

Table of Contents

Introduction	1
Qualifications and Certification Steps.....	2
Awareness Level.....	2
Operational Level.....	2
Competencies for the First Responder at the Awareness Level.....	3
Competencies for the First Responder at the Operational Level.....	7
NFPA 472 Practical Evaluation	17

Introduction

NFPA Standard 472 Professional Competence of Responders to Hazardous Materials Incidents identifies the Job Performance Requirements (JPRs) that a candidate must complete to gain qualifications as a Responder to Hazardous Materials Incidents.

This appendix contains information on completing the certification process. It also contains a record keeping system candidates must utilize to record their progress within this program towards certification under the International Fire Service Accreditation Congress (IFSAC) and/or National Board on Fire Service Professional Qualifications (NPQS).

First responders at the **awareness level** are those persons who, in the course of their normal duties, could be the first on the scene of an emergency involving hazardous materials. First responders at the awareness level are expected to recognize the presence of hazardous materials, protect themselves, call for trained personnel, and secure the area.

The goal of the competencies at the awareness level shall be to provide first responders with the knowledge and skills to perform the following tasks safely. Therefore, when first on the scene of an emergency involving hazardous materials, the first responder at the awareness level shall be able to

1. Analyze the incident to determine both the hazardous materials present and the basic hazardous material by completing the following tasks:
 - Detect the presence of hazardous materials.
 - Survey a hazardous materials incident from a safe location to identify the name, UN/UA identification number, or type placard applied for any hazardous materials involved.
 - Collect hazard information from the current edition of the *North American Emergency Response Guidebook*.
2. Implement actions consistent with the local emergency response plan, the organization's standard operating procedures, and the current edition of the *North American Emergency Response Guidebook* by completing the following tasks:
 - Initiate protective actions.
 - Initiate the notification process.

First responders at the **operational level** are those persons who respond to releases or potential releases of hazardous materials as part of the initial response to the incident for the purposes of protecting nearby persons, the environment or property from the effects of the release. First responders at the operational level are expected to respond in a defensive fashion to control the release from a safe distance and keep it from spreading.

The goal of the competencies at the operational level shall be to provide first responders with the knowledge and skills to perform the following tasks safely. Therefore, in addition to being competent at the awareness level, the first responder at the operational level shall be able to:

- (a) Analyze a hazardous materials incident to determine the magnitude of the problem in terms of outcomes by completing the following tasks:
 1. Survey the hazardous materials incident to identify the containers and materials involved, determine whether hazardous materials have been released, and evaluate the surrounding conditions
 2. Collect hazard and response information from material safety data sheets (MSDS), CHEMTR.EC/CANUTECH/ SETIQ and shipper/manufacture contacts
 3. Predict the likely behaviour of a material as well as its container

4. Estimate the potential harm at a hazardous materials incident
- (b) Plan an initial response within the capabilities and competencies of available personnel, personal protective equipment, and control equipment by completing the following tasks:
1. Describe the response objectives for hazardous materials incidents
 2. Describe the defensive options available for a given response objective
 3. Determine whether the personal protective equipment provided is appropriate for implementing each defensive option
 4. Identify the emergency decontamination procedures
- (c) Implement the planned response to favourably change the outcomes consistent with the local emergency response plan and the organization's standard operating procedures by completing the following tasks:
1. Establish and enforce scene control procedures including control zones, emergency decontamination, and communications
 2. Initiate an incident management system (IMS) for hazardous materials incidents
 3. Don, work in, and doff personal protective equipment provided by the authority having jurisdiction
 4. Perform defensive control functions identified in the plan of action
- (d) Evaluate the progress of the actions taken to ensure that the response objectives are being met safely, effectively, and efficiently by **completing** the following tasks:
1. Evaluate the status of the defensive actions taken in accomplishing the response objectives
 2. Communicate the status of the planned response

Qualifications and Certification Steps

To gain certification a student must:

