

# **SNOHOMISH COUNTY HAZARDOUS MATERIALS AND WEAPONS OF MASS DESTRUCTION**

FIRE CHIEFS ASSOCIATION DOCUMENT 80-01-03



**“SUGGESTED OPERATING GUIDELINES”**

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## **INTRODUCTION**

A hazardous materials incident is unlike anything most emergency response personnel have previously experienced. The unique hazards associated with these incidents can endanger the rescuer, as well as the general public, if proper measures are not taken. Failure to take such protective measures may prove to be extremely costly in terms of legal liabilities, injuries, or death.

RCW 70.1136.020 specifies that all incidents involving hazardous materials be under the command of the pre-determined Incident Command Agency having jurisdiction. In most cases this agency will be the local fire department or the Washington State Patrol. All on-scene activity and resources will be coordinated by the on-scene Incident Commander.

The nature of hazardous materials incidents makes it virtually impossible to develop Standard Operating Procedures that anticipate all contingencies that may arise at an incident. Therefore, the Hazardous Materials Suggested Operating Guideline was created as a resource for first responders, the Hazardous Materials Response Team and the Incident Commander. Because these are guidelines, the Incident Commander will have the authority to alter procedures as deemed necessary to mitigate the incident, provided those alterations are not contrary to accepted hazardous materials response practices.

## **SECTION 1 - FIRST RESPONDER GUIDELINES FOR HAZ-MAT AND WEAPONS OF MASS DESTRUCTION RESPONSES**

### **A. Purpose**

To establish consistent and safe guidelines for first response to hazardous materials and weapons of mass destruction incidents. A chemical or biological hazardous material shall be defined as any substance (gas, liquid or solid) capable of creating harm to people, property or the environment.

### **B. Operating Guidelines**

#### **1. Command**

The Incident Command System shall be used at all hazardous materials incidents.

#### **2. Command Post**

The Command Post shall be located up hill, up wind and at a safe distance from the incident. All personnel at the Command Post shall have appropriate personal protective equipment (PPE).

#### **3. Initial Precautions**

The following precautions shall be taken by all personnel at the time of dispatch to a possible hazardous materials or WMD incident:

- Full bunkers before response.
- Short report from dispatch center.
- Note wind direction and speed.
- Approach scene from up hill/up wind if possible.
- Stop apparatus at a safe distance from the incident site.
- SCBA's in "stand-by position."

**NOTE:** Refer to Emergency Response Guidebook Initial Isolation and Protective Action Distances (Green Section beginning on Page 311) and "Initial Action Checklist" (Page 16).

#### **4. Size Up**

Determine if hazardous materials are present. Maintain a safe distance when conducting size up. The following may indicate of the presence of hazardous materials:

- Type of occupancy.
- Type of container.
- Placards.
- Labels.
- Information from bystanders, employees or drivers.
- Suspicious packages or letters.
- Way bill, bills of lading (inside cab).
- Train consists and wheel reports (inside locomotive or caboose).
- Incident information.
- Pre-fire information.

#### **5. Notification and Report**

After determining that a hazardous material is or may be involved, immediately notify Dispatch. Inform all incoming units of a safe direction of approach. Request the notification of the local Emergency Management Duty Staff at ESCA and/or DEM. Establish Incident Command.

#### **6. Isolate and Deny Entry**

When a hazardous material is involved, it is important to keep the public and emergency response personnel a safe distance from the incident to avoid exposure or contamination. Use the following methods for isolation:

- Cones.
- Barrier tape.
- Stage in-coming units at intersections.
- Law Enforcement.

#### **7. Identify Hazardous Material**

After initial determination that a hazardous material is present, attempt to identify the material. Gather essential information using the following methods:

- Utilize information previously gathered.
- Talk to owner, employees, driver or and/or site specialist.
- Contact the shipper.
- Contact the manufacturer.
- Request assistance from Snohomish County Haz-Mat, ESCA and/or DEM.

## 8. Assess the Potential

Assess the potential course of harm by estimating the amount of hazardous material that has been or may be released. Determine where it will go and the possible effects that will result. This information will be vital in determining the need for evacuation, direction of danger and the need for resources. Use of the following will help determine the potential:

- Container size and the amount of material inside.
- Type of hazardous material.
- Damage to the container and rate of release.
- Weather conditions.
- Geographic location/population at risk.
- Fire involvement or likelihood.
- Migration of material through runoff or vapor cloud.
- Other contributing factors (WMD).

**NOTE:** This information shall be passed on to the Incident Commander and Haz-Mat Team Leader.

## 9. Call for Help

If the Incident Commander determines that the incident exceeds the capabilities of the on-scene suppression crew, a request will be made for the Snohomish County Haz-Mat Team through dispatch. Other resources can come from both emergency and non-emergency organizations. These may include additional staffing, equipment and technical expertise. Resources may be requested from the following:

- Emergency Management - ESCA and/or DEM.
- Police, State Patrol, County Sheriff.
- Public Works (for spills that enter storm sewers).
- Street Department (sand/dirt, equipment or road barricades).
- Coast Guard (spills into waterways).
- Mutual Aid.
- Chemist, Poison Control, Health District or Chemtrec.
- Red Cross and/or Support 7.

**NOTE:** See Resource List found on Haz-Mat Unit for complete information and phone numbers.

## 10. Control Zones and Site Safety

Initial isolation distances can be obtained from the Emergency Response Guidebook, and should be considered when determining control zones. Control Zones should be established as follows:

**HOT ZONE:** This is the contaminated area surrounding the release area. *Only Personnel with the proper PPE and level of training shall enter this area.* Any Emergency personnel or civilians who have been inside the Hot Zone shall be considered contaminated. They must be decontaminated prior to exiting the area. Victims shall be isolated in a safe area within the Hot Zone until decontamination can be performed.

**WARM ZONE:** This area will be established by the Haz-Mat Team for decontamination and access. The Incident Commander should consider a potential location for the decontamination area to assist the Haz-Mat Team. The following needs shall be considered:

- Flat surface upwind/uphill from the Hot Zone.
- 1-3/4" hose line supplied by hydrant or engine.
- Manpower (two companies).

**NOTE:** If it is determined that emergency field decontamination must be performed, the engine company will use the emergency procedures found in Section 5 –Job Aids.

**COLD ZONE:** This area has been determined to be free from any level of contamination and personnel can freely move about this area without the need for chemical protective clothing or breathing apparatus. The Cold Zone will be the area deemed suitable for the location of the Command Post, Staging Area, Rehab, EMS, Haz-Mat Team and other support activities.

## 11. Defensive Tactical Considerations:

***Caution: if you are not sure your PPE will provide adequate protection, DO NOT commit personnel. Remain at a safe distance, isolate, deny entry and call for help!***

**Rescue:** Rescue shall be attempted only if it can be accomplished without endangering personnel. All victims and rescuers will be considered contaminated. Rescues can be attempted under the following conditions:

- PPE will provide adequate protection.
- Victim is deemed viable.
- The buddy system is utilized.
- Back-up teams are in place.
- Emergency decontamination is established.

**Confinement:** The type and amount of hazardous material and the specific situation will determine actions for control and confinement. Your goal may be to slow the spread of the material until mitigation can be performed by the Haz-Mat Team. Techniques for containment may include, but not be limited to:

- Damming and/or diking.
- Diverting.
- Absorption (booms, pads, pillows).
- Covering solids with tarps.

**Plugging transportation vehicle fuel tanks:** Though plugging fuel tanks is considered an offensive action, under certain conditions and with proper training, engine company personnel trained to the “Operations” level may perform those functions. Plugging of gasoline or diesel fuel tanks shall be allowed under the following conditions:

- Those personnel engaging in this operation have the proper training.
- Personnel are in proper PPE (full turnouts and chemical protective gloves).
- Ignition sources are removed.
- Defensive actions to reduce vapor production such as containment, absorption, damming or diking are performed.
- Avoid contamination of turnouts. Lay plastic recovery bag on ground, wear chemical protective gloves and apply plugging material at or above leak level to avoid fuel running down your arm. If contamination is unavoidable, wear Saran/Tyvex suit over turnouts.
- A charged hose line is in place for emergency decontamination.
- A Dry Chemical extinguisher is manned during the plugging operation.
- Personnel follow manufacturer’s suggested preparation procedure for the plugging material prior to use.

**NOTE:** Engine company personnel *should never exceed their level of training.* Under no circumstances should the Fire Department assume responsibility for clean-up or disposal of spilled or contained hazardous materials. Clean up of all contaminated material is the responsibility of the spiller.

**Extinguishment:** When a fire is involved during a hazardous materials incident, a decision will have to be made on attacking or allowing the fire to burn out. The type of product, life hazard or need for special extinguishing agents will determine course of action. The Incident Commander should consider the following:

- Extinguishing agents applied to some products may become contaminated and should be considered hazardous. Run-off may cause a secondary clean-up and should be contained.

- Some poisons and pesticides breakdown more efficiently when they burn, resulting in a less toxic release. Cooling with water streams may increase contaminated waste and create an environmental hazard if not contained.
- Flammable gases that are burning should not be extinguished unless flow can be stopped. Unburned vapors can be hard to detect and may find an ignition source away from the release site, possibly causing an explosion.
- Some products are reactive to extinguishing agents increasing the magnitude of the fire.
- If flame is impinging a pressurized container, water should be used to cool the container at the point of impingement. Be sure you have an adequate water supply before attempting this tactic.

## C. PIPELINE PROCEDURE GUIDE

### 1. Natural Gas

#### Basic Information:

- Main line will be a 30" diameter with pressures up to 960psi or 26" with pressures up to 809psi.
- Lateral lines will be 16 – 20" diameter with pressures of .25 to 250psi.
- PSE and Cascade distribution lines range from 1.25" to 16" with pressures of .25 to 250psi.

**NOTE:** Main lines are not odorized, however, the gas carried in the lines has a natural sulfuric odor (i.e. rotten egg). The odorant is added in lateral lines and is present in lateral and distribution lines. There is one lateral line in South Snohomish County and the odorant is added near Mill Creek.

#### Tactical Considerations:

##### Leak detection:

- Blowing Sound
- Dirt blowing into the air.
- Bubbles from a pond or river.
- Fire coming from the ground.
- Browning vegetation with an inconsistent pattern.
- Odor of mercaptan or sulfur.
- Combustible Gas Indicator readings.

##### Chemical Characteristics:

- Natural gas is lighter than air.
- 4 – 15% flammable range.
- Easily ignited within flammable range.
- Will flash back to source when ignited.
- Can be trapped under asphalt or concrete causing lateral movement.
- Gas trapped in confined spaces can explode.

##### Protective Actions:

- Notify appropriate gas company immediately.
- If the product is on fire: DO NOT EXTINGUISH, evacuate immediate area, control exposures, and air monitor surrounding area.
- In cases of rupture (no fire): Evacuate the immediate area, control ignition sources, and air monitor surrounding area.
- If a device is found on the line: Evacuate the immediate area in all directions, contact gas company, law enforcement and Haz-Mat Team.

- In cases of leak with no rupture: Evacuate the immediate area, air monitor surrounding exposures.

**Gas Company Phone Numbers:**

- |                                     |                |
|-------------------------------------|----------------|
| • Williams (main lines)             | 1-800-972-7733 |
| • Puget Sound Energy (distribution) | 1-800-552-7171 |
| • Cascade Gas (distribution)        | 1-800-552-0615 |

## 2. Flammable Liquids

**Basic Information:**

- Main lines are 16" & 20" diameter with pressures between 800 – 1250psi for 16" and 350 – 500psi for 20" lines.
- Main lines have the potential to release up to 6200gpm for 16" and 6700gpm for 20" lines, depending on the size of the leak.
- The products carried in the lines can vary between gasoline, jet fuel and diesel or any combination in a mixture.
- There are no separations between the products found in the lines.

**Tactical Considerations:**

**Leak Detection:**

- All fuels have a strong distinctive odor when released.
- Colorful sheens will appear on water or flat surfaces.
- Pressurized leaks may blow dirt into the air.
- Fire may be coming from the ground.

**Chemical Characteristics:**

- Gasoline is highly flammable and is easily ignited when released into air.
- Diesel and jet fuel are combustible liquids and produce less vapors than gasoline.
- All products have vapors that are heavier than air and lighter than water.
- All products have increased volatility when released under pressure as aerosol.
- Diesel and jet fuel vapors are not easily detected with a CGI air monitor.
- Warm weather can increase the volatility of these products.

**Protective Actions:**

- Notify **Olympic Pipeline @ 1-888-271-8880** immediately.
- Evacuate exposures immediately down hill and down wind. See DOT evacuation guide.
- **DO NOT EXTINGUISH FIRE AT THE SOURCE.** Control exposures.
- Ignition sources should be limited if possible as fire will flash back to the source.
- Notify ESCA/DEM.
- Stay up hill and up wind from the spill as much as possible.
- Foam will NOT be effective if the spill is moving.
- Cover storm drains and sewers ahead of the spill.
- Divert spill to an open area if possible.
- Confined spaces will have displaced oxygen and flammable atmospheres.
- Booms, pads and pillow absorbents will not be effective in large spills.
- Underflow dams can slow the product spread in creeks and streams.
- Do not attempt to dam a large gasoline flow
- Avoid prolonged exposure to vapors.

## D. BIOLOGICAL AGENT RESPONSE ACTIONS:

It is anticipated that most events involving biological agents will not generate a scene to which personnel could respond. By their very nature, biological agents are slow acting and the public health surveillance system may require days or weeks to detect patterns of casualties.

A biological incident may involve:

- The threat of a release at a specific time and location.
- A device detected and reported prior to release.
- A perpetrator observed in the act of disseminating an agent.
- A package or letter containing an agent or suspected agent was reported.

Credible threats will be managed utilizing the Incident Command System with Law Enforcement as the lead agency in a unified command structure. Non-credible threats of biological incidents will be handled similar to that of bomb threats.

When a threat is received or a biological agent is suspected on scene, dispatch is notified, and the Law Enforcement Duty Chief and the Duty Sergeant will be dispatched. The Duty Chief will notify the FBI if appropriate and the credibility of the threat will be assessed.

When the fire department resources are requested, personnel will support and back-up the efforts of the Local Law Enforcement Agency and the FBI. Local Law Enforcement and the FBI will assume their roles in the Incident Command System and initiate the appropriate criminal investigation.

### 1. Isolate Area and Establish a Perimeter

- Quarantine persons in the immediate area of exposure (office or room of origin) and place them in a safe refuge area.
- Recover and double bag the substance and package *if unopened*. For open containers, request Haz-Mat response.
- Shut down HVAC systems to reduce potential spread within the building.
- Do not use the specific name of the suspected agent over the radio. Use the term "***Bio Agent.***"

**NOTE:** Biological agent contamination shows no immediate symptoms in exposed victims. If you smell an odor or see a spill, the incident should be treated as a Haz-Mat spill response.

If the product is suspect and the incident is deemed a credible threat by law enforcement:

Follow Haz-Mat procedures for isolation of contaminated area, product packaging and decontamination of victims.

Collect the following information required by local and state health agencies.

- Incident time, date, location.
- Names, address, contact information for potential exposed individuals.
- Facility owner or manager contact information as appropriate.
- Credible threat details.
- Investigating law enforcement officer and contact information
- Fire incident commander or Haz-Mat officer and contact information.

Contact local health district/department to coordinate specimen testing by Washington State Department of Health Epidemiology Lab in Shoreline. The local health district will make notification and provide detail to the lab regarding testing requirements. **If the local health district is unable to be reached or is unresponsive, contact ESCA for assistance.**

A law enforcement officer and fire officer will remain on-scene in order to coordinate activities until final disposition of specimen is determined.

Law Enforcement will deliver packaged specimen to the lab in Shoreline.

Snohomish County Health District  
425-339-5278 - Office  
425-339-5295 - 24 hr Pager

King County Health Department  
206-296-4774 - Office  
206-296-4606 - 24hr Pager

State Department Of Health Lab  
1610 150<sup>th</sup> St. NE  
Shoreline, WA  
1-877-539-4344

## **E. INITIAL ACTIONS FOR ALL HAZARDOUS MATERIALS AND SUSPECTED WEAPONS OF MASS DESTRUCTION (WMD) RESPONSES**

### **1. Approach**

- Don't rush in. Use extreme caution, assume hazardous materials are present.
- Avoid exposure to spills, vapor clouds, smoke, suspicious packages, suspected bio-agents and confined spaces.
- Position apparatus upwind, up hill and facing away from the incident.
- Approach for recon will be made in SCBA and full PPE, using the buddy system.

### **2. Size-Up**

- Using binoculars, determine type of incident – fire, spill, container failure, explosion, WMD, etc.
- Is it a facility that may be a terrorist target?
- Is there a suspected biological agent? See page 19 Biological Flowchart.
- Is this an emergency? Rescue? Defensive? Non-Intervention?
- Identify container – pipeline, size, type and condition.
- Identify product – placards, labels and visual observations.
- Determine priorities – life, environment, property.

### **3. Report**

- Report to dispatch and incoming units
- Establish command and give location of command post.
- Give your size-up from information gathered in section two.
- Call for help: Haz-Mat Team, Bomb Squad, law enforcement, mutual aid, etc.
- State your objectives: Scene control, investigation, evacuation or rescue.

### **4. Scene Control**

- Based on the size-up, isolate the area. Use the Emergency Response Guidebook as appropriate for isolation distance, except pipeline: see Pipeline Procedure Guide.
- Deny entry, control traffic, barrier tape, cones and stage incoming units.
- Determine safe approach route and advise incoming units.
- Stage apparatus in a safe area facing away from the incident.
- Establish emergency decontamination for victims and/or rescuers.

