



OSHA INSTRUCTION

U.S. DEPARTMENT OF LABOR

Occupational Safety and Health Administration

DIRECTIVE NUMBER: CPL 02-02-071

EFFECTIVE DATE: November 5, 2003

SUBJECT: Technical Enforcement and Assistance Guidelines for Hazardous Waste Site and RCRA Corrective Action Clean-up Operations

****NOTE:** As a result of the March 26, 2012, revision to OSHA's Hazard Communication Standard, minor changes {in brackets} were made to this directive on December 1, 2015. These changes do not impact this directive's enforcement policy.

ABSTRACT

Purpose: This Instruction clarifies requirements and provides technical enforcement guidelines for clean-up operations conducted under the scope of paragraphs (a)(1)(i) through (a)(1)(iii) of the Hazardous Waste Operations and Emergency Response (HAZWOPER) standard, 29 CFR 1910.120 and 1926.65. It is written to ensure uniform enforcement.

Scope: This Instruction applies OSHA-wide.

References: The reference materials for this instruction are listed in Appendix D.

Cancellations: None

State Impact: State adoption is not required.

Action Offices: OSHA Regional and Area Offices

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Authority Statement: By and Under the Authority of
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Executive Summary

This directive is written to help OSHA compliance officers who need to conduct inspections of clean-up operations on hazardous waste sites and corrective action sites. It will also assist other Federal Agency personnel who oversee site operations (e.g., EPA and U.S. Army Corps of Engineers), trainers, workers, and members of the regulated community who need to comply with paragraphs (b) through (o) of OSHA's HAZWOPER standard.

- A description of required training, medical surveillance, clearances, and field competencies for CSHOs who conduct these types of inspections;
- A discussion of HAZWOPER's possible overlap with other OSHA standards and with standards of other Federal agencies, and related citation guidance;
- Detailed inspection checklists that instruct CSHOs how to evaluate an employer's implementation of the standard's provisions;
- A description of the site cleanup process and sources of site information CSHOs can use to familiarize themselves with a site's operations and hazards prior to an inspection; and
- A list of PPE and other equipment recommended for CSHOs who plan to enter contaminated areas of a site, a glossary of related terms, and a list of references.

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I. Purpose

This Instruction clarifies requirements and provides technical enforcement guidelines for clean-up operations conducted under the scope of paragraphs (a)(1)(i) through (a)(1)(iii) of the Hazardous Waste Operations and Emergency Response (HAZWOPER) standard, 29 CFR 1910.120 and 1926.65. It is written to ensure uniform enforcement.

II. Scope

This instruction applies OSHA-wide.

III. Action Information

A. Responsible Offices

Office of Health Enforcement (OHE)

B. Action Offices

OSHA Regional Offices and Area Offices

C. Information Offices

State Designees and Consultation Project Managers

IV. Actions Required

OSHA Regional Administrators (RAs) and Area Directors (ADs) should use the guidelines in this instruction to ensure uniform enforcement of the HAZWOPER standard. The Directorate of Enforcement Programs will provide support necessary to assist the RAs and ADs in enforcing the standards.

V. Federal Program Change

This instruction describes a Federal program change. State adoption is not required.

NOTE: Compliance staff needs guidance in order to effectively enforce safety and health standards. States are expected to have health and safety standards, enforcement policies and procedures that are at least as effective as those of Federal OSHA.

VI. Definitions

Appendix C defines important terms or phrases used in this instruction.

VII. References

Appendix D lists the reference materials for this instruction.

VIII. Appendices

Appendices A through D provide supplementary information about the HAZWOPER standard and inspection procedures:

A. Appendix A

HAZWOPER, CERCLA, and SARA Background Information

B. Appendix B

List of Equipment Recommended for OSHA personnel Conducting Inspections at Uncontrolled Hazardous Waste Sites

C. Appendix C

Glossary

D. Appendix D

Reference materials

IX. Background

The final HAZWOPER standard was published in the *Federal Register* on March 6, 1989, and became effective March 6, 1990. The U.S. Environmental Protection Agency also requires compliance with HAZWOPER in 40 CFR Part 311 public employees (either compensated or non-compensated) who perform operations within the scope of 29 CFR 1910.120(a)(1)(i) through (a)(1)(iii) in States where Federal OSHA has enforcement authority. In the state-plan States, State and local employees are covered under the State OSHA program.

See Appendix A of this instruction for more detailed information about the legislation that led to promulgation of the HAZWOPER standard.

X. Authorization to Review Limited Medical Information

OSHA personnel, acting as representatives of the Secretary of Labor and under the direction of the OSHA Area Director, are authorized to review medical records and medical opinions pertinent to HAZWOPER. This authorization has limitations and procedures that must be followed in accordance with OSHA Instructions CPL 02-02-030 (CPL 2-2.30) through CPL 02-02-033 (CPL 2-2.33).

XI. Requirements for OSHA Personnel on Hazardous Waste Sites

A. Protecting Your Health and Safety

No enforcement action, on-site consultation, or on-site technical assistance should put your life or health in danger. The requirements in this instruction must be followed to protect you and other OSHA personnel at sites addressed by this directive.

B. Training for Entry into the Contamination Reduction Zone (CRZ) and/or Exclusion Zone (ExZ)

To ensure your health and safety, you must receive specialized training every year and/or have adequate experience and sufficient knowledge of the hazards associated with hazardous waste site clean-up activities. OSHA personnel who are assigned to perform inspections of hazardous waste clean-up operations must demonstrate knowledge of work practices and procedures at such sites.

1. OSHA personnel entering the CRZ or ExZ must have the following knowledge, training and/or experiences:

- (1) You must have received fit testing and training in the use of respiratory and clothing protection to be worn on-site. You must be trained to recognize the signs and symptoms of exposure caused by contaminant breakthrough and heat stress.
- (2) You must be trained in the use of the “buddy system” and site communication procedures, including emergency alerting.
- (3) You must be trained in the proper general and site-specific procedures for putting on and taking off the personal protective equipment (PPE) used on-site.
- (4) You must be trained in the proper general and site-specific decontamination procedures to be used on-site.
- (5) You must be trained regarding site emergency evacuation procedures.
- (6) You must be trained in the proper use of hazardous atmosphere testing equipment.
- (7) You must know how to select the proper PPE (clothing and respiratory) for protection of OSHA personnel. To do this, you will need to know:
 - The levels of air and surface contamination present, or likely to be present on-site, including immediately dangerous to life and health (IDLH) conditions;
 - The chemical, physical, and biological hazards that are present, or likely to be present on-site; and
 - The limits of the PPE.
- (8) You must have the knowledge, experience, and resources to accurately evaluate the decontamination facilities and procedures on-site. You must determine whether they are adequate to protect the safety and health of OSHA personnel. If existing site conditions are not adequate, you must have the knowledge and experience to select, obtain, and establish proper decontamination procedures, materials and facilities to protect OSHA personnel from the hazards on-site.
- (9) You must have sufficient knowledge of and experience with the safety and health hazards present on-site. You must be able to provide guidance for OSHA personnel entering the CRZ or ExZ.
- (10) You must have the knowledge and experience necessary to set up “buddy” and communication systems for OSHA personnel entering the CRZ or ExZ.
- (11) You must be familiar with the HAZWOPER Standard. You also must be familiar with this instruction, and you must understand all the terms defined in Appendix C.

2. OSHA personnel may be asked by State and Federal agencies or site operators to demonstrate proof of training certification in certain instances. You are not required to provide this proof in order to enter a site and conduct an inspection. However, to expedite inspection

activities, the AD in consultation with the RA may issue materials such as letters, memos, or pocket-size hazardous waste training certificates to OSHA personnel. Such documentation may only be issued after reviewing the record of training and experience. These materials should, at a minimum, include the name of the cardholder/OSHA personnel, a statement certifying the training level completed (i.e., team leader, CRZ and ExZ qualified), the name and signature of the certifying official, and the date of the certification. These materials should also indicate the OSHA personnel's participation in the medical monitoring program.

3. On a yearly basis, OSHA supervisors must evaluate the training needs of OSHA personnel who may be involved in hazardous waste site inspections.

C. Medical Monitoring and Information for On-Site Medical Monitoring for OSHA Personnel.

If you need to enter a work zone where HAZWOPER requires medical surveillance for workers, the AD in consultation with the RA should contact OSHA's Office of Occupational Medicine to discuss requirements for the exam. The AD in consultation with the RA should also make appropriate arrangements with the Office of Occupational Medicine for on-site medical monitoring.

D. Hazardous Area Entry Restrictions

Within this directive, a "hazardous area" means a place on a hazardous waste site or corrective action site where access is restricted to personnel with special training who are also using PPE as needed because of the possibility of exposure to health or safety hazards. The following requirements are meant to protect you and other OSHA personnel from the effects of hazardous substances or conditions on such sites:

1. **Authorization to Enter.** OSHA personnel **must receive clearance** from the AD in consultation the RA **before** they can enter a hazardous area. Where entry into hazardous areas is necessary, clearance should be based on your training and experience, the levels of risk involved, and the availability of appropriate and adequate protection.
2. **Work Practices for OSHA Personnel.** The following guidance is for OSHA personnel entering hazardous areas:
 - (1) Review site emergency procedures and alarm signals before entering a hazardous area.
 - (2) Get authorization from the AD in consultation with the RA before you enter permit-required confined spaces. All requirements for entering the confined space must be met.
 - (3) Use the buddy system when entering a hazardous area requiring respiratory protection. Appropriately equipped and trained personnel other than CSHOs (e.g., EPA personnel or site personnel) may serve as buddies if necessary. You must also understand and use the site communication procedures.

- (4) Determine the potential hazards before you enter a hazardous area. You must obtain special authorization from the appropriate administrator before entering a hazardous area that the employer has not characterized, or that may have an IDLH atmosphere.
 - (5) When entering a hazardous area, maintain a safe distance from operations that involve opening or handling drums or containers that are being remediated. Do not move or open drums or containers of unknown contents or where opening a container poses an innate hazard, such as from picric acid or ethyl ether.
3. **Personal Protective Equipment for OSHA Personnel.** OSHA personnel who will enter the CRZ or the ExZ must wear appropriate personal protective equipment for the site. The specific hazards of the work zone determine the equipment needed for entry. The AD in consultation with the RA should also make appropriate arrangements for on-site medical monitoring. Appendix B of this instruction provides recommended equipment for OSHA personnel.
 4. **Decontamination Procedures for OSHA Personnel.** Before entering a hazardous area, determine whether decontamination facilities exist. Also determine whether they are adequate for the expected contaminants at the site, and if they will be available for OSHA's use.

When decontamination facilities including those for emergency decontamination exist at the inspection site, evaluate whether they adequately meet the standard. If so, use them in accordance with the procedures established by the employer. OSHA personnel should not enter the CRZ or ExZ until decontamination facilities are adequate.

- (1) Remove from the site only contaminated items or materials that can be handled in a safe manner. That is, make sure the material is sealed in a labeled, air-tight container. Treat disposable contaminated items as contaminated waste and leave them on-site.
- (2) When taking items into potentially hazardous areas, seal them in contamination-proof containers that can be easily decontaminated and/or removed. In addition, avoid contact with areas of visible contamination such as puddles, discolored areas, and dusty areas.

XII. General Inspection and Citation Guidelines.

The provisions in the HAZWOPER standard require employers to consider both overall performance and specific elements when complying with the standard. Various and special hazards exist at each workplace. For that reason, HAZWOPER requires employers to develop safety and health programs suitable for their particular operation. There are many other provisions, such as medical surveillance, engineering controls, personal protective equipment, and sanitation that you will recognize as standard practice in occupational safety and health. Section XIII of this directive provides further discussion and detail. The following guidance provides a framework to assist the CSHO in conducting the inspection:

A. What is the scope of the HAZWOPER final rule?

The final rule covers three general waste clean-up operations, detailed in paragraph 1. (1)-(3) below. The final rule also covers operations conducted at treatment, storage, and disposal (TSD) facilities, identified in paragraph 2. below, and emergency response to hazardous substance releases not already covered by the first two general categories, identified in paragraph 3 below.