Awareness Level

- (a) Complete NFPA 472 JPRs through self-study, training on the job and/or through courses and seminar.
- (b) Produce a letter of recommendation from their Fire Chief.
- (c) Successfully pass a 50 question written evaluation based upon the North American Emergency Response Guide book , IFSTA Hazardous Materials for First Responders (2nd edition) and Awareness Level Students Manual (OFC) within 1 hour and attain a minimum 70% mark

Operational Level

- (a) Be certified to the Awareness Level under NFPA Standard 472 Professional Competence of Responders to Hazardous Materials Incidents
- (b) Complete NFPA 472 JPRs through self-study, training on the job and/or through courses and seminar.
- (c) Successfully pass a 50 question written evaluation based upon the North American Emergency Response Guidebook, IFSTA Hazardous Materials for First Responders (2nd edition), Operational Level Students Manual (OFC) and the IFSTA Self Contained Breathing Apparatus (2nd Edition), within 1 hour and attain a minimum 70% mark.
- (d) Successfully pass a practical evaluation of practical skills.

Competencies for the First Responder at the Awareness Level

Audit Date:

Candidate's Signature:

Auditors Signature:

Competencies	472 Ref.	Date	Supervisor	Verified
Competencies: Analyzing the incident	2-2			
Detecting the Presence of Hazardous Materials: Given various facility or transportation situations, or both, with and without hazardous materials present, the first responder at the awareness level shall identify those situations where hazardous materials are present. The first responder at the awareness level shall be able to:	2-2.1			
Identify the definition of hazardous materials (or dangerous goods, in Canada).	2-2.1.1			
Identify the DOT hazardous materials (or dangerous goods, in Canada).	2-2.1.2			
Identify the primary hazards associated with each of the DOT hazard classes and divisions of hazardous materials by hazard class or division.	2-2.1.3			
Identify the difference between hazardous materials incidents and other emergencies.	2-2.1.4			
Identify typical occupancies and locations in the community where hazardous materials are manufactured, transported, stored, used, or disposed of.	2-2.1.5			
Identify typical container shapes that can indicate hazardous materials.	2-2.1.6			
Identify facility and transportation markings and colors that indicate hazardous materials, including the following: (a) UN/NA identification numbers, (b) NFPA 704 markings, (c) Military hazardous materials markings, (d) Special hazard communications markings, (e) Pipeline markings, (f) Container markings	2-2.1.7			
Given an NFPA 704 marking, describe the significance of the colors, numbers, and special symbols.	2-2.1.8			
Identify U.S. and Canadian placards and labels that indicate hazardous materials.	2-2.1.9			
Identify the basic information on material safety data sheets (MSDS) and shipping papers that indicates hazardous materials.	2-2.1.10			
Identify where to find material safety data sheets (MSDS).	2-2.10.1			
Identify entries on a material safety data sheet that indicate the presence of hazardous materials.	2-2.10.2			

