



Industrial First-on-the-Scene

Facilitator Guide

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Midwest Consortium for Hazardous Waste Worker Training

Acknowledgments

This Midwest Consortium developed this course under cooperative agreement number U45 ES06184 from the National Institute of Environmental Health Sciences.

We encourage you to comment on these materials. Please give your suggestions to your Program Director or click on the Contact page of the Midwest Consortium website: <https://mwc.umn.edu/contact/>.

Warning

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Disclaimer

This training is intended to meet the requirements of OSHA Hazardous Waste Rule (29 CFR 1910.120) 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 facilitator and/or your company's safety/emergency response plan or the Local Emergency Planning Committee for your city or county.

Content was updated August 4, 2023 and all web links are active as of that date; if you find an error, please inform your Program Director so that it can be updated.

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Overview

This course was developed to meet the requirements of OSHA's Hazardous Waste Standard 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.

This course is designed to be taught in one 8-hour day. Breaks and lunch are not included in the 8 hours. The Midwest Consortium for Hazardous Waste Worker Training is devoted to professional instructional freedom while maintaining consistency of training. 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.

A sample agenda is provided below, but the course may be tailored to the needs of the participants. Lesson plan forms are shown on the following two pages.

Sample Agenda

Introduction	30 minutes
Rights and Responsibilities	45 minutes
Emergency Scenarios	30 minutes
Hazard Recognition	90 minutes
Health Effects	60 minutes
Sizing-Up the Scene	90 minutes
What Do I Do?	45 minutes
Putting It All Together	60 minutes
Closing and Evaluation	30 minutes

Lesson Plan Form 1

<p>Teaching Methods for This Lesson Plan (check each method you will use)</p>	<p>Audiovisual Requirements (check each that is needed)</p>
<p> <input type="checkbox"/> Presentation <input type="checkbox"/> Discussion <input type="checkbox"/> Question and answer <input type="checkbox"/> Hands-on simulation <input type="checkbox"/> Team teaching <input type="checkbox"/> Small-group exercises <input type="checkbox"/> Case study <input type="checkbox"/> Other (describe): </p>	<p> <input type="checkbox"/> Training guidebook <input type="checkbox"/> Supplemental material <input type="checkbox"/> PowerPoint <input type="checkbox"/> Web Sites loaded on devices: <input type="checkbox"/> Whiteboard <input type="checkbox"/> Hands-on simulation <input type="checkbox"/> Other (describe): </p>
<p>Reference Materials (list all materials needed-paper or electronic)</p>	<p>Special Space or Facility Requirements</p>
	<p>(List any room size or special facility regulations here, such as set-up areas, equipment storage concerns, etc.)</p>
<p>Suggested Discussion Questions (think <u>in advance</u> what you might be asked, and prepare responses)</p>	<p>Suggested Facilitator Preparation (consult with others as needed to improve preparation skills)</p>

Lesson Plan Form 2 - use to organize your facilitation.

Subject Area or Element	Detail	Reference Number or Citation
Major subject heading or Roman numeral item from outline format.	Detailed breakdown of subject area or element. This detail will necessarily occupy more space than shown here.	e.g., page number in training handbook, section number of regulation, or audiovisual material.

Facilitator Preparation

Each facilitator should carefully review this Facilitator Guide and the Participant Guide. In addition, you should be familiar with OSHA's HAZWOPER 29 CFR 1910.120. If possible, perform client research in advance so you can be familiar with their ERPs, SOPs, potential chemical exposures, etc.

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

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

Visual aids, including but not limited to 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 course. The purpose of the exercises is to involve participants 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 participants 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 participants 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 participants to freely express their values, attitudes, and opinions.
- Do not judge participants' responses.
- Facilitate discussion by paraphrasing and clarifying.
- Avoid putting people on the spot. Instead of asking individuals for answers, have a volunteer spokesperson present findings to the entire group.

- Keep the groups focused on the task at hand. Because small-group exercises can draw heavily on the participants' personal experience, sometimes conversation can drift.
- Be alert to the potential for one person to dominate work in small groups. If you see this happening, facilitate participation by other members of the group.
- Keep the participants alert and interested by encouraging participation. If the groups are not participating or are giving only cursory answers, ask them probing questions linked to previous work or life experiences.

