

**Health and Safety Audit Guidelines**  
**SARA Title I Section 126**

**Office of Solid Waste and Emergency Response**  
**Office of Emergency and Remedial Response**  
**Emergency Response Division**  
**Washington, DC 20460**

## NOTICE

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**U.S. ENVIRONMENTAL PROTECTION AGENCY  
SARA TITLE I SECTION 126  
HEALTH AND SAFETY AUDIT GUIDELINES**

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## CHAPTER 1

### INTRODUCTION

Section 126(a) of the Superfund Amendments and Reauthorization Act of 1986 (SARA) requires the Secretary of Labor to promulgate health and safety standards pursuant to section 6 of the Occupational Safety and Health Act of 1970 (OSH Act), for employees engaged in hazardous waste operations. These section 126(a) standards were published on March 6, 1989 (54 FR 9294). Pursuant to section 126(c) of SARA, the OSHA worker protection regulations are effective on March 6, 1990, one year after the date of their promulgation as a final rule. Until that time, the existing interim final rule, published on December 19, 1986 (51 FR 45654), remains in effect. The OSHA final regulations contain standards for all private employees, and for Federal employees through Executive Order No. 12196. State and local employees in States that have OSHA-approved plans under section 18 of the OSH Act must comply with standards at least as stringent as the OSHA standards.

Section 126(f) of SARA requires the Administrator of the U.S. Environmental Protection Agency (EPA) to promulgate standards identical to those contained in the section 126(a) OSHA regulations (codified at 29 CFR 1910.120). The EPA regulations (codified at 40 CFR 311) cover State and local government employees in States that are without an OSHA-approved State plan under section 18 of the OSH Act.

The EPA Audit Guidelines reflect the requirements specified in the OSHA final standard (29 CFR 1910.120) as

published on March 6, 1989. Because the OSHA interim final rule is at least as stringent as the OSHA final rule, if an operation or activity is in compliance with the OSHA interim final rule of December 19, 1986, it generally will also be in compliance with the OSHA final standard.

The EPA Audit Guidelines provide step-by-step guidance for assessing preliminary evaluations, health and safety plans (HASPs), and off-site emergency response programs required under the OSHA and EPA worker protection standards. Employees affected by the EPA standards will primarily be those State and local government employees engaged in hazardous waste operations at hazardous waste sites and State and local off-site emergency response personnel.

The following States currently do not have OSHA-approved State plans and, therefore, State and local government employees in these States are subject to EPA's final rule:<sup>1</sup>

Alabama	Mississippi
Arkansas	Missouri
Colorado	Montana
Delaware	Nebraska
District of Columbia	New Hampshire
Florida	New Jersey
Georgia	North Dakota
Guam	Ohio
Idaho	Oklahoma
Illinois	Pennsylvania
Kansas	Rhode Island
Louisiana	South Dakota
Maine	Texas
Massachusetts	West Virginia
	Wisconsin

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<sup>1</sup> The specific States covered by EPA's final rule may vary over time, depending upon whether a State has in place an OSHA-approved State plan. The States listed represent the affected States as of the date of publication of EPA's final rule.

The EPA Audit Guidelines are not meant to be a comprehensive compilation of all requirements in 29 CFR 1910.120. Rather, each section and subsection in the guidelines contains sample questions meant to provide the auditor with a sense of the likely level of compliance. If compliance with the specific elements in a subsection of these guidelines is excellent, then it is likely that all requirements under that subsection have been met. If, on the other hand, compliance is sketchy or weak, it is advisable to pursue additional questions and to investigate compliance with that subsection further. A series of questions eliciting "YES" or "NO" answers guide the user through the evaluation process. A "NO" may indicate a deficiency; the "EXPLAIN" prompt provides an opportunity to describe the apparent deficiency. The space following each question can be used to explain answers in greater detail, and the space after the last question in a series can be used to formulate additional questions and/or comments on a given subject area. The "Summary of Responses" permits easy tabulation of YES and NO responses after each set of questions. The tabulation indicates potential problems and alerts on-site employees to areas requiring additional work.

The EPA Audit Guidelines address two major components of the OSHA/EPA worker protection standards: health and safety provisions at uncontrolled hazardous waste sites and off-site emergency response. The latter provisions are addressed under Chapter 5 of these Guidelines and reflect the requirements specified in 29 CFR 1910.120(q). The former provisions are subdivided into three sections of the EPA Audit Guidelines: Chapter 2: Preliminary Evaluation, Chapter 3: Written Health and Safety Plan Review,

and Chapter 4: Health and Safety Field Review. The Preliminary Evaluation section (Chapter 2) provides background questions that may be particularly useful if the HASP appears weak in certain areas. A weak HASP may be indicative of a weak preliminary evaluation. The questions in Chapter 2, therefore, may help the auditor understand the reasons behind the weakness and this in turn may lead to the preparation of a better HASP.

For users of these Guidelines whose purpose is to audit hazardous waste site operations, two OSHA publications provide useful information on performing field audits: Hazardous Waste Inspections Reference Manual, 1986 and the OSHA Field Operations Manual 2nd Edition, 1987.

The user is encouraged to refer to the Appendices in the EPA Audit Guidelines: Appendix A lists and defines the acronyms used in the Guidelines. Appendix B provides brief explanations of other relevant OSHA standards. Appendix C, "Incident Safety Check Off List" is a quick reference on the types of information that must be obtained prior to entering a site (i.e., preliminary evaluation) and the types of activities that should be conducted following site work. Appendix D, using information from 29 CFR 1910.120 Appendix B, provides detailed information on EPA Levels A, B, C, and D of personal protection, which have been designed to take into account respiratory and dermal routes of exposure to hazardous chemicals. Appendix E, "Generic HASP", refers to a document developed by EPA to assist field personnel in writing a HASP. Due to the length of the document, only the table of contents has been provided. Copies of the document can be obtained by contacting:

U.S. Environmental Protection  
Agency  
Environmental Response Team  
(MS-101)  
Raritan Depot  
Woodbridge Avenue  
Edison, NJ 08837  
Attention: Generic HASP

Appendix F "OSHA Form No. 200"  
provides a form recommended by OSHA

for recording workplace related injuries or illnesses. Appendix G, "Reference List", includes a list of reference materials that are available to provide additional understanding of health and safety issues and procedures at hazardous waste sites. Among the references are volumes on toxicology, personal protective equipment, and hazardous waste site operations.

## CHAPTER 2

### PRELIMINARY EVALUATION 29 CFR 1910.120(c)(4)

This section of the EPA Audit Guidelines may be most useful during the HASP review or during the health and safety field review. Inadequacies in these subject areas may be the result of an insufficient PE of available information.

The important elements in a successful PE are listed in Appendix C of the EPA Audit Guidelines. The PE is an opportunity to collect important background data regarding the site. This information is used to identify hazards and to select

appropriate methods of employee protection. The PE is instrumental in developing a HASP that tailors protective measures to the site-specific hazards that employees may face. The site characterization generally proceeds in two stages: (1) off-site characterization, and (2) field verification.

The following eight components comprise essential information required in the PE. (This information should be compiled prior to employees entering the site.)

#### 2.1 Site Location and Size

The exact location and approximate size of the site should be depicted appropriately through the use of a site location map or its equivalent. Before going on a site, individuals should secure a site location map as well as data on the size of the site.

- 2.1.1. Are the site location and approximate size of the site depicted on a site location map or its equivalent?

[YES]

[NO, EXPLAIN]

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2.1.2

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2.1.3

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SUMMARY OF RESPONSES

[YES]\_\_\_

[NO, EXPLAIN]\_\_\_



## 2.2 Description of Response/Job Function

The appropriate composition of a site entry team depends on the nature of the site, required activities of site personnel, and required level of personal protection.

- 2.2.1 Prior to the initial site entry, have appropriate personnel and responsibilities (e.g., health and safety officer, chemist) been assigned for anticipated on-site job functions?

[YES]

[NO, EXPLAIN]

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2.2.2

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2.2.3

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SUMMARY OF RESPONSES

[YES]\_\_\_\_

[NO, EXPLAIN]\_\_\_\_

## 2.3 Planned Duration of Employee Activity

Estimated project duration and length of the employee workday determine the need for special programs in the site HASP. Seasonal temperature extremes often result in changes in recommended personal protective clothing and equipment. Time or budget considerations may result in longer workdays for the employees. Longer workdays may result in additional health and safety considerations such as increased employee fatigue and additional lighting requirements. (See Section IV.J. of these Guidelines for additional information pertaining to appropriate lighting considerations.)

- 2.3.1 Does the PE estimate the appropriate length of time, (e.g., weeks or months, for each on-site employee activity)?

[YES]

[NO, EXPLAIN]

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2.3.2 Does the PE indicate the anticipated length of the on-site employee workday?

[YES]

[NO, EXPLAIN]

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2.3.3

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2.3.4

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SUMMARY OF RESPONSES

[YES]\_\_\_

[NO, EXPLAIN]\_\_\_

#### 2.4 Site Topography and Site Accessibility by Air and Roads

Topography influences movement of on-site contaminants, areas of present contamination and potential future contamination, and logistical decisions, such as the placement of the site command post. Before entering a site, information should be compiled on site altitudes, site contour, presence of bodies of water, and general terrain conditions (e.g., rocky, grassy, mountainous, flat). Much of this information can be obtained from U.S. Geological Survey (USGS) maps or equivalent topographical maps.

It is often possible to determine if a site is accessible by air and road from site location maps, review of background data, and interviews. The PE should confirm site access information. The availability of different roads for entry and exit from a site improves the likelihood of rapid evacuation or movement of injured personnel from the site. If roads are blocked by heavy equipment or the results of extreme climatic conditions, alternate routes of site entry and exit should be available. Although it is often not feasible, air access to and from the site provides an additional alternative for rapid evacuation of injured personnel. A significant and growing number of hospitals provide emergency helicopter transportation for injured people.

2.4.1 Does the PE indicate that appropriate measures have been taken to characterize the site topography?

[YES]

[NO, EXPLAIN]

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2.4.2 Does the PE indicate that a topographical map has been used?

[YES]

[NO, EXPLAIN]

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2.4.3 Does the PE identify site access by air and roads?

[YES]

[NO, EXPLAIN]

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2.4.4

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2.4.5

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SUMMARY OF RESPONSES

[YES]\_\_\_

[NO, EXPLAIN]\_\_\_

## 2.5 Safety and Health Hazards Expected at the Site

During the PE it is important that safety and health hazards be identified or anticipated prior to going on-site. By accomplishing this during the preliminary evaluation, employees will be better able to prepare for appropriate personal protective equipment (PPE), air monitoring instruments, and the development of an effective work plan.

2.5.1 Does the PE identify the expected safety and health hazards for the site?

[YES]

[NO, EXPLAIN]

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2.5.2

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2.5.3

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SUMMARY OF RESPONSES

[YES]\_\_\_\_

[NO, EXPLAIN]\_\_\_\_

## 2.6 Pathways for Hazardous Substance Dispersion

To anticipate appropriate personal protective equipment (PPE) for the site HASP, it is essential to understand the potential exposure pathways for contaminants. By considering the media where contaminants are found, the physical and chemical characteristics of the contaminants, and the anticipated site operations, the individual(s) performing the site characterization should be able to predict potential hazardous substance dispersion pathways.

- 2.6.1 Does the PE indicate the media (soil, sediment, water, and air) where on-site chemical contamination is known to exist?

[YES]

[NO, EXPLAIN]

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- 2.6.2 Were physical and chemical characteristics of known compounds considered during the PE?

[YES]

[NO, EXPLAIN]

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- 2.6.3 Does the preliminary evaluation indicate dispersion pathways, (e.g., airborne, direct contact)?

[YES]

[NO, EXPLAIN]

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2.6.4

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2.6.5

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SUMMARY OF RESPONSES

[YES]\_\_\_\_

[NO, EXPLAIN]\_\_\_\_

## 2.7 Present Status of Emergency Response Teams for On-Site Emergencies

During the PE it is critical to determine the capabilities of emergency response teams who may respond in the event of an on-site emergency.

- 2.7.1 Does the PE identify the present status and capabilities of the emergency response teams that would provide assistance to on-site employees in the event of an emergency?

