

SAMPLE HEALTH AND SAFETY PLAN (HASP)

Source: OSHA.

6.0 PERSONAL PROTECTIVE EQUIPMENT

(in compliance with 29 CFR 1910.120(b)(4)(ii)(C) and 29 CFR 1910.120(g))

This is the site Personal Protective Equipment (PPE) program. This chapter of the HASP describes how PPE is selected and used to protect workers from exposure to hazardous substances and hazardous conditions on this site. Exposure hazards from anthrax spores, as well as those from the decontamination process, are considered. The following topics are addressed in this chapter:

-) PPE selection criteria
-) site specific PPE ensembles
-) work mission duration
-) training in use of PPE
-) respiratory protection
-) hearing conservation
-) PPE maintenance & storage
-) evaluation of this program
-) references

The person with the overall responsibility for implementing the PPE program on site is (insert name)

6.1 PPE Selection Criteria

Site safety and health hazards are eliminated or reduced to the greatest extent possible through engineering controls and work practices. Where hazards are still present, a combination of engineering controls, work practices, and PPE are used to protect employees.

An initial level of PPE is assigned to each task to provide an adequate barrier to exposure hazards. Initial PPE ensembles are selected based on the anticipated route(s) of entry of biological and chemical hazards and their concentration. Ensemble materials are selected using permeation data supplied by individual manufacturers. Materials providing the greatest duration of protection have been chosen. Tear and seam strength of the PPE are also considered to ensure ensemble durability while work is performed. When necessary, multiple layers of protection are used to accommodate the range of hazards that may be encountered. Where possible, employees are provided with a range of component sizes to ensure properly fitted PPE.

The following criteria are used in selecting PPE levels at this site.

[Delete criteria for PPE levels that do not apply to your site]

Use of Level A Protection

Employees use Level A protection during tasks that have or potentially have the following characteristics: (Insert criteria used to select Level A protection for site tasks.)

[Help Text- Level A Protection should be used if any of the following conditions exist:

-) Measured or potentially high concentration(s) of atmospheric vapors, gases, or particulate.*
-) High potential for splash, immersion, or exposure to unexpected vapors, gases, or particulate of materials that are harmful to skin or capable of being absorbed through the skin.*
-) Operations in confined, or poorly ventilated areas where the absence of conditions requiring Level A have not yet been determined.*

For cleanup of anthrax contaminated facilities, you may want to consult the Red Zone guidance in OSHA's Anthrax Risk Reduction Matrix, available online at

<http://www.osha.gov/bioterrorism/anthrax/matrix/index.html>

Use of Level B Protection

Employees use Level B protection during tasks that have or potentially have the following characteristics: (Insert criteria used to select Level B Protection for site tasks.)

[Help Text-Level B protection should be used if any of the following conditions exist:

-) Exposures are known and the highest degree of respiratory protection is needed.*
-) The atmosphere is oxygen deficient (<19.5%).*
-) There are no warning properties for the identified gases, vapors, or particulates.*
-) The atmosphere contains incompletely identified vapors or gases (indicated by a direct-reading instrument) not suspected of containing high levels of hazardous substances harmful to skin or capable of being absorbed through the skin.*
-) Atmospheres with IDLH concentrations of specific substances that present severe inhalation hazards but do not represent a skin absorption hazard].*

For cleanup of anthrax contaminated facilities, you may want to consult the Red Zone guidance in OSHA's Anthrax Risk Reduction Matrix, available online at

<http://www.osha.gov/bioterrorism/anthrax/matrix/index.html>

Use of Level C Protection

Employees use Level C protection during tasks that have or potentially have the following characteristics: (Insert criteria used to select Level C Protection for site tasks.)

