

**CHAPTER 13**  
**HAZARDOUS MATERIALS**  
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## **INTRODUCTION**

The Hazardous Materials organizational module is designed to provide an organizational structure that will provide necessary supervision and control for the essential functions required at virtually all hazardous materials incidents. This is based on the premise that controlling the tactical operations of companies and movement of personnel and equipment will provide a greater degree of safety and also reduce the probability of spreading of contaminants.

The Hazardous Materials Group Supervisor will direct the primary functions, and all resources that have a direct involvement with the hazardous material will be supervised by one of the functional leaders or the Hazardous Materials Group Supervisor.

## **UNIFIED COMMAND**

A hazardous materials incident will bring together a greater number and a wider variety of agencies than any other single incident your agency will face.

It is assumed that all hazardous materials incidents will be managed under Unified Command principles because in virtually all cases fire, law enforcement, and public health will have some statutory functional responsibility for incident mitigation.

Depending on incident factors, several other agencies will respond to a hazardous materials incident. The best method of ensuring effective information flow and coordination between the responding agencies at the scene of a multi-agency incident is to establish a Unified Command Post and the use of Unified Command. Each key response agency should provide a representative to remain at the command post who will have authority to speak for and commit agency resources. The Assisting Agencies section of this document lists some of the typical functional responsibilities of law enforcement and health agencies.

## **MODULAR DEVELOPMENT**

The following examples are included to illustrate several methods of expanding the incident organization based on the progress of the incident.

## INITIAL RESPONSE ORGANIZATION

Initial response resources are managed by the Incident Commander who will initially handle all Command and General Staff responsibilities.

## REINFORCED RESPONSE ORGANIZATION (3 to 15 fire and/or law enforcement units)

The two Incident Commanders have met and have established Unified Command. They have established a Hazardous Materials Group to manage all activities around the Control Zones and have organized Law Enforcement units into a task force to isolate the operational area. The Incident Commanders have decided to establish a Planning Section, a Staging Area, and a Safety Officer.

## MULTI-DIVISION / GROUP ORGANIZATION

The Incident Commanders have activated most Command and General Staff positions and have established a combination of divisions and groups.

