

NFPA[®]

1072

**Standard for
Hazardous Materials/
Weapons of Mass Destruction
Emergency Response Personnel
Professional Qualifications**

2017



IMPORTANT NOTICES AND DISCLAIMERS CONCERNING NFPA® STANDARDS

NOTICE AND DISCLAIMER OF LIABILITY CONCERNING THE USE OF NFPA STANDARDS

NFPA® codes, standards, recommended practices, and guides (“NFPA Standards”), of which the document contained herein is one, are developed through a consensus standards development process approved by the American National Standards Institute. This process brings together volunteers representing varied viewpoints and interests to achieve consensus on fire and other safety issues. While the NFPA administers the process and establishes rules to promote fairness in the development of consensus, it does not independently test, evaluate, or verify the accuracy of any information or the soundness of any judgments contained in NFPA Standards.

The NFPA disclaims liability for any personal injury, property or other damages of any nature whatsoever, whether special, indirect, consequential or compensatory, directly or indirectly resulting from the publication, use of, or reliance on NFPA Standards. The NFPA also makes no guaranty or warranty as to the accuracy or completeness of any information published herein.

In issuing and making NFPA Standards available, the NFPA is not undertaking to render professional or other services for or on behalf of any person or entity. Nor is the NFPA undertaking to perform any duty owed by any person or entity to someone else. Anyone using this document should rely on his or her own independent judgment or, as appropriate, seek the advice of a competent professional in determining the exercise of reasonable care in any given circumstances.

The NFPA has no power, nor does it undertake, to police or enforce compliance with the contents of NFPA Standards. Nor does the NFPA list, certify, test, or inspect products, designs, or installations for compliance with this document. Any certification or other statement of compliance with the requirements of this document shall not be attributable to the NFPA and is solely the responsibility of the certifier or maker of the statement.

REMINDER: UPDATING OF NFPA STANDARDS

Users of NFPA codes, standards, recommended practices, and guides (“NFPA Standards”) should be aware that NFPA Standards may be amended from time to time through the issuance of Tentative Interim Amendments or corrected by Errata. An official NFPA Standard at any point in time consists of the current edition of the document together with any Tentative Interim Amendment and any Errata then in effect.

In order to determine whether an NFPA Standard has been amended through the issuance of Tentative Interim Amendments or corrected by Errata, visit the “Codes & Standards” section on NFPA’s website. There, the document information pages located at the “List of NFPA Codes & Standards” provide up-to-date, document-specific information including any issued Tentative Interim Amendments and Errata.

To view the document information page for a specific Standard, go to <http://www.nfpa.org/docinfo> to choose from the list of NFPA Standards or use the search feature to select the NFPA Standard number (e.g., NFPA 101). The document information page includes postings of all existing Tentative Interim Amendments and Errata. It also includes the option to register for an “Alert” feature to receive an automatic email notification when new updates and other information are posted regarding the document.

ISBN: 978-145591594-1 (Print)
ISBN: 978-145591595-8 (PDF)

IMPORTANT NOTICES AND DISCLAIMERS CONCERNING NFPA® STANDARDS

ADDITIONAL NOTICES AND DISCLAIMERS

Updating of NFPA Standards

Users of NFPA codes, standards, recommended practices, and guides (“NFPA Standards”) should be aware that these documents may be superseded at any time by the issuance of new editions or may be amended from time to time through the issuance of Tentative Interim Amendments or corrected by Errata. An official NFPA Standard at any point in time consists of the current edition of the document together with any Tentative Interim Amendments and any Errata then in effect. In order to determine whether a given document is the current edition and whether it has been amended through the issuance of Tentative Interim Amendments or corrected through the issuance of Errata, consult appropriate NFPA publications such as the National Fire Codes® Subscription Service, visit the NFPA website at www.nfpa.org, or contact the NFPA at the address listed below.

Interpretations of NFPA Standards

A statement, written or oral, that is not processed in accordance with Section 6 of the Regulations Governing the Development of NFPA Standards shall not be considered the official position of NFPA or any of its Committees and shall not be considered to be, nor be relied upon as, a Formal Interpretation.

Patents

The NFPA does not take any position with respect to the validity of any patent rights referenced in, related to, or asserted in connection with an NFPA Standard. The users of NFPA Standards bear the sole responsibility for determining the validity of any such patent rights, as well as the risk of infringement of such rights, and the NFPA disclaims liability for the infringement of any patent resulting from the use of or reliance on NFPA Standards.

NFPA adheres to the policy of the American National Standards Institute (ANSI) regarding the inclusion of patents in American National Standards (“the ANSI Patent Policy”), and hereby gives the following notice pursuant to that policy:

NOTICE: The user’s attention is called to the possibility that compliance with an NFPA Standard may require use of an invention covered by patent rights. NFPA takes no position as to the validity of any such patent rights or as to whether such patent rights constitute or include essential patent claims under the ANSI Patent Policy. If, in connection with the ANSI Patent Policy, a patent holder has filed a statement of willingness to grant licenses under these rights on reasonable and nondiscriminatory terms and conditions to applicants desiring to obtain such a license, copies of such filed statements can be obtained, on request, from NFPA. For further information, contact the NFPA at the address listed below.

Law and Regulations

Users of NFPA Standards should consult applicable federal, state, and local laws and regulations. NFPA does not, by the publication of its codes, standards, recommended practices, and guides, intend to urge action that is not in compliance with applicable laws, and these documents may not be construed as doing so.

Copyrights

NFPA Standards are copyrighted. They are made available for a wide variety of both public and private uses. These include both use, by reference, in laws and regulations, and use in private self-regulation, standardization, and the promotion of safe practices and methods. By making these documents available for use and adoption by public authorities and private users, the NFPA does not waive any rights in copyright to these documents.

