

Reference Materials

The jurisdictional entity in which the rescue personnel serves must have access to the most current editions of the following training manuals:

NFPA

NFPA 472: Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents

Training Completion

Applicant must:

- i. complete 'Courage to be Safe' coursework; and
- ii. complete and report all required objectives from the SFFMA HazMat Awareness & Operations curriculum.

Previously issued certifications are "grandfathered" to the Hazardous Materials Awareness & Operations as follows:

- i. Firefighter I training completion with an effective date prior to January 1, 2020.

The Austin office will issue an Eligibility Endorsement letter stating that the trainee is qualified to take the Board-approved examination.

Full Hazardous Materials Awareness & Operations Certification

Applicant must successfully complete the required Board-approved written examination.

Previously issued certifications are "grandfathered" to the Firefighter II level as follows:

- a. Firefighter I certifications with an effective date prior to January 1, 2020.

The Austin office will:

- a. issue a full Hazardous Materials Awareness & Operations certificate and shoulder patch; and
- b. maintain a permanent record of the certification.

Curriculum for HazMat Awareness & Operations

Objectives moved from Chapter 18 of 1001: Firefighter I

For qualification at Level I, the firefighter candidate shall meet the general knowledge requirements in 5.1.1; the general skill requirements in 5.1.2; the JPRs defined in Sections 5.2 through 5.5 of this standard; and the requirements defined in Chapter 5, Core Competencies for Operations Level Responders, and Section 6.6, Mission-Specific Competencies: Product Control, of *NFPA 472: Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents*.

18-I.01 Trainee shall identify and discuss the federal regulations and national standards that pertain to Hazardous Materials (HazMat) response.

NFPA 472-4.1, 472-5.1, 472-6.1

18-I.02 Trainees shall analyze an incident to determine the presence of hazardous materials/WMD, along with appropriate basic hazard and response information for each by completing the following tasks:

NFPA 472-4.1.2.2

- A. Demonstrate knowledge of what hazardous materials are, and the risks associated with them in an incident.
- B. Demonstrate knowledge of the potential outcomes associated with an emergency created when hazardous materials are present. Detect and recognize the presence of hazardous materials/WMD.
- C. Identify the hazardous materials/WMD involved.
- D. Collect hazard information from the current edition of the DOT *Emergency Response Guidebook* (ERG),
- E. Demonstrate knowledge of the role of the first responder awareness individual in the role of the department's emergency response plan including site and security control.

- 18-I.03 Trainee shall identify the definitions of both:
- A. Hazard Materials
 - B. Weapons of Mass Destruction (WMD)
- NFPA 472 4.2.1 (1)**
- 18-I.04 Trainee shall identify the hazard classes and divisions of hazardous materials/WMD and identify common examples of materials and primary hazards in each hazard class or division.
- NFPA 472 4.2.1 (2, 3)**
- A. Class 1 – Explosives
 - B. Class 2 – Flammable Gases
 - C. Class 3 – Flammable Liquids
 - D. Class 4 – Flammable Solids
 - E. Class 5 – Oxidizers
 - F. Class 6 – Toxic Substances & Infections substances
 - G. Class 7 – Radioactive Materials
 - H. Class 8 – Corrosive Materials
 - I. Class 9 – Miscellaneous
- 18-I.05 Trainee shall identify the differences between hazardous materials/WMD incidents and other emergencies
- NFPA 472 4.2.1 (4)**
- A. Size
 - B. Complexity
 - C. Intent
 - D. Crime scene management
 - E. Secondary devices/attacks & armed
- 18-I.06 Trainee shall identify typical occupancies and locations in the community where hazardous materials/WMD are manufactured, transported, stored, used, or disposed of.
- NFPA 472 4.2.1 (5)**
- 18-I.07 Trainee shall identify typical container shapes that can indicate the presence of hazardous materials/WMD.
- NFPA 472 4.2.1 (6)**
- A. Non-bulk containers
 - B. Bulk containers
 - C. Fixed facility storage systems
 - D. Pipelines
 - E. Ships and marine vessels
- 18-I.08 Trainee shall identify facility and transportation markings and colors that indicate hazardous materials/WMD.
- NFPA 472 4.2.1 (7)**
- 18-I.09 Given an NFPA 704 marking, describe the significance of the colors, numbers, and special symbols.
- NFPA 472 4.2.1 (8)**
- 18-I.10 Trainee shall identify U.S. and Canadian placards and labels that indicate hazardous materials/WMD. (see ERG or DOT Chart)
- NFPA 472 4.2.1 (9)**