Competencies	472 Ref.	Date	Supervisor	Verified
Identify entries on a material safety data sheet that indicate the presence of hazardous materials.	2-2.10.2			
Identify the entries on shipping papers that indicate the presence of hazardous materials.	2-2.1.10.3			
Match the name of the shipping papers found in transportation (air, highway, rail, and water) with the mode of transportation.	2-2.1.10.4			
Identify the person responsible for having the shipping papers in each mode of transportation.	2-2.1.10.5			
Identify where the shipping papers are found in each mode of transportation.	2-2.1.10.6			
Identify where the papers can be found in an emergency in each mode of transportation.	2-2.1.10.7			
Identify examples of clues (other than occupancy/ location, container shape, markings/color, placards/labels, MSDS, and shipping papers) that use the senses of sight, sound, and odor to indicate hazardous materials.	2-2.1.11			
Describe the limitations of using the senses in determining the presence or absence of hazardous materials.	2-2.1.12			
Identify types of locations that could become targets for criminal or terrorist activity using hazardous goods.	2-2.1.13			
Identify at least 4 indicators of possible criminal or terrorist activity involving hazardous goods.	2-2.1.14			
Surveying the Hazardous Materials Incident from a Safe Location. Given examples of facility and transportation situations involving hazardous materials, the first responder at the awareness level shall identify the hazardous material(s) in each situation by name. UN/NA identification number, or type placard applied. The first responder at the awareness level shall be able to:	2-2.2			
Identify difficulties encountered in determining the specific names of hazardous materials in both facilities and transportation.	2-2.2.1			
Identify sources for obtaining the names of, UN/NA identification numbers for, or types of placard associated with associated with hazardous materials in transportation.	2-2.2.2			
Identify sources for obtaining the names of hazardous materials in a facility.	2-2.2.3			
Collecting Hazard Information. Given the identity of various hazardous materials (name, UN/NA identification number, or type of placard), the first responder at the awareness level shall identify the fire, explosion, and health hazard information for each material by using the current edition of the <i>North American Emergency Response Guidebook</i> . The first responder at the awareness level shall be able to:	2-2.3			

Competencies	472 Ref.	Date	Supervisor	Verified
Identify the three methods for determining the appropriate guide page for a hazardous material.	2-2.3.1			
Identify the two general types of hazards found on each guide page.	2-2-3-2			
Competencies--Planning the Response. (No competencies currently required at this level)	2-3			
Initiating Protective Actions. Given examples of facility and transportation hazardous materials incidents, the local emergency response plan, the organization's standard operating procedures, and the current edition of the <i>North American Emergency Response Guidebook</i> , first responders at the awareness level shall be able to identify the actions to be taken to protect themselves and others and to control access to the scene. The first responder at the awareness level shall be able to:	2-4.1			
Identify the location of both the local emergency response plan and the organization's standard operating procedures.	2-4.1.1			
Identify the role of the first responder at the awareness level during a hazardous materials incident.	2-4.1.2			
Identify the basic precautions to be taken to protect themselves and others in a hazardous materials incident.	2-4.1.3			
Identify the precautions necessary when providing emergency medical care to victims of hazardous materials incidents.	2-4.1.3.1			
Identify typical ignition sources found at the scenes of hazardous materials incidents.	2-4-1-3-2			
Identify the ways hazardous materials are harmful to people, the environment, and property at hazardous materials incidents.	2-4.1.3.3			
Identify the general routes of entry for human exposure to hazardous materials.	2-4.1.3.4			
Given the identity of various hazardous materials (name, UN/NA identification number, or type of placard), identify the following response information: (a) Emergency action (fire, spill, or leak and first aid), (b) Personal protective equipment necessary, (c) Initial isolation and protective action distances.	2-4.1.4			
Given the name of a hazardous material, identify the recommended personal protective equipment from the following list: (a) Street clothing and work uniforms (b) Structural fire-fighting protective clothing (c) Positive pressure self-contained breathing apparatus (d) Chemical-protective clothing and equipment	2-4.1.4.1			
Identify the definition for each of the following protective actions: (a) Isolation of the hazard area and denial of entry (b) Evacuation (c) Sheltering in-place protection.	2-4.1.4.2			
Identify the shapes of recommended initial isolation and protective action zones.	2-4.1.4.3			

Competencies	472 Ref.	Date	Supervisor	Verified
Describe the difference between small and large spills as found in the table of Initial Isolation and Protective Action Distances.	2-4.1.4.4			
Identify the circumstances under which the following distances are used at a hazardous materials incident: (a) Table of initial isolation and protective action distances (b) Isolation distances in the numbered guides.	2-4.1.4.5			
Describe the difference between the isolation distances in the orange-bordered guide pages and the protective action distances in the green-bordered pages in the document.	2-4.1.4.6			
Identify the techniques used to isolate the hazard area and deny entry to unauthorized persons at hazardous materials incidents.	2-4.1.5			
Identify the specific actions necessary when an incident is suspected to involve criminal or terrorist activity.	2-4.1.6			
Initiating the Notification Process. Given either a facility or transportation scenario involving hazardous materials, regardless of the presence of criminal or terrorist activities, the first responder at the awareness level shall identify the appropriate initial notification to be made and how to make them, consistent with the local emergency response plan or the organization's standard operating procedures.	2-4.2			
Competencies - Evaluating Progress. (No competencies currently required at this level)	2-5			
Competencies - Terminating the Incident. (No competencies currently required at this level).	2-6			