Evaluation

Evaluation provides input from participants regarding value to them, achievement of learning objectives and insights into how to improve the program. NIEHS supports 'model programs' that employ interactive training methods to build skills; see https://tools.niehs.nih.gov/wetp/public/hasl_get_blob.cfm?ID=11266&file_name=WTP_Minimum_Criteria_062818_Final_508.pdf. Collection and use of evaluation data are key to program improvement. Adherence to these criteria is a term-and-condition of NIEHS funding.

Evaluation forms are shown at <https://mwc.umn.edu>.

Successful Completion

Successful Completion for this program requires the following:

- Attendance for the entire program
- Active participation in all activities

Introduction

Time Requirement: 30 minutes

Number of Facilitators: 1 or more, consistent with ratio in Minimum Criteria

Materials

- Markerboard or equivalent; markers
- Sign-in sheets
- Registration Forms

Course Objectives

When complete, participants will better be able to:

- Identify hazardous materials and the risks they present
- Recognize potential outcomes related to hazardous materials during an emergency
- Understand the responsibilities as the first-on-the-scene
- Recognize the need for additional resources and to notify the appropriate personnel

Presentation of the Session

This session can be presented as follows:

Welcome the class

- Participants can be welcomed by an employer, union representative, or similar person in support of the program if it is held on-site
- Have participants sign in
- Explain why the program was created, and reference HAZWOPER

Introduce the program presenters:

- The training institution conducting the training
- The Midwest Consortium
- The facilitators who are present

Introduce the participants

- Ask the participants to introduce themselves to the class. Have them briefly tell their name and their experience with hazardous materials.
- Optional: With small classes, or if there is extra time, also ask the participants 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.

Describe the day's activities.

- Go through the agenda
- Explain training policies (e.g., smoking, breaks, phone policies, etc.)
- Explain why evaluation forms are part of training

Ask participants if they have any questions.

- Encourage participants to feel free to ask questions throughout the training presentations

Include stories to emphasize the importance and rationale for regulations.

Rights and Responsibilities

This section is intended to familiarize participants with the rights and responsibilities of a first-on-the-scene responder. It includes a listing of the requirements of an "awareness" program for first-on-the-scene responders. You should stress that this training is for first-on-the-scene responders only. Other types of responders would need additional training. You should tailor the discussion of rights that apply to the type of participants enrolled in the program.

Time Requirement: 45 minutes

Number of Facilitators: 1 or more, consistent with ratio in Minimum Criteria

Materials

- Marker board or equivalent; markers
- Participant Guide
- 29 CFR 1910.120

Objectives

When complete, participants will be better able to:

- Identify worker rights as defined by law
- Identify the first-on-the-scene role in the Incident Command System

Teaching Methods

- Presentation
- Small-group activity

Suggested Facilitator Preparation

- Review the Participant Guide
- Review the HAZWOPER standard

Minimum Content Requirements

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

Questions you may be asked

1. Many participants will question why other rights or responsibilities are not in the law. Facilitators should be prepared to have this discussion.
2. It is likely that employees may state that employers are not meeting their responsibilities. Facilitators need to know in advance the mechanism for health and safety problem resolution if participants are in a contract program. If open enrollment, the facilitator should be prepared to facilitate a discussion of how to approach problem resolution.

Presentation of the Session

This session can be presented as follows:

“SARA” Is Your Friend

- Explain why the program was created, and reference HAZWOPER
- Discuss SARA and OSHA
- Present the requirements of an "awareness" program for first-on-the-scene responders

What Does SARA Do for You as a Worker?

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

What Does SARA Do for You as a Citizen?

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

The Incident Command System (ICS)

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

Review Questions

1. What does 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.*

Emergency Scenarios

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.

Time Requirement: 30 minutes

Number of Facilitators: 1 or more, consistent with ratio in Minimum Criteria

Materials

- Participant Guide
- Markerboard or equivalent; markers

Objectives

When complete, participants will be better able to:

- Recognize a hazardous situation
- Describe the need for gathering information before actions are taken

Teaching Methods

- Presentation
- Small-group activity

Suggested Facilitator Preparation

- Review the Participant Guide
- Review the HAZWOPER standard

Minimum Content Requirements

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

Questions you may be asked

The Scenarios may provoke discussion about hazards and hazard recognition. Emphasize that the next section will focus on hazard recognition.