- 18-I.11 Trainee shall identify the following basic information on material safety data sheets (MSDS) and shipping papers for hazardous materials:
NFPA 472 4.2.1 (10)
- 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.
- 18-I.12 Trainee shall identify examples of clues (other than occupancy/ location, container shape, markings/color, placards/ labels, MSDS, and shipping papers) the sight, sound, and odor of which indicate hazardous materials/WMD.
NFPA 472-4.2.1 (11)
- 18-I.13 Trainee shall describe the limitations of using the senses in determining the presence or absence of Hazard Materials/WMD
NFPA 472-4.2.1 (12)
- 18-I.14 Identify at least four types of locations that could be targets for criminal or terrorist activity using hazardous materials/WMD.
NFPA 472 4.2.1 (13)
- 18-I.15 Trainee shall describe the difference between a chemical and a biological incident.
NFPA 472 4.2.1 (14)
- A. Chemical – characterized by rapid onset of symptoms
 - B. Biological – symptoms require days or weeks to manifest
- 18-I.16 Trainee shall identify at least four indicators of possible criminal or terrorist activity involving:
NFPA 472 4.2.1 (15-20)
- A. Chemical agents
 - B. Biological agents
 - C. Radiological agents
 - D. Illicit Laboratories
 - E. Explosives
 - F. Secondary devices
- 18-I.17 Trainee shall 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:
NFPA 472 4.2.2
- A. Identify difficulties encountered in determining the specific names of hazardous materials/WMD at facilities and in transportation
 - B. Identify sources for obtaining the names of, UN/NA identification numbers for, or types of placard associated with hazardous materials/WMD in transportation
 - C. Identify sources for obtaining the names of hazardous materials/WMD at a facility
- 18-I.18 Trainee shall identify the fire, explosion, and health hazard information for each material by using the current edition of the DOT Emergency Response Guidebook (ERG).
NFPA 472 4.2.3

18-I.19 Trainee shall identify the actions to be taken to protect themselves and others and to control access to the scene by completing the following requirements:

NFPA 472 4.4.1 (1-12)

- A. Identify the location of both the emergency response plan and/or standard operating procedures
- B. Identify the role of the awareness level personnel during hazardous materials/WMD incidents
- C. Identify the following basic precautions to be taken to protect themselves and others in hazardous materials/ WMD incidents:
- D. 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:
 - 1. Emergency action (fire, spill, or leak and first aid)
 - 2. Personal protective equipment necessary
 - 3. Initial isolation and protective action distances
- E. Given the name of a hazardous material, identify the recommended personal protective equipment from the following list:
 - 1. Street clothing and work uniforms
 - 2. Structural fire-fighting protective clothing
 - 3. Positive pressure self-contained breathing apparatus
 - 4. Chemical-protective clothing and equipment
- F. Identify the definitions for each of the following protective actions:
 - 1. Isolation of the hazard area and denial of entry
 - 2. Evacuation
 - 3. Shelter-in-place
- G. Identify the size and shape of recommended initial isolation and protective action zones
- H. 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 (ERG).
- I. Identify the circumstances under which the following distances are used at a hazardous materials/WMD incidents:
 - 1. Table of Initial Isolation and Protective Action Distances
 - 2. Isolation distances in the numbered guides
- J. Describe the difference between the isolation distances on the orange-bordered guidebook pages and the protective action distances on the green-bordered Emergency Response Guidebook (ERG) pages
- K. Identify the techniques used to isolate the hazard area and deny entry to unauthorized persons at hazardous materials/WMD incidents
- L. Identify at least four specific actions necessary when an incident is suspected to involve criminal or terrorist activity

18-I.20 Trainee shall identify the initial notifications to be made and how to make them, consistent with the AHJ.

