



Division 09

Special Operations

Chapter 03 – Hazardous Materials Preparedness and Response

March 2009

POLICY

This General Order establishes the Prince George's County Fire/EMS Department's comprehensive preparedness and response program for Hazardous Materials (HAZMAT).

DEFINITIONS

Definitions are from the National Incident Management System (NIMS) glossary.

Biological Agent – Living organisms or the materials derived from them (such as bacteria, viruses, fungi, and toxins) that cause disease in or harm to humans, animals, or plants, or cause deterioration of material.

Bomb Squad/Explosives Teams – A public safety agency specializing in the investigation and disarming of suspected explosive devices.

Chemical/Biological (C/B) Protective Ensemble – A compliant vapor-protective ensemble that is also certified as being compliant with the additional requirements for protection against C/B warfare agents such as vapors, gases, liquids, and particulate.

Chemical Warfare Agent – A chemical substance (such as a nerve agent, blister agent, blood agent, choking agent, or irritating agent) used to kill, seriously injure, or incapacitate people through its physiological effects.

Decontamination – The physical or chemical process of reducing and preventing the spread of contaminants from persons and equipment

used at a hazardous materials (HAZMAT) incident.

Hazardous Materials (HAZMAT) – Any material that is explosive, flammable, poisonous, corrosive, reactive, or radioactive, or any combination thereof, and requires special care in handling because of the hazards it poses to public health, safety, and/or the environment. Any hazardous substance under the Clean Water Act, or any element, compound, mixture, solution, or substance designated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); any hazardous waste under the Resource Conservation and Recovery Act (RCRA); any toxic pollutant listed under pretreatment provisions of the Clean Water Act; any hazardous pollutant under Section 112 of the Clean Air Act; or any imminent hazardous chemical substance for which the administrator has taken action under the Toxic Substances Control Act (TSCA) Section 7. (Section 101[14] CERCLA)

Hazardous Material Response Team – An organized group of individuals that is trained and equipped to perform work to control actual or potential leaks, spills, discharges, or releases of HAZMAT, requiring possible close approach to the material. The team/equipment may include external or contracted resources.

Hazardous Materials Company – Any piece of equipment having the capabilities, personal protective equipment (PPE), equipment, and complement of personnel as specified in the Hazardous Materials Company types and



minimum capabilities. The personnel complement will include one member who is trained to a minimum level of assistant safety officer - HAZMAT.

Hazardous Materials Incident – Uncontrolled, unlicensed release of HAZMAT during storage or use from a fixed facility or during transport outside a fixed facility that may impact public health, safety, and/or the environment.

HAZMAT Task Force – A group of resources with common communications and a leader. A HAZMAT Task Force may be pre-established and sent to an incident, or formed at the incident.

HAZMAT Trained and Equipped. To the level of training and equipment defined by the Occupational Safety and Health Administration (OSHA) and the National Fire Protection Association (NFPA).

Personal Protective Equipment (PPE) – Equipment and clothing required to shield or isolate personnel from the chemical, physical, thermal, and biological hazards that may be encountered at a hazardous materials (HazMat) incident.

Release – Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discharging of barrels, containers, and other closed receptacles containing any hazardous substance or pollutant or contaminant). (Section 101[22] CERCLA)

Vapor Protective Ensemble – A vapor protective ensemble or garment that is intended for use in an unknown threat atmosphere or for known high health risk atmospheres is vapor tight, and is in

compliance with National Fire Protection Association (NFPA) Standard 1991.

Weapons of Mass Destruction (WMD) – (1) Any destructive device as defined in section 921 of this title ("destructive device" defined as any explosive, incendiary, or poison gas, bomb, grenade, rocket having a propellant charge of more than 4 ounces, missile having an explosive or incendiary charge of more than 1/4 ounce, mine or device similar to the above); (2) any weapon that is designed or intended to cause serious bodily injury through the release, dissemination, or impact of toxic or poisonous chemicals, or their precursors; (3) any weapon involving a disease organism; or (4) any weapon that is designed to release radiation or radioactivity at a level dangerous to human life. (United States Code, Title 18-Crimes and Criminal Procedure, Part I-Crimes, Chapter 113B-Terrorism, Sec. 2332a)

Zone, Contamination Reduction (Warm Zone) – The 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 separates the contaminated area from the clean area and acts as a buffer to reduce contamination of the "clean" area. (U.S. Coast Guard Incident Management Handbook, 2001 edition)

Zone, Exclusion (Hot Zone) – The area immediately around a spill or release and where contamination does or could occur. The innermost of the three zones of a hazardous substances/material incident. Special protection is required for all personnel while in this zone. (U.S. Coast Guard Incident Management Handbook, 2001 edition)



Zone, Support (Cold Zone) – The "clean" area outside of the contamination control line. In this area, equipment and personnel are not expected to become contaminated. Special protective clothing is not required. This is the area where resources are assembled to support the hazardous substances/materials release operations. (U.S. Coast Guard Incident Management Handbook, 2001 edition)

designated as the primary County agency for Hazardous Materials Incident Response Operations, as it is the most likely first arriving and organized agency with the personnel and resources to contain, control, and/or resolve hazardous materials incidents. The hazardous materials incident management process utilized by the Fire/EMS Department shall include procedures for all of the following:

PROCEDURES

1. General Information

Hazardous materials pose a significant and potentially disastrous threat to Prince George's County. Hazardous materials incidents may include, but are not limited to, responses involving fires, spills, transportation accidents, chemical reactions, or explosions.¹ The hazards associated with these incidents could be thermal, radiological, asphyxiant, chemical, etiological, mechanical, or any combination of thereof.