Use of NFPA Standards for regulatory purposes should be accomplished through adoption by reference. The term “adoption by reference” means the citing of title, edition, and publishing information only. Any deletions, additions, and changes desired by the adopting authority should be noted separately in the adopting instrument. In order to assist NFPA in following the uses made of its documents, adopting authorities are requested to notify the NFPA (Attention: Secretary, Standards Council) in writing of such use. For technical assistance and questions concerning adoption of NFPA Standards, contact NFPA at the address below.

For Further Information

All questions or other communications relating to NFPA Standards and all requests for information on NFPA procedures governing its codes and standards development process, including information on the procedures for requesting Formal Interpretations, for proposing Tentative Interim Amendments, and for proposing revisions to NFPA standards during regular revision cycles, should be sent to NFPA headquarters, addressed to the attention of the Secretary, Standards Council, NFPA, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101; email: stds_admin@nfpa.org.

For more information about NFPA, visit the NFPA website at www.nfpa.org. All NFPA codes and standards can be viewed at no cost at www.nfpa.org/docinfo.

Copyright © 2016 National Fire Protection Association®. All Rights Reserved.

NFPA® 1072

Standard for

Hazardous Materials/Weapons of Mass Destruction Emergency Response Personnel Professional Qualifications

2017 Edition

This edition of NFPA 1072, *Standard for Hazardous Materials/Weapons of Mass Destruction Emergency Response Personnel Professional Qualifications*, was prepared by the Technical Committee on Hazardous Materials Response Personnel and released by the Correlating Committee on Professional Qualifications. It was issued by the Standards Council on November 11, 2016, with an effective date of December 1, 2016, and supersedes all previous editions.

This edition of NFPA 1072 was approved as an American National Standard on December 1, 2016.

Origin and Development of NFPA 1072

The 2017 edition is the first edition of NFPA 1072. The initial request for a document focusing on a hazardous materials/weapons of mass destruction professional qualification was submitted by the North American Fire Training Directors and a recommendation of the fire and emergency services professional qualifications workshop in Dallas/Fort Worth, Texas, in April 2011 to the NFPA Standards Council. The Technical Committee for Hazardous Materials Response Personnel welcomed the opportunity to develop this standard. NFPA 1072 identifies the minimum job performance requirements (JPRs) for personnel at the scene of a hazardous materials/weapons of mass destruction (WMD) incident, including the following levels: awareness, operations, operations mission-specific, hazardous materials technician, and incident commander.

Dedication

The Technical Committee on Hazardous Materials Response Personnel dedicates this project to Mr. Charles J. Wright, one of the original members of the Technical Committee. Charlie's leadership, dedication, and collective contributions over the last 30 years were critical elements of all the Committee's projects, especially NFPA 1072. The greatest comment that we can make is but a simple one: "Charlie Wright was a guy who made a difference." We will miss you!

Correlating Committee on Professional Qualifications

William E. Peterson, Chair

Kissimmee, FL [M]

Rep. International Fire Service Training Association

Andrew Blum, Exponent, Inc., GA [SE]

Brian R. Brauer, University of Illinois Fire Service Institute, IL [E]
Rep. National Board on Fire Service Professional Qualifications

Gregg A. Cleveland, La Crosse Fire Department, WI [U]
Rep. NFPA Fire Service Section

Gordon Descutner, Alaska DPS Fire Standards Council, AK [U]
Rep. Alaska Fire Standards Council

Angus Maclean Duff, Consolidated Fire District 2, KS [U]

Alec Feldman, Fulcrum Consultants, Ireland [SE]
Rep. JOIFF-International Organisation for Industrial Hazard Management

Douglas P. Forsman, Fairfield Bay Fire Department, AR [L]

Douglas R. Goodings, Missouri State Fire Marshal, MO [E]

Scott M. Gorgon, North Las Vegas Fire Department, NV [L]
Rep. International Association of Fire Fighters

R. Kirk Hankins, Fire Consulting & Case Review International, Inc., MO [U]
Rep. International Association of Arson Investigators, Inc.

Tonya L. Hoover, CAL FIRE, Office of the State Fire Marshal, CA [U]

Rep. International Association of Fire Chiefs

James F. Jaracz, Fire Code Guy, IN [SE]

Richard A. Mason, National Fallen Firefighters Foundation, NH [SE]

Philip C. Stittleburg, La Farge Fire Department, WI [L]
Rep. National Volunteer Fire Council

Tracie M. Young-Brungard, Pennsylvania Office of the State Fire Commissioner, PA [E]

Rep. International Fire Service Accreditation Congress

Michael J. Yurgesc, Spartan Motors, IL [M]

Dalan Lee Zartman, Rescue Methods, OH [U]

Alternates

Thomas W. Aurnhammer, Los Pinos Fire District, CO [U]
(Alt. to R. Kirk Hankins)

Wayne Bailey, North Carolina Fire & Rescue Commission, NC [E]
(Alt. to Tracie M. Young-Brungard)

David W. Lewis, National Volunteer Fire Council, MD [L]
(Alt. to Philip C. Stittleburg)

Richard T. Long, Jr., Exponent, Inc., MD [SE]
(Alt. to Andrew Blum)

Frederick W. Piechota, Jr., National Board on Fire Service Professional Qualifications, MA [E]
(Alt. to Brian R. Brauer)

Nonvoting

Stephen P. Austin, Cumberland Valley Volunteer Firemen's Association, DE [L]
Rep. TC on Traffic Control Incident Management Professional Qualifications

Alan W. Conkle, Ohio Association of Emergency Vehicle Technicians (OAEVT), OH [M]
Rep. TC on Emergency Vehicle Mechanic Technicians Professional Qualifications

John S. Cunningham, Nova Scotia Firefighters School, Canada [U]
Rep. TC on Fire Fighter Professional Qualifications