NFPA 472 4.4.2

- 18-I.21 Trainee shall be able to perform the following tasks
NFPA 472 5.1.2.2
- A. Analyze the hazardous material/WMD incident and determine the scope of the problem and potential outcomes
 - B. Plan an initial response to a hazardous materials/WMD incident within the capabilities and competencies of available personnel and personal protective equipment
 - C. 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
 - D. Evaluate the progress of the actions taken at a hazardous materials/WMD incident to ensure that the response objectives are being met safely, effectively
- 18-I.22 Trainees shall analyze an incident to determine the scope and hazards of a hazardous materials/WMD incident and predict potential outcomes by completing the following tasks:
NFPA 472-5.2
- A. Use containers, markings, and environmental clues to collect information about the incident;
 - B. Identify types of assistance provided by government authorities with incidents involving criminal or terrorist activity; and
 - C. Identify possible outcomes based on material/agent type, chemical properties, types of breach or release, and the health risks and physical hazards.
- 18-I.23 Trainees shall analyze an incident and plan the response by completing the following tasks:
NFPA 472-5.3, 472-5.4, 472-6.2.3, 472-6.2.4
- A. Describing response objectives
 - B. Identifying action options
 - C. Determine suitability of personal protective equipment
 - D. Identifying decontamination issues
- 18-I.24 Trainees shall demonstrate an ability to implement a response to an incident involving hazardous materials/WMD by completing the following tasks as listed in the emergency response plan and/or standard operating procedures:
NFPA 472-5.4
- A. Establish/enforce scene control, safety, evacuation, sheltering-in-place, emergency decontamination, and communication between responders and to the public.
 - B. Describe the process to preserve evidence.
 - C. Initiate the Incident Command System to include describing the purpose, need, benefits, and elements of the incident command system, the various incident levels, the role of the operations level responder, the duties and roles of specified functions, considerations for determining the location of the incident command post, procedures for requesting additional resources, and the role and response objectives of other agencies.
 - D. Describe considerations for the use of personal protective equipment provided by the AHJ, to include safety precautions, importance of the buddy system and backup personnel, the signs, symptoms and control of heat and cold stress and procedures for their control, the capabilities and limitations of personnel working in PPE, and procedures for cleaning, disinfecting, inspecting, maintaining, testing, and storing PPE.

- 18-I.25 Trainees shall demonstrate an ability to evaluate the progress of a response to an incident involving hazardous materials/WMD by completing the following tasks:
NFPA 472-5.5
- A. Identify if actions taken were effective in accomplishing the objectives, and describe the circumstances under which it would be prudent to withdraw from a hazardous materials/WMD incident.
 - B. Identify the methods for communicating the status of the planned response through the normal chain of command, and for immediate notification of the incident commander and other response personnel about critical emergency conditions at the incident.
- 18-I.26 Trainees shall meet all competencies at the awareness and operations level, all mission-specific competencies for PPE, and all competencies in this section by completing the following tasks within the capabilities and competencies of available personnel, PPE, and control equipment in accordance with the emergency response plan or standard operating procedures.
NFPA 472-6.6.1
- 18-I.27 Trainees shall plan an initial response by completing the following tasks:
NFPA 472.6.6.3
- A. Identify the options to accomplish a given response objective.
 - B. Identify the purpose for and the procedures, equipment, and safety precautions associated with each of the following control techniques: absorption, adsorption, damming, diking, dilution, diversion, remote valve shutoff, retention, vapor dispersion, vapor suppression.
 - C. Select the PPE equipment required to support product control at hazardous materials/WMD incidents based on local procedures.
- 18-I.28 Trainees shall demonstrate control functions by completing the following tasks:
NFPA 472-6.6.4
- A. Demonstrate the application of foam(s) or agent(s) on a spill or fire involving hazardous materials/WMD.
 - B. Identify the characteristics and applicability of the following Class B foams: Aqueous film-forming foam (AFFF), Alcohol-resistant concentrates (ARC), Fluoroprotein, High-expansion foam
 - C. Demonstrate how to perform the following control activities: absorption, adsorption, damming, diking, dilution, diversion, remote valve shutoff, retention, vapor dispersion, vapor suppression.
 - D. 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.
 - E. Describe the use of emergency remote shutoff devices at fixed facilities.
 - F. Describe local procedures for going through the technical decontamination process.