The threat of weapons of mass destruction is important throughout the Washington Metropolitan Region. A comprehensive and coordinated response to these incidents has been undertaken by Prince George's County Fire/EMS Department and the other members of the Metropolitan Washington Council of Governments (COG). Even though weapons of mass destruction preparedness and response are considered a subset of the hazardous materials response process, they covered in General Order XXXX.

Under Prince George's County Executive Order 25-1987, the Fire/EMS Department is

¹ Responses to explosive incidents (i.e., improvised explosive devices – IEDs, munitions, etc.) are covered under Bureau of Fire Investigations Operational Order #3. This operational order may be implemented at the same time due to the nature of the incident.

1. Scene Management and Control
2. Identifying the Problem
3. Hazard and Risk Evaluation
4. Selecting Personal Protective Clothing and Equipment
5. Information Management and Resource Coordination
 1. Implementing Response Objectives
 2. Decontamination
 3. Termination and Documentation

2. HAZMAT Coordinator

The HAZMAT Coordinator manages the Fire/EMS Department HAZMAT/WMD Response program. The HAZMAT Coordinator ensures the HAZMAT Team metrics are satisfied. The HAZMAT Coordinator is the senior HAZMAT Team Leader during HAZMAT Responses.

3. HAZMAT Team Metrics

The Fire/EMS Department HAZMAT/WMD Response Program is designed to maintain this department's HAZMAT Team as a Type I HAZMAT Entry Team² under Emergency Support Function (ESF) #10 within the National Incident Management System (NIMS). A Type I HAZMAT Team must be able to perform the following metrics (as minimum capabilities):

² See FEMA Document 508-4, *Typed Resource Definitions – Fire and Hazardous Materials Resources*.



- a. Field Testing for Known Chemicals; Unknown Chemicals; and Known or Suspect Weapons of Mass Destruction Chemical/Biological Substances
 - 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. Air Monitoring for Basic Confined Space Monitoring; Specific Known Gas Monitoring; and WMD Chem/Bio Aerosol Vapor and Gas
 - The use of devices to detect the presence of known gases or vapors. The basics begin with ability to provide standard confined space readings (oxygen deficiency percentage, flammable atmosphere Lower Explosive Limit [LEL], carbon monoxide, and hydrogen sulfide).
 - The use of advanced detection equipment to detect the presence of known or unknown gases or vapors. Advanced detection and monitoring may incorporate more sophisticated instruments that differentiate between two or more flammable vapors, and may directly identify by name a specific flammable or toxic vapor.
 - Advanced detection and monitoring includes WMD Chem/Bio detection Instruments.
- c. Sampling (Capturing, Labeling, Evidence Collection) for Known Industrial Chemicals; Unknown Industrial Chemicals; and WMD Chem/Bio
 - Known industrial chemicals standard evidence collection protocols required for each include capturing and collection, containerizing and proper labeling, and preparation for transportation and distribution, including standard environmental sampling procedures for lab analysis.
 - Consistent with established chain of custody protocols.
 - Known and unknown industrial chemicals standard evidence collection protocols.
 - Ability to sample liquid and solids.
 - Special resources may be required for air sample collection.
- d. Radiation Monitoring/ Detection for Alpha, Beta; and Gamma Detection
 - The ability to accurately interpret readings from the radiation-detection devices and conduct geographical survey search of suspected radiological source or contamination spread.
 - Basic criteria include detection and survey capabilities for alpha, beta, and gamma.
 - Identify and establish the exclusion zones after contamination spread (this does include identification of some, but not all, radionuclides).