[YES]

[NO, EXPLAIN]

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2.7.2

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2.7.3

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SUMMARY OF RESPONSES

[YES]\_\_\_

[NO, EXPLAIN]\_\_\_

## 2.8 Hazardous Substances and Health Hazards Involved or Expected at the Site and Their Chemical and Physical Properties

The physical and chemical properties of the hazardous substances on-site affect PPE selection in the site HASP. For instance, for Level C personal protection, selection of appropriate respirator canisters depends on the physical and chemical properties of the hazardous substances (i.e., some chemicals pass directly through certain canisters). The complexity of PPE selection requires that the physical and chemical properties of hazardous substances along with their health hazards be considered in the PE.

- 2.8.1 Are the physical and chemical properties of all known or suspected chemical contaminants documented in the PE?

[YES]

[NO, EXPLAIN]

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2.8.2 Are the health hazards of all known or suspected hazardous substances documented in the PE?

[YES]

[NO, EXPLAIN]

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2.8.3

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2.8.4

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SUMMARY OF RESPONSES

[YES]\_\_\_

[NO, EXPLAIN]\_\_\_

## CHAPTER 3

### WRITTEN HEALTH AND SAFETY PLAN

The HASP elements in the box to the left do not appear in the same order as provided in 29 CFR 1910.120(b). Instead, these elements are arranged in the order in which their associated relevant paragraphs appear within 29 CFR 1910.120.

This checklist portion of the EPA Audit Guidelines permits the user to identify inadequacies in the HASP. Answers to the HASP checklist questions should be ascertainable by reviewing the HASP.

At a minimum the HASP should contain the following information:

- Names of key personnel responsible for site safety;
- Safety and health risk analysis for each site task and operation;
- Site control measures;
- Employee training assignments;
- Medical surveillance requirements;
- Personal protective equipment for each of the site tasks and operations;
- Frequency and types of air monitoring, personnel monitoring, environmental sampling techniques, and instrumentation along with methods for maintenance and calibration of equipment;
- Confined space entry procedures;
- Spill Containment Program;
- Decontamination procedures; and
- Emergency response plan.

#### 3.1 Names of Key Personnel and Health and Safety Personnel - 29 CFR 1910.120(b)(2)

Key personnel may include individuals with job titles such as Project Manager, Field Operations Leader, and Site Supervisor. A Site Health and Safety Officer should also be designated and always be on-site during operations.

##### 3.1.1 Are key personnel identified in the HASP?

[YES]

[NO, EXPLAIN]

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3.1.2 Are the health and safety personnel (including alternates) identified in the HASP?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_  
**NOTE:** During the field audit, verify key site personnel and the presence of the site health and safety officer.

3.1.3

3.1.4

SUMMARY OF RESPONSES

[YES]\_\_\_\_

[NO, EXPLAIN]\_\_\_\_

3.2 Safety and Health Risk Analysis for Each Site Task and Operation - 29 CFR 1910.120(b)(4)

Simple risk analyses can be conducted based on the chemical contaminants of concern, the affected media, concentrations, and potential routes of exposure. These elements are essential to any analysis of health risks. OSHA-PELs and IDLH levels should be provided at a minimum for compounds, which have the potential to become airborne. These values can be located for many compounds in the NIOSH/OSHA Pocket Guide to Chemical Hazards, 1985, as well as in 29 CFR 1910.1000 as published on January 19, 1989 (FR Vol. 54, No. 12).

The HASP also should incorporate some safety risk analyses to address anticipated on-site operations. Certain field operations may be less safe when conducted at a hazardous waste site than if conducted in a more conventional environment. In addition, certain jobs at a hazardous waste site differ in their potential hazards. For instance, the job of a heavy equipment operator or materials handler would generally be a more hazardous job than the job of a supervisor because of the increased risk of direct contact with the concentrated waste. Methods and procedures for reducing safety hazards should be provided in the HASP.

The EPA Superfund Public Health Evaluation Manual (1986), may be useful to users as a tool for performing more sophisticated health risk analyses attributable to common chemical contaminants found at hazardous waste sites. The Guidelines enable the user to calculate hazard indices for chemicals without carcinogenic potential, and to calculate the likely increase in cancer incidence rates associated with exposure to carcinogens at the hazardous waste site.



3.2.1 Does the HASP address methods to deal with potential safety problems (e.g. heavy equipment operations, presence of live electrical sources, and slip, trip, fall hazards)?

[YES]

[NO, EXPLAIN]

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3.2.2 Does the HASP contain a safety and health risk or hazards analysis for each site task and operation found in the workplan?

[YES]

[NO, EXPLAIN]

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NOTE: Verification of incorporation into the HASP of health and safety risk analysis for each site task and operation occurring in the field should be determined during the field audit.

3.2.3 Are chemical contaminants, affected media, concentrations, potential routes of exposure, and health effects identified in the HASP?

[YES]

[NO, EXPLAIN]

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3.2.4 Does the HASP identify the appropriate PPE level for each site task and operation?

[YES]

[NO, EXPLAIN]

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3.2.5

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3.2.6 \_\_\_\_\_  
\_\_\_\_\_

SUMMARY OF RESPONSES

[YES] \_\_\_\_\_

[NO, EXPLAIN] \_\_\_\_\_

3.3 Site Control - 29 CFR 1910.120(d)

A site control program is required by 29 CFR 1910.120(d). It should include a site map, site work zones, site communications, safe work practices, and identification of the nearest medical assistance. The "buddy system" should be used throughout site operations.

Site control addresses the establishment of work zones to minimize the hazard to on-site employees and to facilitate site operations.

3.3.1 Does the HASP contain a section on site control defining work zones on-site?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

3.3.2 Does the HASP contain information on the use of the "buddy system" during all site operations?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

3.3.3 Does the HASP contain a site map that includes the location of work zones?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

NOTE: Verification of the physical/visual segregation of work zones should be conducted during the field audit.

3.3.4 Does the HASP contain information on site communications?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

3.3.5 Does the HASP contain information on safe work practices, (e.g., no eating in exclusion zone)?

[YES]

[NO, EXPLAIN]

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3.3.6 Does the HASP identify the nearest medical assistance?

[YES]

[NO, EXPLAIN]

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3.3.7

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3.3.8

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SUMMARY OF RESPONSES

[YES]\_\_\_

[NO, EXPLAIN]\_\_\_

#### 3.4 Employee Training - 29 CFR 1910.120(e)

The employee's initial health and safety training, annual health and safety refresher training, on-the-job training, supervisory training (where applicable), first-aid training, CPR training, and other training relevant to the performance of hazardous waste site operations should be indicated in the HASP for all individuals involved in on-site activities.

3.4.1 Does the HASP indicate that all on-site employees meet appropriate health and safety training requirements?

[YES]

[NO, EXPLAIN]

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If NO, please go on to questions 2-5, while if YES please go on to question 6.

3.4.2 Does the HASP indicate that all individuals expected to be on-site have the requisite initial health and safety training?

[YES]

[NO, EXPLAIN]

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3.4.3 Does the HASP indicate that individuals functioning in a supervisory capacity have the requisite supervisory training?

[YES]

[NO, EXPLAIN]

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3.4.4 Does the HASP indicate that all individuals functioning independently of an immediate supervisor have a minimum of three days of actual field experience under a skilled supervisor (on-the-job training)?

[YES]

[NO, EXPLAIN]

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3.4.5 Does the HASP indicate that all individuals who had their initial health and safety training longer than one year ago have also completed the required annual health and safety refresher training?

[YES]

[NO, EXPLAIN]

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3.4.6 Does the HASP indicate that employees have had training to recognize the symptoms and signs of over-exposure to chemical hazards?

[YES]

[NO, EXPLAIN]

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3.4.7 If there is no medical facility in proximity to the site, do the training records in the HASP indicate at least one individual on-site who is adequately trained to render first aid (see Appendix B for summary of 29 CFR 1910.151)?

[YES]

[NO, EXPLAIN]

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3.4.8

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3.4.9

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SUMMARY OF RESPONSES

[YES]\_\_\_

[NO, EXPLAIN]\_\_\_

### 3.5 Medical Surveillance - 29 CFR 1910.120(f)

29 CFR 1910.120 requires a comprehensive medical surveillance program to monitor the health status of personnel who potentially are exposed to hazardous substances in the field and who wear respirators 30 or more days in a year. The program must include initial and periodic medical examinations, examinations upon termination of employment, and medical recordkeeping.

3.5.1 Does the HASP indicate that site personnel who may be exposed at or above the OSHA-PELs or other published exposure levels or wear respirators 30 or more days each year are enrolled in a comprehensive medical monitoring program before working on-site?

[YES]

[NO, EXPLAIN]

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3.5.2

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3.5.3

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SUMMARY OF RESPONSES

[YES]\_\_\_

[NO, EXPLAIN]\_\_\_

### 3.6 Personal Protective Equipment (PPE) - 29 CFR 1910.120(g)

Engineering controls and work practices should first be explored as methods to protect workers before personal protective equipment is used. The standard describes PPE ensembles as Level A, B, C, and D. These levels are described more fully in Appendix D of these Guidelines. PPE ensembles prescribed in the HASP must specifically address the potential site-specific hazards. PPE ensembles themselves may create additional hazards such as heat stress under extreme conditions. Different PPE ensembles may be used for different site operations and in different portions of the same site.

- 3.6.1 Does the HASP prescribe specific PPE ensembles for each site activity as defined in the site operations/site work plan?

[YES]

[NO, EXPLAIN]

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- 3.6.2 Does the HASP contain, or make reference to, a comprehensive, written PPE program specific to site operations that addresses site hazards, duration of site activity, limitations of PPE during temperature extremes, and PPE selection, use, maintenance and storage, decontamination procedures, training and proper fitting, donning and doffing procedures, inspection, and in-use monitoring?

[YES]

[NO, EXPLAIN]

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3.6.3

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3.6.4

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SUMMARY OF RESPONSES

[YES]\_\_\_\_

[NO, EXPLAIN]\_\_\_\_

### 3.7 Frequency and Types of Air Monitoring, Personnel Monitoring, and Environmental Sampling Techniques - 29 CFR 1910.120(h)

A comprehensive, site-specific air monitoring program must evaluate the exposure potential of all identified and suspected chemical contaminants that could result from all site activities. Typically, such a program consists of two types of air monitoring. First, in 29 CFR 1910.1001-1048, OSHA has published specific personal exposure monitoring requirements for 23 chemical

substances including benzene and formaldehyde. The site-specific air monitoring program must meet any applicable requirements as described therein. The program must characterize representative personal exposures. Personal sampling techniques, such as passive dosimeters, diffusion tubes, and charcoal tube sampling with pumps and subsequent laboratory analyses, are described in the NIOSH Manual of Analytical Methods, 3rd Edition (1984).

Second, the program must describe real time air monitoring protocols using direct reading instruments for each site activity as appropriate. These monitoring protocols must describe the frequency and location of all real time monitoring activity, based upon the nature of the site activity. Periodic real time monitoring must be performed, at a minimum, whenever site work begins, operations change, work begins on a different portion of the site, any invasive site activity begins, contaminants other than those previously identified are being handled, personnel begin to handle obviously contaminated materials or personnel are handling leaking drums or containers. Monitoring efforts should focus on personnel most likely to receive the highest exposures and on all personnel likely to be exposed to any substance above the OSHA-Permissible Exposure Limit (OSHA-PEL). OSHA has recently revised its list of air contaminants and their accompanying standards. These air contaminants and their respective OSHA-PELs are available in Air Contaminants - Permissible Exposure Limits; OSHA 3112; 1989.

- 3.7.1 Does the HASP indicate that upon initial entry, representative air monitoring shall be conducted to identify IDLH conditions, exposure above OSHA-PELs or other published exposure levels including exposure to radiation, flammable atmospheres, and/or oxygen deficient atmospheres?

[YES]

[NO, EXPLAIN]

---

---

- 3.7.2 Does the HASP describe the components of an air monitoring program that addresses all known and suspected site contaminants for all site activities?

[YES]

[NO, EXPLAIN]

---

---

- 3.7.3 Are any chemical substances listed in 29 CFR 1910.1001-1048 known or expected to be on-site?

[YES]

[NO, EXPLAIN]

---

---

If question "3" was answered [YES], does the HASP prescribe personal monitoring programs to meet the specific personal monitoring requirements described in that rule?

[YES]

[NO, EXPLAIN]

---

---

3.7.4 Does the HASP specify regular maintenance and calibration of all real time air monitoring instruments?

[YES]

[NO, EXPLAIN]

---

---

3.7.5

---

---

3.7.6

---

---

SUMMARY OF RESPONSES

[YES]\_\_\_

[NO, EXPLAIN]\_\_\_

### 3.8 Confined Space Entry Procedures - 29 CFR 1910.120(j)(9)

If confined space entries are anticipated during site activities, then confined space entry procedures should be detailed in the HASP. Entry into an abandoned building or a storage vessel may be examples of confined space entries.

