

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 primary functions will be directed by the Hazardous Materials Group Supervisor or the Hazardous Materials Branch Director (if activated), 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.

MODULAR DEVELOPMENT

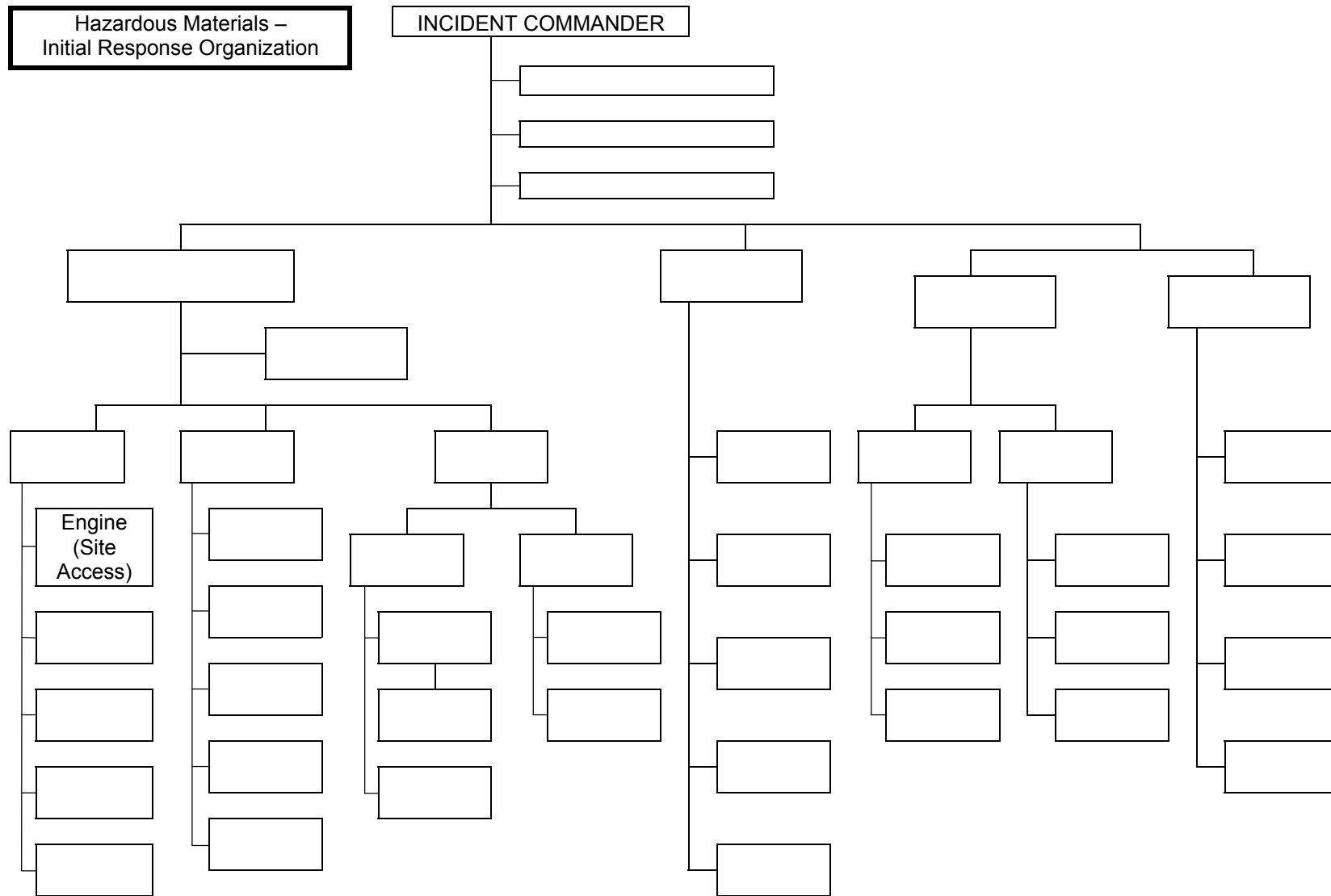
A series of examples of modular development are included to illustrate one method of expanding the incident organization.