PRINCE GEORGE'S COUNTY, MARYLAND
FIRE/EMERGENCY MEDICAL SERVICES DEPARTMENT GENERAL ORDERS

- Ability to conduct environmental and personnel survey.
 - Ensure all members of survey teams are equipped with accumulative self-reading instruments (dosimeters).
- e. Protective Clothing Ensembles for Liquid Splash-Protective CPC; Vapor-Protective CPC; Flash Fire Vapor-Protective CPC; and Weapons of Mass Destruction (WMD) Vapor-Protective CPC; WMD Liquid Splash-Protective CPC)
- Chemical Protective Clothing (CPC) includes complete ensembles (suit, boots, gloves) and may incorporate various configurations (encapsulating, non-encapsulating, jumpsuit, multi-piece) depending upon the level of protection needed.
 - Liquid Splash-Protective, which must be compliant with NFPA Standard 1992, Standard on Liquid Splash-Protective Ensembles and Clothing for Hazardous Materials Emergencies (current edition).
 - Vapor-Protective, Flash Fire Protective option for Vapor-Protective, and Chemical/Biological-Protective option for Vapor-Protective, all of which must be compliant with NFPA Standard 1991, Standard on Vapor-Protective Ensembles for Hazardous Materials Emergencies (current edition).
- f. Technical Reference (Printed and Electronic; Plume Air Modeling; Map Overlays, and WMD Chem/Bio)
- Access to and use of various databases, chemical substance data depositories, and other guidelines and safety data sheets, either in print format, electronic format, stand-alone computer programs, or data available via telecommunications. The interpretation of data collected from electronic devices and chemical testing procedures.
- g. Special Capabilities. Additional resources that augment the capabilities of the team. This includes:
- At a minimum, technical references will have the ability to outsource additional capabilities and have one source for air-modeling capability.
 - Gloves and other specialized equipment based on local risk assessment;
 - Heat sensing capability; light amplification capability; and
 - Digital imaging documentation capability.
- h. Intervention. Ability to implement the following techniques:
- Diking, Damming, Absorption. Employment of mechanical means of intervention and control such as plugging, patching, off-loading, and tank stabilization. Environmental means such as absorption, dams, dikes, and booms.
 - Liquid Leak Intervention, Neutralization, Plugging, Patching, and Vapor Leak Intervention. Chemical means such as neutralization and encapsulation of known and unknown chemicals. Mechanical means include specially designed kits for controlling leaks in



rail car dome assemblies and pressurized containers, to pneumatic and standard patching systems.

Responding to Hazardous Materials Incidents, as is appropriate for the specific team type.

- Advanced capabilities should include ability to intervene and confine incidents involving WMD Chem/Bio substances.
- i. Decontamination of Known Contaminants Based on Local Risk Assessment; Unknown Contaminants; and WMD Chem/Bio
- Must be self-sufficient to provide decontamination for members of their team.
 - Must be capable of providing decontamination for known and unknown contaminants and WMD Chem/Bio.
- j. Communications (In-Suit; Wireless Voice; Wireless Data; and Secure Communications)
- Personnel utilizing CPC shall be able to communicate appropriately and safely with one another and their team leaders
- k. Staffing (5 Personnel)
- l. Training
- All personnel must be trained to the minimum response standards in accordance with the most current editions of NFPA 471, Recommended Practice for Responding to Hazardous Materials Incidents, NFPA 472, Standard for Professional Competence of Responders to Hazardous Materials Incidents, and NFPA 473, Standard for Competencies for EMS Personnel

- m. Sustainability
- Capability to perform three (3) entries in a 24-hour period.

This general order is divided into three sections (Preparedness, Response, and Recovery).

4. Preparedness

The Fire/EMS Department HAZMAT/WMD Response Preparedness Program is designed to and involves the following:

Training – Comprehensive training program to ensure that responders are prepared to respond to hazardous materials and weapons of mass destruction emergencies incidents safely and effectively. See Addendum 1 for training requirements.

Equipment/Techniques – Provide specialized equipment and techniques to effectively manage and control hazardous materials and weapons of mass destruction emergencies.

All response units in the Prince George's County Fire/EMS Department may be called upon to respond to an incident involving hazardous materials. As such, the following minimum equipment standards are established in Addendum 2 to this General Order. Equipment requirements should meet minimum capabilities of a Type I HAZMAT Team.

Planning – Pre-Incident Planning, Inspection, and Enforcement program designed to anticipate and reduce the probabilities, risks, and impact of hazardous materials or weapons of mass destruction emergencies.



The HAZMAT Coordinator is responsible to maintain a list of facilities and locations that use, store, or manufacture hazardous materials in quantities that exceed the threshold planning quantity (TPQ) as defined by the EPCRA regulations.³ A list of these facilities (within each first-due) is sent to each fire station. Each first-due company is responsible for developing a pre-plan using departmental format.

The HAZMAT Coordinator will identify designated facilities that could be considered high-risk targets for terrorism and require pre-incident plans. The Primary Hazardous Materials Company will pre-plan these facilities for typical fire emergencies and for mass decontamination, mass casualty care, and hazardous materials response.

These pre-plans will be updated and forwarded on an annual basis to the HAZMAT Coordinator and the Primary Hazardous Materials Company. Each of these pre-plans will be made available on the computer systems on the primary hazardous materials response unit and PSC-1. Printed copies will be made available to first due companies and Battalion Chiefs.

Inspection and Enforcement – Fire Inspectors from the Fire Prevention Office will accompany first due station personnel during the pre-planning and inspection process, upon request. Fire code concerns will be addressed using normal fire code enforcement procedures.

5. Response – Dispatch Procedures

Dispatch procedures will follow the guidance set forth in Addendum 3 to this general order.

³ List is developed from submitted Tier II facility documents to comply with the Emergency Planning and Community Right-to-Know Act (EPCRA).

6. Operational Procedures

All hazardous materials responses will use the National Incident Command System to safely, effectively, and efficiently address all of the following steps of the Hazardous Materials Incident Management Process (Noll, Hildebrand, Yvorra, 2005):

1. Scene Management
2. Recognition and Identification
3. Hazard and Risk Assessment
4. Selection of Protective Clothing
5. Information and Resource Coordination
6. Execute Response Objectives
7. Decontamination
8. Termination and Documentation

Note: This procedure is written for general response to hazardous materials incidents. Although this guidance is relevant and effective, specific procedures have been developed for those incidents that are most common, such as Natural Gas Emergencies, Fuel Spills, and Carbon Monoxide incidents.

