

NFPA® 472

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

2018



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NFPA® 472

Standard for

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

2018 Edition

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

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

Origin and Development of NFPA 472

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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