

HAZARDOUS MATERIALS AWARENESS & OPERATIONS

SKILL SHEET PACKAGE

Based on *NFPA 472: Standard for Competence of Responders to
Hazardous Materials/Weapons of Mass Destruction Incidents*,
2008 Edition.

ALABAMA FIRE COLLEGE

AUGUST 2011

Certification Criteria HAZARDOUS MATERIALS AWARENESS & OPERATIONS



Pre-Requisites

- 18 years of age

Certification Requirements

To be issued certification as a Hazardous Materials Awareness and Operations, the candidate will:

- Show successful completion of the above pre-requisite requirement. This must be documented on file at the Alabama Fire College, Testing Division.
- Complete required training hours (minimum 40).
- Written Examination**
 - Perform to a minimum 70% competency on a 50 question examination for Hazardous Materials Awareness and a 50 question examination for Hazardous Materials Operations.
 - One retest per level, after 30 days of initial test, is allowed.
 - All testing, to include retesting must be completed within one year of course end date.
- Practical Examination**
 - Successfully complete a skills evaluation (working as a member of a team and/or completing individual skills), to a minimum of 70% competency and successful completion of all critical points.
 - One retest after 30 days and within one year of course end date is allowed.
 - Documentation of Practical Skills, must be on file with the Alabama Fire College – Testing Division
 - Performance Evaluation Grade Sheet
 - Individual Skills Sheets from the random Skills Test conducted by the AFC
 - 2 – HMAO Skills

Basis: Alabama Fire College & Personnel Standards Commission, Administrative Code, Chapter 360-X-2-.02: Requirements for Certified Fire Fighter

ALABAMA FIRE COLLEGE

Hazardous Materials Awareness and Operations Performance Evaluation Grade Sheet

This Performance Evaluation Grade Sheet is to be used in conjunction with the Alabama Fire College Hazardous Materials Awareness and Operations Skill Sheets. Please submit a Performance Evaluation Grade Sheet for each student in your class to the test proctor. The individual Performance Evaluation Skill Sheets may be with the students' records at their home department. Students must pass all skills in order to attempt the final skills evaluation.

REFERENCE SOURCE:

NFPA 472: STANDARD FOR COMPETENCE OF RESPONDERS TO HAZARDOUS MATERIALS/WEAPONS OF MASS DESTRUCTION INCIDENTS, 2008 EDITION

NFPA 472 JPR	Skill	Pass	Fail
HM5-1	Emergency Scene Communications		
HM5-2	Structural Firefighter's Clothing		
HM5-3	Using SCBA		
HM5-4	SCBA Emergency Procedures		
HM5-5	Perform Emergency Decontamination		
HM6.2-1	Assists technical Decon Team		
HM6.6-1	Absorption		
HM6.6-2	Adsorption		
HM6.6-3	Damming		
HM6.6-4	Diking		
HM6.6-5	Dilution		
HM6.6-6	Diversion		
HM6.6-7	Retention		
HM6.6-8	Remote Valve Shutoff		
HM6.6-9	Vapor Dispersion		
HM6.6-10	Vapor Suppression		

Instructor: Print Name/Signature:	Date:
Student Print Name/ Signature:	



Emergency Scene Communications

The ability to operate department communications equipment

NFPA 472 Chapter 5 (2008) – 5.4.1(6), 5.5.2

AFC & PSC

Hazardous Materials Operations

Skill Sheet HM5-1

Given a scenario, communication equipment, and working as a team, the candidate shall demonstrate transmitting and receiving radio messages using a two-way radio, ensuring that the supervisor is consistently informed of the team's needs, including declaring a Mayday and transferring command. The candidate shall also demonstrate effective verbal communication, both on the telephone and face-to-face, with the public. **Expected time to complete skill(s) is 10 minutes.**

Criteria:	Test		Retest	
	P	F	P	F
RADIO COMMUNICATION				
Checks equipment and ensures that radio is on right frequency, battery is charged, and radio is ready to be used- CRITICAL POINT				
Waits for open channel prior to transmitting ensuring that they are not interrupting other transmissions				
Begins with call sign of station being called				
Uses radio phonetics correctly				
Transmits message clearly, concisely, and using clear speech (no codes)				
Candidate must successfully perform 4/5 steps including all critical criteria (4/5 required)	Score: __/5			
DECLARING A MAYDAY				
Transmits on radio that they are declaring a Mayday (repeats three times) – CRITICAL POINT				
Waits for acknowledgement of Mayday				
Gives LUNAR report (Location, Unit, Name, Assignment, Resources) – CRITICAL POINT				
Manually activates PASS device – CRITICAL POINT				
Candidate must successfully perform 3/4 steps including all critical criteria (3/4 required)	Score: __/4			
TRANSFERRING COMMAND				
Evaluates the need for the transfer of command				
All necessary information is relayed from outgoing officer to incoming commander (situational status report)				
Acknowledges status report and announces transfer of command to all members on scene				
Candidate must successfully perform 3/3 steps including all critical criteria (3/3 required)	Score: __/3			
Evaluator Notes				



