

NFPA® 472

Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents

2018



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NFPA® 472

Standard for

Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents

2018 Edition

This edition of NFPA 472, *Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents*, was prepared by the Technical Committee on Hazardous Materials Response Personnel. It was issued by the Standards Council on August 1, 2017, with an effective date of August 21, 2017, and supersedes all previous editions.

This edition of NFPA 472 was approved as an American National Standard on August 21, 2017.

Origin and Development of NFPA 472

At the July 1985 NFPA Standards Council meeting, approval was given to the concept of a new project on Hazardous Materials Response Personnel. The Standards Council directed that a proposed scope and start-up roster for the new Technical Committee on Hazardous Materials Response Personnel be prepared, taking into account the need to expand the committee membership beyond the fire service and the people beyond “professional qualifications.”

When establishment of the committee was formally announced, many requests for membership were received, and similar requests continued to arrive during the first year of its existence. The first meeting of the committee took place in October 1986.

Interest in the subject of hazardous materials, especially as it relates to the emergency responder, continued at a high level. Some of the interest was due to an increased awareness of the wide proliferation of hazardous materials, while much of the interest could be credited to federal regulations that have an impact on all responders.

In 1990, the committee began reviewing the document for the purpose of revising it. The committee established a task group that conducted a task analysis relating to hazardous materials response. Based on the task group’s recommendations, the committee revised the original document. The 1992 edition changed the original format and presented the competencies in a more complete manner. During the same time period, the committee developed a related document, NFPA 473, *Standard for Competencies for EMS Personnel Responding to Hazardous Materials Incidents*, which was also released as a 1992 edition.

Since 1992, several task groups created two new levels, the Hazardous Materials Branch Officer and the Safety Officer, which were incorporated into the 1997 edition. Three new specialty levels, for tank cars, cargo tanks, and intermodal tanks, were added to the standard. The committee found it necessary to make changes to clarify existing requirements, especially for the technician level.

In 1998, the committee processed a Tentative Interim Amendment (TIA) to address concerns related to the unique challenges of responding to hazardous materials incidents caused by criminal or terrorist activity. These concerns were motivated by incidents such as the bombing of the Alfred P. Murrah Federal Building in Oklahoma City and other national and international incidents.

The TIA added paragraphs on recognizing criminal and terrorist activities, actions to take when criminal or terrorist activity is suspected, differentiating between chemical and biological agents, identification of body substance isolation and decontamination procedures when faced with an incident involving biological warfare, and other similar competencies.

In the 2002 edition, the TIA material was updated and moved into the body of the text with modifications and additions, along with updates to coordinate with a similar TIA and other new material in NFPA 473. The events of September 11, 2001, which occurred after the committee had

completed its development work on the 2002 edition, demonstrated the necessity of increasing awareness and preparation for terrorist incidents involving hazardous materials of all kinds.

In addition to new coverage of weapons of mass destruction, the 2002 edition contained material on responding to transportation or other incidents involving radioactive materials. This content began as a suggestion from the U.S. Department of Energy (DOE). A task group with DOE representation worked on a draft for committee consideration. One addition included Annex D, “Competencies for the Technician with a Radioactive Material Specialty.”

The committee dedicated the 2002 edition of the standard to the fallen heroes of the September 11th terrorist attack. Many lives were saved because of their efforts. These individuals gave the ultimate sacrifice in the line of duty and stand alone in their bravery and dedication to their jobs and their country. Our thoughts and prayers remain with their families, friends, and co-workers. Let us never forget these brave individuals and other emergency responders who have died in the line of duty. The committee also honored committee member John J. Fanning, FDNY, who died in the line of duty on September 11.

As work began on the 2008 edition of the standard, the growing threat of terrorism using weapons of mass destruction and the use of hazardous materials as both a weapon and in criminal activities had significantly changed the traditional philosophies of hazardous materials emergency response. In addition, the development of various tactical and operational procedures to meet the anticipated demands created by these response scenarios blurred the classical distinction between offensive and defensive response operations that had been the cornerstone of both NFPA 472 and 29 CFR 1910.120(q) since their inception.

In preparing the 2008 edition, the committee worked with a number of organizations, including the ASTM E54 Committee on Homeland Security Applications — Emergency Preparedness, Training, and Procedures, the Interagency Board for Equipment Standardization and Interoperability (IAB), the FBI, U.S. Capitol Police, the National Association of Bomb Squad Commanders, and the National Sheriffs Association.

As a result of discussions among those organizations, the committee established a working group whose task was to conduct a review of the 2002 edition to determine how the standard could better meet the “traditional” hazardous materials response issues and the emerging issues created by terrorism and criminal use of hazardous materials scenarios, evaluate opportunities for making NFPA 472 more responsive to the needs and response concerns of nonfire service disciplines, and recommend a path forward.

As a result of this process, the 2008 edition was based on the following operational philosophies:

- (1) Emergency response operations to a terrorism or criminal scenario using hazardous materials are based on the basic concepts of hazardous materials response. In simple terms, responders cannot safely and effectively respond to a terrorism or criminal scenario involving hazardous materials/weapons of mass destruction (WMD) if they do not first understand hazardous materials response.
- (2) The scope of the standard applies to all emergency responders, regardless of response discipline, who could respond to the emergency phase of a hazardous materials/WMD incident.
- (3) Emergency responders, regardless of their discipline and organizational affiliation, should be trained to perform their expected tasks. Given the real-world demands of limited time and resources, training should focus on an individual’s expected duties and tasks.
- (4) Personnel not directly involved in providing on-scene emergency response services (e.g., hospital first-receivers) are not covered under the scope of this standard.
- (5) Competencies for emergency medical services personnel remain in NFPA 473, *Standard for Competence of EMS Personnel Responding to Hazardous Materials/Weapons of Mass Destruction Incidents*.

Key changes in the 2008 edition can be summarized as follows:

- (1) *Awareness level personnel*. The term *responders* was dropped from the definition of awareness level and replaced with *awareness level personnel*. The committee viewed these individuals as those who, in the course of their normal duties, might be first on-scene. However, they might not be emergency responders.
- (2) *Operations level responders*. If an individual was tasked to respond to the scene of a hazardous materials/WMD incident during the emergency phase, that individual was viewed as an operations level responder. This level included fire, rescue, law enforcement, emergency medical services, private industry, and other allied professionals. Competencies for operations level responders were broken into two categories:
 - (a) *Core competencies* (Chapter 5). These competencies were required of all emergency responders at this level. This chapter was essentially the competencies from the 2002 edition Chapter 5, minus the product control and personal protective clothing competencies.
 - (b) *Mission-specific competencies* (Chapter 6). These competencies were optional and were provided so that the authority having jurisdiction (AHJ) could match the expected tasks and duties of its personnel with the competencies required to perform those tasks. Mission-specific competencies were available for operations level responders who were assigned to perform the following tasks:
 - i. Use personal protective equipment, as provided by the AHJ

- ii. Perform technical decontamination
 - iii. Perform mass decontamination
 - iv. Perform product control
 - v. Perform air monitoring and sampling
 - vi. Perform victim rescue and recovery operations
 - vii. Preserve evidence and perform sampling
 - viii. Respond to illicit laboratory incidents
- (c) *Operations level mission-specific competencies.* These competencies were to be performed under the guidance of a hazardous materials technician, allied professional, or standard operating procedure. The competencies for personnel previously trained to the operations level of the 2002 edition could be referenced as follows:
- i. Chapter 5 — Core Competencies
 - ii. Section 6.2 — Personal Protective Equipment
 - iii. Section 6.5 — Product Control Table A.5.1.1.1, Operations Level Responder Matrix, gave examples of the application and use of the operations level core and mission-specific competencies.
- (3) *Hazardous Materials Technician.* Although the definition of a *hazardous materials technician* was modified to reflect the usage of a risk-based response process, and the definition of *hazardous materials response team* was changed to specifically reference the performance of technician-level skills, there were no major changes to this section. Given that hazardous materials response teams are a typed resource under the National Incident Management System (NIMS) and to ensure consistency in operational capabilities, the committee felt strongly that the concept of “mission-specific” could not be applied to the hazardous materials technician level.
- (4) *Specialist Employee.* Although there are no competency changes, the title was changed from *private sector specialist employee* to *specialist employee* for consistency with the 29 CFR 1910.120(q) terminology and usage of the term in the field.
- (5) *Hazardous Materials Officer.* Although there were no significant competency changes, the definition was modified to reflect that in some response organizations this individual could function as an advisor to the incident commander or as a technical specialist.
- (6) *Competencies for hazardous materials technician with a radioactive material specialty.* These new competencies were for responders already trained to the hazardous materials technician level and were developed by a working group representing the DOE and state and local radiation emergency responders. The technical committee decided to place these nonmandatory competencies in the annexes for informational purposes at this time.
- (7) *Competencies for operations level responders assigned agent-specific responsibilities.* These agent-specific competencies were for responders who were already trained to Chapter 5, Core Competencies for Operations Level Responders, and Section 6.2, Personal Protective Equipment. Agent-specific competencies were provided for chemical, biological, and radiological agents. The technical committee decided to place these nonmandatory competencies in the annexes for informational purposes at this time.

The technical committee made several significant changes to the 2013 edition. Chapter 6 was expanded to include Section 6.10, Perform Disablement/Disruption of Improvised Explosives Devices (IEDs), Improvised WMD Dispersal Devices, and Operations at Improvised Explosives Laboratories. Chapter 15 was expanded to include non-tank vessel information and was renamed Competencies for Hazardous Materials Technicians with a Marine Tank and Non-Tank Vessel Specialty. The following annex material from the 2008 edition was formalized and moved to the main body of the document:

- Chapter 16, Competencies for Hazardous Materials Technicians with a Flammable Liquids Bulk Storage Specialty
- Chapter 17, Competencies for Hazardous Materials Technicians with a Flammable Gases Bulk Storage Specialty
- Chapter 18, Competencies for Hazardous Materials Technicians with a Radioactive Material Specialty

For the 2018 edition of NFPA 472, the technical committee made significant revisions to the document to align with the other hazardous materials response personnel documents (NFPA 473, 475, and 1072). While the technical committee supports NFPA 472 as the “parent” document, the revision cycles for the other documents came ahead of this document. The technical committee will request a revision cycle change ahead of the next revision. Many of the changes to the document are for clarification and consistency. Significant modifications were made to the competency baseline of hazardous materials technician, and several new chapters were added with specialty or advanced specialty competencies for the technician level, including monitoring and detection, consequence analysis and planning, chemical risk assessment and analysis, product control, weapons of mass destruction, and decontamination. Revisions were made to the awareness and operations level chapters to better align with and for consistency with the other documents. Two new operation level responder mission-specific competencies for diving in contaminated water environment and evidence collection were added.

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Committee Scope: This Committee shall have primary responsibility for documents on the requirements for professional qualifications, professional competence, training, procedures, and equipment for emergency responders to hazardous materials/weapons of mass destruction incidents.

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NFPA 472

Standard for

Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents

2018 Edition

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NOTICE: An asterisk (*) following the number or letter designating a paragraph indicates that explanatory material on the paragraph can be found in Annex A.

A reference in brackets [] following a section or paragraph indicates material that has been extracted from another NFPA document. As an aid to the user, the complete title and edition of the source documents for extracts in mandatory sections of the document are given in Chapter 2 and those for extracts in informational sections are given in Annex H. Extracted text may be edited for consistency and style and may include the revision of internal paragraph references and other references as appropriate. Requests for interpretations or revisions of extracted text shall be sent to the technical committee responsible for the source document.

Information on referenced publications can be found in Chapter 2 and Annex H.

Chapter 1 Administration

1.1 Scope.

1.1.1* This standard shall identify the minimum levels of competence required by responders to emergencies involving hazardous materials/weapons of mass destruction (WMD).

1.1.2 This standard shall apply to any individual or member of any organization who responds to hazardous materials/WMD incidents.

1.1.3 This standard shall cover the competencies for awareness level personnel, operations level responders, hazardous materials technicians, incident commanders, hazardous materi-

als officers, hazardous materials safety officers, and other specialist employees.

1.2 Purpose.

1.2.1 The purpose of this standard shall be to specify minimum competencies required for those who respond to hazardous materials/WMD incidents and necessary for a risk-based response to these incidents.

1.2.2 The competencies contained herein shall help reduce the numbers of accidents, injuries, and illnesses during response to hazardous materials/WMD incidents and shall help prevent exposure to hazardous materials/WMD, thus reducing the possibility of fatalities, illness, and disabilities to emergency response personnel.

N 1.2.3 This document is also intended to further clarify competencies with the associated job performance requirements (JPRs) established in NFPA 1072.

1.3 Application. It shall not be the intent of this standard to restrict any jurisdiction from exceeding these minimum requirements.

Chapter 2 Referenced Publications

2.1 General. The documents or portions thereof listed in this chapter are referenced within this standard and shall be considered part of the requirements of this document.

2.2 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.

NFPA 11, *Standard for Low-, Medium-, and High-Expansion Foam*, 2016 edition.

NFPA 704, *Standard System for the Identification of the Hazards of Materials for Emergency Response*, 2017 edition.

NFPA 1001, *Standard for Fire Fighter Professional Qualifications*, 2013 edition.

NFPA 1072, *Standard for Hazardous Materials/Weapons of Mass Destruction Emergency Response Personnel Professional Qualifications*, 2017 edition.

2.3 Other Publications.

N 2.3.1 ASTM Publications. ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.

ASTM A240/A240M-07, *Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications*. November 1, 2015.

2.3.2 U.S. Government Publications. U.S. Government Publishing Office, 732 North Capitol Street, NW, Washington, DC 20401-0001.

Emergency Planning and Community Right-to-Know Act, Public Law 99-499, 1986.

Emergency Response Guidebook, Pipeline and Hazardous Materials Administration, U.S. Department of Transportation, 2016 edition.

FBI Bomb Data Center, Special Technicians Bulletin 2010-1, “A Model for Bomb Squad Standard Operating Procedures,” Washington, DC, July 22, 2011.

National Bomb Squad Commanders Advisory Board (NBSCAB), *National Guidelines for Bomb Technicians*.

Superfund Amendments and Reauthorization Act (SARA), National Guidelines for Bomb Technicians, March 2014, U.S. Department of Justice.

Title 18, U.S. Code, Section 2332a, "Use of Weapons of Mass Destruction."

Title 46, Code of Federal Regulations, Subchapter C, Parts 24–28.

Title 46, Code of Federal Regulations, Subchapter D, Parts 30–39.

Title 46, Code of Federal Regulations, Subchapter I, Parts 90–105.

Title 46, Code of Federal Regulations, Subchapter I-A, Parts 107–109.

Title 46, Code of Federal Regulations, Subchapter H, Parts 70–79.

Title 46, Code of Federal Regulations, Subchapter L, Parts 125–134.

Title 46, Code of Federal Regulations, Subchapter O, Parts 150–154.

Title 46, Code of Federal Regulations, Subchapter T, Parts 175–185.

2.3.3 Other Publications.

Merriam-Webster's Collegiate Dictionary, 11th edition, Merriam-Webster, Inc., Springfield, MA, 2003.

2.4 References for Extracts in Mandatory Sections.

NFPA 51, *Standard for the Design and Installation of Oxygen–Fuel Gas Systems for Welding, Cutting, and Allied Processes*, 2018 edition.
NFPA 70®, *National Electrical Code*®, 2017 edition.

Chapter 3 Definitions

3.1 General. The definitions contained in this chapter shall apply to the terms used in this standard. Where terms are not defined in this chapter or within another chapter, they shall be defined using their ordinarily accepted meanings within the context in which they are used. *Merriam-Webster's Collegiate Dictionary*, 11th edition, shall be the source for the ordinarily accepted meaning.

3.2 NFPA Official Definitions.

3.2.1* Approved. Acceptable to the authority having jurisdiction.

3.2.2* Authority Having Jurisdiction (AHJ). An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.

3.2.3* Listed. Equipment, materials, or services included in a list published by an organization that is acceptable to the authority having jurisdiction and concerned with evaluation of products or services, that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states that either the equip-

ment, material, or service meets appropriate designated standards or has been tested and found suitable for a specified purpose.

3.2.4 Shall. Indicates a mandatory requirement.

3.2.5 Should. Indicates a recommendation or that which is advised but not required.

3.2.6 Standard. An NFPA Standard, the main text of which contains only mandatory provisions using the word "shall" to indicate requirements and that is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions are not to be considered a part of the requirements of a standard and shall be located in an appendix, annex, footnote, informational note, or other means as permitted in the NFPA Manuals of Style. When used in a generic sense, such as in the phrase "standards development process" or "standards development activities," the term "standards" includes all NFPA Standards, including Codes, Standards, Recommended Practices, and Guides.

3.3 General Definitions.

3.3.1 Action Options. Tasks responders perform to meet response objectives at hazardous materials/weapons of mass destruction (WMD) incidents.

3.3.2* Allied Professional. That person who possesses the knowledge, skills, and technical competence to provide assistance in the selection, implementation, and evaluation of tasks at a hazardous materials/weapons of mass destruction (WMD) incident.

3.3.3 Analyze. The process of identifying a hazardous materials/weapons of mass destruction (WMD) problem and determining likely behavior and harm within the training and capabilities of the emergency responder.

3.3.4 Area of Specialization.

3.3.4.1 Individual Area of Specialization. The qualifications or functions of a specific job(s) associated with chemicals and/or containers used within an organization.

3.3.4.2 Organization's Area of Specialization. Any chemicals or containers used by the specialist employee's employer.

3.3.5 Awareness Level Personnel. Personnel who, in the course of their normal duties, could encounter an emergency involving hazardous materials/weapons of mass destruction (WMD) and who are expected to recognize the presence of the hazardous materials WMD, protect themselves, call for trained personnel, and secure the scene. (See Annex E.)

3.3.6 CANUTEC. The Canadian Transport Emergency Centre, operated by Transport Canada, that provides emergency response information and assistance on a 24-hour basis for responders to hazardous materials/weapons of mass destruction (WMD) incidents.

3.3.7 CHEMTREC. A public service of the American Chemistry Council, which provides emergency response information and assistance on a 24-hour basis for responders to hazardous materials/weapons of mass destruction (WMD) incidents.

3.3.8 Competence. Possessing knowledge, skills, and judgment needed to perform indicated objectives.

3.3.9* Confined Space. An area large enough and so configured that a member can bodily enter and perform assigned work but which has limited or restricted means for entry and exit and is not designed for continuous human occupancy.

3.3.10 Container. A receptacle, piping, or pipeline used for storing or transporting material of any kind; synonymous with "packaging" in transportation.