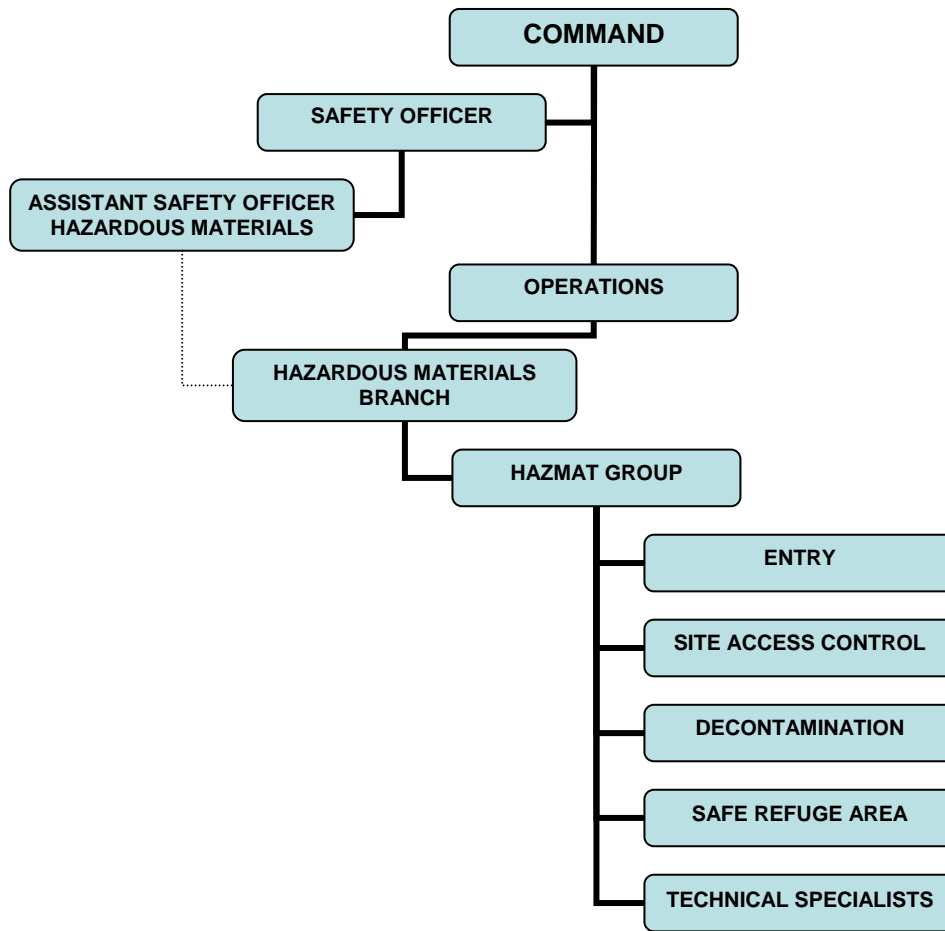
## MULTI-BRANCH ORGANIZATION

The Incident Commanders have activated all Command and General Staff positions and have established four branches in the Operations Section.

## COMMUNICATIONS

Communications between Incident Command and the Hazardous Materials Group Supervisor or the Hazardous Materials Branch Director if activated, must be made through the chain of command. Communications within the Hazardous Materials Entry Team must be accomplished on a channel separate from other on-scene communications.

HAZARDOUS MATERIALS BRANCH ORGANIZATION



\* Not all positions will be required on every incident. Complexity, mission, and size of incident will dictate positions used.

**POSITION CHECKLISTS**

**HAZARDOUS MATERIALS GROUP SUPERVISOR:** The Hazardous Materials Group Supervisor reports to the Operations Section Chief. The Hazardous Materials Group Supervisor is responsible for the implementation of the phases of the Incident Action Plan dealing with the Hazardous Materials Group operations. The Hazardous Materials Group Supervisor is responsible for the assignment of resources within the Hazardous Materials Group, reporting on the progress of control operations and the status of resources within the Group. The Hazardous Materials Group supervisor directs the overall operations of the Hazardous Materials Group.

- a. Review Common Responsibilities (page 1-2).
- b. Ensure the development of Control zones and Access Control Points and the placement of appropriate control lines.
- c. Evaluate and recommend public protection action options to the Operations Chief or Branch Director (if activated).
- d. Ensure that current weather data and future weather predictions are obtained.
- e. Establish environmental monitoring of the hazard site for contaminants.
- f. Ensure that a Site Safety and Control Plan (ICS Form 208-HM) is developed and implemented.
- g. Conduct safety meetings with the Hazardous Materials Group.
- h. Participate in the development of the Incident Action Plan.
- i. Ensure that recommended safe operational procedures are followed.
- j. Ensure that the proper Personal Protective Equipment is selected and used.
- k. Ensure that the appropriate agencies are notified through the Incident Commander.
- l. Maintain Unit/Activity Log (ICS Form 214).

**ENTRY LEADER:** Reports to the Hazardous Materials Group Supervisor. The Entry Leader is responsible for the overall entry operations of assigned personnel within the Exclusion Zone.

- a. Review Common Responsibilities (page 1-2).
- b. Supervise entry operations.

- c. Recommend actions to mitigate the situation within the Exclusion zone.
- d. Carry out actions, as directed by the Hazardous Materials Group Supervisor, to mitigate the hazardous materials release or threatened release.
- e. Maintain communications and coordinate operations with the Decontamination Leader.
- f. Maintain communications and coordinate operations with the Site Access Control Leader and the Safe Refuge Area Manager (if activated).
- g. Maintain communications and coordinate operations with Technical Specialist-Hazardous Materials Reference.
- h. Maintain control of the movement of people and equipment within the Exclusion Zone, including contaminated victims.
- i. Direct rescue operations, as needed, in the Exclusion Zone.
- j. Maintain Unit/activity Log (ICS Form 214).

