



**Municipal First-on-the-Scene  
Instructor Manual  
May 2014**

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Midwest Consortium for Hazardous Waste Worker Training

## Acknowledgments

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## Warning

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## Disclaimer

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### **Note to First-on-the-Scene Awareness Training Participants**

This training is intended to meet the requirements of the OSHA Hazardous Waste Final Rule (29 CFR 1910.120 effective March 6, 1990) for first responder personnel (awareness level) who may be the first-on-the-scene at a hazardous materials incident. The training program covers basic hazard recognition, identification, reporting, and self-protection for individuals who may do preliminary observation of an event. It does **not** provide the necessary hazard recognition and protective skills required to perform emergency response activities. To undertake the activities of emergency responders, additional training is necessary.

For further information about this matter, consult the training instructor and/or your company's safety/emergency response plan or the Local Emergency Planning Committee for your city or county.

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## Course Overview – Instructor Guide

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This course was developed to meet the requirements of OSHA's Hazardous Waste Final Rule, 29 CFR 1910.120, for awareness-level first-on-the-scene responders. The program covers basic hazard recognition and identification, reporting, and self-protection for individuals who may do preliminary observation of an event. It does not provide the necessary hazard recognition and protective skills required to perform emergency response activities. To undertake these types of activities, participants will need additional training. The curriculum consists of material presentations, key points reviews, and small-group exercises.

This Instructor's Guide provides an outline for teaching the 8-Hour Industrial First-on-the-Scene curriculum. By following the outlined format and activities in this guide, you will be better able to enhance learning, stimulate class discussion, and maintain the training objectives.

This course complies with OSHA's Final Rule and is designed to be taught in one 8-hour day. Breaks and lunch are not included in the 8 hours. Although the amount of time spent on each section is flexible, material covered in earlier sections may be needed for successful completion of later class exercises. The exercises were designed to illustrate and reinforce different components of the training, but it is possible to delete one or more minor exercises if time constraints arise. It is the desire of the Midwest Consortium for Hazardous Waste Worker Training to allow professional instructional freedom yet maintain consistency of training. Therefore, all course outlines must be carefully prepared so that 8 hours of training are completed by the end of the course. To provide an effective student-teacher ratio and maximize learning, limit the class to no more than 24 participants.

**Sample Agenda (7 contact hours)**

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|                      |  |
|----------------------|--|
| <b>7:45 - 8:00</b>   | <b>Introduction to the Course</b>  |
| <b>8:00 - 9:00</b>   | <b>Rights and Responsibilities</b>   |
| <b>9:00 - 10:00</b>  | <b>Unsolved Mysteries</b><br><b>-Unsolved Mysteries Exercise</b>   |
| <b>10:00 - 10:15</b> | <b>Break</b>   |
| <b>10:15-11:30</b>   | <b>Hazard Recognition</b><br><b>-Placards &amp; Labels Exercise</b><br><b>-Container Shapes Exercise</b><br><b>-What's Going on Here? Exercise</b> |
| <b>11:30 - 12:30</b> | <b>Lunch</b>   |
| <b>12:30 - 1:15</b>  | <b>Hazard Recognition (continued)</b>  |
| <b>1:15 - 2:00</b>   | <b>Health Effects</b><br><b>-Health Effects Exercise</b>   |
| <b>2:00 - 2:15</b>   | <b>Break</b>   |
| <b>2:15 - 3:15</b>   | <b>Sizing-Up the Scene</b><br><b>-Sizing-Up the Scene Exercise</b>   |
| <b>3:15 - 3:45</b>   | <b>What Do I Do?</b><br><b>- What Would You Tell Them? Exercise</b><br><b>-Calling It In Exercise (optional)</b>                                   |
| <b>3:45 - 4:30</b>   | <b>Putting It All Together</b><br><b>-SWIMS Exercise</b>   |
| <b>4:30 - 4:45</b>   | <b>Closing</b>   |

## Instructor Preparation

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The Municipal First-on-the-Scene course incorporates a variety of teaching methods to meet varied learning styles. Material presentation, discussion, and small-group exercises (including a call-in simulation) are used to teach material.

This Instructor's Guide will give you a guideline for presenting the material, and it includes the following types of information: objectives of the modules and directions for running them, exercise directions and answers, and issues that might be raised by the class.

As an instructor, you should carefully review this Instructor's Guide and the content of the Student Manual. In addition, you should be familiar with OSHA's HAZWOPER Standard-Final Rule, 29 CFR 1910.120.

The "Key Points" and "Review Questions" pages in the Student Manual will provide an opportunity to reinforce main points and the module objectives. Reserve time at the end of each module to answer the trainees' questions and make sure that key issues have been understood.

Graphics are available and should be used to assist with in-class instruction.

Graphics appear throughout the manual to illustrate labels and placards, container shapes, and situations which first-on-the-scene responders might encounter. Refer trainees to these illustrations when you cover material and when they work the exercises.

Other photographs, sketches, charts, slides, posters, short videos, and overheads are also useful training tools and may be introduced in the lesson where appropriate.

Small-group exercises are incorporated throughout the Industrial First-on-the-Scene course. The purpose of the exercises is to involve trainees in clarifying information, identifying options, and applying the skills they will need if they are first on the scene at an incident. Be sure to allow sufficient time for trainees to complete the exercises and discuss them afterwards.

Because class activities and exercises enhance the learning process, it is important to make discussions comfortable so that everyone can participate.

Assume that every class will have participants with a wide range of communication skills. Some trainees will have no problems participating in group discussion, while others may have a hard time talking in front of the group.

Suggestions for handling group exercises and discussions include the following:

- Allow trainees to express their values, attitudes, and opinions freely.
- Do not judge trainees' responses.
- Facilitate discussion by paraphrasing and clarifying.

- Avoid putting people on the spot. Instead of asking individuals for answers, have a voluntary group spokesperson present answers to the class.
- Keep the groups focused on the task at hand. Because small-group exercises can draw heavily on the trainees' personal experience, sometimes one person can dominate the group and run away with the discussion. If you see this happening, steer the discussion back on track by asking another group for reactions.
- Keep the trainees alert and interested by encouraging participation. If the groups are not participating or are giving only cursory answers, ask them probing questions about their answers to make them be more specific.