N 3.3.10.1 Bulk Transportation Containers. Containers, including transport vehicles, having a liquid capacity of more than 119 gal (450 L), a solids capacity of more than 882 lb (400 kg), or a compressed gas water capacity of more than 1001 lb (454 kg) that are either placed on or in a transport vehicle, or vessel or are constructed as an integral part of the transport vehicle, including **a.** Cargo tanks including nonpressure tanks — MC-306/DOT-406 or equivalent, low-pressure tanks — MC-307-DOT-407 or equivalent, corrosive liquid tanks — MC-312/DOT-412 or equivalent, high-pressure tanks — MC-331 or equivalent, and cryogenic tanks — MC-338 or equivalent **b.** Portable tanks such as intermodal tanks, including nonpressure tanks, pressure tanks, cryogenic tanks, and tube modules **c.** Tank cars including nonpressure tank cars, pressure tanks cars, and cryogenic tank cars **d.** Ton containers.

N 3.3.10.2 Facility Storage Tanks. Atmospheric and low-pressure storage tanks, pressurized storage tanks, and cryogenic storage tanks.

N 3.3.10.3 Intermediate Bulk Containers (IBCs). Pressure, nonpressure, and cryogenic rigid or flexible portable containers, other than cylinders or portable tanks, designed for mechanical lifting.

N 3.3.10.4 Nonbulk Containers. Containers, including bags, boxes, carboys, cylinders, drums, and Dewar flasks for cryogenic liquids, having a liquid capacity of 119 gal (450 L) or less, a solids capacity of 882 lb (400 kg) or less, or a compressed gas water capacity of 1001 lb (454 kg) or less.

N 3.3.10.5 Pipeline. A length of pipe including pumps, valves, flanges, control devices, strainers, and/or similar equipment for conveying fluids. [70, 2017]

N 3.3.10.6 Piping. Assemblies of piping components used to convey, distribute, mix, separate, discharge, meter, control, or snub fluid flows. Piping also includes pipe-supporting elements but does not include support structures such as building frames, bents, foundations, or any other equipment excluded from this standard. [51, 2013]

N 3.3.10.7* Radioactive Materials Containers. Excepted packaging, industrial packaging, Type A, Type B, and Type C packaging for radioactive materials.

3.3.11 Contaminant. A hazardous material, or the hazardous component of a weapon of mass destruction (WMD), that physically remains on or in people, animals, the environment, or equipment, thereby creating a continuing risk of direct injury or a risk of exposure.

3.3.12 Contamination. The process of transferring a hazardous material, or the hazardous component of a weapon of mass destruction (WMD), from its source to people, animals, the environment, or equipment, that can act as a carrier.

3.3.12.1 Cross Contamination. The process by which a contaminant is carried out of the hot zone and contaminates people, animals, the environment, or equipment.

3.3.13 Control. The procedures, techniques, and methods, used in the mitigation of hazardous materials/weapons of mass destruction (WMD) incidents, including containment, extinguishment, and confinement.

N 3.3.13.1 Confinement. Those procedures taken to keep a material, once released, in a defined or local area.

N 3.3.13.2 Containment. The actions taken to keep a material in its container (e.g., stop a release of the material or reduce the amount being released).

N 3.3.13.3 Extinguishment. To cause to cease burning.

3.3.14* Control Zones. The areas at hazardous materials/weapons of mass destruction (WMD) incidents within an established/controlled perimeter that are designated based upon safety and the degree of hazard.

3.3.14.1 Cold Zone. The control zone of hazardous materials/weapons of mass destruction (WMD) incidents that contains the incident command post and such other support functions as are deemed necessary to control the incident.

3.3.14.2 Decontamination Corridor. The area usually located within the warm zone where decontamination is performed.

3.3.14.3 Hot Zone. The control zone immediately surrounding hazardous materials/weapons of mass destruction (WMD) incidents, which extends far enough to prevent adverse effects of hazards to personnel outside the zone and where only personnel who are trained, equipped, and authorized to do the assigned work are permitted to enter.

3.3.14.4* Warm Zone. The control zone at hazardous materials/weapons of mass destruction (WMD) incidents where personnel and equipment decontamination and hot zone support takes place.

3.3.15 Coordination. The process used to get people, who could represent different agencies, to work together integrally and harmoniously in a common action or effort.

3.3.16* Decontamination. The physical and/or chemical process of reducing and preventing the spread and effects of contaminants to people, animals, the environment, or equipment involved at hazardous materials/weapons of mass destruction (WMD) incidents.

Δ 3.3.16.1* Emergency Decontamination. The process of immediately reducing contamination of individuals in potentially life-threatening situations with or without the formal establishment of a decontamination corridor.

3.3.16.2* Gross Decontamination. A phase of the decontamination process where significant reduction of the amount of surface contamination takes place as soon as possible, most often accomplished by mechanical removal of the contaminant or initial rinsing from handheld hose lines, emergency showers, or other nearby sources of water.

Δ 3.3.16.3* Mass Decontamination. The process of reducing or removing surface contaminants from large numbers of victims in potentially life-threatening situations in the fastest time possible.

3.3.16.4* Technical Decontamination. The planned and systematic process of reducing contamination to a level that is as low as reasonably achievable.

Δ 3.3.17 Degradation. A chemical action involving the molecular breakdown of a protective clothing material or equipment due to contact with a chemical.

3.3.18* Demonstrate. To show by actual performance.

3.3.19 Describe. To explain verbally or in writing using standard terms recognized by the hazardous materials/weapons of mass destruction (WMD) response community.

N 3.3.20 Detection and Monitoring Equipment. Instruments and devices used to detect, classify, or quantify materials.

3.3.21 Dispersal Device. Any weapon or combination of mechanical, electrical, or pressurized components that is designed, intended, or used to cause death or serious bodily injury through the release, dissemination, or impact of toxic or poisonous chemicals or their precursors, biological agent, toxin or vector, or radioactive material.

Δ 3.3.22 Emergency Response Guidebook (ERG). The reference book, written in plain language, to guide emergency responders in their actions at the incident scene, specifically the *Emergency Response Guidebook* from the U.S. Department of Transportation; Transport Canada; and the Secretariat of Transportation and Communications, Mexico.

3.3.23 Endangered Area. The actual or potential area of exposure associated with the release of a hazardous material/weapon of mass destruction (WMD).

3.3.24 Evaluate. The process of assessing or judging the effectiveness of a response operation or course of action within the training and capabilities of the emergency responder.

N 3.3.25 Evidence Preservation. Deliberate and specific actions taken with the intention of protecting potential evidence from contamination, damage, loss, or destruction.

3.3.26 Example. An illustration of a problem serving to show the application of a rule, principle, or method (e.g., past incidents, simulated incidents, parameters, pictures, and diagrams).

3.3.27* Exposure. The process by which people, animals, the environment, property, and equipment are subjected to or come in contact with a hazardous material/weapon of mass destruction (WMD).

N 3.3.28 Exposures. The people, animals, environment, property, and equipment that might become exposed at a hazardous materials/weapons of mass destruction (WMD) incident.

3.3.29* Fissile Material. Material whose atoms are capable of nuclear fission (capable of being split).

N 3.3.30 Harm. Adverse effect created by being exposed to a hazard.

N 3.3.31 Hazard. Capable of causing harm or posing an unreasonable risk to life, health, property, or the environment.

Δ 3.3.32* Hazardous Material. Matter (solid, liquid, or gas) or energy that when released is capable of creating harm to people, the environment, and property, including weapons of mass destruction (WMD) as defined in 18 U.S. Code, Section 2332a, as well as any other criminal use of hazardous

materials, such as illicit labs, environmental crimes, or industrial sabotage.

3.3.33* Hazardous Materials Branch/Group. The function within an overall incident management system (IMS) that deals with the mitigation and control of the hazardous materials/weapons of mass destruction (WMD) portion of an incident.

Δ 3.3.34* Hazardous Materials Officer. The person who is responsible for directing and coordinating all operations involving hazardous materials/weapons of mass destruction (WMD) as assigned by the incident commander (IC).

3.3.35* Hazardous Materials Response Team (HMRT). An organized group of trained response personnel operating under an emergency response plan and applicable standard operating procedures who perform hazardous material technician level skills at hazardous materials/weapons of mass destruction (WMD) incidents.

Δ 3.3.36* Hazardous Materials Safety Officer. The person who works within an incident management system (IMS) (specifically, the hazardous materials branch/group) to ensure that recognized hazardous materials/weapons of mass destruction (WMD) safe practices are followed at hazardous materials/WMD incidents.

• 3.3.37 Identify. To select or indicate verbally or in writing using standard terms to establish the fact of an item being the same as the one described.

3.3.38 Incident. An emergency involving the release or potential release of hazardous materials/weapons of mass destruction (WMD).

N 3.3.39 Incident Analysis. The process of analyzing the risk at an incident by identifying the materials and containers involved, predicting the likely behavior of each container and its contents, and estimating the potential harm/outcomes associated with that behavior.

3.3.40* Incident Commander (IC). The individual responsible for all incident activities, including the development of strategies and tactics and the ordering and the release of resources.

3.3.41 Incident Command System (ICS). A component of an incident management system (IMS) designed to enable effective and efficient on-scene incident management by integrating organizational functions, tactical operations, incident planning, incident logistics, and administrative tasks within a common organizational structure.

3.3.42* Incident Management System (IMS). A process that defines the roles and responsibilities to be assumed by personnel and the operating procedures to be used in the management and direction of emergency operations to include the incident command system (ICS), unified command, multi-agency coordination system, training, and management of resources.

3.3.43 Match. To provide with a counterpart.

• 3.3.44 Objective. A goal that is achieved through the attainment of a skill, knowledge, or both, that can be observed or measured.

• 3.3.45 Penetration. The movement of a material through a suit's closures, such as zippers, buttonholes, seams, flaps, or

other design features of chemical-protective clothing, and through punctures, cuts, and tears.

3.3.46 Permeation. A chemical action involving the movement of chemicals, on a molecular level, through intact material.

3.3.47* Personal Protective Equipment (PPE). The protective clothing and respiratory protective equipment provided to shield or isolate a person from the hazards encountered at hazardous materials/weapons of mass destruction (WMD) incident operations.

3.3.48 Plan.

3.3.48.1* Emergency Response Plan (ERP). A plan — developed by the authority having jurisdiction (AHJ) with the cooperation of all participating agencies and organizations, including a jurisdiction with emergency responsibilities and those outside the jurisdiction who have entered into response/support agreements — that identifies goals and objectives for that emergency type, agency roles, and overall strategies.

3.3.48.2* Incident Action Plan (IAP). An oral or written plan approved by the incident commander containing general objectives reflecting the overall strategy for managing an incident for a specific time frame and target location.

3.3.48.3* Site Safety and Control Plan. A site-specific safety document used within the incident command system (ICS) to organize information important to hazardous materials response operations.

3.3.49* Planned Response. The incident action plan, with the site safety and control plan, consistent with the emergency response plan and/or standard operating procedures for a specific hazardous materials/weapon of mass destruction (WMD) incident.

3.3.50 Predict. The process of estimating or forecasting the future behavior of a hazardous materials/weapons of mass destruction (WMD) container and/or its contents within the training and capabilities of the emergency responder.

3.3.51* Protective Clothing. Equipment designed to protect the wearer from thermal hazards, hazardous materials, or from the hazardous component of a weapon of mass destruction contacting the skin or eyes.

N 3.3.51.1 Ballistic Protective Clothing (BPC). An item of personal protective equipment that provides protection against specific ballistic threats by helping to absorb the impact and reduce or prohibit the penetration to the body from bullets and steel fragments from handheld weapons and exploding munitions.

3.3.51.2* Chemical-Protective Clothing (CPC). The ensemble elements (garment, gloves, and footwear) provided to shield or isolate a person from the hazards encountered during hazardous materials/WMD incident operations.

3.3.51.2.1* Liquid Splash-Protective Clothing. Multiple elements of compliant protective clothing and equipment products that when worn together provide protection from some, but not all, risks of hazardous materials/WMD emergency incident operations involving liquids.

3.3.51.2.2* Vapor-Protective Clothing. Multiple elements of compliant protective clothing and equipment that when

worn together provide protection from some, but not all, risks of vapor, liquid-splash, and particulate environments during hazardous materials/WMD incident operations.

3.3.51.3* High Temperature-Protective Clothing. Protective clothing designed to protect the wearer for short-term high temperature exposures.

3.3.51.4* Structural Fire-Fighting Protective Clothing. The fire-resistant protective clothing normally worn by fire fighters during structural fire-fighting operations, which includes a helmet, coat, pants, boots, gloves, PASS device, and a fire-resistant hood to cover parts of the head and neck not protected by the helmet and respirator facepiece.

N 3.3.52 Public Safety Sampling. The detection, monitoring, or collection of a material for the purposes of determining the hazards present and to guide public safety response decisions.

3.3.53 Qualified. Having knowledge of the installation, construction, or operation of apparatus and the hazards involved.

3.3.54* Respiratory Protection. Equipment designed to protect the wearer from the inhalation of contaminants.

3.3.55* Response. That portion of incident management in which personnel are involved in controlling hazardous materials/weapons of mass destruction (WMD) incidents.

N 3.3.56 Risk. The probability or threat of suffering harm or loss.

3.3.57 Risk-Based Response Process. Systematic process by which responders analyze a problem involving hazardous materials/weapons of mass destruction (WMD), assess the hazards, evaluate the potential consequences, and determine appropriate response actions based upon facts, science, and the circumstances of the incident.

N 3.3.58* Safety Data Sheet (SDS). Formatted information provided by chemical manufacturers and distributors of hazardous products that contains information about chemical composition, physical and chemical properties, health and safety hazards, emergency response, and waste disposal of the material.

N 3.3.59* Sampling. The process of selecting materials to analyze.

3.3.60 Scenario. A sequence or synopsis of actual or imagined events used in the field or classroom to provide information necessary to meet student competencies; can be based upon threat assessment.

3.3.61 SETIQ. The Emergency Transportation System for the Chemical Industry in Mexico that provides emergency response information and assistance on a 24-hour basis for responders to emergencies involving hazardous materials/weapons of mass destruction (WMD).

3.3.62 Specialist Employees.

3.3.62.1* Specialist Employee A. That person who is specifically trained to handle incidents involving chemicals or containers for chemicals used in the organization's area of specialization.

3.3.62.2* Specialist Employee B. That person who, in the course of his or her regular job duties, works with or is

trained in the hazards of specific chemicals or containers within the individual's area of specialization.

3.3.62.3* Specialist Employee C. That person who responds to emergencies involving chemicals and/or containers within the organization's area of specialization.

3.3.63 Stabilization. The point in an incident when the adverse behavior of the hazardous material, or the hazardous component of a weapon of mass destruction (WMD), is controlled.

N 3.3.64 Standard Operating Procedure (SOP). A written directive that establishes specific operational or administrative methods to be followed routinely for the performance of a task or for the use of equipment.

N 3.3.65 Surrounding Conditions. Conditions to be taken into consideration when identifying the scope of a hazardous materials/WMD incident, including but not limited to topography; land use, including utilities and fiber-optic cables; accessibility; weather conditions; bodies of water, including recharge ponds; public exposure potential; patient presentation; overhead and underground wires and pipelines; storm and sewer drains; possible ignition sources; adjacent land use such as rail lines, highways, and airports; and the nature and extent of injuries.

3.3.66* Termination. That portion of incident management after the cessation of tactical operations in which personnel are involved in documenting safety procedures, site operations, hazards faced, and lessons learned from the incident and include specifications for debriefing, post-incident analysis and critique in a specific sequence: critique, debriefing, and post-incident analysis.

N 3.3.66.1 Critique. An element of incident termination that examines the overall effectiveness of the emergency response effort and develops recommendations for improvement.

N 3.3.66.2 Debriefing. An element of incident termination that focuses on the following: (1) informing responders exactly what hazmat they were (possibly) exposed to and the signs and symptoms of exposure; (2) identifying damaged equipment requiring replacement or repair; (3) identifying equipment or supplies requiring specialized decontamination or disposal; (4) identifying unsafe work conditions; (5) assigning information-gathering responsibilities for a post-incident analysis.

N 3.3.66.3 Post-Incident Analysis. An element of incident termination that includes completion of the required incident reporting forms, determining the level of financial responsibility, and assembling documentation for conducting a critique.

3.3.67* UN/NA Identification Number. The four-digit number assigned to a hazardous material/weapon of mass destruction (WMD), which is used to identify and cross-reference products in the transportation mode.

3.3.68* Weapon of Mass Destruction (WMD). (1) Any destructive device, such as any explosive, incendiary, or poison gas bomb, grenade, rocket having a propellant charge of more than four ounces, missile having an explosive or incendiary charge of more than one quarter ounce (7 grams), mine, or device similar to the preceding description; (2) any weapon involving toxic or poisonous chemicals; (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.

3.3.68.1* Radiological Weapons of Mass Destruction.

3.3.68.1.1* Improvised Nuclear Device (IND). An illicit nuclear weapon that is bought, stolen, or otherwise obtained from a nuclear state (i.e., a national government with nuclear weapons), or a weapon fabricated from fissile material that is capable of producing a nuclear explosion.

3.3.68.1.2* Radiation Dispersal Device (RDD). A device designed to spread radioactive material through a detonation of conventional explosives or other means.

3.3.68.1.3* Radiation Exposure Device (RED). A device intended to cause harm by exposing people to radiation without spreading radioactive material.

3.4 Operations Level Responders Definitions.

3.4.1 Agent-Specific Competencies. The knowledge, skills, and judgment needed by operations level responders who have completed the operations level competencies and who are designated by the authority having jurisdiction to respond to releases or potential releases of a specific group of WMD agents.

3.4.2 Mission-Specific Competencies. The knowledge, skills, and judgment needed by operations level responders who have completed the operations level competencies and who are designated by the authority having jurisdiction to perform mission-specific tasks, such as decontamination, victim/hostage rescue and recovery, evidence preservation, and sampling.

3.4.3* Operations Level Responders. Persons who respond to hazardous materials/weapons of mass destruction (WMD) incidents for the purpose of implementing or supporting actions to protect nearby persons, the environment, or property from the effects of the release.

3.4.4 Operations Level Responders Assigned to Disablement/Disruption of Improvised Explosives Devices (IED), Improvised WMD Dispersal Devices, and Operations at Improvised Explosive Laboratories. Persons, competent at the operations level, who are assigned to interrupt the functioning of improvised explosive devices (IED) and improvised WMD dispersal devices and to conduct operations at improvised explosive laboratories.