1. The general category of hazardous waste clean-up operations is divided into three very specific groups in the scope of 29 CFR 1910.120(a)(1) and 1926.65(a)(1):
 - (1) Clean-up operations required by a governmental body involving hazardous substances that are conducted at uncontrolled hazardous waste sites;
 - (2) Corrective actions involving clean-up operations at sites covered by the Resource Conservation and Recovery Act (RCRA) of 1976 as amended; and
 - (3) Voluntary clean-up operations at sites recognized by governmental bodies as uncontrolled hazardous waste sites.

All of these operations must comply with paragraphs (b) through (o) of 29 CFR 1910.120 and/or 1926.65 and are covered by this directive.

2. RCRA-permitted treatment, storage and disposal facilities must comply with paragraph (p) of 29 CFR 1910.120 and/or 1926.65.
3. Hazardous substance emergency response operations (regardless of location) must comply with paragraph (q) of 29 CFR 1910.120 and/or 1926.65, where not already covered by another part of the standard. For more information, see CPL 02-02-059 (CPL 2-2.59A), Inspection Procedures for the Hazardous Waste Operations and Emergency Response Standard, 29 CFR 1910.120, Paragraph (q): Emergency Response to Hazardous Substance Releases, dated April 24, 1998.

B. What does OSHA mean by the possibility of “employee exposure to safety or health hazards” in paragraph (a)(1)?

{ 29 CFR 1910.1200 amended the meaning of health hazard in 29 CFR 1910.120(a)(3). } Employers must consider all routes of entry (inhalation, ingestion, and skin absorption) without regard to the use of PPE when evaluating employee exposure or the reasonable possibility of employee exposure to safety or health hazards. The exposure or potential exposure must be associated with a hazardous substance (*See Note below for definition of hazardous substance*) from operations addressed in (a)(1)(i-iv) or with the release of a hazardous substance during operations addressed in paragraph (a)(1)(v) of the standard. Safety hazards from a hazardous substance could include fire, explosion, corrosive action, etc., from flammable, corrosive materials, etc. associated with the work site or emergency site. Health hazards from a hazardous substance could include cancer or organ function impairment from toxic, carcinogenic, or infectious material associated with the work site or emergency site. Safety hazards from sources not specifically associated with the hazardous substances at the work site or the emergency site (e.g., trenching, moving machinery, slips,

trips, and falls) do not by themselves require coverage under HAZWOPER. Employees are considered “exposed” when they encounter any amount of a hazardous substance in the work environment that could cause them harm.

[Note: (1910.120(a)(3)) – “Hazardous Substance means any substance designated or listed under (A) through (D) of this definition, exposure to which results or may result in adverse effects on the health or safety of employees:

[A] Any substance defined under section 101(14) or CERCLA;

[B] Any biologic agent and other disease causing agent which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any person, either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction) or physical deformations in such persons or their offspring.

[C] Any substance listed by the U.S. Department of Transportation as hazardous materials under 49 CFR 172.101 and appendices and

[D] Hazardous waste as herein defined.]

C. How should I coordinate on-site activities with other agencies?

Once on-site, you can coordinate with other agencies on-site and inform them of OSHA's inspection activities. OSHA may be able to use a portion of these other agencies' on-site offices for some parts of the inspection, such as holding interviews, staging/calibrating equipment, and reviewing documents. Typically, contracts issued by EPA require remediation contractors to provide on-site office space to government officials. Working with representatives of these agencies can be of great assistance and save time.

D. What should happen during the opening conference with the employer(s) or employer representative(s)?

1. Like construction sites, hazardous waste sites are commonly multi-employer work sites. You should follow the guidance in CPL 02-00-124 (CPL 2-0.124), the Multi-Employer Citation Policy, issued December 10, 1999.
2. In addition to the usual topics covered at an opening conference, per CPL 02-00-103 (CPL 2.103), the Field Inspection Reference Manual (FIRM), the opening conference should cover such topics as the procedures to follow in the event of an emergency, the site warning signals, the nature and location of any ongoing hazardous activities, and any safety or health procedures not described in the current written safety and health program that should be followed while on-site. This should be done to ensure that you are familiar with the site's required procedures for entering and exiting the Exclusion Zone or in the event that an emergency occurs during the inspection.
3. You must not enter hazardous areas without meeting the requirements listed under Engineering Control, Work Practices, and PPE in subparagraph (g) of HAZWOPER and receiving clearance through your AD in consultation with the RA.

E. What written programs should I review during an inspection?

Section XIII, Detailed Inspection Guidance, contains specific information on this issue [See *Detailed Inspection Guidance in Checklist A. 1910.120(b) and 1926.65(b): Safety and Health Program*]. Written programs for hazardous waste clean-up operations that you should review include the following:

1. **Safety and health program**, as per 29 CFR 1910.120(b)(1) and/or 1926.65(b)(1). The safety and health program requires other written programs such as an organizational structure, a work plan, and a site-specific safety and health plan. See Section XIII for more information on the relationships between the written safety and health program, the site-specific safety and health plan, and the requirements of the HAZWOPER standard;
2. **Site-specific safety and health plan**, as per HAZWOPER paragraph (b)(1)(ii)(C). This may be part of the safety and health program listed above, and need not duplicate the employers standard operating procedures;
3. **Documentation of site characterization and analysis**, as per 29 CFR 1910.120(c)(4) and/or 1926.65(c)(4);
4. **Spill containment program**, as per 29 CFR 1910.120(j)(1)(viii) and/or 1926.65(j)(1)(viii);
5. **Emergency response plan**, as per 29 CFR 1910.120(l)(1) and/or 1926.65(l)(1);
6. **New technology program**, as per 29 CFR 1910.120(o) and/or 1926.65(o), which may be part of the safety and health program; and
7. **Other programs that may be needed** because of special site conditions or special site procedures. Examples include programs for benzene, lead, asbestos, heat stress, process safety management (PSM), permit-required confined space, and lockout/tagout.

F. What other agencies have regulations that are related to 29 CFR 1910.120 and 29 CFR 1926.65? What do those regulations address?

1. **Environmental Protection Agency, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP)** . The NCP is a set of regulations that sets forth the procedures that must be followed when implementing the Superfund program and the Oil Pollution Act of 1990. These requirements, codified in 40 CFR Part 300, outline requirements for responding to situations in which oil is discharged into or upon the navigable waters of the United States, or hazardous substances, pollutants, or contaminants are released into the environment. The oil response regulations developed pursuant to the Clean Water Act (as amended by the Oil Pollution Act of 1990) are codified in Subpart D of the NCP (40 CFR 300.300). The hazardous substance regulations, developed pursuant to §105 of CERCLA and SARA, are codified in Subpart E (40 CFR 300.400).

- (1) The NCP addresses worker health and safety in 40 CFR 300.150. Paragraph 300.150(a) states the response actions under the NCP will comply with the provisions for response action worker safety and health in 29 CFR 1910.120.
- (2) The NCP also states in 40 CFR Part 300.175(b)(11)(ii) that "...on request, OSHA will provide advice and assistance to EPA and other NRT/RRT [National Response Team/Regional Response Team] agencies as well as to the OSC/RPM [On-Scene Coordinator/ Remedial Project Manager] regarding hazards to persons engaged in response activities. Technical assistance may include review of site safety plans and work practices, assistance with exposure monitoring, and help with other compliance questions." This advice and assistance does not take the place of OSHA's enforcement activities.

2. **Department of Transportation, Hazardous Material Transportation Uniform Safety Act of 1990 (HMTUSA).** The handling of hazardous materials in the transportation industry is regulated by HMTUSA. Training for the safe handling and safe transportation of hazardous materials is required in Section 7 of HMTUSA, which states that, for purposes of Section 4(b)(1) of the OSH Act, no action taken by the Secretary of Transportation pursuant to Section 7 shall be deemed to be an exercise of statutory authority to prescribe or enforce standards or regulations affecting occupational safety and health.

- (1) On May 15, 1992, DOT published the final rule "Hazardous Materials Training for Safe Transportation" (49 CFR 171-177) to enhance training requirements for persons involved in the transportation of hazardous materials. The rule requires employers to train their employees in the safe loading, unloading, handling, storing, and transportation of hazardous materials. Such employees are primarily in the private sector, but the DOT rule may apply to public sector employees if commerce is involved. The rule is also designed to improve emergency preparedness for responding to accidents or incidents involving the transportation of hazardous materials.
- (2) The current DOT rule does not preempt OSHA from enforcing occupational safety and health regulations, such as 29 CFR 1910.120, when employers fall under the scope of HMTUSA. HAZWOPER applies if transporters are handling hazardous waste being transported to a hazardous waste site or to a Treatment Storage and Disposal (TSD) facility. HAZWOPER also applies when transporters become involved in emergency responses to the release of hazardous substances.

Note: HMTUSA was rewritten editorially in 1994 with no substantive changes. Check with OSHA's Office of General Industry Enforcement (202-693-1850) to determine if OSHA jurisdiction has changed.

- (3) Training provided to satisfy the OSHA, EPA, or DOT requirements may be used to satisfy comparable training requirements of the other agencies' rules. Multiple training courses are not necessary.

3. **United States Coast Guard, Oil Pollution Act of 1990 (OPA 90).** The Oil Pollution Act of 1990 (OPA) amended the Clean Water Act (CWA) and other statutes to strengthen and expand the nation's oil and hazardous substances spill prevention, preparedness, and response activities. The removal of an "oil discharge," according to Subtitle B of OPA 90, must be conducted in accordance with the NCP and any appropriate Area Contingency Plan. Therefore, the health and safety provisions within the NCP at 40 CFR 300.150 (discussed above) also apply to oil spills.

The USCG regulates oil vessels, deepwater ports, and the marine transfer components of transportation-related onshore facilities, including some inland port areas. The USCG provides On Scene Coordinators (OSCs) for coastal spill response and *must* direct the response in cases where the coastal spill "is of such a size or character as to pose a substantial threat to the public health or welfare." The USCG also manages the National Response Center (NRC) and maintains the National Strike Force, a team specifically trained and equipped to respond to major marine pollution incidents.

- (1) The NCP designates OSHA as the agency responsible for ensuring that employees are protected and for determining if the site is in compliance with HAZWOPER. The lead agency for the NCP (EPA or U.S. Coast Guard) may request OSHA's assistance, but OSHA is not preempted from its regular enforcement duties. Appendix E of 40 CFR 300 specifically addresses oil spill response.
- (2) In 1990, OSHA published CPL 02-02-051 (CPL 2-2.51), "Inspection Guidelines for Post-Emergency Response Operations Under 29 CFR 1910.120." Although this directive can apply to any post-emergency response operation, it specifically addresses training for clean-up operations after an oil spill.

G. Are there guidelines for issuing citations to 29 CFR 1910.120, 1926.65, and other applicable OSHA standards?

1. **When do I cite 29 CFR 1910.120 vs. 29 CFR 1926.65?** Since OSHA issued the codified standards for construction in 1993, you must determine whether 1910.120 or 1926.65 is the more appropriate standard for issuing citations.
 - (1) Determine if the employer is involved in general industry or construction activities on a hazardous waste site the same way that you would for any other type of workplace. That is, work for construction, alteration, and/or repair, including painting and decorating is considered "construction work" according to 1910.120 and must comply with the Construction Safety and Health Regulations within 29 CFR 1926. Once this determination is made, violations of the HAZWOPER standard should be cited under either 29 CFR 1910.120 or 29 CFR 1926.65, as appropriate.
 - (2) Decisions about whether to cite standards outside of HAZWOPER for violative conditions should be based on **selecting the most**

protective standard. 29 CFR 1910.120(a)(2)(i) states, "All requirements of part 1910 and part 1926 of Title 29 of the Code of Federal Regulations apply pursuant to their terms to hazardous waste and emergency response operations. If there is a conflict or overlap, the provision more protective of employee safety and health shall apply without regard to 29 CFR 1910.5(c)(i)." Likewise, 29 CFR 1926.65(a)(2)(i) now has a similar statement that ends in "...without regard to 29 CFR 1926.20(e)." You should reference 29 CFR 1910.120(a)(2)(i) or 29 CFR 1926.65(a)(2)(i) if a standard outside of HAZWOPER is cited.

