
	STANDARD OPERATING GUIDELINE				
	OPERATIONS				
	HAZARDOUS MATERIALS OPERATIONS – RESPONSE TO BIO-CHEM THREAT				
Effective: 01/Aug/99	Revised: 28/Dec/2020	S.O.G. #: O-324a	Page: 1 of 6		

1.0 Objective

1.1 The purpose of this guideline is to assist first responders in the management and handling of an unknown Biological-Chemical (Bio-Chem) threat.

2.0 Responsibility

2.1 It is the responsibility of all Department personnel to understand the procedures documented in this Standard Operating Guideline.



3.0 General Information and Properties

3.1 General Information - Biological agents, such as Anthrax, are those products that can have a severe effect on living organisms and pose a threat to humans or their environment. These agents have a treatment timeline of several days to weeks. The initial response should focus on **isolation, reduction of exposures, material identification, primary mitigation activities, and emergency scene termination with transfer to law enforcement and public health authorities.**

- 3.1.1 Due to the nature of these incidents, they are to be considered crime scenes. Keep in mind that the majority of the threats are hoaxes and can carry a criminal penalty.
- 3.1.2 Based on the nature and severity of the incident, a multi-agency response (Fire, Police, EMS, MABAS Division III Hazardous Materials Team, etc.) as well as State and Federal officials may be called for with a Unified Command system utilized. Biological agents can be broken down into three categories. The three categories are:
 - 3.1.3 Bacteria - Anthrax, Tularemia, Plague.
 - 3.1.4 Toxins - Ricin, Outline, SEB
 - 3.1.5 Viruses - Smallpox, Ebola, VEE

3.2 General Properties - Biological agents can display certain properties when encountered. These properties are:

- 3.2.1 Nonvolatile - will not evaporate.
- 3.2.2 May be effective when dispersed as an aerosol or powder.
- 3.2.3 Respiratory tract is the primary route of exposure.
- 3.2.4 Other potential routes of exposure include abraded skin or unprotected eyes with certain agents.
- 3.2.5 Weather plays a major role in effective dissemination outside.
- 3.2.6 Determine the time between when people were first “exposed” and when the incident was reported. Was it immediate? Delayed?
- 3.2.7 Assess whether the patients are symptomatic. Depending on the particular agent, symptoms may not show until hours or days after exposure. People who complain of immediate “symptoms ” may be psychogenic, have other unrelated ailments, or have been chemically exposed.
- 3.2.8 Assess the physical state of the suspect material. Biological agents do not pose an immediate respiratory threat if in liquid form. If the agent is in a powdered form and it is not disturbed, it does not pose a respiratory threat.
- 3.2.9 A biological agent is a hazardous material. Manage the scene as a hazardous materials incident.

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4.0 Response Consideration



- 4.1 Pre-arrival instructions to the caller:
 - 4.1.1 If unopened, do not open.
 - 4.1.2 Leave the immediate area.
 - 4.1.3 Wash hands and face for five (5) minutes with anti-microbial soap and water.
 - 4.1.4 If it can be done safely, cover the material.
 - 4.1.5 Turn any ventilation equipment off.
 - 4.1.6 Get information about product dispersal method, area of contamination, and physical description.
 - 4.1.7 Calm victim and request that they sit at one location next to the phone.
 - 4.1.8 Dispatch as a “Code 2, unknown substance investigation.”

5.0 Response

- 5.1 Unless there are sick or injured, or otherwise directed by the Battalion Chief, the initial response to a report of an unknown substance shall be a Code 2. The response shall consist of:
 - 5.1.1 The Engine, Squad, or Truck Company from the appropriate Still District.
 - 5.1.2 If there is a reported symptomatic patient, the appropriate Ambulance should be dispatched along with the on-duty Battalion Chief.
 - 5.1.3 If there is an available Hazardous Materials Team technician on-duty, his assigned apparatus will also respond. If there is no hazardous materials technician on-duty, the Battalion Chief may telephone page the Hazardous Materials Team members for consultation or response, if needed.