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

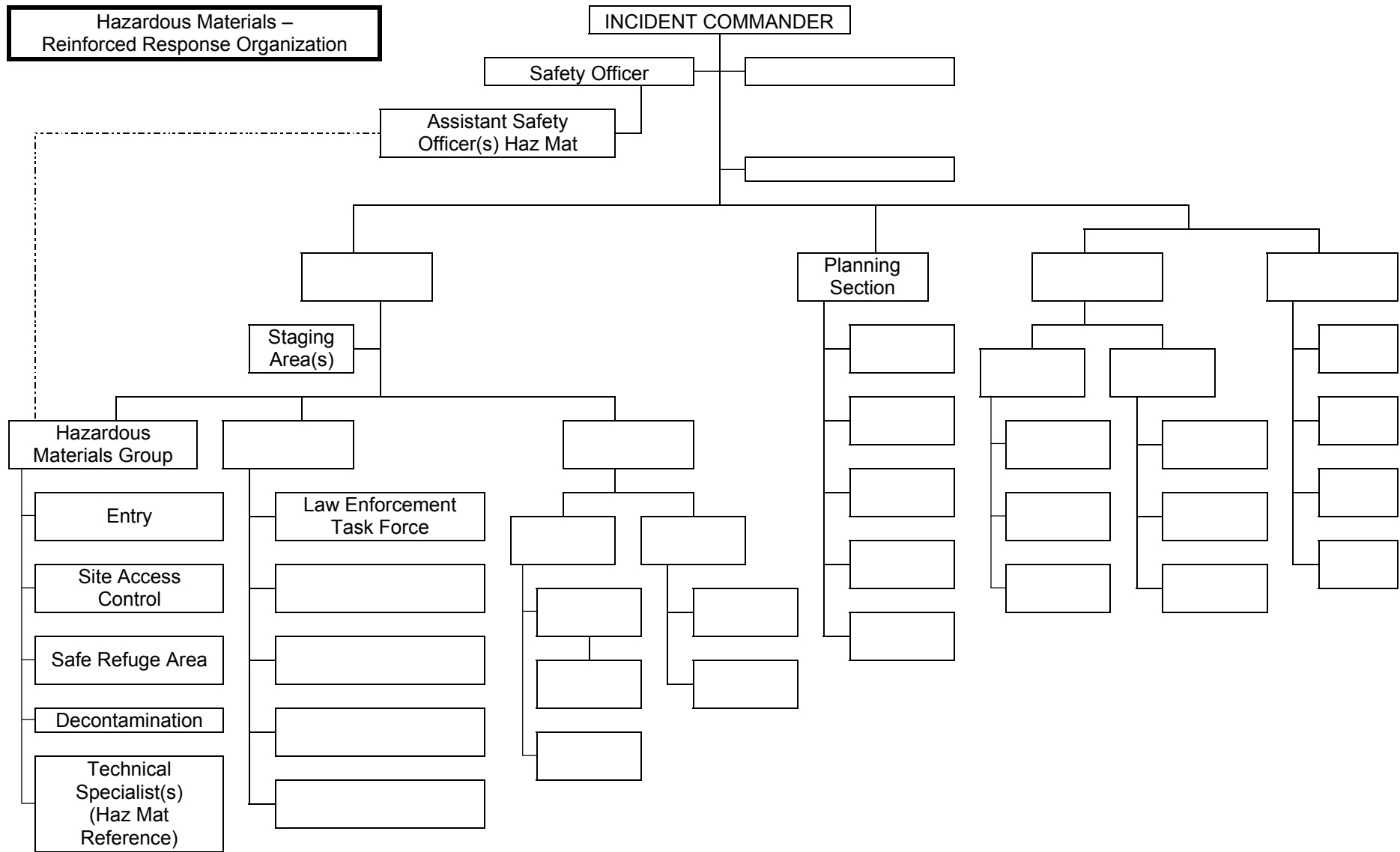
Reinforced Response - (three to fifteen fire and/or law enforcement units) The two Incident Commanders have met and have established Unified Command. They have established a Hazardous Materials Group to manage all activities around the Control Zones and have organized Law Enforcement units into a task 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 - The Incident Commanders have activated most Command and General Staff positions and have established a combination of divisions and groups.