[Help Text-Level C protection should be used to protect against measured concentrations of known atmospheric contaminants for which an air-purifying respirator can be used and when liquid splashes or other direct contact with hazardous substances will not adversely affect employee health or be absorbed through any exposed skin. Air purifying respirators (APR) can be used only when the contaminant(s) are known, cartridges/canisters exist, and concentrations are within the substance-specific standard guidelines or within the maximum use concentration (MUC) for the APR used. The MUC is calculated by multiplying the assigned protection factor (APF) by the exposure limit for the contaminant(s). The NIOSH APF for half face APRs is 10. The NIOSH APF for full face APRs is 50. For cleanup of anthrax

contaminated facilities, you may want to consult the Red Zone guidance in OSHA's Anthrax Risk Reduction Matrix, available online at <http://www.osha.gov/bioterrorism/anthrax/matrix/index.htm>

In accordance with 29 CFR 1910.134(d)(3)(iii)(B)(2), a cartridge/canister change schedule has been determined. Cartridges and canisters used with air-purifying respirators on this site are replaced when any of the following occurs: *[insert other criteria that apply for this site]*

-) a NIOSH-approved end of service life indicator (ESLI) is activated,
-) the service time identified in Table 6-2a has passed, (service time is total period of time canisters/cartridges are exposed to the environment)
-) inhalation is restricted, or
-) If warning properties (chemical odors, tastes or physical irritation) are noted, employees will immediately leave the work area and notify their site supervisor or the site safety and health officer.

Use of Level D Protection

[insert criteria used to select Level D Protection for site tasks]

Employees will use Level D protection during tasks that have the following characteristics:

[Help Text-Level D protection may be used during tasks where the atmosphere contains no known hazard and work functions preclude splashes, immersion, or the potential for unexpected inhalation of or contact with hazardous levels of any biological or chemical substances].

6.2 Use of PPE

Site-specific PPE ensembles and materials are identified below in Table 6-2a. These ensembles are consistent with Appendix B of 29 CFR 1910.120. All PPE is used in accordance with manufacturers' recommendations, and in conjunction with Chapter 12, **Standard Operating Procedures**.

Table 6-2a Site-Specific PPE Ensembles					
Select ensemble component by placing an “x” in each of the applicable columns. See PPE picklists at end of this chapter for additional components.					
Equipment	Model/Material	Level A	Level B	Level C	Level D
Self Contained Breathing Apparatus (SCBA)					
Air-line system with escape air supply (5-minute minimum for escape supply)					
Escape only air supply					
Powered air purifying respirator (PAPR) [help text #1]	Model:				
	Cartridge:				
	Service Time:				
Air purifying respirator (APR) [help text #1]	Model:				
	Cartridge:				
	Service Time:				
Fully Encapsulating Chemical Protective Suit					
Hooded Chemical Resistant Clothing/Suit [help text #2]					
Booties, outer, chemical-resistant					
Coveralls					
Inner chemical resistant gloves					
Outer chemical resistant gloves					
Steel toe/shank boots					
Hard Hat					
Safety Glasses					
Other (Specify) as determined by _____					

[Help Text #1: Each specific model and cartridge of air purifying respirator (PAPR or APR) must be entered separately. Service times (saturation point for cartridge/canister) must be determined for each cartridge/canister and for each hazardous substance/concentration to which they are exposed. Cartridge/canister change schedules may be determined using manufacturer data or predictive mathematical models. Reviewing the OSHA website at the following address may provide guidance: <http://www.osha-slc.gov/SLTC/respiratoryprotection/index.html>

Help Text #2: Two-piece chemical-splash suits, and disposable chemical-resistant overalls are both types of chemical resistant suits. Breakthrough times (the time it takes for a contaminant to permeate the suit) for each vary with different materials and substances. Various protective suits are designed to protect against different families of hazardous substances. See Section 6.8 References or contact the manufacturer, or their representative to determine which protective material is the proper choice for the contaminants at the site.]

Criteria for PPE Upgrades and Downgrades

Since PPE is primarily used as a barrier to biological and chemical exposure, airborne concentrations of anthrax spores and decontamination chemicals are monitored routinely, in accordance with Chapter 7, Exposure Monitoring. The level of PPE is assessed based on the criteria in Table 6-2b below.

_____ has the authority to upgrade or downgrade PPE in a timely manner to respond to changing site conditions and to protect worker health and safety. Routine evaluation of the PPE program is conducted as identified in Section 6.7 below.

Table 6-2b Action Levels/Criteria for PPE Upgrades and Downgrades				
Level of PPE	Action Level/Criteria for PPE Upgrade	Required Modification for Action Level/Criteria	Action Level/Criteria for PPE Downgrade	Required Modification for Action Level/Criteria

[Help Text-Action Levels should be consistent with the values entered in Chapter 7, Exposure Monitoring.]