Emergency Scene Communications

The ability to operate department communications equipment

NFPA 472 Chapter 5 (2008) – 5.4.1(6), 5.5.2

AFC & PSC

Hazardous Materials Operations

Skill Sheet HM5-1

Given a scenario, communication equipment, and working as a team, the candidate shall demonstrate transmitting and receiving radio messages using a two-way radio, ensuring that the supervisor is consistently informed of the team's needs, including declaring a Mayday and transferring command. The candidate shall also demonstrate effective verbal communication, both on the telephone and face-to-face, with the public. **Expected time to complete skill(s) is 10 minutes.**

COMMUNICATING WITH THE PUBLIC			
Evaluates the need for communicating with members of the public and outside agencies.			
Addresses members of the public in a courteous, respectful manner.			
Provides only necessary details to members of the public/outside agencies while maintaining clarity.			
Works through ICS to transmit essential information via the Media to the public.			
Acknowledges receipt of information from the public/outside agencies.			
Ensures that feedback loop is closed.			
Candidate must successfully perform 5/6 steps including all critical criteria (5/6 required)	Score: __/6		
Evaluator Notes			
Evaluator Print Name & Signature:	Date	Overall Skill Sheet Score	
		Pass____	Fail____
Re-Test Evaluator Print Name & Signature:	Overall Skill Sheet Re-Test Score		
		Pass____	Fail____
Candidate Print Name & Signature:	Candidate: Print Name or Candidate #		



Using Structural Firefighters' Clothing

Often called bunker or turn-out gear, structural firefighters' clothing is normally worn during structural fire fighting operations, but if worn in conjunction with self-contained breathing apparatus, may provide limited protection at some hazardous materials incidents. A "Risk vs Benefit" analysis must reveal the benefit if wearing structural firefighters' clothing into the hot zone.

NFPA 472 Chapter 5 (2008) – 5.4.4(5), 5.4.4(6), 5.4.4(7), 6.2.4.1(3), 6.2.4.1(5), 6.2.5.1

AFC & PSC

Hazardous Materials Operations

Skill Sheet HM5-2

The candidate, with a complete set of structural firefighters' clothing, shall don full personal protective equipment according to manufacturers' recommendations. The candidate shall also demonstrate and describe the inspection, cleaning, maintenance and storage procedures for the PPE according to the manufacturers' specifications. **Expected time to complete skill(s) is 10 minutes.**

Criteria:	Test		Retest	
DONNING PPE	P	F	P	F
Dons boots, pants, protective hood, coat, helmet, and gloves				
All personal protective equipment donned properly (no exposed skin except for facial area, helmet strap is tightened, coat collar is up, and all fasteners are secured) – CRITICAL POINT				
Completed within 1 minute				
Doff personal protective clothing and prepare for reuse				
Candidate must successfully perform 3/4 steps including all critical criteria (3/4 required)	Score: __/4			
INSPECTION, CLEANING, MAINTENANCE, STORAGE OF PPE				
Following use, inspects all components of PPE.				
Identifies damage and degradation.				
Cleans and/or disinfects all components.				
Repairs or replaces damaged or degraded components.				
Stores components in a manner that minimizes damage and degradation.				
Candidate must successfully perform 4/5 steps including all critical criteria (4/5 required)	Score: __/5			
Evaluator Notes				
Evaluator Print Name & Signature:		Date	Overall Skill Sheet Score	
			Pass ___	Fail ___
Re-Test Evaluator Print Name & Signature:			Overall Skill Sheet Re-Test Score	
			Pass ___	Fail ___
Candidate Print Name & Signature:		Candidate: Print Name or Candidate #		



Using Self-Contained Breathing Apparatus

At hazardous materials incidents, inhalation is the most common route of entry of contaminants into the body. If worn and used properly, SCBA provide the highest level of respiratory protection.

NFPA 472 Chapter 5 (2008) – 5.3.3(1)(b), 5.4.4(6), 5.4.4(7), 6.2.4.1(3), 6.2.4.1(5), 6.2.5.1

Hazardous Materials Operations

Skill Sheet HM5-3

The candidate, with a self-contained breathing apparatus, shall don the SCBA according to manufacturer's recommendations. The candidate shall also demonstrate and describe the inspection, cleaning/disinfection, maintenance and storage procedures for the SCBA according to the manufacturer's specifications. **Expected time to complete skill(s) is 10 minutes.**

