



State Firefighters' and Fire Marshals' Association of Texas

Texas Volunteer Firefighters' and Fire Marshals' Certification Board

PO Box 1409 ♦ Manchaca, Texas 78652-1409 ♦ 512.453.1876 (fax)

www.sffma.org ♦ 512.454.3473 (phone)

TESTING SKILLS

Hazardous Materials Training Equipment & Prop List

The following are minimal recommended supplies necessary for hazardous materials training at the below listed levels of certification. Variations may exist based on the needs of each AHJ and any mission-specific job tasks as assigned by an AHJ.

Hazardous Materials Awareness

Department of Transportation's *Emergency Response Guidebook* (ERG) (current ed.)

Material Safety Data Sheet (MSDS) or Safety Data Sheets (SDS) – Samples

Placards & Labels

Transportation/Shipping document – Sample

NFPA 704 sample

Safety Vests

Binoculars

Hazardous Materials Operations

All awareness equipment plus...

Structural Firefighter Protective Ensemble (bunker gear)

Reference Material:

- NIOSH *Pocket Guide to Chemical Hazards*
- NFPA *Hazardous Materials / Weapons of Mass Destruction Response Handbook* (current edition)
- Pesticide label example

Respiratory Protection to include:

- Air Purifying Respirator (APR-half mask)
- Air Purifying Respirator (APR-full face)
- SCBA

Chemical Protective Clothing to include:

- Vapor Protective CPC (Level A)
- Splash Protective Encapsulated CPC (Level B)
- Splash Protective Non-Encapsulated CPC (Level B, Level C)
- Chemical Boots (Rubber Boots for training only)
- Inner/Outer gloves - assorted types
- Chem Tape (duct tape for training only)

Fire Hose, Foam Nozzles and Eductors, Foam

Pictures/slides of various railcar, intermodal, and highway cargo trailers

Pictures/slides of bulk and non-bulk containers, and fixed facility containment systems

Defensive Spill Equipment:

- Absorbent/Adsorbent
- Broom/Shovel
- 5-gallon buckets
- Assortment of boom and pads



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Decontamination Equipment:

- Poly sheeting or tarp
- Duct tape
- Traffic cone(s)
- Decon Pools
- Sprayer(s)
- Garden hose(s) and sprayer/nozzles
- 5-gallon bucket(s)
- Various Decon solution(s)
- Folding chairs
- Overpack drum

Various monitoring detection equipment as may be required. Examples *may* include:

- Combustible Gas Indicator
- Oxygen Meter
- Radiation Detector

Hazardous Materials Operations – Mission Specific Competencies

Equipment needed for training to Hazardous Materials Operations – Mission Specific Competencies will be based the competencies themselves and the authority having jurisdiction (AHJ). Equipment, at a minimum, will include that which is required to train to the Hazardous Materials Operations Level. Additional equipment or props may include part or all of the equipment listed below for Hazardous Materials Technician.

For example, if training to the Mission Specific Competencies: Air Monitoring and Sampling is to be performed, additional monitoring detection and sampling equipment will be required.

Hazardous Materials Technician

Awareness and Operations equipment plus... Reference Material:

- CPC Permeation Guides/Tables
- BOE/AAR *Field Guide to Railcar Identification*
- NFPA *Fire Protection Guide to Hazardous Materials Detection*
- Other printed or electronic publications/databases as may be required by the AHJ

Various monitoring detection equipment and corresponding samples to include:

- Combustible Gas Indicator
- Oxygen Meter
- Carbon monoxide meter
- Gas specific meter
- Photoionization detector
- Radiation Detectors (alpha, beta, gamma)
- Colorimetric tubes, pump
- Classifier/detection strips and reagents
- pH paper or pH meter
- additional monitoring and detection equipment as may be required by AHJ
- Calibration kit(s) as required for above



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Leak & Spill Equipment:

- Plugging/patching supplies
- Leaking drum(s): metal & poly
- Overpack drum(s)
- Leak pipe simulator
- 150 lbs. Chlorine cylinder leak prop o Chlorine emergency kit type "A"
- Chlorine 1-Ton cylinder leak prop o Chlorine emergency kit type "B"
- Pressure Railcar dome leak prop o Chlorine emergency kit type "C" or Midland kit
- Cargo Tank Leak Simulator (MC-306/DOT-406 Dome)
- Dome Cover Clamp
- Grounding & Bonding Kit
- Product Transfer Equipment
- Misc. Hand Tools (e.g., hand wrenches, bung wrench, spanner wrench, mallet, screwdrivers, etc.)

Command and Control Equipment/Forms (e.g., Incident Action Plan, Site Safety Plan, Medical Plan, Communication Plan - all NIMS/ICS compliant)

Hazardous Materials Incident Commander

Reference Material

- Department of Transportation's *Emergency Response Guidebook* (ERG) (current ed.)
- Material Safety Data Sheet (MSDS) or Safety Data Sheet (SDS) - Samples
- Transportation/Shipping document – Sample
- NIOSH *Pocket Guide to Chemical Hazards*
- NFPA *Hazardous Materials / Weapons of Mass Destruction Response Handbook* (current edition)
- CPC Permeation Guides/Tables
- BOE/AAR *Field Guide to Railcar Identification*
- NFPA *Fire Protection Guide to Hazardous Materials Detection*
- Other printed or electronic publications/databases as may be required by the AHJ

Command and Control Equipment/Forms

- Department of Homeland Security – National Incident Management System/Incident Command System standardized forms
 - ICS 201 Incident Briefing Form
 - ICS 202 Incident Objectives Worksheet
 - ICS 203 Organization Assignment List
 - ICS 204 Division Assignment List
 - ICS 205 Communications Plan
 - ICS 206 Medical Plan
 - ICS 208HM Site Safety and Control Plan
 - ICS 211 Incident Check-in List
 - ICS 213 General Message
 - ICS 214 Unit Log
 - ICS 215 Incident Planning Worksheet
 - ICS 215A Incident Action Plan Safety Analysis



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TESTING SKILLS

Awareness Skill # 1

Recognition and Identification; Initiate Protective Actions; Notification

PERFORMANCE STANDARD

NFPA 1072, 2017 edition, 4.2.1, 4.2.1(B), 4.3.1, 4.3.1(B), 4.4.1, 4.4.1(B)