Competencies for the First Responder at the Operational Level

Audit Date:

Candidate's Signature:

Auditors Signature:

Competencies	472 Ref.	Date	Supervisor	Verified
Competencies-Analyzing the Incident.	3-2			
Surveying the Hazardous Materials Incident. Given examples of both facility and transportation scenarios involving hazardous materials, the first responder at the operational level shall survey the incident to identify the containers and materials involved, determine whether hazardous materials have been released, and evaluate the surrounding conditions. The first responder at the operational level shall be able to:	3-2.1			
Given three (3) examples each of liquid, gas, and solid hazardous materials, identify the general shapes of containers in which the hazardous materials are typically found.	3-2.1.1			
Given examples of the following tank cars, identify each tank car by type: (a) Nonpressure tank cars with and without expansion (b) domes (c) Pressure tank cars (d) Cryogenic liquid tank cars.	3-2.1.1.1			
Given examples of the following intermodal tank containers, identify each intermodal tank container by type: (a) Nonpressure intermodal tank containers (b) Pressure intermodal tank containers	3-2.1.1.2			
Given examples of the following cargo tanks, identify each cargo tank by type: (a) MC-306/DOT 406 cargo tanks (b) MC-307/DOT-407 cargo tanks (c) MC-312/DOT-412 cargo tanks (d) MC-331 cargo tanks (e) MC-338 cargo tanks (f) Dry bulk cargo tanks	3-2.1.1.3			
Given examples of the following facility tanks, identify each fixed facility tank by type: (a) Nonpressure facility tanks (b) Pressure facility tanks (c) Cryogenic liquid tanks	3-2.1.1.4			
Given examples of the following nonbulk packages, identify each package by type: (a) Bags (b) Carboys (c) Cylinders (d) Drums	3-2.1.1.5			

Competencies	472 Ref.	Date	Supervisor	Verified
Given examples of facility and transportation containers, identify the markings that differentiate one container from another	3-2.1.2			
Given examples of the following marked transport vehicles and their corresponding shipping papers, identify the vehicle or tank identification marking: (a) Rail transport vehicles, including tank cars (b) Intermodal equipment including tank containers (c) Highway transport vehicles, including cargo tanks	3-2.1.2.1			
Given examples of facility containers, identify the markings indicating container size, product contained, and/ or site identification numbers.	3-2.1.2.2			
Given examples of facility and transportation situations involving hazardous materials, identify the name (s) of the hazardous materials) in each situation.	3-2.1.3			
Identify the following information on a pipeline marker: (a) Product (b) Owner (c) Emergency telephone number	3-2.1.3.1			
Given a pesticide label, identify each of the following pieces of information; then match the piece of information to its significance in surveying the hazardous materials incident: (a) Name of pesticide (b) Signal word (c) Pest control product (PCP) number (in Canada) (d) Precautionary statement (e) Hazard statement (f) Active ingredient	3-2.1.3.2			
Identify and list the surrounding conditions that should be noted by the first responders when surveying hazardous materials incidents.	3-2.1.4			
Give examples of ways to verify information obtained from the survey of a hazardous materials incident.	3-2.1.5			
Identify at least 3 additional hazards that could be associated with an incident involving criminal or terrorist activity.	3-2.1.6			
Collecting Hazard and Response Information. Given known hazardous materials, the first responder at the operational level shall collect hazard and response information using material safety data sheets (MSDS), CHEMTREC/CANUTEC/ SETIQ, and contacts with the shipper/manufacturer. The first responder at the operational level shall be able to:	3-2.2			
Match the definitions associated with the DOT hazard classes and divisions of hazardous materials, including refrigerated liquefied gases and cryogenic liquids, with the class or division.	3-2.2.1			
Identify two ways to obtain a material safety data sheet (MSDS) in an emergency.	3-2.2.2			