### **5. Gather Information**

- Product name – UN number, classification, primary hazard.
- Paperwork – shipping papers, waybills, consist or MSDS.
- Resources – driver, shipper, consignee, plant specialist, witnesses.

- Determine potential – exposures, weather, release type and rate.
- Share information – report to Haz-Mat Team Leader, Bomb Team Leader, Incident Commander.

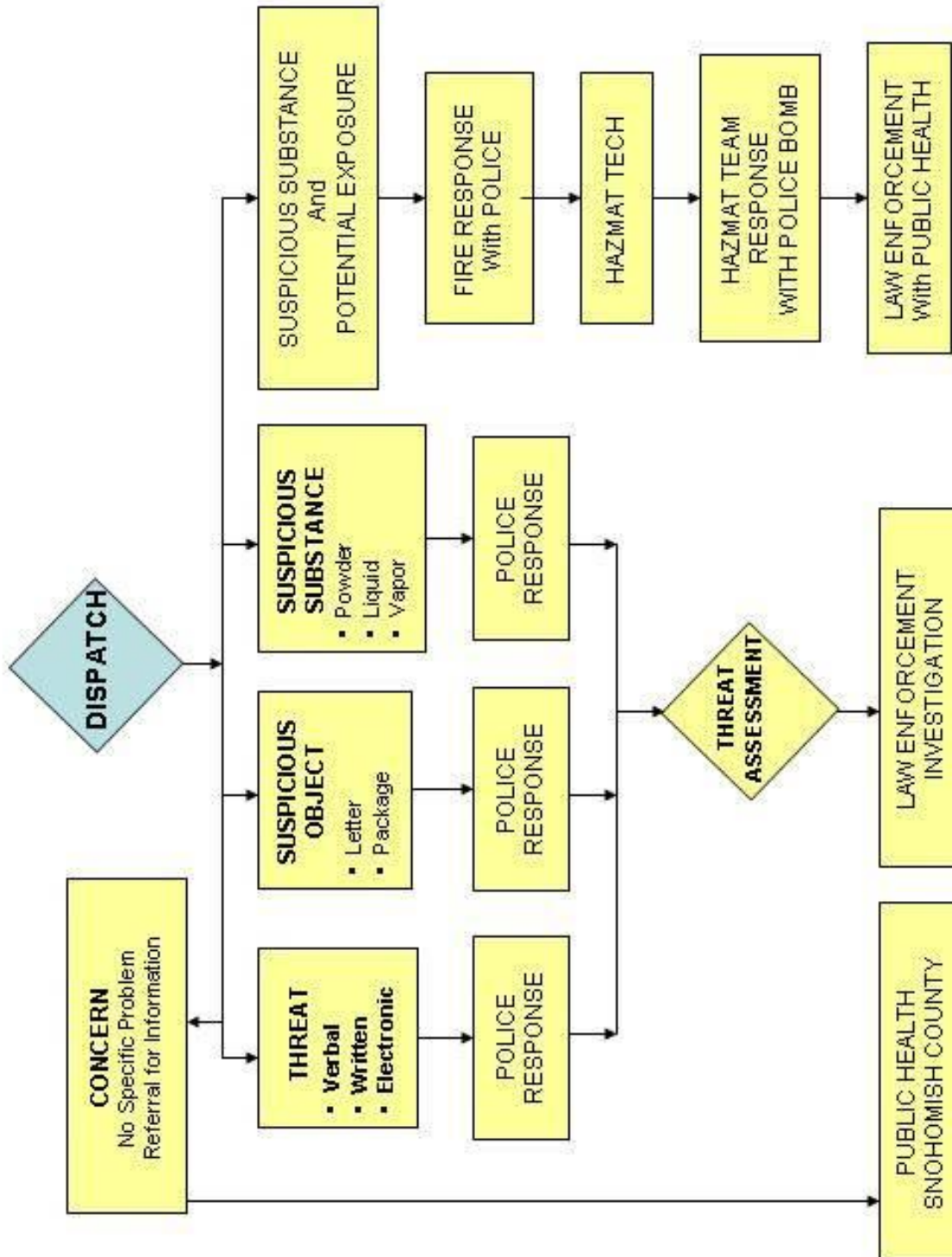
#### **6. Establish Emergency or Mass Decontamination (if necessary)**

- Locate Decontamination Area up hill and up wind of incident on level ground.
- Lay 1 ¾” hose line. Use warm water if time allows.
- For mass decontamination position apparatus in a triangle and position water spray so victims can wash themselves thoroughly with soap and water then move to a safe area.
- Have victims move to Decontamination Area independently if possible.
- Have victims remove clothing and jewelry place in plastic bags (1 per patient).
- Evaluate patients, dry brush powder contaminants and check for burns.
- Flush patient head to toe for 5-15 minutes.
- Segregate symptomatic and non-symptomatic victims.
- Perform secondary evaluation of patient.
- Provide blanket or tyvek coverall and transport to hospital.
- Avoid aid unit contamination. Cover gurney with plastic and have aid crew in chemical protective gloves.
- Notify hospital of contaminate involved in incident.
- Retain contaminated personal articles at the scene.
- The responsibility for decontamination shall be transferred to the Hazmat Team Decontamination Officer as soon as possible.
- Mass Casualty Incident protocols shall be utilized for patient care after mass decontamination.

#### **7. Rescue**

- Attempt rescue only if adequate personal protective is available, victim is viable, buddy system is used and a back-up team is available.

## BIOLOGICAL INCIDENT RESPONSE FLOWCHART



## SECTION 2 - HAZARDOUS MATERIALS EMERGENCY OPERATING GUIDELINES

### A. PLANNING BASIS

#### 1. Purpose

This guide has been established for the Snohomish County Hazardous Materials Response Team for use when responding to a hazardous material emergency. This document provides guidelines for the Haz-Mat Team for the efficient handling of such an emergency.

#### 2. Objectives

- To work in concert with the local emergency response plans developed in cooperation with the Local Emergency Planning Committee.
- To establish an operational structure that has the ability to function within the Incident Management System.
- To mitigate a hazardous materials incident as safely as possible using nationally recognized practices.
- To review and update these guidelines as necessary to ensure all practices meet with current laws and standards.
- To encourage networking with other agencies in an effort to coordinate responses, develop consistent policies, and integrate operational guidelines.
- To establish guidelines for Haz-Mat Team response to acts of terrorism and explosives incidents as a regional response team.

### B. RESPONSIBILITIES

#### 1. Incident Commander                      Radio call (*to be named* COMMAND )

- Initiate the Incident Management System, assign Incident Scene Safety Officer and establish a Command Post.
- Ensure that initial response procedures are followed by first-in units.
- Recognize presence of biological, nuclear and chemical weapons as a terrorist event.
- Upgrade to Technical or Team response as needed.

- Establish a Haz-Mat Group to include, but not limited to, the following positions:
  - Haz-Mat Safety Officer
  - Haz-Mat Team Leader
  - Decontamination Officer
  - Entry Team Officer
  - Resource Officer
  - Supply Officer
  - Haz-Mat Medical Officer
  - Haz-Mat Staging Officer
  
- Meet with Haz-Mat Team Liaison establish initial operational objectives.
  
- Notify ESCA/DEM who shall assist in determining what local, county, state, or federal agencies need to be notified of the incident, and if representatives of these agencies need to respond.
  
- Plan and implement strategies and tactics using the following checklist.
  - Site management and control
  - Identification
  - Hazard and risk analysis
  - Personal protective equipment
  - Information and resource coordination
  - Product control, confinement, containment
  - Decontamination
  - Termination
  
- Shall determine if any local, county, state, or federal emergency response plans need to be initiated and make the necessary communications.
  
- Activate Terrorism Response Guidelines as needed.
  
- Complete the Incident Commander check sheet.
  
- Communicate all critical information to the Haz-Mat Team Leader as soon as possible.

**2. Haz-Mat Team Liaison** Radio call (HAZ-MAT LIAISON)

- Serve as a Liaison between the Incident Commander and the Haz-Mat Team Leader.

**3. Haz-Mat Team Leader** Radio call (HAZ-MAT)

- Meet with Haz-Mat Team Liaison and the Incident Commander to establish initial operational objectives.
- Direct the activities of the Haz-Mat Group.
- Coordinate Bomb Squad support activities to include; site safety, decontamination and rescue. Assign the following positions:
  - Haz-Mat Safety Officer
  - Resource Officer
  - Decontamination Officer
  - Entry Officer
  - Haz-Mat Medical Officer
  - Entry & Backup Teams
  - Supply Officer
- Initiate the Site Safety Plan.
- Maintain passport status board for the Haz-Mat Group.
- Complete and incident report and Cost Recovery Form.

#### **4. Haz-Mat Safety Officer**

Radio call (HAZ-MAT SAFETY)

- Report to the Team Leader, Scene Safety Officer and the Incident Commander.
- Assist in identifying and evaluating the hazards present at the incident.
- Assure that safe practices are carried out and observed by emergency response personnel during the incident.
- Complete the Site Safety Plan, which may include, but not be limited to, the following:
  - Establish control zones.
  - Monitor security of control zones.
  - Assist in determining appropriate Personal Protective Equipment.
  - Give final go/no go determination.
  - Determine air monitoring and sampling method.
  - Brief Team on evacuation guidelines.
  - Ensure Decontamination has been established prior to entry of personnel.
  - Monitor all communications of Haz-Mat group.
  - Monitor activities of all areas within the Haz-Mat group.
  - Assist Incident Commander in determining need for evacuation or shelter-in-place, as well as specifics regarding direction and distances.
  - Collect all check sheets and documents.

- If at any time Haz-Mat Safety Officer determines the actions or situation at the incident to be immediately dangerous to personnel, or to involve and imminent danger, he shall have the authority to alter, suspend or terminate those actions in progress to control the incident. This includes withdrawal or evacuation of all personnel from the Warm or Hot Zones. The Safety Officer shall immediately notify the Incident Commander of any actions, which need to be taken to correct these hazards.

**5. Entry Officer**

Radio call (HAZ-MAT ENTRY)

- Ensure a record is kept of all personnel entering the HOT ZONE that will include, but not limited to the following information:
  - Entry team member name
  - Length of exposure
  - Time on air in Personal Protective Equipment
  - ID number of Personal Protective Equipment
  - Number of entries
  - Level of Personal Protective Equipment
  - Medical surveillance information (vitals)
- Stage all equipment for Entry Team in a ready to use condition.
- Maintain radio contact with Entry Team and Safety Officer during entry operations.

**6. Resource Officer**

Radio call (HAZ-MAT RESOURCE)

- Complete a Hazard Risk Assessment form on known products.
- Make proper notifications and contacts as needed.
- Determine proper Personal Protective Equipment for entry.
- Research compatibility of Personal Protective Equipment with product.
- Brief Entry Team on special hazards and /or exposure symptoms prior to entry.
- Maintain a record of all off-scene contacts.
  - Conduct all field sample tests using the Hazclass Kit, document findings, and report results to Team Leader.

**7. Decontamination Officer**

Radio call (DECON)

- Decontamination site location, set-up, and security.
- Complete decontamination set up check sheet.
- Determine proper decontamination solution, based on product involved.
- Ensure the proper decontamination steps are performed.
- Direct all personnel assigned to the decontamination area.
- Ensure all persons decontaminated are sent to the EMS area for evaluation.

#### **8. Van Driver / Supply Officer**

Radio call (SUPPLY)

- Completion of all pre-response activities to include the following:
  - Disconnect shore power.
  - Ensure equipment is secure.
  - Lock all cabinet doors and drawers.
  - Perform a basic rig check.
- Safe placement of the van on-scene.
- Scene set-up: Awning, Power, etc.
- Allocation of equipment on scene.
- Restore van to pre-incident condition.
- Document and report to the Team Leader any damaged or missing equipment.

#### **9. Haz-Mat Medical Officer**

radio call (EMS)

- Set up EMS area at exit point of Decontamination area.
- Complete Entry Team Exposure Form.
- Perform pre and post entry evaluation of Entry Team personnel.
- Complete EMS report on all persons sent to the hospital.
- Include a copy of the CAMEO report on the product involved, if applicable, with EMS report when transporting.

#### **11. Haz-Mat Aid**

- Manage status board passport accountability for Haz-Mat Team Leader.

- Provide technical support and assistance as requested by the Haz-Mat Team Leader.

## C. INCIDENT MITIGATION

### 1. Control Zones

Control zones shall be established prior to any attempts to mitigate the incident. The following guidelines will be used to determine these zones.

- **HOT ZONE** - This is the area, which is, or potentially could be, contaminated due to the release of a hazardous material. No personnel without the proper level of protective clothing shall enter this area. This area is to be considered highly contaminated and an absolute minimum of personnel and equipment should be committed to mitigate the incident. Access to this area should be limited to control points easily recognizable to responders and monitored by the Haz-Mat Safety Officer. All persons and equipment exiting the Hot Zone shall be considered contaminated and will undergo appropriate decontamination procedures.
- **WARM ZONE** - This is the transition area between the contaminated area (Hot Zone) and the clean area (Cold Zone). The decontamination area and access control points are located in this area. Only decontamination team members shall be allowed in this area during an entry and they shall be in proper Personal Protective Equipment.
- **COLD ZONE** - This area shall be free from any level of contamination allowing personnel to perform support activities without the need for chemical protective clothing. This will still be considered a secure area with access limited to support personnel. A media area may be established in the cold zone and shall be clearly marked and monitored by the Incident Safety Officer.

## **2. Hazardous Material Identification**

- Every effort should be undertaken to identify the product involved prior to committing personnel to the hot zone. Recon shall be performed from a safe distance, up wind, and up hill as much as possible. All Recon personnel shall be in full bunkers with SCBA's as a minimum level of protection.
- If possible, three different reference sources will be used to identify product hazards. The information gathered will be documented on a Hazard Risk Assessment form and evaluated by the Team Leader, Haz-Mat Safety Officer, and Resource Officer to determine the proper level of protection required to perform an entry.
- The Team Leader shall communicate with the Incident Commander and first-in units to obtain any information helpful in identifying the product. This should be done as soon as possible after the Team Leader arrives on-scene.
- In cases of known or suspected terrorist events, the Team Leader will coordinate activities of the Hazardous Materials Response Team with those of other responding agencies. The Incident Commander will be advised of any specialized equipment carried available Haz-Mat Units.

## **3. Entry Team Operations**

- Personnel who enter the Hot Zone shall be identified as the Entry Team. The Entry Team will be backed-up by personnel designated as the Backup Team.
- The Entry Team and Backup Team will be under the immediate command of the Team Leader.
- The buddy system will be utilized at all times by the Entry and Backup Teams when performing an entry.
- Each team will consist of the same number of personnel.
- No entry shall be made until the Backup Team and Decontamination Team are in position.

## **4. Operational Briefings**

- Operational briefings will be held as often as necessary for emergency personnel during an incident. These briefings will include, but are not limited to, the following information:
  - Hazardous material identification
  - Symptoms of exposure

- Operational tasks to be performed
- Escape routes
- Evacuation warnings
- Radio checks

There shall be at least **one** operational briefing conducted before any personnel enter the Hot Zone.

## **5. Communications**

All radio communications will be held to a minimum during an entry. If radio use is not possible hand signals will be utilized provided visual contact can be maintained. If visual contact and radios are not possible the entry will be denied until radio communications are restored.

## **6. Monitoring**

- The air monitoring equipment to be used during an entry will be determined by the Haz-Mat Team Leader, Haz-Mat Safety Officer, and Resource Officer based on information gathered about the product involved or type of event.
- All air monitoring equipment shall be maintained in a response ready manner following the manufacturers recommended procedures. The check sheets and procedures shall be readily accessible to all Haz-Mat personnel and kept on Haz-Mat response vehicles.
- The Entry Officer will be responsible for performing basic pre-entry procedures for each air monitor used on the scene.
- The Haz-Mat Team Leader or Haz-Mat Safety Officer will provide downwind air monitoring using available equipment and personnel to determine safe zones at the earliest appropriate time. This activity may include the use of outside resources.

## **6. Resource Support**

- Resource requests beyond that of regular mutual aid should be requested by the Incident Commander or the Haz-Mat Team Leader through ESCA/DEM.

## D. EVACUATION/SHELTER IN PLACE

- Messages should be short and concise. If detailed instructions are necessary, prepare messages in stages so recipients can listen to, and act on the information in order of priority. Consider the following methods for relaying information:
  - Door to door notification by uniformed police and/or fire personnel.
  - Emergency vehicle loud speakers/public address system.
  - Emergency Alert System activates through SNOPAC or ESCA.
  - News Media.
  - Phone calls to high occupancy facilities.
- Evacuate to locations uphill, upwind and upstream. State the nature of the danger and route for evacuation. Tell evacuees to bring supplies, clothing and pets when appropriate. Request next of kin information from persons who are unwilling to follow evacuation instructions. Close the area to all incoming traffic.
- Notify ESCA/DEM immediately of evacuation activity. They will notify adjacent jurisdictions, arrange for shelters and make other notifications as appropriate.
- **Sample Evacuation Message:**

Attention! A hazardous chemical release has occurred at \_\_\_\_\_. The \_\_\_\_\_ fire/police department has issued the following emergency evacuation order. All persons within the area of \_\_\_\_\_ are directed to evacuate immediately. Tie a towel or cloth to you front door knob to indicate the premises are vacated. Police will secure the area vacated. Bring the following supplies with you \_\_\_\_\_. Use the following evacuation routes \_\_\_\_\_. Shelters are set up at \_\_\_\_\_. School children will be evacuated by bus. Do not attempt to pick them up at school. If you require special assistance call \_\_\_\_\_. Stay tuned to your television or radio station for further instructions and information. Do not call 911.

