

NFPA® 472

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

2013 Edition



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NFPA® 472

Standard for

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

2013 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 May 29, 2012, with an effective date of June 18, 2012, and supersedes all previous editions.

This edition of NFPA 472 was approved as an American National Standard on June 18, 2012.

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 Council directed that a proposed scope and start-up roster for the new Committee 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 have 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 E 54 Committee on Homeland Security Applications — Emergency Preparedness, Training, and Procedures; the Inter-agency 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 Responders 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 views 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 is tasked to respond to the scene of a hazardous materials/WMD incident during the emergency phase, that individual is viewed as an operations level responder. This level includes 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 are required of all emergency responders at this level. This chapter is 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 are optional and are provided so that the authority having jurisdiction (AHJ) can match the expected tasks and duties of its personnel with the competencies required to perform those tasks. Mission-specific competencies are available for operations level responders who are 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 are 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 can now 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 gives 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 are 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 are for responders already trained to the hazardous materials technician level and was 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 are for responders who are 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 Technician with a Radioactive Materials Specialty

In Memoriam and Honor

The Technical Committee would like to dedicate NFPA 472, *Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents*, 2013 edition, to three of our long-time committee members and friends.

John Eversole was an early member of the NFPA Technical Committee on Hazardous Materials Response Personnel and served for 20 years, including nine years as Committee Chairman. Chief Eversole was a 32 year veteran of the Chicago Fire Department and founded that department's Hazardous Materials Incident Team. John retired from active duty in 2001 but continued to serve as the Chairman of both the NFPA and the IAFC Hazardous Materials Committees, as well as a member of the Inter-Agency Board (IAB) until his passing in 2007. John Eversole was a tireless advocate for the fire service and hazardous materials responders and will be truly missed.

Jerry Grey was an original member of the Technical Committee, representing the San Francisco, CA, Fire Department. Jerry served for many years as the Vice Chairman, and is well-known throughout the U.S. for his training and educational efforts in the “early days” of hazmat response. Among his accomplishments were his work with Bob Turkington on The HazCat Kit, and with Chief Hank Howard for sharing their experiences at a 1983 Benicia, CA, tank car incident that ultimately resulted in the development of the NFPA chemical protective clothing standards (NFPA 1991 and 1992). Jerry is now retired and enjoying the good life with his wife, Veronica.

Dieter Heinz was another Californian who joined the Committee in 1987 and was well-known throughout the hazmat response community for his excellent Chemistry of Hazardous Materials programs at the National Fire Academy and other locations. A long-time representative of the California State Firefighters Association, Dieter unexpectedly passed away in 2011. We will long remember his laugh, the “Dieterisms,” and his contributions to our profession.

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

Changes other than editorial are indicated by a vertical rule beside the paragraph, table, or figure in which the change occurred. These rules are included as an aid to the user in identifying changes from the previous edition. Where one or more complete paragraphs have been deleted, the deletion is indicated by a bullet (•) between the paragraphs that remain.

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 materials 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.

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 704, *Standard System for the Identification of the Hazards of Materials for Emergency Response*, 2012 edition.

2.3 Other Publications.

2.3.1 U.S. Government Publications. U.S. Government Printing Office, Superintendent of Documents, Washington, DC 20402.

Emergency Response Guidebook, U.S. Department of Transportation, 2004 edition.

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

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

Title 46, Code of Federal Regulations, Office of Federal Register, National Archives and Records Administration, Washington DC 2011.

Hazardous Waste Operations and Emergency Response, 29 CFR 1910, 120, Washington, D.C.: United States Department of Labor, 1994.

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

2.3.2 Other Publications.

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

2.4 References for Extracts in Mandatory Sections. (Reserved)

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 equipment, 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. A document, the main text of which contains only mandatory provisions using the word “shall” to indicate requirements and which 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 *Manual of Style for NFPA Technical Committee Documents*.

3.3 General Definitions.

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

3.3.2 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.

3.3.3 Area of Specialization.

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

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

3.3.4 Awareness Level Personnel. (29 CFR 1910.120: First Responder at the Awareness Level) 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/weapons of mass destruction (WMD), protect themselves, call for trained personnel, and secure the scene. (See Annex E.)

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

3.3.6 CHEMTREC. The Chemical Transportation Emergency Response Center, 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.

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

3.3.8* 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.

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

3.3.10 Container. A receptacle used for storing or transporting material of any kind.

3.3.11 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).

3.3.12 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.

3.3.13 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.

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

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

3.3.15* 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.

3.3.15.1 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.

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

3.3.15.3 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.

3.3.15.4* 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.

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

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

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

3.3.17.2* Gross Decontamination. The phase of the decontamination process during which the amount of surface contaminants is significantly reduced.

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

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

3.3.18 Degradation. (1) A chemical action involving the molecular breakdown of a protective clothing material or equipment due to contact with a chemical. (2) The molecular breakdown of the spilled or released material to render it less hazardous during control operations.

3.3.19* Demonstrate. To show by actual performance.

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

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.

3.3.22 Emergency Response Guidebook (ERG). A reference book, written in plain language, to guide emergency responders in their initial actions at the incident scene.

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.

3.3.25 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).

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

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

3.3.28 Hazard/Hazardous. Capable of posing an unreasonable risk to health, safety, or the environment; capable of causing harm.

3.3.29* Hazardous Material. A substance (either 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.

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

3.3.31* Hazardous Materials Officer. (NIMS: Hazardous Materials Branch Director/Group Supervisor.) 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.

3.3.32* 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.

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

3.3.34* Hazardous Materials Technician. 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/weapons of mass destruction (WMD), select applicable decontamination procedures, and control a release using specialized protective clothing and control equipment.

3.3.34.1* Hazardous Materials Technician with a Cargo Tank Specialty. 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.

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

3.3.34.3 Hazardous Materials Technician with a Flammable Liquids Bulk Storage Specialty. 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.

3.3.34.4* Hazardous Materials Technician with an Intermodal Tank Specialty. 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.

3.3.34.5 Hazardous Materials Technician with a Marine Tank and Non-Tank Vessel Specialty. 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.



3.3.34.6 Hazardous Materials Technician with a Radioactive Material Specialty. 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.

3.3.34.7* Hazardous Materials Technician with a Tank Car Specialty. 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.

3.3.35 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.

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

3.3.37* 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.

3.3.38 Incident Command System (ICS). A management system designed to enable effective and efficient on-scene incident management by integrating a combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure.

3.3.39* Incident Management System (IMS). A plan 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, multi-agency coordination system, training, and management of resources.