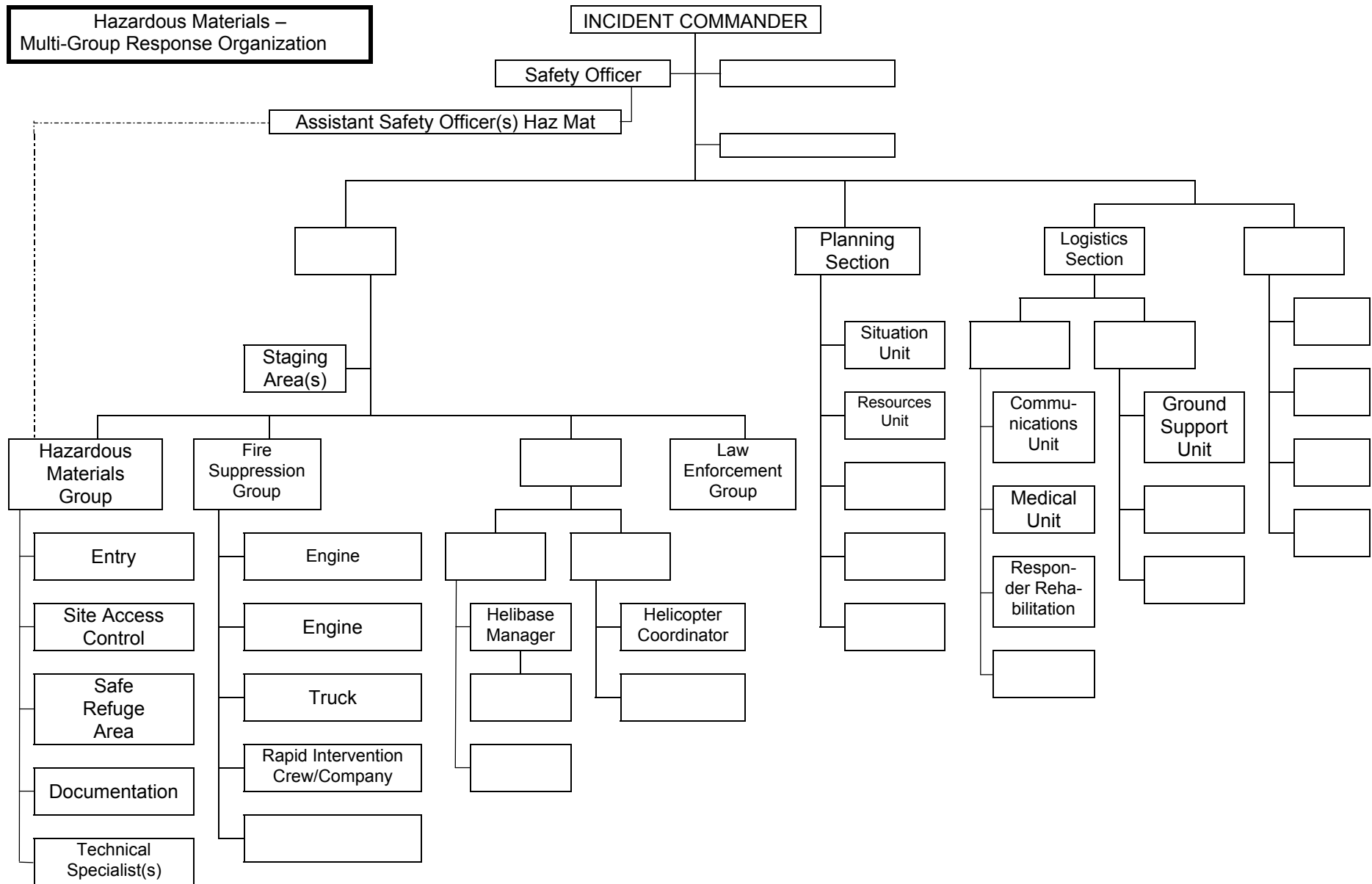
Multi-Branch - The Incident Commanders have activated all Command and General Staff positions and have established four branches in the Operations Section.