## WELCOME

---

During this opening session, describe the overall goals:

- ➡ Risks of hazardous materials.
- ➡ Possible outcomes of an emergency.
- ➡ Ways to recognize hazardous materials.
- ➡ Your role as the person who is first-on-the-scene.
- ➡ The need for other resources.

Introduce yourself and your back ground. Have participants introduce themselves, if not known to each other.

Assure that all of the registration materials are complete.

Review the agenda.

Underscore that questions are welcome during the programs.

## RIGHTS AND RESPONSIBILITIES

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This section is intended to familiarize trainees with the rights and responsibilities of a first-on-the-scene responder. The session begins with a short discussion of SARA and OSHA. A listing of the requirements of an "awareness" program for first-on-the-scene responders then follows. You should stress that this training is for first-on-the-scene responders only. Other types of responders would need additional training. Some of the rights and responsibilities of a first-on-the-scene responder are then presented. You should tailor the discussion of rights that apply to the type of trainees enrolled in the program. The final aspect of this session is an explanation of the Incident Command System.

Time Requirement: 1 hour

Number of Instructors: 1

### Materials

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- Blackboard, marker board or easel with paper
- Chalk or magic markers
- Student Manuals
- 29 CFR 1910.120
- Other course resource materials—Glossary, HAZWOPER
- Handouts

- Course Agenda

### Chapter Objectives

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When participants have completed this chapter, they will be better able to:

- ➔ Describe the purpose of this training.
- ➔ List their rights as defined by law.
- ➔ Work within the Incident Command System.

### Teaching Methods

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- Presentation
- Small-group activity

### Suggested Instructor Preparation

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- Review the participant manual.
- Review the HAZWOPER standard.

### Presentation of the Session

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This session can be presented as follows:

### Minimum Content Requirements

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The following are minimum content objectives for the Rights and Responsibilities module:

- SARA materials
- HAZWOPER training requirements for awareness and operations level personnel
- The Incident Command System

### Questions you may be asked

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- Many trainees will question why other rights or responsibilities are not in the law. Trainers should be prepared to facilitate this discussion.

- It is likely that employees may state that employers are not meeting their responsibilities. Trainers need to know in advance the mechanism for health and safety problem resolution if trainees are in a contract program. If open enrollment, the trainer should be prepared to facilitate a discussion of how to approach problem resolution.

### Presentation of the Session

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This session can be presented as follows:

#### "SARA" Is Your Friend

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1. Welcome the class.
2. Have participants sign in.
3. Explain why the program was created, and reference HAZWOPER.
4. Introduce the program presenters – the training institution, the Midwest Consortium and the instructors.
5. Ask the trainees to introduce themselves to the class. Have them tell their name, experience with hazardous materials, where they are from, why they are taking the class, and how they will use the First-on-the-Scene training.
  - Optional: With small classes, or if there is extra time, also ask the trainees to tell what health and safety concerns they have. Responses should be listed where the entire class can see them. Highlight each of these concerns during the discussion of the day's agenda.
6. Describe the day's activities.
  - Go through the agenda.
  - Show the trainees the reference materials.
  - Explain training policies (e.g., smoking, breaks, etc.).
  - Explain why evaluation forms are part of training.
7. Discuss SARA and OSHA.
8. Present the requirements of an "awareness" program for first-on-the-scene responders.

#### What Rights Does SARA Give You as a Worker?

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Ensure that trainees understand and can distinguish their rights and responsibilities as a first-on-the-scene responder from those of other types of responders.

### What Rights Does SARA Give You as a Citizen?

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SARA Title III can be summarized as the Right to Know.

### The Incident Command System (ICS)

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- Stress the efficiency of the Incident Command System.
- Note any specific state laws that should be added to the discussion.
- If trainees all work for one company, also address company rules and procedures. If this is a contract training session, you should acquire the company's ERP and cover the portion dealing with first response.

### Review Questions

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1. What do regulations developed because of SARA do for you as a worker?

*Employer must provide a medical exam if you are injured or overexposed while performing emergency responder duties at a scene on his/her behalf. Employer must provide emergency response plan and training.*

2. What does SARA do for you as a citizen?

*Emergency response plans for communities must be developed. Officials at facilities with hazardous substances must develop their own Emergency Response Plan, cooperate with the state and local committees, report releases, and make hazardous material information available to appropriate state and local officials, including the Local Emergency Planning Committee and Fire Department.*

3. Why is an Incident Command System needed? What does it do?

- *Provides a way to respond in an organized and rational way.*
- *ICS specifies duties assigned to individuals as well as determines chain of command for the emergency response.*

## UNSOLVED MYSTERIES

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This section is designed to introduce the activities of an awareness-level first responder and to motivate the class to think about hazardous materials incidents. It begins with exercises to show the trainees that participation is encouraged and that questions and comments are welcome.

Time Requirement: 1 hour

Number of Instructors: 1

Materials

- Student manuals
- Blackboard, marker board or easel with paper.

### Chapter Objectives

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When participants have completed this chapter, they will be better able to:

- ➡ Recognize a hazardous situation.
- ➡ Identify needs for gathering information before actions are taken.
- ➡ Describe reasons to treat all potential incidents as hazardous materials incidents until it known that they are not.

## Teaching Methods

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- Presentation
- Small-group activity

## Suggested Instructor Preparation

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- Review the participant manual.
- Review the HAZWOPER standard.

## Minimum Content Requirements

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The following are minimum content objectives for the Unsolved Mysteries module:

- Emergency recognition
- What actions should and should not be taken when an emergency is discovered.

## Questions you may be asked

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- The Mysteries may provoke a lot of discussion about hazards and hazard recognition. Emphasize that the next section will focus on hazard recognition.

## Presentation of the Session

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This session can be presented as follows:

## Exercise Directions

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1. Divide the trainees into groups of two to six.
2. Tell each group which mysteries they should discuss. It is best to use all four mysteries in each group, but fewer can be used. The mysteries can also be divided among the groups. In each group, one person should take notes and be ready to report back to the class.
3. Set a time limit of 3 to 5 minutes for each mystery. Tell the groups the time limit, and announce when each mystery should be finished. Emphasize to trainees that they should stay within the facts given by the mysteries-not make additional assumptions.