Criteria:	Test		Retest	
DONNING SCBA	P	F	P	F
Dons SCBA using an approved method and ensures unit is secured and adjusted properly				
Dons face piece, attaches regulator (if using waist mount regulator, attaches breathing tube to regulator) inhales activating regulator, holds breath for 5 seconds to ensure there are no leaks – CRITICAL POINT				
Exhales forcefully to ensure exhalation valve is working properly- CRITICAL POINT				
Dons hood, helmet, and gloves and ensures there is no exposed skin – CRITICAL POINT				
Activate PASS alarm- CRITICAL POINT				
Dons SCBA within 1 minute- CRITICAL POINT				
Candidate must successfully perform 5/6 steps including all critical criteria (5/6 required)	Score: __/6			
CHANGING AN AIR CYLINDER				
Doffs unit using proper procedures				
Closes cylinder valve on the used bottle and bleeds off pressure - CRITICAL POINT				
Disconnects the high-pressure coupling from the cylinder and puts the hose coupling on the ground directly in line with the cylinder outlet (ensures grit & liquids can not enter the end of the unprotected high-pressure hose prior to attaching it to the cylinder outlet valve)				
Releases the cylinder clamp & removes the empty cylinder and places a new cylinder into the backpack				
Checks cylinder valve opening & the high-pressure hose fitting for debris and checks condition of O-ring – CRITICAL POINT				
Connects high-pressure hose to cylinder valve opening and opens cylinder valve				
Checks gauges on cylinder & regulator (ensures they are within 10% of each other)				
Candidate must successfully perform 5/7 steps including all critical criteria (5/7 required)	Score: __/7			



Using Self-Contained Breathing Apparatus

At hazardous materials incidents, inhalation is the most common route of entry of contaminants into the body. If worn and used properly, SCBA provide the highest level of respiratory protection.

NFPA 472 Chapter 5 (2008) – 5.3.3(1)(b), 5.4.4(6), 5.4.4(7), 6.2.4.1(3), 6.2.4.1(5), 6.2.5.1

Hazardous Materials Operations

Skill Sheet HM5-3

The candidate, with a self-contained breathing apparatus, shall don the SCBA according to manufacturer's recommendations. The candidate shall also demonstrate and describe the inspection, cleaning/disinfection, maintenance and storage procedures for the SCBA according to the manufacturer's specifications. **Expected time to complete skill(s) is 10 minutes.**

Criteria:	Test		Retest	
	P	F	P	F
INSPECTING SCBA				
Checks that cylinder is at least 90% full				
Checks that all gauges work. Cylinder & regulator gauge should read within 10% of each other				
Checks to see that low pressure alarm is in working condition – CRITICAL POINT				
Checks to ensure that all hose connections are tight & free of leaks				
Checks to ensure that the face piece is in good condition & the straps are in the fully extended position				
Checks to ensure that the harness system is in good condition & that all straps are in the fully extended position				
Checks to ensure that all valves (e.g. bypass, mainline, exhalation) are operational. Bypass valve should be fully closed. – CRITICAL POINT				
Checks cleanliness of unit				
Candidate must successfully perform 6/8 steps including all critical criteria (6/8 required)	Score: __/8			
CLEANING, MAINTENANCE, STORAGE OF SCBA				
Cleans and/or disinfects all components according to manufacturer's recommendations.				
Repairs or replaces damaged or degraded components.				
Stores SCBA in a manner that minimizes damage and degradation.				
Candidate must successfully perform 3/3 steps including all critical criteria (3/3 required)	Score: __/3			
Evaluator Notes				
Evaluator Print Name & Signature:		Date	Overall Skill Sheet Score	
			Pass _____	Fail _____
Re-Test Evaluator Print Name & Signature:			Overall Skill Sheet Re-Test Score	
			Pass _____	Fail _____
Candidate Print Name & Signature:		Candidate: Print Name or Candidate #		



SCBA Emergency Procedures

The ability to control breathing and initiate emergency procedures in the event of an SCBA failure. **WARNING: No emergency breathing procedure is endorsed by manufacturers, IFSTA, ANSI, or any other regulating agency. These procedures should be used only as a last resort in life-threatening situations.**

AFC & PSC

NFPA 472 Chapter 5 (2008) – 5.3.3(1)(b), 5.4.4(3), 6.2.4.1(5)

Hazardous Materials Operations

Skill Sheet HM5-4

The candidate, wearing full structural firefighters' clothing and SCBA, shall demonstrate controlled breathing techniques and shall demonstrate the ability to perform an emergency procedure check on their self-contained breathing apparatus. **Expected time to complete skill(s) is 10 minutes.**

Criteria:	Test		Retest	
CONSERVATION OF AIR (CONTROLLED BREATHING)	P	F	P	F
<i>Calls a Mayday. CRITICAL POINT</i>				
Inhales normally through mouth and exhales normally through nose.				
Inhales and exhales slowly.				
Proceeds to emergency decontamination area as quickly as possible.				
<i>Repeats steps for three minutes. CRITICAL POINT</i>				
Candidate must successfully perform 4/5 steps including all critical criteria (4/5 required)	Score: __/5			
EMERGENCY PROCEDURE CHECK				
<i>Calls a Mayday. CRITICAL POINT</i>				
<i>Does NOT remove face piece. CRITICAL POINT</i>				
Left hand to face piece and regulator and checks bypass valve.				
Uses bypass or cylinder valve to control air flow (depending on free flow or no flow).				
Corrects problem if possible.				
Proceeds to emergency decontamination area as quickly as possible.				
<i>Repeats steps for three minutes. CRITICAL POINT</i>				
Candidate must successfully perform 5/7 steps including all critical criteria (5/7 required)	Score: __/7			
Evaluator Notes				
Evaluator Print Name & Signature:		Date	Overall Skill Sheet Score	
			Pass ____	Fail ____
Re-Test Evaluator Print Name & Signature:			Overall Skill Sheet Re-Test Score	
			Pass ____	Fail ____
Candidate Print Name & Signature:		Candidate: Print Name or Candidate #		



AFC & PSC

Emergency Decontamination

The emergency responder must be prepared to competently perform this emergency decontamination procedure should the entry team encounter an unexpected emergency, or if victims are encountered.