Jay Dornseif, III, Priority Dispatch Corporation, UT [M]
Rep. TC on Public Safety Telecommunicator Professional Qualifications

Dave E. Hanneman, Idaho Falls Fire Department, ID [U]
Rep. TC on Incident Management Professional Qualifications

Edward M. Hawthorne, Shell Oil Company, TX [U]
Rep. TC on Industrial Fire Brigades Professional Qualifications

Ronald L. Hopkins, TRACE Fire Protection & Safety Consultant, Ltd., KY [SE]
Rep. TC on Fire and Emergency Services Instructor Professional Qualifications

Ed Conlin, NFPA Staff Liaison

Randy J. Krause, Port of Seattle Fire Department, WA [E]
Rep. TC on Fire Service Occupational Safety and Health

Michael S. Mayers, Hilton Head Island Fire Rescue, SC [U]
Rep. TC on Rescue Technician Professional Qualifications

Gregory G. Noll, Hildebrand & Noll Associates Inc., PA [SE]
Rep. TC on Hazardous Materials Response Personnel

Randal E. Novak, Iowa Fire Service Training Bureau, IA [SE]
Rep. TC on Accreditation & Certification Professional Qualifications

Lawrence L. Preston, Maryland Fire and Rescue Institute, MD [E]
Rep. TC on Fire Officer Professional Qualifications

Jim Stumpf, Organizational Quality Associates, ID [SE]
Rep. TC on Wildfire Suppression Professional Qualifications

Nancy J. Trench, Fire Protection Publications, OK [M]
Rep. TC on Public Fire Educator Professional Qualifications

George A. Wendt, Travelers Insurance Company, NJ [I]
Rep. TC on Fire Investigator Professional Qualifications

This list represents the membership at the time the Committee was balloted on the final text of this edition. Since that time, changes in the membership may have occurred. A key to classifications is found at the back of the document.

NOTE: Membership on a committee shall not in and of itself constitute an endorsement of the Association or any document developed by the committee on which the member serves.

Committee Scope: This Committee shall have primary responsibility for the management of the NFPA Professional Qualifications Project and documents related to professional qualifications for fire service, public safety, and related personnel.

Technical Committee on Hazardous Materials Response Personnel

Gregory G. Noll, *Chair*

Hildebrand & Noll Associates Inc., PA [SE]

Christina M. Baxter, U.S. Department of Defense, VA [E]

Armando S. Bevelacqua, Lake County Technical College, FL [SE]

H. K. Carr, H. K. Carr & Associates Inc., NJ [U]

Rep. International Society of Fire Service Instructors

Jorge A. Carrasco, Suatrans, Brazil [SE]

Tom Clawson, Technical Resources Group, Inc., ID [SE]

William R. Coffey, WRC Safety and Risk Consultants, PA [SE]

Rep. American Society of Safety Engineers

K. Wade Collins, Virginia Department of Emergency Management, VA [C]

Cris D'Onofrio, U.S. Environmental Protection Agency, NJ [E]

Richard C. Edinger, Chesterfield County Fire & Emergency Medical Services, VA [E]

Rep. International Association of Fire Chiefs

Richard B. Emery, Emery & Associates, Inc., IL [SE]

Steven Hergenreter, Fort Dodge Fire Fighters, IAFF Local 622, IA [L]

Rep. International Association of Fire Fighters

Robert J. Ingram, Fire Department City of New York, NY [E]

Rep. Fire Department City of New York

Kristina Kreutzer, The DuPont Company, Inc., DE [U]

Rep. CHEMTREC

Troy Lilley, Houston Fire Department, TX [U]

Carl Makins, Jr., Charleston County Sheriff's Office, SC [U]

Rep. The InterAgency Board

Wayne McNett, Hemlock Semiconductor Corporation, MI [U]

Rep. NFPA Industrial Fire Protection Section

Leslie A. Miller, Fire Protection Publications, OK [M]

Rep. International Fire Service Training Association

Thomas D. Miller, Sissonville Volunteer Fire Department, WV [C]

Rep. National Volunteer Fire Council

Ryan K. Miller, U.S. Federal Bureau of Investigation, VA [E]

Matthew Minson, Critical Management Programs, TX [SE]

John F. Porter, Louisiana State Police, LA [C]

Lawrence L. Preston, Maryland Fire and Rescue Institute, MD [U]

Rep. North American Fire Training Directors

Timothy R. Rehak, National Institute for Occupational Safety & Health, PA [E]

Robert W. Royall, Jr., Harris County Fire Marshal's Office, TX [E]

Rob Schnepf, Alameda County Fire Department, CA [C]

Danny G. Simpson, CN Railway, IL [U]

Robert Stenner, Pacific Northwest National Laboratory, WA [RT]

Matthew E. Swingholm, Seminole Sheriff's Office, FL [E]

Rep. National Tactical Officers Association

Fred C. Terryn, U.S. Department of the Air Force, FL [U]

Christopher Tracy, Fairfield Fire Department, CT [C]

Rep. Fairfield County Hazardous Incident Response Team

Kenneth W. Uzeloc, Calgary Fire Department, Canada [E]

Rep. Canadian Association of Fire Chiefs

Charles J. Wright, Omaha, NE [SE]

Alternates

Albert C. Bassett, Jr., Fairfield County Hazardous Incident Response Team, CT [C]

(Alt. to Christopher Tracy)

Jeff Beeson, EPAB Fort Worth, TX [SE]

(Alt. to Matthew Minson)

Hugh Connor, Utah Fire and Rescue Academy, UT [U]

(Alt. to Lawrence L. Preston)

Charles Cordova, Seattle Fire Department, WA [E]

(Alt. to Richard C. Edinger)

Travis Day, Louisiana State Police, LA [C]

(Alt. to John F. Porter)

