Inspect, Don, Doff a Level of Protection

Time Requirement:  3 hours total

Number of Instructors:  Minimum of 2, consistent with ratio in Minimum Criteria

Materials

- Participant materials (Participant Guide, worksheets)
- Whiteboard, easel and easel paper, or chalkboard
- Markers or chalk
- Open-space room that will allow groups mobility with protective equipment
- Four tables set up as lab stations
- Chemical protective clothing (CPC)
- Tape (Tape recommended by the manufacturer should be used)
- SCBA units (one per participant as needed)
- Cylinder of breathing air (1 breathing air cylinder per participant, if Level A or B)
- Supplied-air respirator face pieces
- Air-purifying respirators (as needed)
- Some defective PPE (for identification during inspection)
- All levels of PPE, if demonstration is included
Objectives

When completed, participants will be better able to:

- Inspect gear for defects or damage prior to use.
- Demonstrate the ability to dressout in Level A, B or C.

Teaching Methods

- Presentation/discussion
- Demonstration
- Small-group activity
- Individual activity

Suggested Instructor Preparation

- Review the Participant Guide and exercises
- Test all web links prior to the session and if any are inoperative please notify the Midwest Consortium at hilbertj@ucmail.uc.edu
- Review the Chemical Protective Clothing (CPC), Work Practices and Decon sections of the program that these participants have completed.
- Review background reading materials
- Conduct reconnaissance to obtain Respiratory Protective Equipment (RPE) and Chemical Protective Clothing (CPC) programs, describe use during the past year and obtain brands/sizes available
- Review manufacturer information and instructions for equipment to be used during module
- Prepare checklists
- Prepare an outline for class notes to be placed in the program file
- Assemble supplies and equipment for exercise
Minimum Content Requirements

- Review different types of chemical protective clothing (CPC) that are available
- Selection considerations
- Different levels of protection of PPE
- Characteristics and properties
- Precautions when wearing CPC
- Inspection of protective gear
- Donning and doffing of PPE

Questions You May Be Asked

1. Participants might remark, "We don't do the inspection this way at our site. So what are we supposed to do?" You should be prepared to facilitate a discussion about working through union or management representatives to facilitate review and possible changes in the facility Health and Safety Plan (HASP). Emphasize that HAZWOPER requires the development and implementation of written procedures. Alternative procedures may be effective. Stress that inspection should be performed.

2. "What do I do when my employer tells me there is no budget to get new suits, but I have lost weight and need a smaller size?" Be prepared to facilitate a discussion on strategies to improve the company program through discussions with employee or management representatives. Emphasize that the law requires that employers provide protective gear. Perhaps the employer is waiting to order a smaller size when the current supply runs out?

3. "What about facial hair? My employer has a 'no beard' policy, and I don't like it." Emphasize that facial hair prevents a good fit, resulting in exposure to toxic substances.

4. "What about medical clearance?" Facilitate a discussion of the stresses of wearing PPE. Medical clearance is needed for respirator use; employers may have additional requirements based on other PPE.
**Presentation of the Session**

This session can be presented as follows:

- Review the objectives
- Review the figures in the Participant Guide

**Chemical-Protective Clothing**

Ask: Why is protective clothing necessary?

Ask: What are the types of protective clothing you have used at a work site?

Ask: What are situations in which protective clothing is required?

- List responses where the entire class can see them.

Ask: What considerations should be made when selecting protective clothing?

- List responses where the entire class can see them.

Refer to hazards that the group might be exposed to.

**Types of Chemical-Protective Suits**

- Emphasize that different types of CPC are needed to protect against different hazards.

- Stress that totally encapsulating chemical-protective suits (TEPC) are the only ones that can protect from vapor hazards.

- Also note that CPC can have an expiration date, because it can and does degrade during use and storage.

**Selection of PPE**

Ask: What hazards are present at your current work site or at sites where you have worked in the past?

List responses where all participants can see them. Point out that different hazards will require different PPE.
Levels of PPE

Ask: What equipment, according to OSHA, makes up Level A protective clothing? and "What is required, and what is optional equipment?"

If available, have a second instructor demonstrate the equipment for Level A.

Ask: When is Level A equipment necessary?