NFPA 472 Chapter 5 (2008) – 5.3.2(2), 5.3.4(4), 5.3.4(5), 5.4.1(4)

Hazardous Materials Operations

Skill Sheet 5-5

Given a scenario, the candidates, working within a team, will identify the potential for contamination, determine the need for emergency decontamination, and demonstrate emergency decontamination on emergency personnel or victims. **Expected time to complete skill(s) is 10 minutes.**

Criteria:	Test		Retest	
EMERGENCY DECONTAMINATION – EMERGENCY PERSONNEL	P	F	P	F
<i>Appropriate full PPE worn at all times. CRITICAL POINT</i>				
<i>Maintains buddy system at all times. CRITICAL POINT</i>				
Wash down outer clothing with flooding quantities of water				
Ensures facepiece & air supply remains in place until all other PPE removed.				
Remove PPE from top down.				
Ensures contamination spread to inner clothing minimized.				
Overpack contaminated clothing/tools/equipment.				
Decon personnel perform self-decon.				
Medical support is provided as required.				
Candidate must successfully perform 7/9 steps including all critical criteria (7/9 required)	Score: __/9			
EMERGENCY DECONTAMINATION – VICTIMS				
<i>Appropriate full PPE worn at all times. CRITICAL POINT</i>				
<i>Maintains buddy system at all times. CRITICAL POINT</i>				
Remove triaged victims from hot zone.				
Wash down victims with flooding quantities of water.				
Remove clothing.				
Overpack contaminated clothing.				
Hand-off victims to medical personnel				
Provide appropriate decontamination procedures to rescue personnel.				
Candidate must successfully perform 6/8 steps including all critical criteria (6/8 required)	Score: __/8			
Evaluator Notes				
Evaluator Print Name & Signature:		Date	Overall Skill Sheet Score	
			Pass___	Fail___
Re-Test Evaluator Print Name & Signature:			Overall Skill Sheet Re-Test Score	
			Pass___	Fail___
Candidate Print Name & Signature:		Candidate: Print Name or Candidate #		



Technical Decontamination

The emergency responder trained to the operations level may be called upon to provide support to a hazardous materials technician team working in a technical contamination reduction corridor. The operations level responder will take direction from hazardous materials technicians throughout the technical decontamination process.

AFC & PSC

NFPA 472 Chapter 6.2 (2008) – 6.2.4.1(4)

Hazardous Materials Operations

Skill Sheet 6.2-1

Given a scenario, the candidates, working within a team, shall don Level B or C chemical protective clothing and shall set up and work in a technical decontamination corridor. The candidate trained to the operations level shall perform all tasks under the supervision of and as directed by a hazardous materials technician, and shall follow all operating guidelines as provided by the AHJ. **Expected time to complete skill(s) is 10 minutes.**

Criteria:	Test		Retest	
TECHNICAL DECONTAMINATION	P	F	P	F
Appropriate full PPE worn at all times. CRITICAL POINT				
Considers location for decontamination corridor based on surrounding conditions.				
Ensures emergency decontamination area is available at all times.				
Provides protective measures for environment.				
Prepares decontamination solutions as directed by hazmat technician.				
Clearly marks hot zone entry and egress points.				
Sets up equipment & supplies as required by hazmat technician:				
- Tool drop area				
- Sample/evidence collection/testing area.				
- Contaminated materials disposal area.				
- Decontamination stations.				
Effectively decontaminates using techniques requested by hazmat technician:				
- Responders				
- Victims				
- Equipment and apparatus				
Overpacks and labels contaminated clothing/tools/equipment.				
Decon personnel self-decontaminates.				
Ensures medical support provided as required for all responders and victims.				
Candidate must successfully perform 12/16 steps including all critical criteria (12/16 required)	Score: __/16			
Evaluator Notes				
Evaluator Print Name & Signature:	Date	Overall Skill Sheet Score		
		Pass ___	Fail ___	
Re-Test Evaluator Print Name & Signature:		Overall Skill Sheet Re-Test Score		
		Pass ___	Fail ___	
Candidate Print Name & Signature:	Candidate: Print Name or Candidate #			



Product Control – Absorption

A defensive tactic accomplished by applying an absorbent product to a hazardous material in order to soak it up.