- **Sample Shelter in Place Message:**

Attention! A hazardous chemical release has occurred at \_\_\_\_\_. The \_\_\_\_\_ fire/police department has issued the following emergency shelter in place order. All persons within the area of \_\_\_\_\_ are directed to shelter in place. Go indoors immediately. If you are already indoors stay there. Close all windows and doors. Go to an interior room and try to seal all cracks and openings around windows, doors, and ventilation ducts with duct tape, plastic or wet towels for better protection. Take a radio or television, some food and water and pets with you. Stay still and quiet to minimize air use. Place a wet towel over your nose and mouth for extra protection. You will be safe for several hours. School children will be protected at school. Do not attempt to pick them

up at school. Stay tuned to your television or radio station for further instructions and information. Do not call 911.

## E. PERSONAL PROTECTIVE EQUIPMENT

- All Personal Protective Equipment will be maintained in accordance with recommendations from the manufacturer. Each suit will be tagged and identified as tested.
- Personal Protective Equipment will be examined by the Entry Officer prior to entry for damage and proper fit.
- Chemical compatibility for Kappler/Responder suits will be checked prior to entry by the Resource Officer. This information can be found on the Chemical Data Disk.

### 1. Protection Levels

- **Level A:** Will be used when a product release creates a condition that meets the following criteria:
  - The product involved has been identified as one whose properties require the highest level of protection for skin, eyes, and the respiratory system.
  - Operations and response functions involve high potential for splash, immersion or exposure to unexpected vapors, gases, or particulates of materials highly toxic to the skin.
  - Substances with a high degree of hazard to the skin are known or suspected to be present, and skin contact is possible.
  - Operations must be conducted in confined, poorly ventilated areas until the absence of substances requiring level A protection is determined.
  - Unknown substance release.
- **Level B:** Will be used when a product release creates a condition that meets the following criteria:
  - The type and atmospheric concentration of toxic substance has been identified and requires a high level of respiratory protection, but less skin protection than Level A. These would be atmospheres with concentrations that exceed their IDLH, but does not represent a severe skin hazard.
  - The atmosphere contains less than 19.5% oxygen.
  - It is highly unlikely that response activities will generate high concentrations of vapors, or splashes of material that will affect the skin of response personnel.
- **Support Suits:** Will be used exclusively within the Warm Zone during decontamination activities unless the Haz-Mat Safety Officer approves the use of turnouts and SCBA.
- **Specialized Protective Equipment:** Only personnel with proper training in specialized protective equipment shall be allowed to don this type equipment

for the purposes of rescue and backup only. Chemical protective oversuits will be used as deemed necessary by the Haz-Mat Safety Officer.

- **Ancillary Respiratory protection (Level C)** SCBA equipment alone may not be sufficient for use on all Hazardous Materials and/or WMD responses. SCBA's will be required for entry into all unknown atmospheres and atmospheres with an IDLH concentration. However to extend entry time and lessen fatigue in known atmospheres and concentration below the IDLH it may be more efficient to use Powered Air Purifying Respirators (PAPR). Due to the lighter weight, and the fact that a fan supplies air, these units reduce stress and fatigue for the user. Unlike SCBA's a PAPR is not supplied by a bottle with a limited amount of air, therefore entry times can be dramatically increased.

**Limitations:** The PAPR does have its limitations. A PAPR is not self contained it draws air from the atmosphere and filters it. A PAPR should not be used in oxygen deficient atmospheres (19.5% and below). A PAPR should not be used in unknown atmospheres or atmospheres with an IDLH. You must have the correct filters for the agent.

**Selection of PAPR for entry:** The PAPR will not be used for emergency entry. The PAPR may be selected when the agent or agents and their concentration have been identified, and are below IDLH levels. The PAPR will only be used when it is determined that class C respiratory protection is sufficient and the appropriate filters for the agent/agents are available. Use the following guide before choosing the PAPR.

- Determine what agents are present in the area, the concentrations of the agents and the warning properties.
- Determine that it is not an oxygen deficient atmosphere (oxygen concentration of 19.5% or less).
- Verify that the agent(s) has good warning properties (odor of chemical is detectable to the wearer of the PAPR at a concentration that warns of filter/cartridge breakthrough prior to reaching a harmful level).
- Determine that the concentration of chemicals present is less than the IDLH level.

**Uses for the PAPR:** When the above conditions have been met the PAPR may be used to extend entry times for some operations such as patient removal, air monitoring, decontamination, and perimeter control.

**Safety:** When the criteria for use of a PAPR are met the user shall be monitored from time to time for signs of heat stress, and fatigue. Follow the filter/cartridge manufactures recommendations for filter/cartridge breakdown time and concentration. There should be ongoing air monitoring in the areas were PAPR's are being used. Do not over stay the life of your battery.

**Fit Testing:** Fit Testing should be done using the same guidelines as SCBA's.

**Training:** All users of the PAPR shall receive training before using a PAPR, with periodic training as done for SCBA's.

**Care and Maintenance:** All PAPR's will be periodically inspected. All cartridges shall be checked to make sure they are properly sealed. A cartridge or filter that has been previously used shall be discarded. All batteries shall be fully charged before use.

**Cartridge Selection:** The following charts will help in identifying and selecting the appropriate cartridge and or filter.

COLOR	TYPE OF PROTECTION
Black	Organic Vapor Cartridge
White	Acid Gas Cartridge
Yellow	Organic Vapor and acid gas cartridge
Green	Ammonia and Methyl amine cartridge
Olive Green	Organic vapor and formaldehyde cartridge
Purple (Magenta)	Dust, fumes, mists, asbestos, radionuclides, and highly toxic particulates (P100) filter
Black/Purple	Organic Vapor and P100 combination
White/Purple	Acid Gas P100 combo
Yellow/Purple	Organic vapor/acid gas and P100 combo
Green Purple	Ammonia/Methyl amine and P100 combo
Olive Green/Purple	Organic vapor/formaldehyde and P100 combo
Pre-filters	Use with dusts, fumes, mists, pesticides, and paints

FILTER TYPE	USE
P100	At least 99.97% efficient against solid and liquid particles including those containing oil. May be in a cartridge form or disk form. When in cartridge form, color coded purple. P100 designation replaces HEPA filters.
N95 Pre-filter	Approved for solid and liquid particulates excluding those containing oil.
P95 Pre-filter	Approved for solid and liquid particles including those containing oil.

## F. DECONTAMINATION

Decontamination is an essential part of the overall hazardous materials response plan. There are many types of decontamination that may be performed by Operations, Technician or Specialist level personnel.

- Gross Decontamination – This is a form of self-decontamination to be performed by the victim with little or no assistance by responders. Removal of clothing or brushing off powders as examples.
- Emergency Field Decontamination – This is an Operations level action utilizing a fog stream pattern to quickly apply water for victims exhibiting symptoms. There is no concern given to run-off and should be utilized in emergency situations only, when waiting for a Hazmat Team is not practical.
- Technical Decontamination – This is the highest level of decontamination available in the field. Technical decontamination is under the direction of the Team Leader and Decontamination Officer. It is a three-stage operation consisting of a gross decontamination shower, primary decontamination and secondary decontamination. The second stage must be established as a minimum before any entry into the hot zone can commence. This operation shall be performed in accordance with the decontamination setup and procedure checklists found on page 61 in this plan.
- Mass Decontamination – This is for use when emergency field decontamination is deemed insufficient to handle the number of patients needing decontamination. This is the first action to be used in a Hazmat MCI, intended to provide the most good for the most people. Engine company personnel will start this operation with the responsibility shifting to the Hazmat Team upon arrival. Procedures for this operation are found in the Engine Company Operating Guidelines. Hazmat Team Operations for a Hazmat MCI will be in accordance with the Mass Decontamination Procedure Checklist found in Section 5-Job Aids.

## **G. INCIDENT TERMINATION**

### **1. Termination**

- Termination is one of the most important phases of an incident. Returning the personnel and equipment to a response ready mode requires practice and a consistent procedure to ensure no steps are missed. The following steps need to be taken to bring the incident to a close:
  - Transfer responsibilities to other agencies.
  - Gather documentation and reports.
  - Debriefing of personnel.
  - Collection of pertinent data from all responders
  - Provide chemical exposure information
- Critique the incident based on the reports, check sheets, debriefing, and observations. These should be held for each major incident and invitations should be sent to all involved agencies to allow for other views and suggestions. Critiques do not have to define problems, just solutions.

### **2. Behavioral Health**

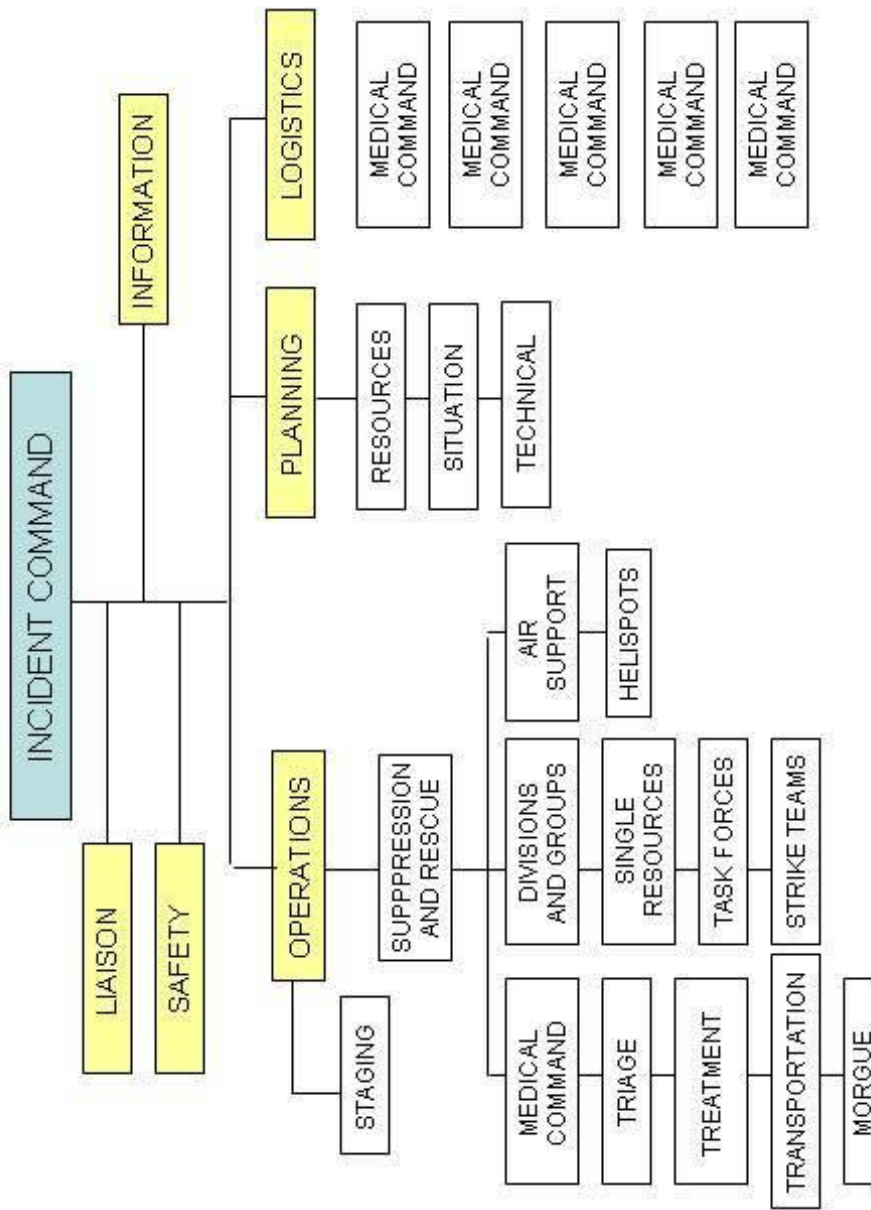
- The American Red Cross, local mental health professionals and Support Seven personnel may be requested to address the behavioral health needs of victims. Behavioral Health needs of responders will be addressed through departmental policies and the Critical Incident Stress Debriefing Team (CISD).

### **3. Clean up and Cost Recovery**

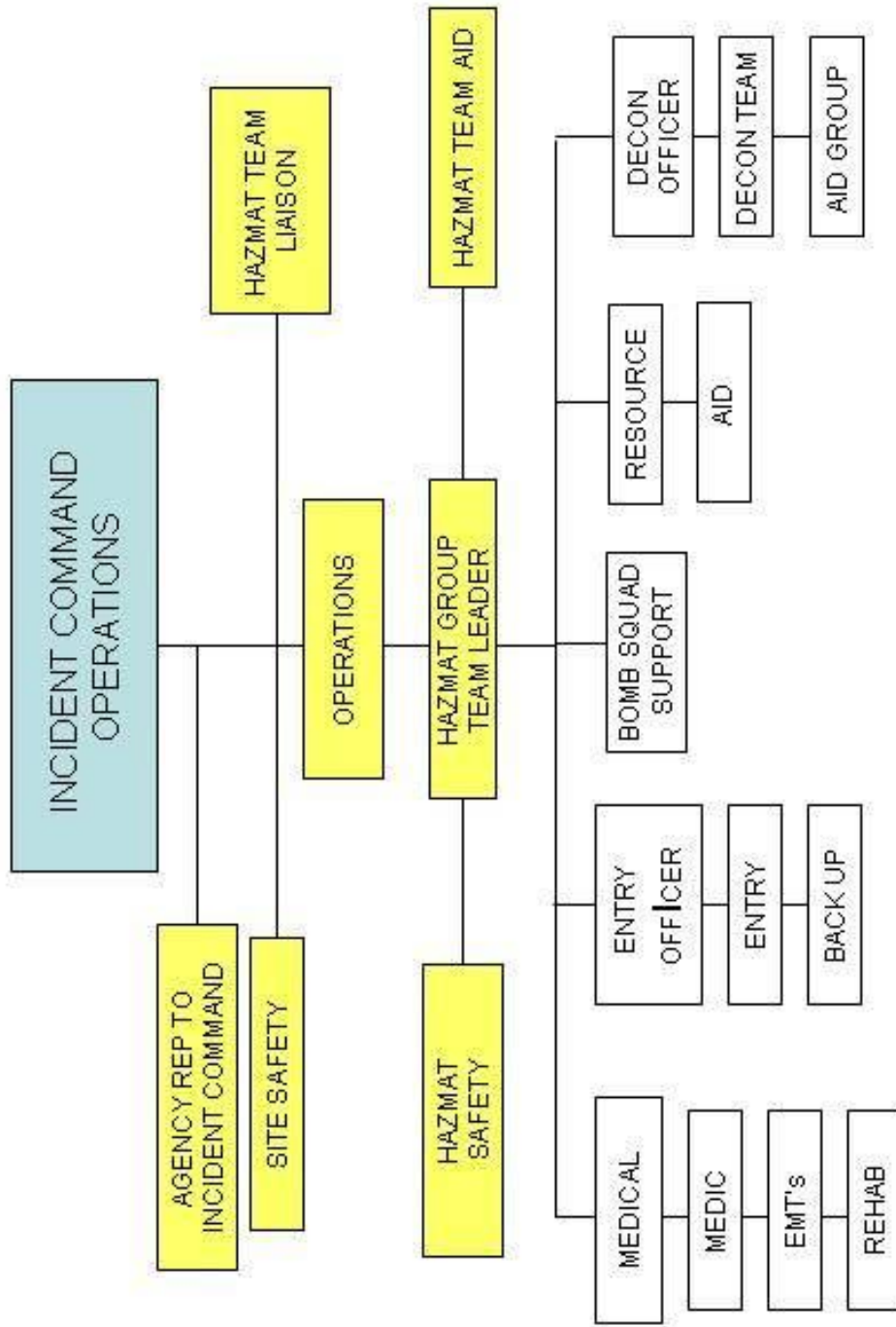
- Haz-Mat Team personnel may respond and provide support services such as decontamination or stand-by to clean-up contractors/agencies requesting assistance. Under no circumstances shall Haz-Mat Team personnel enter into clean-up operations. Clean-up operations will be handled by private contractors, or state or federal agencies
- Taking possession of a small quantity of hazardous materials for temporary storage at a secured location or transport to an approved drop off point may be authorized by the Department of Ecology and is allowed only with coordination through ESCA. ESCA's authorization to store or transport a hazardous substance will be given on a case by case basis, normally on weekends or after regular business hours when the Department of Ecology is not available for routine spill response.

- The Snohomish County Regional Drug Task Force will provide response and coordination for processing and clean up for illegal drug labs.
- Cost recovery is vital to the survival of a regional response team. The Team Leader shall complete the Cost Recovery and Equipment Supply Order Forms and provide other documentation as needed for each incident. See Administrative Procedures (page 86).

# INCIDENT COMMAND ORGANIZATION CHART



# HAZMAT GROUP ORGANIZATION CHART



## **SECTION 4 - WEAPONS OF MASS DESTRUCTION**

This section describes recommended procedures and resources for terrorist incidents involving weapons of mass destruction (WMD) that utilize nuclear, biological or chemical (NBC) warfare agents and industrial substances capable of producing mass casualties. Though Mass Casualty Incident (MCI) and Hazardous Materials (Hazmat) procedures will be activated during a WMD event, neither would be sufficient to be utilized exclusively. This plan serves as a guide to assist responding agencies when dealing with the unique nature of terrorist events and will reference other plans as warranted.

As in all incidents, responding agencies will rely on the Incident Management System (IMS) to provide the organization to deal with the terrorist threats. The response context for virtually all WMD / NBC events will be that of a Hazmat incident. Consequently, the Incident Commander will build a response organization using the Incident Management System principles for Hazmat, but will have available additional resources/agencies to meet the special needs of such events. The additional resources are built upon special training, equipment and medical antidotes provided to the responding Hazmat Teams. All current mutual aid systems will be relied upon to support the IMS as in any type incident.