**DECONTAMINATION LEADER:** Reports to the Hazardous Materials Group Supervisor. The Decontamination Leader is responsible for the operations of the decontamination element, providing decontamination as required by the Incident Action Plan.

- a. Review Common Responsibilities (page 1-2).
- b. Establish the Contamination Reduction Corridor(s).
- c. Identify contaminated people and equipment.
- d. Supervise the operations of the decontamination element in the process of decontaminating people and equipment.
- e. Maintain control of movement of people and equipment within the Contamination Reduction Zone.
- f. Maintain communications and coordinate operations with the Entry Leader.
- g. Maintain communications and coordinate operations with the Site Access Control Leader and the Safe Refuge Area Manager (if activated).
- h. Coordinate the transfer of contaminated patients requiring medical attention (after decontamination) to the Medical Group.
- i. Coordinate handling, storage, and transfer of contaminants within the Contamination Reduction Zone.
- j. Maintain Unit/Activity Log (ICS Form 214).

**SITE ACCESS CONTROL LEADER:** Reports to the Hazardous Materials Group Supervisor. The Site Access Control Leader is responsible for the control of the movement of all people and equipment through appropriate access routes at the hazard site and ensures that contaminants are controlled and records are maintained.

- a. Review Common Responsibilities (page 1-2).
- b. Organize and supervise assigned personnel to control access to the hazard site.
- c. Oversee the placement of the Exclusion Control Line and the Contamination Control Line.
- d. Ensure that appropriate action is taken to prevent the spread of contamination.
- e. Establish the Safe Refuge Area within the Contamination Reduction Zone. Appoint a Safe Refuge Area Manager (as needed).
- f. Ensure that injured or exposed individuals are decontaminated prior to departure from the hazard site.
- g. Track the movement of persons passing through the Contamination Control Line to ensure that long term observations are provided.
- h. Coordinate with the Medical Group for proper separation and tracking of potentially contaminated individuals needing medical attention.
- i. Maintain observations of any changes in climatic conditions or other circumstances external to the hazard site.
- j. Maintain communications and coordinate operations with the Entry Leader.
- k. Maintain communications and coordinate operations with the Decontamination Leader.
- l. Maintain Unit/activity Log (ICS Form 214).

**ASSISTANT SAFETY OFFICER - HAZARDOUS MATERIALS:** Reports to the Incident Safety Officer as an Assistant Safety Officer and coordinates with the Hazardous Materials Group Supervisor (or Hazardous Materials Branch Director if activated). The Assistant Safety Officer-Hazardous Materials coordinates safety related activities directly relating to the Hazardous

Materials Group operations as mandated by 29 CFR part 1910.120 and applicable State and local laws. This position advises the Hazardous Materials Group Supervisor (or Hazardous Materials Branch Director) on all aspects of health and safety and has the authority to stop or prevent unsafe acts. It is mandatory that an Assistant Safety Officer-Hazardous Materials be appointed at all hazardous materials incidents. In a multi-activity incident the Assistant Safety Officer-Hazardous Materials does not act as the Safety Officer for the overall incident.

- a. Review Common Responsibilities (page 1-2).
- b. Obtain briefing from the Hazardous Materials Group Supervisor.
- c. Participate in the preparation of, and implement the Site Safety and Control Plan (ICS Form 208-HM)
- d. Advise the Hazardous Materials Group Supervisor (or Hazardous Materials Branch Director) of deviations from the Site Safety and Control Plan (ICS Form 208-HM) or any dangerous situations.
- e. Has the authority to alter, suspend, or terminate any activity that may be judged to be unsafe and must communicate that intent or action to the Hazardous Materials Group Supervisor.
- f. Ensure the protection of the Hazardous Materials Group personnel from physical, environmental, and chemical hazards/exposures.
- g. Ensure the provision of required emergency medical services for assigned personnel and coordinate with the Medical Unit Leader.
- h. Ensure that medical related records for the Hazardous Materials Group personnel are maintained.
- i. Maintain Unit/Activity Log (ICS Form 214).

