HM502 Unit 6 Assignment

Scenario: Chemical Attack – Nerve Agent in New York City

Overview

Sarin is a human-made chemical warfare agent classified as a nerve agent. Nerve agents are the most toxic and rapidly acting of the known chemical warfare agents. Sarin is a clear, colorless, and tasteless liquid that has no odor in its pure form. However, Sarin can evaporate into a vapor and spread into the environment. Sarin is also known as GB.

In this scenario, the Universal Adversary (UA) builds six spray dissemination devices and releases Sarin vapor into the ventilation systems of three large commercial office buildings in a metropolitan area. The agent kills 95% of the people in the buildings and kills or sickens many of the first responders. In addition, some of the agent exits through rooftop ventilation stacks, creating a downwind hazard.

For purposes of estimating federal response requirements, each building is assumed to have an occupancy of 2,000 personnel (i.e., twenty-story buildings with 100 occupants per floor), and the outdoor/subway population density of the surrounding areas is 3,900 people per square mile (one-tenth of the total population density in the vicinity of Times Square, New York).

Secondary Hazards/Events:

Numerous injuries will occur as a result of panic on the street, including falling and crushing injuries. Further injuries are likely to occur due to motor vehicle accidents in the surrounding roadways.

Key Implications:

Assuming 2,000 occupants per building, the initial fatality count will be 5,700 (95%) and 300 injured, including the initial Emergency Medical Service (EMS) and fire personnel at each building. Patients who experience prolonged seizures may sustain permanent damage to the central nervous system – assume 350 patients in this category (300 inside plus 50 outside). Fatalities and major injuries will occur due to falling and crushing during the panic on the street, and due to vehicle accidents.

Little direct damage due to the attack, except the building interiors and contents, will be highly contaminated by agent condensing on surfaces. The three buildings and their contents will be a total loss due to decontamination measures and/or psychological impacts of future usability. However, airing and washing should decontaminate adjacent structures adequately.

Overwhelming demand will disrupt communications (landline telephone and cellular) in the local area. There will be large numbers of “worried well” swamping the medical system. Loss of three fire crews and three EMS crews will impact readiness for other events in the short term.

Decontamination, destruction, disposal, and replacement of three large commercial office buildings could cost up to $300 million. Business in the buildings may never reopen, and an overall national economic downturn is possible in the wake of the attack due to loss of consumer confidence.

Those who survive usually recover within 4 to 6 weeks, with full cholinesterase level restoration within 3 to 4 months. Patients who experience prolonged seizures may sustain permanent damage to the central nervous system.

Reference:

The Homeland Security Council. (2004, July). Planning scenarios: Executive summaries. Version 2.0. pp 7-1 – 7-3. Retrieved from https://kansascity.feb.gov/wp-content/uploads/2014/02/National_Planning_Scenarios_ExecSummaries_ver2_1_.pdf