Special resources in the form of consultation and testing can be called to the scene or provided through the Emergency Services Coordinating Agency (ESCA) or the Snohomish County Department of Emergency Management (DEM). Available resources include Federal, State, County and local agencies. These resources become available through activation of the Hazardous Materials Response Plan.

### **A. NOTIFICATION**

Due to tremendous burden placed upon initial responding agencies, immediate activation of the Hazardous Materials Response Plan is vital. Once a WMD event is recognized it becomes the responsibility of the Incident Commander to notify the dispatch center, other responding agencies and ESCA and/or DEM immediately.

### **B. RECOGNIZING WEAPONS OF MASS DESTRUCTION (WMD) AND NUCLEAR, BIOLOGICAL OR CHEMICAL (NBC) EVENTS**

In some cases, an incident will be known or suspected to involve NBC agents at the time units are dispatched. In these cases, special resources, including Hazmat will be involved initially in the incident.

It is also possible that there may be no advance identification for NBC incidents. In these cases, first responders may be dispatched following normal protocol classifying incidents as structure fire, hazardous materials, medical emergency, technical rescue, or service response. It is incumbent upon all company officers and responding personnel to remain alert to signs that an incident may involve weapons of mass destruction with explosive, chemical, biological or radiological agents. Explosive device actions are found in the Hazardous Materials Operating Guidelines and will not be addressed in this section.

There are seven indicators of a NBC attack when approaching an incident scene:

- Symptoms of victims.
- Mass casualties - many victims with similar symptoms and no obvious trauma or cause.
- Casualty pattern - victim distribution indicating source or direction of hazard.
- Presence of a dissemination device - a low order explosion with little collateral damage, formation of a plume, or canister equipment present.
- Dead animals or birds - lower tolerance to chemicals.
- Statements of victims - symptoms, noises heard, or unusual sights.
- Things that seem unusual or out of place at the scene - smells, liquid spills, or devices.

### **C. CHEMICAL AND BIOLOGICAL AGENT INDICATORS**

It is important to remember that chemical agents found in the field may not be limited to military compounds. Industrial chemicals are very effective as weapons of mass destruction and are easier to obtain.

Chemical exposure will result in immediate manifestation of signs and symptoms which are common to all exposed.

Biological agents are not volatile, do not penetrate unbroken skin, and are undetectable by human senses. All biological agents involve *delayed* rather than immediate effects. The delayed nature of biological agent effects usually results in the event detection through: (1) the operation of the public health infectious disease surveillance; (2) illness patterns at public hospitals; (3) a perpetrator is apprehended in the act of dispersing.

The tables on the following pages summarize selected chemical and biological agent signs and symptoms.

### Chemical Agent Signs and Symptoms

Agent	Effects	Smell	Onset	First Aid	Decontamination	Detection
<b>Nerve:</b> Sarin  Soman  VX	<b>Vapor:</b> Pinpoint pupils, salivation, shortness of breath  <b>Liquid:</b> Increased sweating at site, localized muscle twitching  <b>Both:</b> Nausea vomiting, seizures	Fruity smell like Juicyfruit gum  Camphor  Sulfur	Seconds  Minutes to hours	Mark I kit (atropine & 2 pam chloride) 1-3 kits  Diazepam if symptoms are severe	<b>Skin:</b> 5% bleach solution  <b>Equipment:</b> 5% bleach solution	<b>Liquid:</b> M8 paper, M9 paper  <b>Vapors:</b> M256 kit, Drager APD-2000
<b>Blister:</b> Mustard  Lewisite  Phosgene Oxime	<b>Vapor:</b> Irritated eyes, runny nose, sneezing, hacking cough  <b>Liquid:</b> Redness of skin, blisters, moderate to severe pain	Garlic  Geraniums  Irritating	Hours  Rapid pain If Lewisite or Phosgene Oxime	None  Supportive care for pain and blisters	<b>Skin:</b> 5% bleach solution  <b>Equipment:</b> 5% bleach solution	<b>Liquid:</b> M8 paper, M9 paper  <b>Vapors:</b> M256 kit, Drager, APD-2000
<b>Choking:</b> Phosgene  Chlorine	Coughing, choking, tightness in chest, a feeling of suffocation, edema and death	Mowed hay or grass  Swimming pool or bleach	Seconds	Remove from environment, give oxygen	None	Drager, APD-2000
<b>Blood:</b> Hydrogen Cyanide  Cyanogen Chloride	Gasping for air, reddish skin, unconsciousness, seizures, death	Bitter almonds  Bitter almonds	Seconds	Remove from environment, give amyl nitrate, sodium thiosulfate &/or sodium nitrate	None	Drager, M256 kit, APD-2000

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## BIOLOGICAL AGENTS

AGENT	INCUBATION	LETHALITY	PERSISTENCE	DISSEMINATION
<b>Bacteria</b>				
Anthrax	1 -5 days	3 -5 days fatal	Very Stable	Aerosol
Cholera	12 hours – 6 days	Low with treatment High without treatment	Unstable Stable in saltwater	Aerosol Sabotage of water
Plague	1 – 3 days	1 – 6 days fatal	Extremely stable	Aerosol
Tularemia	1 – 10 days	2 weeks moderate	Very stable	Aerosol
Q fever	14 – 26 days	Weeks?	Stable	Aerosol Sabotage
<b>Viruses</b>				
Smallpox	10 – 12 days	High	Very stable	Aerosol
Venezuelan Equine Encephalitis	1 – 6 days	Low	Unstable	Aerosol Vectors
Ebola	4 – 6 days	7 – 16 days fatal	Unstable	Aerosol Direct contact
<b>Biological Toxins</b>				
Botulinum toxins	Hours to days	High without treatment	Stable	Aerosol Sabotage
Staphylococcal enterotoxin B	1 6 hours	Low	Stable	Aerosol Sabotage
Ricin	Hours to days	10 – 12 days fatal	Stable	Aerosol Sabotage
Tricothecene	2 – 4 hours	Moderate	Extremely stable	Aerosol Sabotage

## **D. CHEMICAL AGENT RESPONSE ACTIONS**

First responders to a chemical agent will recognize the signs and symptoms of chemical exposure. Initial actions should follow Hazardous Materials Response Plan Operating Guidelines with the additional actions listed below.

### **1. Isolate Area and Establish a Perimeter**

- WMD events by their nature involve multiple causalities. It is very important that first responders protect themselves from cross contamination, tunnel vision, and secondary devices. This is a crime scene and there may be vital evidence in plain view of the first responder upon arrival. Isolation of the scene will serve to protect both the responder and the evidence.

### **2. Establish Zones**

- The HOT ZONE as defined in the Hazardous Materials Response Plan Operating Guidelines will be the area immediately around the source, munitions, or device. All access to the Hot Zone will be limited to a single entry control point. Anyone entering this area must wear full protective gear. The entry control point should be a minimum of 300 feet or Emergency Response Guidebook Initial Isolation Distance recommendation; which ever is greater from the source.
- The WARM ZONE as defined in the Hazardous Materials Response Plan Operating Guidelines will be for Hot Zone support, rescue, and decontamination. This will be considered a safe area until Decontamination operations are in progress at which time full protective gear will be required. This area will have to be large enough to accommodate multiple victims awaiting decontamination.
- The COLD ZONE as defined in the Hazardous Materials Response Plan Operating Guidelines shall be clean of all contamination by people or equipment. Triage, treatment and transport shall take place in this area. Only necessary support personnel should be in the Cold Zone, which include Hazmat, Command, and EMS personnel.

### **3. Evidence Considerations**

- Care should be taken to preserve evidence that may be removed from victims during decontamination. Police may want to assign one person to watch for potential evidence in the treatment area.

### **4. Initiate Patient Management**

- Minimum Personal Protective Equipment is turnout, chemical protective gloves and SCBA.
- Initiate MCI Protocols as needed for multiple victim incidents. Attempt to gather ambulatory victims for evaluation of symptoms and/or contamination. Establish a safe area within the Warm Zone to stage victims in need of decontamination. Gross decontamination operations shall be initiated immediately as described in the Operating Guidelines if victims are contaminated.

- In most cases decontamination will be required. Explain the decontamination process to the victims as the area is being established. Once patients are decontaminated, triage can begin. Victims needing additional decontamination by the Hazmat Team shall remain in a safe area within the Warm Zone.
- Gather information on number of injured or dead not visible from the Treatment Area from ambulatory victims.
- Non-ambulatory victims shall be left in place until Hazmat and Rescue personnel arrive. All dead should be considered as in the Hot Zone and left in place.

## **5. Establish a Hazmat Group**

- The Hazmat Group will develop a site-specific safety plan and evaluate first-in company actions. All decontamination activities will be the responsibility of the Hazmat Group. Operational personnel in the area shall be assigned to the Hazmat Group for support.
- The Hazmat Team will determine if the event involves a Chemical, Nuclear, or Biological hazard and make proper notifications and requests for assistance based on the findings.
- If mass decontamination is implemented the Hazmat Team will request additional resources from the Incident Commander as needed. Decontamination set up procedures for the individual decontamination units will be followed.

## **6. Mass Decontamination Set-up and Operation**

- The Operations Level personnel shall initiate mass decontamination as directed. Procedures for mass decontamination can be found in Section 5–Job Aids. The team will establish a technical decontamination line as described in Section 5–Job Aids including set up of the decontamination shelter.
- Victims exhibiting symptoms, having obvious signs of contamination and/or special needs will be given priority for decontamination and then staged in a safe area to await triage.
- Care shall be taken to document all removed clothing and personal items. Such items shall be bagged and marked with the owner’s name. Police Department personnel will track and store bagged items not deemed contaminated.
- Once the mass decontamination line is established the technical decontamination line shall be exclusively for response personnel.

## **7. Hazmat Initial Entry**

- Entry into the Hot Zone will not take place until all victims are decontaminated or a separate decontamination line has been established for response personnel.
- No entry will be made if explosive devices are found or suspected. The Explosives Unit assisted by the Hazmat Team shall conduct those operations. Should a suspected secondary device be discovered during an entry all radio communications shall stop and the entry team will evacuate the area. Isolation Zones will be reevaluated and the Explosives Unit notified of the situation.
- Entry into the Hot Zone will be determined by the protocols established in the Hazardous Materials Response Plan Operating Guidelines.

## **8. Victim Rescue/Extrication**

- When victims are trapped and require special rescue techniques, a rescue response will be requested. It will be the responsibility of the Hazmat Group to ensure a safe working environment exists prior to rescue operations beginning. All Rescue Team operations shall be in accordance with the Rescue Team Operating Guidelines.

## **9. Emergency Medical Management**

- The purpose of medical management is ensuring the best possible pre-hospital emergency care is rendered to victims throughout the course of an incident. The EMS Group shall be established as soon as possible when a mass or multi-causality incident has occurred as the result of a WMD/NBC event. All decontaminated victims will be directed to the EMS Group located near the decontamination corridor for secondary triage, treatment and transportation. All activities within the EMS Group will be in accordance with MCI protocols and under the direction of a paramedic or Hospital Control.
- Special care to avoid cross contamination will be taken at all times during Triage.
- Treatment Protocols for selected agents are contained in this document.
- Pharmaceuticals are stored at various locations and will be brought to the scene with responding Paramedic Units as required for the incident. Separate caches of antidotes are identified for victims and responders and will be stored at AirLift Northwest, Arlington.

## **10. Hospitals**

- Potential receiving hospitals will be notified immediately by dispatch upon determination that a WMD chemical agent is involved in an incident. Communication lines shall be established with Hospital Control as soon as practical following the establishment of a Medical Group Supervisor. Hospitals will receive information on the identified or suspected agent, decontamination status, and field treatment of victims as the information becomes available.

- Receiving hospitals will engage lock-down status. All area hospitals will be informed of an NBC incident in progress. Decisions to lock-down at hospitals not designated as receiving victims from the scene will be made according to each hospital's specific disaster plan.
- Hospitals will assume the responsibility for decontamination, triage and treatment of "walk in" patients. This includes primary set-up of decontamination and personal protective equipment for hospital personnel.
- Local police departments will be responsible for assisting hospital security staff in maintaining order at receiving hospitals. This includes management of "walk ins" awaiting decontamination.
- Hospital capacity will be determined by the individual hospitals and relayed to the Incident Commander or Medical Officer by Medical Control. Field hospitals will be established in accordance with the County/City Disaster Plan when area hospitals become saturated.

## **11. Recovery and Restoration**

- The recovery and restoration phase begins after the last living victims have been transported from the scene and continues until all contamination has been eliminated. The Department of Homeland Security and its subordinate agencies have management and support roles at a terrorist event. Resources from those agencies may assist in the recovery phase. FBI, law enforcement agencies and the Medical Examiners Office will carry out post incident investigation. They are responsible for gathering evidence and removing bodies from the scene.
- The Snohomish County Haz-Mat Team will remain available to support all agencies involved in the recovery phase as needed. The decontamination areas will be maintained until no longer needed at the incident scene. All disposable equipment will be left at the scene for removal by a clean up contractor designated by the Department of Ecology.
- All other equipment will be decontaminated at the scene prior to the decontamination area being shut down. Equipment that cannot be cleaned in the decontamination area will be cleaned with a 5% bleach solution back at the station. A minimum solution contact time of 15 minutes will be observed, followed by a rinse and retest for contaminants. This process will be repeated until no contamination is detected.

## **D. RADIOLOGICAL AGENT RESPONSE ACTIONS**

Radiological threats can take the form of an explosion that disseminates gamma rays and radioactive particles, an exposure of radioactive substances that generate gamma rays, or the dispersion of solid radioactive material that may be inhaled or ingested. Nuclear weapon detonation by terrorists is remote, though they may be a target while in transport. These weapons contain high explosives and may be shock sensitive.

The effects of human exposure to radiological hazards are delayed. In some cases burns may be present or if material is ingested in large quantity, gastric symptoms may be present.

Other injuries may be present if an explosive device was used to disseminate the radioactive material.

A radiological incident may involve:

- The threat of a release at a specific time and location.
- A device detected and reported prior to release.
- An explosive device used as a disseminating device without warning.
- A perpetrator observed in the act of disseminating an agent.

### **1. Isolate Area and Establish a Perimeter**

- Initial response actions at a radiological incident will be in accordance with the Emergency Response Guidebook located on each apparatus. Responders should be very cautious of wind direction to avoid down wind contamination. First arriving units should secure a perimeter, evaluate the situation, and request a Hazardous Materials Response Team.
- If a fire is involved as part of the incident, units should evacuate surrounding area to a distance of 2000 feet. Police assistance will be mandatory in this event.

### **2. Establish Zones**

- The HOT ZONE as defined in the Hazardous Materials Response Plan Operating Guidelines will be the area immediately around the source, munitions, or device. All access to the Hot Zone will be limited to a single entry control point. Anyone entering this area must wear full protective gear. The entry control point should be a minimum of 330 feet or Emergency Response Guidebook Initial isolation zone recommendation; whichever is greater from the source.
- The WARM ZONE as defined in the Hazardous Materials Response Plan Operating Guidelines will be for Hot Zone support, rescue, and decontamination. This will be considered a safe area until decontamination operations are in progress at which time full protective gear will be required. This area will have to be large enough to accommodate multiple victims awaiting decontamination.
- The COLD ZONE as defined in the Hazardous Materials Response Plan Operating Guidelines, shall be clean of all contamination by people or equipment. Triage, Treatment and Transport shall take place in this area. Only necessary support personnel should be in the Cold Zone, which include Hazmat, Command, and EMS personnel.

### **3. Initiate Patient Management**

- Minimum personal protective equipment is turnouts and chemical protective gloves.
- Initiate MCI Protocols as needed for multiple victim incidents. Attempt to gather ambulatory victims for evaluation of symptoms and/or contamination. Establish a safe area within the Warm Zone to stage victims in need of decontamination.

Gross decontamination operations shall be initiated immediately as described in the Operating Guidelines if victims are contaminated.

- Medical conditions take priority over radiological concerns. Victims of radiation are NO DANGER to responders. Radioactive particles on skin and clothing are not a medical emergency and may be brushed or washed off easily. Make note of any runoff into storm sewers and notify the Hazmat Team.
- Explain the decontamination process to the victims as the area is being established. Once decontaminated, triage can begin using the START method.
- Gather information on number of injured or dead and ambulatory victims not visible from the treatment area. Non-ambulatory victims shall be left in place until Hazmat and Rescue personnel arrive.

#### **4. Establish a Hazmat Group**

- The Hazmat Group will develop a site-specific safety plan and evaluate first-in company actions. All decontamination activities will be the responsibility of the Hazmat Group. Operational personnel in the area shall be assigned to the Hazmat Group for support.
- The Hazmat Team will determine if the event involves a Chemical, Nuclear, or Biological hazard and make proper notifications based on the findings.
- If mass decontamination is warranted the Team will request additional resources from the Incident Commander as needed. Marysville and Everett Hazmat have decontamination equipment. MCI Trailers will also be requested which have decontamination equipment.

#### **5. Mass Decontamination Set-up and Operation**

- The Operations Level personnel shall initiate mass decontamination as directed. Procedures for mass decontamination can be found in Section 5 –Job Aids. The team will establish a technical decontamination line as described in Section 5 – Job Aids including set up of the decontamination shelter.
- Victims exhibiting symptoms, having obvious signs of contamination and/or special needs will be given priority for decontamination and then staged in a safe area to await triage.
- Care shall be taken to document all removed clothing and personal items. Such items shall be bagged and marked with the owner's name. Police Department personnel will track and store bagged items not deemed contaminated.