NFPA 472 Chapter 6.6 (2008) – 6.6.4.1(3)(a)

Hazardous Materials Operations

Skill Sheet HM6.6-1

Given the required tools, equipment, supplies, and a simulated hazardous materials spill, and working as part of a team, the candidate shall demonstrate how to perform product control using absorption techniques. **Expected time to complete skill(s) is 10 minutes.**

Criteria:	Test		Retest	
ABSORPTION:	P	F	P	F
<i>Appropriate full PPE worn at all times. CRITICAL POINT</i>				
<i>Maintains buddy system at all times. CRITICAL POINT</i>				
<i>Ensures RIT in place prior to hot zone entry. CRITICAL POINT</i>				
<i>Ensures compatibility between spilled product and all PPE, equipment, supplies, tools brought into the hot zone. CRITICAL POINT</i>				
<i>Minimizes intentional contact with spilled product. CRITICAL POINT</i>				
Attempts to identify hazardous materials.				
Validates control technique with CHEMTREC if needed.				
Approaches spill from uphill/upwind side.				
Deploys absorbent material in pools of liquid without splashing.				
Shovels contaminated absorbent material into overpack container.				
Seals and labels overpack container.				
Ensures environmental agency contacted.				
Places tools/equipment in tool drop area.				
Advances to contamination reduction corridor.				
Candidate must successfully perform 10/14 steps including all critical criteria (10/14 required)	Score: __/14			
Evaluators Notes				
Evaluators Print Name & Signature:		Date	Overall Skill Sheet Score	
			Pass ___	Fail ___
Re-Test Evaluators Print Name & Signature:			Overall Skill Sheet Re-Test Score	
			Pass ___	Fail ___
Candidate Print Name & Signature:		Candidate: Print Name or Candidate #		



Product Control – Adsorption

A defensive tactic accomplished by applying an adsorbent to a hazardous material in order to chemically bind the two materials together.

NFPA 472 Chapter 6.6 (2008) – 6.6.4.1(3)(b)

Hazardous Materials Operations

Skill Sheet HM6.6-2

Given the required tools, equipment, supplies, and a simulated hazardous materials spill, and working as part of a team, the candidate shall demonstrate how to perform product control using adsorption techniques. **Expected time to complete skill(s) is 10 minutes.**

Criteria:	Test		Retest	
	P	F	P	F
ADSORPTION				
<i>Appropriate full PPE worn at all times. CRITICAL POINT</i>				
<i>Maintains buddy system at all times. CRITICAL POINT</i>				
<i>Ensures RIT in place prior to hot zone entry. CRITICAL POINT</i>				
<i>Ensures compatibility between spilled product and all PPE, equipment, supplies, tools brought into the hot zone. CRITICAL POINT</i>				
<i>Minimizes intentional contact with spilled product. CRITICAL POINT</i>				
Attempts to identify hazardous material.				
Validates control technique with CHEMTREC if needed.				
Approaches spill from uphill/upwind side.				
Deploys adsorbent material in pools of liquid without splashing.				
Shovels contaminated adsorbent material into overpack container.				
Seals and labels overpack container.				
Ensures environmental agency contacted.				
Places tools/equipment in tool drop area.				
Advances to contamination reduction corridor.				
Candidate must successfully perform 10/14 steps including all critical criteria (10/14 required)	Score: __/14			
Evaluator Notes				
Evaluator Print Name & Signature:	Date	Overall Skill Sheet Score		
		Pass___	Fail___	
Re-Test Evaluator Print Name & Signature:		Overall Skill Sheet Re-Test Score		
		Pass___	Fail___	
Candidate Print Name & Signature:		Candidate: Print Name or Candidate #		



Product Control – Damming

A defensive tactic used to protect the environment by separating the hazardous material from existing waterways.

NFPA 472 Chapter 6.6 (2008) – 6.6.4.1(3)(c)

Hazardous Materials Operations

Skill Sheet HM6.6-3

Given the required tools, equipment, supplies, and a simulated hazardous materials spill, and working as part of a team, the candidate shall demonstrate how to construct a dam to separate a liquid hazardous material from existing waterways. **Expected time to complete skill(s) is 15 minutes.**

Criteria:	Test		Retest	
UNDERFLOW/OVERFLOW DAM	P	F	P	F
<i>Appropriate full PPE worn at all times. CRITICAL POINT</i>				
<i>Maintains buddy system at all times. CRITICAL POINT</i>				
<i>Ensures RIT in place prior to hot zone entry. CRITICAL POINT</i>				
<i>Ensures compatibility between spilled product and all PPE, equipment, supplies, tools brought into the hot zone. CRITICAL POINT</i>				
<i>Minimizes intentional contact with spilled product. CRITICAL POINT</i>				
Attempts to identify hazardous material/specific gravity.				
Validates control technique with CHEMTREC if needed.				
Approaches spill from uphill/upwind side.				
Assesses terrain for best location of dam.				
Uses appropriate method (underflow/overflow) based on specific gravity of product.				
Adequately holds back product.				
Ensures environmental agency contacted.				
Places tools/equipment in tool drop area.				
Advances to contamination reduction corridor.				
Candidate must successfully perform 10/14 steps including all critical criteria (10/14 required)	Score: __/14			
Evaluator Notes				
Evaluator Print Name & Signature:		Date	Overall Skill Sheet Score	
			Pass____	Fail____
Re-Test Evaluator Print Name & Signature:			Overall Skill Sheet Re-Test Score	
			Pass____	Fail____
Candidate Print Name & Signature:		Candidate: Print Name or Candidate #		



AFC & PSC

Hazardous Materials Operations

Product Control – Diking

A defensive tactic accomplished by confining the product to a specific area.