Competencies	472 Ref.	Date	Supervisor	Verified
<p>Using a material safety data sheet (MSDS) for a specified material, identify the following hazard and response information:</p> <ul style="list-style-type: none"> (a) Physical and chemical characteristics (b) Physical hazards of the material (c) Health hazards of the material (d) Signs and symptoms of exposure (e) Routes of entry (f) Permissible exposure limits (g) Responsible party contact (h) Precautions for safe handling (including hygiene practices, protective measures, procedures for cleanup of spills or leaks) (i) Applicable control measures including personal protective equipment (j) Emergency First Aid procedures 	3-2.2.3			
<p>Identify the following:</p> <ul style="list-style-type: none"> (a) Type of assistance provided by CHEMTREC/CANUTEC/SETIQ (b) Procedure for contacting CHEMTREC/CANUTEC/SETIQ (c) Information to be furnished to CHEMTREC/CANUTEC/SETIQ 	3-2.2.4			
<p>Identify two methods of contacting the manufacturer or shipper to obtain hazard and response information.</p>	3-2.2.5			
<p>Identify the type of assistance provided by the federal defense authorities, such as Defense Logistics Agency and U.S. Army Operations Center, with respect to criminal or terrorist activities involving hazardous goods.</p>	3-2.2.6			
<p>Identify the procedure for contacting federal defense authorities as specified in the local emergency response plan (ERP) or the organization's standard operating procedures (SOP).</p>	3-2.2.6.1			
<p>Predicting the Behaviour of a Material and its Container. Given an incident involving a single hazardous material, the first responder at the operational level shall predict the likely behaviour of the material and its container. The first responder at the operational level shall be able to:</p>	3-2.3			
<p>Given two examples of scenarios involving known hazardous materials, interpret the hazard and response information obtained from the current edition of the <i>North American Emergency Response Guidebook</i>, material safety data sheets (MSDS), CHEMTREC/CANUTEC/SETIQ and shipper/manufacturer contacts.</p>	3-2.3.1			

Competencies	472 Ref.	Date	Supervisor	Verified
Match the following chemical and physical properties with their significance and impact on the behaviour of the container and/or its contents: (a) Boiling point (b) Chemical reactivity (c) Corrosivity (pH) (d) Flammable (explosive) range (LEL & UEL) (e) Flash point (f) Ignition (autoignition) temperature (g) Physical state (solid, liquid, gas) (h) Specific gravity (i) Toxic products of combustion (j) Vapour density (k) Vapour pressure (l) Water solubility	3-2.3.1.1			
Identify the differences among the following terms: (a) Exposure and hazard (b) Exposure and contamination (c) Contamination and secondary contamination	3-2.3.1.2			
Identify three types of stress that could cause a container system to release its contents.	3-2.3.2			
Identify five ways in which containers can breach.	3-2.3.3			
Identify four ways in which containers can release their contents.	3-2.3.4			
Identify at least four dispersion patterns that can be created upon release of a hazardous material.	3-2.3.5			
Identify the three general time frames for predicting the length of time that exposures can be in contact with hazardous materials in an endangered area.	3-2.3.6			
Identify the health and physical hazards that could cause harm	3-2.3.7			
Identify the health hazards associated with the following terms: (a) Asphyxiant (b) Chronic health hazard (c) Convulsant (d) Irritant/corrosive (e) Sensitizer/allergen	3-2.3.8			