**TECHNICAL SPECIALIST-HAZARDOUS MATERIALS REFERENCE:**

Reports to the Hazardous Materials Group supervisor (or Hazardous Materials Branch Director if activated). This position provides technical information and assistance to the Hazardous Materials Group using various reference sources such as computer data bases, technical journals, CHEMTREC, and phone contact with facility representatives. The Technical Specialist-Hazardous Materials Reference may provide product identification using hazardous categorization tests and/or any other means of identifying unknown materials.

- a. Review Common Responsibilities (page 1-2).
- b. Obtain briefing from the Planning Section Chief.

- c. Provide technical support to the Hazardous Materials Group Supervisor.
- d. Maintain communications and coordinate operations with the Entry Leader.
- e. Provide and interpret environmental monitoring information.
- f. Provide analysis of hazardous material sample.
- g. Determine personal protective equipment compatibility to hazardous material.
- h. Provide technical information of the incident for documentation.
- i. Provide technical information management with public and private agencies i.e.: Poison Control Center, CHEMTREC, State Department of Food and Agriculture, National Response Team.
- j. Assist Planning Section with projecting the potential environmental effects of the release.
- k. Maintain Unit/Activity Log (ICS Form 214).

**SAFE REFUGE AREA MANAGER:** The Safe Refuge Area Manager reports to the Site Access Control Leader and coordinates with the Decontamination Leader and the Entry Leader. The Safe Refuge Area Manager is responsible for evaluating and prioritizing victims for treatment, collecting information from the victims, and preventing the spread of contamination by these victims. If there is a need for the Safe Refuge Area Manager to enter the Contamination Reduction Zone in order to fulfill assigned responsibilities then the appropriate Personal Protective Equipment shall be worn.

- a. Review Common Responsibilities (page 1-2).
- b. Establish the Safe Refuge Area within the Contamination Reduction Zone adjacent to the Contamination Reduction Corridor and the Exclusion Control Line.
- c. Monitor the hazardous materials release to ensure that the Safe Refuge Area is not subject to exposure.
- d. Assist the Site Access Control Leader by ensuring the victims are evaluated for contamination.
- e. Manage the Safe Refuge Area for the holding and evaluation of victims who may have information about the incident, or if suspected of having contamination.
- f. Maintain communications with the Entry Leader to coordinate the movement of victims from the Refuge Area(s) in the Exclusion Zone to the Safe Refuge Area.

- g. Maintain communications with the Decontamination Leader to coordinate the movement of victims from the Safe Refuge Area into the Contamination Reduction Corridor, if needed.
- h. Maintain Unit/Activity Log (ICS Form 214).