Christopher T. Gallo, U.S. Environmental Protection Agency, NJ [E]

(Alt. to Cris D'Onofrio)

William E. Haskell, III, National Institute for Occupational Safety & Health, MA [E]

(Alt. to Timothy R. Rehak)

Christopher D. Hawley, Cecil County Department of Emergency Services, MD [C]

(Alt. to Rob Schnepf)

Butch Hayes, Houston Fire Department, TX [U]

(Alt. to Troy Lilley)

Christian W. Hays, Orange County Sheriff's Department, CA [E]

(Alt. to Matthew E. Swingholm)

Susan Elizabeth Henry, Calgary Fire Department, Canada [E]

(Alt. to Kenneth W. Uzeloc)

Michael S. Hildebrand, Hildebrand & Noll Associates, Inc., MD [SE]

(Alt. to Gregory G. Noll)

Richard Hopkins, International Association of Fire Fighters, DC [L]

(Alt. to Steven Hergenreter)

Anthony Ippolito, CN Railway, IN [U]

(Alt. to Danny G. Simpson)

Thomas C. Jordan, Virginia Department of Emergency Management, VA [C]

(Alt. to K. Wade Collins)

Barry Lindley, The Chemours Company, WV [U]

(Alt. to Kristina Kreutzer)

Mark E. Linsley, Technical Resources Group, Inc., IA [SE]

(Alt. to Tom Clawson)

Mike Montgomery, Harris County Fire Marshal's Office, TX [E]

(Alt. to Robert W. Royall, Jr.)

Tony J. Mussorfiti, Pacific Northwest National Laboratory, NY [RT]

(Alt. to Robert Stenner)

James E. Podolske, Jr., US Department of the Air Force, FL [U]

(Alt. to Fred C. Terryn)

Kevin D. Quinn, Union Fire District, RI [C]

(Alt. to Thomas D. Miller)

Timothy Rice, Fire Department City of New York, NY [E]

(Alt. to Robert J. Ingram)

Glen D. Rudner, Technology Test Center, CO [SE]

(Alt. to Richard B. Emery)

John Scrivani, U.S. Department of Defense, VA [E]

(Alt. to Christina M. Baxter)

Daniel Gary Snell, Houston Fire Department, TX [SE]

(Alt. to Charles J. Wright)

Libby Snyder, Fire Protection Publications, OK [M]
(Alt. to Leslie A. Miller)

Tim Topolinski, Hemlock Semiconductor, TN [U]
(Alt. to Wayne McNett)

Nonvoting

Timothy P. Butters, U.S. Department of Transportation, DC [E]

Wayne E. Yoder, U.S. Department of Homeland Security, MD [SE]

Janis M. McCarroll, U.S. Department of Homeland Security, DC [E]
Rep. U.S. Department of Homeland Security/CBRNE

Thomas McGowan, NFPA Staff Liaison

This list represents the membership at the time the Committee was balloted on the final text of this edition. Since that time, changes in the membership may have occurred. A key to classifications is found at the back of the document.

NOTE: Membership on a committee shall not in and of itself constitute an endorsement of the Association or any document developed by the committee on which the member serves.

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.

Contents

Chapter 1 Administration	1072- 7	6.5 Evidence Preservation and Public Safety Sampling.	1072- 17
1.1 Scope.	1072- 7	6.6 Product Control.	1072- 17
1.2 Purpose.	1072- 7	6.7 Detection, Monitoring, and Sampling.	1072- 18
1.3 Application.	1072- 7	6.8 Victim Rescue and Recovery.	1072- 18
1.4 Units.	1072- 8	6.9 Response to Illicit Laboratories.	1072- 18
Chapter 2 Referenced Publications	1072- 8	Chapter 7 Hazardous Materials Technician	1072- 19
2.1 General.	1072- 8	7.1 General.	1072- 19
2.2 NFPA Publications.	1072- 8	7.2 Analyze the Incident.	1072- 19
2.3 Other Publications.	1072- 8	7.3 Response Planning.	1072- 21
2.4 References for Extracts in Mandatory Sections.	1072- 8	7.4 Action Plan Implementation.	1072- 22
Chapter 3 Definitions	1072- 8	7.5 Evaluating and Reporting Progress.	1072- 24
3.1 General.	1072- 8	7.6 Terminating the Incident.	1072- 24
3.2 NFPA Official Definitions.	1072- 9	Chapter 8 Incident Commander	1072- 24
3.3 General Definitions.	1072- 9	8.1 General.	1072- 24
3.4 Operations Level Responder Definitions.	1072- 13	8.2 Analyze the Incident.	1072- 24
Chapter 4 Awareness	1072- 13	8.3 Plan the Response.	1072- 24
4.1 General.	1072- 13	8.4 Implement the Incident Action Plan (IAP). ..	1072- 24
4.2 Recognition and Identification.	1072- 13	8.5 Evaluate Progress and Adjust IAP.	1072- 25
4.3 Initiate Protective Actions.	1072- 14	8.6 Termination.	1072- 25
4.4 Notification.	1072- 14	Annex A Explanatory Material	1072- 25
Chapter 5 Operations	1072- 14	Annex B Explanation of the Professional Qualifications Standards and Concepts of JPRs	1072- 37
5.1 General.	1072- 14	Annex C An Overview of JPRs for Hazardous Materials/WMD Response Personnel	1072- 40
5.2 Identify Potential Hazards.	1072- 14	Annex D National Fallen Firefighters Foundation	1072- 40
5.3 Identify Action Options.	1072- 14	Annex E Informational References	1072- 46
5.4 Action Plan Implementation.	1072- 15	Index	1072- 49
5.5 Emergency Decontamination.	1072- 15		
5.6 Progress Evaluation and Reporting.	1072- 15		
Chapter 6 Operations Mission-Specific	1072- 15		
6.1 General.	1072- 15		
6.2 Personal Protective Equipment.	1072- 16		
6.3 Mass Decontamination.	1072- 16		
6.4 Technical Decontamination.	1072- 16		

NFPA 1072

Standard for

Hazardous Materials/Weapons of Mass Destruction Emergency Response Personnel Professional Qualifications

2017 Edition

IMPORTANT NOTE: This NFPA document is made available for use subject to important notices and legal disclaimers. These notices and disclaimers appear in all publications containing this document and may be found under the heading “Important Notices and Disclaimers Concerning NFPA Standards.” They can also be viewed at www.nfpa.org/disclaimers or obtained on request from NFPA.