Section 601

Awareness

OBJECTIVE

Given examples of hazardous materials/WMD incidents, the emergency response plan, the standard operating procedures, and the current edition of the *Emergency Response Guidebook*, safety data sheets and shipping papers, awareness level personnel shall be able to recognize and identify the materials and protective actions to be taken to protect themselves and others and to control access to the scene and make notifications as required. The following requirements shall be met:

Recognize and identify the hazardous materials/WMD and hazards involved in a hazardous materials/WMD incident, given a hazardous materials/WMD incident, and approved reference sources, so that the presence of hazardous materials/WMD is recognized and the materials and their hazards are identified. (4.2.1)

Recognizing indicators to the presence of hazardous materials/WMD. Identifying hazardous materials/WMD by name, UN/NA identification number, placard applied, or container identification charts. Using the ERG, SDS, shipping papers with emergency response information, and other approved reference sources to identify hazardous materials/WMD and their potential fire, explosion, and health hazards (4.2.1(B))

Isolate the hazard area and deny entry at a hazardous materials/WMD incident, given a hazardous materials/WMD incident, policies and procedures, and approved reference sources, so that the hazard area is isolated and secured, personal safety procedures are followed, hazards are avoided or minimized, and additional people are not exposed to further harm. (4.3.1)

Recognizing precautions for protecting responders and the public Identifying isolation areas, denying entry, and avoiding minimizing hazards. (4.3.1(B))

Initiate required notifications at a hazardous materials/WMD incident, given a hazardous materials/WMD incident, policies and procedures, and approved communications equipment, so that the notification process is initiated, and the necessary information is communicated. (4.4.1)

Operating approved communications equipment and communicating in accordance with policies and procedures. (4.4.1(B))

INSTRUCTIONS - procedures for achieving the objective

Given the most current edition of the *Emergency Response Guidebook*, product safety data sheets and shipping papers, and a scenario or worksheet, you shall analyze, identify and describe, as may be required, the actions that are appropriate for the safe implementation of awareness level response measures.

You shall respond verbally or in the written form as may be appropriate. You shall communicate your findings and actions to dispatch (simulated) using approved communication devices. You will begin on my instruction to start. The skill will end when you state to me that you have completed all of the identified steps. Do you understand these instructions?



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TESTING SKILLS

EXAMINER'S NOTE

The candidate will not be allowed to review the performance steps at the time of testing.

Provide the candidate with an incident scenario. This may be in the form of an actual staged scenario on the training field, a PowerPoint or multimedia presentation/video, or a photograph(s) with narratives.

Allow the candidate to analyze the scenario, they may use the ERG and applicable SDS, shipping papers, and other reference support material provided. The use of WISER on their personal electronic device (cell phone or tablet) is also acceptable.

The candidate may provide a written or verbal response, per the direction of the program coordinator. Their response must include:

1. Identification of the problem/hazard
2. Perform steps to isolation and secure the hazard area
3. Initiate the notification process to Local, State, and Federal response partners
4. A size-up report

The verbal size-up report may be provided to the examiner by radio, cell phone, or simulated (face to face).

PREPARATION & EQUIPMENT

- *Emergency Response Guidebook (ERG)*, most current edition
- *Wireless Information System for Emergency Responders (WISER)*
- Safety data sheet(s) (SDS)
- Shipping papers
- Approved communication devices (Radio, cell phone, etc.)
- A written or audio/visual representation of a scene or scenario (i.e., PowerPoint Presentation) or an instructor prepared worksheet.



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TESTING SKILLS

Awareness Skill # 1

Recognition and Identification; Initiate Protective Actions; Notification

Candidate: _____

Notes: _____

Examiner: _____

School: _____

Test Site: _____

Recognize and identify the hazardous materials/WMD and hazards involved in a hazardous materials/WMD incident, given a hazardous materials/WMD incident, and approved reference sources, so that the presence of hazardous materials/WMD is recognized and the materials and their hazards are identified. (4.2.1)

Recognizing indicators to the presence of hazardous materials/WMD. Identifying hazardous materials/WMD by name, UN/NA identification number, placard applied, or container identification charts. Using the ERG, SDS, shipping papers with emergency response information, and other approved reference sources to identify hazardous materials/WMD and their potential fire, explosion, and health hazards. (4.2.1.B)

Isolate the hazard area and deny entry at a hazardous materials/WMD incident, given a hazardous materials/WMD incident, policies and procedures, and approved reference sources, so that the hazard area is isolated and secured, personal safety procedures are followed, hazards are avoided or minimized, and additional people are not exposed to further harm. (4.3.1)

Recognizing precautions for protecting responders and the public Identifying isolation areas, denying entry, and avoiding minimizing hazards. (4.3.1.B)

Initiate required notifications at a hazardous materials/WMD incident, given a hazardous materials/WMD incident, policies and procedures, and approved communications equipment, so that the notification process is initiated, and the necessary information is communicated. (4.4.1)

Operating approved communications equipment and communicating in accordance with policies and procedures. (4.4.1.B)

	POSSIBLE POINTS	TEST	RETEST
a. Recognize indicators to the presence of hazardous materials/WMD.			
b. Identify hazardous materials/WMD by name, UN/NA identification number, placard applied, or container identification charts.	1		
c. Use the ERG, applicable SDS, shipping papers with emergency response information, and other approved reference sources to identify hazardous materials/WMD and their potential fire, explosion, and health hazards.	1		
d. Identify, isolate and secure the hazard area. <ul style="list-style-type: none"> • Recognize precautions for protecting responders and public • Identify isolation areas • Deny entry • Avoid hazards 	1		



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e. Initiate required notifications. <ul style="list-style-type: none"> • AHJ (Local) • Regulatory agencies (State & Federal) • Other response partners (i.e., Regional Hazmat Team, Mutual Aid, etc.) 	1		
f. Provide size-up report. (CAN Report) <ul style="list-style-type: none"> • Conditions (product ID, container status, threats) • Actions (protective actions, ID isolation areas) • Needs (additional assistance needed/requested) 	1		
g. Operate approved communications equipment.	1		
TOTAL POINTS:	8		

Points needed to pass: 6

Evaluator/Candidate Comments:

Certifying Examiner

Date

Re-Test Certifying Examiner

Date

Overall Skill Sheet Score	
Pass <input type="checkbox"/>	Fail <input type="checkbox"/>
Overall Skill Sheet Re-Test Score	
Pass <input type="checkbox"/>	Fail <input type="checkbox"/>