Repeat these questions and demonstration for Levels B, C, and D protection.

Non-vapor-tight TECPs may be used for Level B protection.

Characteristics and Properties of CPC

Discuss the terms Penetration, Degredation and Permeation shown in the Participant Guide by reviewing the figures.

Refer to the Participant Guide for a list of CPC materials and their advantages and disadvantages.

Precautions When Wearing CPC

List 5 precautions to consider when selecting CPC, as listed in the Participant Guide.

Have participants make a list of five precautions to consider. This task should take about 3 minutes. Ask for volunteers to state what they considered.

List participant responses where everyone in the class can see them. Add additional responses to complete the list.

Refer to the Participant Guide for a list of precautions in the use of CPC.

Ask: How can you minimize each of the following potential hazards?

- Hearing impairment
- Vision impairment
- Heat stress
- Slips, trips, and falls

Make list on a writing surface viewable by all.
Emphasize:

- Care taken when donning and doffing gloves to avoid rips and tears
- Avoid placing hands and knees on the ground to prevent permeation of chemicals and abrasion of suit material
- Use of the buddy system

Inspection, Maintenance, and Storage of CPC

Ask "Why is it important to inspect, maintain, and properly store CPC?"

Demonstrate how to inspect CPC including examining suits for cuts, holes, rips and tears, abrasions, weakness in zippers, signs of malfunctioning, and discolorations and visible chemical contaminants.

Donning and Doffing a Level of Protection

Stress the following:

- PPE should be inspected every time it is donned and doffed
- All tape should include tabs for ease of removal
- Positive and negative pressure checks of respirators should be performed every time a respirator is donned
- Be sure there are annual pressure checks for suits

Exercise – Inspect, Don, Doff

The purpose of this exercise is to give participants the opportunity to wear and become familiar with proper donning and doffing of Levels A, B, and C protective clothing and to teach participants inspection procedures of the various parts, such as boots, hard hat, gloves, CPC suit, etc.

The 2 hours were allotted because of the time for each person in a team to complete the three checklists. Depending upon the Level of Protection and program size, more time and facilitators may be needed. After the participant has donned and doffed the suit and completed the checklist, you review, sign, and collect the checklist.

Lab Performance Checklists are part of the Consortium's documentation of training and must be collected from the participants and maintained by the training institution,
Copies of checklists may be given upon request by the participant or his/her employer. Before running a station, each station leader should wear the PPE and read through the checklists to know what is expected of him/her and the participants.

**Inspection**

Allow participants to handle all available clothing. Include some gear that has defects or shows signs of damage. Facilitators may emphasize specific points while going from group-to-group including:

- **Suits**
  - Types of seams
  - Hoods versus no hoods
  - Stress points
  - Sizes
  - Face shield not tested for permeation
  - Tape may degrade

- **Gloves**
  - Performance charts
  - Sizes
  - Damage
  - Inspection

- **Boots**
  - Steel toes
  - Stitching, molded seams

- **Respiratory protection**
Donning and Doffing a Level of Protection

Materials (tailor to the Level to be used)

- SCBAs (one per participant for Level A or B))
- Extra facepieces in various sizes
- Minimum of 1200 lbs. air pressure
- Manufacturer's procedures for donning and doffing SCBA
- One table for every four participants
- Paper towels
- Mild cleaning solution
- Moist wipes
- Cylinders of air
- Levels A, B, or C protective clothing
- Tape recommended by the manufacturer should be used in the field.
- Clipboards and pens
- Checklists
- Selected suits, gloves, boots, and hard hats

Organization:

- Depending on class size and equipment, determine how many teams of two to have
- Set up an equipment pick-up area
- Set up large tables (one for every 4 participants) for donning and doffing
- Have one person in each group do the inspection, then don and doff
- Complete Checklist
- Repeat
**Summary**

Review the objectives

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

   List them on a writing surface viewable by all

Answer any remaining questions

**Follow up**

Make this exercise better:

- Forward suggestions to your Program Director
- 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 - PPE Donning and Doffing**

During this exercise you will demonstrate proficiency inspecting PPE and donning and doffing one level of protection (A, B, or C).