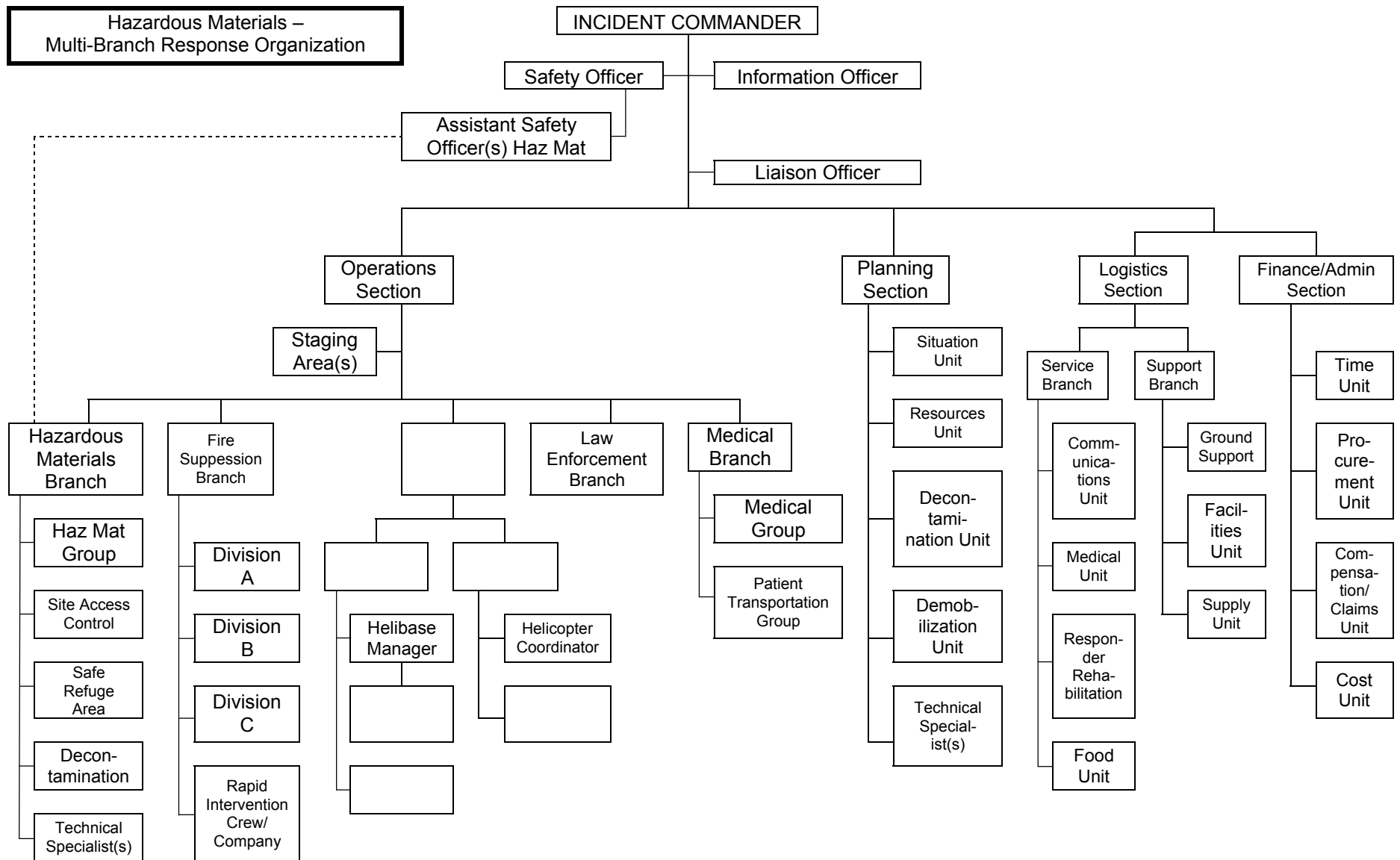
Hazardous Materials – Initial Response Organization (example): The Engine Company has arrived to find a release of a Hazardous Materials and is initiating immediate actions to isolate the area (Site Access). In addition, the Company Officer has assumed Incident Command and is ordering additional resources.