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TESTING SKILLS

Emergency Response Guidebook Worksheet Guidelines for Development and Use

- The following worksheet is an example of a instructor designed worksheet that could be used to test a firefighter trainee's ability to properly use an Emergency Response Guidebook during a Hazardous Materials response. This worksheet has been designed to be completed using the Emergency Response Guidebook in it's most current edition.
- The use of this worksheet would be suitable for training purposes. However, for skill examination purposes, it is expected that images, placards, UN numbers, and chemical names would be changed.
- This is not a single source solution skills examination evaluation. The development and use of a unique worksheet would be appropriate, acceptable, and encouraged.
- Minimum worksheet development guidelines should include the following minimal content items as a general rule:
 - Hazardous Materials identification by UN Number (Yellow Section)
 - Hazardous Materials identification by Chemical Name (Blue Section)
 - Identify the correct
 - The ability to derive information from the Emergency Action Guide pages (Orange Section) including:
 - Potential Fire and Explosion Hazards
 - Potential Health Hazards
 - Protective Clothing Selection
 - Evacuation Considerations
 - Firefighting Measures
 - Spill or Leak recommended control measures
 - Immediate First Aid actions
 - The identification of Isolation Distances and Protective Actions for Non-Toxic Inhalation Hazards (Orange Section)
 - The identification of Initial Isolation Distances and Downwind Protective Distances for Toxic Inhalation Hazards (Green Section)



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TESTING SKILLS

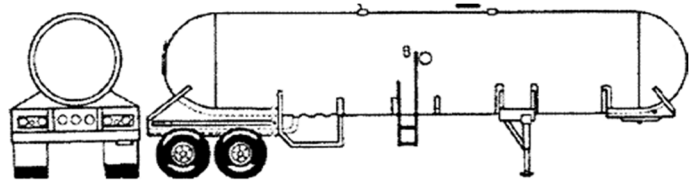
Emergency Response Guidebook Worksheet

Name: _____

Date: _____

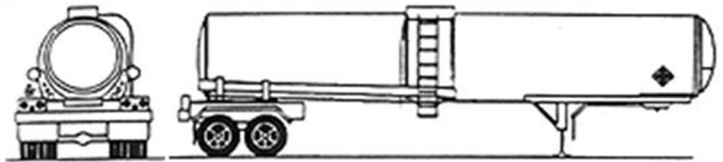
Using the most current edition of the *Emergency Response Guidebook* solve the following problems:

1. What is the initial **isolation zone** and **downwind protective action distance** day and night when there is a small leak from the highway cargo tanker pictured here?



2. What is the **primary hazard** of the product with the ID number **UN1824**?

3. What type of **firefighting foam** should be used on a large spill fire involving the product in this highway cargo tanker? Are there **toxic effects** associated with this product?



4. What type of protective clothing should be worn to handle a spill involving **Hydrofluoric acid, solution**?

5. In case of accidental eye contact with **methanol**, what actions should you take?

6. What are the recommended **extinguishing agents** for the product with this placard? What is this product?





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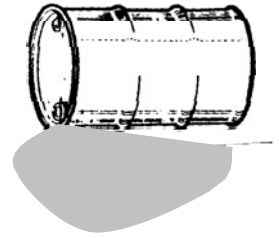
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TESTING SKILLS

7. Which **guide number** should be used for the product spilled from the drum in this picture?

Guide Number: _____



8. Identify the **hazards and product name** of this display found on an intermodal container.



9. What is the **recommended evacuation distance** if a truck load of explosives with this placard is involved in a fire?



10. If **Styrene** is exposed to **excessive heat**, what may occur?

11. What types of extinguishing agents should **not** be applied to fires involving **Perchloric acid UN1802**?

12. What is Protective Clothing and Respiratory Protection recommendation for a response involving **Chloropicrin**?

13. Which guide number should be used for emergency response information for a spill involving material with this placard?

Guide Number: _____



14. What are the emergency response telephone numbers for **CHEMTREC**[®] and the **NATIONAL RESPONSE CENTER (NRC)**?

NRC #: _____

CHEMTREC#: _____

15. If water is leaking into a cargo hold of a barge containing **UN1830**, what may occur?



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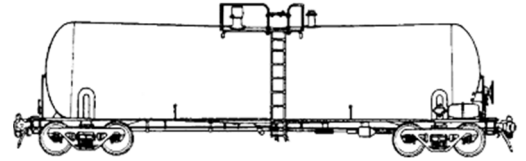
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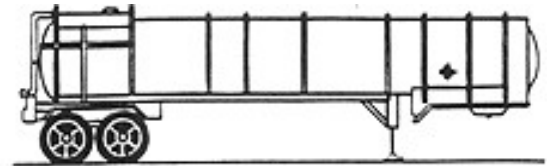
16. Which guide number would you use to find response information about the railcar pictured here?

Guide Number: _____

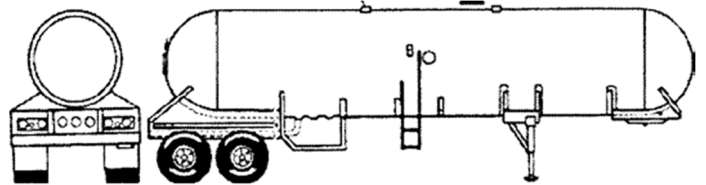


17. Which guide number would you use to find response information about the highway cargo tanker pictured here?

Guide Number: _____



18. If the highway cargo tanker pictured below is involved in a fire, what **sights or sounds** should cause an immediate withdrawal of emergency response personnel?



19. If a container of the material with this placard is submerged in water, what Toxic by Inhalation (TIH) gas may be produced?



20. Is **UN1053** a flammable gas? What is its primary hazard, fire or toxicity?

21. If an unconscious person is contaminated with "Boron trifluoride, diethyl etherate" is mouth-to-mouth a recommended first-aid procedure?