4. After all of the mysteries have been discussed in small groups, call the class back together.
5. Have a representative from each group read the answers to the class. Have all the answers to one mystery read by all groups who discussed it before moving on to the next mystery.
6. During the discussions, highlight that hazardous materials incidents happen in a variety of settings, more information is almost always needed before any action is taken, and incorrect actions could cause serious damage. Also, tell the class that the information a first-on-the-scene responder should gather, as well as how he or she should gather it, will be a focus of the day's training. Specific points can be written where all participants can see them for future reference.

## Unsolved Mysteries

### Exercise Directions

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This exercise includes four hazardous materials incident scenarios. The first three scenarios (Mysteries A, B, and C) are incidents that have just occurred, and a first-on-the-scene person has just arrived; no action has yet been taken. Mystery D is different from the rest in that it was taken from a real incident and is longer and slightly more detailed than the rest. Mystery D also differs from the rest because the incident is played out from beginning (inappropriate response by nursery employees) to end (health consequences). Background information on this scenario can be found in the *NIOSH Health Hazard Evaluation Report* in Appendix A. Alternative scenarios can be used that are appropriate to the audience and/or geographic area.

After each scenario, two questions are asked. One question for each scenario asks about the “clues” that are present in the scenario and the information that the trainees think should be gathered by the individuals at the scene to protect themselves and others. Information gathering, introduced here, is a major theme throughout this program. Later sections will teach trainees what information they should gather if they are first on the scene.

A second question included with each mystery concerns what the person in the mystery should do. This question allows trainees to speculate on what individuals should do when confronted with an emergency situation. This question directly relates to two other predominant themes of the program: methods for safely gathering information and doing only what the individual is trained to do. Later sections will advise trainees on safe methods of information gathering as well as the necessity of proper training for different responders.

Trainees' answers to these questions can be discussed again at the end of the day to show how the program has changed their perceptions (if at all) of what information should be gathered at an incident scene, how it should be gathered, and the role of the first-on-the-scene responder. Mystery B is much like the scenario in the SWIMS exercise in the last section of this program. A discussion of the answers trainees gave to questions related to Mystery B would, therefore, be particularly useful in showing changes in perceptions that trainees have before and after training.

The purpose of this exercise is **not** for you to tell the trainees the correct answers to the questions. They will be covered during the training program. Instead, the purpose is to start the trainees thinking about the material that will be covered throughout the day. The section is titled "Unsolved Mysteries" because there is no mention of the specific hazardous materials that may be involved. Remember that trainees may know very little about hazardous materials at this point, and hazardous materials may indeed be a mystery to them. This exercise is intended to encourage basic discussion during which the concept of hazardous materials can be introduced.

### Examples from Your Experiences

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- Have the trainees individually fill out the "Examples from Your Experiences" questionnaire, which asks about previous experience with emergency situations.
- Discuss trainees' responses to questionnaire.

## What is a Hazardous Material?

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- Lead a discussion on definitions of "hazardous materials."
- Different agencies have different definitions.
- For legal definitions, refer to 49 CFR, Part 171.8 (DOT) and 40 CFR, Part 262 (EPA).
- Transportation in-house or on private property falls under another government authority, OSHA. OSHA deals with hazardous chemicals more specifically in the workplace. Refer to the Hazard Communication standard, 29 CFR 1910.1200, for details.
- Stress the practical importance of treating all unknown materials as if they were hazardous.

## Review Questions

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1. Think about the different cases the class discussed. Why was each case considered a hazardous materials incident?

*The purpose of this question is to get participants thinking about hazardous materials incidents.*

2. Think about the incidents from your personal experience. Why would they (or wouldn't they) be considered hazardous materials incidents?

*Participants may think differently about their past experiences after completing the Unsolved Mysteries chapter. They may wonder if they have been exposed to hazardous chemicals.*

## HAZARD RECOGNITION

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This section covers the hazards that a first-on-the-scene responder should look for while sizing-up an incident scene, specifically physical, biological, and chemical hazards. Labels, placards, and container shapes are also covered. The Emergency Response Guidebook (ERG) is discussed and used in an exercise. Safety Data Sheets (SDSs) are also covered to supplement training which participants should have received previously in accordance with the Hazard Communication Standard (1910.1200).

Time Requirement: 2 hours

Number of Instructors: 1

### Materials

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- Student manuals
- NIOSH Pocket Guide and other electronic resources, such as WISER, New Jersey Fact Sheets, CAMEO Chemicals, etc.
- Hazard Communication standard
- If possible, obtain laminated Hazard Communication Quick Cards from the local OSHA office. Twenty (20) can be ordered per requester from the OSHA on-line service.
- If extra training on the 2012 Hazard Communication Standard is needed, the HCS 2012 exercise may be used.

- Emergency Response Guidebook
- Blackboard, marker board or easel with paper.
- Safety data sheet (SDS) for one or more chemicals of interest

### Chapter Objectives

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When participants have completed this chapter, they will be better able to:

- ➔ Recognize the clues to safety and health hazards.
- ➔ Report hazards to an emergency response team.

### Teaching Methods

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- Presentation
- Small-group activity

### Suggested Instructor Preparation

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- Review the participant manual.
- Review the HAZWOPER and Hazard Communication standards.