Competencies	472 Ref.	Date	Supervisor	Verified
Given the following types of warfare agents, identify the corresponding DOT hazard class and division: (a) Nerve agents, (b) Vesicants (blister agents) (c) Blood agents (d) Choking agents (e) Irritants (riot control agents) (f) Biological agents	3-2.3.9			
Estimating the Potential Harm. The first responder at the operational level shall estimate the potential harm within the endangered area at a hazardous materials incident. The first responder at the operational level shall be able to:	3-2.4			
Identify a resource for determining the size of an endangered area of a hazardous materials incident.	3-2.4.1			
Given the dimensions of the endangered area and the surrounding conditions at a hazardous materials incident, estimate the number and type of exposures within that endangered area.	3-2.4.2			
Identify resources available for determining the concentrations of a released hazardous material within an endangered area.	3-2.4.3			
Given the concentrations of the released material, identify the factors for determining the extent of physical, health, and safety hazards within the endangered area of a hazardous materials incident.	3-2.4.4			
Competencies-Planning the Response.	3-3			
Describing Response Objectives for Hazardous Materials Incidents. Given at least two scenarios involving hazardous materials incidents (one facility and one transportation), the first responder at the operational level shall describe the first responder's response objectives for each problem. The first responder- at the operational level shall be able to:	3-3.1			
Given an analysis of a hazardous materials problem and the exposures already lost, identify the steps for determining the number of exposures that could be saved by the first responder with the resources provided by the authority having jurisdiction and operating in a defensive fashion.	3-3.1.1			
Given an analysis of a hazardous materials incident, describe the steps for determining defensive response objectives.	3-3.1.2			
Identifying Defensive Options. Given simulated facility and transportation hazardous materials problems, the first responder at the operational level shall identify the defensive options for each response objective. The first responder at the operational level shall be able to:	3-3.2			
Identify the defensive options to accomplish a given response objective.	3-3.2.1			

Competencies	472 Ref.	Date	Supervisor	Verified
Identify the purpose for, and the procedures, equipment, and safety precautions used with, each of the following control techniques: (a) Absorption (b) Dike, dam, diversion, retention (c) Dilution (d) Remote valve shutoff (e) Vapour dispersion (f) Vapour suppression	3-3.2.2			
Determining Appropriateness of Personal Protective Equipment. Given the name of the hazardous material involved and the anticipated type of exposure, the first responder at the operational level shall determine whether available personal protective equipment is appropriate for implementing a defensive option. The first responder at the operational level shall be able to:	3-3.3			
Identify the appropriate respiratory protection required for a given defensive option.	3-3.3.1			
Identify the three types of respiratory protection and the advantages and limitations presented by the use of each at hazardous materials incidents.	3-3.3.1.1			
Identify the required physical capabilities and limitations of personnel working in positive pressure self-contained breathing apparatus.	3-3.3.1.2			
Identify the appropriate personal protective clothing required for a given defensive option.	3-3.3.2			
Identify skin contact hazards encountered at hazardous materials incidents.	3-3.3.2.1			
Identify the purpose, advantages, and limitations of the following levels of protective clothing at hazardous materials incidents: (a) Structural fire-fighting protective clothing (b) High temperature-protective clothing (c) Chemical-protective clothing 1. Liquid splash-protective clothing 2. Vapour-protective clothing	3-3.3.2.2			
Identifying Emergency Decontamination Procedures. The first responder at the operational level shall identify emergency decontamination procedures. The first responder at the operational level shall be able to:	3-3.4			
Identify ways that personnel, personal protective equipment, apparatus, and tools and equipment become contaminated.	3-3.4.1			

