

## **SAMPLE HEALTH AND SAFETY PLAN (HASP)**

Source: OSHA.

### **10.0 DECONTAMINATION**

(in compliance with 29 CFR 1910.120(b)(4)(ii)(G) and 1910.120(k))

The decontamination chapter of the HASP describes how personnel and equipment are decontaminated when they leave the Exclusion Zone. This chapter also describes how residual waste from decontamination processes is disposed. Decontamination procedures are designed to achieve an orderly, controlled removal or neutralization of contaminants that may accumulate on personnel or equipment. These procedures minimize worker contact with contaminants and protect against the transfer of contaminants outside designated work zones. They also extend the useful life of PPE by reducing the amount of time that contaminants contact and permeate PPE surfaces. The decontamination procedures described below are designed to meet the requirements of 1910.120(k) and include project-specific information about:

- ) the location and type of project decontamination facilities
- ) general and specific decontamination procedures for personnel and PPE
- ) general and specific decontamination procedures for equipment
- ) disposal of residual waste from decontamination
- ) decontamination equipment and solutions
- ) the monitoring procedures used to evaluate the effectiveness of decontamination

Emergency decontamination procedures are detailed in the Emergency Response chapter of this HASP.

\_\_\_\_\_ overseas implementation of project decontamination procedures and is responsible for ensuring their effectiveness.

#### **10.1 Decontamination Facilities**

Decontamination is conducted in the contamination reduction zone (CRZ). The CRZ acts as a buffer between the exclusion zone and the support zone. The location and design of decontamination stations minimize the spread of contamination beyond these stations. Separate facilities are used for personnel and for equipment. The location of these designated facilities is marked on Figure 10-1.

Figure 10-1 Location of Decontamination Facilities

(Insert a map marking the location of decontamination facilities here.)

## 10.2 Decontamination Procedures for Personnel and PPE

Decontamination procedures are designed for the level of PPE used. Project-specific procedures for personnel and PPE decontamination minimize the potential for hazardous skin or inhalation exposure, cross-contamination, and chemical incompatibilities.

(Choose either Option 1 or Option 2 as appropriate for this project. For Option 1, showers and change rooms are not provided for personnel. For Option 2, showers and change rooms are provided for personnel.)

*[Help Text - Effective employee decontamination often requires clean change rooms and showers. Employees must be able to shower after removing contaminated clothing and then go into a clean area where the employees put on their street clothing. Paragraph (n)(7) of HAZWOPER requires change rooms and showers meeting the requirements in 29 CFR 1910.141 when the work will require at least six months to complete. The intent of these requirements is to prevent contamination of workers' street clothes and, consequently, spread of hazardous substances to other areas such as an employee's home. Because of the hazards associated with anthrax spores, OSHA encourages the use of showers and change rooms for anthrax facility decontamination regardless of the duration of the project.]*

### (Option 1)

Based on the nature of the hazards and duration of work, showers and change rooms are not necessary and are not provided for workers.

### (Option 2)

Based on the nature of the hazards and/or duration of work, showers and change rooms consistent with the requirements of 29 CFR 1910.141 are provided for workers.

### (End of Option 2)

The following are general decontamination procedures established and implemented during this project. Specific procedures for personnel and PPE decontamination are provided in Table 10-2.

(Add, delete, or edit the general decontamination procedures below as you'd like them to appear in your HASP)

Decontamination is required for all workers exiting a contaminated area. Personnel may re-enter the Support Zone only after undergoing the decontamination procedures described in the next section.

Used protective clothing is (edit as it applies to your project) decontaminated, cleaned, laundered, maintained and/or replaced as needed to ensure its effectiveness.

PPE that requires maintenance or parts replacement is decontaminated prior to repairs or service.

PPE is decontaminated or prepared for disposal on the premises. Personnel who handle contaminated equipment have been trained in the proper means to do so to avoid hazardous exposure.

Workers are required and trained to immediately exit the work zone, perform applicable decontamination procedures, shower, and change into uncontaminated clothing if their permeable clothing is splashed or becomes wetted with a hazardous substance.

Procedures for decontamination waste disposal meet all applicable local, State, and Federal regulations.

Respirators and non-disposable PPE are decontaminated with a method/procedure that has proven to be effective for anthrax spores. A detailed copy of that method/procedure is attached to this chapter. (Follow this statement and attach a detailed description of your method for decontaminating respirators and non-disposable PPE. Be sure to address contact time and solution strength if you plan to use a hypochlorite solution.)

Tables 10-2a and 10-2b list project-specific procedures for personnel decontamination and handling of personnel decontamination waste.

(Complete the decontamination procedures below in Table 10-2a depending on the level(s) of PPE used during facility decontamination – Level(s) A, B, C, or D) The PICKLIST at the end of this chapter may be helpful in identifying necessary decontamination equipment to complete Table 10-2a below)

Table 10-2a Level A Decontamination Procedures & Equipment	
Station No.	Station Activity

Table 10-2a Level B Decontamination Procedures & Equipment	
Station No.	Station Activity

Table 10-2a Level C Decontamination Procedures & Equipment	
Station No.	Station Activity

Table 10-2a Level D Storage & Cleaning Procedures
Level D Storage Procedures:
Level D Cleaning Procedures:
Level D Special Handling Procedures:

Table 10-2b Waste Handling for Personnel Decontamination	
Waste Streams/Products for Personnel	Disposal Procedures for Waste Stream/Product

### 10.3 Decontamination Procedures for Equipment

All tools, equipment, and machinery from the Exclusion Zone or CRZ are decontaminated in the CRZ prior to removal to the Support Zone. Equipment decontamination procedures are designed to minimize the potential for hazardous skin or inhalation exposure, cross-contamination, and chemical incompatibilities.