First Arriving Unit and Initial Command Officer

The initial units are responsible to initiate the Hazardous Materials Incident Management Process as described in this General Order.

ALL Other Operations Level Companies

All other responding units are to report to the staging area designated by the initial and subsequent incident commander and await further assignment and instructions. The operational procedures set forth by General Order 3-1 are not appropriate for an initial hazardous materials response.



Hazardous Materials Technician Level Companies

Hazardous Materials Companies are responsible to support the initial operations on the scene prior to their arrival with technical advice. Upon arrival they will provide guidance and specialized tactics necessary to address the hazards found.

Operations Level Companies

The first arriving unit and resulting command should consider the following response priorities during any hazardous materials response. Operations Level Companies concentrate their efforts on the first three steps of the Hazardous Material Incident Management Process. These steps are most critical to the life safety of responders, the public in general, and any victims present on the scene. The Incident Commander assigns units to specific tasks and roles. The incident commander must consider responder safety and the limitations of protective equipment and training when making these assignments.

Scene Management and Control

- Approach the scene cautiously from an upwind and uphill direction
- Establish Incident Command System (ICS)
- Establish safe staging area for other responding units
- Request additional resources, as necessary
- Isolate an initial Hot Zone and deny entry
- Establish emergency decontamination procedures for affected victims
- Initiate public protective actions (Evacuation or Shelter-in-Place)
- Establish triage, treatment, and transportation groups and areas.
- Establish other hazard control zones (Warm and Cold)

- Maintain responder safety and accountability

Recognition and Identification of the Problem from a Safe Distance

- Attempt to identify Material(s) involved using:
 - Occupancy, Location, and Pre-Incident Plans
 - Container Shapes
 - Markings and Colors
 - Placards and Labels
 - Shipping Papers/Facility Documents/MSDS
 - Drivers/Subject Matter Experts
 - Monitoring and Detection Devices
 - Senses of Victims/Signs and Symptoms
- Assess container(s) involved
 - Size(s)
 - Pressure
 - Materials of construction
 - Relief devices
 - Breaches, Leaks, or Openings
- Conduct Defensive Reconnaissance

Hazard and Risk Assessment

- Assess potential hazards
 - Thermal
 - Radiological
 - Asphyxiant
 - Corrosive
 - Etiological (Biological)
 - Mechanical
 - Poisonous
- Anticipate potential course and harm of the incident
- Develop initial Incident Action Plan
 - Defensive
 - Non-Intervention

Selection of Protective Clothing

- Evaluate proper Protective clothing for the material and potential hazards
 - Understand the limitations and capabilities of Structural Fire



- Fighter Protective Clothing and Self-Contained Breathing Apparatus
- Understand the appropriateness of higher levels of chemical protective clothing
 - Ensure proper application of protective clothing prior to incident operations

Information and Resource Coordination

- Incident Command
 - Unified Command
 - Expanded to address operational needs (HAZMAT Group, Protection Group, Suppression Group, etc.)
- Notifications

Execute Response Objectives

- Life Safety
 - Offensive — Assess the viability of victims versus the limitations of PPE available; conduct emergent rescue of victims, only if reasonable to do so.
 - Defensive — Remove ambulatory victims from Release area, conduct emergency decontamination, and perform Triage, Treatment, and Transport.
 - Non-Intervention — If you can't change the outcome, don't get involved.
- Incident Stabilization
 - Defensive Product Control — Perform actions in accordance with limitations of training and protective clothing
 - Non-Intervention — If you can't change the outcome, don't get involved.
- Property Conservation
 - Defensive Product Control — Perform actions in accordance

- with limitations of training and protective clothing
- Non-Intervention — If you can't change the outcome, don't get involved.
- Environmental Protection
 - Defensive Product Control — Perform actions in accordance with limitations of training and protective clothing
 - Non-Intervention — If you can't change the outcome, don't get involved.
- **Atmospheric Monitoring**
 - Defensive — Area Monitoring
- **Decontamination**
 - Continue Emergency Mass Casualty Decontamination
- **Termination**
 - Personnel Accountability
 - Incident Scene Debriefing
 - Documentation
 - Equipment replacement and servicing
 - Critique

Technician Level Companies/Hazardous Materials Response Team

The first arriving technician level unit will be responsible to provide technical advice and incident action planning to the Incident Commander. Technician level companies are trained and equipped to perform offensive tactics to address all response objectives: Life Safety, Incident Stabilization, Property Conservation, and Environmental Preservation. Technician level companies will create a Hazardous Materials Branch or Group within the existing Incident Command Structure. The Hazardous Materials Group will provide adequate information and updates to the Incident Commander.