3.3.40 Match. To provide with a counterpart.

3.3.41* Material Safety Data Sheet (MSDS). A form, provided by manufacturers and compounders (blenders) of chemicals, containing information about chemical composition, physical and chemical properties, health and safety hazards, emergency response, and waste disposal of the material.

3.3.42 Monitoring Equipment. Instruments and devices used to identify and quantify contaminants.

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

3.3.44* Packaging. Any container that holds a material (hazardous or nonhazardous).

3.3.44.1* Bulk Packaging. Any packaging, 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).

3.3.44.2 Nonbulk Packaging. Any packaging 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.

3.3.44.3* Radioactive Materials Packaging. Any packaging for radioactive materials including excepted packaging, industrial packaging, Type A, Type B, and Type C packaging.

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 equipment provided to shield or isolate a person from the chemical, physical, and thermal hazards that can be encountered at hazardous materials/weapons of mass destruction (WMD) incidents.

3.3.48 Plan.

3.3.48.1* Emergency Response Plan. A plan developed by the authority having jurisdiction, with the cooperation of all participating agencies and organizations, that details specific actions to be performed by all personnel who are expected to respond during an emergency.

3.3.48.2* Incident Action Plan. An oral or written plan approved by the incident commander containing general objectives reflecting the overall strategy for managing an incident.

3.3.48.3 Site Safety and Control Plan. A site safety and control plan should be completed and approved by the hazardous materials officer, the hazardous materials safety officer, and the incident commander for inclusion in the incident action plan. The plan must be briefed to personnel operating within the hot zone by the hazardous materials safety officer or the hazardous materials officer prior to entry mission initiation. The initial site safety and control plan for the first operational period can be written or oral. The plan should be documented as soon as resources allow.

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 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 heat and/or from hazardous materials, or from the hazardous component of a weapon of mass destruction contacting the skin or eyes.

3.3.51.1* Chemical-Protective Clothing. Items made from chemical-resistive materials, such as clothing, hood, boots, and gloves, that are designed and configured to protect the wearer's torso, head, arms, legs, hands, and feet from hazardous materials.

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

3.3.51.3* Liquid Splash-Protective Clothing. The garment portion of a chemical-protective clothing ensemble that is designed and configured to protect the wearer against chemical liquid splashes but not against chemical vapors or gases.

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.

3.3.51.5* Vapor-Protective Clothing. The garment portion of a chemical-protective clothing ensemble that is designed and configured to protect the wearer against chemical vapors or gases.

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

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

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

3.3.55 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.

3.3.56 Safely. To perform the assigned tasks without injury to self or others, to the environment, or to property.

3.3.57 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.

3.3.58 SETIQ. The Emergency Transportation System for the Chemical Industry in Mexico.

3.3.59 Specialist Employees.

3.3.59.1* 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.

3.3.59.2* 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.

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

3.3.60 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.

3.3.61* 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.

3.3.62* 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.

3.3.63* 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 involv-

ing a disease organism; or (4) any weapon that is designed to release radiation or radioactivity at a level dangerous to human life.

3.3.63.1* Radiological Weapons of Mass Destruction.

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

3.3.63.1.2* Radiation Dispersal Device (RDD). A device designed to spread radioactive material through a detonation of conventional explosives or other (non-nuclear) means; also referred to as a "dirty bomb."

3.3.63.1.3* Radiation Exposure Device (RED). Radioactive material, either as a sealed source or as material within some type of container, or a radiation-generating device, such as an x-ray device, that directly exposes people to ionizing radiation; the term is interchangeable with the term *radiological exposure device* or *radiation emitting device*.

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 Core Competencies. The knowledge, skills, and judgment needed by operations level responders who respond to releases or potential releases of hazardous materials/weapons of mass destruction (WMD).

3.4.3 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.

3.4.4* 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.

3.4.5 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.

3.4.6 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.

3.4.7 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.



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

3.4.9 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.

3.4.10 Operations Level Responders Assigned to Perform Technical Decontamination During Hazardous Materials/Weapons of Mass Destruction (WMD) Incidents. Persons, competent at the operations level, who are assigned to implement technical decontamination operations at hazardous materials/weapons of mass destruction (WMD) incidents.

3.4.11 Operations Level Responders Assigned to Perform Victim Rescue/Recovery During Hazardous Materials/Weapons of Mass Destruction (WMD) Incidents. 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.

3.4.12 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.

3.4.13 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.

3.4.14 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.

3.4.15 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.

3.4.16 Operations Level Responders Assigned to Use Personal Protective Equipment During Hazardous Materials/Weapons of Mass Destruction (WMD) Incidents. Persons, competent at the operations level, who are assigned to use personal protective equipment at hazardous materials/weapons of mass destruction (WMD) incidents.

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 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 already on the scene of a hazardous materials/WMD incident with the knowledge and skills to perform the tasks in 4.1.2.2 safely and effectively.

4.1.2.2 When already on the scene of a hazardous materials/WMD incident, the awareness level personnel shall be able to perform the following tasks:

- (1) Analyze the incident to determine both the hazardous materials/WMD present and the basic hazard and response information for each hazardous materials/WMD agent by completing the following tasks:
 - (a) Detect the presence of hazardous materials/WMD.
 - (b) Survey a hazardous materials/WMD incident from a safe location to identify the name, UN/NA identification number, type of placard, or other distinctive marking applied for the hazardous materials/WMD involved.
 - (c) Collect hazard information from the current edition of the DOT *Emergency Response Guidebook*.
- (2) Implement actions consistent with the authority having jurisdiction (AHJ), and the current edition of the DOT *Emergency Response Guidebook* by completing the following tasks:
 - (a) Initiate protective actions
 - (b) Initiate the notification process

4.2 Competencies — Analyzing the Incident.

4.2.1* Detecting the Presence of Hazardous Materials/WMD.