6.0 Self - Protection

- 6.1 Use S.C.B.A., or an approved chemical / biological, gas particulate, air purifying respirator (APR) or other suitable full-face respiratory protection as authorized by the Incident Commander.
- 6.2 Wear two pairs of medical gloves (double gloving).
- 6.3 Wear issued personal protective clothing or other suitable and authorized clothing ensemble.
- 6.4 Supplies: Located on Squad #33
 - 6.4.1 Level B: Hazardous Materials Team Personnel
 - 6.4.1.1 Encapsulated Suit (CPF II)
 - 6.4.1.2 SCBA
 - 6.4.1.3 Gloves double or triple (optional)
 - 6.4.1.4 Duct Tape
 - 6.4.1.5 Boots (Tingley)
 - 6.4.1.6 Booties (optional)
 - 6.4.2 Decontamination:
 - 6.4.2.1 1 gallon zipper freezer bags
 - 6.4.2.2 Large plastic 30 - 55 gallon bags (bio-bags optional)
 - 6.4.2.3 5-gallon buckets

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6.4.2.4 20% bleach solution (1/2 gallon bleach, 2 gallons of water)

6.4.2.5 2 1/2 gallon sprayer



6.4.2.6 Liquid soap

6.4.2.7 Scrub brushes

6.4.2.8 Water supply from hydrant or Engine Company.

7.0 On - Scene Actions and Considerations

- 7.1 Approach the scene from upwind using weather conditions to determine isolation areas and safe havens. Are windows open, did this event occur outside, is there potential for a secondary device and cross contamination?
- 7.2 Stage additional personnel and equipment upwind.
- 7.3 Establish communications with Police Department representative.
- 7.4 Communicate with caller via telephone. If required, talk face-to-face with the caller but remember they are potentially contaminated.
- 7.5 Assess the level of threat.
- 7.6 Use issued personal protective clothing and S.C.B.A.
- 7.7 Cordon area and restrict entry to authorized and protected personnel only. Establish appropriate zones.
- 7.8 Set up decontamination area for entry team personnel. See Section 9.0 for decontamination procedures.
- 7.9 Discuss entry team objectives.
- 7.10 The entry team will consist of two appropriately trained members. Personnel protective clothing will be:
 - 7.10.1 Level B encapsulated suit with SCBA.
 - 7.10.2 Double glove, tape outer gloves to wrists.
 - 7.10.3 Tingley boots.
- 7.11 One team member is the entry person. The entry person will:
 - 7.11.1 Optional: Third glove (no tape) and booties prior to entry.
 - 7.11.2 Double bag substance and any evidence.
 - 7.11.3 Optional: Clean up spill and bag hazardous waste (if small).
- 7.12 The second team member will:
 - 7.12.1 Act as safety / decon.
 - 7.12.2 Have the portable radio and remain in contact with Incident Commander.
 - 7.12.3 Stay outside the hazard area (door to room) and maintain visual contact with the entry team member.
 - 7.12.4 Just before leaving the hazard area, the safety / decon member will hold open the triple bag for the entry team member to place the double bagged substance / evidence bag. The safety / decon member will seal the bag.
- 7.13 Identify the physical form of the product / material. If needed, contact the appropriate department (Northbrook, Skokie as a back-up) housing the Guardian BTA System for Bio-Chem Suspicious Substances. Northbrook may be contacted through RED Center at (847) 724-5700 and Skokie may be contacted at (847) 982-5300. Sample test results will be relayed to the Incident Commander for proper incident mitigation. The MABAS Division III Flow Chart for Bio-Chem Suspicious Substances (included) may be utilized for reference.

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- 7.14 Call early for additional Hazardous Materials and E.M.S. resources. MABAS Division III has a Hazardous Materials Advisory Team that will provide the Incident Commander with additional technicians to assist, in an advisory capacity only, with the incident. Consider notification of the Lake County Bomb Squad (Waukegan Fire Department) or the Cook County Bomb Squad.
- 7.15 Remove potentially exposed persons from inside the structure to the outside.
- 7.16 Obtain name, address, and telephone number of potentially exposed people. You can document this information on the Multiple Release Form.
- 7.17 Do not disturb the package or material. Isolate it. Remember the letter, package, or other item(s) could be "Booby-Trapped." If suspected, use the Bomb Squad to render the item safe. Also be alert for secondary devices.
- 7.18 Treat the scene as a crime scene and preserve all possible evidence.
- 7.19 Anticipate that the incident will draw large numbers of reporters, T.V. crews, and helicopters.
- 7.20 Establish the Public Information Sector immediately and provide adequate staffing, if required.
- 7.21 Provide accurate information to the media to reduce public fear.
- 7.22 Request that the F.A.A. restrict the air space above the incident to reduce the chance of collisions and eliminate the effect that the down drafts produced by the helicopters will have on the product.
- 7.23 Consult with the Hazardous Materials Team personnel on the best way to handle and mitigate the incident.