Scene Management and Control

- Approach the scene cautiously from an upwind and uphill direction
- Coordinate with Incident Command
 - Establish a Hazardous Materials Branch or Group with the Incident Command Structure
 - Determine a safe staging and operational location for hazardous materials branch/group personnel in the Warm Zone
 - Exchange Information
- Request appropriate resources to address hazardous materials tactical objectives
 - Engine Company to support technical decontamination
 - Special Service Company for support operations
 - Hazardous Materials Technician personnel for offensive measures
 - Medic Unit for medical monitoring
- Verify safe staging area and unit positioning
- Verify safe staging area
- Verify initial Hot Zone and control measures
- Enhance/Support emergency decontamination procedures on affected victims
- Verify public protective actions (Evacuation or Shelter-in-Place)
- Verify other hazard control zones (Warm and Cold)
- Maintain responder safety and accountability

Recognition and Identification of the Problem from a Safe Distance

- Attempt to Identify Material(s) Involved
 - Occupancy, Location, and Pre-Incident Plans
 - Container Shapes

- Markings and Colors
- Placards and Labels
- Shipping Papers, Facility Documents, and MSDSs
- Drivers/Subject Matter Experts
- Monitoring and Detection Devices (Including for potential Weapons of Mass Destruction)
- Senses of Victims/Signs and Symptoms
- Assess container(s) involved
 - Size(s)
 - Pressure
 - Materials of construction
 - Relief devices
 - Breaches, Leaks, or Openings
- Conduct Offensive or Defensive Reconnaissance

Hazard and Risk Assessment

- Assess potential hazards
 - Thermal
 - Radiological
 - Asphyxiant
 - Corrosive
 - Etiological (Biological)
 - Mechanical
 - Poisonous
- Anticipate potential course and harm of the incident
- Develop initial Incident Action Plan
 - Offensive
 - Defensive
 - Non-Intervention

Selection of Protective Clothing

- Evaluate proper protective clothing for the material and potential hazards
 - Select Proper Chemical Protective Clothing Level
 - Select Proper Chemical Protective Clothing Ensemble
- Ensure proper application of protective clothing prior to incident operations



Information and Resource Coordination

- Incident Command
 - Unified Command
 - Expanded to address operational needs (i.e., HAZMAT Group, Protection Group, Suppression Group, etc.)
- Notifications

Execute Response Objectives

- Life Safety
 - Offensive — Assess the viability of victims vs. the limitations of PPE available; conduct emergent rescue of victims, only if reasonable to do so.
 - Defensive — Remove ambulatory victims from release area, conduct emergency decontamination, and perform Triage, Treatment, and Transport.
 - Non-Intervention — If you can't change the outcome, don't get involved.
- Incident Stabilization
 - Offensive — Perform actions in accordance with limitations of training and protective clothing
 - Defensive Product Control — Perform actions in accordance with limitations of training and protective clothing
 - Non-Intervention — If you can't change the outcome, don't get involved.
- Property Conservation
 - Defensive Product Control — Perform actions in accordance with limitations of training and protective clothing
 - Non-Intervention — If you can't change the outcome, don't get involved.
- Environmental Protection
 - Defensive Product Control — Perform actions in accordance

with limitations of training and protective clothing

- Non-Intervention — If you can't change the outcome, don't get involved.

- Ensure proper Rapid Intervention Team
 - Properly Protected and Equipped
- Ensure Preparation for Entry Team(s)
 - Briefing
 - Objectives
 - Safety Procedures
 - Decontamination
- Atmospheric Monitoring

Decontamination

- Initiate Emergency Mass Casualty Decontamination
- Ensure technical decontamination is available prior to Entry Operations
- Monitoring
- Disposal
- **Termination**
 - Personnel Accountability
 - Incident Scene Debriefing
 - Documentation
 - Equipment replacement and servicing
 - Critique

REFERENCES

All Hazardous Materials response operations coordinated by the Prince George's County Fire/EMS Department will be conducted in accordance with the rules and regulations for operations in such situations, as established in the OSHA and national consensus standards listed in the reference section.

1. OSHA 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response (HAZWOPER)



2. 29 CFR 1910.134, Respiratory Protection
3. NFPA 471, Recommended Practice for Responding to Hazardous Materials Incidents
4. NFPA 472, Standard for Professional Competence of Responders to Hazardous Materials Incidents
5. NFPA 473, Standard for Professional Competence of EMS Personnel to Hazardous Materials Incidents
6. NFPA 1500, Standard on Fire Department Occupational Safety and Health Program
7. NFPA 1991, Standard on Vapor-Protective Ensembles for Hazardous Materials Emergencies
8. NFPA 1993, Standard on Liquid Splash-Protective Ensembles for Hazardous Materials Emergencies
9. NFPA 1994, Standard on Protective Ensembles for Chemical/Biological Terrorism Incidents
10. FEMA Document 508-4, Typed Resource Definitions – Fire and Hazardous Materials Resources.

FORMS/ATTACHMENTS

Addendum 1- Training

Addendum 2- Minimum Equipment Requirements

Addendum 3- Dispatch Procedures



Addendum 1 - Training

All hazardous materials training is provided through formal curriculum programs and regular drills and exercises designed to maintain competence with all related equipment and procedures. All hazardous materials training is intended to meet the requirements of OSHA Part 29 CFR 1910.120 and NFPA 472 and 473.

All Fire/EMS Department personnel must be trained to one of the following levels:

First Responder at the Operational Level (HAZMAT Operations)

First responders at the operational level are those persons who respond to releases or potential releases of hazardous materials as part of the initial response to the incident for the purpose of protecting nearby persons, the environment, or property from the effects of the release. They should be trained to respond in a **defensive** fashion to control the release from a safe distance and keep it from spreading. (NFPA 472)

Personnel:

- All personnel (career and volunteer) that may discover, investigate, or respond to a hazardous materials incident must maintain Hazardous Materials Operations level training.