### Minimum Content Requirements

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The following are minimum content objectives for the Hazard Recognition module:

- Emergency recognition
- DOT system
- Hazard Communication, HMIS, NFPA, and/or other labeling systems used at the facility
- Container shape materials (note: for contract programs, only those relevant to the facility may be covered, if desired)
- SDS materials
- Heat stress and confined space information

## Questions you may be asked

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- Trainees may ask why labels at their facility are not like HazCom, NFPA or HMIS. Trainers should review 1910.1200 and be prepared to discuss alternatives. Also questions about labeling of pipes and small containers may be raised; both are addressed in 1910.1200. Hazardous wastes are exempted from 1910.1200. This may cause some confusion for trainees. Under 1910.120, employers must provide training about known health hazards of wastes, but are not required to provide an SDS. Trainers should be prepared to facilitate a discussion about how workers can obtain information about health hazards of wastes which are found at the facility.
- Trainees (or employers) may state that they know every hazard at the site and that training about the DOT system or other labeling systems and/or recognition of unknown hazards is unnecessary.
- The trainer should be prepared to discuss the possibility of the following: A truck delivering chemicals to the plant may include chemicals other than those used at the facility. What happens if a spill occurs from the trailer on plant grounds?
- What happens if bulk material is transferred into an incorrectly labeled container?
- If employees may be called upon to respond to an emergency at a remote site, how will they recognize hazards at the scene?
- Other scenarios also exist. It is also important to note that hazard recognition training is required by HAZWOPER.

## Presentation of the Session

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This session can be presented as follows:

### Introduction

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Ask:

What are hazards you might encounter in the workplace?

Record the answers where everyone can see. Write answers that participants give in three columns, depending whether they are chemical, biological or physical.

Ask:

What characteristics of the scene might be important to emergency responders?  
Record the answers where everyone can see.

### Physical Hazards - Keep a Safe Distance

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Present the contents of the Physical Hazards section, using the physical hazards checklist to reinforce the material.

### Biological Hazards

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Present the contents of the Biological Hazards section, using the biological hazards checklist to reinforce the material.

### Chemical Hazards

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Touch on chemical hazards and chemical properties.

### Recognizing Chemical and Biological Hazards

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Six clues can help you identify potential hazards:

1. Occupancy (use of the space) and Location (where)
2. DOT Placards and Labels
3. Markings and Colors
4. Container Shapes and Sizes
5. Shipping Papers and Safety Data Sheets (SDSs)
6. Senses

### DOT Placards and Labels

---

- Present the contents of the DOT Placards and Labels section.
- Introduce the *DOT Emergency Response Guidebook*.
- Stress that first-on-the-scene responders do not have to memorize all of the symbols and codes. Instead, they need to remember which characteristics about these items (i.e., size, shape, and color) should be reported when calling for help.

### Markings and Colors

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- Introduce the NFPA, Hazard Communication standard, and HMIS systems for labeling containers.
- Emphasize the difference between the rating systems of NFPA and HMIS, and that of the Hazard Communication standard. Under HCS 2012, the most hazardous chemicals are assigned to Category 1, with higher category numbers corresponding to reduced risks. **This is the opposite ranking from the long-standing practice used by the National Fire Protection Association and the HMIS system.** However, HCS category numbers do not appear on labels. They will be found in Section 2 of the Safety Data Sheet (SDS) for chemicals.
- Review the meaning of the 9 HCS pictograms.
- Use the OSHA Quick Cards as a resource.
- Use the labels and placards checklist to reinforce the material.

### Placards and Labels/Markings and Colors Exercise

---

1. Have a number of placards and labels (or copies of them) available. If possible, choose labels that represent the different systems discussed in the Student Manual (i.e., something from the DOT, NFPA-704M, Hazard Communication standard, and HMIS systems).
2. Break the class into groups.
3. Give each group two to four placards and two to four labels.
4. After the groups have discussed the two questions in their manual, have the groups report their answers to the class.
5. Discuss with the class the features of labels and placards that should be included when calling in an incident. If the groups could not answer Question 2, explain that it is not as important for the first on the scene to make a determination of the hazardous substance. Instead, it is important that the characteristics of the label or placard are called in to experts who can make that determination.
6. If ERGs were used in this exercise, determine whether any problems were encountered. This might be an appropriate time to reinforce the idea that trainees should not decide how hazardous a substance or incident may be based on their reading of the DOT Guidebook. These determinations should be made by qualified experts.

#### Answers:

1. What important features of the labels and placards should you note?

*Answers will vary depending on which label or placard they have, and may include:*

- *Color*
- *Numbers*
- *Shape*
- *Pictograms*
- *Other information*

2. What are the hazards displayed on each of the placards and labels given to your group?

*Answers will vary.*

### Container Shapes and Sizes

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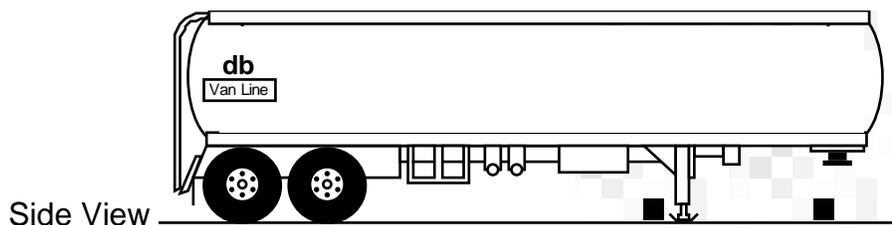
- Present the contents of the Container Shapes and Sizes section.
- Note that some types of containers are not included in this section (i.e., hoppers).
- Types of containers that are prevalent in your area or apply to your training audience should be included in your presentation of this section.
- Use the chemical container checklist to reinforce the material.

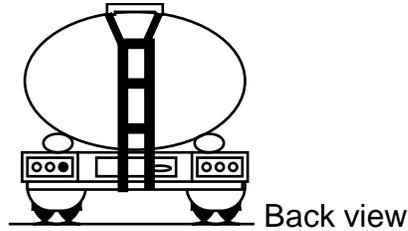
### Container Shapes and Sizes Exercise - Answers

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During the container exercise, the same groups that were chosen for the placard exercise should discuss the descriptions that they would give if they were calling in an incident involving the containers shown. Possible contents of the containers would be an additional question that could be asked.