Given examples of various situations, awareness level personnel shall identify those situations where hazardous materials/WMD are present by completing the following requirements:

- (1)*Identify the definitions of both *hazardous material* (or *dangerous goods*, in Canada) and WMD
 - (2) Identify the UN/DOT 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 UN/DOT hazard class and division
 - (4) Identify the difference 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, *Standard System for the Identification of the Hazards of Materials for Emergency Response*, 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 U.S. and Canadian placards and labels that indicate hazardous materials/WMD
 - (10) Identify the following basic information on material safety data sheets (MSDS) and shipping papers for hazardous materials:
 - (a) Identify where to find MSDS
 - (b) Identify major sections of an MSDS
 - (c) Identify the entries on shipping papers that indicate the presence of hazardous materials
 - (d) Match the name of the shipping papers found in transportation (air, highway, rail, and water) with the mode of transportation
 - (e) Identify the person responsible for having the shipping papers in each mode of transportation
 - (f) Identify where the shipping papers are found in each mode of transportation
 - (g) Identify where the papers can be found in an emergency in each mode of transportation
 - (11)*Identify examples of clues (other than occupancy/location, container shape, markings/color, placards/labels, MSDS, and shipping papers) to include sight, sound, and odor of which indicate hazardous materials/WMD
 - (12) Describe the limitations of using the senses in determining the presence or absence of hazardous materials/WMD
 - (13)*Identify at least four types of locations that could be targets for criminal or terrorist activity using hazardous materials/WMD
 - (14)*Describe the difference between a chemical and a biological incident
 - (15)*Identify at least four indicators of possible criminal or terrorist activity involving chemical agents
 - (16)*Identify at least four indicators of possible criminal or terrorist activity involving biological agents
 - (17) Identify at least four indicators of possible criminal or terrorist activity involving radiological agents
 - (18) Identify at least four indicators of possible criminal or terrorist activity involving illicit laboratories (clandestine laboratories, weapons lab, ricin lab)
 - (19) Identify at least four indicators of possible criminal or terrorist activity involving explosives
 - (20)*Identify at least four indicators of secondary devices
- 4.2.2 Surveying Hazardous Materials/WMD Incidents.** Given examples of hazardous materials/WMD incidents, 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 fire, explosion, and health hazard information for each material by using the current edition of the DOT *Emergency Response Guidebook* 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.**
- 4.4.1* Initiating Protective Actions.** Given examples of hazardous materials/WMD incidents, the emergency response plan, the standard operating procedures, and the current edition of the DOT *Emergency Response Guidebook*, awareness level personnel shall be able to identify the actions to be taken to protect themselves and others and to control access to the scene 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 necessary
 - (c) Initial isolation and protective action distances
- (5) Given the name of a hazardous material, identify the recommended personal protective equipment from the following list:
 - (a) Street clothing and work uniforms
 - (b) Structural fire-fighting protective clothing
 - (c) Positive pressure self-contained breathing apparatus
 - (d) Chemical-protective clothing and equipment
- (6) 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
- (7) Identify the size and shape of recommended initial isolation and protective action zones
- (8) Describe the difference between small and large spills as found in the Table of Initial Isolation and Protective Action Distances in the DOT *Emergency Response Guidebook*
- (9) 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
- (10) Describe the difference between the isolation distances on the orange-bordered guidebook pages and the protective action distances on the green-bordered ERG (*Emergency Response Guidebook*) pages
- (11) Identify the techniques used to isolate the hazard area and deny entry to unauthorized persons at hazardous materials/WMD incidents
- (12)*Identify at least four specific actions necessary when an incident is suspected to involve criminal or terrorist activity

4.4.2 Initiating the Notification Process. Given scenarios involving hazardous materials/WMD incidents, awareness level personnel shall identify the initial notifications to be made and how to make them, consistent with the AHJ.

4.5* Competencies — Evaluating Progress. (Reserved)

4.6* Competencies — Terminating the Incident. (Reserved)

Chapter 5 Core 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 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.

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 core competencies in 5.1.2.2 safely.

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

- (1) Analyze a hazardous materials/WMD incident to determine the scope of the problem and potential outcomes by completing the following tasks:
 - (a) Survey a hazardous materials/WMD incident to identify the containers and materials involved, determine whether hazardous materials/WMD have been released, and evaluate the surrounding conditions
 - (b) Collect hazard and response information from MSDS; CHEMTREC/CANUTEC/SETIQ; local, state, and federal authorities; and shipper/manufacturer contacts
 - (c) Predict the likely behavior of a hazardous material/WMD and its container
 - (d) Estimate the potential 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 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 personal protective equipment provided is appropriate 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 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) Demonstrate emergency decontamination
- (4) Evaluate the progress of the actions taken at a hazardous materials/WMD incident to ensure that the response objectives are being met safely, effectively, and efficiently 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 Core Competencies — Analyzing the Incident.

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, the surrounding conditions, and whether hazardous materials/WMD have been released by completing the requirements of 5.2.1.1 through 5.2.1.6.

5.2.1.1* Given three examples each of liquid, gas, and solid hazardous material or WMD, including various hazard classes, operations level personnel shall identify the general shapes of containers in which the hazardous materials/WMD are typically found.

5.2.1.1.1 Given examples of the following tank cars, the operations level responder shall identify each tank car by type, as follows:

- (1) Cryogenic liquid tank cars
- (2) Nonpressure tank cars (general service or low pressure cars)
- (3) Pressure tank cars

5.2.1.1.2 Given examples of the following intermodal tanks, the operations level responder shall identify each intermodal tank by type, as follows:

- (1) Nonpressure intermodal tanks
- (2) Pressure intermodal tanks
- (3) Specialized intermodal tanks, including the following:
 - (a) Cryogenic intermodal tanks
 - (b) Tube modules

5.2.1.1.3 Given examples of the following cargo tanks, the operations level responder shall identify each cargo tank by type, as follows:

- (1) Compressed gas tube trailers
- (2) Corrosive liquid tanks
- (3) Cryogenic liquid tanks
- (4) Dry bulk cargo tanks
- (5) High pressure tanks
- (6) Low pressure chemical tanks
- (7) Nonpressure liquid tanks

5.2.1.1.4 Given examples of the following storage tanks, the operations level responder shall identify each tank by type, as follows:

- (1) Cryogenic liquid tank
- (2) Nonpressure tank
- (3) Pressure tank

5.2.1.1.5 Given examples of the following nonbulk packaging, the operations level responder shall identify each package by type, as follows:

- (1) Bags
- (2) Carboys
- (3) Cylinders
- (4) Drums
- (5) Dewar flask (cryogenic liquids)

5.2.1.1.6 Given examples of the following packaging, the operations level responder shall identify the characteristics of each container or package by type as follows:

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

5.2.1.1.7* Given examples of the following radioactive material packages, the operations level responder shall identify the characteristics of each container or package by type, as follows:

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

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 the following vehicle or tank identification marking:

- (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 containers, 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 The operations level responder shall identify the following information on a pipeline marker:

- (1) Emergency telephone number
- (2) Owner
- (3) Product

5.2.1.3.2 Given a pesticide label, the operations level responder shall identify each of the following pieces of information, then match the piece of information to its significance in surveying hazardous materials incidents:

- (1) Active ingredient
- (2) Hazard statement
- (3) Name of pesticide
- (4) Pest control product (PCP) number (in Canada)
- (5) Precautionary statement
- (6) Signal word

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.