3.4.5 Operations Level Responders Assigned to Perform Air Monitoring and Sampling. Persons, competent at the operations level, who are assigned to implement air monitoring and sampling operations at hazardous materials/weapons of mass destruction (WMD) incidents.

3.4.6 Operations Level Responders Assigned to Perform Evidence Preservation and Sampling. Persons, competent at the operations level, who are assigned to preserve forensic evidence, take samples, and/or seize evidence at hazardous materials/weapons of mass destruction (WMD) incidents involving potential violations of criminal statutes or governmental regulations.

3.4.7 Operations Level Responders Assigned to Perform Mass Decontamination. Persons, competent at the operations level, who are assigned to implement mass decontamination operations at hazardous materials/weapons of mass destruction (WMD) incidents.

3.4.8 Operations Level Responders Assigned to Perform Product Control. Persons, competent at the operations level, who are assigned to implement product control measures at hazardous materials/weapons of mass destruction (WMD) incidents.

3.4.9 Operations Level Responders Assigned to Perform Technical Decontamination. Persons, competent at the operations level, who are assigned to implement technical decontamination operations at hazardous materials/weapons of mass destruction (WMD) incidents.

3.4.10 Operations Level Responders Assigned to Perform Victim Rescue/Recovery. Persons, competent at the operations level, who are assigned to rescue and/or recover exposed and contaminated victims at hazardous materials/weapons of mass destruction (WMD) incidents.

3.4.11 Operations Level Responders Assigned to Respond to Illicit Laboratory Incidents. Persons, competent at the operations level, who, at hazardous materials/weapons of mass destruction (WMD) incidents involving potential violations of criminal statutes specific to the illegal manufacture of methamphetamines, other drugs, or weapons of mass destruction (WMD), are assigned to secure the scene, identify the laboratory/process, and preserve evidence.

3.4.12 Operations Level Responders Assigned Responsibilities for Biological Response. Persons, competent at the operations level, who, at hazardous materials/weapons of mass destruction (WMD) incidents involving biological materials, are assigned to support the hazardous materials technician and other personnel, provide strategic and tactical recommendations to the on-scene incident commander, serve in a technical specialist capacity to provide technical oversight for operations, and act as a liaison between the hazardous materials technician, response personnel, and other outside resources regarding biological issues.

3.4.13 Operations Level Responders Assigned Responsibilities for Chemical Response. Persons, competent at the operations level, who, at hazardous materials/weapons of mass destruction (WMD) incidents involving chemical materials, are assigned to support the hazardous materials technician and other personnel, provide strategic and tactical recommendations to the on-scene incident commander, serve in a technical specialist capacity to provide technical oversight for operations, and act as a liaison between the hazardous material technician, response personnel, and other outside resources regarding chemical issues.

3.4.14 Operations Level Responders Assigned Responsibilities for Radioactive Material Response. Persons, competent at the operations level, who, at hazardous materials/weapons of mass destruction (WMD) incidents involving radioactive materials, are assigned to support the hazardous materials technician and other personnel, provide strategic and tactical recommendations to the on-scene incident commander, serve in a technical specialist capacity to provide technical oversight for operations, and act as a liaison between the hazardous material technician, response personnel, and other outside resources regarding radioactive material issues.

3.4.15 Operations Level Responders Assigned to Use Personal Protective Equipment (PPE). Persons, competent at the operations level, who are assigned to use personal protective equipment (PPE) at hazardous materials/weapons of mass destruction (WMD) incidents.

N 3.5 Hazardous Materials Technician. A person who responds to hazardous materials/weapons of mass destruction (WMD) incidents using a risk-based response process by which they analyze a problem involving hazardous materials/WMD, plan a response to the problem, implement the planned response, evaluate progress of the planned response and adjust accordingly, and assist in terminating the incident.

N 3.5.1 Hazardous Materials Technician with a Cargo Tank Specialty. A person who provides technical support pertaining to cargo tanks, provides oversight for product removal and movement of damaged cargo tanks, and acts as a liaison between the hazardous materials technician and other outside resources.

N 3.5.2 Hazardous Materials Technician with a Flammable Gases Bulk Storage Specialty. A person who, in incidents involving flammable gas bulk storage tanks, provides support to the hazardous materials technician and other personnel, provides strategic and tactical recommendations to the on-scene incident commander, provides oversight for fire control and product removal operations, and acts as a liaison between technicians, fire-fighting personnel, and other resources.

N 3.5.3 Hazardous Materials Technician with a Flammable Liquids Bulk Storage Specialty. A person who, in incidents involving bulk flammable liquid storage tanks and related facilities, provides support to the hazardous materials technician and other personnel, provides strategic and tactical recommendations to the on-scene incident commander, provides oversight for fire control and product removal operations, and acts as a liaison between technicians, response personnel, and outside resources.

N 3.5.4 Hazardous Materials Technician with an Intermodal Tank Specialty. A person who provides technical support pertaining to intermodal tanks, provides oversight for product removal and movement of damaged intermodal tanks, and acts as a liaison between the hazardous materials technician and other outside resources.

N 3.5.5 Hazardous Materials Technician with a Marine Tank and Non-Tank Vessel Specialty. A person who provides technical support pertaining to marine tank and non-tank vessels, provides oversight for product removal and movement of damaged marine tank and non-tank vessels, and acts as a liaison between the hazardous materials technician and other outside resources.

N 3.5.6 Hazardous Materials Technician with a Radioactive Material Specialty. A person who provides support to the hazardous materials technician and other personnel, uses radiation detection instruments, manages the control of radiation exposure, conducts hazards assessment, and acts as a liaison between hazardous materials technicians at incidents involving radioactive materials.

N 3.5.7 Hazardous Materials Technician with a Tank Car Specialty. A person who provides technical support pertaining to tank cars, provides oversight for product removal and movement of damaged tank cars, and acts as a liaison between the hazardous materials technician and other outside resources.

Chapter 4 Competencies for Awareness Level Personnel

4.1 General.

4.1.1 Introduction.

4.1.1.1 Awareness level personnel shall be persons who, in the course of their normal duties, could encounter an emergency involving hazardous materials/weapons of mass destruction (WMD) and who are expected to recognize the presence of the hazardous materials/WMD, protect themselves, call for trained personnel, and secure the area.

4.1.1.2 Awareness level personnel shall be trained to meet all competencies defined in Sections 4.2 through 4.4 of this chapter.

4.1.1.3 Awareness level personnel shall receive additional training to meet applicable governmental occupational health and safety regulations.

4.1.2 Goal.

4.1.2.1 The goal of the competencies in this chapter shall be to provide personnel who in the course of normal duties encounter hazardous materials/WMD incidents with the knowledge and skills to perform the tasks in 4.1.2.2 in a safe and effective manner.

Δ 4.1.2.2 Given a hazardous materials/WMD incident, policies and procedures, approved reference sources, and approved communications equipment, the awareness level personnel shall be able to perform the following tasks:

- (1) Analyze the incident to identify both the hazardous materials/WMD present and the basic hazards for each hazardous materials/WMD agent involved by completing the following tasks:
 - (a) Recognize the presence of hazardous materials/WMD.
 - (b) Identify the name, UN/NA identification number, type of placard, or other distinctive marking applied for the hazardous materials/WMD involved from a safe location.
 - (c) Identify potential hazards from the current edition of the *Emergency Response Guidebook* (ERG), safety data sheets (SDS), shipping papers, and other approved reference sources.
- (2) Implement actions consistent with the authority having jurisdiction (AHJ), and the current edition of the ERG or an equivalent document by completing the following tasks:
 - (a) Isolate the hazard area
 - (b) Initiate required notifications

4.2 Competencies — Analyzing the Incident.

Δ 4.2.1* Recognizing the Presence of Hazardous Materials/WMD. Given a hazardous materials/WMD incident and approved reference sources, awareness level personnel shall recognize those situations where hazardous materials/WMD are present by completing the following requirements:

- (1)* Define the terms *hazardous material* (or *dangerous goods*, in Canada) and *WMD*
- (2) Identify the hazard classes and divisions of hazardous materials/WMD and identify common examples of materials in each hazard class or division

- (3)* Identify the primary hazards associated with each hazard class and division
- (4) Identify the difference(s) between hazardous materials/WMD incidents and other emergencies
- (5) Identify typical occupancies and locations in the community where hazardous materials/WMD are manufactured, transported, stored, used, or disposed of
- (6) Identify typical container shapes that can indicate the presence of hazardous materials/WMD
- (7) Identify facility and transportation markings and colors that indicate hazardous materials/WMD, including the following:
 - (a) Transportation markings, including UN/NA identification number marks, marine pollutant mark, elevated temperature (HOT) mark, commodity marking, and inhalation hazard mark
 - (b) NFPA 704 markings
 - (c)* Military hazardous materials/WMD markings
 - (d) Special hazard communication markings for each hazard class
 - (e) Pipeline markings
 - (f) Container markings
- (8) Given an NFPA 704 marking, describe the significance of the colors, numbers, and special symbols
- (9) Identify placards and labels that indicate hazardous materials/WMD
- (10) Identify the following basic information on safety data sheets (SDS) and shipping papers for hazardous materials:
 - (a) Identify where to find SDS
 - (b) Identify major sections of SDS
- (11) Identify the following basic information on shipping papers for hazardous materials:
 - (a) Identify the entries on shipping papers that indicate the presence of hazardous materials
 - (b) Match the name of the shipping papers found in transportation (air, highway, rail, and water) with the mode of transportation
 - (c) Identify the person responsible for having the shipping papers in each mode of transportation
 - (d) Identify where the shipping papers are found in each mode of transportation
 - (e) Identify where the papers can be found in an emergency in each mode of transportation
- (12)* Identify examples of other clues, including senses (sight, sound, and odor), that indicate the presence of hazardous materials/WMD

4.2.2 Identifying Hazardous Materials/WMD. Given examples of hazardous materials/WMD incident, awareness level personnel shall, from a safe location, identify the hazardous material(s)/WMD involved in each situation by name, UN/NA identification number, or type placard applied by completing the following requirements:

- (1) Identify difficulties encountered in determining the specific names of hazardous materials/WMD at facilities and in transportation
- (2) Identify sources for obtaining the names of, UN/NA identification numbers for, or types of placard associated with hazardous materials/WMD in transportation
- (3) Identify sources for obtaining the names of hazardous materials/WMD at a facility

4.2.3* Collecting Hazard Information. Given the identity of various hazardous materials/WMD (name, UN/NA identification number, or type placard), awareness level personnel shall identify the basic hazard information for each material by using the current edition of the ERG or equivalent document; safety data sheet (SDS); manufacturer, shipper, and carrier documents (including shipping papers); and contacts by completing the following requirements:

- (1)* Identify the three methods for determining the guidebook page for a hazardous material/WMD
- (2) Identify the two general types of hazards found on each guidebook page

4.3* Competencies — Planning the Response. (Reserved)

4.4 Competencies — Implementing the Planned Response.

Δ 4.4.1* Isolate the Hazard Area. Given examples of hazardous materials/WMD incidents, the emergency response plan, the standard operating procedures, and the current edition of the ERG, awareness level personnel shall isolate and deny entry to the hazard area by completing the following requirements:

- (1) Identify the location of both the emergency response plan and/or standard operating procedures
- (2) Identify the role of the awareness level personnel during hazardous materials/WMD incidents
- (3) Identify the following basic precautions to be taken to protect themselves and others in hazardous materials/WMD incidents:
 - (a) Identify the precautions necessary when providing emergency medical care to victims of hazardous materials/WMD incidents
 - (b) Identify typical ignition sources found at the scene of hazardous materials/WMD incidents
 - (c)* Identify the ways hazardous materials/WMD are harmful to people, the environment, and property
 - (d)* Identify the general routes of entry for human exposure to hazardous materials/WMD
- (4)* Given examples of hazardous materials/WMD and the identity of each hazardous material/WMD (name, UN/NA identification number, or type placard), identify the following response information:
 - (a) Emergency action (fire, spill, or leak and first aid)
 - (b) Personal protective equipment (PPE) recommended:
 - (i) Street clothing and work uniforms
 - (ii) Structural fire-fighting protective clothing
 - (iii) Positive pressure self-contained breathing apparatus (SCBA)
 - (iv) Chemical-protective clothing and equipment
- (5) Identify the definitions for each of the following protective actions:
 - (a) Isolation of the hazard area and denial of entry
 - (b) Evacuation
 - (c)* Shelter-in-place
- (6) Identify the size and shape of recommended initial isolation and protective action zones
- (7) Describe the difference(s) between small and large spills as found in the Table of Initial Isolation and Protective Action Distances in the ERG or equivalent document

- (8) Identify the circumstances under which the following distances are used at a hazardous materials/WMD incidents:
 - (a) Table of Initial Isolation and Protective Action Distances
 - (b) Isolation distances in the numbered guides

- (9) Describe the difference(s) between the isolation distances on the orange-bordered guidebook pages and the protective action distances on the green-bordered ERG pages
- (10) Identify the techniques used to isolate the hazard area and deny entry to unauthorized persons at hazardous materials/WMD incidents

4.4.2 Initiating the Notification Process. Given a hazardous materials/WMD incident, policies and procedures, and approved communications equipment, awareness level personnel shall initiate notifications at a hazardous materials/WMD incident, completing the following requirements:

- (1) Identify policies and procedures for notification, reporting, and communications
- (2) Identify types of approved communications equipment
- (3) Describe how to operate approved communications equipment

4.5* Competencies — Evaluating Progress. (Reserved)

4.6* Competencies — Terminating the Incident. (Reserved)

Chapter 5 Competencies for Operations Level Responders

5.1 General.

5.1.1 Introduction.

5.1.1.1* The operations level responder shall be that person who responds to hazardous materials/weapons of mass destruction (WMD) incidents for the purpose of protecting nearby persons, the environment, or property from the effects of the release.

5.1.1.2 The operations level responder shall be trained to meet all competencies at the awareness level (*see Chapter 4*) and the competencies defined in Sections 5.2 through 5.5 of this chapter.

5.1.1.3* The operations level responder shall receive additional training to meet applicable governmental occupational health and safety regulations.

5.1.2 Goal.

Δ 5.1.2.1 The goal of the competencies in this chapter shall be to provide operations level responders with the knowledge and skills to perform the competencies in 5.1.2.2 in a safe manner.

5.1.2.2 When responding to hazardous materials/WMD incidents, operations level responders shall be able to perform the following tasks:

- (1) Identify the scope of the problem and potential hazards, harm, and outcomes by completing the following tasks:
 - (a) Survey a hazardous materials/WMD incident to identify the containers and materials involved and to identify the surrounding conditions

- (b) Collect hazard and response information from the **ERG; SDS; CHEMTREC/CANUTEC/SETIQ; governmental authorities; and shipper/manufacture**r/carrier documents, including shipping papers with emergency response information and shipper/manufacture
- (c) Predict the likely behavior of a hazardous material/WMD and its container, including hazards associated with that behavior
- (d) Estimate the potential outcomes harm at a hazardous materials/WMD incident
- (2) Plan an initial response to a hazardous materials/WMD incident within the capabilities and competencies of available personnel and personal protective equipment (PPE) by completing the following tasks:
 - (a) Describe the response objectives for the hazardous materials/WMD incident
 - (b) Describe the response options available for each objective
 - (c) Determine whether the PPE provided is suitable for implementing each option
 - (d) Describe emergency decontamination procedures
 - (e) Develop a plan of action, including safety considerations
- (3) Implement the planned response for a hazardous materials/WMD incident to favorably change the outcomes consistent with the emergency response plan and/or standard operating procedures by completing the following tasks:
 - (a) Establish and enforce scene control procedures, including control zones, emergency decontamination, and communications
 - (b) Where criminal or terrorist acts are suspected, establish a means of evidence preservation
 - (c) Initiate an incident command system (ICS) for hazardous materials/WMD incidents
 - (d) Perform tasks assigned as identified in the incident action plan
 - (e) Perform emergency decontamination
- (4) Evaluate and report the progress of the assigned tasks taken at a hazardous materials/WMD incident to ensure that the response objectives are met in a safe, effective, and efficient manner by completing the following tasks:
 - (a) Evaluate the status of the actions taken in accomplishing the response objectives
 - (b) Communicate the status of the planned response

5.2 Competencies — Analyzing the Incident.

Δ 5.2.1* Surveying Hazardous Materials/WMD Incidents. Given scenarios involving hazardous materials/WMD incidents, the operations level responder shall collect information about the incident to identify the containers, the materials involved, leaking containers, and the surrounding conditions released by completing the requirements of 5.2.1.1 through 5.2.1.6.

Δ 5.2.1.1* Given examples of the following pressure containers, the operations level responder shall identify each container by type, as follows:

- (1) Bulk fixed facility pressure containers
- (2) Pressure tank cars
- (3) High-pressure cargo tanks
- (4) Compressed gas tube trailers
- (5) High-pressure intermodal tanks

- (6) Ton containers
- (7) Y-cylinders
- (8) Compressed gas cylinders
- (9) Portable and horizontal propane cylinders
- (10) Vehicle-mounted pressure containers

5.2.1.1.1 Given examples of the following cryogenic containers, the operations level responder shall identify each container by type, as follows:

- (1) Bulk fixed facility cryogenic containers
- (2) Cryogenic liquid tank cars
- (3) Cryogenic liquid cargo tanks
- (4) Intermodal cryogenic containers
- (5) Cryogenic cylinders
- (6) Dewar flasks

5.2.1.1.2 Given examples of the following liquids-holding containers, the operations level responder shall identify each container by type, as follows:

- (1) Bulk fixed facility tanks
- (2) Low-pressure tank cars
- (3) Nonpressure liquid cargo tanks
- (4) Low-pressure chemical cargo tanks
- (5) 101 and 102 intermodal tanks
- (6) Flexible intermediate bulk containers/rigid intermediate bulk containers (FIBCs/RIBCs)
- (7) Flexible bladders
- (8) Drums
- (9) Bottles, flasks, carboys

5.2.1.1.3 Given examples of the following solids-holding containers, the operations level responder shall identify each container by type, as follows:

- (1) Bulk fixed facilities
- (2) Railway gondolas, coal cars
- (3) Dry bulk cargo trailers
- (4) Intermodal tanks (reactive solids)
- (5) FIBCs/RIBCs
- (6) Drums
- (7) Bags, bottles, boxes

5.2.1.1.4 Given examples of the following mixed-load containers, the operations level responder shall identify each container by type, as follows:

- (1) Box cars
- (2) Mixed cargo trailers
- (3) Freight containers

Δ 5.2.1.1.5 Given examples of the following containers, the operations level responder shall identify the characteristics of each container by type as follows:

- (1) Intermediate bulk container (IBC)
- (2) Ton container

Δ 5.2.1.1.6* Given examples of the following radioactive material containers, the operations level responder shall identify the characteristics of each container by type, as follows:

- (1) Excepted (package)
- (2) Industrial (package)
- (3) Type A (package)
- (4) Type B (package)
- (5) Type C (package)

5.2.1.2 Given examples of containers, the operations level responder shall identify the markings that differentiate one container from another.