**ASSISTING AGENCIES**

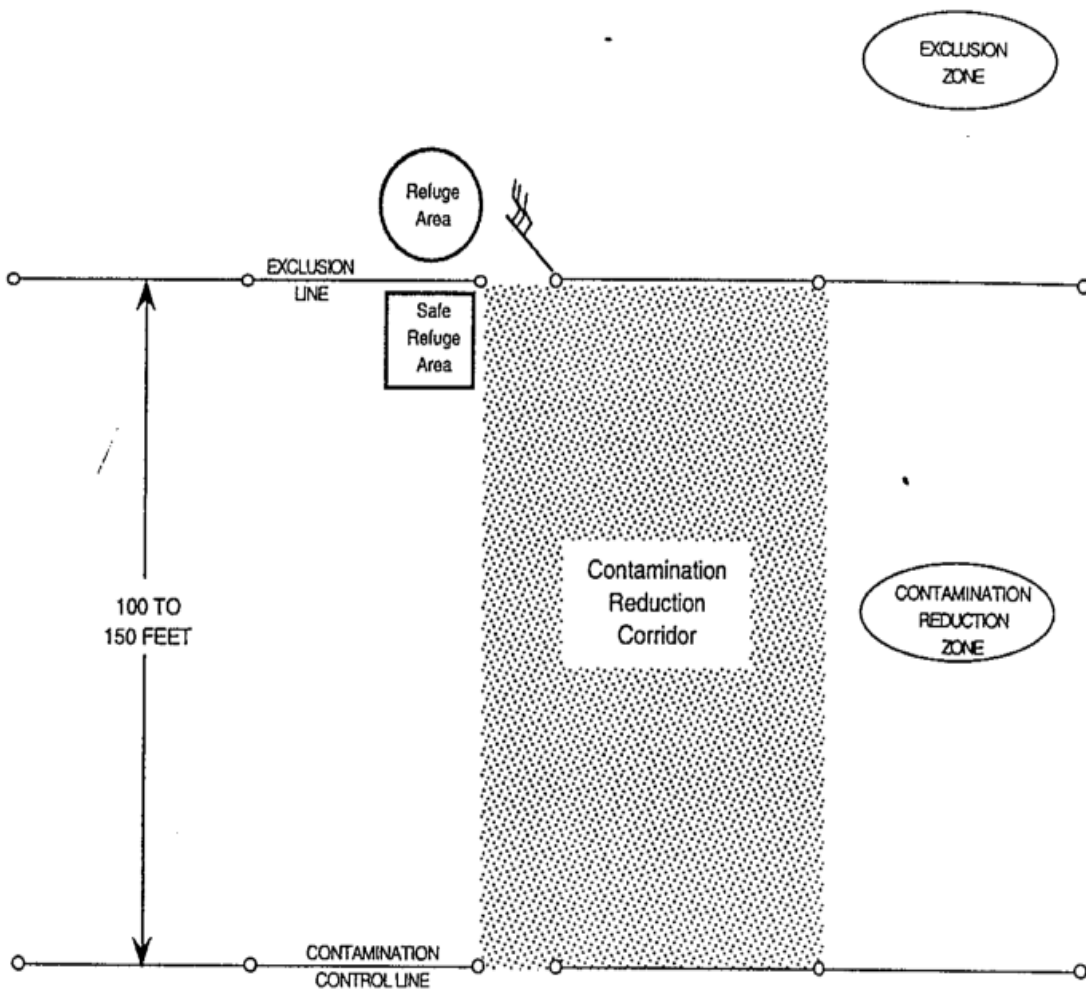
**LAW ENFORCEMENT:** The local law enforcement agency will respond to most Hazardous Materials incidents. Depending on incident factors, law enforcement may be a partner in Unified Command or may participate as an assisting agency. Some functional responsibilities that may be handled by law enforcement are:

- a. Isolate the incident area.
- b. Manage crowd control.
- c. Manage traffic control.
- d. Manage scene security.
- e. Manage public protective action.
- f. Provide scene management for on-highway incidents.
- g. Manage criminal investigations.

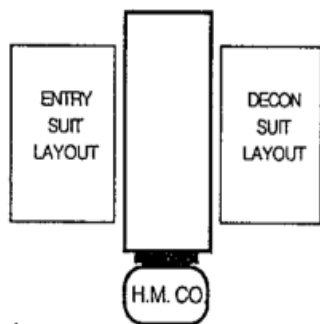
**ENVIRONMENTAL HEALTH AGENCIES:** In most cases the local or State environmental health agency will be at the scene as a partner in Unified Command. Some functional responsibilities that may be handled by environmental health agencies are:

- a. Determine the identity and nature of the Hazardous Materials.
- b. Establish the criteria for clean-up and disposal of the Hazardous Materials.
- c. Declare the site safe for re-entry by the public.
- d. Provide the medical history of exposed individuals.
- e. Monitor the environment.
- f. Supervise the clean-up of the site.
- g. Enforce various laws and acts.
- h. Determine legal responsibility.
- i. Provide technical advice.
- j. Approve funding for the clean-up.

