Nuclear/Radiological Emergency

Scenario

Note: This scenario can be adapted to include response actions required by metropolitan jurisdictions, nearby rural jurisdictions, or other jurisdictions in which populations may be relocating from affected and nearby areas.

10-kiloton Improvised Nuclear Device Detonation

The Ultimate Terrorist Group (UTG) is a domestic terrorist group made up of foreign-born nationals who have strong ties with overseas terrorist groups. Over the course of several years, UTG was able to secure enough highly enriched uranium to construct an improvised nuclear device (IND) with the equivalent power of a 10-kiloton explosion. UTG obtained the nuclear materials outside of the United States and smuggled them into the country. UTG's plan was to transport the IND to _____ ***(fill in the target location)*** *and detonate it during peak business hours.*

UTG obtained help from several international nuclear weapons engineers and technicians to assemble the IND at an unknown location 300 miles from the target location. They added the nuclear materials to the IND and loaded it onto a small rental truck. Two UTG members volunteered to drive the truck and detonate the IND. The detonation switch was located in the cab of the truck on the passenger's side.

At 4:00 a.m. this morning, the two UTG members began the drive to their target. Their intent was to arrive at the target location around 9:00 a.m. and set off the IND between 10:00 a.m. and 12:00 p.m. Previous scouting trips to the area indicated that this was a time period when the most people and businesses were active. They used a burner phone (i.e., a prepaid, disposable cell phone that's typically used for a short time or anonymously) to report their progress every 100 miles. They also drove the posted speed limit to avoid attracting unnecessary attention.

At approximately 9:00 a.m., a car suddenly changed lanes in front of the rental truck. Unable to brake quick enough, the rental truck hit the car. The accident caused a chain reaction of several cars crashing into one another. The accident caused the rental truck to overturn and roll several times. The IND detonated.

Most buildings and structures within the blast area (a half-mile radius of the detonation) were demolished. Anyone within the blast area was killed instantly. Flying debris acted like missiles and resulted in injuries as far away as 3.7 miles from the detonation point. The electromagnetic pulse (EMP) damaged many electronic devices within a 3-mile radius. A mushroom cloud rose above _____ ***(fill in the location)*** *and began to drift in the prevailing wind direction, which was toward* _____ ***(fill in a location/population center)****.*

Many people outside of the blast zone heard the explosion and called 9-1-1. First responders, including law enforcement, Hazmat, and emergency medical services (EMS) crews, arrived at the edge of the blast area at 9:15 a.m. HazMat determined the blast was radiological in nature, and notified _____ ***(fill in agency)****. At 9:20 a.m.,* _____ ***(fill in agency)*** *notified all non-impacted community partners and healthcare organizations of the situation. Patients with blast-related injuries began arriving at healthcare facilities between 9:20 a.m. and 9:30 a.m. by both EMS and private transportation.*

The _____ ***(fill in town/city)*** *emergency operations center (EOC) was activated at 9:30 a.m. The state EOC was activated at 9:45 a.m. Federal assistance is not expected for 24 hours.*

Artificialities and Assumptions

The following artificialities and assumptions have been identified for the purposes of the scenario:

1. *UTG does not intend to detonate any additional INDs.*
2. *Hazmat has radiation detection equipment.*
3. *All community healthcare partners, first responders, and organizations have been informed of the situation and the risk of radiation prior to receiving patients.*
4. *Patient injuries will be treated prior to decontamination.*
5. *First responders have not entered the blast area.*
6. *Healthcare facilities are located more than 2½ miles from the blast area and are mostly undamaged.*
7. *Communication systems are mostly operational outside the 3-mile EMP zone.*

Example Key Issues

All response functions are in play in these scenarios.

Real-Life and Exercise Scenario Examples

Army reacts to 10-K nuclear detonation | Article | The United States Army

Use of Environmental Monitoring Data to Support Public Health Decision Making in Radiation Emergencies