3.8.1 If confined space entry is anticipated on-site, does the HASP contain a section on procedures for confined space entry?

[YES]

[NOT APPLICABLE]

[NO, EXPLAIN]

---

---

A [NOT APPLICABLE] response may indicate that confined space entry on-site is not anticipated.

NOTE: During the field audit, verify that the confined space entry procedures provided in the HASP are appropriate to field conditions.



3.8.2 \_\_\_\_\_  
\_\_\_\_\_

3.8.3 \_\_\_\_\_  
\_\_\_\_\_

SUMMARY OF RESPONSES [YES]\_\_\_\_ [NO, EXPLAIN]\_\_\_\_

3.9 Spill Containment Program - 29 CFR 1910.120(j)

In a spill/release of a hazardous chemical on-site, the HASP should contain detailed information in a spill containment program. The elements that may need to be addressed in the spill containment program include:

Drum and Container Handling  
Opening of Drums and Containers  
Material Handling Equipment  
Radioactive Wastes  
Shock Sensitive Wastes  
Laboratory Waste Packs  
Sampling of Drum and Container Contents  
Shipping and Transport of Drums and Containers  
Appropriate Procedures for Tank and Vault Entry

3.9.1 Does the HASP contain a section addressing elements of a spill containment program that are relevant to the site?

[YES] [NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

3.9.2 Where there is a potential for a major spill, does the HASP provide adequate information for the containment and isolation of the entire volume of any hazardous substance being transferred?

[YES] [NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

3.9.3 \_\_\_\_\_  
\_\_\_\_\_

3.9.4 \_\_\_\_\_  
\_\_\_\_\_

SUMMARY OF RESPONSES

[YES]\_\_\_\_

[NO, EXPLAIN]\_\_\_\_

3.10 Decontamination - 29 CFR 1910.120(k)

Decontamination involves the safe removal of chemical contaminants from employees and equipment. Decontamination procedures should be chosen to match the anticipated contaminants for the site.

3.10.1 Does the HASP contain a section on decontamination of employees and equipment?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

3.10.2 Are the decontamination procedures in the HASP appropriate for the anticipated on-site contaminants?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

3.10.3 Does the HASP provide for monitoring of decontamination procedures by the site health and safety supervisor?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

3.10.4 \_\_\_\_\_  
\_\_\_\_\_

3.10.5 \_\_\_\_\_  
\_\_\_\_\_

SUMMARY OF RESPONSES

[YES]\_\_\_\_

[NO, EXPLAIN]\_\_\_\_

### 3.11 Emergency Response Plan - 29 CFR 1910.120(1)

Hazardous waste sites can present high hazard environments. Therefore, a program addressing potential emergency situations, must be included in the HASP. Such a contingency plan should be communicated to employees on-site through the HASP, as well as through safety meetings and briefings. The emergency response plan portion of the HASP should be sufficiently detailed to insure prompt, safe evacuation of all employees from the site in the event of an emergency. It is recommended that the auditor call the phone numbers provided in the HASP for fire, police, ambulance, and hospital to determine the accuracy of these phone numbers. A method for determining wind direction that is visible to employees in the event of a site evacuation is useful in the HASP.

- 3.11.1 Does the HASP contain a separate section for the emergency response plan that is available for inspection and copying by employees, their representatives, OSHA personnel, and other governmental agencies with relevant responsibilities?

[YES]

[NO, EXPLAIN]

---

---

- 3.11.2 Does the emergency response plan in the HASP provide for on-site emergencies by addressing the following elements?

- 3.11.2.1 Pre-emergency planning?

[YES]

[NO, EXPLAIN]

---

---

- 3.11.2.2 Personnel roles, lines of authority, and communication?

[YES]

[NO, EXPLAIN]

---

---

- 3.11.2.3 Emergency recognition and prevention?

[YES]

[NO, EXPLAIN]

---

---

3.11.2.4 Safe distances and places of refuge in the event of an unexpected chemical spill/release?

[YES]

[NO, EXPLAIN]

---

---

3.11.2.5 Site security and control?

[YES]

[NO, EXPLAIN]

---

---

3.11.2.6 Evacuation routes and procedures?

[YES]

[NO, EXPLAIN]

---

---

3.11.2.7 Decontamination procedures not covered in other parts of the HASP?

[YES]

[NO, EXPLAIN]

---

---

3.11.2.8 Emergency medical treatment and first aid?

[YES]

[NO, EXPLAIN]

---

---

3.11.2.9 Emergency alerting and response procedures?

[YES]

[NO, EXPLAIN]

---

---

3.11.2.10 Procedure for critique of response and follow-up?

[YES]

[NO, EXPLAIN]

---

---

3.11.2.11 PPE and emergency equipment?

[YES]

[NO, EXPLAIN]

---

---

3.11.2.12 Site topography, layout, and prevailing weather conditions?

[YES]

[NO, EXPLAIN]

---

---

SUMMARY OF RESPONSES

[YES]\_\_\_\_

[NO, EXPLAIN]\_\_\_\_

## CHAPTER 4

### HEALTH AND SAFETY FIELD REVIEW

In the field verification portion of the EPA Audit Guidelines, the user determines the adequacy of health and safety measures in the field. Many of the questions that follow can be answered by observing field activities, interviewing field personnel, and reviewing the written health and safety program. Many questions will provide space for the user of the EPA Audit Guidelines to verify responses from other field personnel. These questions are followed by: "Field Verification

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_." Generally, the questions will elicit different responses from field personnel. These questions should be answerable by most field personnel. For instance, questions that provide for additional responses will not be those that can be answered by the EPA Audit Guidelines user through field observation. Certain questions do not require verification by more than one knowledgeable person and, as such, would not be questions that warrant additional field verification.

#### 4.1. Informational Programs - 29 CFR 1910.120(b) and (i)

It is the employer's responsibility to develop and implement a written safety and health program consistent with 29 CFR 1910.120(b) - Safety and health program.

- 4.1.1 Has the employer informed workers or their representatives of the site emergency response procedures and any potential fire, explosion, health, safety, or other hazards of the hazardous waste operation that have been identified?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 4.1.2 Is the site HASP available on-site for inspection by employees, designated representatives of the employees, EPA, and OSHA personnel (when applicable)?

[YES]

[NO, EXPLAIN]

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---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 4.1.3 Have health and safety briefings been held prior to the start of site activities and as necessary, to insure that employees remain apprised of the HASP?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 4.1.3 Are inspections of the site being conducted by the site safety and health supervisor or designee to verify compliance with the plan?

(NOTE: It is the employer's responsibility to correct any deficiencies in the site HASP.)

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 4.1.5 \_\_\_\_\_  
\_\_\_\_\_

- 4.1.6 \_\_\_\_\_  
\_\_\_\_\_

SUMMARY OF RESPONSES [YES] \_\_\_\_\_ [NO, EXPLAIN] \_\_\_\_\_

#### 4.2 Site Control - 29 CFR 1910.120(d)

Site control should "minimize potential contamination of workers, protect the public from the site's chemical and physical hazards, facilitate work activities, and prevent vandalism."<sup>1</sup> In accordance with 29 CFR 1910.120(d)(3), the site control plan must include a site map, site work zones, use of a "buddy system," site communications, standard operating procedures or safe work practices, and identification of nearest medical assistance. Often sites are divided into exclusion zone(s), contamination reduction zone(s), and a support zone.

---

<sup>1</sup> Hazardous Waste Handbook for Health and Safety, p. 149.

4.2.1 Is there a site map that is available to employees?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

NOTE: It is useful if this map depicts such details as topographic features, prevailing wind direction, location of buildings, bodies of water, and known locations of any chemical wastes?

4.2.2 Are site work zones clearly defined on-site (e.g., banner guard or other appropriate indicators)?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.2.3 Does the site control program indicate site work zones (e.g., exclusion zone(s), contamination reduction zone(s), and support zones)?

[YES]

[NO, EXPLAIN]

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---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.2.4 Are on-site communication systems such as walkie talkies or blasting horns available to alert employees in the event of a site evacuation?

[YES]

[NO, EXPLAIN]

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---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_



4.2.5 Has the route to the nearest comprehensive medical treatment facility been made available to on-site employees?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.2.6 Is the site perimeter indicated appropriately, (e.g., existing fenceline, boundary markings, security patrol) and labeled with appropriate warning signs to alert nearby residents to the potential on-site hazards?

[YES]

[NOT AVAILABLE]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.2.7 Are emergency phone numbers conspicuously posted at the site?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.2.8 \_\_\_\_\_

\_\_\_\_\_

4.2.9 \_\_\_\_\_

\_\_\_\_\_

SUMMARY OF RESPONSES

[YES]\_\_\_\_

[NO, EXPLAIN]\_\_\_\_

#### 4.3 Training - 29 CFR 1910.120(e)

Training is required for all employees who engage in hazardous waste field activities. These requirements include initial off-site health and safety training, supervised on-the-job training, and annual health and safety refresher training.

On-site managers or supervisors with direct responsibility for supervision of employees engaged in hazardous waste operations require

additional training. To determine field compliance with training requirements, the users should interview employees, request documentation from employees and/or their home office, and determine employee proficiency through observation and requests of employees to demonstrate proficiency.

- 4.3.1 Do all employees working on-site have documentation available to indicate initial health and safety training?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 4.3.2 Do all employees working on-site have documentation available which meets the on-the-job training requirements for 29 CFR 1910.120(e)?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 4.3.3 Do all employees working on-site who had their initial health and safety training one year or more ago, have documentation available indicating completion of an eight hour annual health and safety refresher training course?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 4.3.4 Do on-site managers and supervisors who are directly responsible for supervision of employees engaged in hazardous waste operations have documentation of additional training relating to site operations?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.3.5 Can the employer show by documentation or certification that an employee's work experience and/or training has resulted in training equivalent to that required of the employee by the standard?

[YES]

[NOT APPLICABLE]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.3.6 Have the employees working on-site been trained appropriately in safety, health, and other hazards present on the site?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.3.7 Have the employees working on-site received appropriate training in the use of PPE?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.3.8 Have the employees working on-site received appropriate training in medical surveillance requirements, including recognition of symptoms and signs that might indicate overexposure to hazards?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.3.9 Have the employees working on-site received training in the following elements of the site specific HASP?

4.3.9.1 Site control measures?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.3.9.2 Decontamination procedures?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.3.9.3 Emergency response plan?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.3.9.4 Confined space entry procedures?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.3.10 Are individuals who may be exposed to unique or special hazards provided with sufficient training beyond minimum training requirements to ensure their safety when performing such operations?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 4.3.11 Do employees participating in field activities have an appropriate level of training to perform their job function and responsibility as indicated by an appropriate license or certification (e.g., license indicating proficiency on the forklift)?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.3.12 \_\_\_\_\_  
\_\_\_\_\_

4.3.13 \_\_\_\_\_  
\_\_\_\_\_

SUMMARY OF RESPONSES

[YES]\_\_\_\_

[NO, EXPLAIN]\_\_\_\_

#### 4.4 Medical Surveillance - 29 CFR 1910.120(f)

A medical monitoring program is essential to assess and monitor workers' health and fitness. In addition, OSHA recommends a medical evaluation for employees required to wear a respirator (29 CFR Part 1910.134[b][10]), and certain OSHA standards include specific medical requirements (e.g., 29 CFR Part 1910.95 and 29 CFR Parts 1910.1001 through 1910.1048). Members of hazardous materials' teams are also required to be enrolled in a medical monitoring program.

Medical examinations, provided without cost to the employee, must include a medical and work history with special emphasis on symptoms related to the handling of hazardous substances and health hazards. Special emphasis should also be placed on fitness for duty, including the ability to wear any required PPE under conditions that may be expected at the work site (e.g., temperature extremes). The employer should obtain and furnish the employee with a copy of a written statement from the examining physician, documenting that the employee is qualified to work at hazardous waste sites and to wear respiratory protection equipment. All medical records should be maintained as confidential and made available to the employee or his designee upon written request.