UPDATES, ALERTS, AND FUTURE EDITIONS: New editions of NFPA codes, standards, recommended practices, and guides (i.e., NFPA Standards) are released on scheduled revision cycles. This edition may be superseded by a later one, or it may be amended outside of its scheduled revision cycle through the issuance of Tentative Interim Amendments (TIAs). An official NFPA Standard at any point in time consists of the current edition of the document, together with all TIAs and Errata in effect. To verify that this document is the current edition or to determine if it has been amended by TIAs or Errata, please consult the National Fire Codes® Subscription Service or the “List of NFPA Codes & Standards” at www.nfpa.org/docinfo. In addition to TIAs and Errata, the document information pages also include the option to sign up for alerts for individual documents and to be involved in the development of the next edition.

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

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

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

Chapter 1 Administration

1.1* Scope. This standard identifies the minimum job performance requirements (JPRs) for personnel at the scene of a hazardous materials/weapons of mass destruction (WMD) incident at the following levels: awareness, operations, operations mission-specific, hazardous materials technician, and incident commander.

1.2 Purpose. The purpose of this standard is to specify the minimum JPRs for service at the scene of a hazardous materials/weapons of mass destruction incident at the following levels: awareness, operations, operations mission-specific, hazardous materials technician, and incident commander.

1.2.1 This standard shall define personnel at the scene of a hazardous materials/weapons of mass destruction incident at the following levels: awareness, operations, operations mission-specific, hazardous materials technician, and incident commander.

1.2.2 The intent of this standard shall be to ensure that personnel at the scene of a hazardous materials/weapons of mass destruction incident at the levels of awareness, operations, operations mission-specific, hazardous materials technician, and incident commander are qualified.

1.2.3* This standard shall not address organization or management responsibility.

1.2.4 It is not the intent of this standard to restrict any jurisdiction from exceeding or combining these minimum requirements.

1.2.5 JPRs for each level and position are the tasks personnel shall be able to perform to carry out the job duties.

1.2.6* Personnel at the scene of a hazardous materials/weapons of mass destruction incident at the levels of awareness, operations, operations mission-specific, hazardous materials technician, and incident commander shall remain current with the general knowledge and skills and JPRs addressed for each level or position of qualification.

1.3 Application. The application of this standard is to specify which requirements within the document shall apply to personnel at the scene of a hazardous materials/weapons of mass destruction incident at the following levels: awareness, operations, operations mission-specific, hazardous materials technician, and incident commander.

1.3.1 The JPRs shall be accomplished in accordance with the requirements of the authority having jurisdiction (AHJ) and all applicable NFPA standards.

1.3.2 It shall not be required that the JPRs be mastered in the order in which they appear. The AHJ shall establish instructional priority and the training program content to prepare personnel to meet the JPRs of this standard.

1.3.3* Performance of each requirement of this standard shall be evaluated by personnel approved by the AHJ.

1.3.4 The JPRs for each level or position shall be completed in accordance with recognized practices and procedures or as defined by law or by the AHJ.

1.3.5 Personnel assigned the duties at the awareness level shall meet all the requirements defined in Chapter 4 prior to being qualified. Personnel assigned the duties at the operations level shall meet all the requirements defined in Chapter 5 prior to being qualified. Personnel assigned the duties at the technician level shall meet all the requirements defined in Chapter 7 prior to being qualified. Personnel assigned the duties of incident commander shall meet all the requirements defined in Chapter 8 prior to being qualified.

1.3.5.1 Personnel qualified at the operations level who are assigned mission-specific duties of personal protection equipment (PPE), mass decontamination, technical decontamination, evidence preservation and sampling, product control, detection, monitoring, and sampling, victim rescue and recovery, and illicit laboratory incidents shall meet all the require-

ments defined in the applicable subsection within Chapter 6 prior to being qualified.

1.3.6 The AHJ shall provide personal protective clothing and the equipment necessary to conduct assignments.

1.3.7 JPRs involving exposure to products of combustion shall be performed in approved PPE.

1.3.8 Prior to training to meet the requirements of this standard, personnel shall meet the following requirements:

- (1) Educational requirements established by the AHJ
- (2) Age requirements established by the AHJ
- (3) Medical requirements established by the AHJ
- (4) Job-related physical performance requirements established by the AHJ

1.3.9 Wherever in this standard the terms *rules, regulations, policies, procedures, supplies, apparatus, or equipment* are referred to, it is implied that they are those of the AHJ.

1.4 Units. In this standard, equivalent values in SI units shall not be considered as the requirement, as these values can be approximate. (See Table 1.4.)

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*, 2017 edition.

2.3 Other Publications.

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

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

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

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.

NFPA 51, *Standard for the Design and Installation of Oxygen-Fuel Gas Systems for Welding, Cutting, and Allied Processes*, 2013 edition.

NFPA 70®, *National Electrical Code®*, 2017 edition.

NFPA 472, *Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents*, 2013 edition.

NFPA 1000, *Standard for Fire Service Professional Qualifications Accreditation and Certification Systems*, 2017 edition.