## **6. Hazmat Initial Entry**

- Entry into the Hot Zone will not take place until all victims are decontamination or a separate decontamination line has been established.
- Entry into the hot zone shall be limited to the absolute minimum number of personnel for the minimum amount of time required for the situation. Radiological monitors will be used with action levels established for safe operation. Should the action level be reached, all entries will stop and immediate evacuation of the hot zone will occur.
- No entry will be made if explosive devices are found or suspected. The Explosives Unit assisted by the Hazmat Team shall conduct those operations. Entry into the Hot Zone will be determined by the protocols established in the Hazardous Materials Response Plan Operating Guidelines. Should a suspected secondary device be discovered during an entry all radio communications shall stop and the entry team will evacuate the area. Isolation Zones will be reevaluated and the Explosives Unit notified of the situation.

## **7. Victim Rescue/Extrication**

- When victims are trapped and require special rescue techniques, a rescue response will be requested. It will be the responsibility of the Hazmat Group to ensure a safe working environment is exists prior to rescue operations beginning. All Rescue Team operations shall be in accordance with the Rescue Team Operating Guidelines.
- All dead should be considered as in the Hot Zone and left in place.

## **8. Medical Management**

- It is probable in a radiological incident that victims at the scene may exhibit no symptoms. Medical treatment at the scene is likely to be confined to collateral event injuries (not radiation).
- Radiation exposure alone is not a medical emergency. Victims who have been exposed to radiation, but are not contaminated and have no other injuries, can be advised to see their personal physician. EMS Group can release such victims for interview and tracking by law enforcement personnel.
- Treatment for radiation exposure is symptomatic support; there are no antidotes or efficacious treatments.

## **9. Hospitals**

- Potential receiving hospitals will be notified immediately by dispatch upon determination that a radiological agent is involved in an incident. Hospitals will receive information on decontamination status, and field treatment of victims as the information becomes available.

- Receiving hospitals will engage lock-down status. All area hospitals will be informed of a radiological incident in progress. Decisions to lock-down at hospitals not designated as receiving victims from the scene will be made in terms of each hospital's specific disaster plan.
- Hospitals will assume the responsibility for decontamination, triage and treatment of "walk in" patients. This includes primary set-up of decontamination and personal protective equipment for hospital personnel.
- Local Police Departments will be responsible for assisting hospital security staff in maintaining order at receiving hospitals. This includes management of "walk ins" awaiting decontamination.
- Hospital capacity will be determined by the individual hospitals and relayed to the Incident Commander or Medical Officer by Medical Control. Field hospitals will be established in accordance with the County/City Disaster Plan when area hospitals become saturated.

## **10. Recovery and Restoration**

- The recovery and restoration phase begins after the last living victims have been transported from the scene and continues until all contamination has been eliminated. The Department of Homeland Security and its subordinate agencies have management and support roles at a terrorist event. Resources from those agencies may assist in the recovery phase. FBI, law enforcement agencies and the Medical Examiners Office will carry out post incident investigation. They are responsible for gathering evidence and removing bodies from the scene.
- The Snohomish County Hazmat Team will remain available to support all agencies involved in the recovery phase as needed. The decontamination areas will be maintained until no longer needed at the scene. All disposable equipment will be left at the scene for removal by a clean up contractor designated by the State Department of Health.
- All other equipment will be decontaminated at the scene prior to the decontamination area being shut down. Equipment that cannot be cleaned in the decontamination area will be cleaned with a 5% bleach solution back at the station. A minimum solution contact time of 15 minutes will be observed, followed by a rinse and retest for contaminants. This process will be repeated until no contamination is detected.

## **E. BIOLOGICAL AGENT RESPONSE ACTIONS**

It is anticipated that most events involving biological agents will not generate a scene to which personnel could respond. By their very nature biological agents are slow acting and the public health surveillance system may require days to detect patterns of casualties.

A biological incident may involve:

- The threat of a release at a specific time and location.
- A device detected and reported prior to release.
- A perpetrator observed in the act of disseminating an agent.
- A package or letter containing an agent or suspected agent was reported.

Credible threats will be managed utilizing the Incident Management System with Law Enforcement as the lead agency in a unified command structure. Non-credible threats of biological incidents will be handled similar to that of bomb threats.

When a threat is received or a biological agent is suspected on scene, dispatch is notified, the Law Enforcement Duty Chief and the Duty Sergeant will be dispatched. The Duty Chief will notify the FBI and the credibility of the threat will be assessed.

When the fire department resources are requested, personnel will support and back-up the efforts of the Local Law Enforcement Agency and the FBI. Local Law Enforcement and the FBI will assume their role in the Incident Command System and initiate the appropriate criminal investigation.

### **1. Isolate Area and Establish a Perimeter**

- Quarantine persons in the immediate area of exposure (office or room of origin) and place them in a safe refuge area.
- Recover and double bag the substance & package if unopened, for open containers wait for Hazmat Team.
- Shut down HVAC systems to reduce potential spread within the building.
- Do not use the specific name of suspected agent over the radio; use the term **“Bio Agent”**.
- Communication with victims, especially in cases of an enclosed area threat posed by a letter or package device, is critical to manage their anxiety and behavior. A paramedic should be used as a point of communication to establish rapport and credibility. If possible, all communications to victims should be coordinated through this person.
- Biological agents are non-volatile and are controllable if located in a facility or office. They pose little downwind hazard if containment to building is achieved.

### **2. Establish Hot Zone**

- First responding personnel shall establish a HOT ZONE encompassing the suspected biological source and any areas visited by victims who are potentially contaminated through direct contact with the agent.
- All other zones will be established as necessary using the Hazardous Materials Response Plan Operating Guidelines. Law enforcement agencies will be

responsible for perimeter control. Fire personnel may assist law enforcement in gathering victims provided they have the proper personal protective equipment.

- Minimum personal protective equipment is turnouts, chemical protective gloves, and SCBA.

### **3. Decontamination**

- The Operations Level personnel shall initiate decontamination as directed. Procedures for decontamination can be found in Section 5 Job Aids. The team will establish a technical decontamination line as described in Section 5 – Job Aids including the set up of the decontamination shelter.
- Victims exhibiting symptoms (unlikely in biological incident until after incubation period), having obvious signs of contamination and/or special needs will be given priority for decontamination and then staged in a safe area to await triage.
- Care shall be taken to document all removed clothing and personal items. Such items shall be bagged and marked with the owner's name. Police Department personnel will track and store bagged items not deemed contaminated.

### **4. Establish a HazMat Group**

- The HazMat Group will develop a site-specific safety plan and evaluate first-in company actions. All decontamination activities will be the responsibility of the HazMat Group. Operational personnel in the area shall be assigned to the HazMat Group for support.
- The Hazmat Team will determine if the event involves a Chemical, Nuclear, or Biological hazard and make proper notifications based on the findings. If the event is suspected, or determined to be a biological agent, Poison Control and the Snohomish County Health District will be notified.
- If mass decontamination is warranted the Team will request additional resources from the Incident Commander as needed. Marysville and Everett Hazmat have decontamination equipment. MCI Trailers will also be requested which have decontamination equipment.

### **5. HazMat Initial Entry**

- If the Incident Commander, in consultation with poison control specialist, determines that the threat merits a team entry to recover or contain a biological agent, all entries will be made in personal protective equipment offering the highest level of protection available. Entries shall be conducted in a manner consistent with Hazardous Materials Response Plan Operating Guidelines.
- No entry will be made if explosive devices are found or suspected. The Explosives Unit assisted by the Hazmat Team shall conduct those operations. Entry into the Hot Zone will be determined by the protocols established in the Hazardous Materials Response Plan Operating Guidelines. Should a suspected

secondary device be discovered during an entry all radio communications shall stop and the entry team will evacuate the area. Isolation Zones will be reevaluated and the Explosives Unit notified of the situation.

## **6. Victim Rescue/Extrication**

- When victims are trapped and require special rescue techniques, a rescue response will be requested. It will be the responsibility of the Hazmat Group to ensure a safe working environment exists prior to rescue operations beginning. All rescue team operations shall be in accordance with the Rescue Team Operating Guidelines.

## **7. Agent Identification**

- The Hazmat Team will collect samples of any suspected biological agent if possible. Samples will be transferred to the Health District for further testing and identification. Transportation of samples will be the responsibility of the Health District or Law Enforcement Agency having jurisdictional authority.

## **8. Medical Management**

- It is likely in a biological incident for victims at the scene to exhibit no symptoms. If the agent is positively identified, a medical decision will be made regarding the administration of antibiotics or antitoxins at the scene. If drugs are administered at scene, Paramedics will do so in the treatment area.
- If the medical decision is to hold patients for observation without treatment, the transportation group will move patients to an observation holding area designated by Medical Control.
- All personnel entering the Hot Zone at a biological agent incident will be required to undergo medical follow up and any required prophylaxis. This regimen shall be under the strict monitoring of the medical control officer in accordance with exposure control protocols.

## **9. Hospitals**

- Potential receiving hospitals will be notified immediately by dispatch upon determination that a biological agent is involved in an incident. Receiving hospitals will engage lock-down status. All area hospitals will be informed of a biological incident in progress. Decisions to lock-down at hospitals not designated as receiving victims from the scene will be made in accordance with each hospital's specific disaster plan.
- Hospitals will receive information on the identified or suspected agent, decontamination status, and field treatment of victims as the information becomes available.
- Hospitals will assume the responsibility for decontamination, triage and treatment of "walk in" patients. This includes primary set-up of decontamination and personal protective equipment for hospital personnel.

- Local Police Departments will be responsible for assisting hospital security staff in maintaining order at receiving hospitals. This includes management of “walk ins” awaiting decontamination.
- Hospital capacity will be determined by the individual hospitals and relayed to the Incident Commander or Medical Officer by Medical Control. Field hospitals will be established in accordance with the County/City Disaster Plan when area hospitals become saturated.

## **10. Recovery and Restoration**

- The recovery and restoration phase begins after the last living victims have been transported from the scene and continues until all contamination has been eliminated. The Department of Homeland Security and its subordinate agencies have management and support roles at a terrorist event. Resources from those agencies may assist in the recovery phase. FBI, law enforcement agencies and the Medical Examiners Office will carryout post incident investigation. They are responsible gathering evidence and removing bodies from the scene.
- The Snohomish County Haz-Mat Team will remain available to support all agencies involved in the recovery phase as needed. The decontamination areas will be maintained until no longer needed at the scene. All disposable equipment will be left at the scene for removal by a clean up contractor designated by the State Department of Health.

## **SECTION 4 – MEDICAL MANAGEMENT**

### **SELECTED BIOLOGICAL AND CHEMICAL AGENT DESCRIPTIONS TREATMENT PROTOCOLS**

#### **Agents Addressed**

Chlorine  
Hydrocyanic Acid  
Hydrogen Cyanide  
Cyanogen Chloride  
Methyl Isocyanate  
Methylene Bisphenyl Isocyanate  
Methylene Dilsocyanate  
Mustard (Sulfur Mustard)  
Nerve Agents

Treatment protocols for radiological/nuclear agents are addressed in the Snohomish and King County Emergency Medical Services, Pre-Hospital Care Protocols and are not included here.

Treatment protocols described here include drugs and procedures that are administered both by pre-hospital personnel and hospital personnel. Thus, some drug administrations and procedures are outside the paramedic scope of practice.

The local physicians have reviewed the following treatment protocols for accuracy.

This document is not intended to supercede any current accepted procedures or protocols. It is merely offered as a guide for consistent treatment during high stress biological and chemical incidents.

## FACT SHEET

### Chlorine

**Military Designation: CL**

**Description:** Chlorine is found as an amber liquid or greenish-yellow gas with a very characteristic irritating pungent odor. Chlorine is severely irritating to the skin, eyes, and respiratory tract. Although generally stored as a liquid, when released, the resulting gas is about two times heavier than air.

**Non-Military Uses:** Chlorine is used widely in industrial settings in organic synthesis and manufacture of antifreeze agents, solvents, refrigerants, resins, bleaching agents, and other inorganic chemicals. There is an exceptionally wide use of chlorine in non-commercial and home setting as a cleaning agent, bleaching agent, bacteriostatic, and disinfecting agent. Storage of this substance in a variety of liquid and granular forms is widespread.

## TREATMENT PROTOCOL

### General

Chlorine is found as a greenish-yellow gas, with a pungent, acrid, characteristic odor. Sensitivity to the odor is below toxic levels; however, since some sensory adaptation occurs, repeat exposures are more likely to produce toxic effects. Exposures irritate eyes and central (upper) airways within minutes. Low doses produce some cough and choking sensation. Moderate doses also produce a sense of suffocation, hoarseness, and substernal pain. High doses also produce severe dyspnea, with pulmonary edema, nausea, vomiting, headache, and syncope also seen. Very high doses may produce sudden death without an obvious pulmonary lesion, possibly via laryngospasm. All recognized exposures should be referred for direct observation/care.

### Patient Evaluation

Fully masked personnel should immediately remove victims from the toxic environment. Chemical protective clothing is required for liquid/solution exposures

Liquid contamination causes eye and skin burns on contact. Contaminated clothing should be removed.

### Treatment

**Eyes:** Liquid exposures should be flushed with copious quantities of water; medical attention should be sought. Gas exposures, if symptomatic, should be flushed with water; medical attention should be sought.

**Skin:** Liquid exposures should be flushed with copious quantities of water; contaminated clothing should be removed. Gas exposures require no specific therapy unless symptomatic.

**Breathing:** Evaluate respiration, cyanosis, and bronchospasm.

**If apneic:** CPR with intubation. Be aware that laryngospasm may be present with intense exposures, hence intubation may be very difficult, and surgical cricothyrotomy could be required. Medical attention should be sought.

If stridorous/hoarse: consider intubation under direct vision since laryngospasm may be imminent (see above). Medical attention should be sought.

If dyspnea/cough/chest tightness: Consider intubation for impending pulmonary edema. Also consider possible bronchospasm sufficiently severe to have so little air exchange that wheezes are absent. Medical attention should be sought. Codeine-containing demulcents may help. Be wary of sedation.

NOTE: The anatomical configuration of infants and children's airways makes wheezing a less reliable indicator of bronchospasm. Severe smaller airway constriction with a resultant hypoxia may be present. Any apparent infant or child respiratory distress should be immediately assessed with oximetry.

If bronchospasm: Provide aggressive bronchodilation:

Adult: Inhaled albuterol: unit dose q 2 hr.

Steroids: methyl prednisone, load 120 mg IV, then 60 mg q 6 hr.

Theophylline: load 150 mg IV, then 30 mg/hr.

Infants and children (0-12): Inhaled albuterol: 0.15 mg/kg per nebulized dose up to 5 mg/20 minutes for first 2 hr.

Steroids: methyl prednisone: 1 mg/kg IV q 6 hr.

Theophylline: 10 mg/kg IV/24 hr.

Elderly: Inhaled albuterol: unit dose q 3 hr.

Steroids: methyl prednisone: load 125 mg IV, then 60 mg q 6 hr.

Theophylline (occasional use): load 100 mg IV, then 25 mg/hr.

If asymptomatic: Maintain direct observation for at least 1 hour; if becomes symptomatic, treat as above. If still asymptomatic, continue to recheck every hour for additional 12 hours since some bronchospasm may appear late.

If hypoxic from bronchospasm, administer bronchodilators and supplemental oxygen. If hypoxic from pulmonary edema: oxygen may be utilized with positive pressure ventilation (after intubation).

If pulmonary edema occurs: Treat as noncardiac pulmonary edema (Adult Respiratory Distress Syndrome or ARDS) with positive pressure ventilation afterwards. Diuretic therapy is not indicated.

Inhalation exposures may produce pulmonary infiltrates, fever, and white blood cell elevations leading to an erroneous diagnosis of (presumed bacterial) pneumonia. Prophylactic antibiotics are not indicated. Surveillance bacteriological cultures are obtained anticipating an approximate 50% risk of nosocomial pneumonia at days 3-6.

## FACT SHEET

### Hydrocyanic Acid Hydrogen Cyanide & Cyanogen Chloride

**Military Designations:** AC  
CK

**Description:** Both of these substances are liquids, but they vaporize at about 73/F or 58/C, so they will be in the gaseous form under moderate temperature conditions. AC has an odor of bitter almonds; CK is pungent. AC vapor is lighter than air, whereas CK gas is heavier than air. Cyanogen chloride is quickly metabolized to cyanide once absorbed into the body, and causes the same biological effects as hydrogen cyanide. In addition, CK is irritating to the eyes, nose, and throat (similar to riot control agents), whereas AC is nonirritating.

**Non-Military Uses:** Large amounts of cyanide (most in the form of salts) are produced, transported, and used by U.S. industry annually. Cyanide is used in fumigation, photography, extraction of metals, electroplating, metal cleaning, tempering of metals, and the synthesis of many compounds. It is released when synthetic fibers and plastics burn.

## TREATMENT PROTOCOL

### General

Patient should be removed from the toxic environment immediately.

These substances are very volatile, so there is little need for decontamination if exposure was to vapor alone. If liquid was present, remove patient's clothing; wash liquid off skin.

The effects of vapor from either form of cyanide appear within seconds to a minute of exposure. If the patient has no or only mild effects when seen 5 to 30 minutes after exposure, he/she will not need treatment.

Severe cyanide poisoning produces metabolic acidosis. If cyanide poisoning is suspected in a patient who does not have moderate or severe acidosis, treatment for cyanide poisoning should not be delayed, but the diagnosis should be reconsidered.

### Patient Evaluation

Exposure to high concentration: transient hypernea, followed by convulsions (30 seconds after exposure), gradual decrease in respiratory rate and depth to apnea (3-5 minutes) and cessation of cardiac activity (5-8 minutes).