4.4.1 Do the on-site employees participate in a medical monitoring program that meets the requirements of 29 CFR 1910.120(f)?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.4.2 Do employees who wear respiratory protection at hazardous waste sites for 30 days or more per year or may be exposed to hazardous substances at or above OSHA-PELs or other published exposure limits have documentation available (in their home office or on the site) that indicates they have had baseline physicals and receive yearly physicals consistent with 29 CFR 1910.120(f)?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.4.3 Are employees provided with medical reports from the attending physician in writing?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.4.4 Have employees received a verbal medical briefing regarding the results of their physicals?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.4.5 Are employee medical records available upon request?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.4.6 Have the employees working on-site been trained in medical surveillance requirements, including recognition of symptoms and signs that might indicate over-exposure to physical or chemical hazards [29 CFR 1910.120(e)]?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.4.7 Do employees who wear respiratory protection at hazardous waste sites less than 30 days per year have documentation available (in their home office or on the site) that certify that they are physically able to wear a respirator (i.e., 29 CFR 1910.134)?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.4.8 \_\_\_\_\_  
\_\_\_\_\_

4.4.9 \_\_\_\_\_  
\_\_\_\_\_

SUMMARY OF RESPONSES

[YES]\_\_\_\_

[NO, EXPLAIN]\_\_\_\_

#### 4.5 Engineering Controls, Work Practices, and Personal Protective Equipment For Employee Protection - 29 CFR 1910.120(g)

The following references cited in Appendix G of the Guidelines would be particularly helpful for evaluating compliance with the PPE provisions in the HASP:

Personal Protective Equipment for Hazardous Material Incidents: A Selection Guide, 1984;

Guidelines for the Selection of Personal Protective Equipment, 3rd Edition, 1987;

Hazardous Waste Inspections Reference Manual, 1986; and

Performance of Protective Clothing, 1986.

To determine if an employee is adequately trained in the use of PPE, on-site interviews should be conducted to ascertain the employee's familiarity with the PPE. It may also be appropriate to request that an employee demonstrate his/her knowledge of PPE by demonstrating its use in the Support Zone. (The employee should not be requested to demonstrate PPE knowledge in the Exclusion Zone, especially since the employee may have an inadequate understanding of the PPE in question.)

29 CFR 1910.120(g) requires establishment of a PPE program for hazardous waste operations that addresses:

- Site hazards;
- PPE selection;
- PPE use;
- Work mission duration;
- PPE maintenance and storage;
- PPE decontamination and disposal;
- PPE training and proper fitting;
- PPE donning and doffing procedures;
- PPE inspection procedures prior to, during, and after use;
- Evaluation of the effectiveness of the PPE program; and
- Limitations during temperature extremes, heat stress, and other medical considerations.

##### 4.5.1 Personal Protective Equipment - General

Appendix D of the EPA Audit Guidelines provides guidance on appropriate PPE for EPA's Levels A, B, C, and D.



4.5.1.1 Is a written PPE program that meets the aforementioned 11 elements including procedures, guidelines, and policy statements regarding the use of PPE, available for inspection?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

If the answer is [NO], ask employee(s) these questions and/or observe for the 11 PPE program element questions below.

a. Are the employees trained regarding on-site hazards?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

b. Are the employees adequately trained in selection of PPE?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

c. Are the employees adequately trained in the use of PPE?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

d. Are the employees informed regarding estimated lengths of time for job tasks and estimated time of project duration?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

e. Do employees maintain and store PPE appropriately?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

f. Do employees know how to decontaminate and dispose of PPE properly?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

g. Are employees fitted properly for PPE?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

h. Do employees know how to don and doff PPE?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- i. Do employees know how to adequately inspect PPE (e.g., inspection of gloves, fully encapsulating suits, etc.) prior to, during, and after use?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- j. Is there a system in place to evaluate the effectiveness of the PPE program?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- k. Are employees knowledgeable about limitations on PPE related to temperature extremes, heat stress, and other appropriate medical considerations?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 4.5.1.2 Are employees at this specific site adequately trained in the use, maintenance, and storage of PPE?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.5.1.3 Is there sufficient PPE available for the personnel involved in the performance of site operations?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.5.1.4 Is health and safety instrumentation (e.g., FID, PID, air sampling pumps, radiation meters) maintained and calibrated on-site?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.5.1.5 Is the PPE in place adequate for the chemical and physical hazards on-site?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.5.1.6 \_\_\_\_\_  
\_\_\_\_\_

4.5.1.7 \_\_\_\_\_  
\_\_\_\_\_

SUMMARY OF RESPONSES

[YES]\_\_\_\_

[NO, EXPLAIN]\_\_\_\_

#### 4.5.2 Respiratory Protection

The following references cited in Appendix G of the EPA Audit Guidelines are particularly helpful for evaluating the respiratory protection provisions in the HASP:

Air Sampling Instruments, 1983;

Guide to Industrial Respiratory Protection, 1987;

Guide to Portable Instruments for Assessing Airborne Pollutants  
Arising from Hazardous Wastes, 1988;

Guidelines for the Selection of Personal Protective Equipment, 3rd  
Edition, 1987;

NIOSH/OSHA Pocket Guide to Chemical Hazards, 1985; and

Practical Guide to Respirator Use in Industry, 1985.

- 4.5.2.1 Is a written respiratory protection program that contains  
written standard operating procedures for selection and use of  
respirators (i.e., 29 CFR 1910.134) present and available for  
inspection on-site?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 4.5.2.2 Have all employees who are working on-site been fit-tested  
successfully for negative pressure respirators in accordance  
with 29 CFR 1910.134?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 4.5.2.3 Do employees who wear respiratory protection at hazardous waste  
sites have documentation available (at the home office or on  
the site) that indicates they have had baseline physicals and  
they receive yearly physicals consistent with 29 CFR  
1910.120(f)?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 4.5.2.4 \_\_\_\_\_  
\_\_\_\_\_

4.5.2.5 \_\_\_\_\_  
\_\_\_\_\_

SUMMARY OF RESPONSES [YES]\_\_\_\_ [NO, EXPLAIN]\_\_\_\_

4.5.3 PPE Physical Hazards

A new answer category [NOT APPLICABLE] was added to each of the questions in this section because oftentimes specific physical hazards will be unique to a site.

4.5.3.1 If there are overhead hazards (low hanging objects, overhead work) on-site, do employees wear hard hats in these work areas that meet the requirements of 29 CFR 1910.135?

[YES] [NOT APPLICABLE] [NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.5.3.2 If 8-hour time weighted average noise measurements indicate that ambient noise levels may be greater than or equal to 85 dBA, are ear muffs or ear plugs worn by employees on-site as required by 29 CFR 1910.95?

[YES] [NOT APPLICABLE] [NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

NOTE: 29 CFR 1910.95 requires the implementation of a hearing conservation program for employees if time weighted average noise levels equal or exceed 85 dBA.

4.5.3.3 If heat or cold stress is a concern on-site, are engineering and administrative controls (e.g., work/rest regimen) being properly considered to ensure that appropriate PPE can be worn by employees and still be protective for them?

[YES] [NOT APPLICABLE] [NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

NOTE: PPE should always be sufficient to protect employees. Administrative controls should first be addressed as a means to minimize exposure to temperature extremes.

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 4.5.3.4 If radiation (i.e., ionizing or non-ionizing) is a concern on-site, are engineering/administrative controls and/or PPE selection appropriate for the tasks at hand (e.g., use of radiation meters, use of UV goggles by welders)?

[YES] [NOT APPLICABLE] [NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 4.5.3.5 If "hot work" such as welding or cutting is occurring on-site, the following questions apply:

- a. Is appropriate combustible gas indicator (CGI) air monitoring being conducted?

[YES] [NOT APPLICABLE] [NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- b. Is the employee wearing appropriate protective goggles and fire retardant clothing?

[YES] [NOT APPLICABLE] [NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.5.3.6 If there are other unique physical hazards on-site (e.g., explosives, deep and/or rapidly moving water), is appropriate PPE being worn on-site to address such problems?

[YES]

[NOT APPLICABLE]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.5.3.7 \_\_\_\_\_  
\_\_\_\_\_

4.5.3.8 \_\_\_\_\_  
\_\_\_\_\_

SUMMARY OF RESPONSES

[YES]\_\_\_\_

[NO, EXPLAIN]\_\_\_\_

#### 4.6 Monitoring - 29 CFR 1910.120(h)

Two principal approaches are available for identifying and/or quantifying airborne contaminants:

- On-site use of real time instruments; and
- Laboratory analysis of air samples obtained by gas sampling bag, collection media (e.g., filter, sorbent), and/or wet-contaminant collection methods (e.g., impinger method or wet chemistry technique).

All instruments used on-site should be operated in accordance with accompanying equipment manuals. Many of the detector tubes have both positive and negative interferences that are specified in the accompanying literature for the respective detector tube.

Air sampling methods that use charcoal tubes, Tenax<sup>R</sup> tubes, silica gel tubes, and wet chemistry techniques (e.g., impinger methods) will often be necessary to assist in the identification of unknown contaminants.

It is important that users realize that there are many compounds for which there are no real time instruments capable of measuring contamination. As a result, it often is necessary to resort to air sampling with subsequent laboratory analyses. OSHA regulations require particular air sampling procedures, PPE requirements, and recordkeeping for a variety of compounds.

If information from the site characterization indicates a potential for ionizing radiation and/or IDLH conditions on-site or if insufficient information is available to demonstrate otherwise, then air monitoring shall include:



- Monitoring with direct readout instrumentation for ionizing radiation and/or IDLH conditions including toxic, explosive, combustible, and oxygen deficient atmospheres; and
- Visual observation for actual or potential IDLH conditions on-site.

If after site characterization there are indications that the site is safe for start-up operations, a regular air monitoring program must be adhered to during site operations.

- 4.6.1 Is air monitoring being conducted to identify and quantify airborne levels of hazardous substances in order to determine the appropriate level of on-site employee protection?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 4.6.2 Is air monitoring being conducted to first identify Immediately Dangerous to Life or Health (IDLH) levels and other dangerous situations, such as the presence of flammable atmospheres, oxygen deficient environments, toxic levels of airborne contaminants, and radioactive materials?

[YES]

[NO, EXPLAIN]

---



---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 4.6.3 Is air monitoring being performed any time new work begins on a different portion of the site?

[YES]

[NO, EXPLAIN]

---



---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.6.4 Is air monitoring being performed any time that new contaminants are encountered that differ from those initially encountered?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.6.5 Is air monitoring being performed every time a different operation is initiated?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 4.6.6 Is air monitoring being performed whenever employees are working in an area with obvious liquid contamination (e.g., spill, lagoon, leaking drums)?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 4.6.7 Are the employees who are likely to have exposures above established OSHA-PELs participating in a personal air sampling program?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

NOTE: A representative sampling approach may be used as long as it is documented and the selection of employees and monitored chemicals are based on the criteria stated in 29 CFR 1910.120(h).

- 4.6.8 Are there maintenance and calibration logs on-site for the air monitoring equipment?

[YES]

[NO, EXPLAIN]

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If YES, are the calibration logs on-site up to date?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 4.6.9

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4.6.10 \_\_\_\_\_  
\_\_\_\_\_

SUMMARY OF RESPONSES

[YES] \_\_\_\_\_

[NO, EXPLAIN] \_\_\_\_\_

4.7 Handling Drums and Containers - 29 CFR 1910.120(j)

If drums or containers are present on-site, appropriate and specific handling procedures must be established. Employees must be trained in the appropriate procedures for drum handling as well as the hazards associated with drum or container contents. During all drum or container operations (e.g., transfer operations, sampling operations), fire extinguishing equipment must be on hand. During clean-up procedures, drums and containers must meet appropriate DOT, OSHA, and EPA regulations.

4.7.1 Are drums and containers being used for the clean-up on-site?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

If [YES], do the drums meet appropriate DOT, OSHA, and EPA regulations for the wastes they contain?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.7.2 Are all drums and containers inspected for structural integrity before moving?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.7.3 Are employees warned of the potential hazards associated with the contents of drums or containers prior to movement?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.7.4 Is there a potential for a major spill during transfer of drums or containers?

[YES]

[NO, EXPLAIN]

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---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

If [YES], is there a spill containment program in place to contain and isolate the entire volume of the spill?

[YES]

[NO, EXPLAIN]

---

---

4.7.5 Is a detection system being used to estimate location and depth of drums and containers on-site prior to excavation activities?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.7.6 Are drums or containers being handled on-site?

[YES]

[NO, EXPLAIN]

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---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

If [YES], is a fire extinguisher on-site during any drum or container moving operation in the event of a fire?