Checklists for this exercise are provided here; however, the instructor will hand out duplicates of these checklists which you will complete, have signed by the instructor, and turn in at the end of the exercise. The training center retains this information with your other training records. Therefore, you may want to record your results on the duplicate for your personal records.
Name: _________________________________

Buddy’s Name: ___________________________

**PPE Performance Checklist - Inspecting PPE**

1. Were inspection procedures described for:
   a. Boots? □ Yes □ No
   b. Outer gloves? □ Yes □ No
   c. Hard hats? □ Yes □ No
   d. Suits? □ Yes □ No

2. Did you inspect gloves? □ Yes □ No

3. Did you find defects in the gloves? □ Yes □ No
   
   If yes, describe the defects:
   _______________________________________

4. Did you inspect a suit prior to donning? □ Yes □ No

5. Did you find defects in the suit? □ Yes □ No
   
   If yes, describe the defects:
   _______________________________________

6. Did you observe the Level A suit leak-test procedure? □ Yes □ No

7. Did you see the repair kit for the Level A suit? □ Yes □ No

Date ________________  Instructor’s Signature: ________________________________
Name: __________________________________

Buddy’s Name: _______________________________

PPE Performance Checklist - Donning and Doffing Level A

Preparing to Don the Equipment

1. List the size that you chose for all of the following equipment. If you did not wear the listed equipment, put an “X” on the line.
   a. Disposable suit   Size _____
   b. SCBA Facepiece  Size _____ Brand__________________________
   c. Level A training suit  Size _____
   d. Boots    Size _____
   e. Inner gloves   Size _____
   f. Outer gloves   Size _____
   g. Hard hat    Size = adjustable

List any equipment for which you could not find a proper size, and state whether you needed a larger or smaller size.

   Type of Equipment  ____________________ Size_________________
   Type of Equipment  ____________________ Size_________________
   Type of Equipment  ____________________ Size_________________

2. Did you inspect the equipment before donning it?..........................
    Yes   No

3. Did you and your buddy help each other get dressed? ……………...
    Yes   No

Donning the Equipment

4. Did you do a negative-pressure check of your facepiece? …………… Yes   No

5. Did you check the SCBA by-pass valve before you put on Level A?   Yes   No

6. Did your buddy ask if you could breathe OK before your suit was closed??
   ……………………………………………………………………………………... Yes   No
PPE Performance Checklist - Donning and Doffing Level A (Cont.)

Hooked to Air in Level A

7. Did your buddy check your suit’s sealing points (zipper, cuff, ted.) after your suit was closed? □ Yes □ No

8. Did you and your buddy review the communications system after your suit was closed? □ Yes □ No

9. Did you withdraw your hand from the sleeve of the suit and turn on the SCBA emergency by-pass valve? □ Yes □ No

10. Did you have to withdraw your hand and defog your face shield? □ Yes □ No

11. Did you do an assigned task? □ Yes □ No
   If yes, describe the task: ________________________________
   ____________________________________________________________________

Doffing the Equipment

12. Did you touch the outside of your suit as it was being removed? □ Yes □ No

13. Did you remove your inner gloves properly? □ Yes □ No

14. Did you dry your suit as instructed? □ Yes □ No

15. After doffing the SCBA, did you:
   a. Extend the harness straps? □ Yes □ No
   b. Extend the facepiece straps? □ Yes □ No
   c. Clean the facepiece? □ Yes □ No
   d. Check the cylinder? □ Yes □ No
      If yes, did the cylinder need to be changed? □ Yes □ No
      If yes, did you change it or have it changed? □ Yes □ No

16. How long did you stay in Level A? _____ minutes

Date _________________ Instructor’s Signature: _______________________________
Name: __________________________________________

Buddy's Name: ________________________________

**PPE Performance Checklist - Inspecting PPE**

1. Were inspection procedures described for:
   a. Boots? □ Yes □ No
   b. Outer gloves? □ Yes □ No
   c. Hard hats? □ Yes □ No
   d. Suits? □ Yes □ No