Exposure to lower concentration: flushing, headache, anxiety, agitation, vertigo, feeling of weakness, nausea, muscular trembling (cyanogen chloride may cause irritation of eyes, nose, and airways). Prolonged exposure may lead to effects listed above.

Odor of bitter almonds may be detected (half of the population cannot smell this); normal pupils (may be dilated in terminal stage); cherry red skin (may not be present); diaphoresis; venules in fundus are same color as arterioles; cyanosis occurs only after circulatory collapse and apnea.

## Treatment

For a mild exposure (conscious and breathing): observe; no antidotes, oxygen may be given to young or old or in presence of heart disease in a patient with mild symptoms.

Severe exposure (unconscious, not breathing): Should receive 100% oxygen. Cardiac monitoring and evaluation of oxygen saturation should be done when possible. (Saturation will be normal even in severe casualty until terminal stage; however, additional oxygen may assist in therapy.) Antidotes should be administered as soon as possible (see below). It is important to note that pulse oximeter results are completely unreliable in the setting of methemoglobinemia, which is induced by amyl nitrate or sodium nitrate therapy.

For severe exposure: ventilate using bag-valve-mask with one ampoule of amyl nitrite (crushed) in bag; after several minutes, add another (crushed) ampoule; keep adding an ampoule every several minutes. This is a temporary measure until IV drugs can be given, but it may assist in recovery.

Administer 300 mg (10ml) of sodium nitrite IV over 5 minutes. Flush line. (Children's dose: 1.2-1.3 ml/kg, or 6-9 mg/kg of 3% solution. No separate recommendation for infants. For elderly, use adult dose unless they are small and frail.) Be aware: Nitrites produce orthostatic hypertension, but a patient who can stand does not need them.

Follow with 12.5 grams (50ml) of sodium thiosulphate IV. (Children's dose: 0.4 mg/kg, or 1.65 ml/kg of the 25% solution. No separate recommendation for infants. Adult dose should be used for elderly unless they are small and frail. Use care giving nitrite in a patient with hypertension or heart disease.) (Amyl nitrite, sodium nitrite, and sodium thiosulfate are in the Pasadena (formerly Lilly) Cyanide Antidote Kit, the latter two in ampoules of 300 mg/10ml and 12.5 grams/50ml.) Use of one-half dose in 20 minutes if no improvement. See instructions on top of Antidote Kit box.

If patient continues to remain apneic, intubate and continue oxygen through tube with assisted ventilation.

Transfer apneic or unconscious patients to medical facility.

Patients often recover rapidly unless CNS hypoxia has occurred.

## FACT SHEET

**Methyl Isocyanate, Methylene Bisphenyl Isocyanate, Methylene Dilsocyanate**      **Military designations: none**

**Description:** Methylene Bisphenyl Isocyanate (MDI) is found as a solid in white to yellow flakes. Various liquid solutions are used for industrial purposes. There is no odor to the solid or liquid solutions. The vapor is approximately eight times heavier than air. This chemical is a strong irritant to the eyes, mucus membranes, skin, and respiratory tract. This chemical is also a very potent respiratory sensitizer.

**Non-Military Uses:** Very large quantities of MDI are produced, transported, and used annually in the United States. Various industrial processes utilize MDI in production and usage of polyurethane foams, lacquers, and sealants. MDI is a commonly used precursor in the industrial production of insecticides and laminating materials. Noncommercial uses of polyurethanes such as in isocyanate paints or in cutting of uncured urethanes may also cause exposure. Thermal degradation of these substances may produce MDI as a combustion by-product.

## TREATMENT PROTOCOL

### General

MDI is found as a solid, which has a melting point of 37degrees C. Vapor exposures occur with liquids containing dissolved solid. Gas exposures may occur with high-temperature volatilization. Thermal decomposition produces carbon monoxide and oxides of nitrogen. Sensitivity to this substance (eye, nose irritation) occurs at concentrations five times higher than OSHA limits (0.2mg/m3); hence toxic exposures may go unrecognized.

Exposures lead to: Irritant effects: Eyes, mucous membranes and skin may be irritated, particularly with prolonged, repetitive, or intense exposures. High concentrations may also produce cough, dyspnea, and lethal pulmonary edema.

Sensitizing effects: Respiratory sensitization may occur, particularly in individuals with known asthma, allergies, or recognized isocyanate sensitivity (e.g. TDI).

### Patient Evaluation

Personnel in chemically protective clothing should immediately remove victims from the toxic environment. Vapor or gas hazards should be anticipated with full (positive pressure) masks. Liquid/solid contamination should be corrected by clothing removal and soap and water decontamination.

### Treatment

Eyes: There is no specific therapy appropriate. Liquid/solid exposures should be irrigated with copious quantities of water. Subsequently, symptomatic individuals should seek medical attention.

Skin: There is no specific therapy appropriate. Liquid/solids should be removed with soap and water. Single exposures are unlikely to create rashes unless previously sensitized. Intense exposure may produce dermatitis and require referral.

Swallowing: Liquids/solids should be removed by induced vomiting in the conscious victim or by lavage otherwise.

Breathing: Symptoms due to sensitivity may be delayed up to 8 hours after exposure. Respiratory symptoms may appear with skin, ocular, or GI exposure in previously sensitized individual.

If apneic: CPR, may require intubation for pulmonary edema. Consider severe bronchospasm in previously sensitized victim.

If stridorous/hoarse: Consider intubation under direct vision.

If dyspnea/cough/chest tightness: Consider intubation for impending pulmonary edema. Also consider possible bronchospasm sufficiently severe to have so little air exchange that wheezes are absent. Medical attention should be sought. Codeine-containing demulcents may help. Be wary of sedation.

NOTE: The anatomical configuration of infants and children's air ways makes wheezing a less reliable indicator of bronchospasm. Severe smaller airway constriction with resultant hypoxia may be present. Any apparent infant or child respiratory distress should be immediately assessed with oximetry.

If bronchospasm: Treat as asthma with inhaled albuterol. Bronchospasm may be particularly severe, especially in previously sensitized individuals. Treat aggressively:

Adults: Inhaled albuterol: unit dose q 2 hr or continuous neb 15 g/hr.

Steroids: methylprednisolone load 250 mg IV, then 80 mg q 6 hr.

Theophylline: load 150 mg IV, then 30 mg/hr.

Infants and children (0-12): Inhaled albuterol: 0.15 mg/kg per nebulized dose up to 5 mg/20minutes for first 2 hr.

Steroids: Methylprednisolone; 1mg/kg q 6 hr.

Theophylline: 10 mg/kg IV/24 hr.

Elderly: Inhaled albuterol: unit dose q 3 hr.

Steroids: methylprednisolone load 125 mg IV, then 60 mg q 6 hr.

Theophylline (occasional use): load 100 mg IV, then 25 mg/hr.

Upper airway obstruction: This is rarely seen and only with intense exposures. Hoarseness and stridor suggest impending laryngospasm; consider intubation under direct vision.

If pulmonary edema (may rarely occur with intense exposures): Treat as non-cardiac pulmonary edema (ARDS) see Phosgene.

If hypoxia (commonly from bronchospasm, rarely from pulmonary edema): Treat with above bronchodilation and oxygen.

If cough: Codeine-containing demulcents (tissue-soothing agents) may help. Be wary of sedation.

## FACT SHEET

### Mustard (Sulfur Mustard)

**Military Designations: H; HD; HS**

**Description:** Mustard is a “blister agent” that causes cell damage and destruction. It is a colorless to light yellow to dark brown oily liquid with the odor of garlic, onion, or mustard. It does not evaporate readily, but may pose a vapor hazard in warm weather. It is a vapor and liquid hazard to skin and eyes and a vapor hazard to airways. Its vapor is five times heavier than air.

**Non-Military Uses:** Sulfur mustard has been used as a research tool to study DNA damage and repair. A related compound, nitrogen mustard, was the first cancer chemotherapeutic agent and is still used for some purposes.

## TREATMENT PROTOCOL

### General

Mustard causes no immediate effects. The initial clinical effects of mustard (which usually involve the eyes, the skin, and the airways) appear 2 to 24 hours (usually 4 to 8 hours) after exposure to liquid mustard or to mustard vapor. However, liquid or vapor mustard penetrates the skin and mucous membranes and damages cells within minutes of exposure, so decontamination must be done immediately after exposure.

The patient should be immediately removed from the toxic environment.

If liquid contact, clothing should be removed and skin decontaminated with 0.5% hyperchlorite solution, soap and cool water, or thoroughly flushed with water alone, removing clothing.

If there is a history of definite exposure, patient should be taken to a medical facility for observation.

### Patient Evaluation:

Initial effects (2 to 24 hours after exposure)

Eyes: irritation, feeling of grit in eye, redness.

Skin: erythema (will progress to blisters 1 to 4 hours after exposure to large amounts).

Airways: irritation of nose, voice change, sinus pain, and hacking cough. (Very rarely a patient might inhale an extremely large amount and start to have these effects plus dyspnea within two hours. This patient should be intubated, and assisted ventilation with oxygen. This patient should be taken to the nearest appropriate hospital ASAP.

## Treatment

There is nothing to do for these patients until the effects appear except to decontaminate. Tissue is damaged within minutes, so emergency field decontamination is indicated.

Eyes: Any commercial eye solution may relieve the irritation from a mild exposure. More severe effects: A mydriatic b.i.d. or q.i.d. (depending on the length of action of the drug); a topical antibiotic b.i.d.; vaseline on lid edges b.i.d.; sunglasses if photophobia is present. Topical steroids within the first 24 hours only, may reduce inflammation. Control pain with systemic, not topical analgesics. Visual loss is usually due to lid edema and blepharospasm, not eye damage.

Skin: A soothing lotion (e.g. calamine) for erythema. Leave small blisters intact. Unroof large blisters and irrigate denuded area at least t.i.d. followed by liberal application of topical antibiotic. Watch for infection. Fluid requirements are much less than those for thermal burns; do not over hydrate.

Airways: Steam inhalation and cough suppressants will generally relieve mild symptoms. A chemical (pneumonitis) increased temperature, white blood count; chest x-ray findings) may develop after large exposure: intubation, assisted ventilation with oxygen (and possibly with PEEP or CPAP); bronchodilators; watch sputum at least daily for organisms (no antibiotics until organism is defined).

Systemic absorption of a large amount of mustard may cause bone marrow and gastrointestinal tract damage. Watch WBC, Hct daily.

## FACT SHEET

### Nerve Agents

Tabun, Sarin, Soman  
Unnamed agents

### Military Designations:

GA, GB, GD  
GF and VX

**Description:** Nerve agents are very toxic organophosphorous compounds that have biological activity similar to that of many insecticides. Their volatility's range from that of water to that of motor oil; they present a hazard from vapor and liquid. Under temperature conditions, the liquids are clear, colorless, and nearly odorless. They cause biological effects by inhibiting acetylcholinesterase, thereby allowing acetylcholine to accumulate and cause hyperactivity in muscles, glands, and nerves.

No Non-military use

## TREATMENT PROTOCOL

### General

Nerve agents are extremely toxic chemicals that cause effects by inhibiting the enzyme acetylcholinesterase, allowing excess acetylcholine to accumulate. This excess neurotransmitter then produces over stimulation and causes hyperactivity in muscles, glands and nerves. The nerve agents list above have identical effects.

Remove patient from contaminated atmosphere. If exposure was to vapor, remove clothing; if exposure was to liquid; remove clothing and wash skin with 0.5% hypochlorite solution, soap and water or thoroughly flush with water alone.

### Patient Evaluation

If patient is conscious, note ventilatory status and ask about nausea. If unconscious, note ventilatory status and heart rate.

Initial effects differ depending on whether exposure was to vapor or liquid.

Vapor: Effects start within seconds to a minute or two.

Mild to moderate: Miosis, possible redness in eye, eye pain, complaints of dim or blurred vision, nausea, rhinorrhea, excess secretions, dyspnea (mild to severe).

Severe: Loss of consciousness, seizures, apnea, and flaccid paralysis.

Liquid: Effects start in minutes (large exposure) to 18 hours (small exposure) after an asymptomatic interval.

Mild to moderate: Sweating and fasciculations at site of exposure; nausea, vomiting, diarrhea; weakness.

Severe: Same as for vapor, but after a 1-30 minute asymptomatic interval.

### Treatment

## Initial Management

Mild to moderate: Dyspnea should be treated with one or two doses of atropine IM or IV and one dose of pralidoxime (IV drip) initially, depending on severity of dyspnea. (See paragraph B for size of dose.) This should be supplemented with oxygen, particularly in infants, young children, and the elderly; healthy older children and adults will usually do well without it unless they have pulmonary or cardiac disease. Atropine dose should be repeated at 5-10 minute intervals until improvement is noted. Failure to respond, (i.e., no dry mouth, no decrease in secretions) confirms the need to administer additional doses of atropine. Gastrointestinal effects after liquid exposure are treated in the same manner. Do not treat for miosis (unless eye pain is severe) or rhinorrhea (unless severe).

Severe: Administer three doses of atropine IM (not IV in hypoxic patient) and start one dose of pralidoxime by slow (20 minute) IV drip. (More rapid administration will cause hypertension.) (See paragraph B for size of dose.) Intubate and ventilate with oxygen (initial ventilation will be difficult because of airway resistance; atropine will relieve this). Administer diazepam if convulsing. Suction for secretions. Repeat 1 dose of atropine (IM until hypoxia is improved, then IV) every 5 minutes until (a) secretions diminish or (b) airway resistance is less or normal. Failure to respond, (i.e., no dry mouth, no decrease in secretions) confirms the need to administer additional doses of atropine. Monitor via pulse oximeter; cardiac monitoring should also be done (cardiac arrhythmias are uncommon after atropine is given). Acidosis may develop after seizures or after a period of hypoxia and will require therapy. This patient should be transported to a hospital after stabilization (adequate drug therapy and initiation of ventilation).

Eyes: Do not treat miosis unless eye eye/head pain is severe. Use topical, not systemic, anticholinergic to relieve pain.

## Recommended Doses

### Atropine:

Older child and adult: 2mg

Infant and young child: 0.02 mg/kg

Elderly: Use adult dose unless cardiac or pulmonary disease is present or patient is small or frail; in latter instances, use 1 mg as standard, but be prepared to administer additional amounts more frequently.

### Pralidoxime (2-PAM)

Older child and adult: 1 gram

Infant and young child: 25-50 mg/kg

Elderly: Adult dose unless cardiac or renal disease is present, patient has hypertension, or patient is small and frail: decrease dose by half in these patients, but administer the other half 1 hour later if patient has not improved. Pralidoxime can cause hypertension when given rapidly IV. Slow administration over 20 minutes will minimize the hypertensive effect. After rapid administration, hypertension can be rapidly but transiently reversed by phentolamine (adult; 5mg IV, Child: 1mg IV).

## Further Care

Mild to Moderate: After vapor exposure, a patient who is breathing normally does not need to be hospitalized as he will not worsen. However, miosis should be followed until eyes are normal (4 to 6 weeks). After liquid exposure, a patient should be observed in hospital for 18 hours until all agent is absorbed from the skin.

Severe: Continue to ventilate and administer atropine following guidelines above. Treat acidosis if present. If patient has not had prolonged hypoxia, recovery of an unconscious patient will be gradual over 1 to 3 hours.

**SECTION 5 – JOB AIDS**

**SAFETY PLAN**

This document shall be completed by the Safety Officer prior to entry into the Hot Zone. The Haz-Mat Team Leader shall act as the Haz-Mat Safety Officer until one can be appointed. There shall be a Haz-Mat Safety Officer appointed prior to entry into the Hot Zone. The Haz-Mat Team Leader will complete the first page of this document.

**SITE DESCRIPTION**

Date \_\_\_\_\_ Time on scene \_\_\_\_\_

Location of Incident \_\_\_\_\_

\_\_\_\_\_

Command Post Name \_\_\_\_\_

Command Post Location \_\_\_\_\_

Initial Action Precautions Taken?                      Yes / No

Exposures

Life \_\_\_\_\_

Environment \_\_\_\_\_

Property \_\_\_\_\_

Brief description of incident: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Potential course of harm: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Tactical considerations (Access, Weather, Reactivity, Etc.): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Chemical or chemicals involved: \_\_\_\_\_

\_\_\_\_\_

## ON-SITE ORGANIZATION AND COORDINATION

The following personnel are designated to carry out the stated job functions:

Team Leader **	_____
Technical Aid*	_____
Bomb Squad Support**	_____
Safety Officer**	_____
Resource Officer*	_____
Decontamination Officer*	_____
Haz-Mat Supply	_____
Entry Officer*	_____
Medical Officer	_____
Staging Officer	_____

\* Hazardous Material Response Team Member required to fill this position.

\*\* Specialist training required to fill this position. All Technicians are required to meet Decontamination Specialist training requirements.

A radio check shall be completed and radio designations assigned by the Haz-Mat Team Leader. Radio designations shall be as follows:

- |                           |                |
|---------------------------|----------------|
| • TEAM LEADER             | HAZ-MAT        |
| • HAZ-MAT SAFETY OFFICER  | HAZ-MAT SAFETY |
| • DECONTAMINATION OFFICER | DECON          |
| • RESOURCE OFFICER        | RESOURCE       |
| • HAZ-MAT SUPPLY          | SUPPLY         |
| • ENTRY TEAM/OFFICER      | ENTRY          |
| • HAZ-MAT MEDICAL OFFICER | EMS            |
| • BOMB SQUAD SUPPORT      | BOMB SUPPORT   |

Staging requests for the Haz-Mat Group shall be made through the Haz-Mat Team Leader.