CONTROL ZONE LAYOUT



H



RIALS

**HAZARDOUS MATERIALS  
RESOURCE TYPES AND MINIMUM STANDARDS**

RESOURCE	COMPONENTS	TYPES			
		I	II	III	IV

<b>Hazardous Materials Resource</b>	<b>Incident types</b>	<b>Known release of a Chemical, Biological, Radiological, Nuclear, or Explosive agent [WMD Chem/Bio]</b>	<b>Release of a Known or Unknown chemical, or potential WMD Chem/Bio agent.</b>	<b>Release of a Known or Unknown Chemical.</b>	<b>None, only serve to supplement a Type II or III team with manpower.</b>
	<b>Manning</b>	<b>60 multi-discipline personnel. Combination of two Type II teams, CST team, DEP's ERT team, and specially trained personnel.</b>	<b>15 personnel (All personnel being trained to the level of hazardous materials technician.)</b>	<b>7 personnel (All personnel being trained to the level of hazardous materials technician.)</b>	<b>7 personnel (All personnel being trained to the level of hazardous materials technician.)</b>
	<b>Capabilities</b>	<b>Incidents involving a known release of a CBRNE agent requiring analytical capability, technical decontamination, down range entry or evidentiary capabilities which exceed the capabilities of the Type II Resource.</b>	<b>Presumptive testing for CBRNE (Chem/Bio) agents and technical decon in addition to Type III capabilities.</b>	<b>The presumptive testing and identification of chemical substances using a variety of sources to be able to identify associated chemical and physical properties. Sources may include printed and electronic reference resources, safety data sheets, field testing kits, specific chemical testing kits, chemical testing strips, data derived from detection devices, and air-monitoring sources.</b>	<b>None</b>

**HAZARDOUS MATERIALS  
GLOSSARY OF TERMS**

**29 CFR 1910.120.** 29 of the Code of Federal Regulations, Part 1910.120 is the Hazardous Waste operations and Emergency Response reference document as required by SARA. This document covers employees involved in certain hazardous waste operations and any emergency response to incidents involving hazardous situations. Federal OSHA enforces this code.

**ACCESS CONTROL POINT.** The point of entry and exit from the control zones. Regulates access to and from the work areas.

**CHEMTREC.** Chemical Transportation Emergency Center. A public service of the Chemical Manufacturers Association, (800)424-9300.

**CONTAMINATION REDUCTION CORRIDOR (CRC).** That area within the Contamination Reduction zone where the actual decontamination is to take place. Exit from the Exclusion Zone is through the Contamination Reduction Corridor (CRC). The CRC will become contaminated as people and equipment pass through to the decontamination stations.

**CONTAMINATION CONTROL LINE (CCL).** The established line around the Contamination Reduction Zone that separates the contamination Reduction Zone from the Support zone.

**CONTAMINATION REDUCTION ZONE (CRZ).** That area between the Exclusion zone and the Support zone. This zone contains the Personnel Decontamination Station. This zone may require a lesser degree of personnel protection than the Exclusion Zone. This area separates the contaminated area from the clean area and acts as a buffer to reduce contamination of the clean area.

**CONTROL ZONES.** The geographical areas within the control lines set up at a hazardous materials incident. The three zones most commonly used are the Exclusion Zone, Contamination Reduction Zone and Support Zone.

**DECONTAMINATION (DECON).** That action required to physically remove or chemically change the contaminants from personnel and equipment.

**EXCLUSION ZONE.** That area immediately around the spill. That area where contamination does or could occur. The innermost of the three zones of a hazardous materials site. Special protection is required for all personnel while in this zone.

**REFUGE AREA.** An area identified within the Exclusion zone, if needed, for the assemblage of contaminated individuals in order to reduce the risk of further contamination or injury. The Refuge Area may provide the gross decontamination and triage.

**SAFE REFUGE AREA (SRA).** An area within the Contamination Reduction Zone for the assemblage of individuals who are witnesses to the hazardous materials incident or who were on site at the time of the spill. The assemblage will provide for the separation of contaminated persons from non-contaminated persons.

**SITE SAFETY PLAN.** An Emergency Response Plan describing the general safety procedures to be followed at an incident involving hazardous materials. This plan should be prepared in accordance with 29 CFR 1910.120 and the U.S. Environmental Protection Agency's "Standard Operating Safety Guides for Environmental Incidents (1984)."

**SUPPORT ZONE.** The clean area outside of the Contamination Control Line. Equipment and personnel are not expected to become contaminated in this area. Special protective clothing is not required. This is the area where resources are assembled to support the hazardous materials operation.