2. Did you inspect gloves? □ Yes □ No

3. Did you find defects in the gloves? □ Yes □ No
   If yes, describe the defects: ________________________________

4. Did you inspect a suit prior to donning? □ Yes □ No

5. Did you find defects in the suit? □ Yes □ No
   If yes, describe the defects: ________________________________

Date ______________ Instructor's Signature: ______________________________
Name: _________________________________

Buddy's Name: ___________________________

PPE Performance Checklist - Donning and Doffing Level B

1. List the size that you chose for all of the following equipment. If you did not wear the
listed equipment, put an “X” on the line.
   a. Chemical-protective clothing Size _____
   b. Face piece Size _____ Brand____________________
   c. Boots Size _____
   d. Inner gloves Size _____
   e. Outer gloves Size _____
   f. Hard hat Size = adjustable

List any equipment for which you could not find a proper size, and state whether you
needed a larger of smaller size.
   Type of Equipment  ________________Size_____________________________
   Type of Equipment  ________________Size_____________________________
   Type of Equipment  ________________Size_____________________________

2. Did you inspect the equipment before donning it? ……………………..
   □ Yes □ No

3. Did your buddy:
   a. Make pull tabs when taping your boots/pants? ………………………….
      □ Yes □ No
   b. Make pull tabs when taping your gloves/sleeves? ……………………..
      □ Yes □ No
   c. Review the communications system with you? ………………………
      □ Yes □ No

4. Did you do an assigned task? …..………  ……………………………..
   □ Yes □ No
   If yes, describe the task:________________________________________________
   ___________________________________________________________________

5. After doffing the SCBA, did you:
   a. Extend the harness straps? ……………………………………...□ Yes □ No
   b. Extend the facepiece straps? ……………………………………□ Yes □ No
   c. Clean the facepiece? ………………………………………..□ Yes □ No
   d. Check the cylinder? ………………………………………..□ Yes □ No
      If yes, did the cylinder need to be changed? ……….□ Yes □ No
      If yes, did you change it or have it changed? …………□ Yes □ No

6. How long did you stay in Level B? _____ minutes

Date _________________ Instructor’s Signature: _____________________________
PPE Performance Checklist - Inspecting PPE

1. Were inspection procedures described for:
   a. Boots? □ Yes □ No
   b. Outer gloves? □ Yes □ No
   c. Hard hats? □ Yes □ No
   d. Suits? □ Yes □ No

2. Did you inspect gloves? □ Yes □ No

3. Did you find defects in the gloves? □ Yes □ No
   If yes, describe the defects: ________________________________________

4. Did you inspect a suit prior to donning? □ Yes □ No

5. Did you find defects in the suit? □ Yes □ No
   If yes, describe the defects: ________________________________________

Date ______________ Instructor’s Signature: _______________________________
Name: _________________________________

Buddy’s Name: ___________________________

**PPE Performance Checklist - Donning and Doffing Level C**

1. List the size that you chose for all of the following equipment. If you did not wear the listed equipment, put an “X” on the line.

- Chemical-protective clothing  Size _____
- Air-purifying respirator   Size _____ Brand
- Boots     Size _____
- Inner gloves    Size _____
- Outer gloves    Size _____
- Hard hat     Size = adjustable

List any equipment for which you could not find a proper size, and state whether you needed a larger or smaller size.

Type of Equipment _______________________ Size_________________
Type of Equipment _______________________ Size_________________

2. Did you inspect the equipment before donning it?..........................  Yes  No

3. Did your buddy:
   a. Make pull tabs when taping your boots/pants? ………………… Yes  No
   b. Make pull tabs when taping your gloves/sleeves? …………….. Yes  No
   c. Review the communications system with you? ………………… Yes  No

4. Did you do an assigned task? ………………………………………… Yes  No
If yes, describe the task:_____________________________________________ 
________________________________________________________________

5. Did you take off the suit in a manner that would protect you and the other workers around you from contamination? …………………………………… Yes  No

6. Did you remove your inner gloves properly? ……………………… Yes  No

7. When removing your respirator:
   a. Were you wearing your inner gloves? …………………………… Yes  No
   b. Did you extend your facepiece straps? ………………………… Yes  No
   c. Did you clean the respirator? ……………………………………… Yes  No

8. How long did you stay in Level C? _____ minutes

Date ______________ Instructor’s Signature: ____________________________