NFPA 472 Chapter 6.6 (2008) – 6.6.4.1(3)(d)

Skill Sheet HM6.6-4

Given the required tools, equipment, supplies, and a simulated hazardous materials spill, and working as part of a team, the candidate shall demonstrate construction of a dike to confine or divert a liquid hazardous material spill. **Expected time to complete skill(s) is 15 minutes.**

Criteria:	Test		Retest	
DIKING	P	F	P	F
Appropriate full PPE worn at all times. CRITICAL POINT				
Maintains buddy system at all times. CRITICAL POINT				
Ensures RIT in place prior to hot zone entry. CRITICAL POINT				
Ensures compatibility between spilled product and all PPE, equipment, supplies, tools brought into the hot zone. CRITICAL POINT				
Minimizes intentional contact with spilled product. CRITICAL POINT				
Attempts to identify hazardous material.				
Validates control technique with CHEMTREC if needed.				
Approaches spill from uphill/upwind.				
Assesses terrain for best location of dike.				
Constructs dike of adequate size to confine or divert the entire spill.				
Ensures environmental agency contacted.				
Places tools/equipment in tool drop area.				
Advances to contamination reduction corridor.				
Candidate must successfully perform 10/13 steps including all critical criteria (10/13 required)	Score: __/13			
Evaluator Notes				
Evaluator Print Name & Signature:		Date		Overall Skill Sheet Score
				Pass____ Fail____
Re-Test Evaluator Print Name & Signature:		Overall Skill Sheet Re-Test Score		
		Pass____ Fail____		
Candidate Print Name & Signature:		Candidate: Print Name or Candidate #		



AFC & PSC

Product Control – Dilution

A defensive tactic accomplished by adding water to the hazardous material to reduce its harmful effects. Many hazardous materials are water reactive; therefore, use of this technique should be limited to instances where other tactics are ineffective.

NFPA 472 Chapter 6.6 (2008) – 6.6.4.1(3)(e)

Hazardous Materials Operations

Skill Sheet HM6.6-5

Given the required tools, equipment, supplies, and a simulated hazardous materials spill, and working as part of a team, the candidate shall demonstrate dilution of a hazardous material through the addition of water to the spilled material, within 10 minutes. This technique shall only be used in conjunction with damming, diking, diverting and/or retaining tactics to confine diluted products. **Expected time to complete skill(s) is 10 minutes.**

Criteria:	Test		Retest	
DILUTION	P	F	P	F
<i>Appropriate full PPE worn at all times. CRITICAL POINT</i>				
<i>Maintains buddy system at all times. CRITICAL POINT</i>				
<i>Ensures RIT in place prior to hot zone entry. CRITICAL POINT</i>				
<i>Ensures compatibility between spilled product and all PPE, equipment, supplies, tools brought into the hot zone. CRITICAL POINT</i>				
<i>Minimizes intentional contact with spilled product. CRITICAL POINT</i>				
Validates control technique with CHEMTREC if needed.				
Attempts to identify hazardous material.				
Ensures adequate water supply to complete task.				
Approaches spill from uphill/upwind.				
Assesses terrain to determine flow of diluted product.				
Ensures dam, dike, diversion, and/or retention area are in place.				
Applies water to hazardous material from uphill/upwind location, minimizing splashing.				
Ensures environmental agency contacted.				
Places tools/equipment in tool drop area.				
Advances to contamination reduction corridor.				
Candidate must successfully perform 11/15 steps including all critical criteria (11/15 required)	Score: __/15			
Evaluator Notes				
Evaluator Print Name & Signature:		Date	Overall Skill Sheet Score	
			Pass__	Fail__
Re-Test Evaluator Print Name & Signature:			Overall Skill Sheet Re-Test Score	
			Pass__	Fail__
Candidate Print Name & Signature:		Candidate: Print Name or Candidate #		



Product Control – Diversion

A defensive tactic used to redirect the movement of a liquid hazardous material spill. Usually used in conjunction with retention tactic.