5.2.1.2.1 Given examples of the following marked transport vehicles and their corresponding shipping papers, the operations level responder shall identify marking used for identifying the specific transport vehicle:

- (1) Highway transport vehicles, including cargo tanks
- (2) Intermodal equipment, including tank containers
- (3) Rail transport vehicles, including tank cars

5.2.1.2.2 Given examples of facility storage tanks, the operations level responder shall identify the markings indicating container size, product contained, and/or site identification numbers.

5.2.1.3 Given examples of hazardous materials incidents, the operations level responder shall identify the name(s) of the hazardous material(s) in 5.2.1.3.1 through 5.2.1.3.3.

5.2.1.3.1 Given a pipeline marker, the operations level responder shall identify the emergency telephone number, owner, and product as applicable.

5.2.1.3.2 Given a pesticide label, the operations level responder shall identify the active ingredient, hazard statement, name of pesticide, and pest control product (CPC) number (in Canada).

5.2.1.3.3 Given a label for a radioactive material, the operations level responder shall identify the type or category of label, contents, activity, transport index, and criticality safety index as applicable.

Δ 5.2.1.4* The operations level responder shall identify and list the surrounding conditions that should be noted when surveying a hazardous materials/WMD incident.

5.2.1.5 The operations level responder shall describe ways to verify information obtained from the survey of a hazardous materials/WMD incident.

5.2.1.6* The operations level responder shall identify at least three additional hazards that could be associated with an incident involving terrorist or criminal activities.

N 5.2.1.6.1 Identify at least four types of locations that could be targets for criminal or terrorist activity using hazardous materials/WMD.

N 5.2.1.6.2 Describe the difference between a chemical and a biological incident.

N 5.2.1.6.3 Identify at least four indicators of possible criminal or terrorist activity involving chemical agents.

N 5.2.1.6.4 Identify at least four indicators of possible criminal or terrorist activity involving biological agents.

N 5.2.1.6.5 Identify at least four indicators of possible criminal or terrorist activity involving radiological agents.

N 5.2.1.6.6 Identify at least four indicators of possible criminal or terrorist activity involving illicit laboratories (e.g., clandestine laboratories, weapons lab, explosive lab, or biological lab).

N 5.2.1.6.7 Identify at least four indicators of possible criminal or terrorist activity involving explosives.

N 5.2.1.6.8 Identify at least four indicators of secondary devices.

N 5.2.1.6.9 Identify at least four specific actions necessary when an incident is suspected to involve criminal or terrorist activity.

N 5.2.1.7 The operations level responder shall describe ways in which emergency responders are exposed to toxic products of combustion.

Δ 5.2.2 Collecting Hazard and Response Information. Given scenarios involving known hazardous materials/WMD, the operations level responder shall collect hazard and response information from SDS, CHEMTREC/CANUTEC/SETIQ, governmental authorities, and manufacturers, shippers, and carriers by completing the following requirements:

- (1) Match the definitions associated with the hazard classes and divisions of hazardous materials/WMD with the designated class or division.
- (2) Identify two ways to obtain an SDS in an emergency.
- (3) Using an SDS for a specified material, identify the following hazard and response information:
 - (a) Identification, including supplier identifier and emergency telephone number
 - (b) Hazard identification
 - (c) Composition/information on ingredients
 - (d) First aid measures
 - (e) Fire-fighting measures
 - (f) Accident release measures
 - (g) Handling and storage
 - (h) Exposure controls/personal protection
 - (i) Physical and chemical properties
 - (j) Stability and reactivity
 - (k) Toxicological information
 - (l) Ecological information (nonmandatory)
 - (m) Disposal considerations (nonmandatory)
 - (n) Transport information (nonmandatory)
 - (o) Regulatory information (nonmandatory)
 - (p) Other information
- (4) Identify the types of assistance provided by, procedure for contacting, and information to be provided to CHEMTREC/CANUTEC/SETIQ and governmental authorities.
- (5) Identify two methods of contacting manufacturers, shippers, and carriers (highway, rail, marine, air, and pipeline) to obtain hazard and response information.
- (6) Identify the type of assistance provided by governmental authorities with respect to criminal or terrorist activities involving the release or potential release of hazardous materials/WMD.

Δ 5.2.3* Predicting the Likely Behavior of a Material and Its Container. Given scenarios involving hazardous materials/WMD incidents, each with a single hazardous material/WMD, the operations level responder shall describe the likely behavior of the material or agent and its container by completing the following requirements:

- (1) Use the hazard and response information obtained from the current edition of the ERG, SDS, CHEMTREC/CANUTEC/SETIQ, governmental authorities, and manufacturer, shipper, and carrier contacts, as follows:
 - (a)* Match the following chemical and physical properties with their significance and impact on the behavior of the container and its contents:
 - i. Boiling point
 - ii. Chemical reactivity
 - iii. Corrosivity (pH)

- iv. Flammable (explosive) range [lower explosive limit (LEL) and upper explosive limit (UEL)]
- v. Flash point
- vi. Ignition (autoignition) temperature
- vii. Particle size
- viii. Persistence
- ix. Physical state (solid, liquid, gas)
- x. Radiation (ionizing and nonionizing)
- xi. Specific gravity
- xii. Toxic products of combustion
- xiii. Vapor density
- xiv. Vapor pressure
- xv. Water solubility
- xvi. Polymerization
- xvii. Expansion ratio
- xviii. Biological agents and toxins

(b) Identify the differences between the following terms:

- i. Contamination and secondary contamination
- ii. Exposure and contamination
- iii. Exposure and hazard
- iv. Infectious and contagious
- v. Acute effects and chronic effects
- vi. Acute exposures and chronic exposures

- (2)* Identify types of stress that can cause a container system to release its contents (thermal, mechanical, and chemical).
- (3)* Identify ways containers can breach (disintegration, runaway cracking, closures open up, punctures, and splits or tears).
- (4)* Identify ways containers can release their contents (detonation, violent rupture, rapid relief, spill, or leak).
- (5)* Identify dispersion patterns that can be created upon release of a hazardous material (hemispherical, cloud, plume, cone, stream, pool, and irregular).
- (6)* Identify the time frames for estimating the duration that hazardous materials/WMD will present an exposure risk (short-term, medium-term, and long-term).
- (7)* Identify the health and physical hazards that could cause harm.

5.2.4* Estimating Potential Harm. Given scenarios involving hazardous materials/WMD incidents, the operations level responder shall describe the potential harm within the endangered area at each incident by completing the following requirements:

- (1)* Identify a resource for determining the size of an endangered area of a hazardous materials/WMD incident
- (2) Given the dimensions of the endangered area and the surrounding conditions at a hazardous materials/WMD incident, describe the number and type of exposures within that endangered area
- (3) Identify resources available for determining the concentrations of a released hazardous materials/WMD within an endangered area
- (4)* Given the concentrations of the released material, describe the factors for determining the extent of physical, health, and safety hazards within the endangered area of a hazardous materials/WMD incident
- (5) Describe the impact that time, distance, and shielding have on exposure to radioactive materials specific to the expected dose rate

- (6) Describe the potential for secondary threats and devices at criminal or terrorist events

5.3 Competencies — Planning the Response.

5.3.1 Describing Response Objectives. Given at least two scenarios involving hazardous materials/WMD incidents, the operations level responder shall describe the response objectives for each example by completing the following requirements:

- (1) Given an analysis of a hazardous materials/WMD incident and the exposures, describe the number of exposures that could be saved with the resources provided by the AHJ
- (2) Given an analysis of a hazardous materials/WMD incident, describe the steps for determining response objectives
- (3) Describe how to assess the risk to a responder for each hazard class in rescuing injured persons at a hazardous materials/WMD incident

5.3.2 Identifying Action Options. Given examples of hazardous materials/WMD incidents (facility and transportation), the operations level responder shall identify the action options for each response objective and shall meet the following requirements:

- (1) Identify the options to accomplish a given response objective
- (2) Describe the prioritization of emergency medical care and removal of victims from the hazard area relative to exposure and contamination concerns

5.3.3 Determining Suitability of Personal Protective Equipment (PPE). Given examples of hazardous materials/WMD incidents, including the names of the hazardous materials/WMD involved and the anticipated type of exposure, the operations level responder shall determine whether available PPE is applicable to performing assigned tasks by completing the following requirements:

- (1)* Identify the respiratory protection required for a given response option and the following:
 - (a) Describe the advantages, limitations, uses, and operational components of the following types of respiratory protection at hazardous materials/WMD incidents:
 - i. Self-contained breathing apparatus (SCBA)
 - ii. Supplied air respirators
 - iii. Powered air-purifying respirators
 - iv. Air-purifying respirators
 - (b) Identify the required physical capabilities and limitations of personnel working in respiratory protection
- (2) Identify the personal protective clothing, required for a given action option and the following:
 - (a) Identify skin contact hazards encountered at hazardous materials/WMD incidents
 - (b) Identify the purpose, advantages, and limitations of the following types of protective clothing at hazardous materials/WMD incidents:
 - i. Chemical-protective clothing, including liquid splash-protective ensembles and vapor-protective ensembles

- ii. High temperature-protective clothing, including proximity suits and entry suits
- iii. Structural fire-fighting protective clothing

5.3.4* Identifying Emergency Decontamination Issues. Given scenarios involving hazardous materials/WMD incidents, the operations level responder shall identify when emergency decontamination is needed by completing the following requirements:

- (1) Identify ways that people, PPE, apparatus, tools, and equipment become contaminated.
- (2) Describe how the potential for secondary contamination determines the need for emergency decontamination.
- (3) Explain the importance, differences, and limitations of emergency/field expedient, gross, technical, and mass decontamination procedures at hazardous materials incidents.
- (4) Identify the purpose of emergency decontamination procedures at hazardous materials incidents.

5.4 Competencies — Implementing the Planned Response.

5.4.1 Establishing Scene Control. Given two scenarios involving hazardous materials/WMD incidents, the operations level responder shall explain how to establish and maintain scene control, including control zones and emergency decontamination, and communications between responders and to the public by completing the following requirements:

- (1) Identify the procedures for establishing scene control through control zones
- (2) Identify the criteria for determining the locations of the control zones at hazardous materials/WMD incidents
- (3) Identify the basic techniques for the following protective actions at hazardous materials/WMD incidents:
 - (a) Evacuation
 - (b) Shelter-in-place
- (4)* Perform emergency decontamination while preventing spread of contamination and avoiding hazards while using PPE
- (5)* Identify the items to be considered in a safety briefing prior to allowing personnel to work at the following:
 - (a) Hazardous material incidents
 - (b)* Hazardous materials/WMD incidents involving criminal activities
- (6) Identify the procedures for ensuring coordinated communication between responders and to the public

5.4.2* Preserving Evidence. Given two scenarios involving hazardous materials/WMD incidents, the operations level responder shall describe the process to preserve evidence as listed in the emergency response plan and/or standard operating procedures.

5.4.3* Initiating the Incident Command System. Given scenarios involving hazardous materials/WMD incidents, the operations level responder shall implement the incident command system as required by the AHJ by completing the following requirements:

- (1) Identify the role of the operations level responder during hazardous materials/WMD incidents as specified in the emergency response plan and/or standard operating procedures
- (2) Identify the levels of hazardous materials/WMD incidents as defined in the emergency response plan

- (3) Identify the purpose, need, benefits, and elements of the incident command system for hazardous materials/WMD incidents
- (4) Identify the duties and responsibilities of the following functions within the incident management system:
 - (a) Incident safety officer
 - (b) Hazardous materials branch or group
- (5) Identify the considerations for determining the location of the incident command post for a hazardous materials/WMD incident
- (6) Identify the procedures for requesting additional resources at a hazardous materials/WMD incident
- (7) Describe the role and response objectives of other agencies that respond to hazardous materials/WMD incidents

5.4.4 Using Personal Protective Equipment (PPE). Given the PPE provided by the AHJ, the operations level responder shall describe considerations for the use of PPE provided by the AHJ by completing the following requirements:

- (1) Identify the importance of the buddy system
- (2) Identify the importance of the backup personnel
- (3) Identify the safety precautions to be observed when approaching and working at hazardous materials/WMD incidents
- (4) Identify the signs and symptoms of heat and cold stress and procedures for their control
- (5) Identify the capabilities and limitations of personnel working in the PPE provided by the AHJ
- (6) Identify the procedures for cleaning, disinfecting, and inspecting PPE provided by the AHJ
- (7) Maintain and store PPE following the instructions provided by the manufacturer on the care, use, and maintenance of the protective ensemble elements

5.5 Competencies — Evaluating Progress.

5.5.1 Evaluating the Status of Planned Response. Given two scenarios involving hazardous materials/WMD incidents, including the incident action plan, the operations level responder shall determine the effectiveness of the actions taken in accomplishing the response objectives and shall meet the following requirements:

- (1) Identify the factors to be evaluated to determine if actions taken were effective in accomplishing the objectives
- (2) Describe the circumstances under which it would be prudent to withdraw from a hazardous materials/WMD incident

5.5.2 Communicating the Status of Planned Response. Given two scenarios involving hazardous materials/WMD incidents, including the incident action plan, the operations level responder shall report the status of the planned response through the normal chain of command by completing the following requirements:

- (1) Identify the procedures for reporting the status of the planned response through the normal chain of command
- (2) Identify the methods for immediate notification of the incident commander and other response personnel about critical emergency conditions at the incident

5.6* Competencies — Terminating the Incident. (Reserved)

Chapter 6 Competencies for Operations Level Responders Assigned Mission-Specific Responsibilities

6.1 General.

6.1.1 Introduction.

▲ 6.1.1.1* This chapter shall address competencies for the following operations level responders assigned mission-specific responsibilities at hazardous materials/WMD incidents by the authority having jurisdiction (AHJ) beyond the competencies at the operations level (see Chapter 5). Operations mission-specific responders will be identified by the specialty area as follows:

- (1) Personal protective equipment (PPE) (see Section 6.2)
- (2) Mass decontamination (see Section 6.3)
- (3) Technical decontamination (see Section 6.4)
- (4) Evidence preservation and public safety sampling (see Section 6.5)
- (5) Product control (see Section 6.6)
- (6) Detection, monitoring, and sampling (see Section 6.7)
- (7) Victim rescue/recovery (see Section 6.8)
- (8) Illicit laboratory incidents (see Section 6.9)
- (9) Disablement/disruption of improvised explosive devices (IED), improvised WMD dispersal devices, and operations at improvised explosives laboratories (see Section 6.10)
- (10) Diving in contaminated water environment (see Section 6.11)
- (11) Evidence collection (see Section 6.12)

▲ 6.1.1.2 The operations level responder who is assigned mission-specific responsibilities at hazardous materials/WMD incidents shall be trained to meet all competencies at the awareness level (see Chapter 4), all competencies at the operations level (see Chapter 5), and all competencies in Section 6.2 of this chapter, and all competencies for each assigned responsibility in Sections 6.3 through 6.10 in this chapter.

6.1.1.3* The operations level responder who is assigned mission-specific responsibilities at hazardous materials/WMD incidents shall receive additional training to meet applicable governmental occupational health and safety regulations.

6.1.1.4 The operations level responder who is assigned mission-specific responsibilities at hazardous materials/WMD incidents shall operate under the guidance of a hazardous materials technician, an allied professional, an emergency response plan, or standard operating procedures.

6.1.1.5 The development of assigned mission-specific knowledge and skills shall be based on the tools, equipment, and procedures provided by the AHJ for the mission-specific responsibilities assigned.

6.1.2 Goal. The goal of the competencies in this chapter shall be to provide the operations level responder assigned mission-specific responsibilities at hazardous materials/WMD incidents by the AHJ with the knowledge and skills to perform the assigned mission-specific responsibilities in a safe and effective manner.

6.1.3 Mandating of Competencies. This standard shall not mandate that the response organizations perform mission-specific responsibilities.

6.1.3.1 Operations level responders assigned mission-specific responsibilities at hazardous materials/WMD incidents, operating

within the scope of their training in this chapter, shall be able to perform their assigned mission-specific responsibilities.

6.1.3.2 If a response organization desires to train some or all of its operations level responders to perform mission-specific responsibilities at hazardous materials/WMD incidents, the minimum required competencies shall be as set out in this chapter.

6.2 Mission-Specific Competencies: Personal Protective Equipment (PPE).

6.2.1 General.

6.2.1.1 Introduction.

6.2.1.1.1 The operations level responder assigned to use PPE at hazardous materials/WMD incidents shall be that person, competent at the operations level, who is assigned by the AHJ to select, inspect, don, work in, go through decontamination while wearing, and doff PPE at hazardous materials/WMD incidents.

▲ 6.2.1.1.2 The operations level responder assigned to use PPE at hazardous materials/WMD incidents shall be trained to meet all competencies at the awareness level (see Chapter 4), all competencies at the operations level (see Chapter 5), and all competencies in this section.

6.2.1.1.3 The operations level responder assigned to use PPE at hazardous materials/WMD incidents shall operate under the guidance of a hazardous materials technician, an allied professional, an emergency response plan, or standard operating procedures.

6.2.1.1.4* The operations level responder assigned to use PPE shall receive the additional training necessary to meet specific needs of the jurisdiction.

6.2.1.2 Goal. The goal of the competencies in this section shall be to provide the operations level responder assigned to select, inspect, don, work in, go through decontamination while wearing, and doff PPE with the knowledge and skills to perform the tasks in a safe and effective manner.