#### Container Shape I



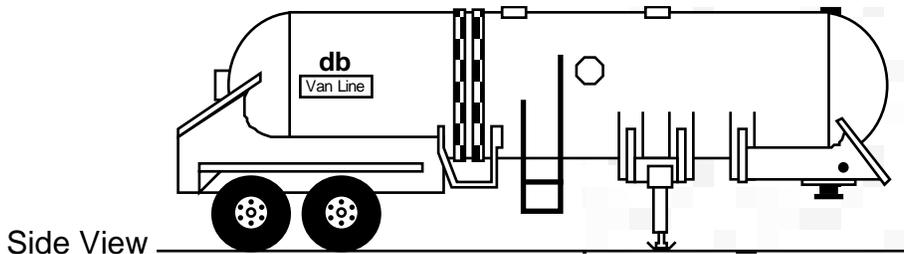


Back view

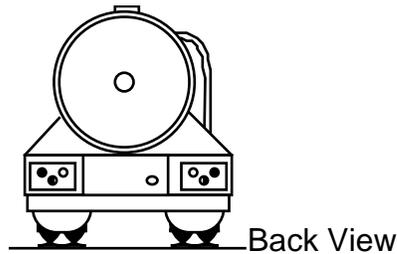
Description:

*Truck trailer shaped like an oval cylinder – generally carries flammable and combustible liquids, especially liquids lighter than water.*

**Container Shape II**



Side View

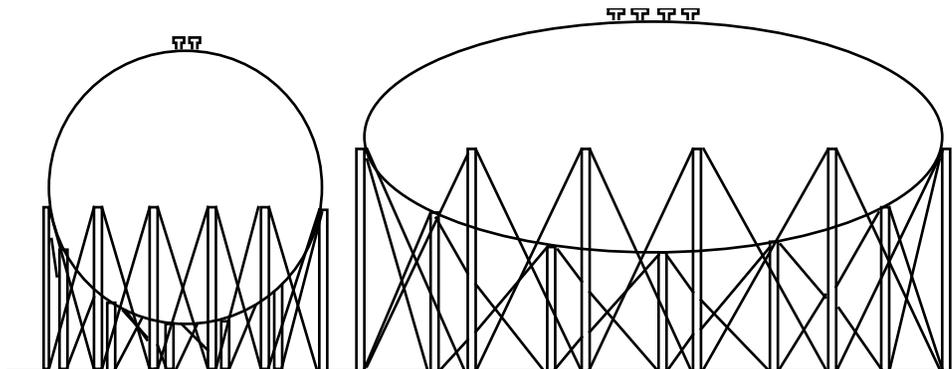


Back View

Description:

*Circular truck trailer with rounded ends. They usually carry propane, butane or anhydrous ammonia under pressure.*

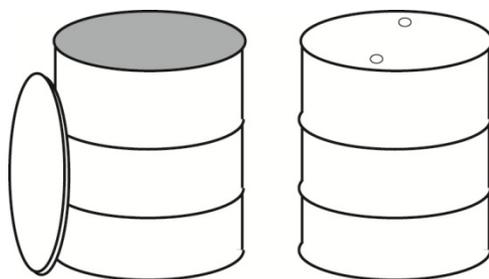
**Container Shape III**



**Description:**

*Sphere tanks, one round and one elliptical. They usually store pressurized materials such as methane, propane, LPG, heptane, ethane and other light gases.*

### Container Shape IV



**Description:**

*Drums, one open-top, one closed-top. Drums can contain almost anything. If possible, describe the drum material (plastic, steel, lined or unlined, or corrosion-resistant material such as stainless steel or MONEL™, to help identify the contents.*

### Shipping Papers and Safety Data Sheets (SDSs)

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Discuss other sources of information.

Review in the Student Manual:

- Shipping papers for hazardous material-required by DOT
- Manifest forms-required by the EPA and DOT
- Waste Profile Sheets-analysis of hazardous waste
- SDSs – required by the Hazard Communication standard to be available in the workplace.
- Documents are important resources for recognizing health and safety hazards.
- Discuss the limitations of documentation.

### Senses

---

Use your eyes and ears to gather information at the scene of a possible hazardous materials incident.

Don't rely on your nose – it can sometimes be unreliable for information-gathering. For example, although hydrogen sulfide smells very bad, your nose quickly becomes accustomed to the smell, and stops smelling it.

### Running the Exercise:

#### What's Going on Here?

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1. The exercise is designed to allow students to tie together the information that was presented. This exercise also serves as an introduction to new material presented immediately after the exercise. If you choose to delete this exercise, you will have to make adjustments to the presentation of material immediately following the exercise.
2. Have trainees do the exercise individually. After you have given the trainees about 5 minutes to complete the task, ask some of them to share their responses with the class.
3. Lead the discussion using the information on the page following the exercise in the student manual. Stress that first-on-the-scene responders should safely gather as much information as possible as quickly as possible and then send for or call for help.
4. Stress that other information is necessary besides the type of chemical hazard present. Lead the trainees through the list provided. Focus on the importance of the setting and how the setting can affect the handling of an incident.

Answer Key:

Hazard Recognition Review Questions

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1. List 4 physical hazards and situations in which each might occur.

- *Radiation—energy and weapons production*
- *Electricity—downed lines; transformers and circuit boxes*
- *Stress—having to make a lot of decisions quickly*
- *Slips, Trips, and Falls—unstable footing; steep slopes; climbing over equipment*
- *Falling or Flying Objects—unstable scenes*
- *Steam or Chemical Vapor Clouds—ruptured lines; steam or heat reacting with other materials; steam carried by wind; toxic clouds; gases escaping from pressurized container*
- *Confined Spaces—ditches; stream beds; trailers; tanks; railcars; basements; storage closets*

2. List 4 sources of clues as to various types of chemical hazards which may be visible from afar.

*Labels and placards, characteristics of the containers that are present, and things you notice about the area around the incident.*

3. An NFPA label has a “0” in the flammability diamond. Is it flammable?

*No*

4. What should be observed from labels/placards?

- *Type of placard (word or number)*
- *Labeling system (DOT, NFPA-704M, HMIS): shape, color, words, numbers, symbols*

5. What should be observed about the container?
  - *Location: road, rail, fixed, in storage*
  - *Shape: round, oval, flat or round ends, cone-shaped, spheres*
  - *Material: plastic, metal, composite, wood, glass, paper*
6. What should be observed about the scene?
  - *Dead animals or vegetation*
  - *Injured people*
  - *Nearby buildings*
  - *Other people at or near the scene (actual or probable)*
  - *Wind direction*
  - *Sewers or drains*
  - *Creeks, rivers, or waterways*
  - *Local weather*
  - *Amount of traffic and portion of road that is blocked*
7. What is a clue to the presence of a biological hazard?
  - *Cardboard or plastic container*
  - *Red plastic bag*
  - *Infectious waste symbol*
  - *Used needles, syringes, test tubes, and vials*
8. How should you make observations at the scene?
  - *From a distance*
  - *Upwind*
  - *With binoculars, if possible*

## HEALTH EFFECTS

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The purpose of this section is to familiarize trainees with the potential health effects associated with being first on the scene at a hazardous materials incident. This section discusses how chemicals can enter the body, when and where hazardous materials affect the body, how the body reacts to hazardous substances, the kinds of substances that can affect the body, and the proper procedure to follow in the event that injury or illness is suspected before and after leaving the scene.