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.7.7 Does an instructional program for the employee detail procedures for drum or container opening operations on-site?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.7.7.1 Are only required personnel present during drum or container openings and are other personnel at a safe distance from the operation?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.7.7.2 Does an instructional program for the employees indicate either that drum openings will occur remotely with pressure relief or that an appropriate shield will be placed between employee and the drum container during opening?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.7.7.3 Are workers informed not to stand upon or work in proximity to drums (except when the task requires this)?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.7.8 Are sampling procedures for drums, tanks, containers, vaults, etc. appropriately documented and available to employees for review as part of a field sampling plan?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.7.9 \_\_\_\_\_  
\_\_\_\_\_

4.7.10 \_\_\_\_\_  
\_\_\_\_\_

SUMMARY OF RESPONSES [YES]\_\_\_\_ [NO, EXPLAIN]\_\_\_\_

#### 4.8 Decontamination - 29 CFR 1910.120(k)

All personnel and equipment should be properly decontaminated prior to leaving a site. The decontamination procedures shall be developed and communicated to employees. The decontamination procedure should, at a minimum, include the following:

- Number and location of decontamination stations;
- Required decontamination equipment;
- Appropriate decontamination methods;
- Procedures to prevent contamination of clean areas, employee contact, and equipment contact;
- Methods and procedures to minimize worker contact with contaminants during removal of PPE; and

- Methods for disposing of clothing and equipment that are not completely decontaminated.

Decontamination methods could involve: (1) physically removing contaminants; (2) neutralizing contaminants by chemical detoxification or disinfection; or (3) removing contaminants through a combination of both physical and chemical means. The types, locations, physical states, and concentrations of contamination present will determine the appropriate method of decontamination.

In general, for Level B and Level C activities, the initial decontamination steps in the Contamination Reduction Zone (CRZ) are performed by individuals who are one level of personal protection below those who are exiting from the exclusion zone. All decontamination workers are in a potentially contaminated area and must themselves be decontaminated before entering a clean zone.

- 4.8.1 Was the decontamination plan communicated to employees and implemented prior to any employee or equipment entering areas where potential exposure to hazardous substances exists?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 4.8.2 Are standard operating procedures and good work practices being used to minimize employee contact with hazardous substances and with equipment that has contacted hazardous substances?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 4.8.3 Are decontamination areas situated to minimize the potential for contamination of uncontaminated employees or equipment (i.e., is the CRZ located properly)?

[YES]

[NO, EXPLAIN]

---



---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_



- 4.8.4 Are all employees, clothing, and equipment decontaminated properly prior to leaving a contaminated area?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 4.8.5 Are all protective clothing and equipment decontaminated, cleaned, laundered, maintained, or replaced as needed to maintain effectiveness?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 4.8.6 Do established equipment drop-off, decontamination, and protective clothing doffing procedures minimize employee exposures (i.e., is contaminated protective clothing being decontaminated prior to removal by the employee)?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 4.8.7 Are all equipment and solvents used for decontamination disposed of or decontaminated properly?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.8.8 Where decontamination procedures indicate a need for showers and change rooms, are soap, hot and cold water, individual clean towels, and separate storage facilities for street and work clothes available as stated in 29 CFR 1910.141?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.8.9 Are unauthorized employees (e.g., administrative and support staff) denied access to decontamination areas, decontamination equipment, and change rooms?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.8.10

\_\_\_\_\_  
\_\_\_\_\_

4.8.11

\_\_\_\_\_  
\_\_\_\_\_

SUMMARY OF RESPONSES

[YES] \_\_\_\_\_

[NO, EXPLAIN] \_\_\_\_\_

#### 4.9 Emergency Response - 29 CFR 1910.120(1)

At a minimum, the emergency response section of the HASP must include the following:

- Pre-emergency planning;
- Personnel roles, lines of authority and communication;
- Emergency recognition and prevention;
- Safe distances and places of refuge;
- Site security and control;
- Evacuation routes and procedures;
- Decontamination procedures that are not already covered elsewhere in the HASP;
- Emergency medical treatment and first aid;
- Emergency alerting and response procedures;
- Procedure for critique of response and follow-up;
- PPE and emergency equipment;
- Site topography, layout, and prevailing weather conditions; and
- Procedures for reporting incidents to local, state, and Federal governmental agencies.

In general, the emergency response section should be a discrete section of the HASP and should be periodically reviewed in response to new or changing site conditions or information. The aforementioned elements of the emergency response plan should be verified by the EPA Audit Guidelines user in the field.

- 4.9.1 Are personnel roles, lines of authority, and communication among employees evident in the field (e.g., is the person who would be in charge during an emergency incident clearly identifiable?)

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.9.2 Are employees able to demonstrate emergency recognition and prevention?

[YES]

[NO, EXPLAIN]

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---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.9.3 Are site security and control measures evident in the field?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.9.4 Are employees aware of evacuation routes and procedures?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.9.5 Are employees familiar with decontamination procedures?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.9.6 Are emergency medical treatment and first aid available to employees?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.9.7 Are emergency alerting and response procedures addressed in evidence in the field?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.9.8 Is a procedure in place to enable field personnel to critique a response and to provide follow-up actions in the field?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.9.9 Are PPE and emergency equipment readily available to employees in the field?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.9.10 Are procedures in place for reporting emergencies to local, state, and federal governmental agencies?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

SUMMARY OF RESPONSES

[YES]\_\_\_\_

[NO, EXPLAIN]\_\_\_\_

4.10. Illumination - 29 CFR 1910.120(m)

The provisions for illumination of hazardous waste operations are established in OSHA's industry requirements for illumination at construction sites, 29 CFR 1926.56. For general work areas, five foot candles is the recommended minimum illumination intensity for site work. If work may be performed in dimly lighted areas, the HASP should provide contingency measures for additional on-site lighting, along with a recommendation for the use of a light meter to determine illumination intensity.

4.10.1 If site work is anticipated in dimly lighted areas, is additional lighting provided?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.10.2

\_\_\_\_\_  
\_\_\_\_\_

4.10.3

\_\_\_\_\_  
\_\_\_\_\_

SUMMARY OF RESPONSES

[YES]\_\_\_\_

[NO, EXPLAIN]\_\_\_\_

4.11. Sanitation at Temporary Workplaces - 29 CFR 1910.120(n)

During the field verification for good health and safety practices on-site, the user should seek to answer the following questions pertaining to sanitary conditions on-site.

4.11.1 Is potable water labeled as safe for drinking?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.11.2 Are nonpotable water sources labeled as unfit for drinking, washing, and cooking purposes?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.11.3 If there are fewer than 20 employees on-site, is there a minimum of one toilet available?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

NOTE: Mobile work crews with transportation readily available to equivalent toilet facilities are exempt from the requirements of this paragraph for sanitation facilities.

4.11.4 If there are greater than 20 employees on-site, have additional toilets and urinals been provided for each additional 40 employees?

[YES]

[NO, EXPLAIN]

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---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.11.5 Is food handled in accordance with local food handling regulations?

[YES]

[NO, EXPLAIN]

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---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.11.6 If temporary sleeping quarters are present, are they heated, ventilated, and lighted?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.11.7 Are washing facilities away from hazardous substances and adequate to permit employees to remove hazardous substances from their bodies?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4.11.8 \_\_\_\_\_  
\_\_\_\_\_

4.11.9 \_\_\_\_\_  
\_\_\_\_\_

SUMMARY OF RESPONSES

[YES]\_\_\_\_

[NO, EXPLAIN]\_\_\_\_



## CHAPTER 5

### OFF-SITE EMERGENCY RESPONSE REVIEW 29 CFR 1910.120(q)

This section addresses the requirements for personnel engaged in off-site operations in response to actual or potential releases of hazardous chemicals. These off-site emergency response operations may occur anywhere. The typical activities covered by this section are transportation accidents and hazardous substance releases at chemical manufacturing facilities (such as the release that occurred in Bhopal, India); however, it would normally not include established cleanup operations (e.g., Federal EPA Superfund sites); voluntary cleanup operations at uncontrolled hazardous waste sites recognized by government bodies; and normal operations or corrective actions involving hazardous wastes at treatment, storage, or disposal (TSD) facilities.

The off-site emergency response personnel covered by the EPA standard include both compensated and non-compensated State and local emergency response personnel. EPA's definition of "employee," therefore, includes volunteer fire fighters.

In general, the requirements for off-site emergency response workers are similar as those provided in Section IV of the EPA Audit Guidelines for hazardous waste site workers. By referring to the subsections on site control (pp. 27-29), personal protective equipment (pp. 36-43), air monitoring (pp. 43-47), handling drums and containers (pp. 47-50), decontamination (pp. 50-53), and illumination (p. 57) in Section IV, the EPA Audit Guidelines user will have additional questions available that may be appropriate to the off-

site response at hand. These questions were not restated in Section V because many of them may not be relevant to the particular off-site emergency response. However, there are four basic areas that are covered in Section V:

- **Planning.** An employer's emergency response plan must be developed and made available to employees, their representatives, and OSHA/EPA personnel.
- **Training.** Requirements are based on the duties and functions of each responder. Skill and knowledge levels vary from the awareness level of first responders who witness or discover the release, to the hazardous materials specialists responsible for containment and clean up.
- **Equipment.** Chemical protective clothing and personal protective equipment (PPE) are required for some personnel.
- **Medical surveillance.** Baseline physicals and medical consultation are required for some personnel.

The principal difference in requirements for emergency responders and hazardous waste site workers is the training requirements, which vary for emergency responders according to their level of responsibility and terminology.

## 5.1 Emergency Response Plan - 29 CFR 1910.120(l) and (q)

A written emergency response plan must be developed and implemented to handle anticipated emergencies before the start of emergency response operations.

**NOTE:** To avoid duplication of effort with SARA Title III plans, emergency response organizations may use the local emergency response plan, state emergency response plan, or both as part of their emergency response plan.

At a minimum, the emergency response plan must address the following:

- Pre-emergency planning and coordination with outside parties;
- Personnel roles, lines of authority, training, and communication;
- Emergency recognition and prevention;
- Safe distances and places of refuge;
- Site security and control;
- Evacuation routes and procedures;
- Decontamination;
- Emergency medical treatment and first aid;
- Emergency alerting and response procedures;
- Procedure for critique of response and follow-up;
- PPE and emergency equipment; and
- Use of the local or state emergency response plan.

5.1.1. Does the emergency response plan reflect pre-emergency planning and coordination with outside parties?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.1.2 Are personnel roles, lines of authority, training, and communication provided in the emergency response plan?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.1.3 Does the emergency response plan address emergency recognition and prevention?

[YES]

[NO, EXPLAIN]

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---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.1.4 Does the emergency response plan address safe distances, places of refuge, site security and control?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.1.5 Does the emergency response plan provide information on decontamination of personnel and equipment?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.1.6 Are emergency medical treatment and first aid available to employees?

[YES]

[NO, EXPLAIN]

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---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.1.7 Are emergency alerting and response procedures addressed in the plan and in evidence in the field?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.1.8 Does the emergency response plan provide a procedure for critique of response and follow-up?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.1.9 Does the emergency response plan provide for the use of personal protective equipment and emergency equipment, and are they being used in the field?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.1.10 Does the emergency response plan make use of the local or state emergency response plan?

[YES]

[NOT APPLICABLE]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.1.11 \_\_\_\_\_  
\_\_\_\_\_

5.1.12 \_\_\_\_\_  
\_\_\_\_\_

SUMMARY OF RESPONSES [YES] \_\_\_\_\_ [NO, EXPLAIN] \_\_\_\_\_

5.2 Procedures for Handling Emergencies - 29 CFR 1910.120(q)(3)

5.2.1 Has an individual been identified as being in charge of the Incident Command System (ICS)?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.2.2 Has a safety official been identified by the individual in charge of the Incident Command System (ICS)?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.2.3 Are back-up personnel readily available with appropriate equipment to provide assistance or rescue?

[YES]

[NO, EXPLAIN]

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---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.2.4 When a fire is involved are employees suited in PPE in accordance with 29 CFR 1910.156(e) (e.g., foot and leg protection, self contained breathing apparatus)?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.2.5 \_\_\_\_\_  
\_\_\_\_\_

5.2.6 \_\_\_\_\_  
\_\_\_\_\_

SUMMARY OF RESPONSES

[YES]\_\_\_\_

[NO, EXPLAIN]\_\_\_\_

5.3 Skilled Support Personnel - 29 CFR 1910.120(q)(4)

In addition to these specialist employees, it may be necessary in the course of responding to a hazardous materials incident to call upon the services of support personnel with special skills to perform temporary emergency support work. These personnel are not required to meet the training requirements for emergency responders, but must be given an initial briefing prior to their participation and be provided with any health and safety information provided to other employees.