■ 6.2.1.2.1 Given a hazardous materials/WMD incident, a mission-specific assignment in an incident action plan (IAP) that requires use of PPE; the scope of the problem; response objectives and options for the incident; policies and procedures; access to a hazardous materials technician, an allied professional, an emergency response plan, or standard operating procedures; approved PPE; and policies and procedures, the operations level responder assigned to use PPE shall be able to perform the following tasks:

- (1) Select PPE provided by the AHJ based on tasks assigned
- (2) Inspect, don, work in, go through emergency and technical decontamination while wearing, and doff PPE provided by the AHJ consistent with the AHJ standard operating procedures and the incident site safety and control plan by following safety procedures, avoiding or minimizing hazards, and protecting exposures and personnel
- (3) Maintain and store PPE consistent with AHJ policies and procedures
- (4) Report and document the use of PPE

6.2.2 Competencies — Analyzing the Incident. (Reserved)**6.2.3 Competencies — Planning the Response.****6.2.3.1 Selecting Personal Protective Equipment (PPE).**

Given scenarios involving hazardous materials/WMD incidents with known and unknown hazardous materials/WMD and the PPE provided by the AHJ, the operations level responder assigned to use PPE provided by the AHJ shall select the PPE required to support assigned mission-specific tasks at hazardous materials/WMD incidents based on AHJ policies and procedures by completing the following requirements:

- (1)* Describe the importance of working under the guidance of a hazardous materials technician, an allied professional, an emergency response plan, or standard operating procedures
- (2) Describe the purpose of each type of PPE provided by the AHJ for response to hazardous materials/WMD incidents based on NFPA standards and how these items relate to EPA levels of protection
- (3) Describe capabilities and limitations of PPE for the following hazards:
 - (a) Thermal
 - (b) Radiological
 - (c) Asphyxiating
 - (d) Chemical (corrosive, toxic)
 - (e) Etiological/biological
 - (f) Mechanical
- (4) Select PPE provided by the AHJ for assigned mission-specific tasks at hazardous materials/WMD incidents based on AHJ policies and procedures
 - (a) Describe the following terms and explain their impact and significance on the selection of chemical-protective clothing (CPC):
 - i. Degradation
 - ii. Penetration
 - iii. Permeation
 - (b) Identify at least three indications of material degradation of CPC
 - (c) Identify the different designs of vapor-protective clothing and liquid splash-protective clothing, and describe the advantages and disadvantages of each type
 - (d)* Identify the advantages and disadvantages of the following cooling measures:
 - i. Air cooled
 - ii. Ice cooled
 - iii. Water cooled
 - iv. Phase change cooling technology
 - (e) Identify the physiological and psychological stresses that can affect users of PPE
 - (f) Describe AHJ policies and procedures for going through the emergency and technical decontamination process while wearing PPE

6.2.4 Competencies — Implementing the Planned Response.

6.2.4.1 Using Personal Protective Equipment (PPE). Given the PPE provided by the AHJ, the operations level responder assigned to use PPE shall demonstrate the ability to inspect, don, work in, go through decontamination while wearing, and doff the PPE provided to support assigned mission-specific tasks by completing the following requirements:

- (1) Describe safety precautions for personnel wearing PPE, including buddy systems, backup systems, accountability systems, safety briefings, and evacuation/escape procedures
- (2) Inspect, don, work in, and doff PPE provided by the AHJ following safety procedures, protecting exposures and personnel, and avoiding or minimizing hazards
- (3) Go through the process of being decontaminated (emergency and technical) while wearing PPE
- (4) Maintain and store PPE according to AHJ policies and procedures

6.2.5 Competencies — Evaluating Progress. (Reserved)**6.2.6 Competencies — Terminating the Incident.**

6.2.6.1 Reporting and Documenting Personal Protective Equipment (PPE) Use. Given a scenario involving a hazardous materials/WMD incident and AHJ policies and procedures, the operations level responder assigned to use PPE shall report and document use of the PPE as required by the AHJ by completing the following:

- (1) Identify the reports and supporting documentation required by the AHJ pertaining to PPE use
- (2) Describe the importance of personnel exposure records
- (3) Identify the steps in keeping an activity log and exposure records
- (4) Identify the requirements for filing documents and maintaining records

6.3 Mission-Specific Competencies: Mass Decontamination.**6.3.1 General.****6.3.1.1 Introduction.**

6.3.1.1.1 The operations level responder assigned to perform mass decontamination at hazardous materials/WMD incidents shall be that person, competent at the operations level, who is assigned by the AHJ to select, set up, implement, evaluate, and terminate mass decontamination for ambulatory and nonambulatory victims at hazardous materials/WMD incidents.

6.3.1.1.2 The operations level responder assigned to perform mass decontamination at hazardous materials/WMD incidents shall be trained to meet all competencies at the awareness level (see Chapter 4), all competencies at the operations level (see Chapter 5), all mission-specific competencies for PPE (see Section 6.2), and all competencies in this section.

6.3.1.1.3 The operations level responder assigned to perform mass decontamination at hazardous materials/WMD incidents shall operate under the guidance of a hazardous materials technician, an allied professional, an emergency response plan, or standard operating procedures.

6.3.1.1.4* The operations level responder assigned to perform mass decontamination at hazardous materials/WMD incidents shall receive the additional training necessary to meet specific needs of the jurisdiction.

6.3.1.2 Goal.

6.3.1.2.1 The goal of the competencies in this section shall be to provide the operations level responder assigned to select, set up, implement, evaluate, and terminate mass decontamination for ambulatory and nonambulatory victims at hazardous materials/WMD incidents with the knowledge and skills to perform the tasks in 6.3.1.2.2 in a safe and effective manner.

Δ 6.3.1.2.2 Given a hazardous materials/WMD incident that requires mass decontamination; an assignment in an IAP; the scope of the problem; policies and procedures; approved tools, equipment, and PPE; and access to a hazardous materials technician, an allied professional, an emergency response plan, or standard operating procedures responding to hazardous materials/WMD incidents, the operations level responder assigned to perform mass decontamination shall be able to perform the following tasks:

- (1) Select a mass decontamination process to minimize the hazard for an assigned mission-specific task within the capabilities of available personnel, PPE, and response equipment provided by the AHJ
- (2) Set up and implement the selected mass decontamination process to decontaminate victims, personnel, tools, and equipment consistent with AHJ policies and procedures and the incident site safety and control plan following safety procedures, avoiding or minimizing hazards, and protecting exposures and personnel
- (3) Evaluate the effectiveness of the mass decontamination process
- (4) Report and document mass decontamination activities

6.3.2 Competencies — Analyzing the Incident. (Reserved)

6.3.3 Competencies — Planning the Response.

Δ 6.3.3.1 Selecting a Mass Decontamination Process. Given scenarios involving hazardous materials/WMD incidents requiring mass decontamination, the operations level responder assigned to perform mass decontamination shall select a mass decontamination process that will minimize the hazard and spread of contamination based on AHJ policies and procedures by completing the following requirements:

- (1) Describe the importance of working under the guidance of a hazardous materials technician, an allied professional, an emergency response plan, or standard operating procedures when performing assigned tasks
- (2) Identify the advantages and limitations of mass decontamination methods
- (3) Identify sources of information for determining the correct mass decontamination methods, and identify how to access those resources in a hazardous materials/WMD incident
- (4) Identify the tools, equipment, and PPE required to set up and implement mass decontamination operations
- (5) Describe crowd control techniques that can be used at incidents where mass decontamination is required
- (6) Describe the AHJ's mass decontamination unit/team positions, and describe the roles and responsibilities

6.3.4 Competencies — Implementing the Planned Response.

Δ 6.3.4.1 Performing Decontamination Operations Identified in the Incident Action Plan. Given the selected mass decontamination process and the tools, equipment, and PPE provided by the AHJ, the operations level responder assigned to perform mass decontamination shall demonstrate the ability to set up and implement mass decontamination operations for ambulatory and nonambulatory victims consistent with AHJ policies and procedures following safety procedures, protecting exposures and personnel, and avoiding or minimizing hazards.

6.3.5 Competencies — Evaluating Progress.

6.3.5.1 Evaluating the Effectiveness of the Mass Decontamination Process. Given examples of contaminated items that have undergone the required decontamination, the operations level responder assigned to mass decontamination operations shall identify procedures for determining whether the items have been fully decontaminated according to the standard operating procedures of the AHJ or the incident action plan.

6.3.6 Competencies — Terminating the Incident.

Δ 6.3.6.1 Reporting and Documenting Mass Decontamination Operations. Given a scenario involving a hazardous materials/WMD incident involving mass decontamination operations/activities and AHJ policies and procedures, the operations level responder assigned to perform mass decontamination shall report and document the mass decontamination operations/activities as required by the AHJ by completing the following:

- (1) Identify the reports and supporting documentation required by the AHJ pertaining to mass decontamination operations/activities

6.4 Mission-Specific Competencies: Technical Decontamination.

6.4.1 General.

6.4.1.1 Introduction.

6.4.1.1.1 The operations level responder assigned to perform technical decontamination at hazardous materials/WMD incidents shall be that person, competent at the operations level, who is assigned by the AHJ to select, set up, implement, evaluate, and terminate technical decontamination in support of entry operations and for ambulatory and nonambulatory victims at hazardous materials/WMD incidents.

Δ 6.4.1.1.2 The operations level responder assigned to perform technical decontamination at hazardous materials/WMD incidents shall be trained to meet all competencies at the awareness level (*see Chapter 4*), all competencies at the operations level (*see Chapter 5*), all mission-specific competencies for PPE (*see Section 6.2*), and all competencies in this section.

6.4.1.1.3 The operations level responder assigned to perform technical decontamination at hazardous materials/WMD incidents shall operate under the guidance of a hazardous materials technician, an allied professional, or standard operating procedures.

6.4.1.1.4* The operations level responder assigned to perform technical decontamination at hazardous materials/WMD incidents shall receive the additional training necessary to meet specific needs of the jurisdiction.

6.4.1.2 Goal.

6.4.1.2.1 The goal of the competencies in this section shall be to provide the operations level responder assigned to select, set up, implement, evaluate, and terminate technical decontamination in support of entry operations and for ambulatory and nonambulatory victims at hazardous materials/WMD incidents with the knowledge and skills to perform the tasks in 6.4.1.2.2 in a safe and effective manner.

Δ 6.4.1.2.2 Given a hazardous materials/WMD incident that requires technical decontamination; an assignment in an IAP; the scope of the problem; policies and procedures for technical decontamination; approved tools, equipment, and PPE; and access to a hazardous materials technician, an allied professional, an emergency response plan, or standard operating procedures, the operations level responder assigned to perform technical decontamination shall be able to perform the following tasks:

- (1) Select a technical decontamination process in support of entry operations and/or for ambulatory and nonambulatory victims, the capabilities of available personnel, PPE, and response equipment in accordance with AHJ policies and procedures
- (2) Set up and implement the selected technical decontamination operations and methods following safety procedures, avoiding or minimizing hazards, and protecting exposures and personnel
- (3) Evaluate the effectiveness of the technical decontamination process
- (4) Report and document the technical decontamination operations

6.4.2 Competencies — Analyzing the Incident. (Reserved)

6.4.3 Competencies — Planning the Response.

Δ 6.4.3.1 Selecting a Technical Decontamination Process.

Given a hazardous materials/WMD incident that requires technical decontamination; an assignment in an IAP; the scope of the problem; policies and procedures; approved tools, equipment, and PPE; and access to a hazardous materials technician, an allied professional, an emergency response plan, or standard operating procedures, the operations level responder assigned to perform technical decontamination shall select a technical decontamination process to minimize the hazard and spread of contamination in support of entry operations and for ambulatory and nonambulatory victims by completing the following requirements:

- (1) Describe the importance of working under the guidance of a hazardous materials technician, an allied professional, an emergency response plan, or standard operating procedures when performing assigned tasks
- (2) Describe the advantages and limitations of each of the following technical decontamination methods:
 - (a) Absorption
 - (b) Adsorption
 - (c) Chemical degradation
 - (d) Dilution
 - (e) Disinfection
 - (f) Evaporation
 - (g) Isolation and disposal
 - (h) Neutralization
 - (i) Solidification
 - (j) Sterilization
 - (k) Vacuuming
 - (l) Washing
- (3) Identify sources of information on the technical decontamination operations and methods available, and identify how to access those sources in a hazardous materials/WMD incident
- (4) Identify the tools, equipment, and PPE for performing required setup, and implement the selected technical decontamination operations

- (5) Identify the procedures, tools, equipment, and safety precautions for processing evidence collected during technical decontamination at hazardous materials/WMD incidents
- (6) Identify procedures, equipment, and safety precautions for handling tools, equipment, weapons, criminal suspects, and law enforcement/search canines brought to the decontamination corridor at hazardous materials/WMD incidents

6.4.4 Competencies — Implementing the Planned Response.

6.4.4.1 Setting Up and Implementing Technical Decontamination.

Given the selected technical decontamination operations and methods and the tools, equipment, and PPE provided by the AHJ, the operations level responder assigned to perform technical decontamination shall set up and implement technical decontamination operations and methods in support of entry operations and for ambulatory and nonambulatory victims following safety procedures, protecting exposures and personnel, and avoiding or minimizing hazards.

6.4.5 Competencies — Evaluating Progress.

6.4.5.1 Evaluating the Effectiveness of the Technical Decontamination Process.

Given examples of contaminated victims, personnel, tools, equipment, and PPE that have undergone the selected technical decontamination operations and methods, the operations level responder assigned to perform technical decontamination shall evaluate the effectiveness of the technical decontamination process consistent with AHJ policies and procedures or the incident action plan (IAP) by completing the following:

- (1) Describe the procedures for evaluating effectiveness of the technical decontamination process by visual observations, monitoring device, ultraviolet light, wipe sampling, and chemical analysis

6.4.6 Competencies — Terminating the Incident.

Δ 6.4.6.1 Reporting and Documenting Technical Decontamination Operations.

Given a scenario involving a hazardous materials/WMD incident involving technical decontamination operations/activities and AHJ policies and procedures, the operations level responder assigned to perform technical decontamination shall report and document the technical decontamination operations/activities as required by the AHJ by completing the following:

- (1) Identify the reports and technical documentation required by the AHJ pertaining to technical decontamination operations/activities

6.5 Mission-Specific Competencies: Evidence Preservation and Sampling.

6.5.1 General.

6.5.1.1 Introduction.

6.5.1.1.1 The operations level responder assigned to perform evidence preservation and public safety sampling shall be that person, competent at the operations level, who is assigned by the AHJ to preserve forensic evidence and take public safety samples at hazardous materials/WMD incidents involving potential violations of criminal statutes or governmental regulations, including those involving suspicious letters and packages, illicit laboratories, a release/attack with a WMD agent, and environmental crimes.

6.5.1.1.2 The operations level responder assigned to perform evidence preservation and public safety sampling at hazardous materials/WMD incidents shall be trained to meet all competencies at the awareness level (*see Chapter 4*), all competencies at the operations level (*see Chapter 5*), all mission-specific competencies for PPE (*see Section 6.2*), and all competencies in this section.

6.5.1.1.3 The operations level responder assigned to perform evidence preservation and public safety sampling at hazardous materials/WMD incidents shall operate under the guidance of a hazardous materials technician, an allied professional, or standard operating procedures.

6.5.1.1.4* The operations level responder assigned to perform evidence preservation and public safety sampling at hazardous materials/WMD incidents shall receive the additional training necessary to meet specific needs of the jurisdiction.

6.5.1.2 Goal.

6.5.1.2.1 The goal of the competencies in this section shall be to provide the operations level responder assigned to perform evidence preservation and public safety sampling at hazardous materials/WMD incidents with the knowledge and skills to perform the tasks in 6.5.1.2.2 in a safe and effective manner.

6.5.1.2.2 Given a hazardous materials/WMD incident involving potential violations of criminal statutes or governmental regulations including those involving suspicious letters and packages, illicit laboratories, a release/attack with a WMD agent, and environmental crimes; an assignment in an IAP; the scope of the problem; policies and procedures; and approved tools, equipment, and PPE, the operations level responder assigned to perform evidence preservation and public safety sampling shall be able to perform the following tasks:

- (1) Analyze a hazardous materials/WMD incident to determine the complexity of the problem and potential outcomes by completing the following tasks:
 - (a) Determine if the incident is potentially criminal in nature, and identify the law enforcement agency having investigative jurisdiction
 - (b) Identify unique aspects of criminal hazardous materials/WMD incidents
- (2) Plan a response for an incident where there is potential criminal intent involving hazardous materials/WMD within the capabilities and competencies of available personnel, PPE, and response equipment by completing the following tasks:
 - (a) Determine the response options to conduct public safety sampling and evidence preservation operations
 - (b) Describe how the options are within the legal authorities, capabilities, and competencies of available personnel, PPE, and response equipment
- (3) Implement the planned response to a hazardous materials/WMD incident involving potential violations of criminal statutes or governmental regulations by completing the following tasks under the guidance of law enforcement:
 - (a) Preserve forensic evidence
 - (b) Take samples
 - (c) Seize evidence
- (4) Report and document evidence preservation and public safety sampling operations

6.5.2 Competencies — Analyzing the Incident.

6.5.2.1 Determining If the Incident Is Potentially Criminal in Nature and Identifying the Law Enforcement Agency That Has Investigative Jurisdiction. Given examples of hazardous materials/WMD incidents involving potential criminal intent, the operations level responder assigned to evidence preservation and public safety sampling shall describe the potential criminal violation and identify the law enforcement agency having investigative jurisdiction by completing the following requirements:

- (1) Given examples of the following hazardous materials/WMD incidents, the operations level responder shall describe products that might be encountered in the incident associated with each situation:
 - (a) Hazardous materials/WMD suspicious letter
 - (b) Hazardous materials/WMD suspicious package
 - (c) Hazardous materials/WMD illicit laboratory
 - (d) Release/attack with a WMD agent
 - (e) Environmental crimes
- (2) Given examples of the following hazardous materials/WMD incidents, the operations level responder shall identify the agency(ies) with investigative authority and the incident response considerations associated with each situation:
 - (a) Hazardous materials/WMD suspicious letter
 - (b) Hazardous materials/WMD suspicious package
 - (c) Hazardous materials/WMD illicit laboratory
 - (d) Release/attack with a WMD agent
 - (e) Environmental crimes

6.5.3 Competencies — Planning the Response.

6.5.3.1 Identifying Unique Aspects of Criminal Hazardous Materials/WMD Incidents. The operations level responder assigned to evidence preservation and public safety sampling shall describe the unique aspects associated with illicit laboratories, hazardous materials/WMD incidents, and environmental crimes by completing the following requirements:

- (1) Given an incident involving illicit laboratories, a hazardous materials/WMD incident, or an environmental crime, the operations level responder shall perform the following tasks:
 - (a) Describe the procedure for securing the scene and characterizing and preserving evidence at the scene
 - (b) Describe the procedure to document personnel and scene operations associated with the incident
 - (c) Describe the procedure to determine whether the operations level responders are within their legal authority to perform evidence preservation and public safety sampling tasks
 - (d) Describe the procedure to notify the agency with investigative authority
 - (e) Describe the procedure to notify the hazardous devices technician
 - (f) Identify potential sample/evidence
 - (g) Identify the applicable public safety sampling equipment
 - (h) Describe the procedures to protect public safety samples and evidence from secondary contamination
 - (i) Describe documentation procedures
 - (j) Describe evidentiary sampling techniques