Although decontamination procedure training is beyond the scope of this program, you may want to include a short discussion of decontamination.

Time Requirement: 45 minutes

Number of Instructors: 1

### Materials

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The following materials will be needed for all exercises and demonstrations:

- Chalkboard, marker board or easel with paper
- Markers
- Masking tape

- NIOSH Pocket Guide

Materials unique to each exercise are:

- Wall charts or slides of organ systems
- Medical dictionary

### Chapter Objectives

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Objectives for this chapter are:

- ➡ Recognize how an emergency situation may be hazardous to your health.
- ➡ Recognize the signs and symptoms which may be related to a chemical exposure.

### Suggested Instructor Preparation

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- Read the chapter in the Student Manual.
- Prepare an outline to follow. Different groups will have different needs. It is better to respond to their concerns than to follow an outline rigidly. Refer back to the list of hazards generated at the beginning of the course.

### Minimum Content Requirements

---

The following are minimum content requirements for this section:

- Chemicals and the body

### Questions you may be asked

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- Are the chemicals at work harming me? The instructor should be prepared to discuss work exposures in relation to other causes of major diseases, i.e. the many causes of lung cancer. The trainee should be referred to an occupational medicine clinic for detailed information. Specific references could also be discussed.
- How can I get exposures measured? Company and union resources should be discussed. Filing an HHE or OSHA complaint is a last resort.
- Can the results of medical surveillance be used to fine me? This is a common concern of workers. The instructor should be prepared to discuss union and OSHA avenues to resolve this concern.

- How do you know if a physician specializes in occupational medicine? Few physicians are “occ docs”. Be prepared to give the names or locations of “occ docs” in your area.
- Which type of radiation is dangerous? All radiation is dangerous. Stress the concepts of time, distance, and shielding.
- Can urine collected for a required chemical analysis be used for a drug screen? Instructors should be aware of company practices. Refer trainee to their union or management representative.

### Presentation of the Session

---

This session can be presented as follows:

#### Health Effects Exercise

---

1. Before any discussion of the content of this section begins, have trainees complete the Health Effects Exercise individually or in pairs.
2. Do not discuss trainees' responses to these questions.
3. Present the content of the section. You might want to concentrate on one or two specifics in the figures that would be most relevant to the training audience.
4. If this is a contract course, the particular possible exposures should be noted.



## How, When, and Where?

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Some participants may be surprised to learn that chemicals can be absorbed through the skin.

Emphasize that repeated exposures to a chemical may be more hazardous to your health than a single exposure due to chronic effects.

Use the figures in the student manual to spark a discussion about what stressors participants are exposed to at work.

Stress that an absence of symptoms is not proof that no exposure occurred.

## At the Scene

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Good observations and reporting of what you sensed will help emergency responders respond to the emergency most effectively.

## Before you leave the Scene

---

Make sure to tell someone if you think you have been exposed or contaminated.

## After you have left the Scene

---

The more your health care professional knows about what you have been exposed to, the more effectively s/he can treat you.

## Health Effects Exercise Again

---

Repeat the Health Effects Exercise at the end of this module. It should be evident that participants have learned new information.

## SIZING-UP THE SCENE

---

The purpose of this activity is for trainees to "pull together" the information previously covered. Trainees will work in groups. Each group will receive the same basic information; however, additional information you provide will make each group's problem unique.

Time Requirement: 1 hour  
Number of Instructors: 1

### Materials

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The following materials will be needed for all exercises and demonstrations:

- Chalkboard, marker board or easel with paper
- Markers
- Masking tape
- NIOSH Pocket Guide

### Chapter Objectives

---

Objectives for this chapter are:

- ➡ Pull together information so that you can size up a scene.

## Teaching Methods

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- Small-group activity
- Hands-on lab

## Suggested Instructor Preparation

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- Read the Sizing Up the Scene chapter in the Student Manual.
- Review background reading materials.
- Prepare class notes.
- Review exercise.
- Prepare handouts.

## Minimum Content Requirements

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- Sizing-Up the Scene exercise

## Questions you may be asked

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Trainers should be prepared to discuss variations on the incident. Trainees will undoubtedly ask, "What if...". Thorough trainer preparation for the many possibilities is very important.