Chapter 3 Definitions

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

Table 1.4 U.S.–SI Conversion Factors

Quantity	U.S. Unit/Symbol	SI Unit/Symbol	Conversion Factor
Length	inch (in.) foot (ft)	millimeter (mm) meter (m)	1 in. = 25.4 mm 1 ft = 0.305 m
Area	square foot (ft ²)	square meter (m ²)	1 ft ² = 0.0929 m ²
Volume	gallon (gal) quart (qt)	liter (L) liter (L)	1 gal = 3.785 l 1 qt = 0.9463 l
Weight	pound (lb)	gram (g)	1 lb = 453.6 g
Pressure	atmosphere (atm) inches of mercury (in. Hg) inches of water (in. H ₂ O) pounds per square inch (psi) pounds per square inch (psi) pounds per square inch (psi)	millimeters of mercury (mm Hg) millimeters of mercury (mm Hg) millimeters of mercury (mm Hg) millimeters of mercury (mm Hg) bar pascal (Pa)	1 atm = 760 mm Hg 1 in. Hg = 25.4 mm Hg 1 in H ₂ O = 1.87 mm Hg 1 psi = 51.7 mm Hg 1 psi = 0.068 bar 1 psi = 6894.8 Pa
Radiation	rad rem curie (Ci)	gray (Gy) sievert (Sv) becquerel (Bq)	100 rad = 1 Gy 100 rem = 1 Sv 1 Bq = 2.7 × 10 ⁻¹¹ Ci

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

3.3 General Definitions.

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

3.3.2 Analyze. To identify a hazardous materials/weapons of mass destruction (WMD) problem and determine likely behavior and harm within the training and capabilities of the emergency responder.

3.3.3 Assignment. A job, task, role, or function to be performed that can come from a supervisor or other established authority as determined by the authority having jurisdiction (AHJ) (e.g., hazardous materials technician, allied professional, emergency response plans, or standard operating procedures).

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

3.3.5 CANUTEC. The Canadian Transport Emergency Centre, operated by Transport Canada, that provides emergency response information and assistance on a 24-hour basis

for responders to hazardous materials/weapons of mass destruction (WMD) incidents.

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

3.3.7 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 person can enter and perform assigned work but that has limited or restricted means for entry and exit and is not designed for continuous human occupancy.

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

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

3.3.9.2 Facility Storage Tanks. Atmospheric and low-pressure storage tanks; pressurized storage tanks; and cryogenic storage tanks.

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

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

3.3.9.5 Pipeline. A length of pipe including pumps, valves, flanges, control devices, strainers, and/or similar equipment for conveying fluids. [70:427.2]

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

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

3.3.10 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.

3.3.11 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, which can act as a carrier.

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

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

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

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

3.3.12.3 Extinguishment. To cause to cease burning.

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

3.3.13.1 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.

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

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

3.3.13.4* 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.

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

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

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

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

3.3.15.3* 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.

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

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

3.3.17* Demonstrate. To show by actual performance.

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

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

3.3.20 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.

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

3.3.22 Endangered Area. The actual or potential area of exposure associated with the release of a hazardous materials/weapons of mass destruction (WMD).

3.3.23 Evaluate. To assess or judge the effectiveness of a response operation or course of action within the training and capabilities of the emergency responder.

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

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, property, and equipment are subjected to or come in contact with a hazardous material/weapon of mass destruction (WMD).

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

3.3.28 Field Screening. A set of procedures, to include at a minimum nondestructive field testing to identify the presence of explosive devices, radiological materials, flammable materials, volatile organic compounds (VOC), strong oxidizers, fluorides, or corrosives, that serves as a protective safety measure prior to collection, transportation, and laboratory analysis.

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

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

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

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

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

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

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

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

3.3.37* Hazardous Materials Technician. Person who responds to hazardous materials/weapons of mass destruction (WMD) incidents using a risk-based response process to analyze a problem involving hazardous materials/WMD, plan a response to the problem, implement the planned response, evaluate progress of a planned response and adjust as needed, and assist in terminating the incident.

3.3.38 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.

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

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

3.3.41* 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.

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

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

3.3.44* Job Performance Requirement (JPR). A written statement that describes a specific job task, lists the items necessary to complete the task, and defines measurable or observable outcomes and evaluation areas for the specific task. [1000, 2017]

3.3.45 Match. To provide with a counterpart.

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

3.3.47 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.

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

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

3.3.50 Plan.

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

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

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

3.3.51* 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/weapons of mass destruction (WMD) incident.

3.3.52 Predict. To estimate or forecast the future behavior of a hazardous materials/weapons of mass destruction (WMD) container and/or its contents within the training and capabilities of the emergency responder.

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

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

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

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

3.3.53.2.2* Vapor-Protective Ensemble. Multiple elements of compliant protective clothing and equipment that when worn together provide protection from some, but not all, risks of vapor, liquid-splash, and particulate environments during hazardous materials/WMD incident operations.

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

3.3.53.4* 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.

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

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

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

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

3.3.58 Risk The probability or threat of suffering a harm or loss.

3.3.59 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.

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

3.3.61* Sampling. The process of selecting materials to analyze.

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

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

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

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

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

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

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

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

3.3.67* UN/NA Identification Number. The four-digit number assigned to a hazardous material/weapon of mass

destruction (WMD) that is used to identify and cross-reference products in the transportation mode.

3.3.68* Weapon of Mass Destruction (WMD). (1) Any destructive device, such as any explosive, incendiary, or poison gas bomb, grenade, rocket having a propellant charge of more than 4 oz (113 grams), missile having an explosive or incendiary charge of more than 0.25 oz (7 grams), mine, or similar device; (2) any weapon involving toxic or poisonous chemicals; (3) any weapon involving a disease organism; or (4) any weapon that is designed to release radiation or radioactivity at a level dangerous to human life.

3.3.68.1* Radiological Weapons of Mass Destruction.