Guide: _____



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TESTING SKILLS

22. Why does "Propadiene, inhibited" have a "P" following the Guide Number in the blue-bordered Section?

23. If a large amount of "sulfuryl chloride" is spilled into water, what is the initial isolation distance?

UN Identification Number: _____

Initial Isolation distance: _____

24. What toxic gases may be produced by the reaction between sulfuryl chloride and water?

25. What general safety precautions are recommended by the *Emergency Response Guidebook*?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____



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TESTING SKILLS

Operations Skill #1

Identify Potential Hazards and Action Options

PERFORMANCE STANDARD

NFPA 1072, 2017 edition, 5.2.1, 5.2.1.B

Section 602

Operations

OBJECTIVES

Identify the scope of the problem at a hazardous materials/WMD incident, given hazardous materials/WMD incident, an assignment, policies and procedures, and approved reference sources, so that container types, materials, location of any release, and surrounding conditions are identified, hazard information is collected, the potential behavior of a material and its container is identified, and the potential hazards, harm, and outcomes associated with that behavior are identified. (5.2.1)

Identifying container types, materials, location of release, and surrounding conditions at a hazardous materials/WMD incident; collecting hazard information; communicating with pipeline operators, carrier representatives or responsible party; describing likely behavior of hazardous materials or WMD and its container; and describing the potential hazards, harm, and outcomes associated with that behavior and the surrounding conditions. (5.2.1.B)

Identify the action options for a hazardous materials/WMD incident, given a hazardous materials/WMD incident, an assignment, policies and procedures, approved reference sources, and the scope of the problem, so that response objectives, action options, safety precautions, suitability of approved personal protective equipment (PPE) available, and emergency decontamination needs are identified. (5.3.1)

Identifying response objectives and action options based on the scope of the problem and available resources; identifying whether approved PPE is suitable incident conditions; and identifying emergency decontamination needs based on the scope of the problem. (5.3.1.B)

INSTRUCTIONS

You will be given a Hazardous Materials incident scenario, the applicable policies and procedures, and approved reference material. You are to identify the scope of the problem, and identify the container type or types involved in the scenario to include the location of release, and surrounding conditions. You are to also identify the action options and response objectives to include mode(s) of operation, appropriate personal protective equipment, and emergency decontamination requirements.

You will begin on my instruction to start. The skill will end when you state to me that you have completed all the identified steps and all appropriate tasks.

Do you understand these instructions?

EXAMINER'S NOTE

The candidate will not be allowed to review the performance steps at the time of testing.

Provide the candidate with an incident scenario. This may be in the form of an actual staged scenario on the training field, a PowerPoint or multimedia presentation/video, or a photograph(s) with narratives.

Allow the candidate to analyze the scenario, they may use the ERG, NIOSH Pocket Guide, and applicable SDS, shipping papers, and other reference support material provided. The use of WISER on their personal electronic device (cell phone or tablet) is also acceptable.



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TESTING SKILLS

PREPARATION & EQUIPMENT

- *Emergency Response Guidebook (ERG)*, most current edition
- *NIOSH Pocket Guidebook to Chemical Hazards*, most current edition
- *Wireless Information System for Emergency Responders (WISER)*
- Safety data sheet(s) (SDS)
- Shipping papers
- PPE/PCP compatibility charts/guides/manuals, if necessary
- A written or audio/visual representation of a scene or scenario provide product information response objectives applicable to policies and procedures according to the examinees AHJ. (i.e., PowerPoint Presentation) or an instructor prepared worksheet as needed.



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TESTING SKILLS

Operations Skill #1

Identify Potential Hazards and Action Options

Candidate: _____

Notes: _____

Examiner: _____

School: _____

Test Site: _____

Identify the scope of the problem at a hazardous materials/WMD incident, given hazardous materials/WMD incident, an assignment, policies and procedures, and approved reference sources, so that container types, materials, location of any release, and surrounding conditions are identified, hazard information is collected, the potential behavior of a material and its container is identified, and the potential hazards, harm, and outcomes associated with that behavior are identified. (5.2.1)

Identifying container types, materials, location of release, and surrounding conditions at a hazardous materials/WMD incident; collecting hazard information; communicating with pipeline operators or carrier representatives; describing likely behavior of the hazardous materials or WMD and its container; and describing the potential hazards, harm, and outcomes associated with that behavior and the surrounding conditions. (5.2.1.B)

Identify the action options for a hazardous materials/WMD incident, given a hazardous materials/WMD incident, an assignment, policies and procedures, approved reference sources, and the scope of the problem, so that response objectives, action options, safety precautions, suitability of approved personal protective equipment (PPE) available, and emergency decontamination needs are identified. (5.3.1)

Identifying response objectives and action options based on the scope of the problem and available resources; identifying whether approved PPE is suitable for incident conditions; and identifying emergency decontamination needs based on the scope of the problem. (5.3.1.B)

	POSSIBLE POINTS	TEST	RETEST
a. Identify container types, materials, location of release, and surrounding conditions at a hazardous materials/WMD incident	1		
b. Collect hazard information	1		
c. Detail the actions of communicating with pipeline operators, carrier representatives and or responsible party.	1		
d. Describe likely behavior of the hazardous materials or WMD and its container.	1		
e. Describe the potential hazards, harm, and outcomes associated with that behavior and the surrounding conditions.	1		
f. Identify response objectives and action options based on the scope of the problem and available resources.	1		
g. Identify whether approved PPE is suitable for incident conditions	1		



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h. Identify emergency decontamination needs based on the scope of the problem	1		
TOTAL POINTS:	7		

Points needed to pass: 5

Evaluator/Candidate Comments:

Certifying Examiner

Date

Re-Test Certifying Examiner

Date

Overall Skill Sheet Score	
Pass <input type="checkbox"/>	Fail <input type="checkbox"/>
Overall Skill Sheet Re-Test Score	
Pass <input type="checkbox"/>	Fail <input type="checkbox"/>



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TESTING SKILLS

Operations

Container Identification Worksheet

RAILCAR TANK		
	Container Name	
1		
2		
3		
INTERMODAL TANK		
	Container Name	Type/Specification
1		
2		
3		
4		
5		
HIGHWAY CARGO TANK		
	Container Name	MC/DOT Specification
1		
2		
3		
4		
5		
6		
7		
NON-BULK CONTAINER PACKAGING		
	Container Name/Type	
1		
2		
3		
4		
5		
Intermediate Bulk Containers & Ton Containers		
	Container Name/Type	
1		
2		
3		
FIXED FACILITY STORAGE TANK		
	Container Name	
1		
2		
3		



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TESTING SKILLS

RADIOACTIVE MATERIAL PACKAGING		
	Container Name	Characteristics
1		
2		
3		
4		
5		



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TESTING SKILLS

Pesticide Label

Worksheet

Using the Pesticide label provided for _____ answer the following questions:

1. What is the Active ingredient in this pesticide? _____
2. What information is provided in the Hazard Statement? _____
3. What is the Name of pesticide? _____
4. What is the EPA Registration Number (or Pest Control Product (PCP) number in Canada)?