Hazardous Materials – Reinforced Response Organization (example): The Hazardous Materials response has been reinforced and a Hazardous Materials Group has been established to deal with the release. Law Enforcement responsibilities of scene security and crowd control will be assessed and handled by a Law Enforcement Group. The Planning Section Chief will accomplish initial planning and resource tracking.



Hazardous Materials – Multi-Group Response Organization (example): Additional resources have arrived and the incident Commander has established a Fire Suppression Group to address other risks on the incident. Aviation resources are assigned and appropriate supervision is established. Planning and Logistics Sections are partially established. An Assistant Safety Officer is specifically assigned to the Hazardous Materials Group.



Hazardous Materials – Multi-Branch Response (example): In this case, the incident now includes more than just a Hazardous Materials release. Therefore, the complexity of the incident requires an Operations Section Chief be assigned as well as the balance of the Command and General Staff positions. Operational control is now enhanced by the assignment of Branch Directors.

POSITION CHECKLISTS

HAZARDOUS MATERIALS GROUP SUPERVISOR (ICS-HM-222-1) - The Hazardous Materials Group Supervisor or Hazardous Materials Branch Director 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) is developed and implemented.
- g. Conduct safety meetings with the Hazardous Materials Group.
- h. Participate, when requested, 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 (ICS-HM-222-2) - 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 (ICS-HM-222-3) - 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. Control the movement of people and equipment within the
- f. Contamination Reduction Zone.
- g. Maintain communications and coordinate operations with the Entry Leader.
- h. Maintain communications and coordinate operations with the Site Access Control Leader and the Safe Refuge Area Manager (if activated).
- i. Coordinate the transfer of contaminated patients requiring medical attention (after decontamination) to the Medical Group.
- j. Coordinate handling, storage, and transfer of contaminants within the Contamination Reduction Zone.
- k. Maintain Unit/Activity Log (ICS Form 214).

SITE ACCESS CONTROL LEADER (ICS-HM-222-4) - 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 (ICS-HM-222-5) -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).
- d. Advise the Hazardous Materials Group Supervisor (or Hazardous Materials Branch Director) of deviations from the Site Safety and Control Plan (ICS Form 208) or any dangerous situations.
- e. Has authority to alter, suspend, or terminate any activity that may be judged to be unsafe.
- 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 (ICS-HM-222-6) - 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 databases, 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 or assigned supervisor.
- 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, Toxicology 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 (ICS-HM-222-7) - 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 - Local, State, and Federal law enforcement agencies may respond to 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:

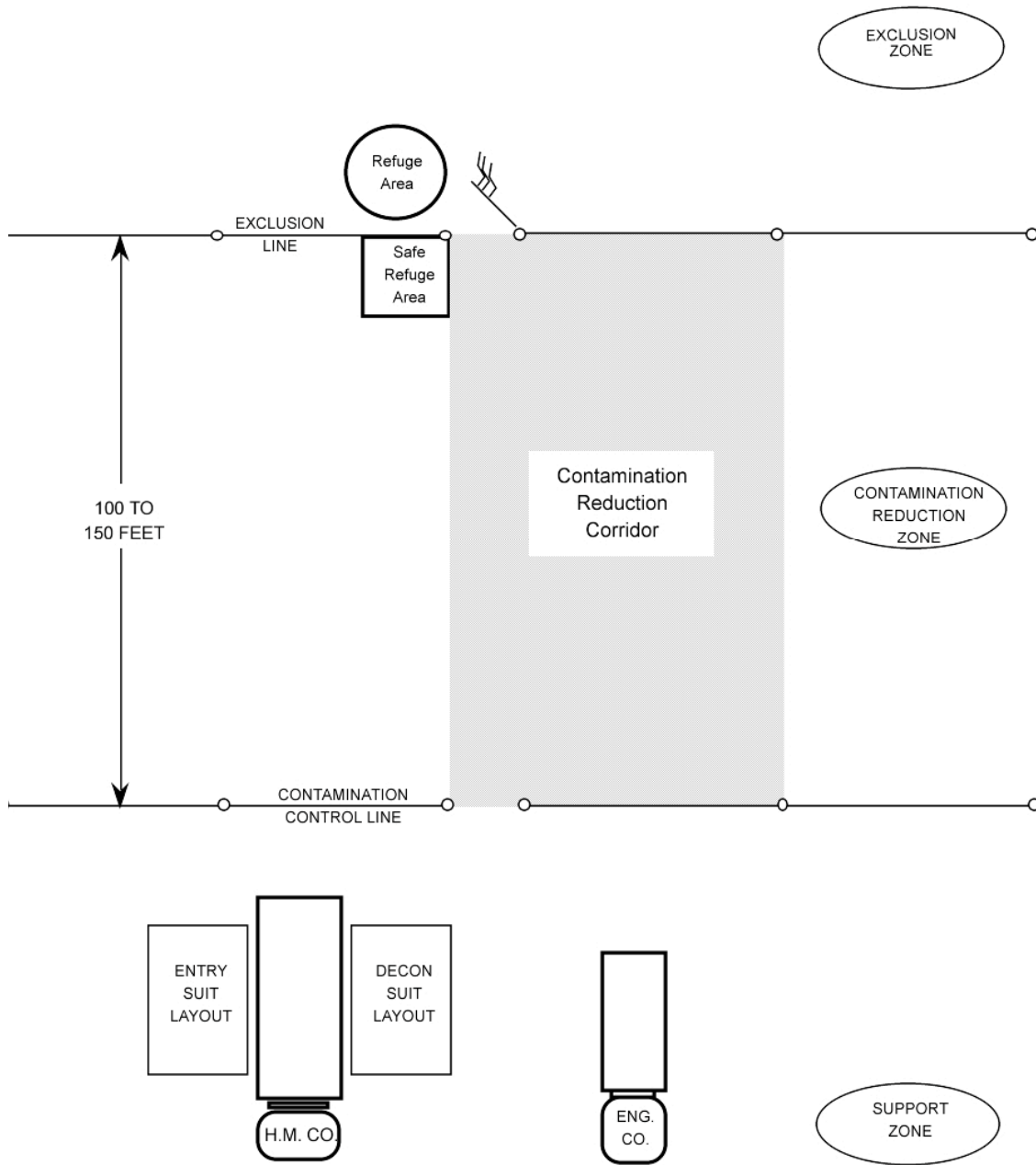
- a. Isolate the incident area.
- b. Manage crowd control.
- c. Manage traffic control.
- d. Manage public protective action.
- e. Provide scene management for on-highway incidents.
- f. Manage criminal investigations.
- g. Evidence collection.

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.

CIVIL SUPPORT TEAM (CST) – The California National Guard (CNG) Weapons of Mass Destruction Civil Support Teams (CST) are designed to support local incident commanders and local emergency first responders twenty-four (24) hours a day, seven days per week for any Weapons of Mass Destruction (WMD) terrorist event.