5.3.1 Do skilled support personnel (e.g. crane operator) receive initial briefings that acquaint them with PPE, chemical hazards, and job duties to be performed?

[YES]

[NO, EXPLAIN]

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.3.2 Does the employer provide the same health and safety information to skilled support personnel as supplied to employees?

[YES]

[NO, EXPLAIN]

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.3.3 \_\_\_\_\_  
\_\_\_\_\_

5.3.4 \_\_\_\_\_  
\_\_\_\_\_

SUMMARY OF RESPONSES

[YES]\_\_\_\_

[NO, EXPLAIN]\_\_\_\_

#### 5.4 Training Requirements - 29 CFR 1910.120(q)(6)

Employees who, in the course of their regular job duties, provide technical advice or assistance at a hazardous substance release incident, must receive training or demonstrate competence annually according to their specific level of responsibility.

The varying skill levels for off-site emergency responders are:

- First responder awareness level. Individuals who are likely to witness or discover a hazardous substance release and who have been trained to initiate an emergency response sequence by notifying the proper authorities of the release.
- First responder operations level. Individuals who respond to releases or potential releases of hazardous substances as part of the initial response to the site for purposes of protecting nearby persons, property, or the environment from the effects of the release. Their function is to contain the release from a safe distance, keep it from spreading, and prevent exposures.
- Hazardous materials technician. Individuals who respond to releases or potential releases for the purpose of stopping the release. They assume a more aggressive role than a first responder at the operations level in that they will approach the point of release in order to plug, patch, or otherwise stop the release.
- Hazardous materials specialist. Individuals who respond with and provide support to hazardous materials technicians. Their duties parallel those of the hazardous materials technician, however, those duties require a more directed or specific knowledge of the various substances they may be called upon to contain. The hazardous materials specialist also acts as the site liaison with Federal, State, local, and other government authorities in regards to site activities.
- On scene incident commander. Individuals who assume control of the incident scene. They have the ability to implement the employer's incident command system and emergency response plan, and they are familiar with the State and Federal Regional Response Team plans.
- Hazardous materials response (HAZMAT) team. An organized group of employees, who are expected to perform work to handle and control actual or potential leaks or spills of hazardous substances requiring possible close approach to the substance. The team members perform responses to releases or potential releases of hazardous substances for the purpose of control or stabilization of the incident. A HAZMAT team is not a fire brigade nor is a typical brigade a HAZMAT team. A HAZMAT team, however, may be a separate component of a fire brigade or fire department.

##### 5.4.1 First Responder Awareness Level

- 5.4.1.1 Does the "first responder at the awareness level" have sufficient training or sufficient experience to demonstrate competency to initiate an emergency response sequence by notifying the appropriate authorities of a spill/release?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.4.1.2 Does the "first responder at the awareness level" have an understanding of the employer's emergency response plan including site security and control?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.4.1.3 Does the "first responder at the awareness level" have the ability to realize the need for additional resources to address the spill/release?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.4.1.4 \_\_\_\_\_  
\_\_\_\_\_

5.4.1.5 \_\_\_\_\_  
\_\_\_\_\_

SUMMARY OF RESPONSES

[YES]\_\_\_\_

[NO, EXPLAIN]\_\_\_\_

5.4.2 First Responder Operations Level

5.4.2.1 Does the "first responder at the operations level" have eight hours of training or sufficient experience to respond to releases or potential releases of hazardous substances as part of the initial response?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_



5.4.2.2 Does the "first responder at the operations level" have knowledge of basic hazard and risk assessment techniques to help ensure protection of nearby persons, property, and the environment?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.4.2.3 Does the "first responder at the operations level" know how to perform basic control, containment and/or confinement operations within the capabilities of the resources and PPE available on scene?

[YES]

[NO, EXPLAIN]

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---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.4.2.4 \_\_\_\_\_  
\_\_\_\_\_

5.4.1.5 \_\_\_\_\_  
\_\_\_\_\_

SUMMARY OF RESPONSES [YES]\_\_\_\_ [NO, EXPLAIN]\_\_\_\_

5.4.3 Hazardous Materials Technician

5.4.3.1 Does the "hazardous materials technician" have at least 24 hours of first responder operations level training?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.4.3.2 Does the "hazardous material technician" have sufficient competency, as certified by the employer, to stop a spill/release through active measures including plugging and patching of the damaged container from which the spill/release occurred?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.4.3.3 Can the "hazardous materials technician" function within an assigned role in the Incident Command System?

[YES]

[NO, EXPLAIN]

---

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.4.3.4 Does the "hazardous materials technician" understand and implement decontamination procedures?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.4.3.5 \_\_\_\_\_  
\_\_\_\_\_

5.4.3.6 \_\_\_\_\_  
\_\_\_\_\_

SUMMARY OF RESPONSES

[YES]\_\_\_\_

[NO, EXPLAIN]\_\_\_\_

5.4.4 Hazardous Materials Specialist

- 5.4.4.1 Does the "hazardous materials specialist" have at least 24 hours of training equal to the technician level?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 5.4.4.2 Does the "hazardous materials specialist" have the level of knowledge that the hazardous materials technician has as well as specific knowledge of the chemical substances that may need to be contained?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 5.4.4.3 Does the "hazardous materials specialist" possess the necessary knowledge to act as site liaison with Federal, State, and local governments regarding site activities?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 5.4.4.4 Is the "hazardous materials specialist" able to select and use proper specialized chemical PPE that is provided for spill/release response?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.4.4.5 Is the "hazardous materials specialist" able to determine and implement decontamination procedures?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.4.4.6 Does the "hazardous materials specialist" understand chemical, radiological, and toxicological terminology and behavior?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.4.4.7

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5.4.4.8

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SUMMARY OF RESPONSES

[YES]\_\_\_\_

[NO, EXPLAIN]\_\_\_\_

5.4.5 On Scene Incident Commander

5.4.5.1 Does the "on scene incident commander" have at least 24 hours of first responder operations level training?

[YES]

[NO, EXPLAIN]

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---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 5.4.5.2 Does the "on scene incident commander" have sufficient competency, as certified by the employer, to assume control of the incident beyond that of the first responder?

[YES]

[NO, EXPLAIN]

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---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 5.4.5.3 Does the "on scene incident commander" know how to implement the employer's incident command system and emergency response plan, and the local emergency response plan?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 5.4.5.4 Does the "on scene incident commander" know and understand the hazards and risks associated with employees working in chemical protective clothing?

[YES]

[NO, EXPLAIN]

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---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 5.4.5.5 Does the "on scene incident commander" know and understand the importance of decontamination procedures?

[YES]

[NO, EXPLAIN]

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---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 5.4.5.6 \_\_\_\_\_  
\_\_\_\_\_

5.4.5.7 \_\_\_\_\_  
\_\_\_\_\_

SUMMARY OF RESPONSES [YES]\_\_\_\_ [NO, EXPLAIN]\_\_\_\_

5.5 Refresher Training - 29 CFR 1910.120(q)(8)

Employees must take an annual refresher course or demonstrate competency in their subject areas each year. The employer must provide a record of training or demonstrated competency for the employee. If the employer provides a record regarding demonstrated competency by an employee, the employer shall also keep a record regarding the method by which competency was demonstrated.

5.5.1 Do trained employees receive annual refresher training of sufficient content and duration to maintain their competencies on at least an annual basis?

[YES] [NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.5.2 Does the employer have available a statement of annual refresher training or competency demonstrated on an annual basis for each employee?

[YES] [NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.5.3 If the employer makes use of a statement of competency for a specialist employee, does the employer keep a record of the methodology used to demonstrate competency?

[NOT APPLICABLE] [YES] [NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.5.4 \_\_\_\_\_  
\_\_\_\_\_

5.5.5 \_\_\_\_\_  
\_\_\_\_\_

SUMMARY OF RESPONSES

[YES] \_\_\_\_\_

[NO, EXPLAIN] \_\_\_\_\_

**5.6 Medical Surveillance and Consultation - 29 CFR 1910.120(f) and (q)(9)**

Hazardous Materials Specialists [29 CFR 1910.120(q)(5)(iv)] and members of Hazardous Materials Teams (HAZMAT) must receive baseline physicals and be part of a medical surveillance program. This program must include medical consultation following exposure to hazardous substances, periodic physicals, a physical upon termination of employment, and medical recordkeeping.

5.6.1 Do members of an organized and designated HAZMAT team and Hazardous Materials Specialists receive a baseline physical?

[YES] \_\_\_\_\_  
\_\_\_\_\_

[NO, EXPLAIN] \_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.6.2 Do members of an organized and designated HAZMAT team and Hazardous Materials Specialists receive periodic physicals (at a frequency determined by the attending physician)?

[YES] \_\_\_\_\_  
\_\_\_\_\_

[NO, EXPLAIN] \_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.6.3 Do members of an organized and designated HAZMAT team and Hazardous Materials Specialists receive a physical upon termination of employment or reassignment to a non-HAZMAT job if the employee has not received a physical within the last six months?

[YES] \_\_\_\_\_  
\_\_\_\_\_

[NO, EXPLAIN] \_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.6.4 Do members of an organized and designated HAZMAT team and Hazardous Materials Specialists receive medical attention following the development of signs or symptoms that may indicate possible overexposure to hazardous substances, or when the employee is exposed above the OSHA Permissible Exposure Limits or other established exposure limits in an emergency situation?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.6.5 Does the employer furnish the employee who has received a physical with a written physician's opinion indicating medical results and whether the employee is capable of hazardous materials work?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.6.6 Is medical recordkeeping done in a manner consistent with 29 CFR 1910.20 (Access to Employee Exposure and Medical Records)?

[YES]

[NO, EXPLAIN]

\_\_\_\_\_  
\_\_\_\_\_

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.6.7 \_\_\_\_\_  
\_\_\_\_\_

5.6.8 \_\_\_\_\_  
\_\_\_\_\_

SUMMARY OF RESPONSES

[YES] \_\_\_\_\_

[NO, EXPLAIN] \_\_\_\_\_



5.7 Chemical Protective Clothing - 29 CFR 1910.120(g) and (q)(10)

A personal protective equipment (PPE) program is required by 29 CFR 1910.120(g). PPE ensembles should be carefully selected based on site characterization and any new information (e.g., air monitoring readings) collected on-site.

- 5.7.1 Is a written PPE program, including procedures, guidelines, and policy statements regarding the use of PPE, available for inspection?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

If the answer is [NO], ask employee(s) these questions and/or observe for the 12 PPE program element questions below.

- 5.7.1.1 Are the employees trained regarding on-site hazards?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 5.7.1.2 Are the employees adequately trained in selection of PPE?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 5.7.1.3 Are the employees adequately trained in the use of PPE?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.7.1.4 Are the employees informed regarding estimated lengths of time for job tasks and estimated time of project duration?

[YES]

[NO, EXPLAIN]

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---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.7.1.5 Do employees maintain and store PPE appropriately?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.7.1.6 Do employees know how to decontaminate PPE?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.7.1.7 Are employees fitted properly for PPE?

[YES]

[NO, EXPLAIN]

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5.7.1.8 Do employees know how to don and doff PPE?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.7.1.9 Do employees know how to adequately inspect PPE (e.g., inspection of full-face air purifying respirator including valves, face seal, straps, diaphragm)?

[YES]

[NO, EXPLAIN]

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---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.7.1.10 Is there a system in place to indicate what PPE is being used and what PPE is not in use?

[YES]

[NO, EXPLAIN]

---

---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.7.1.11 Is there a system in place to evaluate the effectiveness of the PPE program?

[YES]

[NO, EXPLAIN]

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---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.7.1.12 Are employees familiar with the limits of PPE during temperature extremes?

[YES]

[NO, EXPLAIN]

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---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 5.7.2 Is PPE chosen based on hazards and potential hazards as identified during the site characterization that will be sufficiently protective of hazardous materials employees?

[YES]

[NO, EXPLAIN]

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---

Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 5.7.3 Is PPE selection based on performance characteristics relative to potential hazards, task-specific conditions, and site limitations?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 5.7.4 Under IDLH conditions, are positive pressure self-contained breathing apparatus, or positive pressure air-line respirators with escape packs used by hazardous materials employees?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

- 5.7.5 In cases where skin absorption of a chemical may pose an IDLH condition, are totally-encapsulating chemical protective suits (Level A) used by the hazardous material employees?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.7.6 Is the level of protection for hazardous materials employees increased in response to information that potential exposures may be greater than OSHA-PELs for the chemicals of concern?