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

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

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

3.4 Operations Level Responder Definitions.

3.4.1 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 (AHJ) to perform mission-specific tasks, such as decontamination, victim/hostage rescue and recovery, evidence preservation, and sampling.

3.4.2* 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.

3.4.3 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.

3.4.4 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.

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

3.4.6 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.

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

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

3.4.9 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 weapon of mass destruction (WMD), are assigned to secure the scene, identify the laboratory/process, and preserve evidence.

3.4.10 Operations Level Responders Assigned to Use Personal Protective Equipment (PPE). 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 Awareness

4.1 General.

4.1.1 Awareness personnel are those 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.

4.1.2* Awareness personnel shall meet the job performance requirements defined in Sections 4.2 through 4.4.

4.1.3 General Knowledge Requirements. Role of awareness personnel at a hazardous materials/WMD incident, location and contents of the AHJ emergency response plan, and standard operating procedures for awareness personnel.

4.1.4 General Skills Requirements. (Reserved)

4.2* Recognition and Identification.

4.2.1 Recognize and identify the hazardous materials/WMD and hazards involved in a hazardous materials/WMD incident, given a hazardous materials/WMD incident, and approved reference sources, so that the presence of hazardous materials/WMD is recognized and the materials and their hazards are identified.

(A)* Requisite Knowledge. What hazardous materials and WMD are; basic hazards associated with classes and divisions; indicators to the presence of hazardous materials including container shapes, NFPA 704 markings, globally harmonized system (GHS) markings, placards, labels, pipeline markings, other transportation markings, shipping papers with emergency response information, and other indicators; accessing information from the *Emergency Response Guidebook* (ERG)

(current edition) using name of the material, UN/NA identification number, placard applied, or container identification charts; and types of hazard information available from the ERG, safety data sheets (SDS), shipping papers with emergency response information, and other approved reference sources.

(B)* Requisite Skills. Recognizing indicators to the presence of hazardous materials/WMD; identifying hazardous materials/WMD by name, UN/NA identification number, placard applied, or container identification charts; and using the ERG, SDS, shipping papers with emergency response information, and other approved reference sources to identify hazardous materials/WMD and their potential fire, explosion, and health hazards.

4.3* Initiate Protective Actions.

4.3.1 Isolate the hazard area and deny entry at a hazardous materials/WMD incident, given a hazardous materials/WMD incident, policies and procedures, and approved reference sources, so that the hazard area is isolated and secured, personal safety procedures are followed, hazards are avoided or minimized, and additional people are not exposed to further harm.

(A)* Requisite Knowledge. Use of the ERG, SDS, shipping papers with emergency response information, and other approved reference sources to identify precautions to be taken to protect responders and the public; policies and procedures for isolating the hazard area and denying entry; and the purpose of and methods for isolating the hazard area and denying entry.

(B)* Requisite Skills. Recognizing precautions for protecting responders and the public; identifying isolation areas, denying entry, and avoiding minimizing hazards.

4.4 Notification.

4.4.1 Initiate required notifications at a hazardous materials/WMD incident, given a hazardous materials/WMD incident, policies and procedures, and approved communications equipment, so that the notification process is initiated and the necessary information is communicated.

(A) Requisite Knowledge. Policies and procedures for notification, reporting, and communications; types of approved communications equipment; and the operation of that equipment.

(B) Requisite Skills. Operating approved communications equipment and communicating in accordance with policies and procedures.

Chapter 5 Operations

5.1 General.

5.1.1 Operations level responders are those 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.

5.1.2 Operations level responders shall meet the job performance requirements defined in Sections 4.2 through 4.4.

5.1.3 Operations level responders shall meet the job performance requirements defined in Sections 5.2 through 5.6.

5.1.4 Operations level responders shall have additional competencies that are specific to the response mission and expected tasks as determined by the AHJ.

5.1.5 General Knowledge Requirements. Role of operations level responders at a hazardous materials/WMD incident; location and contents of AHJ emergency response plan and standard operating procedures for operations level responders, including those response operations for hazardous materials/WMD incidents.

5.1.6 General Skills Requirements. (Reserved)

5.2* Identify Potential Hazards.

5.2.1 Identify the scope of the problem at a hazardous materials/WMD incident, given a hazardous materials/WMD incident, an assignment, policies and procedures, and approved reference sources, so that container types, materials, location of any release, and surrounding conditions are identified, hazard information is collected, the potential behavior of a material and its container is identified, and the potential hazards, harm, and outcomes associated with that behavior are identified.

(A)* Requisite Knowledge. Definitions of hazard classes and divisions; types of containers; container identification markings, including piping and pipeline markings and contacting information; types of information to be collected during the hazardous materials/WMD incident survey; availability of shipping papers in transportation and of safety data sheets (SDS) at facilities; types of hazard information available from and how to contact CHEMTREC, CANUTEC, and SETIQ, governmental authorities, and manufacturers, shippers, and carriers; how to communicate with carrier representatives to reduce impact of a release; basic physical and chemical properties, including boiling point, chemical reactivity, corrosivity (pH), flammable (explosive) range [LFL (LEL) and UFL (UEL)], flash point, ignition (autoignition) temperature, particle size, persistence, physical state (solid, liquid, gas), radiation (ionizing and nonionizing), specific gravity, toxic products of combustion, vapor density, vapor pressure, and water solubility; how to identify the behavior of a material and its container based on the material's physical and chemical properties and the hazards associated with the identified behavior; examples of potential criminal and terrorist targets; indicators of possible criminal or terrorist activity for each of the following: chemical agents, biological agents, radiological agents, illicit laboratories (i.e., clandestine laboratories, weapons labs, ricin labs), and explosives; additional hazards associated with terrorist or criminal activities, such as secondary devices; and how to determine the likely harm and outcomes associated with the identified behavior and the surrounding conditions.