Presentation of the Session

This session can be presented as follows:

Exercise

1. Divide the participants into groups of two to six.
2. Tell each group which scenarios they should discuss. It is best to use all four scenarios in each group, but fewer can be used. The scenarios can also be divided among the groups. In each group, one person should take notes.
3. Set a time limit of 3 to 5 minutes for each scenario. Tell the groups the time limit and announce when each scenario should be finished. Emphasize to participants that they should stay within the facts given by the scenarios-not make additional assumptions.
4. Save the discussion of these scenarios for later in the course when they can serve as an informal pre-/post-test.

Examples from Your Experiences

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

What is a Hazardous Material?

- 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 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 Question

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

Participants may start to think differently about their past experiences. They may wonder if they have been exposed to hazardous chemicals.

Hazard Recognition

This section covers the hazards that a first-on-the-scene responder should look for while sizing-up an incident scene.

Time Requirement: 90 minutes

Number of Facilitators: 1 or more, consistent with ratio in Minimum Criteria

Materials

- Participant Guide
- NIOSH Pocket Guide and other electronic resources, such as WISER, New Jersey Fact Sheets, CAMEO Chemicals, etc.
- Hazard Communication standard
- If extra training on the 2012 Hazard Communication Standard is needed, the HCS 2012 exercise may be used
- Emergency Response Guidebook
- Markerboard or equivalent
- Safety data sheet (SDS) for one or more chemicals of interest, to show an example of an SDS

Objectives

When complete, participants will be better able to:

- Identify physical, biological, and chemical hazards
- Describe important characteristics of the scene
- Recognize how to safely observe a potential hazard
- Recognize labels and placards

Teaching Methods

- Presentation
- Small-group activity

Suggested Facilitator Preparation

- Review the Participant Guide
- Review the HAZWOPER and Hazard Communication standards

Minimum Content Requirements

- Emergency recognition
- DOT system
- Hazard Communication, HMIS, NFPA, and/or other labeling systems used at the facility
- Shipping papers and SDSs
- Using your senses to gather information

Questions you may be asked

1. Participants may ask why labels at their facility are not like HazCom, NFPA or HMIS. Facilitators should review 1910.1200 and be prepared to discuss alternatives.
2. Questions about labeling of pipes and small containers may be raised; both are addressed in 1910.1200.
3. Hazardous wastes are exempted from 1910.1200, but are covered under the Resource Recovery and Conservation Act for hazard communication issues. This may cause some confusion for participants. Under 1910.120, employers must provide training about known health hazards of wastes, but are not required to provide an SDS. Facilitators should be prepared for a discussion about how workers can obtain information about health hazards of wastes which are found at the facility.

4. Participants (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.

In response, the facilitator should be prepared to discuss the possibility of scenarios such as 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

This session can be presented as follows:

Introduction

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

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

Biological Hazards

The information in this section is not included in the Participant Guide.

The most common type of packaged biological waste is probably infectious waste from hospitals or other healthcare facilities. This type of waste should be in boxes, plastic containers, or **red** plastic bags. These containers should be marked on all sides with the **fluorescent orange** infectious materials symbol. Examples of infectious materials include used needles and syringes, soiled bandages, test tubes, and disposable vials.

As with any hazardous waste, disposal containers may break open in transportation accidents. If you notice anything that looks like hospital waste lying around an accident site, move away from the area. **Do not pick up or touch the material.**

Less frequently encountered biological hazards would include biological research materials such as viral or bacterial cultures. If the research materials involve biological agents, the containers should be clearly marked. If you notice broken vials, flasks, or culture dishes at the site, stay clear and report this to the emergency responders.

Often unrecognized biological hazards include potential for bites from snakes or insects and skin contact with poisonous plants. These have no labels! Know how to recognize the types of animal or plant hazards in your locale.

BIOLOGICAL HAZARDS CHECKLIST

What do I look for?

- Cardboard or plastic container
- Red plastic bag
- Infectious waste symbol
- Used needles, syringes, test tubes, and vials

How should I observe them?