## SITE CONTROL CHECKLIST

- \_\_\_\_\_ A safe perimeter has been established (Cold Zone)
- \_\_\_\_\_ The Cold Zone is controlled by Police and/or Firefighters

***NO UNAUTHORIZED PERSON SHALL BE WITHIN THE CONTROLLED AREA!***

- \_\_\_\_\_ Control boundaries have been established
- \_\_\_\_\_ Hot Zone marked
- \_\_\_\_\_ Warm Zone marked
- \_\_\_\_\_ Cold Zone marked

### **PRE-ENTRY REQUIREMENTS**

- \_\_\_\_\_ Hazard risk assessment completed
- \_\_\_\_\_ Decontamination established
- \_\_\_\_\_ Entry Team Check List and Log completed
- \_\_\_\_\_ Entry Team Exposure Form completed
- \_\_\_\_\_ Medical area established
- \_\_\_\_\_ Entry team briefing complete
- \_\_\_\_\_ Communications check complete
- \_\_\_\_\_ Evacuation warning designated
- \_\_\_\_\_ Escape routes planned

**ON-SITE WORK PLAN**

**Team #1 Objectives:**

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**Team #2 Objectives:**

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**Monitoring equipment to be used:**

**Follow specific instructions for use.**

\_\_\_\_\_ Gastec: \_\_\_\_\_

\_\_\_\_\_ Colorimetric Tubes: \_\_\_\_\_

\_\_\_\_\_ Chemical Classifier: \_\_\_\_\_

\_\_\_\_\_ pH Paper: \_\_\_\_\_

\_\_\_\_\_ Other: \_\_\_\_\_

**Mitigation equipment to be used:**

\_\_\_\_\_ Absorbent Pads

\_\_\_\_\_ Booms / Pillows

\_\_\_\_\_ Neutralizer

\_\_\_\_\_ Plugging or Patching

\_\_\_\_\_ Other

## COMMUNICATIONS GUIDELINES

All personnel in the Cold Zone will use \_\_\_\_\_

All personnel in the Hot Zone will use \_\_\_\_\_

In cases where Cold Zone and the Hot Zone will be using the same frequency, all radio communications shall be silenced prior to an entry into the Hot Zone. A roll call may be performed by the Team Leader to ensure that all radio traffic stops.

### EMERGENCY GUIDELINES

On-site personnel will use the following guidelines. The Haz-Mat Safety Officer shall be notified of on-site emergencies and be responsible for ensuring that the appropriate actions are taken.

#### Personnel Injury in the Hot Zone

Upon notification of an injury in the Hot Zone, the designated emergency signal \_\_\_\_\_ shall be sounded.

All personnel in the Hot Zone will assemble at the Decontamination Entrance Area or, if they are unable to reach this area, at the escape area.

The Backup Team will be given the appropriate briefing on how to enter the Hot Zone to remove any injured person(s) to the Decontamination Area if the entry team is unable to escape.

The Haz-Mat Safety Officer will evaluate the nature of the injury, and the affected person will be decontaminated to the extent necessary prior to movement to the Medical Area.

The Medical Officer shall initiate the appropriate first aid and ensure proper transport to the medical facility.

**NO HOT ZONE ACTIVITIES WILL RESUME UNTIL THE CAUSE OF INJURY OR SYMPTOMS ARE DETERMINED.**

#### Personnel Injury in a Support Zone

Upon notification of an injury in the Cold Zone or Warm Zone, the Haz-Mat Safety Officer will assess the nature of the injury. If the cause of the injury or loss of the injured person does not affect the performance of the other site personnel, operations may continue.

The Medical Officer will initiate the appropriate first aid and transport if needed.

#### Personnel Protective Equipment Failure

If any personnel experience a failure or alteration of protective equipment, that person and his buddy shall immediately leave the Hot Zone and proceed to the Decontamination Area.

**NO HOT ZONE ACTIVITY SHALL BE PERMITTED UNTIL THE CAUSE OF THE EQUIPMENT FAILURE IS DETERMINED!**

**Emergency Escape Routes**

The following emergency escape routes are designated for use in those situations where egress from the Hot Zone cannot occur through the Decontamination Area.

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**Radio Communications Failure Guideline**

In the event of radio failure Entry Team personnel shall immediately move to a line of sight position within the Hot Zone.

Any failure of radio communication requires an evaluation as to whether or not personnel should leave the Hot Zone. This evaluation shall be performed by the Haz-Mat Team Leader, Haz-Mat Safety Officer and the Entry Officer. If necessary, the emergency signal shall be sounded directing all personnel to leave the Hot Zone.

## INCIDENT COMMAND CHECKLIST

- \_\_\_\_\_ Assess First-In Actions (Operating Guidelines)
- \_\_\_\_\_ Contact First-In Officer
- \_\_\_\_\_ Locate Command Post and Report to Dispatch
- \_\_\_\_\_ Establish an Area of Safe Refuge
- \_\_\_\_\_ Estimate Potential of Incident
- \_\_\_\_\_ Evaluate scene for signs of Terrorism
- \_\_\_\_\_ Determine Need for Evacuation / Shelter in Place
- \_\_\_\_\_ Establish Haz-Mat Group
- \_\_\_\_\_ Note Weather Conditions, Precipitation, Wind Direction, Speed, Etc.
- \_\_\_\_\_ Meet With Team Leader, Develop Objectives (Haz-Mat)
- \_\_\_\_\_ Notification Considerations (ESCA, DEM)
- \_\_\_\_\_ Mutual Aid Needed? (Haz-Mat Group needs 1 engine and 1 Aid company)
- \_\_\_\_\_ Haz-Mat Safety Officer Assigned
- \_\_\_\_\_ Is Work To Be Done Necessary and Can It Be Done Safely?
- \_\_\_\_\_ Law Enforcement Considerations  
(Drug lab, terrorism, cold zone control)
- \_\_\_\_\_ Secure Scene or Release to Other Agencies  
(WSP, DOE, Contractor)
- \_\_\_\_\_ Clean Up Required (Contact ESCA/DEM, Ecology)
- \_\_\_\_\_ Termination Procedures
- \_\_\_\_\_ Reports
  - \_\_\_\_\_ Debriefing
  - \_\_\_\_\_ Document Exposures
  - \_\_\_\_\_ Follow Up (If scene not turned over to DOE)
  - \_\_\_\_\_ Critique within 7 days of the incident

# EMERGENCY FIELD AND MASS DECONTAMINATION GUIDELINES

## Initial Actions

- \_\_\_\_\_ Size up incident using Approach Guidelines.
- \_\_\_\_\_ Call for help. Activate the Haz-Mat Team and EMS.
- \_\_\_\_\_ Instruct contaminated victims to move away from the hazard area.
- \_\_\_\_\_ Locate decontamination area (upwind/uphill and on level ground).
- \_\_\_\_\_ Lay 1 3/4" hose line (warm water in pump if time allows).
- \_\_\_\_\_ Have victim move to Decontamination area if possible (firefighters/civilians)
- \_\_\_\_\_ Initiate Emergency Field Decontamination.
- \_\_\_\_\_ Instruct victims to initiate gross decontamination and move to a safe area.
- \_\_\_\_\_ Evaluate victim's level of contamination and extent of injuries.
- \_\_\_\_\_ Assess need for Mass Decontamination, if no, continue with victim decontamination.

## Mass Decontamination

- \_\_\_\_\_ Activate Haz-Mat MCI Plan.
- \_\_\_\_\_ Have trained personnel perform mass decontamination.
- \_\_\_\_\_ Position apparatus in a triangle formation to create a decontamination corridor.
- \_\_\_\_\_ Assign control points to keep the flow of victims moving. Send multiples of same sex.
- \_\_\_\_\_ Segregate symptomatic and non-symptomatic. Move to treatment areas.
- \_\_\_\_\_ Advise the Incident Commander if victims by-pass the decontamination corridor.
- \_\_\_\_\_ Assist the Haz-Mat Team when they arrive.

## Victim Decontamination

- \_\_\_\_\_ Decontaminate victims using all means available to protect their modesty.
- \_\_\_\_\_ Have victims undress to level of comfort and bag clothing.
- \_\_\_\_\_ Have victim place personal items and jewelry in a zip lock bag and mark with name.

- \_\_\_\_\_ Provide soap and instruct patient to thoroughly wash hair, face, armpits and groin area.
- \_\_\_\_\_ Give victim towel for drying and blanket for cover as they exit the corridor.
- \_\_\_\_\_ Stage victims requiring secondary decontamination for Haz-Mat Team.
- \_\_\_\_\_ Transport to hospital avoiding aid unit exposure by covering gurney with plastic and having aid crew in chemical protective gloves.
- \_\_\_\_\_ Notify hospital of product involved prior to transport.
- \_\_\_\_\_ Decontaminate all engine company personnel through the Technical Decontamination Line.

### **General Guidelines**

- The responsibility for decontamination shall be transferred to the Haz-Mat Decon Officer as soon as possible.
- All contaminated equipment and clothing shall remain at the scene.
- MCI Protocols shall be used for patient care after decontamination.

## TECHNICAL DECONTAMINATION SET-UP CHECKLIST

The Decontamination Officer is responsible for coordinating decontamination operations and supervising decontamination personnel at the scene. He will also assist the Safety Officer with all necessary post incident responsibilities.

- \_\_\_\_\_ Obtain location of decontamination operation from the Haz-Mat Team Leader.
- \_\_\_\_\_ Obtain checklist, decontamination vest, radio, establish water supply and power for Zumro.
- \_\_\_\_\_ Obtain additional personnel (Decon 21).
- \_\_\_\_\_ Obtain from the Team Leader information on suit selection, product hazard, and special instructions for decontamination set-up.
- \_\_\_\_\_ Brief personnel assigned to decontamination.
- \_\_\_\_\_ Secure decontamination area and mark entry and exit points.
- \_\_\_\_\_ Set up decontamination using decontamination lay out.
- \_\_\_\_\_ Have a minimum 4 spare bottles in the bottle change area.
- \_\_\_\_\_ Suit up decontamination team in proper protective gear; remove all jewelry and personal items.
- \_\_\_\_\_ Check decontamination set-up for readiness.
- \_\_\_\_\_ Advise the Haz-Mat Team Leader when decontamination is ready.

### POST-INCIDENT RESPONSIBILITIES

- \_\_\_\_\_ Isolate contaminated items.
- \_\_\_\_\_ Perform any remaining equipment decontamination.
- \_\_\_\_\_ Break down decontamination.

**DECONTAMINATION PROCEDURE CHECKLIST**  
**(SUPERVISED BY DECONTAMINATION OFFICER)**

- \_\_\_\_\_ 1. Drop tools
- \_\_\_\_\_ 2. Drop outer gloves and booties
- \_\_\_\_\_ 3. Gross decontamination shower
- \_\_\_\_\_ 4. SCBA bottle change and re-entry area
- \_\_\_\_\_ 5. Primary decontamination wash and rinse pool
- \_\_\_\_\_ 6. PPE removal
- \_\_\_\_\_ 7. SCBA removal
- \_\_\_\_\_ 8. Secondary decontamination shower
- \_\_\_\_\_ 9. Re-dress
- \_\_\_\_\_ 10. EMS evaluation

Decontamination solutions shall be approved by the Decontamination and Haz-Mat Safety Officers.

Decontamination layout varies from agency to agency. Each responding unit will provide decontamination layout and procedures for use on scene.

**HAZARD ASSESSMENT FORM - PART 1**

HAZARDOUS MATERIAL:

Shipping Name \_\_\_\_\_ DOT Hazard class \_\_\_\_\_  
Chemical Name \_\_\_\_\_ UN/NA # \_\_\_\_\_ STCC# \_\_\_\_\_  
Manufacturer or Shipper \_\_\_\_\_ Ph# \_\_\_\_\_  
Consignee and Destination \_\_\_\_\_ Ph# \_\_\_\_\_  
Carrier \_\_\_\_\_ Ph# \_\_\_\_\_ Truck Lic.or Railcar # \_\_\_\_\_  
Facility Emergency Spill Coordinator \_\_\_\_\_ Ph# \_\_\_\_\_

<u>SOURCE</u>	#1 _____	CHEMTREC _____
	#2 _____	ECOLOGY _____
	#3 _____	ESCA/DEM _____
		OTHER _____

Hazard Characteristics: Corrosive, Flammable, Radioactive, Toxic, etc. \_\_\_\_\_  
Solid, Liquid or Gas \_\_\_\_\_  
GAS LEAK: Estimated Rate \_\_\_\_\_ cfm  
SOLID SPILL: Amount \_\_\_\_\_ lbs.  
LIQUID SPILL and/or LEAK: Estimated Rate \_\_\_\_\_ gpm Amount \_\_\_\_\_ gal \_\_\_\_\_ sq ft  
Fuming: Yes / No  
Color \_\_\_\_\_  
Physical or Chemical Reactions Occurring \_\_\_\_\_

CHEMICAL PROPERTIES:

Specific Gravity \_\_\_\_\_ Vapor Density \_\_\_\_\_ ph \_\_\_\_\_ Boiling Point \_\_\_\_\_ F  
Solubility in Water \_\_\_\_\_ % Vapor Pressure \_\_\_\_\_ psi or mmHg @ \_\_\_\_\_ F  
Reactive: Yes / No With what? \_\_\_\_\_

EXPLOSION HAZARD: YES NO UNKNOWN

FIRE HAZARD: YES NO UNKNOWN

Flash Point \_\_\_\_\_ F Ignition Temperature \_\_\_\_\_ F Vapor Density \_\_\_\_\_  
Flammable (explosive) Range: LEL \_\_\_\_\_ % UEL \_\_\_\_\_ % BLEVE Potential \_\_\_\_\_  
Toxic Products of Combustion \_\_\_\_\_

Control Runoff: Yes / No Let Fire Burn: Yes / No Inert Gas Flooding: Yes / No  
Permeation Guides Checked Boots \_\_\_\_\_ Gloves \_\_\_\_\_ Suits \_\_\_\_\_  
Possible Extinguishing Agents \_\_\_\_\_

**HAZARD ASSESSMENT FORM - PART 2**

**HEALTH HAZARDS:**      **YES**    **NO**

**ROUTE OF ENTRY:**

Skin Absorption	___	___
Skin Contact Hazard	___	___
Inhalation Hazard	___	___
Ingestion Hazard	___	___

**TOXICITY:**

**ppm (mg/m3)**

Acute Toxic Effect	___	___	TLV / TWA	___
Nerve Poison	___	___	TLV / STEL	___
Systemic Poison	___	___	PEL	___
Irritant	___	___	IDLH	___
Chemical Asphyxiant	___	___		
Oxygen Deficiency	___	___		
Corrosive	___	___		
Etiological	___	___		
Radiological	___	___		
Chronic Toxic Effect	___	___		
Carcinogen	___	___		
Mutagen	___	___		
Teratogen	___	___		
Other _____	___	___		

**Briefing Notes:**



# ENTRY PERSONNEL WORKSHEET

DATE \_\_\_\_\_

TEAM MEMBER \_\_\_\_\_

ENTRY

BACKUP

## PROTECTIVE CLOTHING

SUIT

HOOD

GLOVES

BOOTS

HELMET

LATEX GLOVES

4 H SILVER SHIELD

PERMEATION GUIDES CHECKED

## ENTRY LOG

1	2	3	4	ENTRY #
_____	_____	_____	_____	INTO SUITS (ON AIR)
_____	_____	_____	_____	INTO HOT ZONE
_____	_____	_____	_____	EXIT FROM HOT ZONE
_____	_____	_____	_____	(OFF AIR)
_____	_____	_____	_____	SENT TO MEDICAL

COMPLETED BY \_\_\_\_\_

## PERSONNEL EXPOSURE RECORD

DATE \_\_\_\_\_ INCIDENT REPORT \_\_\_\_\_

ENTRY PERSON \_\_\_\_\_

MEDICAL OFFICER \_\_\_\_\_

### PRE-ENTRY MEDICAL EVALUATION

BP \_\_\_\_\_ PULSE \_\_\_\_\_ RESP \_\_\_\_\_ TEMP \_\_\_\_\_

GIVE ENTRY TEAM AS MUCH WATER AS THEY CAN DRINK WHILE TAKING VITALS

### POST ENTRY EVALUATION

BP \_\_\_\_\_ PULSE \_\_\_\_\_ RESP \_\_\_\_\_ TEMP \_\_\_\_\_

YES IS CONTAMINATION OF TEAM MEMBER  
 NO SUSPECTED (COMPLETE M.I.R./911)?

YES IS TEAM MEMBER MANIFESTING SIGNS  
 NO OR SYMPTOMS (COMPLETE M.I.R./911)?

**ALL PERSONNEL WILL TAKE SECONDARY DECONTAMINATION SHOWER AT FIRE STATION**

**DEBRIEFING SIGN - IN SHEET**

Please print your name and department and sign at the appropriate location on this sheet. By signing this form, you are acknowledging your attendance at this debriefing and that you have been supplied with substance exposure data including the name, routes of exposure, symptoms, and contact person, and procedure should symptoms be exhibited.

