



**Standardized Curriculum Form
Ontario, Canada**

**Office of the Fire Marshal and Emergency Management
Curriculum based on
NFPA 472, Chapter 4, 2013 Edition**

**HAZARDOUS MATERIALS/WEAPONS OF
MASS DESTRUCTION AWARENESS**

**National Fire Protection Association Standard for Competence
of Responders to Hazardous Materials/Weapons of Mass
Destruction Incidents**

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Components of the Office of the Fire Marshal and Emergency Management Standardized Curriculum Form

The Office of the Fire Marshal and Emergency Management (OFMEM) Standardized Curriculum Forms in Ontario, Canada, are based on internationally-recognized, competency-based, professional qualifications standards through the National Fire Protection Association (NFPA). Columns within this form from pages 4 and onward are composed of:

NFPA Objective

National Fire Protection Association Objectives are major competencies and Job Performance Requirements (JPR) within a professional qualifications standard that learners must acquire before successful completion of voluntary testing and certification. To attain these competencies, the OFMEM is offering flexible training delivery models centered on being accessible, attainable, and affordable.

Requisite Knowledge

Requisite Knowledge is defined as “Fundamental knowledge one must have in order to perform a specific task”. This can be acquired by referring to the various suggested readings described below. Information used to construct multiple choice test questions in the Provincial Certification Exam for HAZARDOUS MATERIALS/WMD AWARENESS are derived from these materials.

Requisite Skills

Requisite Skills are defined as “The essential skills one must have in order to perform a specific task”. Currently, those voluntarily seeking certification to NFPA 472, Chapter 4, 2013 Edition are not required to be skills tested. Please note this will change when the Standard transitions in the future to becoming NFPA 1072 in 2017.

Suggested Readings

Multiple choice test bank questions in the Provincial Certification Exam for HAZARDOUS MATERIALS/WMD AWARENESS are derived from the following suggested readings for covering requisite knowledge:

<u>Publisher/Title/Edition</u>	<u>Key Word Reference</u>
1. NFPA 472, <i>Standards for Professional Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents</i> , 2013 Edition	NFPA 472, 2013 Ed.
2. DOT, <i>Emergency Response Guidebook</i> , 2012 Edition	ERG, 2012 Ed.
AND	
3. IFSTA, <i>Essentials of Fire Fighting and Fire Department Operations</i> , 6 th Edition	IFSTA EOFF, 6 th Ed.
OR one of the following below:	
4. Jones and Bartlett, <i>Fundamentals of Fire Fighter Skills</i> , 3 rd Edition	J&B FFFS, 3 rd Ed.
5. IFSTA, <i>Hazardous Materials for First Responders</i> , 4 th Edition	IFSTA HMFR, 4 th Ed.
6. Jones and Bartlett, <i>Hazardous Materials Awareness and Operations</i> , 2 nd Edition	J&B HMAO, 2 nd Ed.

Knowledge Test Weighting (Out of 100%)

This column references percentage of multiple choice questions that will appear on the Provincial Certification Exam for knowledge-based testing for HAZARDOUS MATERIALS/WMD AWARENESS.

Questions are validated by a Provincial Advisory Committee (PAC), and used for voluntary, knowledge-based testing of those seeking certification to NFPA 472, Chapter 4, 2013 Edition through the Academic Standards and Evaluation Section of the Office of the Fire Marshal and Emergency Management. A mark of 70% or better is required to receive a “Pass” on the knowledge test.

Skill Objective

As with most NFPA programs, this column references skill objectives that will be evaluated by the Office of the Fire Marshal and Emergency Management to test Requisite Skill requirements of HAZARDOUS MATERIALS /WMD AWARENESS. As stated above, those voluntarily seeking certification to NFPA 472, Chapter 4, 2013 Edition are presently not required to be skills tested. Please note this will change when the standard transitions in the future to becoming NFPA 1072 in 2017.