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

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.

5.2.2 Collecting Hazard and Response Information. Given scenarios involving known hazardous materials/WMD, the operations level responder shall collect hazard and response in-



formation using MSDS, CHEMTREC/CANUTEC/SETIQ, governmental authorities, and shippers and manufacturers by completing the following requirements:

- (1) Match the definitions associated with the UN/DOT hazard classes and divisions of hazardous materials/WMD, including refrigerated liquefied gases and cryogenic liquids, with the class or division
- (2) Identify two ways to obtain an MSDS in an emergency
- (3) Using an MSDS for a specified material, identify the following hazard and response information:
 - (a) Physical and chemical characteristics
 - (b) Physical hazards of the material
 - (c) Health hazards of the material
 - (d) Signs and symptoms of exposure
 - (e) Routes of entry
 - (f) Permissible exposure limits
 - (g) Responsible party contact
 - (h) Precautions for safe handling (including hygiene practices, protective measures, and procedures for cleanup of spills and leaks)
 - (i) Applicable control measures, including personal protective equipment
 - (j) Emergency and first-aid procedures
- (4) Identify the following:
 - (a) Type of assistance provided by CHEMTREC/CANUTEC/SETIQ and governmental authorities
 - (b) Procedure for contacting CHEMTREC/CANUTEC/SETIQ and governmental authorities
 - (c) Information to be furnished to CHEMTREC/CANUTEC/SETIQ and governmental authorities
- (5) Identify two methods of contacting the manufacturer or shipper 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
- (7) Identify the procedure for contacting local, state, and federal authorities as specified in the emergency response plan and/or standard operating procedures
- (8)*Describe the properties and characteristics of the following:
 - (a) Alpha radiation
 - (b) Beta radiation
 - (c) Gamma radiation
 - (d) Neutron radiation

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 DOT *Emergency Response Guidebook*, MSDS, CHEMTREC/CANUTEC/SETIQ, governmental authorities, and shipper and manufacturer 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 non-ionizing)
 - xi. Specific gravity
 - xii. Toxic products of combustion
 - xiii. Vapor density
 - xiv. Vapor pressure
 - xv. Water solubility
- (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 three types of stress that can cause a container system to release its contents
- (3)*Identify five ways in which containers can breach
- (4)*Identify four ways in which containers can release their contents
- (5)*Identify at least four dispersion patterns that can be created upon release of a hazardous material
- (6)*Identify the time frames for estimating the duration that hazardous materials/WMD will present an exposure risk
- (7)*Identify the health and physical hazards that could cause harm
- (8)*Identify the health hazards associated with the following terms:
 - (a) Alpha, beta, gamma, and neutron radiation
 - (b) Asphyxiant
 - (c)*Carcinogen
 - (d) Convulsant
 - (e) Corrosive
 - (f) Highly toxic
 - (g) Irritant
 - (h) Sensitizer, allergen
 - (i) Target organ effects
 - (j) Toxic
- (9)*Given the following, identify the corresponding UN/DOT hazard class and division:
 - (a) Blood agents
 - (b) Biological agents and biological toxins
 - (c) Choking agents
 - (d) Irritants (riot control agents)
 - (e) Nerve agents
 - (f) Radiological materials
 - (g) Vesicants (blister agents)

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

5.3 Core 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
- (4)*Describe the potential for secondary attacks and devices at criminal or terrorist events

5.3.2 Identifying Action Options. Given examples of hazardous materials/WMD incidents (facility and transportation), the operations level responder shall identify the 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. 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 personal protective equipment 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. Positive pressure self-contained breathing apparatus (SCBA)
 - ii. Positive pressure air-line respirator with required escape unit
 - iii. Closed-circuit SCBA
 - iv. Powered air-purifying respirator (PAPR)
 - v. Air-purifying respirator (APR)
 - vi. Particulate respirator
 - (b) Identify the required physical capabilities and limitations of personnel working in respiratory protection

- (2) Identify the personal protective clothing required for a given 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 such as liquid splash-protective clothing and vapor-protective clothing
 - ii. High temperature-protective clothing such as proximity suit and entry suits
 - iii. Structural fire-fighting protective clothing

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

- (1) Identify ways that people, personal protective equipment, apparatus, tools, and equipment become contaminated
- (2) Describe how the potential for secondary contamination determines the need for decontamination
- (3) Explain the importance and limitations of decontamination procedures at hazardous materials incidents
- (4) Identify the purpose of emergency decontamination procedures at hazardous materials incidents
- (5) Identify the methods, advantages, and limitations of emergency decontamination procedures

5.4 Core 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)*Demonstrate the ability to perform emergency decontamination
- (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 com-



mand 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. Given the personal protective equipment provided by the AHJ, the operations level responder shall describe considerations for the use of personal protective equipment 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 personal protective equipment provided by the AHJ
- (6) Identify the procedures for cleaning, disinfecting, and inspecting personal protective equipment provided by the AHJ
- (7) Describe the maintenance, testing, inspection, and storage procedures for personal protective equipment provided by the AHJ according to the manufacturer's specifications and recommendations

5.5 Core 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 considerations for evaluating whether 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 AHJ beyond the core competencies at the operations level (*see Chapter 5*):

- (1) Operations level responders assigned to use personal protective equipment (*see Section 6.2*)
- (2) Operations level responders assigned to perform mass decontamination (*see Section 6.3*)
- (3) Operations level responders assigned to perform technical decontamination (*see Section 6.4*)
- (4) Operations level responders assigned to perform evidence preservation and sampling (*see Section 6.5*)
- (5) Operations level responders assigned to perform product control (*see Section 6.6*)
- (6) Operations level responders assigned to perform air monitoring and sampling (*see Section 6.7*)
- (7) Operations level responders assigned to perform victim rescue/recovery (*see Section 6.8*)
- (8) Operations level responders assigned to respond to illicit laboratory incidents (*see Section 6.9*)
- (9) Operational level responders assigned to perform disablement/disruption of improvised explosives devices (IED), improvised WMD dispersal devices, and operations at improvised explosive laboratories. (*see Section 6.10*)

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 core competencies at the operations level (*see Chapter 5*), and all competencies for the assigned responsibilities in the applicable section(s) 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 safely and effectively.

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.

6.2.1 General.

6.2.1.1 Introduction.

6.2.1.1.1 The operations level responder assigned to use personal protective equipment shall be that person, competent at the operations level, who is assigned to use personal protective equipment at hazardous materials/WMD incidents.