## Presentation of the Session

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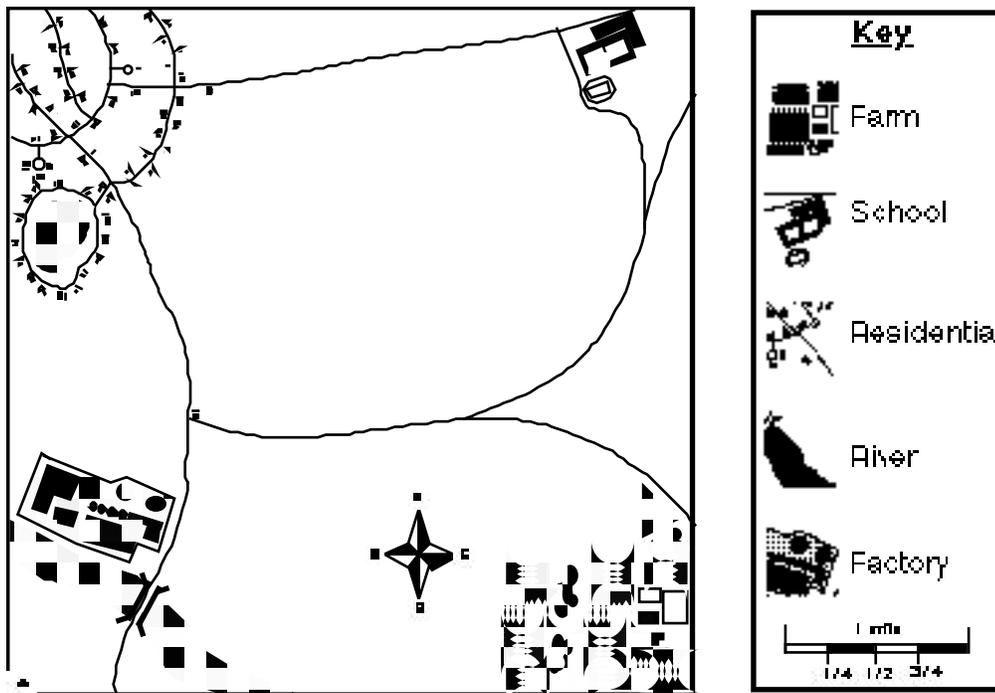
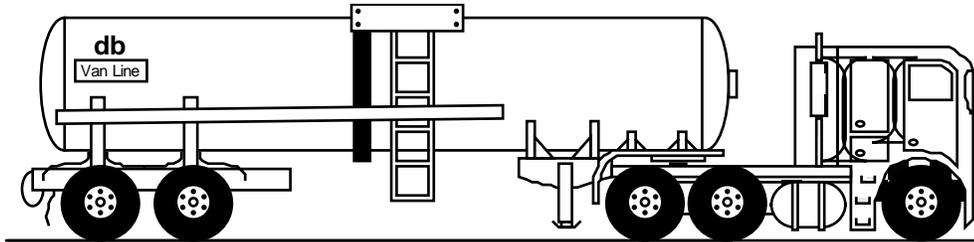
### Running the Sizing-Up the Scene Exercise

1. Make sure that you have the enlarged maps and facts ready to hand out.
2. Divide the class into four groups. Ask each group to select a representative.
3. Tell each group to look at the **map of the incident area and locate their incident scene on the map.**
4. Set a time limit of 15 minutes for the groups to discuss their particular scenario. Tell the groups what this limit is, and announce when the discussion should start coming to a close—after about 10 minutes.

5. After the scenarios have been discussed, call the class back together.
6. Have a representative from each group describe the group's scenario to the class. This person should then read the group's answers to the questions. Each representative should present the group's scenario and responses before any discussion occurs.
7. After all groups have presented their responses, conduct a class discussion. This discussion should focus on the following topics:
  - a. Every hazardous materials incident is different.
  - b. What initially may appear to be similar situations can in fact be very different.
  - c. It is important to gather as much specific information as possible to report to emergency responders.
  - d. The setting of an incident combines with the hazardous material(s) to create a variety of problems that emergency responders have to control.

Scenario for  
Sizing-Up the Scene Exercise

You are driving down the road and see the tanker shown below. The tanker has overturned and is lying on the side of the road. A substance is leaking out of the tanker and forming a pool on and beside the road. It is 2:30 p.m. on a Wednesday afternoon. There is no one else on the road.



\*Answers to questions will depend on specifics of the particular chemicals assigned and the particular information in the “Fact Sheet.”

## Questions

1. What are all of the potential hazards that may exist in the scene?

*According to the placard, the truck contains triazine pesticide, which is liquid, flammable and toxic. According to the SDS, it is harmful if swallowed or inhaled, and can cause skin irritation and serious eye damage. When heated, it decomposes to produce toxic fumes. It may cause a hazard to fish and other water life. Wind is blowing fumes towards the interstate. People on the interstate and workers who will soon be leaving and arriving at the plant can be exposed. Thunderstorms may wash the chemical into Tates Creek.*

2. Where would you observe the scene from?

*You should observe the scene from upwind (northwest), as far away as possible, ideally with the use of binoculars.*

3. What information should you include in a report of the incident?

*The facts at the scene, as stated in the scenario and in answer #1.*

4. What is the worst thing that could happen at this scene? (Note: Use only the information that you know about the scene.)

*The worst thing that could happen at this scene seems to be that motorists could suffer eye damage, resulting in auto accidents. Other answers are possible.*

## Key Points-Sizing-Up the Scene

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Emphasize that weather conditions, the people present, and the conditions at the scene combine to determine the hazards of the situation.

## WHAT DO I DO?

---

This section tells you steps that you should follow between the time when you have finished sizing-up the scene and when the emergency response team arrives.

Time Requirement: 30 minutes  
Number of Instructors: 1

### Materials

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The following materials will be needed for all exercises and demonstrations:

- Chalkboard, marker board or easel with paper
- Markers
- Masking tape
- NIOSH Pocket Guide
- Emergency Response Guidebook

### Chapter Objectives

---

**When participants finish this chapter, they will be better able to:**

- ➡ Fulfill their responsibilities as the first-on-the-scene.

- ➔ Deal with questions from news people.
- ➔ Provide relevant information after leaving the scene.

## Suggested Instructor Preparation

---

- Read the chapter in the Student Manual.
- Prepare an outline to follow. Different groups will have different needs. It is better to respond to their concerns than to follow an outline rigidly.

## Minimum Content Requirements

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Actions to take after sizing up the scene, when emergency responders arrive, and after the emergency

## Questions you may be asked

---

- For contract programs, be prepared to inform the trainees whom they should contact in their company if they discover an emergency.
- For open-enrollment programs, you can discuss general authorities to contact in case of emergency, including the Local Emergency Response Committee (LERC), if applicable.

## Presentation of the Session

---

This session can be presented as follows:

## After Sizing-Up the Scene Exercise

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1. Have trainees individually list information they would report when calling in.
2. Go around the room to ask each participant for a piece of information. Some people may think of something that nobody else thought of.
3. Compare responses of the class to the information listed on the following page in the participant manual. What was left out?

## Before the Emergency Responders Come

---

Emphasize that participants should not attempt to take any actions that they have not been trained for.

