

**Simple Tabletop Exercise, Physical Attack –
Witness Account and Notification by Law Enforcement Scenario
Scenario #5
Facilitator’s Guide**

Scenario Summary

Background: It is May in Zenith City, and the residents are enjoying the blooms and lush greenery brought on by spring showers. The city is preparing to host its annual Lilac Festival in early June. The National Threat Advisory Level is yellow, indicating an elevated risk of terrorist attack. The city is working hard to improve its emergency preparedness based on both the threat level and the upcoming festival, which draws many non-residents to the city.

The Event: On May 23, terrorists arrive in Zenith City. Their mission is to contaminate Zenith City’s water supply to demonstrate the destructive capabilities of their organization. The terrorists place a radiological dispersal device (RDD), or a “dirty bomb,” near the intakes of the Zenith City Water Treatment Plant on Lake Wobegun, the city’s primary water reservoir. The bomb contains Plutonium-238/239, as well as other fission products, including Strontium-90, Cesium-137 and Cobalt-60. The dirty bomb is set to detonate within 20 minutes of its activation. The bomb explodes, spreading radioactive smoke and other particulate matter over the supply inlet. A jogger witnesses the explosion and calls 911 to report the incident. The terrorists have left town by the time the bomb detonates.

The Results: The radioactive material released by the dirty bomb contaminates Zenith City’s primary water supply source. Although the incident does not result in any immediate acute injuries to any of the residents and visitors of Zenith City, the weapon does manage to create mass disruption.

To the Facilitator: The goal of this exercise is to evaluate the ability of the participants to react to a threat to a water system involving radiological contamination. Participants will be required to devise an appropriate sampling plan to assess the degree of contamination, and they will be expected to determine how best to recover from the effects of the contamination. The participants will also be required to discuss critical notifications and collaborations required to address the incident in an organized and effective manner.

Intended Participants: This exercise may be run for water supply, public health, state drinking water primacy agencies, federal agencies such as EPA and the Federal Bureau of Investigation (FBI), local law enforcement, and fire/emergency medical services (EMS) personnel.

You may wish to consider inviting:

Public Utilities:	Water/Wastewater Utility Managers, Emergency Response Team Members, Utility Operators, IT/SCADA Operators, Engineers, Sampling Staff, Administrative Staff
Hospital:	Emergency Room staff, Physicians, Nurses and Nurse Practitioners, Hospital Administrators, Medical Laboratory staff, Public Information Officer
Public Health:	Health Officers, Epidemiologists, Technical Specialists, Public Information Officer
Fire Dept., HazMat and EMS:	Fire Fighters, HazMat Team members, EMS workers, 911 Call Center workers
Police:	Police Officers, Counter-Terrorism Specialists
Laboratory:	Analysts / Technicians, Laboratory Administrators
Local Officials:	Mayor and Elected Officials, City Council Members, Local Emergency Planning Committee (LEPC) Members, Local Emergency Management Agency staff
State Officials:	State Environmental Agency Staff, State Health Department Staff, State Drinking Water Primacy Agency, State Emergency Management Agency, Governor's Office Representatives
Federal Officials:	EPA staff, FBI staff, FEMA staff, CDC staff, DHS staff

In particular, water and wastewater utility personnel, laboratory representatives, hazardous materials response workers, local, county and state health officials, and members of the law enforcement community should be invited to participate. The laboratory and the HazMat or police bomb squad will most likely play prominent roles in a contamination threat scenario of this type.

Running the Exercise

Step 1: Decide on a facility, training date, training duration, and who to invite. Invite participants well in advance of your training date to ensure that you can achieve your attendance goal. Allow adequate time for planning and be sure to prepare all materials (digital and hard copy) ahead of time.

Step 2: Depending on who is participating in this exercise, it may be a good idea to have the participants go around the table and introduce themselves (name, utility, and job title) so that everyone will understand where any particular individual is “coming from” during the ensuing discussions.