- (k) Describe field screening protocols for collected public safety samples and evidence
- (l) Describe evidence labeling and packaging procedures
- (m) Describe evidence decontamination procedures
- (n) Describe evidence packaging procedures for evidence transportation
- (o) Describe chain-of-custody procedures
- (2) Given an example of an illicit laboratory, the operations level responder assigned to evidence preservation and public safety sampling shall be able to perform the following tasks:
 - (a) Describe the hazards, safety procedures, decontamination, and tactical guidelines for this type of incident
 - (b) Describe the factors to be evaluated in selecting the PPE, sampling equipment, detection devices, and public safety sample and evidence packaging and transport containers
 - (c) Describe the sampling options associated with liquid and solid public safety sample and evidence collection
 - (d) Describe the field screening protocols for collected public safety samples and evidence
- (3) Given an example of an environmental crime, the operations level responder assigned to evidence preservation and public safety sampling shall be able to perform the following tasks:
 - (a) Describe the hazards, safety procedures, decontamination, and tactical guidelines for this type of incident
 - (b) Describe the factors to be evaluated in selecting the PPE, sampling equipment, detection devices, and public safety sample and evidence packaging and transport containers
 - (c) Describe the sampling options associated with the collection of liquid and solid public safety samples and evidence
 - (d) Describe the field screening protocols for collected public safety samples and evidence
- (4) Given an example of a hazardous materials/WMD suspicious letter, the operations level responder assigned to evidence preservation and public safety sampling shall be able to perform the following tasks:
 - (a) Describe the factors to be evaluated in selecting the PPE, sampling equipment, detection devices, and public safety sample and evidence packaging and transport containers
 - (b) Describe the sampling options associated with the collection of liquid and solid public safety samples and evidence
 - (c) Describe the field screening protocols for collected public safety samples and evidence
- (5) Given an example of a hazardous materials/WMD suspicious package, the operations level responder assigned to evidence preservation and public safety sampling shall be able to perform the following tasks:
 - (a) Describe the hazards, safety procedures, decontamination, and tactical guidelines for this type of incident
 - (b) Describe the factors to be evaluated in selecting the PPE, sampling equipment, detection devices, and public safety sample and evidence packaging and transport containers
- (6) Given an example of a release/attack involving a hazardous materials and WMD agent, the operations level responder assigned to evidence preservation and public safety sampling shall be able to perform the following tasks:
 - (a) Describe the hazards, safety procedures, decontamination, and tactical guidelines for this type of incident
 - (b) Describe the factors to be evaluated in selecting the PPE, sampling equipment, detection devices, and public safety sample and evidence packaging and transport containers
 - (c) Describe the sampling options associated with the collection of liquid and solid public safety samples and evidence
 - (d) Describe the field screening protocols for collected public safety samples and evidence
- (7) Given examples of different types of potential criminal hazardous materials/WMD incidents, the operations level responder shall identify and describe the application, use, and limitations of the various types of field screening tools that can be utilized for screening the following:
 - (a) Corrosivity
 - (b) Flammability
 - (c) Oxidation
 - (d) Radioactivity
 - (e) Volatile organic compounds (VOC)
- (8) Describe the potential adverse impact of using destructive field screening techniques
- (9) Describe the procedures for maintaining the evidentiary integrity of any item removed from the crime scene

6.5.4 Competencies — Implementing the Planned Response.

6.5.4.1 Implementing the Planned Response. Given the incident action plan for a criminal incident involving hazardous materials/WMD, the operations level responder assigned to evidence preservation and public safety sampling shall implement selected response actions consistent with the emergency response plan or standard operating procedures by completing the following requirements:

- (1) Demonstrate how to secure the scene and characterize and preserve evidence at the scene
- (2) Document personnel and scene operations associated with the incident
- (3) Determine whether responders are within their legal authority to perform evidence collection and public safety sampling tasks
- (4) Describe the procedure to notify the agency with investigative authority
- (5) Notify the hazardous devices technician
- (6) Identify potential public safety samples and evidence to be collected
- (7) Demonstrate procedures to protect samples and evidence from secondary contamination
- (8) Demonstrate correct techniques to collect public safety samples utilizing the equipment provided

- (9) Demonstrate documentation procedures
- (10) Demonstrate public safety sampling protocols
- (11) Demonstrate field screening protocols for public safety samples and evidence collected
- (12) Demonstrate evidence/sample labeling and packaging procedures
- (13) Demonstrate evidence/sample decontamination procedures
- (14) Demonstrate evidence/sample packaging procedures for evidence transportation
- (15) Describe chain of custody procedures for evidence/sample preservation

6.5.4.2 The operations level responder assigned to evidence preservation and public safety sampling shall describe AHJ policies and procedures for the technical decontamination process.

6.5.5 Competencies — Evaluating Progress. (Reserved)

6.5.6 Competencies — Terminating the Incident. (Reserved)

6.5.6.1 Reporting and Documenting Evidence Preservation and Public Safety Sampling Operations. Given a scenario involving a hazardous materials/WMD incident involving evidence preservation and public safety sampling operations and AHJ policies and procedures, the operations level responder assigned to perform evidence preservation and public safety sampling shall report and document the evidence preservation and public safety sampling operations as required by the AHJ by completing the following:

- (1) Identify the reports and supporting documentation required by the AHJ pertaining to evidence preservation and public safety sampling operations.

6.6 Mission-Specific Competencies: Product Control.

6.6.1 General.

6.6.1.1 Introduction.

6.6.1.1.1 The operations level responder assigned to perform product control with limited risk of personal exposure shall be that person, competent at the operations level, who is assigned by the AHJ to confine and contain releases of hazardous materials/WMD and control flammable liquid and flammable gas releases at hazardous materials/WMD incidents.

6.6.1.1.2 The operations level responder assigned to perform product control at hazardous materials/WMD incidents shall be trained to meet all competencies at the awareness level (see Chapter 4), all competencies at the operations level (see Chapter 5), all mission-specific competencies for PPE (see Section 6.2), and all competencies in this section.

6.6.1.1.3 The operations level responder assigned to perform product control at hazardous materials/WMD incidents shall operate under the guidance of a hazardous materials technician, an allied professional, an emergency response plan, or standard operating procedures.

6.6.1.1.4* The operations level responder assigned to perform product control at hazardous materials/WMD incidents shall receive the additional training necessary to meet specific needs of the jurisdiction.

6.6.1.2 Goal.

6.6.1.2.1 The goal of the competencies in this section shall be to provide the operations level responder assigned to perform

product control, including to confine or contain releases of hazardous materials/WMD and to control flammable liquid and flammable gas releases, with limited risk of personal exposure at hazardous materials/WMD incidents with the knowledge and skills to perform the tasks in 6.6.1.2.2 in a safe and effective manner.

6.6.1.2.2 Given a hazardous materials/WMD incident with release of product; an assignment in an IAP; the scope of the problem; policies and procedures; approved tools, equipment, control agents, and PPE; and access to a hazardous materials technician, an allied professional, an emergency response plan, or standard operating procedures, the operations level responder assigned to perform product control shall be able to perform the following tasks:

- (1) Select techniques to control releases with limited risk of personal exposure at hazardous materials/WMD incidents within the capabilities and competencies of available personnel, tools and equipment, control agents, and PPE, in accordance with the AHJ policies and procedures, by completing the following requirements:
 - (a) Describe control techniques to confine/contain released product with limited risk of personal exposure available to the operations level responder.
 - (b) Describe the location and operation of remote control/emergency shutoff devices on cargo and intermodal tanks, and containers at fixed facilities containing flammable liquids and gases.
 - (c) Describe the characteristics and applicability of available control agents and equipment available for controlling flammable liquid and flammable gas releases.
- (2) Implement selected techniques for controlling released product with limited risk of personnel exposure at the incident following safety procedures, avoiding or minimizing hazards, and protecting exposures and personnel.
- (3) Report and document product control operations.

6.6.2 Competencies — Analyzing the Incident. (Reserved)

6.6.3 Competencies — Planning the Response.

6.6.3.1 Selecting Product Control Techniques. Given examples of hazardous materials/WMD incidents, the operations level responder assigned to perform product control with limited risk of personal exposure shall select techniques to confine or contain releases of hazardous materials/WMD and to control flammable liquid and flammable gas releases within the capabilities and competencies of available personnel, tools and equipment, PPE, and control agents and equipment in accordance with the AHJ's policies and procedures by completing the following requirements:

- (1) Explain the importance of working under the guidance of a hazardous materials technician, an allied professional, an emergency response plan, or standard operating procedures.
- (2) Explain the difference between control, confinement, containment, and extinguishment.
- (3) Describe the product control techniques available to the operations level responder.
- (4) Describe the application, necessary tools, equipment, control agents, and safety precautions associated with each of the following control techniques:
 - (a) Absorption
 - (b) Adsorption

- (c) Damming
- (d) Diking
- (e) Dilution
- (f) Diversion
- (g) Remote valve shutoff
- (h) Retention
- (i) Vapor dispersion
- (j) Vapor suppression

- (5) Identify and describe the use of tools and equipment provided by the AHJ for product control, including Class B foam application equipment, diking equipment, damming equipment, approved absorbent materials and products, shovels and other hand tools, piping, heavy equipment (such as backhoes), floats, and spill booms and control agents, including Class B foam and dispersal agents.
- (6) Identify the characteristics and applicability of the following Class B foams if supplied by the AHJ:
 - (a) Aqueous film-forming foam (AFFF)
 - (b) Alcohol-resistant concentrates
 - (c) Fluoroprotein
 - (d) High-expansion foam
- (7) Identify the location and describe the operation of remote control/emergency shutoff devices to contain flammable liquid and flammable gas releases on cargo tanks on MC/DOT-306/406, MC/DOT-307/407, and MC-331 cargo tanks, intermodal tanks, and containers at fixed facilities.
- (8) Describe the safety precaution associated with each product control technique.

6.6.4 Competencies — Implementing the Planned Response.

6.6.4.1 Performing Product Control Techniques. Given the selected product control technique and the tools and equipment, PPE, and control agents and equipment provided by the AHJ at a hazardous materials/WMD incident, the operations level responder assigned to perform product control shall implement the product control technique to confine/contain the release with limited risk of personal exposure by completing the following requirements:

- (1) Using the tools and equipment provided by the AHJ, perform the following product control techniques following safety procedures, protecting exposures and personnel, and avoiding or minimizing hazards:
 - (a) Operate remote control/emergency shutoff devices to reduce or stop the flow of hazardous material from MC-306/DOT-406, MC-407/DOT-407, and MC-331 cargo tanks, intermodal tanks, and containers at fixed facilities containing flammable liquids or gases

6.6.4.2 Given the required tools and equipment provided by the AHJ, perform product control techniques following safety procedures, protecting exposures and personnel, and avoiding or minimizing hazards with the following:

- (1) Using the equipment provided by the AHJ, control flammable liquid and flammable gas releases using techniques, including hose handling, nozzle patterns, and attack operations, found in NFPA 1001.
- (2) Using the Class B foams or agents and equipment provided by the AHJ, control the spill or fire involving flammable liquids by application of the foam(s) or agent(s).

6.6.5 Competencies — Evaluating Progress. (Reserved)

6.6.6 Competencies — Terminating the Incident.

6.6.6.1 Reporting and Documenting Product Control Operations. Given a scenario involving a hazardous materials/WMD incident involving product control, the operations level responder assigned to perform product control shall document the product control operations as required by the AHJ by completing the following requirement:

- (1) Identify the reports and supporting documentation required by the AHJ pertaining to product control operations

6.7 Mission-Specific Competencies: Detection, Monitoring, and Sampling.

6.7.1 General.

6.7.1.1 Introduction.

6.7.1.1.1 The operations level responder assigned to perform detection, monitoring, and sampling shall be that person, competent at the operations level, who is assigned by the AHJ to detect, monitor, and sample at hazardous materials/WMD incidents.

6.7.1.1.2 The operations level responder assigned to perform detection, monitoring, and sampling at hazardous materials/WMD incidents shall be trained to meet all competencies at the awareness level (*see Chapter 4*), all competencies at the operations level (*see Chapter 5*), all mission-specific competencies for PPE (*see Section 6.2*), and all competencies in this section.

6.7.1.1.3 The operations level responder assigned to perform detection, monitoring, and sampling at hazardous materials/WMD incidents shall operate under the guidance of a hazardous materials technician, an allied professional, an emergency response plan, or standard operating procedures.

6.7.1.1.4* The operations level responder assigned to perform air monitoring and sampling at hazardous materials/WMD incidents shall receive the additional training necessary to meet specific needs of the jurisdiction.

6.7.1.2 Goal.

6.7.1.2.1 The goal of the competencies in this section shall be to provide the operations level responder assigned to air monitoring and sampling at hazardous materials/WMD incidents with the knowledge and skills to perform the tasks in 6.7.1.2.2 safely and effectively.

6.7.1.2.2 Given a hazardous materials/WMD incident; an assignment in an IAP; the scope of the problem; policies and procedures; approved resources; detection, monitoring, and sampling equipment; PPE; and access to a hazardous materials technician, an allied professional, an emergency response plan, or standard operating procedures, the operations level responder assigned to perform detection, monitoring, and sampling shall be able to perform the following tasks:

- (1) Select equipment for detecting, monitoring, and sampling suitable for the hazardous materials/WMD present at the incident within the capabilities and competencies of available personnel; approved resources including detection, monitoring, and sampling equipment; and PPE in accordance with the AHJ policies and procedures

- (2) Operate the selected equipment to detect, monitor, and sample hazardous materials/WMD present at the incident following safety procedures, avoiding or minimizing hazards, and protecting exposures and personnel
- (3) Report and document detection, monitoring, and sampling operations

6.7.2 Competencies — Analyzing the Incident. (Reserved)

6.7.3 Competencies — Planning the Response.

6.7.3.1 Selecting Detection, Monitoring, and Sampling Equipment. Given a hazardous materials/WMD incident and the detection, monitoring, and sampling equipment provided by the AHJ, the operations level responder assigned to perform detection, monitoring, and sampling hazardous materials/WMD at the incident shall be able to perform the following:

- (1) Describe the importance of working under the guidance of a hazardous materials technician, an allied professional, an emergency response plan, or standard operating procedures
- (2) Describe detection, monitoring, and sampling methods and equipment available
- (3) Describe the considerations for selecting detection, monitoring, and sampling equipment for an assigned task within the capabilities and competencies of available personnel and approved detection, monitoring, sampling equipment, and PPE
- (4) Given the detection, monitoring, and sampling equipment provided by the AHJ, describe the following for each piece of equipment:
 - (a) Application, capabilities, and limitations
 - (b) Procedures operating the equipment, including field testing, safety precautions, and action levels
 - (c) Procedures for reading, interpreting, documenting, and communicating results of detection, monitoring, and sampling operations
 - (d) Procedures for decontaminating detection, monitoring, and sampling equipment according to manufacturer's recommendations or AHJ policies and procedures
 - (e) Procedures for maintaining detection, monitoring, and sampling equipment according to manufacturers' specifications or AHJ policies and procedures

6.7.4 Competencies — Implementing the Planned Response.

Δ 6.7.4.1 Operating Detection, Monitoring, and Sampling Equipment. Given a hazardous materials/WMD incident and the selected detection, monitoring, and sampling equipment, the operations level responder assigned to perform detection, monitoring, and sampling shall implement detection, monitoring, and sampling operations as necessary and shall be able to perform the following:

- (1) Field test the detection, monitoring, and sampling equipment to be used according to the manufacturers' specification and AHJ policies and procedures, including the following:
 - (a) Functional (i.e., bump) test
 - (b) Calibration
 - (c) Other required tests
- (2) Operate the equipment to detect, monitor, and sample the hazardous materials/WMD present following safety

procedures, avoiding or minimizing hazards, and protecting exposures and personnel

- (3) Read, interpret, and document readings from the detection, monitoring, and sampling equipment
- (4) Communicate results of detection, monitoring, and sampling operations
- (5) Decontaminate the detection, monitoring, and sampling equipment
- (6) Maintain detection, monitoring, and sampling equipment according to the manufacturers' specifications or AHJ policies and procedures

• 6.7.5 Competencies — Evaluating Progress. (Reserved)

6.7.6 Competencies — Terminating the Incident.

N 6.7.6.1 Reporting and Documenting Detection, Monitoring, and Sampling Operations. Given a scenario involving a hazardous materials/WMD incident involving detection, monitoring, and sampling operations and AHJ policies and procedures, the operations level responder assigned to perform detection, monitoring, and sampling shall report and document the detection, monitoring, and sampling operations as required by the AHJ by completing the following:

- (1) Identify the reports and supporting documentation required by the AHJ pertaining to detection, monitoring, and sampling operations

6.8 Mission-Specific Competencies: Victim Rescue and Recovery.

6.8.1 General.

6.8.1.1 Introduction.

6.8.1.1.1 The operations level responder assigned to perform victim rescue and recovery at hazardous materials/WMD incidents shall be that person, competent at the operations level, who is assigned to rescue and recover exposed and/or contaminated victims at hazardous materials/WMD incidents.

Δ 6.8.1.1.2 The operations level responder assigned to perform victim rescue and recovery at hazardous materials/WMD incidents shall be trained to meet all competencies at the awareness level (*see Chapter 4*), all competencies at the operations level (*see Chapter 5*), all mission-specific competencies for PPE (*see Section 6.2*), and all competencies in this section.

6.8.1.1.3 The operations level responder assigned to perform victim rescue and recovery at hazardous materials/WMD incidents shall operate under the guidance of a hazardous materials technician, an allied professional, an emergency response plan, or standard operating procedures.

6.8.1.1.4* The operations level responder assigned to perform victim rescue and recovery at hazardous materials/WMD incidents shall receive the additional training necessary to meet specific needs of the jurisdiction.

6.8.1.2 Goal.

6.8.1.2.1 The goal of the competencies in this section shall be to provide the operations level responder assigned to rescue and/or recover exposed and/or contaminated victims at hazardous materials/WMD incidents with the knowledge and skills to perform the tasks in 6.8.1.2.2 in a safe and effective manner.