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.7.7 Do the totally-encapsulating chemical protective suits worn by hazardous materials employees, maintain positive air pressure and prevent inward test gas leakage? (Appendix A of 29 CFR 1910.120 provides a test method for gas leakage.)

[YES]

[NO, EXPLAIN]

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Field Verification 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

5.7.8 \_\_\_\_\_  
\_\_\_\_\_

5.7.9 \_\_\_\_\_  
\_\_\_\_\_

SUMMARY OF RESPONSES

[YES]\_\_\_\_

[NO, EXPLAIN]\_\_\_\_

## APPENDIX A ACRONYMS

<u>ACGIH</u>	-	American Conference of Governmental Industrial Hygienists.
<u>APR</u>	-	Air Purifying Respirator.
<u>CERCLA</u>	-	Comprehensive Environmental Response, Compensation, and Liability Act of 1980.
<u>CFR</u>	-	Code of Federal Regulations.
<u>CGI</u>	-	Combustible Gas Indicator, instrument used to test for explosives.
<u>CRZ</u>	-	Contamination Reduction Zone.
<u>DOT</u>	-	U.S. Department of Transportation.
<u>EPA</u>	-	U.S. Environmental Protection Agency.
<u>FID</u>	-	Flame Ionization Detector, used to measure volatile hydrocarbons.
<u>FS</u>	-	Feasibility Study.
<u>HASP</u>	-	Health and Safety Plan.
<u>HRS</u>	-	Hazardous Ranking System.
<u>IDLH</u>	-	Immediately Dangerous to Life and Health.
<u>NIOSH</u>	-	National Institute for Occupational Safety and Health. NIOSH is a part of the Department of Health and Human Services.
<u>NPL</u>	-	National Priority List.
<u>OSHA</u>	-	Occupation Safety and Health Administration. OSHA is part of the Department of Labor.
<u>OSWER</u>	-	U.S. EPA Office of Solid Waste and Emergency Response.
<u>PEL</u>	-	Permissible Exposure Limit (promulgated by OSHA; same as OSHA-PEL).
<u>PID</u>	-	Photoionization Detector, used to measure volatile hydrocarbons.
<u>PPE</u>	-	Personal Protective Equipment.
<u>PRP</u>	-	Potentially Responsible Party.
<u>RI/FS</u>	-	Remedial Investigation/Feasibility Study.
<u>ROD</u>	-	Record of Decision: Document describing selection of a cost-effective Superfund-financed remedy.
<u>SARA</u>	-	Superfund Amendments and Reauthorization Act of 1986 (see CERCLA).
<u>SCBA</u>	-	Self Contained Breathing Apparatus.
<u>STEL</u>	-	Short Term Exposure Limit, airborne exposure limit used by ACGIH.
<u>TLV-TWA</u>	-	Threshold Limit Value - Time Weighted Average, airborne exposure limit used by ACGIH.

## APPENDIX B

### OTHER COMMON APPLICABLE OSHA STANDARDS

The following items represent some common health and safety issues that may need to be addressed prior to initiating hazardous work activities. For sites at which any of these safety issues are applicable, the information from the regulation should be provided in sufficient detail within the health and safety plan (HASP) to provide adequate protection of employees working on-site. These are OSHA regulations that are not part of 29 CFR 1910.120. OSHA also requires a log of occupational injuries and illnesses. This information is recorded on form OSHA No. 200 (Appendix E of the EPA Audit Guidelines). The following are some of the OSHA standards that should be considered for site activities.

#### OSHA Act, Section 5(a)(1) GENERAL DUTY CLAUSE

Under the "General Duty" clause of the Occupational Safety and Health Act of 1970, section 5(a)(1) states that each employer "shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees."

#### 29 CFR 1904.24 LOG AND SUMMARY OF OCCUPATIONAL INJURIES AND ILLNESSES

This regulation requires that each employer maintain a log of all recordable occupational injuries and illnesses and that the information be recorded in the log within six working days of the receipt of the information. Form OSHA No. 200 or its equivalent is to be used for this purpose.

#### 29 CFR 1910.20 ACCESS TO EMPLOYEE EXPOSURE AND MEDICAL RECORDS

An employer must provide exposure and medical records to an employee or designated representative within fifteen days after the request for access to records. If the employee requests copies of this information, the employer must make the copies available to the employee at no cost. All employee medical records must be maintained for the duration of employment plus 30 years by the employer.

#### 29 CFR 1910.24 FIXED INDUSTRIAL STAIRS

This section contains specifications for the safe design and construction of fixed general industrial stairs. This classification includes interior and exterior stairs around machinery, tanks, and other equipment, and stairs leading to or from floors, platforms, or pits.

Requirements include stair strength, stair width, angle of stairway rise, stairway platforms, railings and handrails, and vertical clearance. The requirements regarding stairs are very specific. For instance, 29 CFR 1910.24(h), Railings and Handrails, references 29 CFR 1910.23. It requires two standard rails (one set on each open side) if the stairway is more than four feet in height from ground level.

#### 29 CFR 1910.27 FIXED LADDERS

This regulation includes information on design requirements, specific features, appropriate clearances, special requirements (e.g., use of cages for ladder heights greater 20 feet), and appropriate pitch when using a fixed ladder.

#### 29 CFR 1910.28 SAFETY REQUIREMENTS FOR SCAFFOLDING

This regulation provides safety requirements for the construction, operation, maintenance, and use of scaffolds. There are approximately 20 types of scaffolding. For each type of scaffolding, specific safety requirements are provided.

#### 29 CFR 1910.38 EMPLOYEE EMERGENCY PLANS AND FIRE PREVENTION PLANS

This regulation applies to all emergency action plans and fire prevention plans required by particular OSHA standards. With the exception of employers with 10 or fewer employees, both the emergency action plan and the fire prevention plan are required in writing. The required elements of each of these plans are provided in the regulation. If the employer has 10 or fewer employees, the elements of both types of plan must be provided orally to employees. The employer shall also perform housekeeping and maintenance of equipment and systems as part of the fire prevention plan.

#### 29 CFR 1910.95 OCCUPATIONAL NOISE EXPOSURE

On many sites, different site activities (e.g., drilling operations, heavy equipment operations) may result in appreciable noise levels. It is important that area and personal noise surveys be conducted to categorize noise levels appropriately. A sound level meter that has the capability to integrate and average sound levels over the course of a work day is required. Currently, the OSHA-Permissible Exposure Limit for an eight-hour workday, forty-hour work week, is 90 dBA, as recorded on a sound level meter on the A weighted scale. An employer shall implement a hearing conservation program if 8-hour time weighted average noise exposures equal or exceed 85 decibels on the A scale. Continuous intermittent and impulsive sound levels of 80 dBA or greater shall be integrated into the time weighted average.

#### 29 CFR 1910.101 COMPRESSED GASES

To the extent possible, each employer should determine, through a visual inspection, that compressed gas cylinders under his/her control are in safe condition. Other inspections are prescribed in the DOT Hazardous Materials Regulations. Specific safety requirements for handling compressed gases are found in 29 CFR.252(b).

#### 29 CFR 1910.133 EYE AND FACE PROTECTION

Eye and face protection is required when there is the potential for on-site injury. Particular information on goggles, spectacles, and face protection is included in this regulation. Design, construction, testing, and use of such devices must be in accordance with ANSI Z87.1-1968 specifications.



#### 29 CFR 1910.134 RESPIRATORY PROTECTION

Prior to wearing a respirator, an employee should be certified as medically able to wear one. Each employer should have a written respiratory protection plan for selection and use of respirators. All employees must be trained regarding the appropriate use of a respirator.

#### 29 CFR 1910.135 OCCUPATIONAL HEAD PROTECTION

On-site situations requiring head protection include: presence of overhead objects, on-site operation of heavy equipment, potential for flying objects in the work area, and possible electrical shock hazard. In addition to protecting workers from falling or flying objects, head protection affords limited protection from electric shock and burn. Head protection must meet ANSI Z89.1-1969 specifications.

#### 29 CFR 1910.136 OCCUPATIONAL FOOT PROTECTION

Safety toe footwear for employees must meet ANSI Z41.1-1967 for Men's Safety-Toe Footwear. In general, workers at hazardous waste sites must wear leather or rubber boots with steel toes and steel shanks.

#### 29 CFR 1910.141 SANITATION

Specifications concerning appropriate housekeeping, waste disposal, vermin control, water supply, toilet and washing facilities, showers, change rooms, waste disposal containers, sanitary storage, and food handling for permanent places of employment are provided in this regulation.

#### 29 CFR 1910.151 MEDICAL SERVICES AND FIRST AID

If a medical facility is not located in proximity to the workplace, there shall be a person or persons on-site with adequate first-aid training. First aid supplies approved by a consulting physician shall be available on-site. If there is the potential for corrosive materials on-site, suitable facilities shall be available for drenching of eyes and skin.

#### 29 CFR 1910.165 EMPLOYEE ALARM SYSTEMS

The employee alarm system shall be recognizable to all on-site employees. The signal from the employee alarm system shall be audible to employees in the event of a need to warn employees of an evacuation from work areas.

#### 29 CFR 1910.181 DERRICKS

Derricks attached to drill rigs must be periodically inspected. This regulation defines nine different types of derricks. Specific information is provided on inspection; frequency of inspection; load ratings; rope use and inspection; fire extinguisher use; operation near power lines; and operating enclosures.

## 29 CFR 1910.252 WELDING, CUTTING, AND BRAZING

Detailed regulations exist for various types of welding, cutting, and brazing operations. These regulations provide specific information on types of gases, gas pressures, operation and maintenance, and safety procedures.

## 29 CFR 1910.307 HAZARDOUS LOCATIONS

Electrical equipment used in hazardous locations must be intrinsically safe and suitable for use in the appropriate classified environment. Specified definitions of classifications and further information can be found in Section 1910.307 and 1910.399.

## Subpart Z, 29 CFR 1910.1000 TOXIC AND HAZARDOUS SUBSTANCES

There are other applicable OSHA standards that refer to particular air sampling procedures for chemical contaminants, PPE requirements, and recordkeeping for a variety of compounds. These compounds and their accompanying OSHA regulations are as follows:

<u>Compound</u>	<u>OSHA Reference</u>
Asbestos	29 CFR 1910.1001 <sup>1</sup>
Coal tar pitch volatiles	29 CFR 1910.1002
4-nitrobiphenyl	29 CFR 1910.1003
Alpha-Naphthylamine	29 CFR 1910.1004
Methyl chloromethyl ether	29 CFR 1910.1006
3,3'-dichlorobenzidine	29 CFR 1910.1007
bis-chloromethyl ether	29 CFR 1910.1008
Benzidine	29 CFR 1910.1010
4-aminodiphenyl	29 CFR 1910.1011
Ethyleneimine	29 CFR 1910.1012
beta-propiolactone	29 CFR 1910.1013
2-acetylaminofluorene	29 CFR 1910.1014
4-dimethylaminoazobenzene	29 CFR 1910.1015
N-nitrosodimethylamine	29 CFR 1910.1016
Vinyl chloride	29 CFR 1910.1017
Inorganic arsenic	29 CFR 1910.1018
Lead	29 CFR 1910.1025
Benzene	29 CFR 1910.1028
Coke oven emissions	29 CFR 1910.1029
1,2-dibromo-3-chloropropane	29 CFR 1910.1044
Acrylonitrile	29 CFR 1910.1045
Ethylene oxide	29 CFR 1910.1047
Formaldehyde	29 CFR 1910.1048

## 29 CFR 1910.1200 HAZARD COMMUNICATION

The employer will establish a hazard communication program to ensure that hazards associated with chemical usage are communicated to employees. The hazard communication program does not apply to hazardous wastes. There are

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<sup>1</sup> See footnote 3, page 57.

training, labeling, and material safety data sheet (MSDS) requirements for known chemicals. Employers are required to develop a written hazard communication program that will include:

- List of known hazardous chemicals on-site;
- Method for informing employee of chemical hazards associated with non-routine tasks; and
- Methods for informing both employees and subcontractors about chemical hazards (e.g., chemical hazard training, distribution of MSDSs).

#### 29 CFR 1926.56 ILLUMINATION

General work areas shall have a minimum illumination intensity of 5 foot-candles. Other specifications for minimum illumination intensities for different work areas and operations are provided in this regulation.

#### 29 CFR 1926.57 VENTILATION

Whenever dust, fumes, mists, vapors, or gases exist or are produced in the course of construction work, their concentrations must not exceed limits specified in 29 CFR 1926.55(a). When ventilation is used, the system must be installed and operated according to the requirements of this section.