6.2.1.1.2 The operations level responder assigned to use personal protective equipment at hazardous materials/WMD incidents shall be trained to meet all competencies at the awareness level (*see Chapter 4*), all core 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 personal protective equipment at hazardous materials/WMD incidents shall operate under the guidance of a hazardous materials technician, an allied professional, or standard operating procedures.

6.2.1.1.4* The operations level responder assigned to use personal protective equipment 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 use personal protective equipment with the knowledge and skills to perform the following tasks safely and effectively:

- (1) Plan a response within the capabilities of personal protective equipment provided by the AHJ in order to perform mission-specific tasks assigned
- (2) Implement the planned response consistent with the standard operating procedures and site safety and control plan by donning, working in, and doffing personal protective equipment provided by the AHJ
- (3) Terminate the incident by completing the reports and documentation pertaining to personal protective equipment

6.2.2 Competencies — Analyzing the Incident. (Reserved)

6.2.3 Competencies — Planning the Response.

6.2.3.1 Selecting Personal Protective Equipment. Given scenarios involving hazardous materials/WMD incidents with known and unknown hazardous materials/WMD and the per-

sonal protective equipment provided by the AHJ, the operations level responder assigned to use personal protective equipment shall select the personal protective equipment required to support mission-specific tasks at hazardous materials/WMD incidents based on local procedures by completing the following requirements:

- (1)*Describe the types of personal protective equipment that are available for response based on NFPA standards and how these items relate to EPA levels of protection
- (2) Describe personal protective equipment options for the following hazards:
 - (a) Thermal
 - (b) Radiological
 - (c) Asphyxiating
 - (d) Chemical
 - (e) Etiological/biological
 - (f) Mechanical
- (3) Select personal protective equipment for mission-specific tasks at hazardous materials/WMD incidents based on local procedures
 - (a) Describe the following terms and explain their impact and significance on the selection of chemical-protective clothing:
 - i. Degradation
 - ii. Penetration
 - iii. Permeation
 - (b) Identify at least three indications of material degradation of chemical-protective clothing
 - (c) Identify the different designs of vapor-protective and splash-protective clothing and describe the advantages and disadvantages of each type
 - (d)*Identify the relative advantages and disadvantages of the following heat exchange units used for the cooling of personnel operating in personal protective equipment:
 - 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 personal protective equipment
 - (f) Describe local procedures for going through the technical decontamination process

6.2.4 Competencies — Implementing the Planned Response.

6.2.4.1 Using Protective Clothing and Respiratory Protection.

Given the personal protective equipment provided by the AHJ, the operations level responder assigned to use personal protective equipment shall demonstrate the ability to don, work in, and doff the equipment provided to support mission-specific tasks by completing the following requirements:

- (1) Describe at least three safety procedures for personnel wearing protective clothing
- (2) Describe at least three emergency procedures for personnel wearing protective clothing
- (3) Demonstrate the ability to don, work in, and doff personal protective equipment provided by the AHJ
- (4) Demonstrate local procedures for responders undergoing the technical decontamination process
- (5) Describe the maintenance, testing, inspection, storage, and documentation procedures for personal protective equipment provided by the AHJ according to the manufacturer's specifications and recommendations



6.2.5 Competencies — Terminating the Incident.

6.2.5.1 Reporting and Documenting the Incident. Given a scenario involving a hazardous materials/WMD incident, the operations level responder assigned to use personal protective equipment shall document use of the personal protective equipment by completing the documentation requirements of the emergency response plan or standard operating procedures regarding personal protective equipment.

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 to implement mass decontamination operations 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 core 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.

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, 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 perform mass decontamination at hazardous materials/WMD incidents with the knowledge and skills to perform the tasks in 6.3.1.2.2 safely and effectively.

6.3.1.2.2 When responding to hazardous materials/WMD incidents, the operations level responder assigned to perform mass decontamination shall be able to perform the following tasks:

- (1) Plan a response within the capabilities of available personnel, personal protective equipment, and control equipment by selecting a mass decontamination process to minimize the hazard
- (2) Implement the planned response to favorably change the outcomes consistent with standard operating procedures and the site safety and control plan by completing the following tasks:
 - (a) Perform the decontamination duties as assigned
 - (b) Perform the mass decontamination functions identified in the incident action plan
- (3) Evaluate the progress of the planned response by evaluating the effectiveness of the mass decontamination process
- (4) Terminate the incident by providing reports and documentation of decontamination operations

6.3.2 Competencies — Analyzing the Incident. (Reserved)

6.3.3 Competencies — Planning the Response.

6.3.3.1 Selecting Personal Protective Equipment. Given an emergency response plan or standard operating procedures and the personal protective equipment provided by the AHJ, the operations level responder assigned to mass decontamination shall select the personal protective equipment required to support mass decontamination at hazardous materials/WMD incidents based on local procedures (*see Section 6.2*).

6.3.3.2 Selecting Decontamination Procedures. Given scenarios involving hazardous materials/WMD incidents, the operations level responder assigned to mass decontamination operations shall select a mass decontamination procedure that will minimize the hazard and spread of contamination, determine the equipment required to implement that procedure, and meet the following requirements:

- (1) Identify the advantages and limitations of mass decontamination operations
- (2) Describe the advantages and limitations of each of the following mass decontamination methods:
 - (a) Dilution
 - (b) Isolation
 - (c) Washing
- (3) Identify sources of information for determining the correct mass decontamination procedure and identify how to access those resources in a hazardous materials/WMD incident
- (4) Given resources provided by the AHJ, identify the supplies and equipment required to set up and implement mass decontamination operations
- (5) Identify procedures, equipment, and safety precautions for communicating with crowds and crowd management techniques that can be used at incidents where a large number of people might be contaminated

6.3.4 Competencies — Implementing the Planned Response.

6.3.4.1 Performing Incident Management Duties. Given a scenario involving a hazardous materials/WMD incident and the emergency response plan or standard operating procedures, the operations level responder assigned to mass decontamination operations shall demonstrate the mass decontamination duties assigned in the incident action plan by describing the local procedures for the implementation of the mass decontamination function within the incident command system.

6.3.4.2 Performing Decontamination Operations Identified in Incident Action Plan. The operations level responder assigned to mass decontamination operations shall demonstrate the ability to set up and implement mass decontamination operations for ambulatory and nonambulatory victims.

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.

6.3.6.1 Reporting and Documenting the Incident. Given a scenario involving a hazardous materials/WMD incident, the operations level responder assigned to mass decontamination

operations shall document the mass decontamination activities as required by the AHJ by completing the following:

- (1) Identify the reports and supporting documentation required by the emergency response plan or standard operating procedures
- (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

6.4 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 to implement technical decontamination operations at hazardous materials/WMD incidents.