6.8.1.2.2 Given a hazardous materials/WMD incident involving exposed and/or contaminated victims; an assignment in an IAP; the scope of the problem; policies and procedures; approved tools, equipment, including special rescue equipment, and PPE; and access to a hazardous materials technician, an allied professional, an emergency response plan, or standard operating procedures, the operations level responder assigned to perform victim rescue and recovery shall be able to perform the following tasks:

- (1) Select rescue and/or recovery options for victims at the incident within the capabilities of available personnel and approved tools, equipment, special rescue equipment, and PPE in accordance with the AHJ's policies and procedures by completing the following requirements:
 - (a) Identify the status of potential victims
 - (b) Select rescue and/or recovery options based on the status of potential victims
- (2) Search for, rescue, and recover victims following safety procedures, avoiding or minimizing hazards, and protecting exposures and personnel
- (3) Report and document victim rescue and/or recovery operations

6.8.2 Competencies — Analyzing the Incident. (Reserved)

6.8.3 Competencies — Planning the Response.

Δ 6.8.3.1 Selecting Rescue and Recovery Options. Given a hazardous materials/WMD incident involving exposed and/or contaminated victims; an assignment in an IAP; the scope of the problem; policies and procedures; approved tools, equipment, including special rescue equipment, and PPE; and access to a hazardous materials technician, an allied professional, an emergency response plan, or standard operating procedures, the operations level responder assigned to rescue and recover victims shall select the victim rescue and recovery option(s) for the assignment and be able to perform the following tasks:

- (1) Describe the importance of working under the guidance of a hazardous materials technician, an allied professional, an emergency response plan, or standard operating procedures
- (2) Choose whether the task is victim rescue, victim recovery, or both
 - (a) Describe the difference between victim rescue and victim recovery operations
 - (b) Describe considerations for determining the feasibility of conducting rescue or recovery operations in each of the following situations:
 - (i) Line-of-sight with ambulatory victims
 - (ii) Line-of-sight with nonambulatory victims
 - (iii) Non-line-of-sight with ambulatory victims
 - (iv) Non-line-of-sight with nonambulatory victims
 - (v) Victim rescue operations versus victim recovery operations
- (3) Select the rescue and recovery options within the capabilities of available personnel, approved tools, equipment, special rescue equipment, and PPE for the situation at hand
 - (a) Describe both rescue and recovery options for each of the following situations:
 - (i) Line-of-sight with ambulatory victims
 - (ii) Line-of-sight with nonambulatory victims

- (iii) Non-line-of-sight with ambulatory victims
 - (iv) Non-line-of-sight with nonambulatory victims
- (4) Describe the procedures for implementing victim rescue and recovery operations within the incident command system
- (5) Select the victim rescue or recovery option(s) and equipment for the assigned situation within the capabilities of available personnel, approved tools, equipment, special rescue equipment, and PPE
- (6) Identify the PPE protection options required to protect victims during rescue and recovery operations

6.8.4 Competencies — Implementing the Planned Response.

Δ 6.8.4.1 Searching for Rescuing and Recovering Victims. Given a hazardous materials/WMD incident and the recommended victim rescue and recovery option(s) for the incident, the operations level responder assigned to rescue and recover victims shall implement the selected victim rescue and recovery options by completing the following requirements:

- (1) Identify the different victim and recovery team positions, roles, and responsibilities
- (2) Select and use specialized rescue equipment and procedures provided by the AHJ to support victim rescue and recovery
- (3) Search for, rescue, and recover victims following safety procedures, avoiding or minimizing hazards, and protecting exposures and personnel
- (4) Select required PPE for victims and rescuers
- (5) Triage and transfer victims to the decontamination group, casualty collection point, or area of safe refuge or emergency medical care in accordance with the IAP
- (6) Follow the AHJ's procedures for the decontamination of rescue/recovery personnel and their equipment

6.8.5 Competencies — Evaluating Progress. (Reserved)

6.8.6 Competencies — Terminating the Incident.

N 6.8.6.1 Reporting and Documenting Victim Rescue and Recovery Operations. Given a scenario involving a hazardous materials/WMD incident involving victim rescue and recovery operations and AHJ policies and procedures, the operations level responder assigned to perform victim rescue and recovery shall report and document the victim rescue and recovery operations as required by the AHJ by completing the following:

- (1) Identify the reports and supporting documentation required by the AHJ pertaining to victim rescue and recovery operations

6.9 Mission-Specific Competencies: Response to Illicit Laboratory Incidents.

6.9.1 General.

6.9.1.1 Introduction.

6.9.1.1.1 The operations level responder assigned to respond to illicit laboratory incidents shall be that person, competent at the operations level, who, at hazardous materials/WMD incidents involving potential violations of criminal statutes specific to the illegal manufacture of drugs or WMD, is assigned to secure the scene, identify the laboratory or process, and preserve evidence at hazardous materials/WMD incidents involving potential violations of criminal statutes specific to the illegal manufacture of drugs or WMD.

△ **6.9.1.1.2** The operations level responder who responds to illicit laboratory incidents shall be trained to meet all competencies at the awareness level (*see Chapter 4*), all competencies at the operations level (*see Chapter 5*), all mission-specific competencies for **PPE** (*see Section 6.2*), and all competencies in this section.

6.9.1.1.3 The operations level responder who responds to illicit laboratory incidents shall operate under the guidance of a hazardous materials technician, an allied professional, or standard operating procedures.

6.9.1.1.4* The operations level responder who responds to illicit laboratory incidents shall receive the additional training necessary to meet specific needs of the jurisdiction.

6.9.1.2 Goal.

6.9.1.2.1 The goal of the competencies in this section shall be to provide the operations level responder assigned to respond to illicit laboratory incidents with the knowledge and skills to perform the tasks in 6.9.1.2.2 in a safe and effective manner.

6.9.1.2.2 Given a hazardous materials/WMD incident involving an illicit laboratory; an assignment in an IAP; scope of the problem; policies and procedures; approved tools, equipment, and PPE; and access to a hazardous materials technician, an allied professional, an emergency response plan, or standard operating procedures, the operations level responder assigned to respond to illicit laboratory incidents shall be able to perform the following tasks:

- (1) Analyze a hazardous materials/WMD incident to determine the complexity of the problem, potential outcomes, and whether the incident has the potential to be a criminal illicit laboratory operation
- (2) Plan a response for a hazardous materials/WMD incident involving potential illicit laboratory operations in compliance with evidence preservation operations within the capabilities and competencies of available personnel, PPE, and response equipment after notifying the responsible law enforcement agencies of the problem
- (3) Implement the planned response to a hazardous materials/WMD incident involving potential illicit laboratory operations utilizing applicable evidence preservation guidelines
- (4) Report and document illicit laboratory response operations

6.9.2 Competencies — Analyzing the Incident.

△ **6.9.2.1 Determining If a Hazardous Materials/WMD Incident Is an Illicit Laboratory Operation.** Given examples of hazardous materials/WMD incidents involving illicit laboratory operations, the operations level responder assigned to respond to illicit laboratory incidents shall identify the potential drugs/WMD being manufactured by completing the following related requirements:

- (1) Given examples of illicit drug manufacturing methods, describe the operational considerations, hazards, and products involved in the illicit process
- (2) Given examples of illicit chemical WMD methods, describe the operational considerations, hazards, and products involved in the illicit process
- (3) Given examples of illicit biological WMD methods, describe the operational considerations, hazards, and products involved in the illicit process

- (4) Given examples of illicit laboratory operations, describe the booby traps that have been encountered by response personnel
- (5) Given examples of illicit laboratory operations, describe the agencies that have investigative authority and operational responsibility to support the response

6.9.3 Competencies — Planning the Response.

6.9.3.1 Determining the Response Options. Given an analysis of hazardous materials/WMD incidents involving illicit laboratories, the operations level responder assigned to respond to illicit laboratory incidents shall identify possible response options.

6.9.3.2 Identifying Unique Aspects of Criminal Hazardous Materials/WMD Incidents.

6.9.3.2.1 The operations level responder assigned to respond to illicit laboratory incidents shall identify the unique operational aspects associated with illicit drug manufacturing and illicit WMD manufacturing.

△ **6.9.3.2.2** Given an incident involving illicit drug manufacturing or illicit WMD manufacturing, the operations level responder assigned to illicit laboratory incidents shall describe the following tasks:

- (1) Securing and preserving the scene
- (2) Joint hazardous materials and hazardous devices technician site reconnaissance and hazard identification
- (3) Determining atmospheric hazards through air monitoring and detection
- (4) Mitigation of immediate hazards while preserving evidence
- (5) Coordinated crime scene operation with the agency having investigative authority
- (6) Documenting personnel and scene operations associated with the incident

△ **6.9.3.3 Identifying the Agency That Has Investigative Jurisdiction.** The operations level responder assigned to respond to illicit laboratory incidents shall identify the agency having investigative jurisdiction by completing the following:

- (1) Given scenarios involving illicit drug manufacturing or illicit WMD manufacturing, identify the agency(s) with investigative authority for the following situations:
 - (a) Illicit drug manufacturing
 - (b) Illicit WMD manufacturing
 - (c) Environmental crimes resulting from illicit laboratory operations
 - (d) Improvised explosive devices, improvised WMD dispersal devices, and improvised explosives laboratories

6.9.3.4 Identifying Unique Tasks and Operations at Sites Involving Illicit Laboratories.

6.9.3.4.1 The operations level responder assigned to respond to illicit laboratory incidents shall identify and describe the unique tasks and operations encountered at illicit laboratory scenes.

6.9.3.4.2 Given scenarios involving illicit drug manufacturing or illicit WMD manufacturing, describe the following:

- (1) Hazards, safety procedures, and tactical guidelines for this type of emergency

- (2) Factors to be evaluated in selection of the proper PPE for each type of tactical operation
- (3) Factors to be considered in selection of appropriate decontamination procedures
- (4) Factors to be evaluated in the selection of detection devices
- (5) Factors to be considered in the development of a remediation plan

6.9.4 Competencies — Implementing the Planned Response.

6.9.4.1 Implementing the Planned Response. Given scenarios involving an illicit drug/WMD laboratory operation involving hazardous materials/WMD, the operations level responder assigned to respond to illicit laboratory incidents shall implement or oversee the implementation of the selected response options in a safe and effective manner.

▲ **6.9.4.1.1** Given a simulated illicit drug/WMD laboratory incident, the operations level responder assigned to respond to illicit laboratory incidents shall be able to perform the following tasks:

- (1) Describe safe and effective methods to secure the scene
- (2) Demonstrate decontamination procedures for tactical law enforcement personnel to include weapons and law enforcement K-9s securing an illicit laboratory
- (3) Demonstrate decontamination procedures for potential suspects
- (4) Describe methods to identify and avoid hazards found at illicit laboratories such as booby traps and releases of hazardous materials
- (5) Describe procedures for conducting joint hazardous materials/hazardous devices assessment operations

6.9.4.1.2 Given a simulated illicit drug/WMD laboratory entry operation, the operations level responder assigned to respond to illicit laboratory incidents shall describe methods for identifying the following during reconnaissance operations:

- (1) Manufacture of illicit drugs
- (2) Manufacture of illicit WMD materials
- (3) Environmental crimes associated with the manufacture of illicit drugs/WMD materials
- (4) Improvised explosive devices, improvised WMD dispersal devices, and improvised explosives laboratories

6.9.4.1.3 Given a simulated illicit drug/WMD laboratory incident, the operations level responder assigned to respond to illicit laboratory incidents shall describe joint agency crime scene operations, including support to forensic crime scene processing teams.

6.9.4.1.4 Given a simulated illicit drug/WMD laboratory incident, the operations level responder assigned to respond to illicit laboratory incidents shall describe the policy and procedures for post-crime scene processing and site remediation operations.

6.9.4.1.5 The operations level responder assigned to respond to illicit laboratory incidents shall describe local procedures for performing decontamination upon completion of the illicit laboratory mission.

6.9.5 Competencies — Evaluating Progress. (Reserved)

6.9.6 Competencies — Terminating the Incident.

■ **6.9.6.1 Reporting and Documenting Illicit Laboratory Response Operations.** Given a scenario involving a hazardous

materials/WMD incident involving illicit laboratory response operations and AHJ policies and procedures, the operations level responder assigned to perform illicit laboratory response shall report and document the illicit laboratory response operations as required by the AHJ by completing the following:

- (1) Identify the reports and supporting documentation required by the AHJ pertaining to illicit laboratory response operations

6.10 Mission-Specific Competencies: Disablement/Disruption of Improvised Explosive Devices (IEDs), Improvised WMD Dispersal Devices, and Operations at Improvised Explosives Laboratories.

6.10.1 General.

6.10.1.1 Introduction.

6.10.1.1.1 The operations level responder assigned to perform disablement/disruption of IEDs, improvised WMD dispersal devices, and operations at improvised explosives laboratories shall be that person, competent at the operations level, who is assigned to interrupt the functioning of an IED or an improvised WMD dispersal device or conduct operations at improvised explosives laboratories.

6.10.1.1.2 The operations level responder assigned to perform disablement/disruption of IEDs, improvised WMD dispersal devices, and operations at improvised explosives laboratories shall possess current certification as a Hazardous Device Technician from the FBI Hazardous Devices School, Department of Defense, or equivalent certifying agency as determined by the AHJ and be functioning as a member of a bomb squad or recognized military unit.

▲ **6.10.1.1.3** The operations level responder assigned to perform disablement/disruption of IEDs, improvised WMD dispersal devices, and operations at improvised explosives laboratories shall be trained to meet all competencies at the awareness level (see Chapter 4), all competencies at the operations level (see Chapter 5), all mission-specific competencies for PPE (see Section 6.2), mission-specific competencies for response to illicit laboratories (see Section 6.9), and all competencies in this section.

6.10.1.1.4 The operations level responder assigned to perform disablement/disruption of IEDs, improvised WMD dispersal devices, and operations at improvised explosives laboratories shall operate under the guidance of an allied professional or standard operating procedures.

6.10.1.1.5 The operations level responder assigned to perform disablement/disruption of IEDs, improvised WMD dispersal devices, and operations at improvised explosives laboratories shall receive the additional training necessary to meet the specific needs of the jurisdiction and/or agency.

6.10.1.2 Goal.

6.10.1.2.1 The goal of the competencies in this section shall be to provide the operations level responder assigned to perform disablement/disruption of IEDs, improvised WMD dispersal devices, and operations at improvised explosives laboratories with the knowledge and skills to perform the tasks in 6.10.1.2.2 and 6.10.1.2.3 in a safe and effective manner.

▲ **6.10.1.2.2** When responding to hazardous materials/WMD incidents involving a potential IED or improvised WMD dispersal device, the operations level responder assigned to perform

disablement/disruption of IEDs, improvised WMD dispersal devices, and operations at improvised explosives laboratories shall be able to perform the following tasks:

- (1) Analyze a hazardous materials/WMD incident involving an improvised WMD dispersal device to determine the complexity of the problem and potential outcomes by completing the following tasks:
 - (a) Determine if an IED or WMD dispersal device is present
 - (b) Categorize the device by its delivery method
- (2) Plan a response for a hazardous materials/WMD incident where there is a potential improvised WMD dispersal device within the capabilities and competencies of available personnel, PPE and response equipment by completing the following tasks:
 - (a) Determine if response options can be employed to conduct a disablement/disruption of the device
 - (b) Describe the actions to be taken and the resources to be requested if the incident exceeds the available capabilities
- (3) Implement the planned response to a hazardous materials/WMD incident involving an IED or WMD dispersal device by completing the following tasks under the guidance of the senior hazardous devices technician (HDT) present:
 - (a) Employ disablement/disruption techniques in accordance with the FBI Hazardous Devices School "logic tree," the current edition of the National Bomb Squad Commanders Advisory Board's (NBSCAB) "A Model for Bomb Squad Standard Operating Procedures," established protocol of military units, or the AHJ
- (4) Report and document potential IED or improvised WMD dispersal device operations

6.10.1.2.3 When responding to hazardous materials/WMD incidents involving potential improvised explosives laboratories, the operations level responder assigned to perform disablement/disruption of IEDs, improvised WMD dispersal devices, and operations at improvised explosives laboratories shall be able to perform the following tasks:

- (1) Analyze a hazardous materials/WMD incident involving a potential improvised explosives laboratory to determine the complexity of the problem and potential outcomes and whether the incident has the potential for being an improvised explosives laboratory operation
- (2) Plan a response to a hazardous materials/WMD incident involving a potential improvised explosives laboratory in compliance with mitigation techniques and evidence recovery within the capabilities and competencies of available personnel, PPE, and control equipment, after notifying the responsible investigative agencies of the problem
- (3) Implement the planned response to a hazardous materials/WMD incident involving a potential improvised explosives laboratory utilizing applicable standard operating procedures and/or technical advice from qualified allied professionals
- (4) Report and document potential improvised explosives laboratories operations

6.10.2 Competencies — Analyzing the Incident.

6.10.2.1 Determining If the Incident Involves the Potential Presence of an Improvised WMD Dispersal Device. Given

examples of hazardous materials/WMD incidents involving an IED or improvised WMD dispersal device, the operations level responder assigned to perform disablement/disruption of IEDs, improvised WMD dispersal devices, and operations at improvised explosives laboratories shall identify and/or categorize the hazard by completing the following:

- (1) Given examples of the following hazardous materials/WMD incidents involving an IED or improvised WMD dispersal device, describe products that might be encountered in the incident associated with each situation:
 - (a) Letter/package-based improvised dispersal device
 - (b) Briefcase/backpack-based improvised dispersal device
 - (c) Transportation-borne WMD dispersal device
 - (d) Fixed location hazards where an IED has been placed to cause the deliberate release of a material

Δ 6.10.2.2 Determining If the Hazardous Materials/WMD Incident Involves an Improvised Explosives Laboratory Operation.