CONTROL ZONE LAYOUT



HAZARDOUS MATERIALS COMPANY TYPES COMPANY TYPING AND MINIMUM STANDARDS

Components	Type I	Type II	Type III
Field Testing	Known Chemicals	Known Chemicals	Known Chemicals
	Unknown Chemicals	Unknown Chemicals	
	WMD Chem / Bio		
Air Monitoring	Combustible Gas Oxygen Carbon Monoxide Hydrogen Sulfide	Combustible Gas Oxygen Carbon Monoxide Hydrogen Sulfide	Combustible Gas Oxygen Carbon Monoxide Hydrogen Sulfide
	Specialty Gases Hydrocarbon Liquid Vapors	Specialty Gases Hydrocarbon Liquid Vapors	
	WMD Chem / Bio		
Sampling: Capturing Labeling Evidence Collection	Known Chemicals	Known Chemicals	Known Chemicals
	Unknown Chemicals	Unknown Chemicals	
	WMD Chem / Bio		
Radiation Monitoring And Detection	Gamma	Gamma	Gamma
	Beta	Beta	
	Alpha	Alpha	
	Radio Nuclei		
Chemical Protective Clothing: Ensembles	Liquid-Splash Protective	Liquid-Splash Protective	Liquid-Splash Protective
	Vapor Protective	Vapor Protective	
	Flash Fire Vapor Protective	Flash Fire Vapor Protective	
	WMD Chem / Bio Vapor Protective		
	WMD Chem / Bio Liquid Splash Protective		

Components	Type I	Type II	Type III
Chemical Protective Clothing: Gloves - Boots	NFPA Compliant Replacement	NFPA Compliant Replacement	NFPA Compliant Replacement
	Hi-Temp. Protective Gloves Cryogenic Protective Gloves	Hi-Temp. Protective Gloves Cryogenic Protective Gloves	
	Radiation Protection Gloves		
Technical Reference	Printed and Electronic	Printed and Electronic	Printed and Electronic
	Plume Air Modeling, Map Overlays	Plume Air Modeling, Map Overlays	
	WMD Chem / Bio Sources		
Special Capabilities	Heat Sensing	Heat Sensing	
	Night Vision	Night Vision	
	Digital Photo	Digital Photo	
	Digital Video		
Intervention	Diking, Damming, Absorption	Diking, Damming, Absorption	Diking, Damming, Absorption
	Liquid, Solid Leak Intervention	Liquid, Solid Leak Intervention	Liquid, Solid Leak Intervention
	Vapor Leak Intervention	Vapor Leak Intervention	
	Neutralization, Plugging, Patching	Neutralization, Plugging, Patching	
	WMD Chem / Bio Spill Containment		
Decontamination Primary	Known Chemicals	Known Chemicals	Known Chemicals
	Unknown Chemicals	Unknown Chemicals	
	WMD Chem / Bio		
Communications	In-Suit	In-Suit	In-Suit
	Cell Phone	Cell Phone	Cell Phone
	Wireless Fax, Copy, Web Access	Wireless Fax, Copy, Web Access	

Components	Type I	Type II	Type III
Respiratory Protection	SCBA	SCBA	SCBA
	Umbilical Air Support		
	APR or PAPR, WMD Chem / Bio Compliant		
Personnel: Training & Staffing	Haz Mat Specialist ② WMD Chem / Bio ③ 7 ④	Haz Mat Specialist ② 5 ④	Haz Mat Technician ① 5 ④

1. All company personnel must meet the hazardous materials training requirements for Technician in CCR Title 19, Section 2520.
2. All company personnel must meet the hazardous materials training requirements for Specialist in CCR Title 19, Section 2520.
3. All company personnel trained to WMD Chem / Bio: Training shall be, at a minimum, equivalent to the 24-hour CSTI curricula "Technician Specialist Terrorism".
4. One company member trained to minimum level of Assistant Safety Officer HAZMAT (ICS-HM-222-5).
5. The explanation of components and criteria document will be located in the OSD and in the FIREScope website (www.firescope.org).
6. Hazardous Materials Company: Any piece(s) of equipment having the capabilities, PPE, equipment, and complement of personnel as specified in the Hazardous Materials Company Types and Minimum Standards found in the Field Operations Guide (ICS 420-1).