Work Mission Duration

_____ identifies task-specific work duration based on the following:

1. physiological requirements of the task
2. PPE level for the task
3. ambient temperature and humidity
4. respiratory protection capacity (air supply or cartridge change requirements)
5. chemical protective clothing capacity (permeation rate of on-site materials), and
6. acclimatization of the work force to site and task conditions.

_____ communicates the task-specific work duration during daily pre-entry briefings. Work duration is consistent with the requirements outlined in Chapter 8, **Heat Stress** and the respiratory protection capacity for the assigned PPE. Work duration is re-evaluated throughout the day in response to changes in working conditions.

6.3 Training

Employees receive general training regarding proper selection, use and inspection of PPE during initial HAZWOPER training (or equivalent) and subsequent refresher training. Site-specific PPE requirements, including task specific PPE, ensemble components, cartridge/canister service times, and inspection procedures are communicated as identified in Chapter 4, Training. Chapter 12, Standard Operating Procedures, may include additional information regarding PPE training requirements.

6.4 Respiratory Protection

(insert name/number) Respiratory protection is selected, fitted, used, stored and maintained in accordance with the Respiratory Protection Program located in Attachment [attach copy to HASP]. Appropriate service for cartridges and canisters used with APRs are identified in Table 6-2a. The written Respiratory Protection Program has been reviewed for consistency with the other requirements of this HASP.

6.5 Hearing Conservation

Consistent with 1910.95, hearing protection is made available when noise exposures equal or exceed an 8-hour time-weighted average sound level of 85 dBA. Hearing protection is required when the 8-hour time weighted average sound level ≥ 90 dBA. Where noise exposure meets or exceeds this level, noise is listed as a physical hazard in the job hazard analysis for the tasks/operation, and hearing protection is included as one of the control measures (PPE).

Hearing protection is also required for any employees who have not yet had a baseline audiogram or who have experienced a standard threshold shift and are exposed to an 8-hour time weighted average sound level ≥ 85 dBA.

(insert name/number) Employees exposed to an 8-hr TWA sound level ≥ 90 dBA participate in a Hearing Conservation Program. A copy of the written Hearing Conservation Program is located in Attachment [attach copy to HASP].

6.6 PPE Maintenance & Storage

In order to ensure that PPE continues to provide the anticipated protection, this site uses specific procedures for PPE inspection, cleaning, maintenance, and storage. Adherence to these procedures is tracked with written inspection records.

_____ is responsible for overseeing PPE maintenance & storage procedures and for maintaining the inspection record. Table 6-6 details the PPE maintenance requirements for this site.

Table 6-6 PPE Cleaning, Inspection, & Maintenance					
Type of PPE	Model	Inspection Frequency/ Procedures	Done by	Cleaning Frequency/ Procedures	Done by

[Help text: Proper maintenance and care of respirators including standards for cleaning, disinfecting, storage, inspection and repairs is covered in 29 CFR 1910.134(h) and Appendix B-2 of that standard.]

Defective or damaged equipment is not used and is reported to _____ so that the equipment can be repaired or discarded. Spent and disposable PPE is discarded in the manner specified in Chapter 10, **Decontamination**. After decontamination, reusable PPE is properly stored, according to the manufacturers' recommendations and the site decontamination plan mentioned above and in HASP Chapter 12, Standard Operating Procedures.

6.7 Evaluation of PPE Program

Assessment of PPE performance occurs throughout site activities in response to air monitoring data collected (Chapter 7, Exposure Monitoring) and the action levels identified in Table 6-2b. Surface samples are collected from the inside surfaces of used PPE to ensure that the equipment provides an adequate barrier throughout the work shift. Surface monitoring procedures are described in Chapter 7.

Modifications to initially selected PPE are determined by

_____ and affected employees are informed immediately. Chapter 2 of the HASP, Job Hazard Analysis, is with updated information about job hazards and selected controls.