(B)* Requisite Skills. Identifying container types, materials, location of release, and surrounding conditions at a hazardous materials/WMD incident; collecting hazard information; communicating with pipeline operators or carrier representatives; describing the likely behavior of the hazardous materials or WMD and its container; and describing the potential hazards, harm, and outcomes associated with that behavior and the surrounding conditions.

5.3* Identify Action Options.

5.3.1 Identify the action options for a hazardous materials/WMD incident, given a hazardous materials/WMD incident, an assignment, policies and procedures, approved reference sources, and the scope of the problem, so that

response objectives, action options, safety precautions, suitability of approved personal protective equipment (PPE) available, and emergency decontamination needs are identified.

(A)* Requisite Knowledge. Policies and procedures for hazardous materials/WMD incident operations; basic components of an incident action plan (IAP); modes of operation (offensive, defensive, and nonintervention); types of response objectives; types of action options; types of response information available from the *Emergency Response Guidebook* (ERG), safety data sheets (SDS), shipping papers with emergency response information, and other resources; types of information available from and how to contact CHEMTREC, CANUTEC, and SETIQ, governmental authorities, and manufacturers, shippers, and carriers (highway, rail, water, air, pipeline); safety procedures; risk analysis concepts; purpose, advantages, limitations, and uses of approved PPE to determine if PPE is suitable for the incident conditions; difference between exposure and contamination; contamination types, including sources and hazards of carcinogens at incident scenes; routes of exposure; types of decontamination (emergency, mass, and technical); purpose, advantages, and limitations of emergency decontamination; and procedures, tools, and equipment for performing emergency decontamination.

(B)* Requisite Skills. Identifying response objectives and action options based on the scope of the problem and available resources; identifying whether approved PPE is suitable for the incident conditions; and identifying emergency decontamination needs based on the scope of the problem.

5.4* Action Plan Implementation.

5.4.1 Perform assigned tasks at a hazardous materials/WMD incident, given a hazardous materials/WMD incident; an assignment with limited potential of contact with hazardous materials/WMD, policies and procedures, the scope of the problem, approved tools, equipment, and PPE, so that protective actions and scene control are established and maintained, on-scene incident command is described, evidence is preserved, approved PPE is selected and used in the proper manner; exposures and personnel are protected; safety procedures are followed; hazards are avoided or minimized; assignments are completed; and gross decontamination of personnel, tools, equipment, and PPE is conducted in the field.

(A)* Requisite Knowledge. Scene control procedures; procedures for protective actions, including evacuation and sheltering-in-place; procedures for ensuring coordinated communications between responders and to the public; evidence recognition and preservation procedures; incident command organization; purpose, importance, benefits, and organization of incident command at hazardous materials/WMD incidents; policies and procedures for implementing incident command at hazardous materials/WMD incidents; capabilities, limitations, inspection, donning, working in, going through decontamination while wearing, doffing approved PPE; signs and symptoms of thermal stress; safety precautions when working at hazardous materials/WMD incidents; purpose, advantages, and limitations of gross decontamination; the need for gross decontamination in the field based on the task(s) performed and contamination received, including sources and hazards of carcinogens at incident scenes; gross decontamination procedures for personnel, tools, equipment, and PPE; and cleaning, disinfecting, and inspecting tools, equipment, and PPE.

(B)* Requisite Skills. Establishing and maintaining scene control; recognizing and preserving evidence; inspecting, donning, working in, going through decontamination while wearing, and doffing approved PPE; isolating contaminated tools, equipment, and PPE; conducting gross decontamination of contaminated personnel, tools, equipment, and PPE in the field; and cleaning, disinfecting, and inspecting approved tools, equipment, and PPE.

5.5 Emergency Decontamination.

5.5.1 Perform emergency decontamination at a hazardous materials/WMD incident, given a hazardous materials/WMD incident that requires emergency decontamination; an assignment; scope of the problem; policies and procedures; and approved tools, equipment, and PPE for emergency decontamination, so that emergency decontamination needs are identified, approved PPE is selected and used, exposures and personnel are protected, safety procedures are followed, hazards are avoided or minimized, emergency decontamination is set up and implemented, and victims and responders are decontaminated.

(A) Requisite Knowledge. Contamination, cross contamination, and exposure; contamination types; routes of exposure; types of decontamination (emergency, mass, and technical); purpose, advantages, and limitations of emergency decontamination; policies and procedures for performing emergency decontamination; approved tools and equipment for emergency decontamination; and hazard avoidance for emergency decontamination.

(B) Requisite Skills. Selecting an emergency decontamination method; setting up emergency decontamination in a safe area; using PPE in the proper manner; implementing emergency decontamination; preventing spread of contamination; and avoiding hazards during emergency decontamination.

5.6* Progress Evaluation and Reporting.

5.6.1 Evaluate and report the progress of the assigned tasks for a hazardous materials/WMD incident, given a hazardous materials/WMD incident, an assignment, policies and procedures, status of assigned tasks, and approved communication tools and equipment, so that the effectiveness of the assigned tasks is evaluated and communicated to the supervisor, who can adjust the IAP as needed.

(A)* Requisite Knowledge. Components of progress reports; policies and procedures for evaluating and reporting progress; use of approved communication tools and equipment; signs indicating improving, static, or deteriorating conditions based on the objectives of the action plan; and circumstances under which it would be prudent to withdraw from a hazardous materials/WMD incident.

(B)* Requisite Skills. Determining incident status; determining whether the response objectives are being accomplished; using approved communications tools and equipment; and communicating the status of assigned tasks.

Chapter 6 Operations Mission-Specific

6.1 General.

6.1.1 Operations level responders assigned mission-specific responsibilities at hazardous materials/WMD incidents are those operations level responders designated by the AHJ to