- From elevation if possible
- From a distance
- Upwind if possible
- With binoculars, if possible

Chemical Hazards

Discuss chemical hazards and chemical properties shown in the Participant Guide.

Recognizing Chemical Hazards

Five 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 (and other label systems)
4. Shipping Papers and Safety Data Sheets (SDSs)
5. Senses

DOT Placards and Labels

- Present 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.
- Several examples of different systems of identification are described in the Participant Guide.

Markings and other Label Systems

- 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 HCS pictograms.
- Use the labels and placards checklist to reinforce the material.
- If appropriate for the participants, the “infectious materials” symbol may be reviewed: The most common type of packaged biological waste is probably infectious waste from hospitals or other healthcare facilities. This type of waste should be in boxes, plastic containers, or red plastic bags. These containers should be marked on all sides with the fluorescent orange infectious materials

symbol. Examples of infectious materials include used needles and syringes, soiled bandages, test tubes, and disposable vials.

Placards and Labels/Markings Exercise

1. Review the Labels and Placards Checklist.
2. Have a number of placards and labels (or copies of them) available. If possible, choose labels that represent the different systems discussed in the Participant Guide (i.e., something from the DOT, NFPA-704M, Hazard Communication standard, and HMIS systems).
3. Break the class into small groups.
4. Give each group two to four placards and two to four labels.
5. After the groups have discussed the two questions in their guide, have the groups report their answers to the class.
6. 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.

If the ERG was used in this exercise, determine whether any problems were encountered. This might be an appropriate time to reinforce the idea that participants 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.

Shipping Papers and Safety Data Sheets (SDSs)

Discuss other sources of information.

Review in the Participant Guide:

- 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.

Review Questions

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

Any 4 of:

- *Radiation-energy and weapons production*
- *Electricity-downed lines; transformers and circuit boxes*
- *Stress-Having to make a lot of decisions quickly*
- *Heat and Cold-extreme temperature; weather conditions*
- *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 containers*
- *Confined spaces-ditches; stream beds; trailers; tanks; railcars; basements; storage closets*

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

- *Location*
- *Labels and placards*
- *Characteristics of the containers that are present*
- *Characteristics of the scene*

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 label/placard*
- *Shape*
- *Color*

- *Words*
- *Numbers*
- *Pictograms and other symbols*

5. What should be observed about the container?

- *Location – road, rail, fixed or in storage*
- *Shape – round, oval, flat or round ends, cone-shaped, sphere*
- *Material – plastic, metal, composite, wood, glass, lined*

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. Are there poisonous animals or plants in/around your facility?

Answers will vary.

8. How should you make observations at the scene?

- *From a distance*
- *From upwind, uphill, upstream*
- *With binoculars, if possible*

Health Effects

The purpose of this section is to familiarize participants with the potential health effects associated with being first on the scene at a hazardous materials incident.

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

Time Requirement: 60 minutes

Number of Facilitators: 1 or more, consistent with ratio in Minimum Criteria

Materials

- Participant Guide
- Markerboard or equivalent; markers

Objectives

When complete, participants will be better able to:

- Recognize how an emergency situation may be hazardous to health
- Recognize the signs and symptoms related to a chemical exposure
- Identify when and where hazardous materials affect the body
- Identify what to do if you think you have been exposed

Suggested Facilitator Preparation

- Review the Participant Guide
- Different groups will have different needs. Refer back to the list of hazards generated at the beginning of the course.

Minimum Content Requirements

- Chemicals and the body

Questions you may be asked

1. “Are the chemicals at work harming me?” The facilitator should be prepared to discuss work exposures in relation to other causes of major diseases, i.e. the many causes of lung cancer. The participant should be referred to an occupational medicine clinic for detailed information. Specific references could also be discussed.
2. “How can I get exposures measured?” Company and union resources should be discussed. Filing an HHE or OSHA complaint is a last resort.
3. “Can the results of medical surveillance be used to fine me?” This is a common concern of workers. The facilitator should be prepared to discuss union and OSHA avenues to resolve this concern.
4. “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.
5. “Which type of radiation is dangerous?” All radiation is dangerous. Stress the concepts of time, distance, and shielding.
6. “Can urine collected for a required chemical analysis be used for a drug screen?” Facilitators should be aware of company practices. Refer participant to their union or management representative.