Initial Training Requirements:

- Approximately 24 hours of training in compliance with 29 CFR 1910.120 and NFPA 472.
- WMD Awareness/Operations Level Training

Certification Recommended:

- Maryland State Fire Service Professional Qualifications Board (MFSPQB),
- National Board on Fire Service Professional Qualifications (Pro Board), or
- International Fire Service Accreditation Congress (IFSAC)

Continuing Education/Refresher Requirements:

- Annual Regulatory Competency Requirement: Minimum 4 hours

Hazardous Materials Technician (HAZMAT Tech)

Hazardous materials technicians are those persons who respond to releases or potential releases of hazardous materials for the purpose of controlling the release. Hazardous materials technicians are expected to use specialized chemical protective clothing and specialized control equipment. (NFPA 472)

Personnel:

- Hazardous Materials Technician Level personnel and response equipment are maintained at the stations assigned with the Hazardous Materials Support Units.

Initial Training Requirements:

- First Responder Operations Level training, plus approximately 40 hours of training in compliance with 29 CFR 1910.120 and NFPA 472 at the Hazardous Materials Technician Level.



PRINCE GEORGE'S COUNTY, MARYLAND FIRE/EMERGENCY MEDICAL SERVICES DEPARTMENT GENERAL ORDERS

- WMD HAZMAT Technician Enhancement Training (need to define what training is required and from where)

Certifications Recommended:

- Maryland State Fire Service Professional Qualifications Board (MFSPQB),
- National Board on Fire Service Professional Qualifications (Pro Board), or
- International Fire Service Accreditation Congress (IFSAC)

Continuing Education/Refresher Requirements:

- Annual Regulatory Competency Requirement: Minimum 16 hours
- Participation in at least one Hazardous Materials Response Drill per quarter
- Participation in at least one Hazardous Materials Exercise per year.

Credentialing: All Technician Level personnel are identified through appropriate credentials issued by the Fire Chief. This shall include identification cards and helmet designations.

Primary Hazardous Material Company and Response Team

Personnel:

- These personnel are either assigned to the Primary Hazardous Materials Response Unit or otherwise selected to participate as a HAZMAT Response Team Member through a competitive selection process.

Pre-requisite Training Requirements:

- Completion of Technician Level training as specified above.

Certifications Required:

- Maryland State Fire Service Professional Qualifications Board (MFSPQB),
- National Board on Fire Service Professional Qualifications (Pro Board), or
- International Fire Service Accreditation Congress (IFSAC)

Initial Training Requirements:

- HAZMAT Response Team Indoctrination Training – Approximately 80 hours
- WMD HAZMAT Technician Enhancement Training

Initial Training Recommendations:

- NFA – Chemistry of Hazardous Materials or Chemistry for Emergency Response
- NFA – Hazardous Materials Operating Site Practices (or similar training from a recognized training program)

Continuing Education/Refresher Requirements:

- Annual Regulatory Competency Requirement: Minimum 32 hours
- Participation in at least one Hazardous Materials Response Drill per month
- Participation in at least two Hazardous Materials Exercises per year.



Credentialing: All Technician Level personnel are identified through appropriate credentials issued by the Fire Chief. This shall include identification cards and helmet designations.

Hazardous Materials Response Team Leaders

Designated Hazardous Materials Response Team Leaders are responsible to supervise and control of hazardous materials personnel and equipment. They are specially trained to interface with Incident Command and other agencies to ensure safe and effective incident solution is achieved.

Personnel:

- Senior members of Hazardous Materials Response Team with at least 5 years hazardous materials response experience.

Training:

- Same as above, for Hazardous Materials Response Team Members
- Hazardous Materials Incident Commander Certification

Continuing Education/Refresher Requirements:

- Annual Regulatory Competency Requirement: Minimum 42 hours
- Participation in at least one Hazardous Materials Response Drill per month
- Participation in at least two Hazardous Materials Exercises per year.

Credentialing: All Hazardous Materials Response Team Leaders are identified through appropriate credentials issued by the Fire Chief. This shall include identification cards and helmet designations.

Hazardous Materials Incident Commanders

Incident Commanders who will assume control of the incident scene beyond the first responder awareness level must receive specific HAZMAT Incident Commander training.

Initial Training Requirements:

- Approximately 24 hours of training in compliance with 29 CFR 1910.120 and NFPA 472.
- WMD Awareness/Operations Level Training

Certification Recommended:

- Maryland State Fire Service Professional Qualifications Board (MFSPQB),
- National Board on Fire Service Professional Qualifications (Pro Board), or
- International Fire Service Accreditation Congress (IFSAC)

Continuing Education/Refresher Requirements:

- Annual Regulatory Competency Requirement: Minimum 4 hours

Credentialing: All Hazardous Materials Incident Commanders are identified through appropriate credentials issued by the Fire Chief.

Refresher Training



PRINCE GEORGE'S COUNTY, MARYLAND
FIRE/EMERGENCY MEDICAL SERVICES DEPARTMENT GENERAL ORDERS

All refresher training must be approved by the HAZMAT Coordinator and meet 29 CFR 1910.120(q)(6) and NFPA 472/473 requirements.



