Levels of Protection – Facilitator

Time Requirement: 30 minutes

Number of Instructors: 1 or more, consistent with ratio shown in the Minimum Criteria

Materials

- Student materials (participant guide, worksheets)
- Whiteboard, easel and easel paper, or chalkboard
- Markers or chalk
- NIOSH Pocket Guides—copy for each table (or sufficient number of electronic devices)
- Optional: Electronic media such as smart phone or laptop

Objectives

When completed, participants will be better able to:

- Identify the Level of PPE needed

Teaching Methods

This session incorporates the standard diagrams for Levels of Protection. Participants use these and text to determine Levels of Protection needed for six exposure scenarios.

- Presentation/discussion
- Small-group activity

Suggested Instructor Preparation

- Review the participant guide and exercise.
- Review 29CFR1910.120, Appendix B.
- Test web links prior to the session and If any are inoperative please notify the Midwest Consortium at alerdilr@ucmail.uc.edu.
- Review the Chemical Protective Clothing (CPC), Work Practices and Decon sections of the program that these participants have completed.
- Prepare copies of the worksheet. Select 8HR or ERR activities. If a customized group of scenarios is used, ensure that worksheet is included in the Program File.
- Prepare an outline for notes to be included in the program file.
- Assure that you have assembled all the materials needed for the exercise.

Minimum Content Requirements

- Review the figures of Levels of Protection
- Exercise

Questions You May Be Asked

1. Trainees might remark, "It seems there is always more information needed, and there just is not time to get it.” Facilitate a discussion to identify what the best choice is, when there is not complete information.

2. "What do I do when my employer gives me the wrong PPE and tells me that I've got to wear it?”
   Be prepared to facilitate a discussion on strategies to improve the company PPE programs through discussions with employee or management representatives. Emphasize that the law requires that employers provide adequate protection from respiratory hazards.

3. “What do I do when my employer does not provide the appropriate PPE?"
   Be prepared to facilitate a discussion on strategies to improve the company’s PPE programs through discussions with employee or management representatives. Emphasize that the law requires that employers provide adequate protection from respiratory hazards.

Presentation of the Session

The session can be presented as follows:

- Review the objectives.
- Review the figures in the participant material.

Exercise – Levels of Protection

In this exercise, participants will work in groups to complete a work sheet on Levels of Protection for several exposure scenarios. (NOTE: separate worksheet for ERR and 8HR).

Facilitate a report back using a writing surface viewable by all for summary of findings. Be prepared to discuss other information needed in order to improve the decision on Level of Protection.

Summary

Review the learning objective.

Ask: Based on this exercise, what takeaways do you have as you go back to work?

List them where everyone can see.

Answer any remaining questions.

Follow up

Make this exercise better:

- Forward suggestions to UC.
- Are there other ‘Questions you may be asked’ that should be included?
- Organize the listing of ‘takeaways’ and forward to your program director. These are very important impacts to report to NIEHS.

Exercise – Levels of PPE Worksheet (8HR or ERR)

In this exercise, you will select the needed level of protection for several exposure scenarios. For each, identify the appropriate level of PPE and the reason for your decision. Use the NIOSH Pocket Guide, as needed. Describe any additional information you believe is needed

1. An outside maintenance worker just reported that one of the drums on a pallet of dioxane delivered earlier in the day is leaking. You are part of the team that will plug the leak because of your training at the technician level. What level of protection should be used?

2. Spent chlorine cylinders are being loaded onto a semi for transport away from the plant. What level of protection should be worn by the forklift operator?

3. The 'crust' on a pumping unit supplying the manufacturing area is observed to be wet and dripping onto the pad. You need to shut off the valve to prevent further leak. What level of protection is needed?

4. You are assigned to enter an area where the oxygen concentration was measured 18% last week. What level of protection should be worn?

5. You are assisting the safety coordinator with monitoring air concentrations at the fence line of the plant, after an unintentional release of organic solvents due to a malfunction in the carbon bed filtration system. Your task is to get the necessary equipment from the tool crib area. What PPE and safety equipment do you request?

6. While moving 55-gallon drums of hydrochloric acid from the dock to the storage pad, one drops from the forks and ruptures. You immediately alert the Emergency Response Team. What is the highest level of protection used by the Team?

Exercise – Levels of PPE Worksheet: Answer Sheet

In this exercise, you select the needed level of protection for several exposure scenarios. For each, identify the appropriate level of PPE and the reason for your decision. Use the NIOSH Pocket Guide, as needed. Describe any additional information you believe is needed

1. An outside maintenance worker just reported that one of the drums on a pallet of dioxane delivered earlier in the day is leaking. You are part of the team that will plug the leak because of your training at the technician level. What level of protection should be used?

   Dioxane is a carcinogen; IDLH is 500 ppm. Skin absorption is possible, but of less concern than inhalation. Supplied air with full facepiece and level B CPC.

2. Spent chlorine cylinders are being loaded onto a semi for transport away from the plant. What level of protection should be worn by the forklift operator?

   Level C with APR in case there is some release if a valve is damaged.

3. The 'crust' on a pumping unit supplying the manufacturing area is observed to be wet and dripping onto the pad. You need to shut off the valve to prevent further leak. What level of protection is needed?

   The answer depends on the distance between the dripping and the valve (could be many feet away), the contents of the pipe feeding the valve and if there is any leak observed at the valve. Level C with faceshield at a minimum.

4. You are assigned to enter an area where the oxygen concentration was measured at 18% last week. What level of protection should be worn?

   Without additional monitoring, you must assume there is an oxygen deficiency. However, it is a confined space, and required pre-entry monitoring will provide characterization of the trench.

   If there is any potential for the lagoon contents to enter the trench, then that hazard should be characterized.

   Level A is best choice, given the information provided. But entry is not permitted!

5. You are assisting the safety coordinator with monitoring air concentrations at the fence line of the plant, after an unintentional release of organic solvents to the air due to a malfunction in the carbon bed filtration system. Your task is to get the necessary equipment from the tool crib area. What PPE and safety equipment do you request?

   Unless it the organic solvents are identified, Level A is required (could include a carcinogen). With characterization, the level could be reduced.

6. While moving 55-gallon drums of hydrochloric acid from the dock to the storage pad, one drops from the forks and ruptures. You immediately alert the Emergency Response Team. What is the highest level of protection used by the Team?

   Level A – highest respiratory and skin protection