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 core 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.

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 perform technical decontamination at hazardous materials/WMD incidents with the knowledge and skills to perform the tasks in 6.4.1.2.2 safely and effectively.

6.4.1.2.2 When responding to hazardous materials/WMD incidents, the operations level responder assigned to perform technical decontamination shall be able to perform the following tasks:

- (1) Plan a response within the capabilities of available personnel, personal protective equipment, and control equipment by selecting a technical decontamination process to minimize the hazard
- (2) Implement the planned response to favorably change the outcomes consistent with standard operating procedures and the site safety and control plan by completing the following tasks:
 - (a) Perform the technical decontamination duties as assigned
 - (b) Perform the technical decontamination functions identified in the incident action plan

- (3) Evaluate the progress of the planned response by evaluating the effectiveness of the technical decontamination process
- (4) Terminate the incident by completing the reports and documentation of decontamination operations

6.4.2 Competencies — Analyzing the Incident. (Reserved)

6.4.3 Competencies — Planning the Response.

6.4.3.1 Selecting Personal Protective Equipment. Given an emergency response plan or standard operating procedures and the personal protective equipment provided by the AHJ, the operations level responder assigned to technical decontamination operations shall select the personal protective equipment required to support technical decontamination at hazardous materials/WMD incidents based on local procedures (*see Section 6.2*).

6.4.3.2 Selecting Decontamination Procedures. Given scenarios involving hazardous materials/WMD incidents, the operations level responder assigned to technical decontamination operations shall select a technical decontamination procedure that will minimize the hazard and spread of contamination and determine the equipment required to implement that procedure by completing the following requirements:

- (1) Identify the advantages and limitations of technical decontamination operations
- (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 for determining the correct technical decontamination procedure and identify how to access those resources in a hazardous materials/WMD incident
- (4) Given resources provided by the AHJ, identify the supplies and equipment required to set up and implement technical decontamination operations
- (5) Identify the procedures, equipment, and safety precautions for processing evidence during technical decontamination operations 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 Performing Incident Management Duties. Given a scenario involving a hazardous materials/WMD incident and the emergency response plan or standard operating procedures, the operations level responder assigned to technical decontamination operations shall demonstrate the technical decontamination duties assigned in the incident action plan by completing the following requirements:

- (1) Identify the role of the operations level responder assigned to technical decontamination operations during hazardous materials/WMD incidents
- (2) Describe the procedures for implementing technical decontamination operations within the incident command system

6.4.4.2 Performing Decontamination Operations Identified in Incident Action Plan. The responder assigned to technical decontamination operations shall demonstrate the ability to set up and implement the following types of decontamination operations:

- (1) Technical decontamination operations in support of entry operations
- (2) Technical decontamination operations for ambulatory and nonambulatory victims

6.4.5 Competencies — Evaluating Progress.

6.4.5.1 Evaluating the Effectiveness of the Technical Decontamination Process. Given examples of contaminated items that have undergone the required decontamination, the operations level responder assigned to technical 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.

6.4.6 Competencies — Terminating the Incident.

6.4.6.1 Reporting and Documenting the Incident. Given a scenario involving a hazardous materials/WMD incident, the operations level responder assigned to technical decontamination operations shall document the mass decontamination activities as required by the AHJ by completing the following:

- (1) Identify the reports and supporting technical documentation required by the emergency response plan or standard operating procedures
- (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

6.5 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 sampling shall be that person, competent at the operations level, who is assigned to preserve forensic evidence, take samples, and/or seize evidence at hazardous materials/WMD incidents involving potential violations of criminal statutes or governmental regulations.

6.5.1.1.2 The operations level responder assigned to perform evidence preservation and sampling at hazardous materials/WMD incidents shall be trained to meet all competencies at the awareness level (*see Chapter 4*), all core 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.

6.5.1.1.3 The operations level responder assigned to perform evidence preservation and sampling at hazardous materials/WMD incidents shall operate under the guidance of a hazard-

ous materials technician, an allied professional, or standard operating procedures.

6.5.1.1.4* The operations level responder assigned to perform evidence preservation and 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 evidence preservation and sampling at hazardous materials/WMD incidents with the knowledge and skills to perform the tasks in 6.5.1.2.2 safely and effectively.

6.5.1.2.2 When responding to hazardous materials/WMD incidents involving potential violations of criminal statutes or governmental regulations, the operations level responder assigned to perform evidence preservation and 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, personal protective equipment, and control equipment by completing the following tasks:
 - (a) Determine the response options to conduct sampling and evidence preservation operations
 - (b) Describe how the options are within the legal authorities, capabilities, and competencies of available personnel, personal protective equipment, and control 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

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 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 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 activities 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 sampling tasks
 - (d) Describe the procedure to notify the agency with investigative authority
 - (e) Describe the procedure to notify the explosive ordnance disposal (EOD) personnel
 - (f) Identify potential sample/evidence
 - (g) Identify the applicable sampling equipment
 - (h) Describe the procedures to protect samples and evidence from secondary contamination
 - (i) Describe documentation procedures
 - (j) Describe evidentiary sampling techniques
 - (k) Describe field screening protocols for collected 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 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 personal protective equipment, sampling equipment, detection devices, and sample and evidence packaging and transport containers
 - (c) Describe the sampling options associated with liquid and solid sample and evidence collection
 - (d) Describe the field screening protocols for collected samples and evidence
- (3) Given an example of an environmental crime, the operations level responder assigned to evidence preservation and 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 personal protective equipment, sampling equipment, detection devices, and sample and evidence packaging and transport containers
 - (c) Describe the sampling options associated with the collection of liquid and solid samples and evidence
 - (d) Describe the field screening protocols for collected samples and evidence
- (4) Given an example of a hazardous materials/WMD suspicious letter, the operations level responder assigned to evidence preservation and 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 personal protective equipment, sampling equipment, detection devices, and sample and evidence packaging and transport containers
 - (c) Describe the sampling options associated with the collection of liquid and solid samples and evidence
 - (d) Describe the field screening protocols for collected samples and evidence
- (5) Given an example of a hazardous materials/WMD suspicious package, the operations level responder assigned to evidence preservation and 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 personal protective equipment, sampling equipment, detection devices, and sample and evidence packaging and transport containers
 - (c) Describe the sampling options associated with liquid and solid sample/evidence collection
 - (d) Describe the field screening protocols for collected samples and evidence
- (6) Given an example of a release/attack involving a hazardous materials/WMD agent, the operations level responder assigned to evidence preservation and 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 personal protective equipment, sampling equipment, detection devices, and sample and evidence packaging and transport containers
 - (c) Describe the sampling options associated with the collection of liquid and solid samples and evidence
 - (d) Describe the field screening protocols for collected 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 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

6.5.3.2 Selecting Personal Protective Equipment. Given the personal protective equipment provided by the AHJ, the operations level responder assigned to evidence preservation and sampling shall select the personal protective equipment required to support evidence preservation and sampling at hazardous materials/WMD incidents based on local procedures (see Section 6.2).