8.0 Other Actions and Considerations

- 8.1 Notify Highland Park Hospital of the situation if the size and scope of the incident warrant this action. They may elect to notify other area hospitals to be aware of any people coming into their Emergency Rooms with symptoms of exposure.
- 8.2 Consider activation of the City Emergency Response Plan.
- 8.3 Establish a Unified Command Post (e.g., Fire, E.M.S., Local Law Enforcement, F.B.I., North Shore Sanitary District, I.E.P.A., e t c .).
- 8.4 Do not allow potentially affected people to leave the scene without authorization.

9.0 Decontamination

- 9.1 Level C Decontamination (Police personnel)
 - 9.1.1 In a safe area, remove suit and mask, dispose of gloves.
 - 9.1.2 If contaminated, remove suit first, mask second, and gloves last. Place in a hazardous waste bag.
- 9.2 Level B Decontamination (Hazardous Materials Team personnel)
 - 9.2.1 Water supply will consist of one 1 3/4" hose with a fog nozzle.
 - 9.2.2 Perform decontamination over a sewer if possible. If not, wash down area when completed.
 - 9.2.3 Entry Member: Safety / Decon member will assist:
 - 9.2.3.1 Spray with 20% bleach solution, leave on for 5 to 10 minutes.
 - 9.2.3.2 Rinse with water at high flow.
 - 9.2.3.3 Scrub with soap and water.
 - 9.2.3.4 Rinse with water at high flow.
 - 9.2.3.5 Bag suit and gloves.

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9.2.3.6 Rinse boots and bag separately.

9.2.3.7 Bag SCBA.

9.2.4 Safety / Decon member: (support personnel will assist):

9.2.4.1 Spray with 20% bleach solution, leave on for 5 to 10 minutes,

9.2.4.2 Rinse with water at high flow.

9.2.4.3 Scrub with soap and water.

9.2.4.4 Rinse with water at high flow.

9.2.4.5 Bag suit and gloves.

9.2.4.6 Rinse boots and bag separately.

9.2.4.7 Bag SCBA.

9.2.5 Dump remainder of bleach solution in sewer/street.

9.2.6 Flush sewer / street.

9.2.7 At the fire station, shower and change clothes.

9.2.8 Decontaminate boots at the station, dry and recycle.

9.2.9 Clean the SCBA.

9.3 Set up an Emergency Decontamination Corridor System (E.D.C.S.) or other suitable system if mass decontamination is required.

9.3.1 This can be accomplished by using master stream devices set on fog pattern to complete a massive gross decon. Utilizing Truck Companies for overhead shower capabilities works well.

9.4 Decontaminate people who handle the product with liquid or bar soap if available. This is preferred over bleach. However, if bleach is used, use diluted household bleach solution (1 part bleach to 9 parts water). Apply the diluted bleach to exposed skin where the suspected agent contacted it. Rinse the diluted bleach solution with water for 5 to 10 minutes.



9.5 Decontaminate the people in the immediate area of the suspect material by having them go through the E.D.C.S. and have them remove their clothing.

9.6 Have other people who were in the building or outside of the immediate area and were not in contact with the package or material go outside into fresh air (upwind). Consider use of “air decontamination,” i.e., use of positive pressure ventilation or other portable fans to blow across their clothing. Again, document all personal information from affected people.

10.0 Termination of Incident

10.1 Make sure all operating personnel at the scene of the incident are briefed on the signs and symptoms of exposure to biological agents and what to do should their health status change.

10.2 Document all key personnel operating at the Unified Command Post so information processing about the incident can continue after termination.

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11.0 Reference

11.1 Highland Park Fire Department

Approved  Fire Chief