- (3) Citations issued for HAZWOPER violative conditions will normally be classified as "serious." The combined effects of multiple hazards should be considered when determining the seriousness of the violation and associated penalty. Further guidance on violation classifications and penalties can be found in the FIRM.

2. **How do I decide which HAZWOPER paragraphs to cite, and how many citations should be issued?** It is possible to have any or all three sections of the HAZWOPER standard, paragraphs (b)-(o), (p), or (q), apply to one site, depending on conditions and specific activities. To make the determination of the applicable paragraphs, you may find it easier to first decide which sections do not apply rather than which sections do apply. Any sections that remain may apply and you should then cite the section that is most protective or should group citations for each applicable section as necessary.

- (1) It may be necessary for you to issue separate citations for similar kinds of violations of different parts of HAZWOPER. An employer may, for example, be in violation of both (e)(1)(ii) and (p)(7), requiring two separate citations because of the special training required for each type of employee (i.e., hazardous waste workers vs. TSD workers) or because two different operations are conducted at the same site. Similarly, an employer could receive grouped citations for two or more similar violations falling under different aspects of the HAZWOPER standard where abatement of one violation will result in abatement of all citations in the group.
- (2) Violations of both (l)(1)(i) and (p)(8) could result in issuing two citations grouped together or issuing a single citation for either paragraph, since a single emergency response plan could have been developed to cover all emergency responses for a given site. Using the example of an emergency response plan, a contractor involved in a cleanup on a TSD facility might be cited for 29 CFR 1926.65(l)(1)(i) and the employer who is operating the TSD could be cited for 29 CFR 1910.120(p)(8).

3. **What about issuing programmatic citations for HAZWOPER?** You should consider citing for failure to develop and/or implement programs when there is a strong potential for a hazard to exist and it has not been adequately addressed by the Site-Specific Safety and Health Plan or other written programs.

- (1) If, for example, workers are handling drums in an unsafe manner because the contents of the drums are unknown, you do not have to prove that the drums are hazardous. Instead, the drums are considered hazardous until it has been demonstrated otherwise. The site-specific safety and health plan (SSAHP) should, in this example, address the potential hazards of handling unclassified drums and include written procedures for classifying and handling those drums. You should consider citing the various applicable paragraphs of 29 CFR 1910.120(b)(4) and/or 29 CFR 1926.65(b)(4). Citations could also be issued for other applicable paragraphs of HAZWOPER. In this example, you could cite 29 CFR 1910.120(c)(7) and/or 29 CFR 1926.65(c)(7) for "risk identification." You should also consider citing the more specific paragraphs for implementation, such as HAZWOPER paragraph (j)(1)(iv), where possible.
- (2) Consult OSHA Instruction CPL 02-00-111 (CPL 2.111), "Citation Policy for Paperwork and Written Program Requirement Violations," when preparing citations for programmatic violations. This directive gives citation guidance for violations of requirements to prepare a written plan. CPL 02-00-111 (CPL 2.111) discusses issuing citations when the employer's written program is missing or deficient but is not willful. In some cases, where the employer has not addressed a hazard or requirement in a written program, but the deficiency in the plan does not pose a hazard to employees, CSHOs are to issue other-than-serious violations with no penalty or are to not issue a citation.

4. **Are there guidelines for issuing HAZWOPER citations when I am conducting a Process Safety Management (PSM) investigation?**

Inspections of facilities that fall under both the Process Safety Management (PSM) standard (29 CFR 1910.119 and 1926.64) and HAZWOPER can lead to citations that may either be grouped or cited separately, depending on the specific violation. Paragraph (n) of the PSM standard specifically states that, "The employer shall establish and implement an emergency action plan for the entire plant in accordance with 29 CFR 1910.38" for general industry or 29 CDR 1926.35 for construction. It further states that, "Employers covered under this standard may also be subject to the hazardous waste and emergency response provisions contained in 29 CFR 1910.120(a), (p), and (q)" and/or "29 CFR 1926.65(a), (p), and (q)."

- (1) You should make the determination to cite HAZWOPER as if the site were not covered by the PSM standard. Once you have determined that HAZWOPER will be cited, the citation may either be grouped with a citation for paragraph (n) of the PSM standard, or paragraph (n) of the PSM standard can be cited and the appropriate HAZWOPER paragraph can be referenced in the Alleged Violation Description.
- (2) If, however, you should cite multiple violations of the HAZWOPER standard, you should cite them individually rather than grouping them all with the PSM standard paragraph (n).

- (3) For specific violations related to either evacuation or training for the emergency action plan, you should cite 29 CFR 1910.38 or 1926.35 by way of the host standard, i.e., 1910.119(n) or 1926.64(n). In no case where a host standard requires an emergency action plan will 1910.38 or 1926.35 be cited alone. However, 1910.38 or 1926.35 may be referenced in the variable language with the host standard.

5. **When do I cite Subpart T of 29 CFR 1926, Demolition, versus HAZWOPER?** It is not unusual to see the dismantling and demolition of buildings and structures on hazardous waste sites and you should evaluate them according to the requirements in 1926 Subpart T. If hazardous waste or hazardous substances are involved (e.g., testing and removing hazardous materials from buildings before demolition) you need to consider the requirements in HAZWOPER as well as in 1926.850(e). The more protective provisions apply. Examples of frequently cited demolition violations include:

- (1) Not performing a written engineering survey of the structure before commencing demolition work [1926.850(a)].
- (2) Not providing fall protection for employees exposed to wall openings [1926.850(g)].
- (3) Not providing shoring or bracing for walls to prevent premature collapse [1926.850(b)].
- (4) Not properly inspecting and maintaining stairways and ladders in safe conditions for employee use [1926.851(b)].
- (5) Not properly testing and removing hazardous materials from within the structure before commencing demolition work [1926.850(e)].
- (6) Not providing sidewalk shed covers to protect employee entrances to the structure [1926.850(h)].

6. **When do I cite Subpart P of 29 CFR 1926, Excavations, versus HAZWOPER?** Trenching and excavation are also common activities on hazardous waste sites and you should evaluate them according to the requirements in 1926 Subpart P. If hazardous waste or hazardous substances are involved (e.g., excavating in contaminated or potentially contaminated soil, excavating buried drums or tanks containing hazardous substances) you need to consider the requirements in HAZWOPER as well as in 1926.651(g). The more protective provisions apply. When workers are handling drums or other containers during excavation, evaluate the work according to the requirements of HAZWOPER's paragraph (j).

When a leak or spill from an underground storage tank is being remediated under the EPA requirements in 40 CFR 280, Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks, this work fits within the scope of HAZWOPER as a RCRA corrective action, 1910.120(a)(1)(ii).

According to the EPA requirements, cleanup and/or closure of a leaking underground storage tank that is 1,100 gallons or larger with at least 10% of the tank and/or piping located underground is a recognized cleanup site. The provisions of both 1926 Subpart P and HAZWOPER may apply.

7. **When do I apply Expanded Health Standards versus the HAZWOPER standard?** Paragraphs 29 CFR 1910.120(a)(2)(i) and 1926.65(a)(2)(i) state that when there is a conflict or overlap of coverage between standards, the provision that is the more protective of employee safety and health will apply. Employers must comply with all safety and health standards that are applicable to their workplace; however, certain provisions of HAZWOPER may be more protective than the comparable provisions of an expanded health standard. HAZWOPER does not completely supersede any standard. HAZWOPER supersedes provisions of another standard if HAZWOPER is more protective.

For example, you can cite the provisions of one of two standards, the benzene standard and the HAZWOPER standard, depending on which provision offers more protection. The benzene standard provides specific requirements for exposure monitoring and medical surveillance that are more protective than those in the HAZWOPER standard. You should cite the appropriate paragraphs of the benzene standard rather than HAZWOPER in situations where an employer's monitoring or medical surveillance program is inadequate on a hazardous waste site where benzene is present.

8. **What training does the Hazard Communication Standard (HCS), 29 CFR 1910.1200, CFR 1926.59 require and what are its applications?** The HCS requires that employers train employees who may be exposed or potentially exposed to hazardous chemicals. Employers are to train employees in (i) methods to detect a hazardous chemical; (ii) the hazards of chemicals in the work area; (iii) measures employees can take to protect themselves; and (iv) the details of the hazard communication program (further clarified in paragraph (h) of the HCS). It is important to note the objectives of both HAZWOPER and the HCS, especially where the two standards require training:

- (1) The HCS does not specifically apply to hazardous waste. The requirement that employers inform employees of the hazards associated with exposure to hazardous waste or waste-contaminated material are contained in the HAZWOPER standard (1910.120(i) or 1926.65(i)).
- (2) The HCS does apply to commercial hazardous materials that are stored, used, or handled on the site. Such materials may include motor fuels, decontamination solvents, compressed gases, or acids and caustics used in wastewater treatment, other chemical processes, and treatment of hazardous waste performed on the site.

9. **What do I need to review when evaluating compliance with 29 CFR 1910.38 and 1926.35, Employee Emergency Plans and Fire Prevention Plans?** See Section XIII, Emergency Response.

10. **How do I inspect for compliance with 29 CFR 1910.146, Permit-Required Confined Spaces?** See Section XIII, Permit-Required Confined Space Program.
11. **Does HAZWOPER overlap with 29 CFR 1910.1030, Occupational Exposure to Bloodborne Pathogens?** The definition of "hazardous substance" found in HAZWOPER includes any biological agent or infectious material that may cause disease or death. Citations for exposures, mishandling, etc. of biological hazardous wastes should be cited under HAZWOPER. Citations for exposures to bloodborne pathogens as regulated under the Bloodborne Pathogen standard should be cited under 1910.1030. Where there is a conflict or overlap of the standards, the provision more protective of employee safety and health applies.
12. **Is there a mandatory accreditation standard for HAZWOPER training programs?** OSHA does not approve training programs or certify trainers. Appendix E of the HAZWOPER standard gives non-mandatory guidance for training programs. OSHA has removed the proposed standard addressing accreditation of training courses required by HAZWOPER: 29 CFR 1910.121, Accreditation of Training Programs for Hazardous Waste Operations.

XIII. INSPECTION CHECKLISTS

A. 1910.120(b) and 1926.65(b): Safety and Health Program

I. Purpose of Requirements

Employers must develop a comprehensive written safety and health program, as required by HAZWOPER paragraph (b). The written program must include three components: an organizational structure, a comprehensive work plan, and a site specific safety and health plan (SSAHP). The work plan must define work tasks and objectives, and must establish personnel requirements. The SSAHP must analyze job specific hazards and address safety and health hazards present at the site.

Note: Use this section of the guidelines to verify that the employer has a written safety and health program. Other specific elements of the employer's SSAHP can be found in other compliance checklists in this directive.