**Provincial Advisory Committee for HAZARDOUS MATERIALS/WMD AWARENESS
NFPA 472, Chapter 4, 2013 Edition**

This document has been reviewed and signed-off by the following representatives of the Office of the Fire Marshal and Emergency Management (OFMEM) in Ontario, Canada:

Educational Consultant Academic Standards and Evaluation Section	Date
Educational Consultant Academic Standards and Evaluation Section	Date
Section Manager Academic Standards and Evaluation Section	Date
Fire Marshal and Chief, Emergency Management Ministry of Community Safety and Correctional Services	Date

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Course: HAZAROUS MATERIALS/WEAPONS OF MASS DESTRUCTION AWARENESS

Standard: NFPA 472, Chapter 4, 2013 Edition

NFPA Objective	Requisite Knowledge	Requisite Skills	Suggested Readings	Knowledge Test Weighting	Skill Objective #
4.1 General					
4.1.1 Introduction					
4.1.1.1					
Awareness level personnel shall be persons who, in the course of their normal duties, could encounter an emergency involving hazardous materials/weapons of mass destruction (WMD) and who are expected to recognize the presence of the hazardous materials/WMD, protect themselves, call for trained personnel, and secure the area.					
4.1.1.2					
Awareness level personnel shall be trained to meet all competencies of this chapter.					
4.1.1.3					
Awareness level personnel shall receive additional training to meet applicable governmental occupational health and safety regulations.					
4.1.2 Goal					
4.1.2.1					
The goal of the competencies in this chapter shall be to provide personnel already on the scene of a hazardous materials/WMD incident with the knowledge and skills to perform the tasks in 4.1.2.2 safely and effectively.					
4.1.2.2					
When already on the scene of a hazardous materials/WMD incident, the awareness level	(1) Analyze the incident to determine both the hazardous material/WMD present and the		ERG, 2012 Ed.	6% of Questions	



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NFPA Objective	Requisite Knowledge	Requisite Skills	Suggested Readings	Knowledge Test Weighting	Skill Objective #
personnel shall be able to perform the following tasks:	basic hazard and response information for each hazardous material/WMD agent by completing the following tasks:		IFSTA EOFF, 6th Ed. Chapters 23, 24 J&B FFFS, 3rd Ed. Chapters 28, 29, 30, 31 IFSTA HMFR, 4th Ed. Chapters 1, 2 J&B HMAO, 2nd Ed. Chapter 3		
	(a) Detect the presence of hazardous materials/WMD				
	(b) Survey a hazardous materials/WMD incident from a safe location to identify name, UN/NA identification number, type of placard, or other distinctive marking applied for the hazardous materials/WMD involved				
	(c) Collect hazard information from the current edition of the DOT <i>Emergency Response Guidebook</i>				
	2) Implement actions consistent with the authority having jurisdiction (AHJ), and the current edition of the DOT <i>Emergency Response Guidebook</i> by completing the following tasks:				
	(a) Initiate protective actions				
	(b) Initiate the notification process				
4.2 Competencies - Analyzing the Incident.					
4.2.1 Detecting the Presence of Hazardous Materials/WMD.					
Given examples of various situations, awareness level personnel shall identify those situations where hazardous materials/WMD are present by completing the following requirements:	(1) Identify the definitions of both <i>hazardous materials</i> (or <i>dangerous goods</i> , in Canada) and <i>WMD</i> .		ERG, 2012 Ed. IFSTA EOFF, 6th Ed. Chapters 23, 24 J&B FFFS, 3rd Ed. Chapters 28, 29, 30, 31 IFSTA HMFR, 4th Ed. Chapters 1, 2	54% of questions	
	(2) Identify the UN/DOT hazard classes and divisions of hazardous materials/WMD and identify common examples of materials in each hazard class or division				
	(3) Identify the primary hazards associated with				



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NFPA Objective	Requisite Knowledge	Requisite Skills	Suggested Readings	Knowledge Test Weighting	Skill Objective #
	<p>each UN/DOT hazard class and division</p> <p>(4) Identify the difference between hazardous materials/WMD incidents and other emergencies</p> <p>(5) Identify typical occupancies and locations in the community where hazardous materials/WMD are manufactured, transported, stored, used, or disposed of.</p> <p>(6) Identify typical container shapes that indicate the presence of hazardous materials/WMD</p> <p>(7) Identify facility and transportation markings and colors that indicate hazardous materials/WMD, including the following:</p> <p>(a) Transportation markings, including UN/NA identification number markings, marine pollutant mark, elevated temperature (HOT) mark, commodity markings, and inhalation hazard mark</p> <p>(b) NFPA 704, <i>Standard System for the Identification of the Hazards of Materials for Emergency Response</i>, markings</p> <p>(c) Military hazardous materials/WMD markings</p> <p>(d) Special hazard communication markings for each hazard class</p> <p>(e) Pipeline markings</p> <p>(f) Container markings</p> <p>(8) Given an NFPA 704 marking, describe the significance of the colors, numbers, and special symbols</p> <p>(9) Identify U.S. and Canadian placards and labels that indicate hazardous materials/WMD</p> <p>(10) Identify the following basic information on</p>		<p style="text-align: center;">J&B HMAO, 2nd Ed. Chapter 3</p>		