5. What information is provided in the Precautionary Statement?

6. What Signal Word is used on the label? What does it mean?

7. What are the appropriate response actions for dealing with the identified product?



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TESTING SKILLS

Safety Data Sheet

Worksheet

Use the Safety Data Sheet for _____ provided to answer the following questions:

1. What are two ways to obtain an SDS during an emergency?

a. _____

b. _____

Section 1. Identification

2. What is the chemical/product name? _____

3. What other names can this product be shipped as? _____

4. How is this chemical used? _____

5. Are there restrictions on its use? If so, what are they? _____

6. Who is the manufacturer or responsible party? _____

7. What is their emergency contact number or numbers? _____

8. Who is the shipper? _____

9. What is their contact number? _____

10. What is their Emergency contact number? _____

Section 2. Hazard Identification

11. What is its GHS Classification for Health? _____

12. What is it for Environmental? _____

13. What is it for Physical? _____

14. What is its Signal Word? _____

15. What Hazard Statements are listed? _____

16. What Symbols are used? _____

17. What Precautionary Statements are listed? _____



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Section 3. Composition

18. What is the chemical name? _____
19. What is the chemical's common name or synonyms? _____

20. What is the chemical's CAS number? _____
21. If this chemical is a mixture, what are the names and concentrations of the ingredients of the hazardous chemicals in it? _____

Section 4. First Aid Measures

22. What routes of exposure are of concern with this chemical? _____

23. What are the symptoms of exposure?
a. Acute: _____
b. Chronic: _____
24. What are the First Aid Measures that need to be applied if there is an accidental release with exposure to this product? _____

Section 5. Firefighting Measures

25. What extinguishing agents should be applied to this product in case of a fire?

26. What special hazards should be considered if this chemical is involved in a fire?

27. What protective equipment should be used if this chemical is involved in a fire?



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Section 6. Accidental Release Measures

28. What are the precautions and procedures for handling an accidental release of this product?

- a. Personal Precautions: _____

- b. Protective Equipment: _____

- c. Emergency Procedures: _____

- d. Environmental Precautions: _____

- e. Methods and materials for containment and clean-up: _____

Section 7. Handling and Storage

29. What is the recommended handling procedure for this product? _____

30. What is the recommended storage procedure for this product? _____

31. What products ore chemicals are incompatible with this product? _____

Section 8. Exposure Control / Personal Protection

32. What is the PEL? _____
33. What is the STEL? _____
34. What is the IDLH? _____
35. What is the LD50 or LC50? _____
36. What PPE should be used for handling this product? _____

Section 9. Physical and Chemical Properties

37. Appearance: _____
38. Odor: _____
39. PH: _____
40. Melting/Freezing Point: _____



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41. Boiling Point: _____
42. Flash Point: _____
43. Specific Gravity: _____
44. Solubility: _____
45. Auto-Ignition Temp: _____
46. Vapor Density: _____
47. Vapor Pressure: _____
48. Expansion Ratio: _____
49. Flammable Range: _____

Section 10. Stability and reactivity

50. Is it stable? If not, why? _____
51. Is it reactive? _____
 - a. If so, what is it incompatible with? _____
 - b. What does it produce? _____
52. Conditions to avoid? _____

53. Hazardous products of decomposition? _____

Section 11. Toxicological Information

54. Is the product a carcinogen? _____
55. Is this product a teratogen or mutagen? _____
56. Is this product radioactive? _____

Section 12. Ecological Information

57. What are the ecological concerns for a release of this product? _____

Section 13. Disposal considerations

58. What are the recommended disposal considerations for this product? _____



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Section 14. Transportation Information

59. What is its proper shipping name? _____
60. What is its UN #? _____
61. What is its Hazard class or classes? _____
62. In what packing group does it belong? _____
63. Is this chemical/product a marine pollutant? _____

Section 15. Regulatory Information

64. What safety, health, and/or environmental regulations are specific to this product? _____

Section 16. Other Information

65. When was this SDS last revised? _____
66. Is there any other additional information of special concern? _____



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TESTING SKILLS

Operations Skill #2

Action Plan Implementation

PERFORMANCE STANDARD

NFPA 1072, 2017 edition, 5.4.1, 5.4.1.B, 5.6.1, 5.6.1.B

Section 602

Operations

OBJECTIVES

Perform assigned tasks at a hazardous materials/WMD incident, given a hazardous materials/WMD incident; an assignment with limited potential of contact with hazardous materials/WMD, policies and procedures, the scope of the problem, approved tools, equipment, and PPE, so that protective actions and scene control are established and maintained, on-scene incident command is described, evidence is preserved, approved PPE is selected and used in the proper manner; exposures and personnel are protected; safety procedures are followed; hazards are avoided or minimized; assignments are completed; and gross decontamination of personnel, tools, equipment, and PPE is conducted in the field. (5.4.1)

Establishing and maintaining scene control; recognizing and preserving evidence; inspecting, donning, working in, going through contamination while wearing, and doffing approved PPE; isolating contaminated tools, equipment, and PPE; conducting gross decontamination contaminated personnel, tools, equipment, and PPE in the field; and cleaning, disinfecting, and inspecting approved tools, equipment, and PPE. (5.4.1.B)

Evaluate and report the progress of the assigned tasks for a hazardous materials/WMD incident, given a hazardous materials/WMD incident, an assignment, policies and procedures, status of assigned tasks, and approved communication tools and equipment, so that the effectiveness of the assigned tasks is evaluated and communicated to the supervisor, who can adjust the IAP as needed. (5.6.1)

Determining incident status; determining whether the response objectives are being accomplished; using approved communications and equipment and communicating the status of assigned tasks. (5.6.1.B)

INSTRUCTIONS – procedures for achieving the objective

You, as part of a team, will be provided a scenario, reference material, personal protective clothing (including chemical protective clothing), and decontamination equipment. You shall analyze the incident, identify, and select the appropriate PPE.