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
1. Does the employer have an up-to-date written safety and health program? NOTES:	HAZWOPER (b)(1)(i)			
2. Does the written safety and health program contain each of the following elements? <ul style="list-style-type: none"> • An organizational structure; • A site-specific safety and health plan (SSAHP) that includes the employer's standard operating procedures (SOPs) for safety and health; and • A comprehensive work plan NOTES:	HAZWOPER (b)(1)(ii)(A) (b)(1)(ii)(C), (b)(1)(ii)(F) (b)(1)(ii)(B)			
3. Does the employer's written safety and health program include a means of informing subcontractors of site emergency procedures and health and safety hazards present on-site?	HAZWOPER (b)(1)(iv)			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews																		
<p><i>What to look for:</i> All contractors must have written procedures describing their health and safety program. One program may be shared by more than one contractor, that is, the program need not be unique. Regardless of sharing, all contractors must have written procedures addressing the following: 1) where the program is to be maintained; 2) how the program is to be implemented; and 3) how the program is to be made available to employees. All contractors must modify the program to address those elements that are unique to their own companies, and all contractors must train their employees in the elements of the program.</p> <p>NOTES:</p>																						
<p>4. Are the written safety and health program and job-specific safety and health job analyses readily available to:</p> <ul style="list-style-type: none"> • Employees and their representatives; • Subcontractors and their employees; and • OSHA personnel or other Federal, State, or local agencies with regulatory authority? <p>NOTES:</p>	<p>HAZWOPER (b)(1)(v)</p>	<table border="1"> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td style="background-color: #cccccc;"></td><td style="background-color: #cccccc;"></td></tr> </table>																				
<p>5. Does the organizational part of the safety and health program establish a specific chain of command and specify responsibilities of supervisors and employees?</p> <p>Does the organizational structure include at least:</p> <ul style="list-style-type: none"> • A general supervisor who directs all hazardous waste operations; • A site safety and health supervisor who has authority to develop and implement the plan; • General functions and responsibilities of all other personnel needed for hazardous waste activities; and • The lines of authority, responsibility, and communication? • Are health and safety personnel (including alternates) identified in the safety and health program? • Are the names and titles of individuals identified in the organizational structure current? 	<p>HAZWOPER (b)(2)(i)</p> <p>(b)(2)(i)(A)</p> <p>(b)(2)(i)(B)</p> <p>(b)(2)(i)(C)</p> <p>(b)(2)(i)(D)</p> <p>(b)(2)(ii)</p>	<table border="1"> <tr><td></td><td style="background-color: #cccccc;"></td><td style="background-color: #cccccc;"></td></tr> <tr><td></td><td style="background-color: #cccccc;"></td><td style="background-color: #cccccc;"></td></tr> <tr><td></td><td style="background-color: #cccccc;"></td><td style="background-color: #cccccc;"></td></tr> <tr><td></td><td style="background-color: #cccccc;"></td><td style="background-color: #cccccc;"></td></tr> <tr><td></td><td style="background-color: #cccccc;"></td><td style="background-color: #cccccc;"></td></tr> <tr><td></td><td style="background-color: #cccccc;"></td><td style="background-color: #cccccc;"></td></tr> </table>																				

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
NOTES:				
6. Does the comprehensive work plan address the tasks and objectives of site operations?	HAZWOPER (b)(3)			
Does the comprehensive work plan address anticipated clean-up activities and normal operating procedures?	(b)(3)(i)			
NOTES:				
<p>7. Does the SSAHP include at least the following elements?</p> <ul style="list-style-type: none"> • A safety and health risk analysis for each task and operation performed on-site; • An employee training program; • A written personal protective equipment (PPE) program; • A written medical surveillance program, including identification of all employees entered in the program, a description of medical examinations and tests routinely administered, identification of the physician in charge of the program, and a description of recordkeeping procedures; • A written monitoring program that describes the frequency and types of air monitoring to be conducted, instrumentation used, and methods for maintenance and calibration of equipment; • A description of site control measures; • Written decontamination (decon) procedures; • A written emergency response plan; • Confined space entry procedures; and • A spill containment program. 	<p>HAZWOPER (b)(4)(ii)(A)</p> <p>(b)(4)(ii)(B)</p> <p>(b)(4)(ii)(C)</p> <p>(b)(4)(ii)(D)</p> <p>(b)(4)(ii)(E)</p> <p>(b)(4)(ii)(F)</p> <p>(b)(4)(ii)(G)</p> <p>(b)(4)(ii)(H)</p> <p>(b)(4)(ii)(I)</p> <p>(b)(4)(ii)(J)</p>			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p><i>What to look for:</i> You should determine whether the employer is adequately evaluating the effectiveness of the program. The employer can do this by conducting regular site inspections and formally analyzing exposure, medical, and injury/illness data. The program must be revised as necessary based on the results of the employer's evaluation.</p> <p>You should review the employer's evaluation process for the following six aspects. Determine: 1) who is conducting the inspections; 2) how often employers inspect for each element of the SSAHP; 3) what means employers use to notify the appropriate person of a deficiency; 4) what means employers use to verify that the deficiency has been corrected as quickly as possible; 5) what procedures the employer uses if the deficiency has not been corrected; and 6) what protects the employees until the deficiency is corrected.</p> <p>Citations may be issued for non-conformance with the requirements outlined above. If your site inspection identifies numerous violations of the general standards (29 CFR 1910 and/or 29 CFR 1926), the employer's self-inspections are probably not effective in evaluating safety and health hazards and required programs. You can cite for alleged non-conformance with 29 CFR 1910.120(b)(4)(iv) and/or 1926.65(b)(4)(iv).</p>				
<p>NOTES:</p>				

B. 1910.120(c) and 1926.65(c): Site Characterization

I. Purpose of Requirements

As specified in HAZWOPER paragraph (c), the employer must continuously identify and evaluate health and safety risks. This process must begin at the time of initial site characterization and continue throughout site operations. The initial site characterization provides the basis for selecting site procedures and controls. After initial selection, the employer should make changes that are indicated by the ongoing evaluation of the SSAHP's effectiveness, as required by paragraph (b).

You will generally conduct an inspection after the on-site initial characterization is completed and operations have begun. Make sure that site hazards are being evaluated, that the evaluation is quantitative whenever possible, and that risks to employee health and safety are being identified. You should determine whether the SSAHP complies with requirements for initial and ongoing hazard characterization.

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
1. Did the employer obtain and review the following information before the site was entered?	HAZWOPER (c)(4)			
• Location and approximate size of the site;	(c)(4)(i)			
• Description of the work activity to be performed;	(c)(4)(ii)			
• Duration of planned work activity;	(c)(4)(iii)			
• Site topography and accessibility by roads and air;	(c)(4)(iv)			
• Safety and health hazards expected;	(c)(4)(v)			
• Pathways for hazardous substance dispersion;	(c)(4)(v)(vi)			
• Availability and capabilities of emergency response teams that would be used in an emergency; and	(c)(4)(vii)			
• Hazardous substances involved or expected at the site and their chemical and physical properties.	(c)(4)(viii)			

What to look for: The employer must obtain information regarding site hazards through historical records and reconnaissance prior to commencing site activity. Information about the health and safety hazards and hazardous substances on site should be included in the safety and health risk or hazard analysis for each task in the SSAHP. Information about the site and planned work activities should be included in the work plan.

Site characterization is a continuous process, and at each phase of site characterization the information that is obtained must be examined to determine the hazards to which employees may be exposed.

NOTES:

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p>2. Does the SSAHP indicate that both the presence and concentrations of hazardous substances and health hazards have been established?</p> <p>NOTES:</p>	HAZWOPER (c)(7)			
<p>3. Have specific site hazards been identified and evaluated to determine appropriate safety and health control procedures?</p> <p><i>What to look for: The employer is required to continuously obtain and evaluate information to define potential hazards posed by the site. The employer must use this information to develop updated or new job- and task-specific hazard analyses, a required component of the SSAHP. Ongoing monitoring must be performed to capture variations in site conditions, and monitoring must be performed when site conditions change. This information is then used to develop a new SSAHP or to update an existing SSAHP.</i></p> <p><i>In addition to hazards due to the physical, chemical, and toxicological properties of the materials present at the site, you should be alert to any type of hazard that can affect employee safety or health and/or site integrity, such as those associated with electricity, water, heavy equipment, falling objects, heat stress, tripping, etc. You should review and evaluate the employer's data developed from personal exposure sampling or other area monitoring. IDLH and other dangerous conditions should be anticipated where there are confined spaces; bulging drums, significant instrument readings, evidence of gas generation, effervescence, etc.; or areas of dead wildlife and/or vegetation.</i></p> <p>NOTES:</p>	HAZWOPER (c)(1)			
<p>4. Is the employee aware of site hazards that are not addressed in the SSAHP?</p> <p>NOTES:</p>	HAZWOPER (c)(1)			
<p>5. Do site control procedures appear to protect employees from work hazards?</p> <p>NOTES:</p>	HAZWOPER (c)(1)			

C. 1910.120(d) and 1926.65(d): Site Control

I. Purpose of Requirements

As specified in HAZWOPER paragraph (c), the employer must continuously identify and evaluate health and safety risks. This process must begin at the time of initial site characterization and continue throughout site operations. The initial site characterization provides the basis for selecting site procedures and controls. After initial selection, the employer should make changes that are indicated by the ongoing evaluation of the SSAHP's effectiveness, as required by paragraph (b).

You will generally conduct an inspection after the on-site initial characterization is completed and operations have begun. Make sure that site hazards are being evaluated, that the evaluation is quantitative whenever possible, and that risks to employee health and safety are being identified. You should determine whether the SSAHP complies with requirements for initial and ongoing hazard characterization.

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p>1. Does the SSAHP contain site control procedures that have been developed during the planning stages of a hazardous waste clean-up operation and modified as new information becomes available?</p> <p>NOTES:</p>	HAZWOPER (c)(4)(ii)(F), (d)(2)			
<p>2. Does the site control program include, as a minimum, the following? Where these requirements are covered elsewhere, they need not be repeated.</p> <ul style="list-style-type: none"> • An accurate site map. • Site work zones and controlled access points to these zones. • Use of a "buddy system." (The buddy system is defined as a system of organizing employees into work groups such that each employee in the group is observed by at least one other employee in the group at all times.) • Site communication, including methods for emergency communication. • Identification of the nearest medical assistance. • Standard operating procedures (SOPs) or safe work practices. 	HAZWOPER (d)(3)			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p><i>What to look for:</i> Site control SOPs should establish effective work practices to reduce airborne dispersion or other releases of contaminated material, such as containment of overspray from an equipment decontamination line. They should include site security measures to control access to site work zones and to the site itself. The employer should also have provisions for auditing the effectiveness of the established site control program.</p> <p>NOTES:</p>				
<p>3. Is restricted site access enforced?</p>	<p>HAZWOPER (d)(3)</p>			
<p><i>What to look for:</i> The employer must set up physical-security barriers (e.g., fence, caution tape, guarded entry, etc.) to exclude unnecessary personnel from the general area. Verify that site procedures minimize the number of personnel and equipment on-site, consistent with effective operations.</p> <p>NOTES:</p>				
<p>4. Are work zones, including the Exclusion Zone (ExZ) , Contamination Reduction Zone (CRZ) , and Support Zones (SZs) , adequately marked?</p>	<p>HAZWOPER (d)(3)</p>			
<p><i>What to look for:</i> The periphery of the ExZ must be secured, fenced, or well-defined by landmarks and must have entry and exit check point(s). Securing the periphery ensures that the restrictions and procedures for the proper PPE and other equipment, etc. are followed when entering and exiting the zone.</p> <p>You should review the adequacy of the zone boundary. ExZ boundaries should accommodate such factors as adequate distance to contain fires and explosions, physical area necessary to conduct site operations, and the potential of contaminants to migrate from the ExZ. On Superfund sites, the location of the ExZ must be recorded in the Remedial Investigation/Feasibility Study (RI/FS) and the SSAHP.</p> <p>Within the ExZ, different levels of PPE are often justified. You should determine that these sub-areas are readily identifiable and marked as to whether level A, B, or C protection is required. Site job tasks within the ExZ warrant different levels of protection. For example, collecting samples from open containers may require Level B protection, while Level C protection might be sufficient for a walk-through of the site.</p> <p>The CRZ is intended to provide transit between the ExZ and the SZ. The amount of contamination on people and equipment and in the air should be reduced through a combination of decontamination, distance between the ExZ and the SZ, air dilution, work functions, and zone restrictions. Access to the CRZ from the SZ is through a check point. Proper PPE is required for performing work in a CRZ. Re-entry to the SZ then requires removing the PPE and leaving it in the CRZ.</p> <p>The SZ is the location of equipment, supplies, support staff, and other support facilities. It must be maintained as a clean area, and the employer must keep this zone free of contamination by hazardous materials.</p> <p>NOTES:</p>				

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p>5. Are the actual locations of zones and the methods of demarcation consistent with the SSAHP? Some of the criteria to be considered when establishing area dimensions and boundaries include:</p> <ul style="list-style-type: none"> • Physical and topographical features of the site; • Weather conditions, particularly the direction of prevailing winds relative to the locations of the SZ and other un-hazardous areas; • Field/laboratory measurements of air contaminants and environmental samples; • Air dispersion calculations; • Potential for explosion and flying debris; • Physical, chemical, toxicological, and other characteristics of the substances present; • Clean-up activities required. Refer to the Record of Decision (ROD) available from EPA for the specific clean-up activity required; and • The potential for fire(s). <p><i>What to look for: Work zone boundaries are established after evaluating the potential for hazardous substances to migrate through air, soil, or water. These boundaries often change as a result of the activities being performed on-site. The site is divided into the ExZ, the CRZ, and the SZ. Zone boundaries may be vertical or horizontal depending on the locations and physical characteristics of the contaminants. For example, the ExZ may be an outdoor area for which a fence or tape demarcates the zone boundary. Alternatively, walls may represent the zone boundary of an indoor room that is used to process or store hazardous waste. For an area of contaminated soil that has been capped, the zone boundary could be the underside of the cap.</i></p> <p>NOTES:</p>	HAZWOPER (b)(4)(ii)(F)			
<p>6. Is the "buddy system" rigorously adhered to in areas identified by the SSAHP?</p> <p>Are work groups formally designated, or are employees simply instructed to "watch out for each other"?</p> <p>NOTES:</p>	HAZWOPER (d)(3)			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p>7. Is the nearest medical assistance identified?</p> <p>Is the information including telephone numbers, addresses, and location of medical assistance conspicuously posted in the SZ?</p> <p>NOTES:</p>	HAZWOPER (d)(3)			
<p>8. Are employees aware of the existence and location of SOPs for safely performing job tasks?</p> <p>NOTES:</p>	HAZWOPER (d)(3)			

D. 1910.120(e) and 1926.65(e): Training

I. Purpose of Requirements

The most important aspect of HAZWOPER training is that workers be trained to perform the duties expected of them in a safe manner. Employers must train their employees in accordance with paragraph (e) of 29 CFR 1910.120 and 1926.65 during times that the employees would be compensated. An effective training program significantly reduces the number and severity of incidents from overexposure to health hazards.