Given examples of hazardous materials/WMD incidents involving improvised explosives laboratories, the operations level responder assigned to perform disablement/disruption of IEDs, improvised WMD dispersal devices, and operations at improvised explosives laboratories shall identify the potential explosives/WMD being manufactured by completing the following related requirements:

- (1) Given examples of improvised explosives manufacturing methods, describe the operational considerations, hazards, and products involved in the process
- (2) Given examples of improvised explosives laboratory operations, describe the booby traps that have been encountered by response personnel
- (3) Given examples of improvised explosives laboratory operations, describe the agencies that have investigative authority and operational responsibility to support the response

6.10.3 Competencies — Planning the Response.

6.10.3.1 Identifying Unique Aspects of Improvised WMD Dispersal Device Related Hazardous Materials/WMD Incidents. When responding to hazardous materials/WMD incidents, the operations level responder assigned to perform disablement/disruption of IEDs, improvised WMD dispersal devices, and operations at improvised explosives laboratories shall be capable of identifying the unique aspects associated with such incidents by completing the following requirements:

- (1) Given an incident involving a non-vehicle-based WMD dispersal device, shall be able to perform the following tasks:
 - (a) Describe the hazards, safety procedures, and tactical guidelines for this type of incident
 - (b) Describe the factors to be evaluated in selecting the PPE
 - (c) Describe the procedure for identifying and obtaining the appropriate emergency response elements to support disablement/disruption operations
- (2) Given an incident involving a vehicle-borne WMD dispersal device, shall be able to perform the following tasks:
 - (a) Describe the hazards, safety procedures, and tactical guidelines for this type of incident

- (b) Describe the factors to be evaluated in selecting the PPE
- (c) Describe the procedure for identifying and obtaining the appropriate emergency response elements to support disablement/disruption operations
- (3) Given examples of different types of incidents involving an improvised WMD dispersal device, shall identify and describe the application use and limitations of various types of field screening tools that can be utilized for determining the presence of the following materials:
 - (a) Gamma and neutron radiation
 - (b) Explosive materials [commercial and homemade explosives (HME)]

6.10.3.2 Identifying Unique Aspects of Improvised Explosives Laboratory-Related Hazardous Materials/WMD Incidents.

When responding to conduct mitigation procedures on energetic materials at an improvised explosives laboratory, the operations level responder assigned to perform disablement/disruption of IEDs, improvised WMD dispersal devices, and operations at improvised explosives laboratories shall be capable of identifying the unique aspects associated with such incidents by completing the following requirements:

- (1) Given a scenario involving an improvised explosives laboratory and detection devices provided by the AHJ, complete the following:
 - (a) Describe the hazards, safety procedures, and tactical guidelines for this type of incident
 - (b) Describe the factors to be evaluated in selecting the PPE
 - (c) Describe the application, use, and limitations of various types of field screening tools that can be utilized for determining the presence of the following materials:
 - i. Radioactive materials that emit alpha, beta, gamma, or neutron radiation, including radionuclide identification of gamma emitting radioactive materials
 - ii. Explosive materials (commercial and HME)
 - (d) Demonstrate the field test and operation of each detection device and interpret the readings based on local procedures
 - (e) Describe local procedures for decontamination of themselves and their detection devices upon completion of the material detection mission
 - (f) Describe the procedure for identifying and obtaining the appropriate emergency response elements to support disablement/disruption or mitigation operations

6.10.3.3 Identifying Potential Response Options.

▲ 6.10.3.3.1 Given scenarios of an incident involving a potential IED or improvised WMD materials dispersal device, the operations level responder assigned to perform disablement/disruption of IEDs, improvised WMD dispersal devices, and operations at improvised explosives laboratories shall identify possible response options.

▲ 6.10.3.3.2 Given scenarios of an incident involving a potential improvised explosives laboratories, the operations level responder assigned to perform disablement/disruption of IEDs, improvised WMD dispersal devices, and operations at improvised explosives laboratories shall identify possible response options.

▲ 6.10.3.4 Selecting Personal Protective Equipment. Given the PPE provided by the AHJ, the operations level responder assigned to perform disablement/disruption of IEDs, improvised WMD dispersal devices, and operations at an incident at improvised explosives laboratories shall select the PPE required to support such operations at hazardous materials/WMD incidents based on the *National Guidelines for Bomb Technicians* adopted by the National Bomb Squad Commanders Advisory Board (NBSCAB) (see Section 6.2).

6.10.4 Competencies — Implementing the Planned Response.

▲ 6.10.4.1 Given scenarios of an incident involving a potential IED or improvised WMD dispersal device, the operations level responder assigned to perform disablement/disruption of IEDs, improvised WMD dispersal devices, and operations at an improvised explosives laboratory shall be able to complete the following tasks:

- (1) Using detection and monitoring devices provided by the AHJ, demonstrate the field test and operation of each device and interpret the readings based on local or agency procedures
- (2) Perform diagnostics based on procedures instructed by a nationally accredited hazardous devices school or program
- (3) Perform disablement/disruption techniques in accordance with the FBI Hazardous Devices School "logic tree," the NBSCAB "A Model for Bomb Squad Standard Operating Procedures," established protocol for military units, or established protocol of the AHJ
- (4) Assist in planning the air monitoring and sampling operations within the capabilities and competencies of available personnel, PPE, and response equipment and, in accordance with the AHJ, describe the air monitoring and sampling options available
- (5) Given the air monitoring and sampling equipment provided by the AHJ, shall complete the following:
 - (a) Select the detection or monitoring equipment suitable for detecting or monitoring of the IED or improvised WMD dispersal device
 - (b) Describe the operation, capabilities, limitations, local monitoring procedures, field-testing, and maintenance procedures associated with each device provided by the AHJ
 - (c) Describe local procedures for decontamination of the detection and monitoring devices upon completion of the mission

▲ 6.10.4.2 Given a simulated improvised explosives laboratory incident, the operations level responder assigned to perform disablement/disruption of IEDs, improvised WMD dispersal devices, and operations shall be able to perform the following tasks:

- (1) Describe the safe and effective methods for law enforcement to secure the scene
- (2) Demonstrate methods to identify and avoid safety hazards at improvised explosives laboratories such as booby traps, releases of hazardous materials, and initiating components
- (3) Using detection and monitoring devices provided by the AHJ, demonstrate the field test and operation of each device and interpret the readings based on local or agency procedures
- (4) Describe the methods that could be utilized to mitigate the hazards identified

6.10.4.3 The operations level responder assigned to perform disablement/disruption of IEDs, improvised WMD dispersal devices, and operations at improvised explosives laboratories shall demonstrate the ability to wear an appropriate combination of chemical protective clothing, respiratory protection, and ballistic protection for the hazards identified in 6.10.2.1 and 6.10.2.2.

6.10.4.4 The operations level responder assigned to perform disablement/disruption of IEDs, improvised WMD dispersal devices, and operations at improvised explosives laboratories shall describe the local procedures for the technical decontamination process.

6.10.5 Competencies — Evaluating Progress. (Reserved)

6.10.6 Competencies — Terminating the Incident. (Reserved)

N 6.11 Diving in Contaminated Water Environments.

N 6.11.1 General.

N 6.11.1.1 Introduction.

N 6.11.1.1.1 The operations level responder assigned to perform diving in contaminated water environments shall be that person, competent at the operations level, who is assigned to perform either dive or dive surface support operations in water suspected to be contaminated with hazardous materials during emergency response operations, defined as “no notice” dive operations for the purposes of immediate protection of lives or property.

N 6.11.1.1.2 The operations level responder assigned to perform contaminated water diving during emergency response operations shall possess current certification per the policies of the AHJ to perform diving operations, to include the use of self-contained underwater breathing apparatus (SCUBA) (which could include rebreather diving apparatus), and/or surface supplied diving apparatus.

N 6.11.1.1.3 The operations level responder assigned to perform contaminated water surface support operations during emergency response shall be certified per the policies of the AHJ to perform all surface support operations tasks assigned by the AHJ such as dive tender, air console operator, dive supervisor, or other related task.

N 6.11.1.1.4 The operations level responder assigned to perform contaminated water diving or dive surface support operations during emergency response shall be trained to meet all competencies at the awareness level (*see Chapter 4*), all competencies at the operations level (*see Chapter 5*), all mission-specific competencies for personal protective equipment (*see Section 6.2*), and all competencies in this section.

N 6.11.1.1.5 The operations level responder assigned to perform contaminated water diving or dive surface support operations during emergency response shall operate under the guidance of a hazardous materials technician, allied professional, or standard operating procedures.

N 6.11.1.1.6 The operations level responder assigned to perform contaminated water diving or dive surface support operations during emergency response shall receive the additional training necessary to meet the specific needs of the jurisdiction and/or agency.

N 6.11.1.2 Goal.

N 6.11.1.2.1 The goal of the competencies in this section shall be to provide the operations level responder assigned to perform contaminated water diving or dive surface support operations with the knowledge and skills to perform the tasks in 6.11.1.2.2 in a safe and effective manner.

N 6.11.1.2.2 When responding to emergency incidents involving water potentially contaminated with hazardous materials, the operations level responder assigned to perform contaminated water diving or dive surface support operations during emergency response shall be able to perform the following tasks:

- (1) Analyze an emergency incident involving water potentially contaminated with hazardous materials to determine the complexity of the problem and potential outcomes by completing the following tasks:
 - (a) Determine if hazardous materials are present
 - (b) Categorize the hazards to the dive responder by performance of a hazard risk assessment
- (2) Plan a response for an emergency incident where there is a potential to dive in water contaminated with hazardous materials within the capabilities and competencies of available personnel, PPE, and control equipment by completing the following tasks:
 - (a) Determine if response options can be employed effectively to conduct a safe diving operation
 - (b) Describe the actions to be taken and the resources to be requested if the incident exceeds the available capabilities
- (3) Implement the planned response to a contaminated water diving operation by completing the following tasks under the guidance of a hazardous materials technician, allied professional, or standard operating procedures:
 - (a) Employ diving operations in accordance with the policies of the AHJ
- (4) Evaluate the response to a contaminated water diving operation by completing the following tasks:
 - (a) Determine the effectiveness of protective equipment and efficiency of decontamination
- (5) Terminate the response to a contaminated water diving operation by completing the following tasks:
 - (a) Document the incident and determine the levels of contamination on diving equipment

N 6.11.2 Competencies — Analyzing the Incident.

N 6.11.2.1 Performing a Pre-Dive Assessment of the Dive Location. Given a dive location, the operations level responder assigned to perform contaminated water diving or dive surface support operations during emergency response shall perform a risk assessment to determine the presence of hazards to divers and dive surface support personnel by completing the following:

- (1) Given examples of potential hazards at planned dive locations, describe the hazards that might be associated with each situation:
 - (a) Hazards associated with dive locations documented in available reference materials such as, but not limited to, Emergency Planning and Community Right-to-Know Act (EPCRA) Tier II reporting, Combined Sewer Overflow reports, state environmental reports, fish advisories, and identified

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, aka Superfund) reporting

- (b) Historical releases of hazardous materials near or upstream from the dive location
- (c) Knowledge of hazardous materials containers or vessels near or upstream from the dive location

N 6.11.2.2 Determining If the Incident Involves Potential Contamination of the Water. Given examples of hazardous materials/WMD incidents involving the potential contamination of water, the operations level responder assigned to perform contaminated water diving or dive surface support operations during emergency response shall identify and/or categorize the hazard by completing the following:

- (1) Given examples of the following hazardous materials/WMD incidents involving potentially contaminated water, describe the hazards that might be encountered from the incident associated with each situation:
 - (a) Chemicals floating on the surface of the water
 - (b) Chemicals stratified in the water column or infiltrated in bottom sediment
 - (c) Pathogenic biological materials in the water
 - (d) Radiological particulates or radioactive sources in the water
 - (e) Hazmat containers floating on the surface of the water
 - (f) Hazmat containers below the surface of the water

N 6.11.2.3 Determining the Risk from Hazards at the Dive Location. Given examples of hazardous materials/WMD at the dive location, the operations level responder assigned to perform contaminated water diving or dive surface support operations during emergency response shall identify the potential risk to divers and dive surface support personnel by completing the following requirements:

- (1) Given examples of hazardous materials/WMD identified at the dive location, describe the hazards to divers and dive surface support personnel and the operational considerations associated with each hazard:
 - (a) Flammable or combustible materials
 - (b) Flammable solid/dangerous when wet materials
 - (c) Organic peroxides and oxidizers
 - (d) Poisons and toxins
 - (e) Radioactive materials
 - (f) Pathogenic biologic materials
 - (g) Corrosive materials
- (2) Given examples of hazardous materials/WMD containers identified at the dive location, describe the secondary hazards, including mechanical hazards, to divers and dive surface support personnel and the operational considerations associated with each hazard:
 - (a) Drums, cargo tanks, or other low-pressure containers floating on the surface
 - (b) Drums, cargo tanks, or other low-pressure containers resting on the bottom
 - (c) Compressed gas cylinders, containers, cargo tanks, or other pressure vessels floating on the surface
 - (d) Compressed gas cylinders, containers, cargo tanks, or other pressure vessels resting on the bottom

N 6.11.3 Competencies — Planning the Response.

N 6.11.3.1 Identifying Unique Aspects of Dive Related Hazardous Materials/WMD Incidents. When responding to hazardous materials/WMD incidents, the operations level responder assigned to perform contaminated water diving or dive surface support operations during emergency response shall be capable of identifying the unique aspects associated with such incidents by completing the following requirements:

- (1) Given an incident involving contaminated water diving emergency response operations, perform the following:
 - (a) Describe the safety procedures and guidelines required by the AHJ for this type of incident
 - (b) Describe the factors to be evaluated in selecting the personal protective equipment for surface support personnel
 - (c) Describe the factors to be evaluated in selecting dive suit types
 - (d) Describe the factors to be evaluated in selecting dive suit materials
 - (e) Describe the factors to be evaluated in selecting diver breathing air supply systems
 - (f) Describe the factors to be evaluated in selecting the detection and monitoring used by surface support personnel
 - (g) Describe the factors to be evaluated in selecting decontamination procedures and solutions
 - (h) Describe the factors to be evaluated by medical personnel in support of contaminated dive operations
 - (i) Describe the procedures for evaluating the diver's readiness to dive as required by the AHJ
 - (j) Describe techniques for contamination avoidance, including buoyancy techniques when applicable
 - (k) Describe the factors to be evaluated in selecting water quality sampling equipment in support of the operation, as required by the AHJ
 - (l) Describe the factors to be evaluated in selecting sediment sampling equipment in support of the operation, as required by the AHJ
- (2) Given an incident involving a contaminated water diving emergency response operation, perform the following support functions:
 - (a) Describe the application, use, and limitations of various types of detection and monitoring equipment utilized by the AHJ to include:
 - (i) Combustible gas indicators
 - (ii) Oxygen monitors
 - (iii) Toxic gas detectors
 - (iv) pH indicators
 - (v) Radiation monitors
 - (vi) Volatile organic compound (VOC) detectors
 - (b) Describe the field test and operation of each detection device provided by the AHJ, and interpret the readings based on local procedures
 - (c) Describe AHJ procedures for decontamination of personnel and equipment upon completion of dive operations
 - (d) Describe the AHJ procedure for identifying and obtaining the appropriate emergency response elements to support dive and dive surface support operations

N 6.11.3.2 Identifying Potential Response Options.

N 6.11.3.2.1 Given scenarios involving a potential contaminated water dive emergency response operation, the operations level responder assigned to contaminated water diving or dive surface support operations shall identify possible response options.

N 6.11.3.2.2 Given PPE provided by the AHJ, the operations level responder assigned to perform contaminated water diving or dive surface support operations during emergency response shall select the PPE required to perform operations during contaminated water diving and dive surface support operations.

N 6.11.4 Competencies — Implementing the Planned Response.

N 6.11.4.1 Given scenarios involving a contaminated water dive operation, the operations level responder assigned to contaminated water diving or dive surface support operations during emergency response shall be able to complete the following tasks:

- (1) Using the detection and monitoring devices provided by the AHJ for use during surface operations, demonstrate the field test and operation of each device and interpret the readings based on AHJ procedures
- (2) Demonstrate the establishment of the technical decontamination corridor in anticipation of diver egress from contaminated water in accordance with AHJ procedures
- (3) Demonstrate the ability to collect dive site water quality samples for analysis post-dive, to assist with the evaluation of dive equipment contamination as required by the AHJ

N 6.11.4.2 Given scenarios involving a contaminated water dive operation, the operations level responder certified by the AHJ to perform contaminated water diving during emergency response shall be able to complete the following tasks:

- (1) Demonstrate the ability to use diving dry suits provided by the AHJ
- (2) Demonstrate the ability to use full facemask regulators provided by the AHJ
- (3) Demonstrate the ability to use diving helmets provided by the AHJ
- (4) Demonstrate the ability to relay pertinent hazard identification information from submerged containers or vessels as possible, given visibility conditions

N 6.11.4.3 The operations level responder assigned to perform contaminated water surface support operations during emergency response shall demonstrate the ability to wear an appropriate combination of chemical protective clothing, respiratory protection, and personal flotation devices for the hazards identified in 6.11.2.2 and 6.11.2.3.

N 6.11.4.4 The operations level responder assigned to perform contaminated water surface support operations during emergency response shall demonstrate the AHJ procedures for technical decontamination.

N 6.11.5 Competencies — Evaluating Progress.

N 6.11.5.1 Given scenarios involving a contaminated water dive operation, the operations level responder assigned to contaminated water diving or dive surface support operations during emergency response shall be able to complete the following tasks:

- (1) Evaluate the effectiveness of diver protective clothing

- (2) Evaluate the effectiveness of the technical decontamination process

N 6.11.6 Competencies — Terminating the Incident.

N 6.11.6.1 Given scenarios involving a contaminated water dive operation, the operations level responder assigned to contaminated water diving or dive surface support operations during emergency response shall be able to complete the following tasks:

- (1) Describe the AHJ procedures for returning potentially contaminated dive equipment to service
- (2) Describe the AHJ procedures for evaluating water and sediment quality samples post-dive for potential contaminants, exposure analysis, and evaluation of dive equipment for contamination
- (3) Describe the AHJ procedures for evaluating sediment samples for contamination
- (4) Describe the AHJ procedures for documenting dive site activities

N 6.12 Mission-Specific Competencies — Evidence Collection.**N 6.12.1 General.****N 6.12.1.1 Introduction.**

N 6.12.1.1.1 The operations level responder assigned to perform evidence collection at hazardous materials/WMD incidents shall be that person, competent at the operations level, who is assigned by the AHJ to collect evidence at hazardous materials/WMD incidents involving potential violations of criminal statutes or governmental regulations.

N 6.12.1.1.2 The operations level responder assigned to perform evidence collection at hazardous materials/WMD incidents shall possess the authority to collect evidence, as delegated by the AHJ, in accordance with governmental regulations.

N 6.12.1.1.3 The operations level responder assigned to perform evidence collection at hazardous materials/WMD incidents shall be trained to meet all competencies at the awareness level (*see Chapter 4*), all competencies at the operations level (*see Chapter 5*), all mission-specific competencies for PPE (*see Section 6.2*), and all competencies in this section.

N 6.12.1.1.4 The operations level responder assigned to perform evidence collection at hazardous materials/WMD incidents shall operate under the guidance of a hazardous materials technician, an allied professional, or standard operating procedures.

N 6.12.1.1.5 The operations level responder assigned to perform evidence collection at hazardous materials/WMD incidents shall receive the additional training necessary to meet specific needs of the jurisdiction.

N 6.12.1.2 Goal.

N 6.12.1.2.1 The goal of the competencies in this section shall be to provide the operations level responder assigned to perform evidence collection at hazardous materials/WMD incidents with the knowledge and skills to perform the following tasks in a safe and effective manner:

- (1) Determine if the incident has a potential for being criminal in nature, and identify the agency that has investigative jurisdiction
- (2) Identify unique aspects of criminal hazardous materials/WMD incidents