## When Others Arrive

---

Emphasize the importance of reporting your observations to the Incident Commander, and to notify that person before leaving the scene.

## When You Leave

---

If a report is requested by the incident commander, be sure to keep a copy for yourself.

## Running the Exercise-

### What Would You Tell Them When You Call?

---

The “What Would You Tell Them When You Call?” Exercise should be done individually. Trainees should attempt to organize the information in some logical format. Instructors should refer trainees to page 99 of the Participant Manual for the information that should have been included.

An optional “Calling It In” exercise is included in Appendix D. This exercise is designed to allow trainees to practice calling in an incident and to show them how recall affects the information they provide to emergency responders. If equipment is available, this exercise could be conducted over communication devices. The exercise would require duplication of the materials in Appendix D.

## Exercise Answer Key

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List the basic information you would report if you had to call in a hazardous materials incident.

- Who:** Who are you?
- What:** What has happened or is happening?
- Rail, highway, or fixed site
  - Shape of container
  - Placards/labels
  - Physical hazards
  - Wind direction
  - Others at risk—people in vicinity

- Injured persons—conscious or unconscious
- Drains, sewers, or surface waters

**When:** When did you get there?

**Where:** Where are you? Where is the scene?

- Residential area
- Remote area

### Running the Exercise-Calling It In

1. Pass out a blank piece of paper to each trainee.
2. Tell the trainees to pick a partner. Have each pair of trainees decide who will be “the caller” and who will be the “responder.”
3. Pass out Scenario #1 (**Note: two scenarios are included in Appendix D.**) Copy each one separately so that you can hand out one scenario at a time.
4. Give every “caller” two minutes to read the scenario to himself/herself.
5. Have all the “callers” put the scenario away from view.
6. Have each “caller” report the information included in the scenario to his/her “responder.”
7. Give each “responder” 2 minutes to diagram the scenario on his/her blank piece of paper.
8. Tell the “responders” and the “callers” to compare the diagram to the actual scenario.
9. Have each pair of trainees discuss the questions included in Appendix D for 5 minutes.
10. Have the trainees switch roles. Pass out scenario #2, and repeat steps 4 through 9 above.

## Answer Key for Review Questions—What Do I Do?

---

1. What are the elements of a complete call-in?
  - *Who*
  - *What*
  - *When*
  - *Where*
  
2. What are your responsibilities as a first-on-the-scene emergency responder?
  - *Notify appropriate personnel.*
  - *Return to scene to observe any changes (if necessary).*
  - *Maintain safe distance.*
  - *Keep up-to-date on what is happening at the scene.*
  - *Provide complete report to the highest-ranking officer who arrives.*
  - *Handle duties as assigned.*
  - *Get out of the way if you will not be involved with emergency response or site control.*
  - *Notify Incident Commander or recordkeeper before you leave.*
  
3. What information should you include in a write-up of the incident?
  - *Date and location of incident*
  - *Description of initial incident and sequence of events (Note times.)*
  - *People involved—victims, witnesses, other responders (names/addresses)*
  - *Actions you took (in time sequence)*
  - *Your concerns, if any*
  - *Any possible health effect you experienced*

## PUTTING IT ALL TOGETHER

---

This section will help you to tie together the information that has been presented during this training program.

Time Requirement: 45 minutes

Number of Instructors: 1

### Materials

---

The following materials will be needed for all exercises and demonstrations:

- Chalkboard, marker board or easel with paper
- Markers
- Masking tape
- NIOSH Pocket Guide
- Emergency Response Guidebook

### Chapter Objectives

---

**When participants finish this chapter, they will be better able to:**

- ➡ Use the information that has been covered in this class to respond correctly if they discover a hazardous materials incident scene.

- ➡ Protect themselves and others at a hazardous materials incident before emergency responders take control of the scene.

## Suggested Instructor Preparation

---

- Read the chapter in the Student Manual.
- Prepare an outline to follow. Different groups will have different needs. It is better to respond to their concerns than to follow an outline rigidly. Refer back to the list of hazards generated at the beginning of the course.
- Assure internet access for the SWIMS exercise (see [www.eh.uc.edu/mwc/](http://www.eh.uc.edu/mwc/) click on 'exercises resource')

## Minimum Content Requirements

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### SWIMS

### Questions you may be asked

---

After completing the exercise, participants may enjoy discussing the incident. They may often have better answers than those listed below.

## Running the SWIMS Exercise

---

1. Look at the performance objectives, below
2. Work through the online exercise, choosing ALL correct answers for each question.
3. Read the "Instructor's Discussion Notes" for the exercise.
4. Become thoroughly familiar with the problem so that you can present it to your class without reading it.
5. When you present the exercise to the class:
  - Emphasize that each question may have more than one correct answer.
  - Go over the instructions for doing the exercise with the whole group.
  - Explain the problem, making sure everyone understands the problem situation.

- Have the class members work the exercise.
- When everyone has finished, discuss the exercise. Let class members discuss the merits of each answer. Add your own ideas. Then have each person fill out the Trainee's Questionnaire attached to the answer sheet.

## Performance Objectives for SWIMS Exercise

---

| Objective Number | Capability Verb(s) | Description of Required Performance and Conditions under Which It Is to Occur  |
|------------------|--------------------|--|
| 1. EP            | Recognize          | an emergency situation in which a hazardous material might be involved.  |
| 2. EP            | Select             | an appropriate method for notifying authorities, securing the area, and protecting yourself and others from contamination.                 |
| 3. FA            | Recognize          | special considerations in the possible treatment of emergency accident victims.  |
| 4. EP            | Select             | appropriate procedures for controlling entry into a contaminated area.   |
| 5. EP            | Report             | necessary information to give to authorities so that an efficient first response can be made to an accident involving hazardous materials. |
| 6. EP            | Document           | need for remaining at the scene following arrival of emergency response team.  |

\*Skill and knowledge domain abbreviation: FA = First Aid, EP = Emergency Procedures.

## Closing and Evaluation

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Thank participants for attending the program.

This is an opportunity for final questions or to discuss how the knowledge and skills learned can be used.

Provide 10 minutes to complete the program evaluation forms and collect them.