You should assess the adequacy of an employer's training programs at the time of inspection. This evaluation may be performed by examining the employer's training records maintained on-site, observing site operations, and interviewing the employer, employees, and/or employee representatives. Minimum requirements for training include five components: 1) initial training with on-site supervised training; 2) management and supervisor training; 3) training certification; 4) training for emergency response; and 5) refresher training. Review other training as applicable, including confined space entry, lockout/tagout, trenching and excavation, etc. You may wish to evaluate how the employer determines that each employee has been adequately trained.

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
1. Has the employer developed a written safety and health training program? NOTES:	HAZWOPER (b)(1)(ii)(D)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Is the safety and health training program referenced by or incorporated into the SSAHP? NOTES:	HAZWOPER (b)(4)(ii)(B)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Do the elements of the safety and health training program include at least the following?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> • Names of personnel and alternates responsible for site safety and health; 	HAZWOPER (e)(2)(i)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> • Safety, health, and other hazards on the site; 	(e)(2)(ii)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> • Use of personal protective equipment; 	(e)(2)(iii)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> • Work practices used to minimize hazards 	(e)(2)(iv)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> • Safe use of engineering controls and equipment on the site 	(e)(2)(v)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<ul style="list-style-type: none"> Medical surveillance requirements, including recognition of symptoms and signs that might indicate overexposure to hazards; and 	(e)(2)(vi)			
<ul style="list-style-type: none"> The contents of the SSAHP. 	(e)(2)(vii)			
<p><u>What to look for:</u> OSHA does not currently certify or accredit training programs. You can use the following reference documents on training requirements when reviewing the employer's training program:</p> <ul style="list-style-type: none"> Non-mandatory Appendix E for 1910.120 and 1926.65 (Training Curriculum Guidelines); Chapter 4, "Training of the four-agency document entitled <u>Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities</u>, which provides a chart showing required training by job category; and Chapter 3, "Training," of the EPA publication 9285.1-03 entitled <u>Standard Operating Safety Guides</u>, which provides a more detailed explanation of the various levels of training for workers at EPA-regulated sites; <p>Some of the training elements may not be applicable to every work site. In such cases, the employer's training program need not cover the inapplicable topics in detail.</p> <p>NOTES:</p>				
<p>4. Do the SSAHP and personnel records demonstrate that:</p> <ul style="list-style-type: none"> Employees receive training before they are permitted to engage in hazardous waste operations; General site workers receive a minimum of 40 hours of off-site instruction and 3 days of supervised on-site training; Workers assigned specific limited tasks receive at least 24 hours of off-site instruction and 1 day of supervised on-site training; Workers who work in well-characterized areas, who are not exposed above permissible limits, and where there is no possibility of an emergency receive at least 24 hours of off-site instruction and 1 day of supervised on-site training; On-site management and supervisors receive an additional 8 hours of specialized training at the time of job assignment; 	<p>HAZWOPER (e)(1)</p> <p>(b)(4)(ii)(B), (e)(3)(i), (e)(3)(iv)</p> <p>(b)(4)(ii)(B), (e)(3)(ii)</p> <p>(b)(4)(ii)(B), (e)(3)(iii)</p> <p>(b)(4)(ii)(B), (e)(4)</p>			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<ul style="list-style-type: none"> Trainers are qualified to instruct employees and have satisfactorily completed a training program for teachers or have necessary academic credentials or instructional experience; Employees and supervisors have been issued written certificates by their instructor and trained supervisor; Employees engaged in responding to emergency situations have been trained in how to respond to such situations; Employees and supervisors receive at least 8 hours of refresher training each year; and Employees and supervisors who have not had initial training can demonstrate equivalent training or work experience by documentation or certification evidence <p>NOTES:</p>	(b)(4)(ii)(B) (e)(5) (b)(4)(ii)(B), (e)(6) (b)(4)(ii)(B), (e)(7) (b)(4)(ii)(B), (e)(8) (b)(4)(ii)(B), (e)(9)			
<p>5. Do employees appear to be aware of the following? Have they received training in the following?</p> <ul style="list-style-type: none"> Safety, health, and other hazards present on-site; Use of personal protective equipment; Work practices that can minimize the risk of hazards; and; Safe use of engineering controls and equipment. <p><u>What to look for:</u> Improper use of PPE and unsafe work practices.</p> <p>NOTES:</p>	HAZWOPER (e)(2)(ii) (e)(2)(iii) (e)(2)(iv) (e)(2)(v)			
<p>6. Have the employees received training before engaging in hazardous waste operations?</p> <p>NOTES:</p>	HAZWOPER (e)(1)			

Note: The following information describes OSHA's current view on computer-based training programs including hands-on training and the ability of employees to ask questions. Because this is a rapidly developing area, you should periodically check the OSHA website for new interpretive letters on this topic.

In OSHA's view, use of computer-based training by itself would not be sufficient to meet the intent of most of OSHA's training requirements, in particular those of HAZWOPER. However, self-paced, interactive computer-based training can serve as a valuable training tool in the context of an overall training program. Our position on this matter is essentially the same as our policy on the use of training videos, since the two approaches have similar shortcomings. OSHA urges employers to be wary of relying solely on generic, "packaged" training programs in meeting their training requirements. For example, training under HAZWOPER includes site-specific elements and should also, to some degree, be tailored to workers' assigned duties.

In an effective training program, it is critical that trainees have the opportunity to ask questions where material is unfamiliar to them. In a computer-based program, this requirement may be met by providing a telephone hotline so that trainees will have direct access to a qualified trainer. Equally important is the use of hands-on training and exercises to provide trainees with an opportunity to become familiar with equipment and safe practices in a non-hazardous setting. Many industrial operations, and in particular hazardous waste operations, can involve complex and hazardous tasks. It is imperative that employees be able to perform such tasks safely. Traditional, hands-on training is the preferred method to ensure that workers are prepared to safely perform these tasks. The purpose of hands-on training, for example in putting on and removing personal protective equipment, is two-fold: first, to ensure that workers have an opportunity to learn by experience, and second, to assess whether workers have mastered the necessary skills. It is unlikely that sole reliance on a computer-based training program is likely to achieve these objectives.

Thus, OSHA believes that computer-based training programs can be used as part of an effective safety and health training program to satisfy OSHA training requirements, provided that the program is supplemented by the opportunity for trainees to ask questions of a qualified trainer, and provides trainees with sufficient hands-on experience.

E. 1910.120(f) and 1926.65(f): Medical Surveillance

I. Purpose of Requirements

Medical surveillance requirements protect employees' health by monitoring their health status when they have potential exposure to hazardous substances at or above the OSHA PELs or other published limits. OSHA permissible exposure levels (PELS) or other published limits should be used as the exposure standard. Paragraph (f) requires medical examinations to ensure that employees have not been adversely affected by exposure to health hazards, and that prompt medical intervention is initiated in the event that employees are affected. Examinations must be provided prior to initial assignment, at least yearly thereafter, and at termination of employment. Medical examinations must also be provided in cases where employees are injured or develop signs or symptoms of overexposure to health hazards. In addition, initial and periodic examinations are to be provided to employees who are assigned to tasks that require the use of respiratory protection to ensure that employees are medically fit to wear respirators.

II. Compliance Checklist

	OSHA Reference	Records Review	On-Site Conditions	Interviews
1. Do the SSAHP and site records indicate that a medical surveillance program has been established for the following type of employees?	HAZWOPER (b)(4)(ii)(D)			
A. All employees who are or may be exposed to hazardous substances or health hazards at or above PELs or other published exposure levels without regard to the use of respirators for 30 or more days per year;	(f)(1), (f)(2)(i)			
B. All employees who wear a respirator for 30 or more days per year or as required by 1910.134;	(f)(1), (f)(2)(ii)			
C. All employees who are injured, become ill, or develop signs or symptoms due to possible overexposure involving hazardous substances or health hazards from an emergency response or hazardous waste operation;	(f)(1), (f)(2)(iii)			
D. All members of a HAZMAT team; and	(f)(1), (f)(2)(iv)			
E. Are there any employees who are not covered by the medical surveillance program, but should be?	(f)(2)			
NOTES:				
2. Do the SSAHP and site records indicate that the medical surveillance program requires medical exams and consultations on the following schedules?	HAZWOPER (b)(4)(ii)(D)			
For employees included in categories A, B, or D above:				
• Prior to assignment;	(f)(3)(i)(A)			
• At least once every 12 months or biannually (with physician's approval);	(f)(3)(i)(B)			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<ul style="list-style-type: none"> At termination of employment or reassignment to an area where an employee would not be covered, unless the employee has had an exam within the last 6 months; 	(f)(3)(i)(C)			
<ul style="list-style-type: none"> When an employee has developed signs or symptoms indicating possible overexposure; 	(f)(3)(i)(D)			
<ul style="list-style-type: none"> When an employee has been injured or exposed above a PEL in an emergency situation; 	(f)(3)(i)(D)			
<ul style="list-style-type: none"> At more frequent times on medical advice; and 	(f)(3)(i)(E)			
<ul style="list-style-type: none"> Has the employee been examined at the correct frequency? 	(f)(3)			
For employees included in category C above:				
<ul style="list-style-type: none"> As soon as possible following the emergency incident or development of signs or symptoms; 	(f)(3)(ii)(A)			
<ul style="list-style-type: none"> At additional times, if the examining physician determines that follow-up examinations or consultations are medically necessary; and 	(f)(3)(ii)(B)			
<ul style="list-style-type: none"> Has a situation arisen where the employee should have been examined, and was not? 	(f)(2)			
NOTES:				
<p>3. Do the SSAHP and site records indicate that the medical surveillance program provides for exams to contain the following?</p>	HAZWOPER (b)(4)(ii)(D)			
<ul style="list-style-type: none"> Medical and work history with special emphasis on symptoms related to the handling of hazardous substances and health hazards; and 	(f)(4)(i)			
<ul style="list-style-type: none"> 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). 	(f)(4)(i)			
NOTES:				