Addendum 2 - Minimum Equipment Requirements

Primary Hazardous Materials Response Unit

Site Management and Control

- Barrier Tape
- Traffic Cones

Recognition and Identification

- Cell Phone for immediate contact with technical experts/resources
- Wireless Internet Service for internet based reference searches
- Various Electronic Databases
- Various Printed Reference Materials
- Binoculars

Detection and Monitoring

- Atmospheric Monitoring – 4 Gas (O₂, CO, LEL, H₂S) with Photoionization Detector
- Remote Atmospheric Monitoring
- Colorimetric Test Materials
- Ion Mobility Spectrometer
- Sound Acoustic Wave Detector
- Infrared Spectrometer
- RAMAN Spectrometer
- Radiation Detection
- Radiation Dosimeters

Protective Clothing

- Level A Protective Ensembles
- Level B Protective Ensembles
- Level C Protective Ensembles with Powered Air Purifying Respirators
- Level C Protective Ensembles with Air Purifying Respirators
- Structural Fire Fighter Protective Clothing with SCBA
- Flash Fire Protective Coveralls

Specialized Equipment and Techniques

- Offensive Product Control Equipment (i.e., Transfer Pumps and Equipment and Chlorine Response Kits)
- Defensive Product Control Equipment (Absorbent, Pads, Absorbent Boom, Barrier Boom, Hand Tools)

Decontamination

- Mass Casualty Decontamination System with Triage Equipment
- Technical Decontamination

Hazardous Materials Support Units

Site Management and Control

- Barrier Tape

Recognition and Identification



- Binoculars
- Additional Printed Reference Materials

Detection and Monitoring

- Atmospheric Monitoring – 4 Gas (O₂, CO, LEL, H₂S) with Photoionization Detector
- Colorimetric Test Materials
- Radiation Detection
- Radiation Dosimeters

Protective Clothing

- Level B Protective Ensembles
- Level C Protective Ensembles with Air Purifying Respirators
- Structural Fire Fighting Protective Clothing with SCBA

Specialized Equipment and Techniques

- Offensive Product Control Equipment (i.e., Transfer Pumps and Equipment)
- Defensive Product Control Equipment (Absorbent, Pads, Absorbent Boom, Barrier Boom, Hand Tools)

Decontamination

- Mass Casualty Decontamination System with Triage Equipment
- Technical Decontamination

Operations Level Suppression Units

Site Management and Control

- Binoculars
- Barrier Tape

Recognition and Identification

- North American Emergency Response Guidebook

Detection and Monitoring

- Atmospheric Monitoring – 3 Gas (O₂, CO, LEL)
- Radiation Detection

Protective Clothing

- Structural Fire Fighting Protective Clothing with SCBA

Specialized Equipment and Techniques

- Defensive Product Control Equipment (Cellulose Absorbent, Clay Adsorbent, Hand Tools)

Decontamination

- Emergency Mass Casualty Decontamination Techniques

Other Operations Level Response Units

Site Management and Control

- Binoculars
- Barrier Tape

Recognition and Identification

- North American Emergency Response Guidebook



Addendum 3 – Dispatch Procedures

Hazardous Materials Service Call

Units are dispatched to investigate and evaluate suspicious materials, substances, or mail items, this small response allows for the incident to be safely evaluated without inciting panic. These incidents require the specialized resources of the Hazardous Materials Units, without the fire suppression or EMS response. **Note: Bomb technicians will also be notified if packages presents or could present and explosive hazard.**

Dispatch:

- One (1) HAZMAT Unit (Primary or Support)

Notify:

- Primary Hazardous Materials Unit
- Hazardous Materials Team Coordinator
- Hazardous Materials Team Leaders

Hazardous Materials Local Assignment

Units are dispatched to investigate incidents involving the suspicion of a hazardous material release or small incidents involving hazardous materials commonly known (e.g., gasoline, fuel oil, diesel, etc.). This assignment is also used to investigate reports of potential incidents such as abandoned or discarded hazardous material containers with no evidence of a release.

- Dispatch Guidance
- Occupancies: Exterior, no exposures
- Automotive Fluids: Small Vehicles (< 5 tons GVW)
- Carbon Monoxide: Detector activation, no signs and symptoms

Additional Dispatch Guidance (NFPA 471):

Incident Conditions	Information Available/Findings
Product Identification	No placards or labels, NFPA 704 0 or 1 all categories
Container Size	Small (Drum, Pail, Bag, Cylinder (<55 gal))
Fire/Explosion Potential	Low
Leak Severity	No known release, or small release contained with available resources
Life Safety	No known life threatening situation
Environmental Impact	Minimal
Container Integrity	Not Damaged or slightly damaged, not getting worse

Dispatch:

- Closest Suppression Company (Engine, Truck or Squad)



Notify:

- Primary Hazardous Materials Unit
- Hazardous Materials Team Coordinator
- Hazardous Materials Team Leaders

HAZMAT Street Assignment

Units are dispatched to investigate and address:

- Unconfirmed presence or release of a hazardous material with possible victims
- Small incidents involving unknown hazardous materials
- Large incidents involving specific known hazardous materials.