Your team shall establish and maintain scene control, determine incident status, recognize, and preserve evidence, select and set up decontamination in a safe area, implement, prevent spread of contamination, avoid hazards and isolate contaminated tools, equipment, and PPE during decontamination.

You and your team will determine the response objectives are being accomplished, select approved communications and equipment, and communicate the status of assigned tasks.

After successfully completing the response objectives, communicating the status of assigned tasks and completion of decontamination you and your team shall clean, disinfect, and inspect approved tools, equipment, and PPE.

With regard to selecting and utilizing the appropriate PPE/CPC; once selected, it must be properly inspected and maintained as recommended. It must also be properly donned, used/work in, and doffed. All PPE/CPC reporting and documentation requirements per the AHJ must be completed.

You shall respond verbally or in the written form as may be appropriate. You will begin on my instruction to start. The skill will end when you state to me that you have completed all the identified steps. Do you understand these instructions?



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TESTING SKILLS

EXAMINER'S NOTE

The candidate will not be allowed to review the performance steps at the time of testing.

Provide the candidate with an incident scenario. This may be in the form of an actual staged scenario on the training field, a PowerPoint or multimedia presentation/video, or a photograph(s) with narratives.

Allow the candidate to analyze the scenario, they may use the ERG, NIOSH Pocket Guide, and applicable SDS, shipping papers, and other reference support material provided. The use of WISER on their personal electronic device (cell phone or tablet) is also acceptable.

The candidate will perform as a member of a team. Each member of the team will be randomly selected to perform a different/separate function on the team.

Their response must include:

1. Establish and maintain scene control.
2. Determine incident status.
3. Recognize and preserve evidence.
4. Select and set up decontamination in a safe area.
5. Use approved PPE, inspect, don, work in, go through decontamination while wearing, and doff approved PPE.
6. Determine whether the response objectives are being accomplished.
7. Use approved communications and equipment.
8. Communicate the status of assigned tasks.
9. Implement and avoid hazards during decontamination
10. Isolate contaminated tools, equipment, and PPE.
11. Doff PPE, conduct decontamination of contaminated personnel, and gross decontamination of tools, equipment, and PPE in the field.
12. Clean, disinfect, and inspect approved tools, equipment, and PPE.

PREPARATION & EQUIPMENT

- *Emergency Response Guidebook (ERG)*, most current edition
- *NIOSH Pocket Guidebook to Chemical Hazards*, most current edition
- *Wireless Information System for Emergency Responders (WISER)*
- Safety data sheets(S) (SDS)
- Shipping papers
- PPE/PCP compatibility charts/guides/manuals
- PPE/CPC including:
 - Vapor Protective Clothing (Level A)
 - Splash Protective Clothing (Level B)
 - Support Protective Garments (Level C)
 - Primary Protective Work Garments (Level D)
 - Structural Firefighting Protective Ensembles (Bunker Gear)
 - Positive Pressure Self-Contained Breathing Apparatus (SCBA)
 - Air Purifying Respirators (APR or PAPR)
- Approved communication devices (Radio, cell phone, etc.)
- Decontamination supplies/equipment
- A written or audio/visual representation of a scene or scenario (i.e., PowerPoint Presentation) or an instructor prepared worksheet as needed.

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TESTING SKILLS

Operations Skill #2

Action Plan Implementation

Candidate: _____

Notes: _____

Examiner: _____

School: _____

Test Site: _____

Perform assigned tasks at a hazardous materials/WMD incident, given a hazardous materials/WMD incident; an assignment with limited potential of contact with hazardous materials/WMD, policies and procedures, the scope of the problem, approved tools, equipment, and PPE, so that protective actions and scene control are established and maintained, on-scene incident command is described, evidence is preserved, approved PPE is selected and used in the proper manner; exposures and personnel are protected; safety procedures are followed; hazards are avoided or minimized; assignments are completed; and gross decontamination of personnel, tools, equipment, and PPE is conducted in the field. (5.4.1)

Establishing and maintaining scene control; recognizing and preserving evidence; inspecting, donning, working in, going through contamination while wearing, and doffing approved PPE; isolating contaminated tools, equipment, and PPE; conducting gross decontamination contaminated personnel, tools, equipment, and PPE in the field; and cleaning, disinfecting, and inspecting approved tools, equipment, and PPE. (5.4.1.B)

Evaluate and report the progress of the assigned tasks for a hazardous materials/WMD incident, given a hazardous materials/WMD incident, an assignment, policies and procedures, status of assigned tasks, and approved communication tools and equipment, so that the effectiveness of the assigned tasks is evaluated and communicated to the supervisor, who can adjust the IAP as needed. (5.6.1)

Determining incident status; determining whether the response objectives are being accomplished; using approved communications and equipment and communicating the status of assigned tasks. (5.6.1.B)

	POSSIBLE POINTS	TEST	RETEST
a. Establish and maintain scene control	1		
b. Determine incident status	1		
c. Recognize and preserve evidence	1		
d. Set up decontamination in a safe area	1		
e. Use approved PPE in the proper manner	1		
f. Inspect, don, work in, and go through decontamination while wearing approved PPE	1		
g. Determine whether the response objectives are being accomplished	1		
h. Use approved communications and equipment	1		
i. Communicate the status of assigned tasks	1		
j. Prevent spread of contamination	1		
k. Avoid hazards during decontamination	1		



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TESTING SKILLS

l. Isolate contaminated tools, equipment, and PPE	1		
m. Conduct decontamination of contaminated personnel, and gross decontamination of tools, equipment and PPE in the field, and doff PPE	1		
n. Clean, disinfect, and inspect approved tools, equipment, and PPE	1		
TOTAL POINTS:	14		

Points needed to pass: 10

Evaluator/Candidate Comments:

Certifying Examiner

Date

Re-Test Certifying Examiner

Date

Overall Skill Sheet Score	
Pass <input type="checkbox"/>	Fail <input type="checkbox"/>
Overall Skill Sheet Re-Test Score	
Pass <input type="checkbox"/>	Fail <input type="checkbox"/>



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TESTING SKILLS

Operations Skill #3

Emergency Decontamination

PERFORMANCE STANDARD

NFPA 1072, 2017 edition, 5.5.1, 5.5.1.B

Section 602

Operations

OBJECTIVES

Perform emergency decontamination at a hazardous materials/WMD incident, given a hazardous materials/WMD incident that requires emergency decontamination; an assignment; scope of the problem; policies and procedures; and approved tools, equipment, and PPE for emergency decontamination, so that emergency decontamination needs are identified, approved PPE is selected and used, exposures and personnel are protected, safety procedures are followed, hazards are avoided or minimized, emergency decontamination is set up and implemented, and victims and responders are decontaminated. (5.5.1)

Selecting an emergency decontamination method; setting up emergency decontamination in a safe area; using PPE in the proper manner; implementing emergency decontamination; preventing spread of contamination; and avoiding hazards during emergency decontamination. (5.5.1.B)

INSTRUCTIONS – procedures for achieving the objective

Given a scenario and the personal protective equipment, emergency response and hazardous materials response equipment including decontamination equipment provided by the AHJ, you shall demonstrate local procedures for responders undergoing the emergency decontamination process. You will begin on my instruction to start. The skill will end when you state to me that you have completed all of the identified steps. Do you understand these instructions?