Presentation of the Session

This session can be presented as follows:

Health Effects Exercise

- Before any discussion of the content of this section begins, have participants complete the Health Effects Exercise individually or in pairs.
- Do not discuss participants' responses to these questions.
- 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.
- If this is a contract course, the particular possible exposures should be noted.

HEALTH EFFECTS EXERCISE - ANSWERS

Answer the following questions by circling the correct answers. You will discuss the correct answers after you have covered the material in this section.

1. A one-time exposure to a chemical is safe.
True False
2. Your nose will usually provide you with adequate warning about toxic chemicals.
True False
3. The best way to avoid breathing toxic chemicals is to maintain your distance.
 True False
4. Your skin will block absorption of all toxic chemicals.
True False
5. Coughing may indicate that the gases are harmful.
 True False
6. All doctors are trained to recognize diseases caused by chemicals.
True False
7. Nausea and vomiting after responding to an accident may be caused by breathing toxic substances.
 True False
8. Watery eyes are one way the body tells you that a chemical may be toxic.
 True False

How, When, and Where?

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 Participant Guide 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

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 participants to "pull together" the information previously covered. Participants 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: 90 minutes

Number of Facilitators: 1 or more, consistent with ratio in Minimum Criteria

Materials

- Participant Guide
- Markerboard or equivalent; markers
- Emergency Response Guide

Objectives

When complete, participants will be better able to:

- Recognize how different situations affect a hazardous materials incident response
- Identify what kind of information is needed for responders
- Describe how to pull together information to size up a scene

Teaching Methods

- Small-group exercises

Suggested Facilitator Preparation

- Review the Participant Guide

Minimum Content Requirements

- Emergency Scenarios exercise (discussion of earlier exercise)
- What's Going on Here exercise
- Sizing-Up the Scene exercise

Questions you may be asked

Facilitators should be prepared to discuss variations on the incident. Participants will undoubtedly ask, "What if...". Preparation for the many possibilities is very important.

Presentation of the Session

This session can be presented as follows:

Emergency Scenarios Exercise Discussion

This is discussion from the exercise which was completed earlier. It will serve to identify concepts which the participants have learned during the course.

Have a representative from each group read the answers to the class. Have all the answers to one scenario read by all groups who discussed it before moving on to the next scenario.

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.

Scenario A – Discussion Points

It's 2:05 p.m. on a hot Friday in July. You are working at your plant and discover that something is leaking from old transformers stored in a designated area at the facility. You call the plant's hazardous materials personnel and wait nearby for them to arrive.

1. What should you tell the plant first responders?

What you tell them should be the facts, as stated above.

It may be hard to decide whether to treat a leak or a puddle of material as a hazardous materials incident – what could help you to decide?

- *If you knew the container that was leaking contained a hazardous material*
- *If there was a hazard placard or label on the leaking container*
- *Strange appearance or odor*

Such clues may not always be available

2. What "clues" were given that something serious may be happening?

Old transformers may be filled with PCBs, which are hazardous chemicals.

3. What hazards do you think exist with this situation?

Risk of chemical exposure and/or environmental pollution

Scenario B – Discussion Points

While walking across the plant's truck yard, a loading dock worker comes upon an unattended vacuum truck.

The vacuum truck is leaking liquid from its bottom valve. The driver is not in sight. It is a warm, clear day with a brisk breeze blowing. Traffic in the truck yard is very light, but soon another driver arrives and pulls alongside the leaking vacuum truck.

1. What actions should the loading dock worker perform?

Vacuum trucks are typically used to suck up waste or spills. The contents of the vacuum truck could be any of a number of hazardous materials, or the contents may be entirely non-hazardous. It is best to err on the side of caution.

The loading dock worker should warn the other driver, and ask him to shut off his engine so that it cannot be an ignition source. The leaked material could be flammable or explosive. On a warm day, more of the chemical will evaporate than on a cold day. The brisk breeze will spread the vapors around.

Emergency responders should be notified.

The loading dock worker (and the truck driver, if he remains close by) should stay upwind of the leak, where they will be less likely to inhale vapors, while they wait for emergency responders.

If the vacuum truck driver returns, he should also wait for the emergency responders, so that he can inform them as to what material he vacuumed up into the truck.