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 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 activities associated with the incident
- (3) Determine whether responders are within their legal authority to perform evidence collection and sampling tasks
- (4) Describe the procedure to notify the agency with investigative authority
- (5) Notify the EOD personnel
- (6) Identify potential samples and evidence to be collected
- (7) Demonstrate procedures to protect samples and evidence from secondary contamination
- (8) Demonstrate correct techniques to collect samples utilizing the equipment provided
- (9) Demonstrate documentation procedures
- (10) Demonstrate sampling protocols
- (11) Demonstrate field screening protocols for 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 sampling shall describe local procedures for the technical decontamination process.

6.5.5 Competencies — Implementing the Planned Response. (Reserved)

6.5.6 Competencies — Terminating the Incident. (Reserved)

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 shall be that person, competent at the opera-

tions level, who is assigned to implement product control measures 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 core 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.

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, 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 product control at hazardous materials/WMD incidents with the knowledge and skills to perform the tasks in 6.6.1.2.2 safely and effectively.

6.6.1.2.2 When responding to hazardous materials/WMD incidents, the operations level responder assigned to perform product control shall be able to perform the following tasks:

- (1) Plan an initial response within the capabilities and competencies of available personnel, personal protective equipment, and control equipment and in accordance with the emergency response plan or standard operating procedures by completing the following tasks:
 - (a) Describe the control options available to the operations level responder
 - (b) Describe the control options available for flammable liquid and flammable gas incidents
- (2) Implement the planned response to a hazardous materials/WMD incident

6.6.2 Competencies — Analyzing the Incident. (Reserved)

6.6.3 Competencies — Planning the Response.

6.6.3.1 Identifying Control Options. Given examples of hazardous materials/WMD incidents, the operations level responder assigned to perform product control shall identify the options for each response objective by completing the following requirements as prescribed by the AHJ:

- (1) Identify the options to accomplish a given response objective
- (2) Identify the purpose for and the procedures, equipment, 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

6.6.3.2 Selecting Personal Protective Equipment. Given the personal protective equipment provided by the AHJ, the operations level responder assigned to perform product control shall select the personal protective equipment required to support product control at hazardous materials/WMD incidents based on local procedures (*see Section 6.2*).

6.6.4 Competencies — Implementing the Planned Response.

6.6.4.1 Performing Control Options. Given an incident action plan for a hazardous materials/WMD incident, within the capabilities and equipment provided by the AHJ, the operations level responder assigned to perform product control shall demonstrate control functions set out in the plan by completing the following requirements as prescribed by the AHJ:

- (1) Using the type of special purpose or hazard suppressing foams or agents and foam equipment furnished by the AHJ, demonstrate the application of the foam(s) or agent(s) on a spill or fire involving hazardous materials/WMD
- (2) 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
- (3) Given the required tools and equipment, demonstrate how to perform the following control activities:
 - (a) Absorption
 - (b) Adsorption
 - (c) Damming
 - (d) Diking
 - (e) Dilution
 - (f) Diversion
 - (g) Retention
 - (h) Remote valve shutoff
 - (i) Vapor dispersion
 - (j) Vapor suppression
- (4) Identify the location and describe the use of emergency remote shutoff devices on MC/DOT-306/406, MC/DOT-307/407, and MC-331 cargo tanks containing flammable liquids or gases
- (5) Describe the use of emergency remote shutoff devices at fixed facilities

6.6.4.2 The operations level responder assigned to perform product control shall describe local procedures for going through the technical decontamination process.

6.6.5 Competencies — Evaluating Progress. (Reserved)

6.6.6 Competencies — Terminating the Incident. (Reserved)

6.7 Mission-Specific Competencies: Air Monitoring and Sampling.

6.7.1 General.

6.7.1.1 Introduction.

6.7.1.1.1 The operations level responder assigned to perform air monitoring and sampling shall be that person, competent at the operations level, who is assigned to implement air monitoring and sampling operations at hazardous materials/WMD incidents.

6.7.1.1.2 The operations level responder assigned to perform air monitoring and sampling at hazardous materials/WMD

incidents shall be trained to meet all competencies at the awareness level (*see Chapter 4*), all core 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.

6.7.1.1.3 The operations level responder assigned to perform air monitoring and sampling at hazardous materials/WMD incidents shall operate under the guidance of a hazardous materials technician, an allied professional, 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 When responding to hazardous materials/WMD incidents, the operations level responder assigned to perform air monitoring and sampling shall be able to perform the following tasks:

- (1) Plan the air monitoring and sampling activities within the capabilities and competencies of available personnel, personal protective equipment, and control equipment and in accordance with the emergency response plan or standard operating procedures describe the air monitoring and sampling options available to the operations level responder
- (2) Implement the air monitoring and sampling activities as specified in the incident action plan

6.7.2 Competencies — Analyzing the Incident. (Reserved)

6.7.3 Competencies — Planning the Response.

6.7.3.1 Given the air monitoring and sampling equipment provided by the AHJ, the operations level responder assigned to perform air monitoring and sampling shall select the detection or monitoring equipment suitable for detecting or monitoring solid, liquid, or gaseous hazardous materials/WMD.

6.7.3.2 Given detection and monitoring device(s) provided by the AHJ, the operations level responder assigned to perform air monitoring and sampling shall describe the operation, capabilities and limitations, local monitoring procedures, field testing, and maintenance procedures associated with each device.

6.7.3.3 Selecting Personal Protective Equipment (PPE). Given the PPE provided by the AHJ, the operations level responder assigned to perform air monitoring and sampling shall select the personal protective equipment required to support air monitoring and sampling at hazardous materials/WMD incidents based on local procedures (*see Section 6.2*).

6.7.4 Competencies — Implementing the Planned Response.

6.7.4.1 Given a scenario involving hazardous materials/WMD and detection and monitoring devices provided by the AHJ, the operations level responder assigned to perform air monitoring and sampling shall demonstrate the field test and



operation of each device and interpret the readings based on local procedures.

6.7.4.2 The operations level responder assigned to perform air monitoring and sampling shall describe local procedures for decontamination of themselves and their detection and monitoring devices upon completion of the air monitoring mission.

