domestic uses.

A “Do Not Use” notice is issued when there is contamination by a toxic chemical or the contaminant has not yet been identified. This is the most restrictive notice. Disinfecting the water in this case will not correct the problem. Alternate sources of drinking and domestic water are needed.

## Base Scenario

Homeland Security officials in California have issued warnings to local health departments and water systems concerning a threat to disrupt water facilities throughout the state. Through Intelligence Fusion Centers, law enforcement agencies and the Terrorism Liaison Officer network, information is disseminated that the intelligence has included the following threats: sabotage or disruption of the water treatment systems, contamination of the water distribution systems and/or contamination of local reservoirs.

It is mid-November in California and the annual flu season has begun to take hold across the State. In addition to recommending flu shots, health professionals are recommending the use of over-the-counter medicines to control symptoms along with getting plenty of rest and drinking plenty of fluids. Healthcare facilities have seen a significant surge in patients.

Across the State, continued threats and incidents of vandalism at storage reservoirs and suspicious activities around water treatment facilities have heightened concerns about the safety of the public water system.

## Scenario Options for Customization:

Exercise planners should work with water systems, the local health department and participating organizations to determine the cause of the water disruption for the exercise, inserting this into the scenario and the Master Scenario Events List. Options not used may be deleted.

### Option 1.

This option is for communities that are located in hilly areas where the local water system has higher elevation storage reservoirs to provide pressure as well as system storage.

This option uses the introduction of Ricin into the water system as an act of terrorism. Ricin is a protein that is extracted from the castor bean. Ricin may cause allergic reactions, and is toxic, though the severity depends on the route of exposure. Ricin is poisonous if inhaled, injected or ingested, acting as a toxin by the inhibition of protein synthesis. If Ricin is suspected or detected in the water system, a “Do Not Use” notice would be issued.

On November 16, a break-in has been discovered at the storage reservoir that serves the pressure zone serving the community. The locks on the hatch directly leading into the reservoir have been cut and several containers were left that had a slight residue. The local Hazmat Team was called, and chemical field tests were inconclusive. Two firefighters displayed symptoms of respiratory distress and have been transported to a local hospital. The water system has just issued a “Do Not Use” notice. Local law enforcement is notified who in turn contact the Joint Terrorism Task Force.

### Option 2.

This option is for communities that are in a valley where the water system does not rely on higher elevation storage reservoirs to provide the pressure, rather water pressure is provided by a network of pumps throughout the system. These systems are usually supplied by numerous well sources. The introduction of a contaminant into the water distribution system can be accomplished through a cross connection to the system (i.e. tapping into a fire hydrant). Discovery of this activity would lead to a “Do Not Use” notice being issued.

On November 16, the local water system contacts law enforcement after finding a truck illegally connected to one of its fire hydrants with a pump found to be positioned to pump into the hydrant. This hydrant is just around the corner from a municipal water source. The water system has sampled the water, but results will not be available for 6 to 12 hours. As a precaution, the water system has issued a “Do Not Use” notice.

### Option 3.

This option is for a water system with a central water treatment plant that serves the entire city.

On November 16, a water treatment facility was broken into during the night when the plant is unmanned and under automatic operation. During this break-in the alarms were disabled. The terrorist tampered with the caustic soda metering pump and caused an excessive amount to enter the distribution system.

An excessive amount of Sodium Hydroxide entering the distribution system would result in the water system issuing a “Do Not Use” notice.

### Major Events

* In several major cities in the State, reports of vandalism at reservoirs and attempted tampering with fire hydrants has been reported by the media. In Central California, workers at a water treatment plant noted tampering with perimeter fencing and gates in the past week. They reported the vandalism to local law enforcement.
* In the Bay Area, a hospital physician has contacted the poison control center; a patient with severe oral and esophageal burns has been admitted. Emergency medical services responders found a large glass container labeled UN 1824 at the patient’s home. The poison center identifies the label as liquid Sodium Hydroxide. The information is relayed to the local health officer.
* At a community center in Southern California, maintenance staff noted small white pellets on a basement floor where chemicals used to treat the indoor pool are stored. Housekeeping staff were called and water was used to clean the site. Several staff members complained of severe eye irritation, coughing and burning of the throat. The area was secured while the maintenance supervisor called 911 for assistance.
* Local and national media are reporting on the warning issued by State authorities concerning the threat to the water system. Local media are also reporting on the 911 call from the community center. Parents of children at the community center are calling the center, law enforcement and the 911 dispatch center for information and advice.
* In several areas of the State, tampering with fire hydrants and the threat of water contamination has led to concern among citizens about the safety of the water supply. 211 information centers, poison control centers, water authorities and the local health department are all experiencing a dramatic rise in calls for advice.
* Water authorities overseeing the treatment plant that experienced the break-in have issued a Do Not Use notice for all areas serviced by the plant. Neighboring jurisdictions have issued a “Do Not Drink” notice until the water system can be tested.
* Several community organizations in the jurisdiction impacted by the “Do Not Use” notice have informed their clients of the inability to provide services until the water issue is resolved. These services include meal deliveries to the elderly, in-home support services, after school programs and food banks.
* Media representatives are contacting public safety agencies regarding the impact of water contamination on the community. They raise issues related to safety of the water in parks, public restrooms, fire hydrants and sprinkler systems.
* As the day progresses, persons with symptoms of respiratory distress and gastrointestinal illness2 as well as those who are afraid to drink or touch the water begin to show up at hospitals, clinics and private medical providers requesting evaluation and treatment.
* In communities with notices to restrict or avoid drinking or using water, hospitals, clinics and long term care facilities are impacted by the water outage. Service delivery is altered, and there is growing concern about the ability to keep hospitals open without water service.