Competencies	472 Ref.	Date	Supervisor	Verified
Describe how the potential for secondary contamination determines the need for emergency decontamination procedures	3-3.4.2			
Identify the purpose of emergency decontamination procedures at hazardous materials incidents	3-3.4.3			
Identify the advantages and limitations of emergency decontamination procedures.	3-3.4.4			
Describe the procedure listed in the local emergency response plan or the organization's standard operating procedures for decontamination of a large number of people exposed to hazardous materials.	3-3.4.5			
Competencies-Implementing the Planned Response.	3-4			
Establishing and Enforcing Scene Control Procedures. Given scenarios for facility and/or transportation hazardous materials incidents, the first responder at the operational level shall identify how to establish and enforce scene control including control zones, emergency decontamination, and communications. The first responder at the operational level shall be able to:	3-4.1			
Identify the procedures for establishing scene control through control zones.	3-4.1.1			
Identify the criteria for determining the locations of the control zones at hazardous materials incidents.	3-4.1.2			
Identify the basic techniques for the following protective actions at hazardous materials incidents: (a) Evacuation (b) Sheltering in-place protection	3-4.1.3			
Identify the considerations associated with locating emergency decontamination areas	3-4.1.4			
Demonstrate the ability to perform emergency decontamination.	3-4.1.5			
Identify the items to be considered in a safety briefing prior to allowing personnel to work on at the following: (a) Hazardous materials incident (b) Hazardous materials incident involving criminal or terrorist activities.	3-4.1.6			
Initiating the Incident Management System (IMS). Given simulated facility and/or transportation hazardous materials incidents, the first responder at the operational level shall initiate the incident management system (IMS) specified in the local emergency response plan and the organization's standard operating procedures. The first responder at the operational level shall be able to:	3-4.2			

Competencies	472 Ref.	Date	Supervisor	Verified
Identify the role of the first responder at the operational level during hazardous materials incidents as specified in the local emergency response plan and the organization's standard operating procedures.	3-4.2.1			
Identify the levels of hazardous materials incidents as defined in the local emergency response plan.	3-4.2.2			
Identify the purpose, need, benefits, and elements of an incident management system (IMS) at hazardous materials incidents.	3-4.2.3			
Identify the considerations for determining the location of the command post for a hazardous materials incident.	3-4.2.4			
Identify the procedures for requesting additional resources at a hazardous materials incident.	3-4.2.5			
Identify the authority and responsibilities of the safety officer.	3-4.2.6			
Using Personal Protective Equipment. The first responder at the operational level shall demonstrate the ability to don, work in, and doff the personal protective equipment provided by the authority having jurisdiction. The first responder at the operational level shall be able to:	3-4.3			
Identify the importance of the buddy system in implementing the planned defensive options.	3-4.3.1			
Identify the importance of the backup personnel in implementing the planned defensive options	3-4.3.2			
Identify the safety precautions to be observed when approaching and working at hazardous materials incidents	3-4.3.3			
Identify the symptoms of heat and cold stress.	3-4.3.4			
Identify the physical capabilities required for, and the limitations of, personnel working in the personal protective equipment as provided by the authority having jurisdiction.	3-4.3.5			
Match the function of the operational components of the positive pressure self-contained breathing apparatus provided to the hazardous materials responder with the name of the component.	3-4.3.6			
Identify the procedures for cleaning, disinfecting, and inspecting respiratory protective equipment.	3-4.3.7			
Identify the procedures for donning, working in, and doffing positive pressure self-contained breathing apparatus.	3-4.3.8			
Demonstrate donning, working in, and doffing positive pressure self-contained breathing apparatus.	3-4.3.9			
Performing Defensive Control Actions. Given a plan of action for a hazardous materials incident within their capabilities, the first responder at the operational level shall demonstrate defensive control actions set out in the plan. The first responder at the operational level shall be able to:	3-4.4			