6.7.5 Competencies — Evaluating Progress. (Reserved)

6.7.6 Competencies — Terminating the Incident. (Reserved)

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 shall be that person, competent at the operations level, who is assigned to rescue and recover exposed and contaminated victims at hazardous materials/WMD incidents.

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 core 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.

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, 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 victim rescue and recovery at hazardous materials/WMD incidents with the knowledge and skills to perform the tasks in 6.8.1.2.2 safely and effectively.

6.8.1.2.2 When responding to hazardous materials/WMD incidents, the operations level responder assigned to perform victim rescue and recovery shall be able to perform the following tasks:

- (1) Plan a response for victim rescue and recovery operations involving the release of hazardous materials/WMD agent within the capabilities of available personnel and personal protective equipment
- (2) Implement the planned response to accomplish victim rescue and recovery operations within the capabilities of available personnel and personal protective equipment

6.8.2 Competencies — Analyzing the Incident. (Reserved)

6.8.3 Competencies — Planning the Response.

6.8.3.1 Given scenarios involving hazardous materials/WMD incidents, the operations level responder assigned to victim rescue and recovery shall determine the feasibility of conduct-

ing victim rescue and recovery operations at an incident involving hazardous materials/WMD and shall be able to perform the following tasks:

- (1) Determine the feasibility of conducting rescue and recovery operations
- (2) Describe the safety procedures, tactical guidelines, and incident response considerations to effect a rescue associated with each of the following situations:
 - (a) Line-of-sight with ambulatory victims
 - (b) Line-of-sight with nonambulatory victims
 - (c) Non-line-of-sight with ambulatory victims
 - (d) Non-line-of-sight with nonambulatory victims
 - (e) Victim rescue operations versus victim recovery operations
- (3) Determine if the options are within the capabilities of available personnel and personal protective equipment
- (4) Describe the procedures for implementing victim rescue and recovery operations within the incident command system

6.8.3.2 Selecting Personal Protective Equipment (PPE). Given the PPE provided by the AHJ, the operations level responder assigned to perform victim rescue and recovery shall select the personal protective equipment required to support victim rescue and recovery at hazardous materials/WMD incidents based on local procedures (*see Section 6.2*).

6.8.4 Competencies — Implementing the Planned Response.

6.8.4.1 Given a scenario involving hazardous materials/WMD, the operations level responder assigned to victim rescue and recovery shall perform the following tasks:

- (1) Identify the different team positions and describe their main functions
- (2) Select and use specialized rescue equipment and procedures provided by the AHJ to support victim rescue and recovery operations
- (3) Demonstrate safe and effective methods for victim rescue and recovery
- (4) Demonstrate the ability to triage victims
- (5) Describe local procedures for performing decontamination upon completion of the victim rescue and removal mission

6.8.5 Competencies — Evaluating Progress. (Reserved)

6.8.6 Competencies — Terminating the Incident. (Reserved)

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 methamphetamines, other 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 methamphetamines, other 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 core 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.

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 safely and effectively.

6.9.1.2.2 When responding to hazardous materials/WMD incidents, 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 and potential outcomes and whether the incident is potentially 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, personal protective equipment, and control 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

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 potential 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) Law enforcement securing and preserving the scene
- (2) Joint hazardous materials and EOD personnel 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 law enforcement agency having investigative authority
- (6) Documenting personnel and scene activities associated with incident

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

- (1) Given scenarios involving illicit drug manufacturing or illicit WMD manufacturing, identify the law enforcement 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

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 appropriate personal protective equipment 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



6.9.3.5 Selecting Personal Protective Equipment (PPE). Given the PPE provided by the AHJ, the operations level responder assigned to respond to illicit laboratory incidents shall select the personal protective equipment required to respond to illicit laboratory incidents based on local procedures. (See Section 6.2.)

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 safely and effectively.

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 for law enforcement to secure the scene
- (2) Demonstrate decontamination procedures for tactical law enforcement personnel (SWAT or K-9) securing an illicit laboratory
- (3) Describe methods to identify and avoid potential unique safety hazards found at illicit laboratories such as booby traps and releases of hazardous materials
- (4) Describe methods to conduct joint hazardous materials/EOD operations to identify safety hazards and implement control procedures

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) Potential manufacture of illicit drugs
- (2) Potential manufacture of illicit WMD materials
- (3) Potential environmental crimes associated with the manufacture of illicit drugs/WMD materials

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. (Reserved)

6.10 Mission-Specific Competencies: Disablement/Disruption of Improvised Explosives 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 dis-

persal 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 core competencies at the operations level (see Chapter 5), all mission-specific competencies for personal protective equipment (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 safely and effectively.

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 potentially 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, personal protective equipment, and control equipment by completing the following tasks
 - (a) Determine if response options can be effectively 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 (NBSCAB) “A Model for Bomb Squad Standard Operating Procedures,” established protocol of military units, or the AHJ

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 is potentially 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, personal protective equipment, 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

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

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 potential 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 laboratory incidents shall be capable of identifying the unique aspects associated with such incidents by completing the following requirements:

- (1) Given an incident involving a nonvehicle 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 personal protective equipment
 - (c) Describe the procedure for identifying and obtaining the appropriate emergency response elements to support disablement/disruption activities
- (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 personal protective equipment
 - (c) Describe the procedure for identifying and obtaining the appropriate emergency response elements to support disablement/disruption activities
- (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 home made 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 explosive laboratory, the operations level responder assigned to perform disablement/disruption of IEDs, improvised WMD dispersal devices, and operations at improvised explosives shall be capable of identifying the unique aspects associated with such incidents by completing the following requirements:

- (1) Given a scenario involving an improvised explosive 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 personal protective equipment
 - (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 activities

6.10.3.3 Identifying Potential Response Options.

6.10.3.3.1 Given scenarios 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 incident shall identify possible response options.

6.10.3.3.2 Given scenarios 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 incident shall identify possible response options.

6.10.3.4 Selecting Personal Protective Equipment. Given the personal protective equipment provided by the AHJ, the operations level responder assigned to perform disablement/disruption of IEDs, improvised WMD dispersal devices, and operations at improvised explosives laboratories incident, shall select the personal protective equipment 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 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 laboratory incident 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 activities within the capabilities and competencies of available personnel, personal protective equipment, and control 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 at improvised explosives laboratory incident 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 unique 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)

Chapter 7 Competencies for Hazardous Materials Technicians

7.1 General.

7.1.1 Introduction.

7.1.1.1 The hazardous materials technician shall be that person who responds to hazardous materials/WMD incidents using a