The following are general equipment decontamination procedures established and implemented during this project. Specific procedures for equipment decontamination are provided in Table 10-3a and 10-3b.

#### General Equipment Decontamination Procedures:

(Add, delete, or edit the general equipment decontamination procedures below as you'd like them to appear in your HASP)

- J Equipment in the Exclusion Zone that can be used again, that is still operable, and that will not pose an increased exposure hazard during re-use is left in Exclusion Zone until it is no longer needed. This eliminates unnecessary decontamination and reduces the potential for physical transfer of contaminants outside the Exclusion Zone.
- J Decontamination is required for all equipment exiting a contaminated area. Equipment may re-enter the Support Zone only after undergoing the equipment decontamination procedures described in the table below (Table 10-3, Equipment Decontamination Procedures).
- J Equipment that is transported regularly between the contaminated and clean areas of the facility (e.g., monitoring equipment) is carefully decontaminated each time it is removed from the Exclusion Zone and the effectiveness of decontamination is monitored to reduce the likelihood that contamination will be spread outside designated work zones.
- J Equipment that cannot be successfully decontaminated is disposed of as hazardous waste.

Tables 10-3a and -3b list project-specific procedures for equipment decontamination and handling of equipment decontamination wastes.

Table 10-3a Equipment Decontamination Procedures		
Type of Equipment	Decontamination Solution	Decontamination Procedure (include sufficient detail so that those using this HASP can follow the procedure)

Table 10-3b Waste Handling for Equipment Decontamination	
Waste Streams/Products for Equipment	Disposal Procedures for Waste Stream/Product

#### 10.4 Monitoring the Effectiveness of Decontamination Procedures

*[Help Text - The effectiveness of decontamination can be assessed in a variety of ways. Examples of these methods include taking wipe samples of decontaminated equipment, wipe sampling internal and external surfaces of reusable chemical protective clothing, analyzing the final decontamination rinse water for the presence of contaminants, and visually inspecting PPE for signs of contamination following decontamination. You should set acceptable levels of contamination for the monitoring methods you use. The decontamination program must be revised if contaminants are not adequately removed by the decontamination procedures used.]*

Visual examination and sampling are used to evaluate the effectiveness of decontamination procedures, in compliance with 29 CFR 1910.120(k)(2)(iv). Visual examination is used to ensure that procedures are implemented as described and that they appear to control the spread of contaminants under changing conditions. Where feasible, visual examination is also used to inspect for signs of residual contamination or for contaminant permeation of PPE.

Both air sampling and surface sampling are used to verify the effectiveness of decontamination. Air samples are taken in the clean zone to ensure that airborne contaminants have not spread to clean areas of the facility. Surface samples are taken from the inside surfaces of PPE, from decontaminated equipment, and from surfaces within clean areas of the facility to ensure that decontamination and control procedures are performing as anticipated. The type and frequency of air and surface sampling used to ensure the effectiveness of decontamination procedures are detailed in the Exposure Monitoring chapter of this HASP.

Results of the inspections of decontamination procedures and documentation of any action taken to correct deficiencies are recorded and stored at (insert location) .

Personnel who work in contaminated areas, either the Contamination Reduction Zone (CRZ) or the Exclusion Zone, are trained in the principles and practices of decontamination described in this chapter of the HASP and in related SOPs. If procedures are changed as a result of inspection and monitoring, all affected employees are notified of these changes.

#### 10.5 References

(This section is optional. If you use these or other references to develop your program, you may wish to include them here.)

OSHA Fact Sheet and References on Worker Health and Safety for Anthrax Exposure, <http://www.osha.gov/bioterrorism/anthraxfactsheet.html>

US EPA Fact Sheet for Chlorine Dioxide, <http://www.epa.gov/pesticides/factsheets/chlorinedioxidefactsheet.htm>

US EPA Anthrax webpage, New Methods and Technologies section, <http://www.epa.gov/epahome/hi->

[anthrax.htm](#)

Department of Health and Human Services, Counter Terrorism Program Response Planning,  
[http://www.ndms.dhhs.gov/CT\\_Program/Response\\_Planning/response\\_planning.html](http://www.ndms.dhhs.gov/CT_Program/Response_Planning/response_planning.html)

NIOSH Guidance and Recommendations for Emergency Responders in Terrorist Events,  
<http://www.cdc.gov/niosh/npptl/>

**Attachment 10-1 Detailed Decontamination Method/Procedure for Respirators and Non-Disposable PPE**

(attach/insert your procedure here, as indicated in Section 10.2)

*[Picklist for Table 10-2a]*

HEPA vacuum and filters

**Washtubs**

Buckets

Scrub brushes

Pressurized sprayer

Detergent [Indicate Type]

Solvent [Indicate Type]

Household bleach solution *[Indicate Dilution]*

Distilled water

Deionized water

Disposable face piece sanitizer wipes

Facemask sanitizer powder

Wire brush

Spray bottle

Banner/barrier tape

Plastic sheeting

Tarps and poles

Trash bags

Trash cans

Masking tape

Duct tape

Paper towels

Folding chairs

Step ladders

5-Gallon water jugs

Tables