Dispatch Guidance

- Occupancies: Residential or exterior with exposures
- Automotive Fluids: Large Vehicles (greater than 5 tons GVW)
- Propane (LPG): Less than or equal to 40 pounds (fork lift bottle)
- Carbon Monoxide: Detector activation w/ signs and symptoms, or signs and symptoms in more than one person.

Additional Dispatch Guidance (NFPA 471):

Incident Conditions	Information Available/Findings
Product Identification	Any placards or labels found, NFPA 704 2 in any category
Container Size	Medium Small Tanks Multiple packages (Drum, Pail, Bag, Cylinder (<55 gal))
Fire/Explosion Potential	Medium
Leak Severity	Release may not be controllable with available resources
Life Safety	Limited to the building or local area, limited evacuation
Environmental Impact	Moderate
Container Integrity	Damaged but will allow handling or transfer

HAZMAT Street Assignment requires:

Dispatch:

- Two (2) Engine Companies
- One (1) Special Service Company
- One (1) HAZMAT Unit
- One (1) BLS Ambulance
- One (1) ALS Medic Unit
- One (1) Command Officer
- One (1) AEMS Supervisor

Notify:



- Hazardous Materials Team Coordinator
- Hazardous Materials Response Team Leaders
- Primary Hazardous Materials Unit

HAZMAT Task Force

The HAZMAT Task Force assignment is intended to provide the necessary resources to an incident to evaluate a possible release or exposure to a hazardous material. This assignment is used in addition to any initial dispatch if there is reported or suspected involvement with hazardous materials.

The HAZMAT Task Force may be requested by the incident commander to evaluate the potential that there are hazardous materials present on the scene of any incident or to respond to the scene of an incident that requires additional specialized consultation, knowledge, or resources.

Units on the HAZMAT Task Force will evaluate and identify any hazardous materials present and control hazardous run-off. If additional HAZMAT resources are required to safely mitigate the situation, the incident can be escalated as necessary.

The intent of this assignment is to provide the resources necessary to populate a complete HAZMAT Group within the established Incident Command System.

Dispatch:

- Two (2) Engine Companies
- One (1) Special Service Company
- One (1) HAZMAT Support Unit
- One (1) Primary Hazardous Materials Unit
- One (1) BLS Ambulance, if not already assigned to the incident
- One (1) ALS Medic Unit, if not already assigned to the incident
- One (1) Command Officer, if not already assigned to the incident
- One (1) AEMS Supervisor, if not already assigned to the incident

Notify:

- Hazardous Materials Team Coordinator
- Hazardous Materials Response Team Leaders

Hazardous Materials Box Alarm

Units are dispatched to:

- Confirmed presence and possible release of a hazardous material with possible victims
- Confirmed release of any hazardous material greater than 100 gallons
- Incident suspected to involve weapons of mass destruction

Additional Dispatch Guidance (NFPA 471):



Incident Conditions	Information Available/Findings
Product Identification	Class 1, Division 1.1 or 1.2 – Explosives Class 2, Division 2.3 – Poison Gases, Class 4 – Flammable Solid, Dangerous when Wet Class 5, Division 5.1 – Organic Peroxides Class 7 – Radioactive Materials Cryogenic Materials NFPA 704 3 or 4 in any categories Suspected WMD Event
Container Size	Large Bulk Transport Containers: Tank Cars, Tank Trucks, multiple containers
Fire/Explosion Potential	High
Leak Severity	Release may not be controllable even with special resources
Life Safety	Large evacuation area, Large number of evacuees
Environmental Impact	Severe
Container Integrity	Damaged so that catastrophic failure may be possible

A HAZMAT Box Assignment shall consist of the following units:

Typical Street Alarm

- Two (2) Engine Companies
- One (1) Special Service Company
- One (1) Command Officer

With a HAZMAT Task Force

- Two (2) Engine Companies
- One (1) Special Service Company
- One (1) HAZMAT Support Unit
- One (1) Primary Hazardous Materials Unit
- One (1) BLS Ambulance
- One (1) ALS Medic Unit
- One (1) Command Officer
- One (1) AEMS Supervisor
- Hazardous Materials Team Coordinator
- Hazardous Materials Response Team Leaders

Notify:

- Hazardous Materials Team Coordinator
- Hazardous Materials Response Team Leaders

HAZMAT Response Team Dispatch



PRINCE GEORGE'S COUNTY, MARYLAND FIRE/EMERGENCY MEDICAL SERVICES DEPARTMENT GENERAL ORDERS

The off-duty personnel and/or assigned to other positions on-duty the Hazardous Materials Response Team shall be dispatched on the discretion of the Incident Commander on the scene in consultation with a HAZMAT Team Leader.

The HAZMAT Response Team shall require the following in addition to the resources already assigned to the incident:

Notify:

- Hazardous Materials Response Team
- Hazardous Materials Team Coordinator
- Hazardous Materials Response Team Leaders

Additional Resources

Since Hazardous Materials incidents can develop into large and complex command structures, the Incident Commander should also consider the following additional resources:

- Command Unit (PSC-1) – Long duration incidents or complex command structures
- Air Unit – If entry operations are undertaken by the Hazardous Materials personnel
- Foam Unit – If flammable liquids are present
- Canteen Unit – Long duration incidents