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NFPA Objective	Requisite Knowledge	Requisite Skills	Suggested Readings	Knowledge Test Weighting	Skill Objective #
	<p>material safety data sheets (MSDS) and shipping papers for hazardous materials:</p> <p>(a) Identify where to find MSDS</p> <p>(b) Identify major sections of an MSDS</p> <p>(c) Identify the entries on shipping papers that indicate the presence of hazardous materials</p> <p>(d) Match the name of the shipping papers found in transportation (air, highway, rail, and water) with the mode of transportation</p> <p>(e) Identify the person responsible for having the shipping papers in each mode of transportation</p> <p>(f) Identify where the shipping papers are found in each mode of transportation</p> <p>(g) Identify where the papers can be found in an emergency in each mode of transportation</p> <p>(11) Identify examples of clues (other than occupancy/location, container shape, markings/color, placards/labels, MSDS, and shipping papers) to include sight, sound and odor of which indicate hazardous materials/WMD</p> <p>(12) Describe the limitations of using the senses in determining the presence or absence of hazardous materials/WMD</p> <p>(13) Identify at least four types of locations that could become targets for criminal or terrorist activity using hazardous materials/WMD</p> <p>(14) Describe the difference between a chemical and biological incident</p> <p>(15) Identify at least four indicators of possible criminal or terrorist activity involving</p>				



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NFPA Objective	Requisite Knowledge	Requisite Skills	Suggested Readings	Knowledge Test Weighting	Skill Objective #
	chemical agents (16) Identify at least four indicators of possible criminal or terrorist activity involving biological agents (17) Identify at least four indicators of possible criminal or terrorist activity involving radiological agents (18) Identify at least four indicators of possible criminal or terrorist activity involving illicit laboratories (clandestine laboratories, weapons lab, ricin lab) (19) Identify at least four indicators of possible criminal or terrorist activity involving explosives (20) Identify at least four indicators of secondary devices				
4.2.2 Surveying the Hazardous Materials/WMD Incidents					
Given examples of hazardous materials/WMD incidents, awareness level personnel shall, from a safe location, identify the hazardous material(s)/WMD involved in each situation by name, UN/NA identification number, or type placard applied by completing the following requirements:	(1) Identify difficulties encountered in determining the specific names of hazardous materials/WMD at facilities and in transportation		ERG, 2012 Ed. IFSTA EOFF, 6th Ed. Chapter 23 J&B FFFS, 3rd Ed. Chapter 30 IFSTA HMFR, 4th Ed. Chapter 2 J&B HMAO, 2nd Ed. Chapter 3	2% of questions	
	(2) Identify sources for obtaining the names of, (UN/NA) identification numbers for, or types of placard associated with hazardous materials/WMD in transportation				
	(3) Identify sources for obtaining the names of hazardous materials/WMD at a facility				
4.2.3 Collecting Hazard Information.					
Given the identity of various hazardous materials/WMD (name, UN/NA identification	(1) Identify the three methods for determining the guidebook page for a hazardous		ERG, 2012 Ed.	8% of Questions	