**PRINT NAME      INITIAL      DEPARTMENT      ASSIGNMENT**

---

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

7. \_\_\_\_\_

8. \_\_\_\_\_

9. \_\_\_\_\_

10. \_\_\_\_\_

11. \_\_\_\_\_

12. \_\_\_\_\_

13. \_\_\_\_\_

14. \_\_\_\_\_

15. \_\_\_\_\_

16. \_\_\_\_\_

17. \_\_\_\_\_

18. \_\_\_\_\_

19. \_\_\_\_\_

20. \_\_\_\_\_

**TEAM LEADER INCIDENT AFTER ACTION REPORT**

INCIDENT NUMBER: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_

DEBRIEFING DATE: \_\_\_\_\_ TIME: \_\_\_\_\_ LOCATION: \_\_\_\_\_

INCIDENT SYNOPSIS: \_\_\_\_\_

\_\_\_\_\_

ATTACHMENTS: Site Safety Plan [ ] Debriefing [ ]

Other (specify) \_\_\_\_\_

**PROBLEMS IDENTIFIED:**

1. \_\_\_\_\_

\_\_\_\_\_

2. \_\_\_\_\_

\_\_\_\_\_

3. \_\_\_\_\_

\_\_\_\_\_

## **SECTION 5 - HAZARDOUS MATERIALS TEAM MEMBERSHIP**

### **A. PREREQUISITES – TECHNICIAN LEVEL**

- Shall have received approval from the Joint Operating Board and Chief of their Department to function as a Hazardous Materials Response Team Technician.
- Shall have a least 2 years experience as a career firefighter.
- Shall have achieved the competencies required of a Hazardous Materials Technician as defined in NFPA 472 “Standard for Professional Competence of Responders to Hazardous Materials Incidents.”
- Shall have met requirements in accordance with WAC 296-62-41021 for Hazardous Materials Technician.
- Shall have achieved the following competencies that are specific to Snohomish County Hazardous Materials Response Team:
  - Team Decontamination Officer.
  - Entry Team Officer.
  - Team Resource Officer.
  - Entry Team Member
- Shall have read and be familiar with the Hazardous Materials Response Plan, Haz-Mat Team Suggested Operating Guidelines, Hazardous Materials and Terrorism EMS Response Guidelines and the Terrorism Response Coordination Plan.

### **B. PREREQUISITES – SPECIALIST LEVEL**

- Three categories of “Specialist” shall be included in the Hazardous Materials Team. Specialist categories include; Bomb Squad Support Specialist; Safety Officer Specialist; and Team Leader Specialist.
- Safety Officer Specialist shall have a minimum of 3 years experience as a hazardous materials team technician. The Safety Officer Specialist shall complete all competencies listed in Section 5-A. Additional requirements for Safety Officer Specialist include 24 hours of Incident Safety Officer training.
- Team Leader Specialist shall have a minimum of 3 years experience as a hazardous materials team technician. The Team Leader Specialist shall meet all competencies listed in section A. Additional requirements for Team Leader Specialist include Incident Command for Hazardous Materials.

- Bomb Squad Support Specialist shall have a minimum of 3 years experience as a hazardous materials team technician, liaison and incident command skills, attend a minimum of 8 hours specialized training by the Bomb Squad and have the approval of the Chief of their Department.

### **3. ANNUAL CONTINUING EDUCATION TRAINING REQUIREMENTS**

- Technician and Specialist team members shall attend a minimum 32 hours of Technician Training annually.
- Specialist team members shall in addition to the 32 hours of Technician training, meet all competencies for their respective Specialist category.
- Shall successfully complete all competencies listed in Part I of this section, annually.

### **4. FAILURE TO MEET TRAINING REQUIREMENTS**

- Personnel who fail to meet the annual training requirements shall be removed from the Team Roster and will not be allowed to participate as a Team member at hazardous materials incidents.
- Personnel requesting reinstatement shall provide a letter from the chief of the respective department certifying that they have met the required training standards and requesting reinstatement.

## **SECTION 6 - ORGANIZATION AND ADMINISTRATIVE PROCEDURES**

### **ORGANIZATION**

#### **1. Agencies**

By mutual agreement departments and agencies may be a part of the Haz-Mat Team. Other agencies shall provide trained Haz-Mat responders, and may provide apparatus, equipment and supplies. All Haz-Mat Team personnel will participate in the Haz-Mat Team training and response activities. Participating agencies include Lynnwood, Edmonds, Mountlake Terrace, Mukilteo, Marysville, Monroe, Arlington, Snohomish County Fire District 1 and Snohomish County Fire District 7.

#### **2. Hazardous Materials Joint Board**

Members of the Joint Board shall be the Fire Chief or his designee of each participating department, the Emergency Services Coordinating Agency Director, The Director of the Snohomish County Department of Emergency Management and the Haz-Mat Team Vice Chair. The Joint Board shall determine matters of administrative procedure, policy and overall program direction. Administrative procedures subject to State Audit are subject to the approval of the ESCA Board. Each member agency shall have one vote on the Joint Board. The Board will normally meet on a quarterly basis; special meetings may be held. Notice of meetings will be made to member agencies by the Chairperson.

#### **3. Chairperson**

The Chairperson of the Joint Board shall be elected by the Joint Board and serve a two year term. The chairperson shall be from a participating agency and shall facilitate meetings and provide for, and distribute meeting minutes.

#### **4. Vice Chairperson**

The Vice Chairperson is an administrative position appointed by the Chairperson and confirmed by the Joint Board. The Vice Chairperson works directly with the ESCA Director and procedural committee to assist in the development of, and ensure the quality and currency of emergency operations plans and procedures that effect the operations of the Haz-Mat Team. The Vice Chairperson may be assigned the duty of minute taking and distribution.

The Vice Chairperson, in coordination with the ESCA Director, is responsible for ensuring that changes in plans, operating procedures and training requirements are included in annual Haz-Mat Team Training.

The Vice Chairperson shall serve as liaison between the Joint Board and the Haz-Mat Team. The Coordinator shall insure that communications between the Haz-Mat Team Members and the Joint Board are maintained and that the needs of the participating departments are being met.

## **5. Haz-Mat Team Coordinator(s)**

Haz-Mat Team Coordinator(s) is an administrative position that coordinates Haz-Mat Team activities. The Coordinator(s) shall be selected from among the Team Members annually. Each participating agency may elect to have a coordinator for their respective team members.

A Coordinator shall serve as chairperson at Haz-Mat Team meetings. The Coordinator(s) may assign tasks and areas of responsibility to Haz-Mat Team Members as necessary and will coordinate follow-up and completion of assigned tasks.

The Coordinator(s) shall be responsible for the development of the annual budget as it relates to Haz-Mat supplies and equipment, and maintenance of the Haz-Mat vehicles.

The Coordinator(s) shall be responsible for maintaining a current inventory of materials and equipment carried on the Haz-Mat vehicle along with an adequate stock of disposable supplies.

## **6. Team Member Qualifications**

Team Members shall meet training requirements in accordance with WAC 296-62-41021 for Hazardous Materials Technician and have achieved competencies required of Hazardous Materials Technician as defined in NFPA 472 “Standard for Professional Competence of Responders to Hazardous Materials Incidents”.

Certification of Team Members as Hazardous Materials Technicians shall be the responsibility of each team members department or agency. Each individual member of the team and their department or agency shall maintain records of Technician certification and refresher training.

All “Specialist” Level personnel require additional training and experience.

## **7. Response Cost Recovery**

It is the policy of participating agencies that all costs associated with hazardous materials responses will be billed on a cost basis using the Washington State Association of Fire Chiefs Apparatus Rate Schedule and the local rates for uniformed and not uniformed personnel found in this section. Equipment and expendable supplies and materials used at an incident will be billed at the actual replacement cost.

Hazardous materials response is not considered a service that the general public will use routinely as with fire and medical responses. The magnitude of the support operations and the equipment, training and expertise required to perform the tasks associated with these responses are not required in other areas of primary first responder operations. As such, all of the costs associated with all hazardous materials responses are deemed to be extraordinary expenses and will be billed to the individual(s) or agency(s) responsible for the spill or release.

One combined billing per incident on behalf of responding agencies for the recovery of actual response and equipment costs to identified spillers or responsible parties shall be done through the Emergency Services Coordinating Agency (ESCA).

The Haz-Mat Team Leader at the incident scene shall be responsible for providing ESCA with the following written information within ten (10) days of the incident:

- Name, address and telephone number of company and/or individual responsible for the spill.
- Contact person.
- Date, Time and location of the incident.
- Details of the incident, including dispatch record.
- Incident Report

If there is no responsible party identified, a contact person for the agency assuming responsibility for hazardous materials incident command shall be listed.

One combined bill and one reminder notice issued after thirty (30) days will be the responsibility of ESCA. ESCA will under no circumstances serve as a collection agent for delinquent and/or unpaid billings, which are difficult to collect. Delinquent billings will be referred to a collection services provider for cost recovery. A portion of unsuccessful collections, including overtime, supplies and equipment may be referred to the Environmental Protection Agency for partial cost recovery.

Departments/Agencies intending to bill for services must submit billing information on the approved Haz-Mat Incident Cost Recovery Form to the ESCA Director within ten (10) days of the incident. Late submittals will not be billed.

ESCA will bill the identified spiller/responsible party on behalf of all member departments/agencies within thirty 30 days of the incident for actual costs submitted by responding agencies plus an administrative fee. The administrative fee may be waived at the discretion of the ESCA Director. Administrative fees which are waived shall be reported to the ESCA Board at the next regular board meeting.

Upon receipt of funds from the responsible party ESCA will reimburse each department for their respective share of recovered costs. Costs not recovered in full will be disbursed on a percentage basis according to the department/agency cost submitted and the amount recovered.

In lieu of payment of recovered funds ESCA will directly replace supplies and equipment upon request and completion of the approved Haz-Mat Equipment/Supply Order Form signed by the Chief of the requesting department

Individual departments may elect to have a portion of recovery funds collected placed in the ESCA Haz-Mat Fund. The ESCA Director has the authority to utilize this fund for emergency equipment replacement. Other uses of this fund, including Haz-Mat training or other related expenditures must be approved by the Haz-Mat Fund contributors of the Hazardous Materials Joint Board.

The following rates shall be utilized for billing and shall be updated as necessary:

All Uniformed Personnel (police & fire)	45.00 per hour
Non-Uniformed Personnel (other employees)	35.00 per hour
Per call personnel (volunteers, cadets etc.)	Actual Rate
Equipment/Apparatus	Current Washington State Fire Chiefs Recommended Rate Schedule
Administrative Fee	250.00 per incident
Expended Supplies	Replacement Cost
Expended/Damaged Equipment	Replacement Cost

Member agencies may, at their discretion, may bill independently for hazardous materials response services. In such cases the ESCA Director shall be notified.

## **8. Approval and Participation**

Administrative procedures subject to financial audit are approved by the Emergency Services Coordinating Agency Board of Directors and the Hazardous Materials Joint Board. All other procedures require the approval of the Hazardous Materials Joint Board. Upon approval of the Hazardous Materials Joint Board, other agencies or jurisdictions participating in the Mutual Aid Agreement for Fire Services, Emergency Medical Services and Hazardous Material Response may participate in this agreement by written request of the chief elected official or approved signatory of the agency or jurisdiction.

**HAZ-MAT INCIDENT COST RECOVERY FORM**  
 SEND TO: ESCA 23607 HWY 99, SUITE 3-C EDMONDS, WA 98026-9272

Submitted By \_\_\_\_\_ Department \_\_\_\_\_ Date \_\_\_\_\_

**COMPANY OR INDIVIDUAL RESPONSIBLE FOR HAZ-MAT INCIDENT**

Name \_\_\_\_\_ Telephone \_\_\_\_\_ FAX \_\_\_\_\_  
 Address \_\_\_\_\_  
 Contact Person/Title \_\_\_\_\_ Phone (if different) \_\_\_\_\_

INCIDENT INFORMATION Date \_\_\_\_\_ Time \_\_\_\_\_ Type of Incident \_\_\_\_\_  
 Incident Location \_\_\_\_\_  
 Brief Description of Incident: Attach Incident Report

NAME OF RESPONDERS	Hours Worked	\$45 per Hour	Cost
Personnel Cost			

APPARATUS USED	Hours Used	Apparatus Cost/Hr	Cost
Apparatus Cost			

EQUIPMENT USED OR DAMAGED	# Items Used	Unit Price	Replacement Cost
Equipment Cost			

<b>TOTAL REIMBURSEMENT COST</b>
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\_\_\_\_\_ **DEPT. CHIEF USE ONLY.** INITIAL HERE IF YOU WANT ESCA TO PURCHASE REPLACEMENT SUPPLIES. COMPLETE AND ATTACH SUPPLY ORDER FORM.

**HAZMAT EQUIPMENT/SUPPLY ORDER FORM**  
*Send to: ESCA, 23607 Hwy 99 Suite 3-C, Edmonds, WA 98026-9272*

I hereby request that ESCA purchase the following supplies and equipment to replace materials used or damaged during a HazMat Incident handled by my department. HazMat Cost Recovery form is attached.

Date of Incident \_\_\_\_\_ Responsible Party \_\_\_\_\_

Requested by \_\_\_\_\_ Department Name \_\_\_\_\_  
 (Name and Title)

Fire Chief Approval: \_\_\_\_\_ Date of Request \_\_\_\_\_  
 (Signature)

**ITEM #1**

DESCRIPTION	CATALOG #	QUANTITY	UNIT COST	TOTAL THIS ITEM

ORDER FROM: VENDOR NAME \_\_\_\_\_ PHONE \_\_\_\_\_

VENDOR ADDRESS  
 \_\_\_\_\_

**ITEM #2**

DESCRIPTION	CATALOG #	QUANTITY	UNIT COST	TOTAL THIS ITEM

ORDER FROM: VENDOR NAME \_\_\_\_\_ PHONE \_\_\_\_\_

VENDOR ADDRESS  
 \_\_\_\_\_

**ITEM #3**

DESCRIPTION	CATALOG #	QUANTITY	UNIT COST	TOTAL THIS ITEM

ORDER FROM: VENDOR NAME \_\_\_\_\_ PHONE \_\_\_\_\_

VENDOR ADDRESS  
 \_\_\_\_\_

**ITEM #4**

DESCRIPTION	CATALOG #	QUANTITY	UNIT COST	TOTAL THIS ITEM

ORDER FROM: VENDOR NAME \_\_\_\_\_ PHONE \_\_\_\_\_

VENDOR ADDRESS  
 \_\_\_\_\_

Page \_\_\_\_\_ of \_\_\_\_\_

**TOTAL SUPPLY ORDER: \$**

(use additional pages as needed)



**WASHINGTON STATE ASSOCIATION OF FIRE CHIEFS**  
**2002**  
**RECOMMENDED RATE SCHEDULE**  
**FOR**  
**INITIAL RESPONSE AND EQUIPMENT CHARGES**  
(Adopted 3/23/93 – amended April 2002)

**MILEAGE:**

Mileage; and fuel allowance is included in the hourly equipment rates.

**EQUIPMENT CHARGES**

	PUMP RATE GPM MINIMUM	TANK CAPACITY IN GALLONS	HOURLY RATE	
			2X4	4X4
<b>PUMPER/BRUSH ENGINE:</b>				
ICS Type 7	20	125	30.00	36.00
ICS Type 6	50	200	36.00	43.20
ICS Type 5	50	500	41.00	49.20
ICS Type 4	70	750	45.00	54.00
ICS Type 3	120	300	51.00	61.20
AWD If used, add:			+ 20%	
FOAM If used, add:			3.30*	
<b>PUMPER/CLASS A RATED:</b>				
ICS Type 2	500	400	97.00	110.40
ICS Type 1	1,000	400	121.00	138.00
AWD If used, add:			+20%	
FOAM if used, add:			3.50*	
<b>WATER TENDER:</b>				
ICS Type 3	200	1,000	39.00	46.80
ICS Type 2	200	2,500	57.00	68.40
ICS Type 2	200	3,500	65.00	78.00
ICS Type 1	300	5,000	71.00	85.20
AWD if used, add:			+20%	
<b>AERIAL LADDER:</b>				
Less Than 75 Feet			18.00	
75 + Feet			200.00	

\*Does NOT include cost of foam product which may be billed as an expended supply.

	DESCRIPTION	HOURLY RATE
<b>SUPPORT</b>	Supplemental unit in support of other fire fighting units/forces (Ex: air supply unit)	29.40
<b>PLOW</b>	Single disk on 4x4 unit used to trail wildfire (jeep plow)	29.40
<b>HAZARDOUS MATERIALS</b>	Specialized hazardous materials response unit	185.00
<b>CRASH</b>	Specialized aircraft crash unit	185.00
<b>RESCUE</b>	Unit for special rescue operations (Ex: heavy vehicle extrication (Hurst) or technical rescue.)	110.00
<b>EMS UNIT NON TRANSPORT</b>	EMS Response Unit, Non-Transport, licensed under WAC 246-975	36.50
	ALS - Non-Transport	46.00
<b>EMS UNIT TRANSPORT</b>	EMS Unit, Transport: Ambulance unit, licensed under WAC 246-975	49.00
	ALS – Transport Units	60.00
	Patient Transport Mileage	9.00 per mile

COMMAND UNIT	Mileage at prevailing federal government rate	***
COMMAND POST	ICP Bus/Trailer (self sustaining)	360.00 per day

MILEAGE RATES

Mileage is paid for vehicles, which are not eligible for hourly rate compensation. Payment rates are “wet rates”. All fuel, oil, insurance, maintenance and repair, and other costs are included in the rate and are the responsibility of the operator. Units which were used to tow or haul fire apparatus are paid mileage only.

	4X2	4X4
COMPACT	\$.45/mile	\$.50/mile
SUBCOMPACT	\$.45/mile	\$.50/mile
MID SIZE	\$.45/mile	\$.50/mile
SPORT/FULL SIZE UTILITY	\$.55/mile	\$.75/mile
1/2 TON PICKUP	\$.55/mile	\$.75/mile
3/4 TON PICKUP	\$.65/mile	\$.80/mile
1 TON/DOUBLE CAB PICKUP	\$.70/mile	\$.85/mile
1-1/2 TON	\$.90/mile	\$1.16/mile