2. What information should the loading dock worker share with plant first responders?

He should share the facts as he observed them: a vacuum truck is leaking; it is parked in the truck yard; the liquid being leaked is unidentified; the driver is not in sight.

Scenario C – Discussion Points

At 3:00 P.M. on a Wednesday afternoon, you observe two mechanics arriving to work on some underground pipes. The first mechanic removes a sewer lid and leans over the open hole to try to see the conditions at the bottom. Suddenly, he seems to pass out, and he falls into the hole.

1. What should you do?

The sewer is a confined space. The air inside a confined space may be low in oxygen, contain toxic chemicals, or be flammable. The first mechanic may have passed out because he breathed air that is contaminated or low in oxygen.

You should warn the second mechanic not to enter the sewer or lean over and breathe the air coming out of the sewer.

You should call plant first responders. Specialized training is needed for confined space rescue.

Stand by to warn others, while you wait for emergency responders to arrive.

2. What could happen if the other mechanic tries to rescue the coworker?

If the air in the sewer is hazardous, he could be injured or killed.

Scenario D – Discussion Points

You are driving a forklift when you accidentally run into an unmarked pipe. The pipe is pierced and begins to spray liquid. There is a shutoff valve a few inches below the damaged spot in the pipe.

1. What should you do?

You don't know what the liquid may be. You should shut off the forklift so that it is not a source of ignition, in case the liquid is flammable or explosive. You should avoid contact with the liquid, in case it is corrosive or toxic. You should avoid breathing the vapors coming off the liquid for the same reason.

Although the shutoff valve is within easy reach, you could be soaked by the liquid if you reach for it. Because you don't know what you are dealing with, and don't have personal protective equipment, you shouldn't touch it.

You should call emergency responders, warn others away, and wait in a safe place for responders to arrive.

2. What information is needed by responders?

Responders need to know the facts of the incident from you. They will need to seek out more information before they know how to deal with the leak.

What's going on here? – Exercise

This exercise may be conducted in small groups.

What should these two workers do?

These workers should warn the workers in the breakroom, and evacuate the plant, after stopping in the Office Building to warn the people working there. If there is an alarm system, it should be triggered to summon assistance and/or to warn others who may be in the plant.

Trying to use the emergency shutoff could subject the workers to a life-threatening exposure.

The two workers from the smoking area directly exited the plant after observing the chlorine release. A few minutes later, you and your coworker in the breakroom begin to smell chlorine. You open the breakroom door and observe that the building door near the PPE storage area has been left open, and the building seems to be filling up with mist. Your eyes and nose begin to burn and water. There is a telephone in the breakroom.

What should you and your coworker do?

If your eyes and nose are burning, you are being exposed to at least 5 ppm of chlorine. You can expect the concentration to increase fast, since you can see mist entering the building. Remaining in the breakroom to use the telephone is not safe. Note also that you would have to walk right into the “cloud” of chlorine to get to the PPE storage area.

Evacuate the building immediately, and get to a safe area before calling emergency responders. Warn others who may be in harm’s way.

Write below the information that you would share with community first responders, and be ready to discuss your answers with the class.

Some of the information you should share with first responders:

- *That the chemical being released is chlorine*
- *Whether anybody is still inside the plant*
- *Whether there are any known injuries*
- *The availability of any specialized equipment for response to chlorine release*
- *Participants may note that the company should ban smoking on the premises.*
- *There may be other good answers*

The Scene

Emphasize that the responsibility of someone who is first-on-the-scene is to warn others and keep them out of harm’s way, gather as much information as possible, and notify emergency responders, while keeping themselves safe. Even if certain information seems unnecessary to you, it may be important to emergency responders.

Sizing-Up the Scene Exercise

1. Divide the class into small groups. Ask each group to select a representative to take notes and report back to the class.
2. Each group should use the scenario description and map found in the Participant Guide.
3. Set a time limit of 15 minutes for the groups for discussion of the scenario.
4. Call the class back together and facilitate a class discussion.