Competencies	472 Ref.	Date	Supervisor	Verified
Using the type of fire-fighting foam or vapour suppressing agent and foam equipment furnished by the authority having jurisdiction, demonstrate the proper application of the fire-fighting foam(s) or vapour suppressing agent(s) on a spill or fire involving hazardous materials.	3-4.4.1			
Identify the characteristics and applicability of the following foams: (a) Protein (b) Fluoroprotein (c) Special purpose 1. Polar solvent alcohol-resistant concentrates 2. Hazardous materials concentrates (d) Aqueous film-forming foam (AFFF) (e) High expansion	3-4.4.2			
Given the appropriate tools and equipment, demonstrate how to perform the following defensive control activities: (a) Absorption (b) Damming (c) Diking (d) Dilution (e) Diversion (f) Retention (g) Vapour dispersion (h) Vapour suppression	3-4.4.3			
Identify the location and describe the use of the mechanical, hydraulic, and air emergency remote shutoff devices as found on cargo tanks.	3-4.4.4			
Describe the objectives and dangers of search and rescue missions at hazardous materials incidents	3-4.4.5			
Describe the procedures, such as those listed in the local emergency response plan or the organization's standard operating procedures, to preserve evidence at hazardous materials incidents involving criminal or terrorist activities.	3-4.4.6			
Competencies-Evaluating Progress.	3-5			
Evaluating the Status of Defensive Actions. Given simulated facility and/or transportation hazardous materials incidents, the first responder at the operational level shall evaluate the status of the defensive actions taken in accomplishing the response objectives. The first responder at the operational level shall be able to:	3-5.1			

Competencies	472 Ref.	Date	Supervisor	Verified
Identify the considerations for evaluating whether defensive options are effective in accomplishing the objectives.	3-5.1.1			
Describe the circumstances under which it would be prudent to withdraw from a hazardous materials incident	3-5.1.2			
Communicating the Status of the Planned Response. The first responder at the operational level shall communicate the status of the planned response to the incident commander and other response personnel. The first responder at the operational level shall be able to:	3-5.2			
Identify the methods for communicating the status of the planned response to the incident commander through the normal chain of command.	3-5.2.1			
Identify the methods for immediate notification of the incident commander and other response personnel about critical emergency conditions at the incident.	3-5.2.2			
Competencies-Terminating the Incident. (No competencies currently required at this level.)	3-6			

Practical Skills

Demonstrate the ability to perform emergency decontamination.	3-4.1.5
Demonstrate donning, working in, and doffing positive pressure self-contained breathing apparatus.	3-4.3.9
Using the type of fire-fighting foam or vapour suppressing agent and foam equipment furnished by the authority having jurisdiction, demonstrate the proper application of the fire-fighting foam(s) or vapour suppressing agent(s) on a spill or fire involving hazardous materials.	3-4.4.1
Given the appropriate tools and equipment, demonstrate how to perform the following defensive control activities: (a) Absorption (b) Damming (c) Diking (d) Dilution (e) Diversion (f) Retention (g) Vapour dispersion (h) Vapour suppression	3-4.4.3

NFPA 472 Practical Evaluation

Professional Competence of Responders to Hazardous Materials Incidents Operations Level

Name of Person Being Audited _____

Date of Audit _____

Ratings: 70 points total required to achieve a pass				
Standard Reference	Practical Exercise Task Outline	Available Points	Score	
			1 st Attempt	2 nd Attempt
3-4.1.5	Demonstrate the ability to perform emergency decontamination on co-worker.	10		
3-4.3	Demonstrate donning and working in personal protective clothing. Note: must be donned in one minute.	10		
3-4.3.9	Demonstrate donning, working in and doffing Positive Pressure Self-Contained Breathing Apparatus. Note: Must be donned in one minute.	10		
3-4.4.1	Apply foam to a hazardous materials spill or fire.	10		
3-4.4.3	Demonstrate how to perform the following defensive control activities: a. Absorption b. Damming c. Diking d. Dilution e. Diversion f. Retention g. Vapour Dispersion h. Vapour Suppression	60 total 7.5 7.5 7.5 7.5 7.5 7.5 7.5 7.5		
TOTAL SCORE		100		
<p>Students must achieve 70% passmark.</p> <p>Student will be given two attempts to pass the Practical Exercise.</p>				
<p>_____</p> <p>Auditors Name</p>		<p>_____</p> <p>Auditors Signature</p>		