Step 3: Explain to the participants that they are participating in a simple tabletop exercise. There is no time pressure, and that they are there as a group to discuss their roles and responses to an emergency incident. There are no right or wrong answers, but the group should be able to discuss problem or “gray” areas that may arise during the exercise. Let them know this is good, as the exercise should stimulate discussion that

may lead to changes in the way the participants conduct their daily and emergency operations. Also inform the participants that, although the incident is set in fictional Zenith City, it is okay to talk about the incident from their own experiences or in the context of their own protocols and procedures. It will make the exercise more beneficial for the participants if they exchange emergency response practices, protocols, and procedures that they may currently use.

Step 4: Be sure to give the background PowerPoint® presentation to introduce the participants to Zenith City and to set the stage for the incident. The exercise goals will also be presented as a part of this presentation.

Step 5: Begin the exercise by delivering the first inject. Then, let the discussion evolve naturally on its own after giving the participants the first inject. If necessary, to get the discussion started, simply “nudge” the participants with a non-leading question such as: What would you do in this situation? You could direct this question to the group at large, or, in a group where no one is willing to break the ice, to a particular individual, preferably one that you know serves in a leadership role during the course of their daily activities. You can also refer to the discussion points in the Facilitator’s Guide to help jump-start discussion.

Step 6: Be sure to take notes during the discussions. These notes will form the basis of your after-action review. Note problem or gray areas that need more research prior to resolution and who will perform this research or any action items decided upon by the participants. The notes you take will ensure that a summary of the take-home points, action items or messages will not be forgotten or overlooked. You may wish to write these points, action items and messages on a flip chart at the end of the exercise.

Step 7: Perform an after-action review. You may wish to give the participants a 10 to 15 minute break at the end of the exercise to give yourself time to compose your notes prior to conducting the review. Be sure to review the exercise objectives again to determine if the objectives were met by the exercise. Allow the participants to give their feedback on the exercise and the conclusions or decisions that they arrived at during the exercise. The entire tabletop exercise, including the after-action review, can typically be conducted in a two to four hour session. This time range is flexible and is dependant on the amount of discussion generated during the exercise. The pace of the exercise is controlled entirely by the facilitator, who manages the discussions and presents the injects.

Discussion Points

Remember, it is May in Zenith City. The city is preparing to host its annual Lilac Festival in early June. The National Threat Advisory Level is yellow, indicating an elevated risk of terrorist attack. The city is working hard to improve its attack preparedness based on both the threat level and the upcoming festival, which draws many non-residents to the city. Exercise participants are provided a map of Zenith City, a water supply distribution map, a wastewater distribution map, and other pertinent materials. If this exercise is to be customized, all these materials may be substituted with a utility's own maps and other materials.

Inject #1 (11:05 hrs., May 23, Material Code(s) SSc5-1): *Call to 911(routed to police) from a jogger informing them of a bomb detonating on the shore of Lake Wobegun. The eyewitness reports smoke and particulate matter scattered over the lake.*

Points that could be covered in the discussion of Inject #1 include:

- Who would be notified immediately? Do the requirements of the new National Response Plan (NRP) and National Incident Management System (NIMS) affect these initial notifications?
- Discuss other appropriate notifications. (e.g. FBI, water utility, laboratory, health department, and hospitals)
- Discuss what type of field tests should be performed, what type of sampling equipment might be required (e.g. Geiger counters), and how to select appropriate screening locations.
- How would the media be dealt with?

Inject #2 (12:15 hrs., May 23, Material Code(s) SSc5-2): *The HazMat bomb squad reports to the police that they have confirmed that the bomb was a RDD (radiological dispersal device). They inform the police that they have collected a bomb fragment that appears to be very radioactive.*

Points that could be covered in the discussion of Inject #2 include:

- If the utility has not been notified yet, would they be informed now that contamination of the water supply has been confirmed?
- What precautionary steps should the utility take in the event of RDD-related contamination?
- Discuss what type of sampling should be performed, who should perform the sampling, what type of sampling equipment might be required and how to select appropriate sampling locations. Water, air and soil samples should be tested.
- How should the radiological field data be mapped to give a better picture of the extent of contamination?
- Should the supply intakes be shut down at this point? If so, will an alternate water supply need to be established?
- What is the proper time to inform the public, and what is the best way to disseminate information? The water utility should have assigned a public information officer (PIO) in their Emergency Response Plan (ERP).