#### 29 CFR 1926.151(a)(3) FIRE PREVENTION

Electrical wiring and equipment for light, heat, or power purposes must be installed in accordance with the National Electrical Code requirements, NFPA 70-1971; and ANSI CI-197. [29 CFR 1926.151(a)] Also, smoking is prohibited at or in the vicinity of operations which constitute a fire hazard. "No Smoking or Open Flame" signs must be posted. In general, smoking should be limited to a designated area within the "support zone" at a hazardous waste site. This will minimize the fire hazard, as well as the transfer of contaminants to smokers' mouths. [29 CFR 1926.151(a)(3)]

#### 29 CFR 1926.152 FLAMMABLE AND COMBUSTIBLE LIQUIDS

Information on appropriate containers and appropriate storage for flammable and combustible liquids is contained in this reference. Note that no more than 25 gallons of liquid may be stored indoors unless located within an approved storage cabinet.

#### 29 CFR 1926.200 ACCIDENT PREVENTION SIGNS AND TAGS

This regulation contains specific information on color, size, shape, and placement of danger, caution, exit, safety instruction, directional, accident prevention, and traffic signs.

#### 29 CFR 1926.301 HAND TOOLS

Special attention should be paid to the use of safe hand tools. For example, wooden tool handles must be kept free of splinters or cracks, and

impact tools, such as wedges and chisels, must be kept free of mushroomed heads. Also, wrenches must not be used when jaws are sprung to the point that slippage occurs.

#### 29 CFR 1926.651 SPECIFIC EXCAVATION REQUIREMENTS

Specific information on locating underground utilities; using support systems; securing sides, slopes, and faces; using seals, benches, rock bolts, and wire meshes; taking precautions for work adjacent to previously backfilled areas; diverting water flows from excavated areas; using explosives appropriately; using dust control techniques; and using ladders and ramps is provided in this regulation.

#### 29 CFR 1926.652 TRENCHING REQUIREMENTS

Shoring is needed when the sides of a trench are more than five feet deep and unsuitable ground or soft material is present. Also, sides of trenches in hard or compact soil must be shored when the trench is more than five feet deep and eight feet long.

# APPENDIX C

## INCIDENT SAFETY CHECK OFF LIST USEPA - OSWER

### 1. BEFORE FIELD ACTIVITY

Employee \_\_\_\_\_

1. Incident: Site \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_

Response Dates: \_\_\_\_\_

2. Activity Description: Site Evacuation \_\_\_\_\_ Containment \_\_\_\_\_  
Well Drilling \_\_\_\_\_ Facility Inspection \_\_\_\_\_ Sampling - Air \_\_\_\_\_  
Water \_\_\_\_\_ Drum \_\_\_\_\_ Soil \_\_\_\_\_ Residential \_\_\_\_\_ Other \_\_\_\_\_

3. Type of Response: Spill \_\_\_\_\_ Fire \_\_\_\_\_ Site \_\_\_\_\_ Train \_\_\_\_\_  
Other \_\_\_\_\_

4. Site Topography: Mountains \_\_\_\_\_ Rivers \_\_\_\_\_ Valley \_\_\_\_\_ Rural \_\_\_\_\_  
Suburban \_\_\_\_\_ Level \_\_\_\_\_ Slopes \_\_\_\_\_ Unknown \_\_\_\_\_

5. Incident Safety Plan: Region \_\_\_\_\_ Reviewed \_\_\_\_\_  
ERT \_\_\_\_\_ Briefed \_\_\_\_\_  
Facility \_\_\_\_\_ Not Developed \_\_\_\_\_

6. Site Accessibility: Road: Good \_\_\_\_\_ Air: Good \_\_\_\_\_  
Fair \_\_\_\_\_ Fair \_\_\_\_\_  
Poor \_\_\_\_\_ Poor \_\_\_\_\_

7. Suspected chemical(s) and pathway with source(s) involved:  
(A) \_\_\_\_\_ (B) \_\_\_\_\_ (C) \_\_\_\_\_ (D) \_\_\_\_\_

8. Emergency Response Teams Present for First Aid, etc.  
Yes \_\_\_\_\_ No \_\_\_\_\_

9. Protective Level(s) Selected: (A) \_\_\_\_\_ (B) \_\_\_\_\_  
(C) \_\_\_\_\_ (D) \_\_\_\_\_

(a) If Level "C" - 1. Identify Canister \_\_\_\_\_

(b) If Level "D" - Justify: \_\_\_\_\_

10. SCBA Identify Buddy System: Office/Name \_\_\_\_\_

11. Last Response: (a) Level Used: (A) \_\_\_\_\_ (B) \_\_\_\_\_  
(C) \_\_\_\_\_ (D) \_\_\_\_\_

(b) Medical Attention/  
Exam Performed: Yes \_\_\_\_\_ No \_\_\_\_\_

# INCIDENT SAFETY CHECK OFF LIST

USEPA - OSWER

(continued)

## II. AFTER RESPONSE

1. Protective Level Used: (A) \_\_\_\_\_ (B) \_\_\_\_\_  
(C) \_\_\_\_\_ (D) \_\_\_\_\_
  - a. Level "C" - identify canister: \_\_\_\_\_
  - b. Level "D" - JUSTIFY: \_\_\_\_\_
  - c. Level B or C skin protection: Tyvek \_\_\_\_\_ Tyvek/Saran \_\_\_\_\_  
Acid/Rain \_\_\_\_\_ Other \_\_\_\_\_
2. List possible chemical exposure: Same as above: \_\_\_\_\_  
(A) \_\_\_\_\_ (B) \_\_\_\_\_ (C) \_\_\_\_\_ (D) \_\_\_\_\_
3. Equipment Decontamination:
  - (a) clothing \_\_\_\_\_
  - (b) respirator \_\_\_\_\_
  - (c) monitoring \_\_\_\_\_

Disposed: \_\_\_\_\_

Cleaned: \_\_\_\_\_

No Action: \_\_\_\_\_
4. Approximate time in exclusion area: \_\_\_\_\_ hours per day for \_\_\_\_\_ days.
5. Was medical attention/exam required for this response: Yes \_\_\_\_\_  
No \_\_\_\_\_

Part I: DATE PREPARED: \_\_\_\_\_ Reviewed by \_\_\_\_\_  
Date \_\_\_\_\_

Part II: DATE PREPARED: \_\_\_\_\_ Reviewed by \_\_\_\_\_  
Date \_\_\_\_\_

## APPENDIX D

### LEVELS OF PERSONAL PROTECTION\*\*

LEVEL A - To be selected when the greatest level of skin, respiratory, and eye protection is required.

Level A equipment; used as appropriate.

1. Pressure-demand, full face-piece self-contained breathing apparatus (SCBA), or pressure-demand supplied air respirator with escape SCBA, approved by the National Institute for Occupational Safety and Health (NIOSH).
2. Totally-encapsulating chemical-protective suit.
3. Coveralls.\*
4. Long underwear.\*
5. Gloves, outer, chemical-resistant.
6. Gloves, inner, chemical-resistant.
7. Boots, chemical-resistant, steel toe and shank.
8. Hard hat (under suit).\*
9. Disposable protective suit, gloves and boots (Depending on suit construction, may be worn over totally-encapsulating suit).
10. Two-way radios (worn inside encapsulating suit).

\*Optional, as applicable.

LEVEL B - The highest level of respiratory protection is necessary but a lesser level of skin protection is needed.

Level B equipment; used as appropriate.

1. Pressure-demand, full-facepiece self-contained breathing apparatus (SCBA), or pressure-demand supplied air respirator with escape SCBA (NIOSH approved).
2. Hooded chemical-resistant clothing (coveralls and long-sleeved jacket; coveralls; one or two-piece chemical-splash suit; disposable chemical-resistant overalls).
3. Coveralls.\*
4. Gloves, outer, chemical-resistant.

5. Gloves, inner, chemical resistant.
6. Boots, outer, chemical-resistant steel toe and shank.
7. Boot-covers, outer, chemical resistant (disposable)\*.
8. Hard hat.
9. Two-way radios (worn inside encapsulating suit).
10. Face shield.\*

\*Optional, as applicable.

LEVEL C - The concentrations(s) and type(s) of airborne substance(s) is known and the criteria for using air purifying respirators are met.

Level C equipment; used as appropriate.

1. Full-face or half-mask, air purifying, canister equipped respirators (NIOSH approved).
2. Hooded chemical-resistant clothing (overalls; two-piece chemical-splash suit; disposable chemical-resistant overalls).
3. Coveralls.\*
4. Gloves, outer, chemical-resistant.
5. Gloves, inner, chemical resistant.
6. Boots, outer, chemical-resistant steel toe and shank.\*
7. Boot-covers, outer, chemical resistant (disposable).\*
8. Hard hat.
9. Escape mask.\*
10. Two-way radios (worn under outside protective clothing).
10. Face shield.\*

\*Optional, as applicable.

LEVEL D - A work uniform affording minimal protection: used for nuisance contamination only.

Level D equipment; used as appropriate.

1. Coveralls.
2. Gloves.\*
3. Boots/shoes, chemical-resistant steel toe and shank.
4. Boots, outer, chemical-resistant (disposable).\*



5. Safety glasses or chemical splash goggles.\*
6. Hard hat.
7. Escape mask.\*
8. Face shield.\*

\*Optional as applicable.

The types of hazards for which levels A, B, C, and D protection are appropriate are described below:

Level A protection should be used when:

1. The hazardous substance has been identified and requires the highest level of protection for skin, eyes, and the respiratory system based on either the measured (or potential for) high concentration of atmospheric vapors, gases, or particulates; or the site operations and work functions involve a high potential for splash, immersion, or exposure to unexpected vapors, gases, or particulates of materials that are harmful to skin or capable of being absorbed through the intact skin,
2. Substances with a high degree of hazard to the skin are known or suspected to be present, and skin contact is possible, or
3. Operations must be conducted in confined, poorly ventilated areas and the absence of conditions requiring Level A have not yet been determined.

Level B protection should be used when:

1. The type and atmospheric concentration of substances have been identified and require a high level of respiratory protection, but less skin protection.

NOTE: This involves atmospheres with IDLH concentrations of specific substances that do not represent a severe skin hazard; or that do not meet the criteria for use of air-purifying respirators.

2. The atmosphere contains less than 19.5 percent oxygen, or
3. The presence of incompletely identified vapors or gases is indicated by a direct-reading organic vapor detection instrument, but vapors and gases are not suspected of containing high levels of chemicals harmful to skin or capable of being absorbed through the intact skin.

Level C protection should be used when:

1. The atmospheric contaminants, liquid splashes, or other direct contact will not adversely affect or be absorbed through any exposed skin,
2. The types of air contaminants have been identified, concentrations measured, and a canister respirator is available that can remove the contaminants, and
3. All criteria for the use of air-purifying respirators are met.

Level D protection should be used when:

1. The atmosphere contains no hazard, and
2. Work functions preclude splashes, immersion, or the potential for unexpected inhalation of or contact with hazardous levels of any chemicals.

NOTE: As stated before combinations of personal protective equipment other than those described for Levels A, B, C, and D protection may be more appropriate and may be used to provide the proper level of protection.

\*\*This information is from 29 CFR 1910.120 Appendix B.

APPENDIX E

GENERIC HASP

Due to the length of the generic HASP, entitled "Site Health and Safety Plan,"\* only the Table of Contents has been included.

For a complete copy of the "Site Health and Safety Plan," please contact:

U.S. Environmental Protection Agency  
Environmental Response Team (MS 101)  
Raritan Depot  
Woodbridge Avenue  
Edison, NJ 08837  
Attention: Generic HASP

For any comments or questions please call:

Ms. Vickie L. Santoro (201) 906-6917

\*Site Health and Safety Plan prepared by EPA/ERT, June 1989.

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**Bureau of Labor Statistics  
Log and Summary of Occupational  
Injuries and Illnesses**

**NOTE:** This form is required by Public Law 91-506 and must be kept in the establishment for 5 years. Failure to maintain and post can result in the issuance of citations and assessment of penalties. (See posting requirements on the other side of form.)

**RECORDABLE CASES:** You are required to record information about every occupational death; every nonfatal occupational illness; and those nonfatal occupational injuries which involve one or more of the following: loss of consciousness, restriction of work or motion, transfer to another job, or medical treatment (other than first aid). (See definitions on the other side of form.)

**OSHA No. 200**

(continued)

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## APPENDIX G

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