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p>4. Do the SSAHP and site records require that the content of employee medical examinations or consultations will be determined by the attending physician under the guidelines of the four-agency hazardous waste document?</p> <p><i>What to look for: You should ensure that the employer provides employees with medical surveillance, including consultations and evaluations. The two tables from Chapter 5 of the four-agency document entitled <u>Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities</u> may be useful in evaluating the employer's medical surveillance program. These tables provide a general outline of a medical surveillance program as well as specific monitoring procedures for various chemical toxins often found on hazardous waste sites.</i></p> <p>NOTES:</p>	<p>HAZWOPER (b)(4)(ii)(D) (f)(4)(ii)</p>			
<p>5. Do the SSAHP and site records indicate the medical exams and procedures are:</p> <ul style="list-style-type: none"> • Performed by or under the supervision of a licensed physician; and • Provided to the employee: <ul style="list-style-type: none"> – Without cost; – Without loss of pay; and – At a reasonable time and place? • Has the employee had the exams at no cost or loss of pay and at a reasonable time and place? <p>NOTES:</p>	<p>HAZWOPER (b)(4)(ii)(D)</p> <p>(f)(5)</p> <p>(f)(5)</p> <p>(f)(5)</p>			
<p>6. Do the SSAHP and medical records indicate the employer is providing the following to the examining physician?</p> <ul style="list-style-type: none"> • A copy of this standard and its appendices; • A description of the employee's duties as they relate to the employee's exposure; • The employee's exposure levels or anticipated exposure levels; • A description of any PPE used or to be used; 	<p>HAZWOPER (b)(4)(ii)(D)</p> <p>(f)(6)</p> <p>(f)(6)(i)</p> <p>(f)(6)(ii)</p> <p>(f)(6)(iii)</p>			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<ul style="list-style-type: none"> Information from previous medical examinations of the employee that is not readily available to the examining physician; and 	(f)(6)(iv)			
<ul style="list-style-type: none"> Information required by 1910.134. 	(f)(6)(v)			
<p><i>What to look for:</i> You should determine that the employer has provided the physician in charge of the program with information on the nature of hazards present at the site and the toxicological properties of contaminants present. Ideally, the medical surveillance program that the physician develops for the site is based on this information.</p> <p>NOTES:</p>				
<p>7. Do the SSAHP and site records indicate that the employer obtains and furnishes to the employee a written opinion from the attending physician that contains the following?</p> <ul style="list-style-type: none"> The physician's opinion as to whether the employee has any detected medical conditions that would place the employee at increased health risk from work in hazardous waste operations or an emergency response, or from respirator use; The physician's recommended limitations on the employee's assigned work; The results of the medical examination and tests if requested by the employee; and A statement that the physician has informed the employee of the results of the medical examination and any medical conditions that require further examination or treatment; The written opinion does not reveal specific findings or diagnoses unrelated to occupational exposures; and Has the employee seen the physician's written opinion? <p>NOTES:</p>	<p>HAZWOPER (b)(4)(ii)(D)</p> <p>(f)(7)(i)(A)</p> <p>(f)(7)(i)(B)</p> <p>(f)(7)(i)(C)</p> <p>(f)(7)(i)(D)</p> <p>(f)(7)(ii)</p> <p>(f)(7)</p>			
<p>8. Do the SSAHP and site records indicate that medical surveillance records are retained as specified by 1910.1020, and do the retained records contain the following?</p>	<p>HAZWOPER (b)(4)(ii)(D)</p>			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<ul style="list-style-type: none"> Name and social security number of the employee; 	(f)(8)(ii)(A)			
<ul style="list-style-type: none"> Physician's written opinions, recommended limitations, and results of examinations and tests; 	(f)(8)(ii)(B)			
<ul style="list-style-type: none"> Any employee medical complaints related to exposure to hazardous substances; and 	(f)(8)(ii)(C)			
<ul style="list-style-type: none"> A copy of the information provided to the examining physician by the employer. 	(f)(8)(ii)(D)			
<p>NOTES:</p>				

F. 1910.120(g) and 1926.65(g): Engineering Controls, Work Practices, and Personal Protective Equipment for Employee Protection

I. Purpose of Requirements

The purpose of HAZWOPER's paragraph (g) is to ensure that employees are adequately protected from exposure to hazardous substances and other health hazards by means of engineering controls, work practices, and PPE, as appropriate. Employees must be protected using feasible engineering controls and work practices to keep employee exposures below OSHA PELs or other published exposure limits. Where these approaches are not feasible, any combination of engineering controls, work practices, and PPE may be used to control exposures.

Use of PPE at a hazardous waste site must be consistent with a written program that is part of the SSAHP. All applicable requirements of Subparts G and I of Part 1910 or Subparts D and E of Part 1926, as appropriate, must be met. For enforcement, you should reference either Subpart G, I, or Z standards as applicable when citing 29 CFR 1910.120(g) and Subpart D or E when citing 29 CFR 1926.65(g).

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
1. Does the SSAHP contain a written PPE program? Does the written PPE program address the following:	HAZWOPER (b)(4)(ii)(C), (g)(5)			
• PPE selection based on site hazards	(g)(5)(i)			
• PPE use and limitations of the equipment	(g)(5)(ii)			
• Work mission duration	(g)(5)(iii)			
• PPE maintenance and storage	(g)(5)(iv)			
• PPE decontamination and disposal	(g)(5)(v)			
• PPE training and proper fitting	(g)(5)(vi)			
• PPE donning and doffing procedures	(g)(5)(vii)			
• PPE inspection procedures prior to, during, and after use	(g)(5)(viii)			
• Evaluation of the effectiveness of the PPE program	(g)(5)(ix)			
• Appropriate medical considerations, such as limitations during temperature extremes and potential for heat stress?	(g)(5)(x)			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p><i>What to look for: employer is required to establish and implement a PPE program. This should be part of the employer's safety and health program and is required by (b) and (g)(5) of HAZWOPER. The written program should reflect that PPE selection is based on site hazards, and that selection decisions are continuously reevaluated based on activities ongoing at the site and the results of updated job- or task-specific hazard analyses conducted by the employer.</i></p> <p>NOTES:</p>				
<p>2. Is the PPE selected and used to protect employees from the hazards and potential hazards they are likely to encounter as identified during the site characterization and analysis (including physical hazards such as heat stress, ionizing radiation, and noise)?</p> <p><i>What to look for: You should determine whether a safety and health hazard analysis based on the latest monitoring data has been performed for each site task and operation and whether PPE has been specified for each site task based on these data. This requirement is specified in HAZWOPER paragraph (b)(4)(ii).</i></p> <p><i>The hazard analysis must be both site- and task-specific. You should determine if each task has been covered with respect to specific site hazards. If you determine that the PPE has been selected on some basis other than current site hazard data, you should cite 29 CFR 1910.120(g)(3)(i) and/or 1926.65(g)(3)(i).</i></p> <p><i>The employer should use surface monitoring data to determine the level of chemical protective clothing necessary to protect the employees from skin exposure to hazardous materials. Surface samples should be used to determine the level of contamination present to assess the risk of skin exposure to the employee.</i></p> <p><i>You do not have to document exposure above the PEL or other protective levels before citing for PPE violations. When overexposure has not been shown either by your (CSHOs) personal monitoring of workers on the site or through the employer's monitoring records, you can still consider programmatic deficiencies and lax implementation that would be expected to "potentially" expose workers.</i></p> <p><i>If, for example, the employer selected an N-series filter to use with a highly degrading oil such as dioctylphthalate (DOT), citations could be issued for such HAZWOPER paragraphs as (b)(4)(ii)(A) and/or (g)(3)(ii). Failure of the employer to evaluate the program could be cited under (g)(5)(ix).</i></p> <p><i>You can also cite for inadequacies in the PPE program based on the potential for exposure as shown by sampling for contamination inside the PPE. Demonstrating that breakthrough has occurred or that contamination is present inside of PPE can indicate inadequacies in the PPE program, problems with decontamination procedures, and/or failure to monitor properly. Again, it is the potential for exposure and failure to recognize the problem that should result in a citation. If an overexposure is confirmed through sampling, then this should be cited as a separate violation.</i></p> <p>NOTES:</p>	(g)(3)			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p>3. Is the PPE selected and used to meet the requirements of 29 CFR Part 1910, Subpart I (eye and face protection, respiratory protection, occupational head protection, occupational foot protection, and electrical protection devices)?</p> <p>Is the PPE selected based on its performance characteristics relative to requirements and limitations of the site, task-specific conditions and duration, and hazards and potential hazards identified?</p> <p><i>What to look for: You should consider the hazards presented by insufficient or excessive use of PPE. Wearing PPE also poses hazards, such as impaired vision, increased workload, heat stress, restricted breathing, and tripping. You should evaluate the employer's selection of PPE to ensure that it is creating a safer, rather than less safe, working environment based on an evaluation of current site safety and health hazards.</i></p> <p><i>The level of PPE should be decreased when additional information regarding site conditions shows that decreasing the level of PPE will actually increase worker protection and will not result in hazardous exposures to employees. You can cite HAZWOPER paragraph (g)(3)(v) for the use of either insufficient or excessive PPE and can use the employer's own sampling data and previous site history as evidence of employer knowledge.</i></p> <p><i>Work mission duration (as per the HAZWOPER standard paragraph (g)(3)(ii) and (g)(5)(iii)) should be considered in PPE selection. You should verify that the employer has established the duration of each mission before employees begin working in PPE. The employer should address the following limiting factors:</i></p> <ul style="list-style-type: none"> <i>(a) Air supplies, based on rate of air consumption (e.g., work rate);</i> <i>(b) End-of-service-life indicators (ESLI) or change schedule for canisters and cartridges of air purifying respirators;</i> <i>(c) Chemical protective clothing (CPC) breakthrough times; and</i> <i>(d) Potential for heat stress overexposure.</i> <p><i>HAZWOPER paragraphs (g)(3)(i-ii) and/or (g)(5)(i-iii) can be cited when selection of PPE has not been based on the performance characteristics of the PPE relative to the site hazards, PPE use, and mission duration. You may cite for failure to develop and/or implement the program in these instances.</i></p> <p>NOTES:</p>	(g)(3)			
<p>4. Is positive pressure self-contained breathing apparatus (SCBA) or positive air-line respirator and escape air supply used when chemical exposure will create a substantial possibility or immediate death, immediate serious illness or injury, or impair the ability to escape?</p>	(g)(3)			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p>Are totally encapsulating chemical protective suits (Level A) used in conditions where skin absorption of a hazardous substance may result in a substantial possibility of immediate death, immediate serious illness or injury, or impair the ability to escape?</p> <p>Is the level of PPE increased when additional information indicates that increased protection is necessary to reduce employee exposure below PELs and published exposure levels?</p> <p>Does the site safety and health officer have the authority to upgrade the required level of PPE when site conditions warrant?</p> <p>Does the site safety and health officer have the authority to downgrade the required level of PPE, when site conditions warrant, to reduce the potential for heat stress or other hazards?</p>				
<p><i>What to look for: In assessing the adequacy of selected chemical protective clothing, you may use the Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, Chapter 8, and manufacturer's literature.</i></p> <p><i>Appendix B of the HAZWOPER standard, General Description and Discussion of the Levels of Protection and Protective Gear, furnishes an outline of levels of protection for various site conditions based on the potential need for respiratory and skin protection.</i></p> <p><i>Several guidelines and databases exist that provide further information on protective clothing; examples include NIOSH's Guidelines for the Selection of Chemical Protective Clothing and NIOSH's Chemical Protective Clothing Performance Index. The National Fire Protection Association also issues information and standards (e.g., National Fire Protection Association (NFPA) 1991: Standard on Vapor-Protective Suits for Hazardous Chemical Emergencies; NFPA 1992: Standard on Liquid Splash-Protective Suits for Chemical Emergencies; and NFPA 1993: Support Function Protective Garments for Hazardous Chemical Operations). These standards and guides provide data on chemical resistance, design and construction, application, reuse, and costs. The NFPA standards also provide information on flammability resistance. In 1994, the NFPA standards mentioned above were adopted by inclusion in Appendix B of HAZWOPER (59 FR 43268, August 22, 1994).</i></p> <p>NOTES:</p>				
<p>5. Are totally encapsulating chemical protective suits:</p> <ul style="list-style-type: none"> • Selected to protect employees for hazards identified during site characterization and analysis; • Capable of maintaining positive air pressure; and 	<p>HAZWOPER (g)(4)</p>			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<ul style="list-style-type: none"> Capable of preventing inward test gas leakage of more than 0.5% NOTES:				
6. If applicable, has the employer implemented a hearing conservation program that includes noise monitoring, use of hearing protection devices, and audiograms? NOTES:	1910.95(c)			
7. Has the employer implemented the use of engineering controls (e.g., pressurized cabs or control booths, remotely operated material handling equipment) and work practices (e.g., removing all non-essential personnel during drum opening, wetting down dusty operations, working upwind of possible inhalation hazards) to reduce and maintain employee exposure to or below PELs to the extent feasible? <i>What to look for: When engineering controls or work practices required by Subpart Z of Part 1910 are not in use, or are not being implemented properly to control contaminants present in excess of the PEL, you should cite 29 CFR 1910.120(g)(1)(i) and/or 1926.65(g)(1)(i) and make reference to the other standard (Subpart Z) in the citation.</i> NOTES:	HAZWOPER (g)(1)(i)			
8. Does the employer comply with 29 CFR, Subpart G (OSHA standards for ventilation, noise, and ionizing and non-ionizing radiation)? NOTES:	HAZWOPER (g)(1)(iv)			
9. Has the employer implemented the use of engineering controls, work practices, and PPE to reduce and maintain employee exposure to or below published exposure levels for hazardous substances and health hazards not regulated by 29 CFR Part 1910, Subparts G and Z (e.g., heat stress, lifting hazards)? <i>What to look for: You should cite 29 CFR 1910.120(g)(2) and/or 1926.65(g)(2) when:</i> <ul style="list-style-type: none"> The engineering controls or work practices specified in the employer's written safety and health program are not in use, or not being implemented properly; and This results in personal exposure in excess of National Institute for Occupational Safety and Health (NIOSH) or American Conference of Governmental Industrial Hygienists (ACGIH) published exposure levels. 	HAZWOPER (g)(2)			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
NOTES:				
<p>10. Is the employer using employee rotation as a means of controlling exposure only where no potential exists for exposure to ionizing radiation and no other means exist?</p>	HAZWOPER (g)(1)(iii)			
<p><i>What to look for: Employee rotation is not permitted as a means of exposure limits or dose limits, with one exception: employee rotation may be used to achieve dermal and airborne dose limits for ionizing radiation when no other feasible means exist to reduce employee exposure.</i></p>				
NOTES:				
<p>11. Does PPE appear to have been selected and used to protect employees from the hazards and potential hazards they are likely to encounter?</p> <p>Does the potential for heat stress appear to have been considered in the selection of PPE?</p> <p>Is positive pressure self-contained breathing apparatus (SCBA) or positive pressure air-line respirator and escape air supply used when chemical exposure will create a substantial possibility of immediate death, immediate serious illness or injury, or impair the ability to escape?</p>	HAZWOPER (g)(3)			
NOTES:				
<p>12. Are totally encapsulating chemical protective suits (Level A) used in conditions where skin absorption of a hazardous substance may result in a substantial possibility of immediate death, immediate serious illness or injury, or impair the ability to escape?</p> <p>Is PPE selected and used to meet the requirements of 29 CFR Part 1910, Subpart I (eye and face protection, respiratory protection, occupational head protection, occupational foot protection, and electrical protection devices)?</p>	HAZWOPER (g)(3)			
NOTES:				
<p>13. Is PPE used in accordance with the written program contained in the SSAHP?</p>	HAZWOPER (b)(4)(ii)(C), (g)(5)			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p><i>What to look for:</i> You should evaluate implementation of the employer's PPE program with regard to training and the fit of equipment (as per HAZWOPER paragraph (g)(5)(vi)). Indicators of improper fit include torn seams, gloves stretched out of shape, boots that flop or turn as the employee walks, etc. A determination should then be made as to the hazards posed by the improper fit, such as exposure to contamination or tripping hazard. Discomfort should not be a main consideration when making a determination that a hazard exists.</p> <p>Workers entering and leaving hazardous areas should be observed, particularly for the procedures followed for putting on and removing PPE (as per HAZWOPER paragraph (g)(5)(vii)) to verify that doffing procedures adequately prevent contamination of the employee and the spread of contaminants to other areas.</p> <p>Only essential items should accompany employees into the hazardous area. Items of particular concern are those that would not be decontaminated easily as the workers exit.</p> <p>You should review procedures for PPE inspection prior to, during, and after use (as per HAZWOPER paragraph (g)(5)(viii)). PPE use, maintenance, and storage (as per the HAZWOPER standard (g)(5)(iv)) shall meet the requirements of Subpart I of 29 CFR 1910 and/or Subpart E of 29 CFR 1926.</p> <p>NOTES:</p>				
14. Has the employer conducted any objective monitoring (e.g., of contamination of the skin or work clothes) to evaluate the effectiveness of PPE selected?	HAZWOPER (b)(4)(iv), (g)(5)(ix)			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p><i>What to look for:</i> Paragraphs (b)(4)(iv) and (g)(5)(ix) of HAZWOPER require that the employer conduct inspections to determine the effectiveness of all parts of the SSAHP, including the PPE program. HAZWOPER paragraph (g)(5)(ix) should be cited in regard to deficiencies in PPE program effectiveness evaluation or lack of evaluation.</p> <p><i>Procedures that the employer can use to evaluate the effectiveness of its PPE program include:</i></p> <ol style="list-style-type: none"> (1) Sampling the inside and outside surfaces of PPE for site contaminants; (2) Sampling surfaces of employees' skin for site contaminants; (3) Setting surface contamination levels that are considered acceptable and "safe" for employee exposures. The "safe" levels of contamination on surfaces could be determined by calculating the resulting skin dose and determining whether this level is higher or lower than the dose received from exposure to airborne concentrations at the PEL. The direct toxic effects of the contaminant on the skin should also be considered when establishing "safe" levels of contamination; (4) Establishing measures to be taken if contamination levels are found to be higher than this level; and (5) Determining how often to evaluate PPE effectiveness and whether this frequency is reasonable in light of findings in previous employer evaluations. <p><i>You must evaluate the employer's surface monitoring techniques, their limitations, and sampling precautions, which are discussed in the OSHA Technical Manual. You can get assistance from the National Office staff in evaluating an employer's approach to surface contamination.</i></p> <p><i>You should evaluate PPE decontamination and disposal procedures to determine implementation of the decontamination program (per HAZWOPER paragraph (g)(5)(v)) and employer evaluation of the effectiveness of that program. Employees should be observed removing their protective clothing at the decontamination station to determine whether there are any obvious signs of contamination breakthrough or deterioration. Wipe sampling of internal and external surfaces of reusable chemical protective clothing and surfaces of worker's respiratory protection equipment can be used to determine whether decontamination procedures are adequate</i></p> <p><i>The employer must periodically evaluate the respiratory protection program as required in 29 CFR 1910.134(c). Evaluation techniques used and their frequency, as well as respirator selection, use, storage, and maintenance procedures and practices, should be contained in or attached to the SSAHP and should be in compliance with 29 CFR 1910.134. Alleged violations of the respiratory protection evaluation program should be cited under HAZWOPER paragraph (g)(5)(ix), with reference to 29 CFR 1910.134(c)(1)(ix) as appropriate.</i></p> <p>NOTES:</p>				
<p>15. Does the employer use means other than employee rotation to comply with PELs?</p> <p>NOTES:</p>	HAZWOPER (g)(1)(iii)			
<p>16. Are employees familiar with the types of PPE included in Levels A, B, C, and D ensembles, as appropriate for the site?</p>	HAZWOPER (g)(3)			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
NOTES:				
17. Are employees familiar with procedures for inspecting, maintaining, cleaning and disposing of PPE?	HAZWOPER (g)(5)			
NOTES:				
18. Have employees ever encountered situations that indicate that their PPE is not protecting them from exposure (e.g., respirator failure or leakage of moisture through protective clothing)?	HAZWOPER (g)(3)			
NOTES:				