Inject #3 (14:55 hrs., May 23, Material Code(s) SSc5-3a and SSc5-3b): *The participants are provided with a preliminary onsite radiation survey showing the radioactive readings registered at the blast site and surrounding area.*

Points that could be covered in the discussion of Inject #3 include:

- Will the utility or health department need to issue a “Do Not Drink” and a “Do Not Use” order until more information is gathered?
- Who would assume the leadership role in the Incident Command System (ICS) established to manage this incident? The FBI?
- Should the National Response Center (NRC) be notified in the event of a radiological release? (NRC: 1-800-424-8802)
- When would the wastewater plant be notified?
- If they aren’t already, should the supply intakes be shut down at this point? If so, will an alternate water supply need to be established?
- Should the public be informed of this information through the media?
- What other precautions may be necessary?

Inject #4 (15:35 hrs., May 23, Material Code(s) SSc5-4): *A news station reports that a source from the water utility has leaked to them the details of the dirty bomb explosion at the lake. The media reports that the water supply may be contaminated.*

Points that could be covered in the discussion of Inject #4 include:

- Discuss how to handle public perception in the aftermath of this news report. Consumer confidence will be severely reduced. What steps should be taken to minimize mass panic and restore consumer confidence?
- Discuss appropriate ways to get information out to the public, and when and why information is provided.

Inject #5 (9:30 hrs., May 24, Material Code(s) SSc5-5): *Phone call from the laboratory to the police and bomb squad informing them that they are only certified to analyze for radionuclides, and are not capable of detecting plutonium contamination in water samples. The lab representative mentions that he remembers hearing that only one lab in the country possesses this capability.*

Points that could be covered in the discussion of Inject #5 include:

- Discuss laboratory capabilities and limitations in relation to radioactive analyses.
- Discuss whether the utility is aware of their current laboratories' capabilities.
- Has the utility established relationships with labs prepared to perform complex water sample analyses?
- If not, who will support them in these analyses?

Inject #6 (10:24 hrs., May 24, Material Code(s) SSc5-6): *The chief treatment plant operator calls the water utility manager to ask how the contamination that made it into the water system might impact the treatment plant's processes. He also asks if the wastewater utility needs to be concerned about their treatment processes being affected.*

Points that could be covered in the discussion of Inject #6 include:

- The plant's processes may be able to remove some of the radiological contaminants, depending on the treatment steps employed. Do the water and wastewater utilities in the room know which radionuclides their treatment processes remove?
- If the water plant removes excess sodium, it will probably remove Cs-137.
- If it treats for excess calcium or barium, then Sr-90 will most likely be removed.
- If the plant treats the water for excess iron, Co-60 would also be removed.
- The wastewater utility should consider that their resin beds (or other filter media) might take in the hazardous materials, preventing disposal by conventional methods.
- Who should the wastewater utility look to for support?

Inject #7 (13:50 hrs., May 24, Material Code(s) SSc5-7): *Phone call from laboratory to police and bomb squad. Preliminary tests show that the bomb fragment and field samples indicate high levels of beta/gamma emitters.*

Points that could be covered in the discussion of Inject #7 include:

- In light of this new information, what response actions may need to be taken?
- Who should be notified of this information? Discuss the need to notify Incident Command, which should result in notification of all the parties involved (FBI, the utility, the health department, etc.)
- It has often been speculated that plutonium could be chemically reacted to form compounds that are highly soluble in water, such as a nitrate or ionic salt. Since plutonium has an extremely high chemical toxicity (it is estimated to be orders of magnitude more poisonous than thallium or cadmium) it may be possible to add a contaminant “plug” into a water system and poison a community. The ionic salt form of the contaminant could dissociate, then oxidize, and precipitate on walls and sediments in the water supply system pipelines. Discuss how the participants might handle such a contamination event.

Inject #8 (16:25 hrs., May 24, Material Code(s) SSc5-8a and SSc5-8b): *Lab results confirm that water samples collected at the crime scene are contaminated with radiologicals. Participants are presented with a copy of the results.*

Points that could be covered in the discussion of Inject #8 include:

- Discuss the results presented.
- Should a second sampling round be performed to further reinforce the analytical results at hand?
- Does this information indicate that the contamination is significant? Health officials should make a decision based on the data results presented.
- How will the system recover from this incident? Discuss possible remedial actions.