EXAMINER'S NOTE

The candidate will not be allowed to review the performance steps at the time of testing. Provide the candidate with an incident scenario. This may be in the form of an actual staged scenario on the training field, a PowerPoint or multimedia presentation/video, or a photograph(s) with narratives.

Allow the candidate to analyze the scenario, they may use the ERG, NIOSH Pocket Guide, an applicable SDS, shipping papers, and other reference support material provided. The use of WISER on their personal electronic device (cell phone or tablet) is also acceptable.

PREPARATION & EQUIPMENT

- Hazardous materials incident scenario
- Reference material
- Personal protective equipment provided by the AHJ
- Emergency response and hazardous materials response equipment
- Decontamination equipment



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TESTING SKILLS

Operations Skill #3

Emergency Decontamination

Candidate: _____

Notes: _____

Examiner: _____

School: _____

Test Site: _____

Perform emergency decontamination at a hazardous materials/WMD incident, given a hazardous materials/WMD incident that requires emergency decontamination; an assignment; scope of the problem; policies and procedures; and approved tools, equipment, and PPE for emergency decontamination, so that emergency decontamination needs are identified, approved PPE is selected and used, exposures and personnel are protected, safety procedures are followed, hazards are avoided or minimized, emergency decontamination is set up and implemented, and victims and responders are decontaminated. (5.5.1)

Selecting an emergency contamination method; setting up emergency decontamination in a safe area; using PPE in the proper manner; implementing emergency decontamination; preventing spread of contamination; and avoiding hazards during emergency decontamination. (5.5.1.B)

	POSSIBLE POINTS	TEST	RETEST
a. Select an emergency contamination method	1		
b. Set up emergency decontamination in a safe area	1		
c. Use approved PPE in the proper manner	1		
d. Implement emergency decontamination	1		
e. Prevent spread of contamination	1		
f. Avoid hazards during emergency decontamination	1		
TOTAL POINTS:	6		

Points needed to pass: 4

Evaluator/Candidate Comments:

Certifying Examiner

Date

Re-Test Certifying Examiner

Date

Overall Skill Sheet Score	
Pass <input type="checkbox"/>	Fail <input type="checkbox"/>
Overall Skill Sheet Re-Test Score	
Pass <input type="checkbox"/>	Fail <input type="checkbox"/>



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TESTING SKILLS

Operations Skill #4

Personal Protective Equipment & Product Control

PERFORMANCE STANDARD

NFPA 1072, 2017 edition, 6.2.1, 6.2.1.B, 6.6.1, 6.6.1.B

Section 603

Operations-MS (PPE & PC)

OBJECTIVES

Select, don, work in, and doff approved PPE at a hazardous materials/WMD incident, given a hazardous materials/WMD incident; a mission-specific assignment in an IAP that requires use of PPE; the scope of the problem; response objectives and options for the incident; access to a hazardous materials technician, an allied professional, an emergency response plan, or standard operating procedures; approved PPE; and policies and procedures, so that under the guidance of a hazardous materials technician, an allied professional, an emergency response plan, or standard operating procedures, approved PPE is selected, inspected, donned, worked in, decontaminated, and doffed; exposures and personnel are protected; safety procedures are followed; hazards are avoided or minimized; and all reports and documentation pertaining to PPE use are completed. (6.2.1)

Selecting PPE for the assignment; inspecting, maintaining, storing, donning, working in, and doffing PPE; going through decontamination process (emergency and technical) while wearing PPE; reporting and documenting the use of PPE. (6.2.1.B)

Perform product control techniques with a limited risk of personal exposure at a hazardous materials/WMD incident, given a hazardous materials/WMD incident with release of product; an assignment in an IAP; scope of the problem; policies and procedures; approved tools, equipment, control agents, and PPE; and access to a hazardous materials technician, an allied professional, an emergency response plan, or standard operating procedures, so that under the guidance of a hazardous materials technician, an allied professional, an emergency response plan, or standard operating procedures, approved PPE is selected and used; exposures and personnel are protected; safety procedures are followed; hazards are avoided or minimized; a product control technique is selected and implemented; the product is controlled; victims, personnel, tools, and equipment are decontaminated; and product control operations are reported and documented. (6.6.1)

Selecting and using PPE; selecting and performing product control techniques to confine/contain the release with limited risk of personal exposure; using approved control agents and equipment on a release involving hazardous materials/WMD; using remote control valves and emergency shutoff devices on cargo tanks and intermodal tanks in transportation and containers at fixed facilities; and performing product control techniques. (6.6.1.B)

INSTRUCTIONS - procedures for achieving the objective

You, as part of team, will be provided a scenario, reference material, personal protective clothing, and equipment (including chemical protective clothing), product control equipment, and decontamination equipment. You shall analyze the incident, identify, and select the appropriate PPE and product control options.

Your team shall establish an incident response plan that includes identifying the products and hazards involved, selecting the appropriate PPE/CPC, select and perform product control techniques to confine/contain the release with limited risk of personal exposure while identifying which approved control agents and/or equipment are appropriate to use on a release involving the identified hazardous materials/WMD.

You and your team will demonstrate competence in using remote control valves and emergency shutoff devices on cargo tanks and intermodal tanks in transportation and containers at fixed facilities as relevant to the scenario provided and perform product control techniques appropriate to situation.



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After successfully completing product control actions, you and your team will perform appropriate decontamination procedures (emergency and/or technical).