G. 1910.120(h) and 1926.65(h): Monitoring

I. Purpose of Requirements

The purpose of HAZWOPER's paragraph (h) is to provide for an ongoing exposure monitoring program to ensure proper selection of engineering controls, work practices, and PPE. By these means, employees should be effectively protected from airborne levels of contaminants that exceed PELs or other published exposure limits. The monitoring program should also address exposure to hazards such as noise, heat stress, and ionizing radiation if they are present. For supplementary guidance on heat stress monitoring, see the "Heat Stress Program" checklist in this appendix.

II. Compliance Checklist

	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p>1. Does the SSAHP contain a program or procedures to monitor employee exposures to all hazardous substances known or suspected on-site?</p> <p><i>What to look for: As part of the initial hazard evaluation, the employer is required to use monitoring data, visible indicators (signs, labels, placards, type of container, etc.), and other information (manifests, inventories, EPA records, etc.) to evaluate the presence of or potential for air contaminant release. The employer must use this information to design the monitoring program, to characterize employee exposures, and to choose appropriate exposure controls, including PPE. As monitoring results are received, the employer must use this information to evaluate and update the monitoring program. You should ensure that the written monitoring program is consistent with actual site practice and that the program is appropriate for the site and its hazards.</i></p> <p>NOTES:</p>	HAZWOPER (b)(4)(ii)(E), (c)(6) (h)(2)			
<p>2. Does the SSAHP contain a program or procedures to monitor employee exposures to all hazardous substances known or suspected on-site?</p> <p>Frequency and types of:</p> <ul style="list-style-type: none"> • Air monitoring • Personnel monitoring; and • Environmental sampling (for heat stress, noise, radiation); <p>Including:</p> <ul style="list-style-type: none"> • Sampling techniques and instrumentation; • Methods of maintenance; and • Methods of calibration? 	HAZWOPER (b)(4)(ii)(E)			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p><u>What to look for:</u> The employer is required to specify the frequency and types of monitoring in the site-specific safety and health plan. You should ensure that the employer's monitoring program includes the rationale behind the specifics of the monitoring program. You should evaluate the rationale based on your personal knowledge and field experiences, the operations occurring on-site, the exposure controls used, the hazardous substances known or believed to be present, and the potential for employee exposures.</p> <p>NOTES:</p>				
<p>3. Does the SSAHP contain requirements and procedures for monitoring after initial site entry and representative air monitoring when:</p> <ul style="list-style-type: none"> • The possibility of an IDLH condition or flammable atmosphere has developed; or • There is an indication that exposures may have changed, under such conditions as: <ul style="list-style-type: none"> – Work begins on a different portion of the site; – Contaminants other than those previously identified are being handled; – A different type of operation is initiated; or – Employees are handling leaking drums or containers or working areas with obvious liquid contamination 	<p>HAZWOPER (h)(3)</p> <p>(h)(3(i))</p> <p>(h)(3(ii))</p> <p>(h)(3(iii))</p> <p>(h)(3(iv))</p>			
<p><u>What to look for:</u> Periodic monitoring must be performed to alert the employer to changing conditions, such as when exposures may have increased/decreased or the employees are being exposed to different materials. The employer must use periodic monitoring results to modify PPE and other exposure controls as necessary. The periodic monitoring required by paragraph (h)(3) may be incorporated into the employer's personal sampling program required in paragraph (h)(4).</p> <p>NOTES:</p>				
<p>4. Does the SSAHP include monitoring to meet the specific personal monitoring requirements for substances that are listed in 1910.1001-1048, if they are present?</p>	<p>HAZWOPER 1910.146, 1910.1001 to 1910.1096, as applicable</p>			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p><i>What to look for:</i> You should review the specific application of the chemical-specific standards as well as confined space entry requirements (if necessary). For example, the Cotton Dust standard is limited to yarn manufacturing, slashing and weaving operations, or waste houses for textile operations, and thus does not apply to hazardous waste operations.</p> <p>NOTES:</p>				
<p>5. Does the SSAHP require that the employees who are likely to have the highest exposure to hazardous substances and health hazards are monitored by using personal sampling? Is the monitoring frequent enough to adequately characterize employee exposures?</p> <p>NOTES:</p>	<p>HAZWOPER (h)(4)</p>			
<p>6. When the exposures of employees likely to have the highest exposure are over the PELs or other published exposure levels, does the SSAHP require that monitoring shall continue to determine the exposures of all employees likely to be above those limits?</p> <p>NOTES:</p>	<p>HAZWOPER (h)(4)</p>			
<p>7. Are the appropriate sampling and monitoring methods used for the substances identified?</p> <p><i>What to look for:</i> Direct-reading monitoring instruments can be well-suited to the rapidly changing conditions at hazardous waste sites. They serve most appropriately as a screening tool to detect changes in airborne exposure levels. New, compact designs for some direct-reading monitors also allow them to be used as real-time personal monitoring devices. When direct-reading instruments are used, the you should evaluate whether:</p> <ul style="list-style-type: none"> • The instrument can measure the hazard(s) of concern; • This results in personal exposure in excess of National Institute for Occupational Safety and Health (NIOSH) or American Conference of Governmental Industrial Hygienists (ACGIH) published exposure levels. • The employer is using the direct-reading instrument correctly, and has correlated the results from direct-reading monitors and lab-analyzed samples to evaluate the accuracy and correction factor of the direct-reading instruments. <p>Laboratory-analyzed, Time-Weighted Average personal samples are still required in order to allow accurate characterization of employee exposures.</p> <p>Deficiencies in the correct use of monitoring devices can be cited under paragraph (h)(1)(ii) as a failure to identify and quantify airborne levels of hazardous substances, and/or paragraph (b)(4)(iv), as a failure to evaluate the effectiveness of the SSAHP.</p> <p>NOTES:</p>	<p>HAZWOPER (h)(1)</p>			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p>8. Are the correct "indicator substances" used to characterize employee exposures to the hazardous substances?</p> <p>Is monitoring being routinely conducted for the "indicator substances" identified in the SSAHP?</p> <p><i>What to look for: When multiple contaminants are present, sentinel or indicator substances may be used for contamination monitoring if the presence and concentration of a sentinel material can be determined and is likely to be representative of the presence of other contaminants of concern. Generally, the employer should choose the substance with the lowest PEL as the sentinel or indicator substance.</i></p> <p>NOTES:</p>	<p>HAZWOPER (h)(1), (b)(4)(ii)(E)</p>			
<p>9. Is the sampling frequency appropriate for the work task and the substances being identified?</p> <p>NOTES:</p>	<p>HAZWOPER (h)(1)</p>			
<p>10. Is a qualified laboratory used to analyze exposure samples?</p> <p>NOTES:</p>	<p>HAZWOPER (h)(1)</p>			
<p>11. Are sampling and monitoring results returned in a reasonable time frame to prevent harm to employees if the results are above PELs or published exposure levels?</p> <p>NOTES:</p>	<p>HAZWOPER (h)(1)</p>			
<p>12. Are sampling and monitoring results identified for personal or area locations?</p> <p>NOTES:</p>	<p>HAZWOPER (h)(1)</p>			
<p>13. Are sampling and monitoring results used to determine the appropriate level of employee protection needed on-site?</p> <p>NOTES:</p>	<p>HAZWOPER (h)(1)</p>			
<p>14. Does the SSAHP contain specific procedures to respond to overexposure detected from monitoring?</p> <p>NOTES:</p>	<p>HAZWOPER (b)(4)(iv), (h)(1)</p>			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
15. Are real-time monitoring instrument results correctly correlated to sampling results? NOTES:	HAZWOPER (h)(1)			
16. Are up-to-date maintenance and calibration logs kept for all sampling and monitoring instruments? NOTES:	HAZWOPER (b)(4)(ii)(E), (h)(1)			
17. Are the maintenance and calibration procedures for the sampling and monitoring instrumentation adequate to ensure accurate results? Is the instrument calibration performed appropriately? NOTES:	HAZWOPER (b)(4)(ii)(E), (h)(1)			
18. Are sampling and monitoring being performed correctly regarding: <ul style="list-style-type: none"> • Location of samples or readings; • Instrument operation; • Analysis of results or readings; and • Recording of results or readings? NOTES:	HAZWOPER (h)(1)			
19. Does the person performing the sampling and monitoring have sufficient training to: <ul style="list-style-type: none"> • Ensure accurate results? • Ensure proper response to overexposure results? NOTES:	HAZWOPER (h)(1)			
20. Are employees notified of their sampling and monitoring results? NOTES:	HAZWOPER (i)			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
21. Do employees understand the significance or meaning of the sampling and monitoring results?	HAZWOPER (i)			
NOTES:				