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 Point - Sizing-Up the Scene

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: 45 minutes

Number of Facilitators: 1 or more, consistent with ratio in Minimum Criteria

Materials

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

- Participant Guide
- Markerboard or equivalent; markers
- NIOSH Pocket Guide
- Emergency Response Guidebook

Objectives

When complete, participants will be better able to:

- Identify the responsibilities of a first-on-the-scene responder
- Identify information that is relevant to provide after leaving the scene

Suggested Facilitator Preparation

- Review the Participant Guide
- Different groups will have different needs. Refer back to the list of hazards generated at the beginning of the course.

Minimum Content Requirements

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 participants 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

1. Have participants 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 Guide. 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.

Key Points

- **Do** include all relevant information when you call in the incident report.
- **Do** keep unauthorized personnel away from the scene.
- **Do** report immediately to the Incident Commander when he or she arrives.
- **Do** make a written report, even if only for yourself.

Review Questions

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 the appropriate personnel.*
 - *Return to the scene to observe any changes (if necessary).*
 - *Maintain a safe distance.*
 - *Keep up-to-date on what is happening at the scene.*
 - *Provide a complete report to the highest-ranking officer that arrives.*
 - *Handle duties as assigned.*
 - *Get out of way if you will not be involved with emergency response or site control.*

- *Notify the Incident Commander or Recordkeeper before you leave.*

3. What should you include in a write-up of the incident?

- *The date and location of the incident.*
- *A description of the initial incident and sequence of event (with times)*
- *People involved: victims, witnesses, other responders (name and 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: 60 minutes

Number of Facilitators: 1 or more, consistent with ratio in Minimum Criteria

Materials

- Participant Guide
- Markerboard or equivalent; markers
- NIOSH Pocket Guide
- Emergency Response Guidebook

Objectives

When complete, participants will be better able to:

- Identify a correct response upon discovering a hazardous materials incident scene
- Recognize how to protect themselves and others at a hazardous materials incident before emergency responders take control of the scene

Suggested Facilitator Preparation

- Review the Participant Guide

Minimum Content Requirements

Correct response to discovery of a hazardous materials incident scene.

Presentation of the Session

This session can be presented as follows:

Form small groups and ask each group to complete the worksheet. Facilitate the report back and a discussion.

Exercise – Putting It All Together - Answers

What should you do?

You should encourage the operator to check on the alarm condition.

Why isn't the operator responding to the alarm?

Too many false alarms have made the operator complacent about responding to the alarm.

Based on an actual incident. See: <http://www.csb.gov/assets/document/CSB%20Final%20Report.pdf>

What should you do?

You should notify the operator about the leak, and ask her about emergency response procedures. If she cannot be located quickly, plant emergency responders should be notified. Others who may be nearby should be warned. People should be kept away from the scene.

What do you know about the chemicals being leaked by looking at the scene?

The pipe is not labeled, so you cannot tell what chemical(s) is(are) involved just by looking. You should treat them as hazardous until they can be identified as non-hazardous.

The pipe appears to be welded stainless steel, which may indicate that the material is corrosive.

Would it be a bad idea to use your cell phone to call emergency responders from the scene? Why or why not?

Yes, it would be a bad idea. Methyl chloride is extremely flammable, and your cell phone could be a source of ignition. You are also being exposed to methyl chloride vapors while you are at the scene.

Where should you wait for emergency responders to arrive?

Do not wait for emergency responders at the scene of the leak. Methyl chloride is hazardous if inhaled and has poor warning properties. The control room may be a good place to wait if it is far enough away. It may be necessary to evacuate the building, but you should stay where the first emergency responders can find you when they arrive.

Closing and Evaluation

Time Requirement: 30 minutes

Number of Facilitators: 1 or more, consistent with ratio in Minimum Criteria

Materials

- Evaluation forms

Objectives

- Review program objectives
- Answer questions
- Collect evaluation forms

Minimum Content Requirements

- Evaluation
- Answer final questions
- Provide certificates for those who met the definition of successful completion; provide remediation according to Training Center and MWC policy for anyone who did not attend the entire program.

Question You May Be Asked

“How do I get more training?”

Provide your upcoming training schedule or reference other MWC members who provide the needed training.

Presentation of the Session

Review the Key Points from the program and facilitate a discussion on how to use the training.

This is an opportunity for final questions

Evaluation is important to continued program improvement. This should not be rushed. Provide time to complete the program evaluation forms and collect them.