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NFPA Objective	Requisite Knowledge	Requisite Skills	Suggested Readings	Knowledge Test Weighting	Skill Objective #
number, or type of placard), the awareness level personnel shall identify the fire, explosion, and health hazard information for each material by using the current edition of the DOT <i>Emergency Response Guidebook</i> by completing the following requirements:	materials/WMD		IFSTA EOFF, 6th Ed. Chapter 24 J&B FFFS, 3rd Ed. Chapters 30, 31		
	(2) Identify the two general types of hazards found on each guidebook page		IFSTA HMFR, 4th Ed. Chapter 3 J&B HMAO, 2nd Ed. Chapter 3		
4.3 Competencies - Planning the Response. (Reserved)					
4.4 Competencies - Implementing the Planned Response					
4.4.1 Initiating Protective Actions.					
Given examples of hazardous materials/WMD incidents, the emergency response plan, the standard operating procedures, and the current edition of the DOT <i>Emergency Response Guidebook</i> , awareness level personnel shall be able to identify the actions to be taken to protect themselves and others and to control access to the scene by completing the following requirements:	(1) Identify the location of both the emergency response plan and/or standard operating procedures		ERG, 2012 Ed. IFSTA EOFF, 6th Ed. Chapters 23, 24 J&B FFFS, 3rd Ed. Chapters 28, 30, 31, 32, 33	28% of questions	
	(2) Identify the role of the awareness level personnel during a hazardous materials/WMD incidents		IFSTA HMFR, 4th Ed. Chapters 1, 3		
	(3) Identify the following basic precautions to be taken to protect themselves and others in hazardous materials/WMD incidents:		J&B HMAO, 2nd Ed. Chapters 1, 2, 3, 4		
	(a) Identify the precautions necessary when providing emergency medical care to victims of hazardous materials/WMD incidents				



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NFPA Objective	Requisite Knowledge	Requisite Skills	Suggested Readings	Knowledge Test Weighting	Skill Objective #
	<p>(b) Identify typical ignition sources found at the scene of hazardous materials/WMD incidents</p> <p>(c) Identify the ways hazardous materials/WMD are harmful to people, the environment, and property</p> <p>(d) Identify the general routes of entry for human exposure to hazardous materials/WMD</p> <p>(4) Given examples of hazardous materials/WMD and the identity of each hazardous material/WMD (name, UN/NA, identification number, or type placard), identify the following response information:</p> <p>(a) Emergency action (fire, spill, or leak and first aid)</p> <p>(b) Personal protective equipment necessary</p> <p>(c) Initial isolation and protective action distances</p> <p>(5) Given the name of a hazardous material, identify the recommended personal protective equipment from the following list:</p> <p>(a) Street clothing and work uniforms</p> <p>(b) Structural fire-fighting protective clothing</p> <p>(c) Positive pressure self-contained breathing apparatus</p> <p>(d) Chemical-protective clothing and equipment</p> <p>(6) Identify the definitions for each of the following protective actions:</p> <p>(a) Isolation of the hazard area and denial of entry</p>				



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NFPA Objective	Requisite Knowledge	Requisite Skills	Suggested Readings	Knowledge Test Weighting	Skill Objective #
	(b) Evacuation (c) Sheltering in-place (7) Identify the size and shape of recommended initial isolation and protective action zones (8) Describe the difference between small and large spills as found in the Table of Initial Isolation and Protective Action Distances in the DOT <i>Emergency Response Guidebook</i> (9) Identify the circumstances under which the following distances are used at a hazardous materials/WMD incident (a) Table of Initial Isolation and Protective Action Distances (b) Isolation distances in the numbered guides (10) Describe the difference between the isolation distances on the orange-bordered guidebook pages and the protective action distances in the green-bordered ERG (<i>Emergency Response Guidebook</i>) pages (11) Identify the techniques used to isolate the hazard area and deny entry to unauthorized persons at hazardous materials/WMD incidents. (12) Identify at least four specific actions necessary when an incident is suspected to involve criminal or terrorist activity				
4.4.2 Initiating the Notification Process.					
Given scenarios involving hazardous materials/WMD incidents, awareness level personnel shall identify the initial notifications to be made and how to make them, consistent with the AHJ.	Identify the initial notifications to be made and how to make them		IFSTA EOFF, 6th Ed. Chapter 24 J&B FFFS, 3rd Ed. Chapter 31 IFSTA HMFR, 4th Ed. Chapter 3	2% of questions	



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NFPA Objective	Requisite Knowledge	Requisite Skills	Suggested Readings	Knowledge Test Weighting	Skill Objective #
			J&B HMAO, 2 nd Ed. Chapter 5		
4.5* Competencies - Evaluating Progress. (Reserved)					
4.6* Competencies - Terminating the Incident. (Reserved)					