With regard to selecting and utilizing the appropriate PPE/CPC; once selected, it must be properly inspected and maintained as recommended. It must also be properly donned, used/work in, and doffed. All PPE/CPC reporting and documentation requirements per the AHJ must be completed.

You shall respond verbally or in the written form as may be appropriate. You will begin on my instruction to start. The skill will end when you state to me that you have completed all the identified steps. Do you understand these instructions?

EXAMINER'S NOTE

The candidate will not be allowed to review the performance steps at the time of testing.

Provide the candidate with an incident scenario. This may be in the form of an actual staged scenario on the training field, a PowerPoint or multimedia presentation/video, or a photograph(s) with narratives.

Allow the candidate to analyze the scenario, they may use the ERG, NIOSH Pocket Guide, and applicable SDS, shipping papers, and other reference support material provided. The use of WISER on their personal electronic device (cell phone or tablet) is also acceptable.

The candidate will perform as a member of a team. Each member of the team will be randomly selected to perform a different/separate function on the team.

Their response must include:

1. Identifying the products and hazards involved
2. Selecting the appropriate PPE/CPC.
3. Selecting and performing product control techniques to confine/contain the release with limited risk of personal exposure.
4. Identification of approved control agents and/or equipment appropriate for use on the identified hazardous materials/WMD.
5. Demonstration of competence in using remote control valves and emergency shutoff devices on cargo tanks and intermodal tanks in transportation and containers at fixed facilities as may be relevant to the scenario provided.
6. Perform product control techniques appropriate to situation.
7. Performance of appropriate decontamination procedures (emergency and/or technical).

PREPARATION & EQUIPMENT

- *Emergency Response Guidebook (ERG)*, most current edition
- *NIOSH Pocket Guide to Chemical Hazards*, most current edition
- *Wireless Information System for Emergency Responders (WISER)*
- Safety data sheet(s) (SDS)
- Shipping papers
- Monitoring and Detection equipment (Simulators/training aids are acceptable) • PPE/CPC compatibility charts/guides/manuals
- PPE/CPC including:
 - Vapor Protective Clothing (Level A)
 - Splash Protective Clothing (Level B)
 - Support Protective Garments (Level C)

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TESTING SKILLS

- Primary Protective Work Garments (Level D)
- Structural Firefighting Protective Ensembles (Bunker Gear)
- Positive Pressure Self-Contained Breathing Apparatus (SCBA)
- Air Purifying Respirators (APR or PAPR)
- Approved communication devices (Radio, cell phone, etc.)
- Product Control Equipment (Absorbent boom/pad material, adsorbent material, foam concentrate (or simulated) and foam production devices, diking, damming, confinement and containment equipment and material).
- Decontamination supplies/equipment
- A written or audio/visual representation of a scene or scenario (i.e., PowerPoint Presentation) or an instructor prepared worksheet as needed.



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TESTING SKILLS

Operations Skill #4

Personal Protective Equipment & Product Control

Candidate: _____

Notes: _____

Examiner: _____

School: _____

Test Site: _____

Select, don, work in, and doff approved PPE at a hazardous materials/WMD incident, given a hazardous materials/WMD incident; a mission-specific assignment in an IAP that requires use of PPE; the scope of the problem; response objectives and options for the incident; access to a hazardous materials technician, an allied professional, an emergency response plan, or standard operating procedures; approved PPE; and policies and procedures, so that under the guidance of a hazardous materials technician, an allied professional, an emergency response plan, or standard operating procedures, approved PPE is selected, inspected, donned, worked in, decontaminated, and doffed; exposures and personnel are protected; safety procedures are followed; hazards are avoided or minimized; and all reports and documentation pertaining to PPE use are completed. (6.2.1)

Selecting PPE for the assignment; inspecting, maintaining, storing, donning, working in, and doffing PPE; going through decontamination process (emergency and technical) while wearing PPE; reporting and documenting the use of PPE. (6.2.1.B)

Perform product control techniques with a limited risk of personal exposure at a hazardous materials/WMD incident, given a hazardous materials/WMD incident with release of product; an assignment in an IAP; scope of the problem; policies and procedures; approved tools, equipment, control agents, and PPE; and access to a hazardous materials technician, an allied professional, an emergency response plan, or standard operating procedures, so that under the guidance of a hazardous materials technician, an allied professional, an emergency response plan, or standard operating procedures, approved PPE is selected and used; exposures and personnel are protected; safety procedures are followed; hazards are avoided or minimized; a product control technique is selected and implemented; the product is controlled; victims, personnel, tools, and equipment are decontaminated; and product control operations are reported and documented. (6.6.1)

Selecting and using PPE; selecting and performing product control techniques to confine/contain the release with limited risk of personal exposure; using approved control agents and equipment on a release involving hazardous materials/WMD; using remote control valves and emergency shutoff devices on cargo tanks and intermodal tanks in transportation and containers at fixed facilities; and performing product control techniques. (6.6.1.B)



State Firefighters' and Fire Marshals' Association of Texas

Texas Volunteer Firefighters' and Fire Marshals' Certification Board

PO Box 1409 ♦ Manchaca, Texas 78652-1409 ♦ 512.453.1876 (fax)

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TESTING SKILLS

	POSSIBLE POINTS	TEST	RETEST
a. Select and use the appropriate PPE for the assignment	1		
b. Demonstrate the following PPE skills: <ul style="list-style-type: none"> • Inspection • Maintenance • Donning • Working in • Doffing 	5		
c. Select and perform product control techniques to confine/contain the release with limited risk of personal exposure	1		
d. Identify which approved control agents and equipment to use on a release involving hazardous materials/WMD	1		
e. Demonstrate competence in using remote control valves and emergency shutoff devices on cargo tanks and intermodal tanks in transportation and/or containers at fixed facilities (Based on scenario provided)	1		
f. Perform product control techniques appropriate to situation	1		
g. Demonstrate competence in going through decontamination procedures (emergency and technical) while wearing PPE	1		
h. Report and document use of PPE	1		
TOTAL POINTS:	12		

Points needed to pass: 8

Evaluator/Candidate Comments:

Certifying Examiner

Date

Re-Test Certifying Examiner

Date

Overall Skill Sheet Score	
Pass <input type="checkbox"/>	Fail <input type="checkbox"/>
Overall Skill Sheet Re-Test Score	
Pass <input type="checkbox"/>	Fail <input type="checkbox"/>