NFPA 472 Chapter 6.6 (2008) – 6.6.4.1(3)(f)

Hazardous Materials Operations

Skill Sheet HM6.6-6

Given the required tools, equipment, supplies, and a simulated hazardous materials spill, and working as part of a team, the candidate shall demonstrate diversion of a liquid hazardous materials spill by redirecting the flow of the product, to an appropriate retention area. **Expected time to complete skill(s) is 15 minutes.**

Criteria:	Test		Retest	
DIVERSION	P	F	P	F
<i>Appropriate full PPE worn at all times. CRITICAL POINT</i>				
<i>Maintains buddy system at all times. CRITICAL POINT</i>				
<i>Ensures RIT in place prior to hot zone entry. CRITICAL POINT</i>				
<i>Ensures compatibility between spilled product and all PPE, equipment, supplies, tools brought into the hot zone. CRITICAL POINT</i>				
<i>Minimizes intentional contact with spilled product. CRITICAL POINT</i>				
Attempts to identify hazardous material.				
Validates control technique with CHEMTREC if needed.				
Approaches spill from uphill/upwind side.				
Assesses terrain and selects or creates a retention area to hold spill.				
Starts diversion distant to the spill and works towards spill.				
Adequately redirects flow of product.				
Ensures environmental agency contacted.				
Places tools/equipment in tool drop area.				
Advances to contamination reduction corridor.				
Candidate must successfully perform 10/14 steps including all critical criteria (10/14 required)	Score: __/14			
Evaluator Notes				
Evaluator Print Name & Signature:		Date	Overall Skill Sheet Score	
			Pass__	Fail__
Re-Test Evaluator Print Name & Signature:			Overall Skill Sheet Re-Test Score	
			Pass__	Fail__
Candidate Print Name & Signature:		Candidate: Print Name or Candidate #		



Product Control – Retention

A defensive tactic where a natural depression, a ditch or a responder-made hole is used to collect and confine a liquid hazardous material. Usually used in conjunction with diversion tactic.

NFPA 472 Chapter 6.6 (2008) – 6.6.4.1(3)(g)

Hazardous Materials Operations

Skill Sheet HM6.6-7

Given the required tools, equipment, supplies, and a simulated hazardous materials spill, and working as part of a team, the candidate shall demonstrate use of a retention area for a liquid hazardous materials spill, by using natural depressions, a ditch or by digging a hole to adequately confine the product. **Expected time to complete skill(s) is 15 minutes.**

Criteria:	Test		Retest	
RETENTION	P	F	P	F
<i>Appropriate full PPE worn at all times. CRITICAL POINT</i>				
<i>Maintains buddy system at all times. CRITICAL POINT</i>				
<i>Ensures RIT in place prior to hot zone entry. CRITICAL POINT</i>				
<i>Ensures compatibility between spilled product and all PPE, equipment, supplies, tools brought into the hot zone. CRITICAL POINT</i>				
<i>Minimizes intentional contact with spilled product. CRITICAL POINT</i>				
Attempts to identify hazardous material.				
Validates control technique with CHEMTREC if needed.				
Approaches spill from uphill/upwind side.				
Assesses terrain for best location of retention area.				
Constructs retention area and associate structures distant to the spill .				
Ensures environmental agency contacted.				
Places tools/equipment in tool drop area.				
Advances to contamination reduction corridor.				
Candidate must successfully perform 10/13 steps including all critical criteria (10/13 required)	Score: __/13			
Evaluator Notes				
Evaluator Print Name & Signature:	Date	Overall Skill Sheet Score		
		Pass____ Fail____		
Re-Test Evaluator Print Name & Signature:		Overall Skill Sheet Re-Test Score		
		Pass____ Fail____		
Candidate Print Name & Signature:		Candidate: Print Name or Candidate #		



Product Control – Remote Valve Shutoff

A defensive tactic used at fixed facilities or on tank trailer units. Use of mechanical, hydraulic, or pneumatic emergency shutoffs, remote to the actual spill to shut valves and contain hazardous materials in its container.

NFPA 472 Chapter 6.6 (2008) – 6.6.4.1(3)(h)

AFC & PSC

Hazardous Materials Operations

Skill Sheet HM6.6-8

Given the required tools, equipment, supplies, and a simulated hazardous materials spill, and working as part of a team, the candidate shall demonstrate use of a remote shutoff to contain a hazardous material in a fixed facility tank or highway tank trailer. **Expected time to complete skill(s) is 10 minutes.**

Criteria:	Test		Retest	
	P	F	P	F
REMOTE VALVE SHUTOFF				
<i>Appropriate full PPE worn at all times. CRITICAL POINT</i>				
<i>Maintains buddy system at all times. CRITICAL POINT</i>				
<i>Ensures RIT in place prior to hot zone entry. CRITICAL POINT</i>				
<i>Ensures compatibility between spilled product and all PPE, equipment, supplies, tools brought into the hot zone. CRITICAL POINT</i>				
<i>Minimizes intentional contact with spilled product. CRITICAL POINT</i>				
Attempts to identify hazardous material.				
Approaches spill from uphill/upwind side.				
Activates remote shutoff to contain product.				
Uses appropriate method to confine released product.				
Ensures environmental agency contacted.				
Places tools/equipment in tool drop area.				
Advances to contamination reduction corridor.				
Candidate must successfully perform 9/12 steps including all critical criteria (9/12 required)	Score: __/12			
Evaluator Notes				
Evaluator Print Name & Signature:		Date	Overall Skill Sheet Score	
			Pass___	Fail___
Re-Test Evaluator Print Name & Signature:			Overall Skill Sheet Re-Test Score	
			Pass___	Fail___
Candidate Print Name & Signature:		Candidate: Print Name or Candidate #		



Product Control – Vapor Dispersion

A defensive tactic where water spray is used to reduce vapors or to divert a vapor cloud. The released vapor must be water soluble. Due to the inherent dangers associated with this technique, it should be limited to instances where lives are threatened and dispersion of the vapor cloud will protect people from harm.