6.8 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>

Occupational Exposure To Anthrax: OSHA Frequently Asked Questions,
<http://www.osha.gov/bioterrorism/anthrax/faqs.html>

OSHA Emergency Response Technical Links, <http://www.osha.gov/SLTC/emergencyresponse/index.html>
, particularly NIOSH report offering Guidance and Recommendations for Emergency Responders in
Terrorist Events (<http://www.cdc.gov/niosh/nppt/>), and NIOSH information on respiratory protection
certification for chemical/biological agents (<http://www.cdc.gov/niosh/interspup.html>)

NIOSH Fact Sheet: Protecting Investigators Performing Environmental Sampling for *Bacillus anthracis*:
Personal Protective Equipment, <http://www.cdc.gov/niosh/unp-anthrax-ppe.html>

Interim Recommendations for the Selection and Use of Protective Clothing and Respirators Against
Biological Agents,
<http://www.bt.cdc.gov/DocumentsApp/Anthrax/Protective/10242001Protect.asp>

29 CFR 1910.120(g) or 29 CFR 1926.65(g)

29 CFR 1910.120 Appendix B or 29 CFR 1926.65(g)

NFPA 1991 - Standard on Vapor-Protective Suits for Hazardous Chemical Emergencies

NFPA 1992 - Standard on Liquid Splash-Protective Suits for Hazardous Chemical Emergencies

NFPA 1993 - Standard on Liquid Splash-Protective Suits for Non-emergency, Non-flammable Hazardous Chemical Situations

Other (Specify)

PPE Picklists

Level A

Booties-outer, chemical-resistant, disposable *[Indicate Type]*

Cascade System

Cooling vest

Coveralls

Disposable protective suit (depending on suit construction, may be worn over totally-encapsulating suit) *[Indicate Type]*

Gloves (outer, chemical-resistant) *[Indicate Type]*

Gloves (inner, chemical-resistant) *[Indicate Type]*

Hardhat

Hardhat liner

Hearing protection

Manifold System

Positive pressure supplied air respirator, with escape SCBA (NIOSH certified)

SCBA-positive pressure, full face-piece (NIOSH certified)

Safety boots-steel toe and shank, chemical-resistant *[Indicate Type]*

Spare air cylinders

Totally-encapsulating chemical protective suit *[Indicate Type]*

Level B

Booties-outer, chemical-resistant, disposable *[Indicate Type]*

Butyl apron

Cascade System

Cooling vest

Cotton clothing

Face shield

Hardhat

Hardhat liner

Hearing protection

Hooded chemical-resistant clothing (overalls and long-sleeved jacket; coveralls; one or two-piece chemical-splash suit; disposable chemical-resistant overalls) *[Indicate Type]*

Gloves (outer, chemical-resistant) *[Indicate Type]*

Gloves (inner, chemical-resistant) *[Indicate Type]*

Manifold System

Positive pressure supplied air respirator, with escape SCBA (NIOSH certified)

Protective coverall *[Indicate Type]*

SCBA-positive pressure, full face-piece (NIOSH certified)

Safety boots-steel toe and shank, chemical-resistant *[Indicate Type]*

Spare air cylinders

Level C

5-minute escape mask

Booties-outer, chemical-resistant, disposable *[Indicate Type]*

Butyl apron

Cartridges *[Indicate Type]*

Canisters *[Indicate Type]*

Cooling vest

Cotton clothing

Coveralls

Face shield
Full-face or half-mask air purifying respirator (NIOSH certified) *[Select One]*
Hardhat
Hardhat liner
Hearing protection
Hooded chemical-resistant clothing (overalls; two-piece chemical-splash suit; disposable chemical-resistant overalls) *[Indicate Type]*
Insulated Coveralls
Insulated Boots
Outer gloves *[Indicate Type]*
Outer work gloves *[Indicate Type]*
Power air purifying respirator *[Indicate Type]*
Protective coverall *[Indicate Type]*
Safety boots-steel toe and shank, chemical-resistant *[Indicate Type]*
Safety glasses or chemical splash goggles

Level D

5-minute escape mask
Booties-outer, chemical-resistant, disposable *[Indicate Type]*
Cotton clothing
Coveralls
Face shield
Hardhat
Hardhat liner
Hearing protection
Insulated Coveralls
Insulated Boots
Protective coverall *[Indicate Type]*
Safety boots-steel toe and shank, chemical-resistant *[Indicate Type]*
Safety glasses or chemical splash goggles
Work gloves *[Indicate Ty*