NFPA 472 Chapter 6.6 (2008) – 6.6.4.1(3)(i)

AFC & PSC

Hazardous Materials Operations

Skill Sheet HM6.6-9

Given the required tools, equipment, supplies, and a simulated hazardous materials vapor release, and working as part of a team, the candidate shall demonstrate use of a water spray to reduce or divert the vapor cloud. **Expected time to complete skill(s) is 10 minutes.**

Criteria:	Test		Retest	
	P	F	P	F
VAPOR DISPERSION				
<i>Appropriate full PPE worn at all times. CRITICAL POINT</i>				
<i>Maintains buddy system at all times. CRITICAL POINT</i>				
<i>Ensures RIT in place prior to hot zone entry. CRITICAL POINT</i>				
<i>Ensures compatibility between spilled product and all PPE, equipment, supplies, tools brought into the hot zone. CRITICAL POINT</i>				
<i>Minimizes intentional contact with spilled product. CRITICAL POINT</i>				
Ascertains that technique is necessary to protect civilians/victims.				
Identifies hazardous material.				
Validates control technique with CHEMTREC if needed.				
Approaches container from uphill/upwind side.				
Deploys appropriate attack line, charges line, adjusts nozzle pattern to medium width fog, bleeds air from line prior to entry.				
Directs water spray at vapor cloud.				
<i>Ensures that water is NOT directed into container. CRITICAL POINT</i>				
Ensures that appropriate defensive tactics are employed to control runoff.				
Ensures environmental agency contacted.				
Places tools/equipment in tool drop area.				
Advances to contamination reduction corridor.				
Candidate must successfully perform 12/16 steps including all critical criteria (12/16 required)	Score: __/16			
Evaluator Notes				
Evaluator Print Name & Signature:		Date	Overall Skill Sheet Score	
			Pass__	Fail__
Re-Test Evaluator Print Name & Signature:			Overall Skill Sheet Re-Test Score	
			Pass__	Fail__
Candidate Print Name & Signature:		Candidate: Print Name or Candidate #		



Product Control – Vapor Suppression

A defensive tactic where volatile liquids are released, resulting in fire or the potential for fire due to the presence of vapors.

NFPA 472 Chapter 6.6 (2008) – 6.6.4.1(1), 6.6.4.1(3)(j)

AFC & PSC

Hazardous Materials Operations

Skill Sheet HM6.6-10

Given the required tools, equipment, supplies, and a simulated volatile hazardous materials release, and working as part of a team, the candidate shall demonstrate the application of special purpose or hazard suppressing foam. The candidate will properly proportion, apply and maintain a foam blanket, using roll-on and/or bank-off methods to safely suppress the vapors. **Expected time to complete skill(s) is 10 minutes.**

Criteria:	Pass		Fail	
VAPOR SUPPRESSION	P	F	P	F
Appropriate full PPE worn at all times. CRITICAL POINT				
Maintains buddy system at all times. CRITICAL POINT				
Ensures RIT in place prior to hot zone entry. CRITICAL POINT				
Ensures compatibility between spilled product and all PPE, equipment, supplies, tools brought into the hot zone. CRITICAL POINT				
Minimizes intentional contact with spilled product. CRITICAL POINT				
Attempts to identify hazardous materials.				
Selects appropriate foam/agent for the hazardous material released.				
Validates control technique with CHEMTREC if needed.				
Correctly sets up equipment				
Proportions foam in correct ratio. CRITICAL POINT				
Charges hose line and checks for foam deployment.				
Approaches spill/fire from uphill/upwind side.				
Uses appropriate application technique for foam/agent/fuel type.				
Effectively suppresses vapors. CRITICAL POINT				
Ensures appropriate defensive tactics are employed to control runoff.				
Ensures environmental agency contacted.				
Places tools/equipment in tool drop area.				
Advances to contamination reduction corridor.				
Candidate must successfully perform 13/18 steps including all critical criteria (13/18 required)	Score: __/18			
Evaluator Notes				
Evaluator Print Name & Signature:		Date	Overall Skill Sheet Score	
			Pass ___	Fail ___
Re-Test Evaluator Print Name & Signature:		Overall Skill Sheet Re-Test Score		
		Pass ___ Fail ___		
Candidate Print Name & Signature:		Candidate: Print Name or Candidate #		