H. 1910.120(i) and 1926.65(i): Informational Programs

I. Purpose of Requirements

The purpose of HAZWOPER's paragraph (i) is to ensure that all site employees, including contractor and subcontractor employees, are informed of the safety and health hazards associated with their work. HAZWOPER's paragraph (i) essentially establishes hazard communication requirements for hazardous waste and mandates that employers must develop and implement a written program to ensure that all employees on-site who could potentially be exposed to the hazards of the employer's operations are informed of the nature, level, and degree of exposure likely to result from their work.

II. Compliance Checklist

	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p>1. Does the employer's safety and health program contain a written program to inform all potentially affected employees on-site, including subcontractor employees, of the nature, level, and degree of hazardous exposure likely to result from the employer's site operations?</p> <p><i>What to look for: The employer must have a documented method to quickly inform employees and other contractors on-site about newly identified or introduced hazards, either materials or processes. Such methods may include, but are not limited to, bulletin board postings, tailgate safety meetings, briefings, and published site "newsletters."</i></p> <p><i>The information included in the "briefings" should be the same as required in the on-site training before employees are allowed on-site. If you determine that employees are inadequately trained on the new hazards or processes, you should cite paragraph (e) should normally be cited. Paragraph (e) may be grouped with 29 CFR 1910.120(c)(8) and (b)(4)(iii) as appropriate.</i></p> <p><i>Hazard communication training: The employer may incorporate its informational program into the hazard communication program for hazardous materials not including hazardous waste. Citations for paragraph (i) should be given when employers do not have an effective program for conveying site hazard information accurately and expediently to employees and other contractors and subcontractors. The Hazard Communication standard (HCS, 29 CFR 1910.1200 or 29 CFR 1926.59) should be cited for violations of the HCS requirements.</i></p> <p>NOTES:</p>	HAZWOPER (i)			
<p>2. Are site employees familiar with the specific nature and level of hazards associated with their employer's operations? Have employees seen the employer's written informational program or been told where to obtain a copy?</p> <p>NOTES:</p>	HAZWOPER (i)			
<p>3. Have site employees been informed about the specific nature and level of hazards associated with operations of other contractors or subcontractors on-site? Do employees know how to obtain a written copy of this information?</p>	HAZWOPER (i)			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
NOTES:				

I. 1910.120(j) and 1926.65(j): Handling Drums and Containers

I. Purpose of Requirements

The intent of HAZWOPER's paragraph (j) is to establish materials handling requirements that minimize the potential for employee exposure or injury or a hazardous substance spill on sites where any drums, tanks, vaults, or other containers are included in site operations. If the potential for a major spill exists, these requirements are also intended to ensure that both employers and employees are prepared to respond. Employers are required to prepare a written spill containment program that is part of the SSAHP. The program must address how the spill will be isolated and contained.

Drums and other containers may be used or handled in a variety of areas throughout the site. The drums may hold material being remediated as part of the site clean-up project. They may be buried, severely corroded, bulging, or have other features that pose a hazard to site workers. Other drums and containers such as over packs and lab packs may also be used for remediation. You should keep in mind that a wide variety of containers fall under the scope of paragraph 29 CFR 1910.120(j) and/or 29 CFR 1926.65(j). These range from small containers, such as glass jars, to large tanks and vaults, such as underground storage tanks (USTs)

II. Compliance Checklist

	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p>1. Does the SSAHP address the potential for a hazardous substance spill?</p> <p>If the potential for a major spill exists, does the SSAHP contain a written spill containment program that would allow the entire volume of the spill to be contained and isolated?</p> <p><i>What to look for: The plan may be written to comply with EPA requirements (40 CFR 264 and 265), as well as those of OSHA, but must be consistent with the requirements of HAZWOPER's paragraph (j) and must be designed to contain and isolate the entire volume of any spill.</i></p> <p>NOTES:</p>	HAZWOPER (b)(4)(ii)(J), (j)(1)(viii)			
<p>2. Where drums, tanks, vaults, or other containers of hazardous waste must be handled, are there written procedures consistent with HAZWOPER paragraph (j) for operations such as handling, opening, staging, labeling, transporting, and shipping these containers?</p>	HAZWOPER (d)(3), (j)			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p><u>What to look for:</u> <i>When reviewing the employer's drum handling procedures, you should consider the following aspects of procedures regarding the handling of drums, containers, tanks, and vaults:</i></p> <ul style="list-style-type: none"> • <i>Locating, selecting, handling, inspecting, labeling, repairing, over-packing, storing, and shipping;</i> • <i>Opening or breaking seals;</i> • <i>Use of material handling equipment where ignitable vapors may be released;</i> • <i>Handling drums and containers containing radioactive wastes;</i> • <i>Handling drums and containers containing shock-sensitive wastes;</i> • <i>Handling drums and containers containing lab-packed materials;</i> • <i>Sampling to determine contents; and</i> • <i>Shipping and transport.</i> <p>NOTES:</p>				
<p>3. When it is practical to inspect drums and containers, does SSAHP contain written inspection procedures?</p> <p><u>What to look for:</u> <i>These procedures should cover the inspection of areas where containers are stored to identify leaking containers and the deterioration of containers and containment systems caused by corrosion or other factors.</i></p> <ul style="list-style-type: none"> • <i>The employer's inspection of stored drums or containers should be performed at least weekly.</i> • <i>Drums and containers that contain hazardous waste and are being remediated must be inspected by the employer before such drums or containers are handled. If the drum or container is partially buried or there is some other obstruction that interferes with the inspection, employees may need to move the drum or container to complete the inspection.</i> <p>NOTES:</p>	HAZWOPER (j)(1)(iii)			
<p>4. Where drums or containers must be sampled, does the SSAHP contain appropriate written sampling procedures?</p> <p>NOTES:</p>	HAZWOPER (j)(7)			
<p>5. Are drums and containers inspected prior to being moved to ensure their integrity? Where this is impractical, are they moved to a separate location for inspection prior to further handling?</p> <p>Are drums and containers under pressure left in place until the cause for excess pressure is determined and appropriate containment procedures have been implemented?</p>	(j)(1)(iii) (j)(5)(v)			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
NOTES:				
6. Are unlabeled drums and containers handled as hazardous waste until their contents are identified and they are labeled?	(j)(1)(iv)			
NOTES:				
7. Do drums and container used during cleanup meet the appropriate DOT, OSHA, and EPA regulations for the wastes they contain?	HAZWOPER (j)(1)(ii)			
<p><i>What to look for: When you are investigating sites where the design or particular use of a container is at issue, you may want to review the following regulations specifically covering the handling of drums and other containers:</i></p> <ul style="list-style-type: none"> <i>EPA regulations (40 CFR Parts 264 and 265), which cover requirements for various types of hazardous waste containers, maintenance of containers and containment structures, and design and maintenance of storage areas.</i> <i>DOT regulations (49 CFR Part 171-178), which cover requirements for containers and procedures for shipment of hazardous wastes.</i> 				
NOTES:				
8. Are U.S. Department of Transportation (DOT) -specified salvage drums or containers kept accessible on-site, and do employees know where they are located? Are sufficient quantities of suitable absorbent also kept accessible on-site, and do employees know where they are located?	(j)(1)(vii)			
NOTES:				
9. Are drums or containers that cannot be moved without leakage emptied into an appropriate container?	(j)(1)(ix)			
NOTES:				
10. Do employees understand the concept of bulking hazardous waste, and do they refrain from hazard waste bulking until wastes have been thoroughly characterized?	HAZWOPER (j)(8)(iv)			
NOTES:				

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p>11. Is fire extinguishing equipment that meets the requirements of 29 CFR Part 1910, Subpart L, appropriately placed on-site to control incipient stage fires, and do employees know the location of this equipment?</p> <p>NOTES:</p>	HAZWOPER (j)(1)(xii)			
<p>12. If a flammable atmosphere might be present during drum and container handling, is the potential for ignition minimized through the use of non-sparking hand tools and material handling equipment designed to prevent sources of ignition?</p> <p>NOTES:</p>	HAZWOPER (j)(2)(v), (j)(3)			
<p>13. Where drums and containers are being opened, are air-line respirator systems protected from contamination and physical damage?</p> <p>NOTES:</p>	HAZWOPER (j)(2)(i)			
<p>14. Where drums or containers are being opened, is the operation designed to protect employees from accidental explosion through the use of protective barriers or remote handling?</p> <p>Are non-essential employees evacuated from the area?</p> <p>Is appropriate monitoring and fire suppression equipment accessible during these operations?</p> <p>NOTES:</p>	<p>HAZWOPER (j)(2)(iii), (j)(2)(iv), (j)(2)(vi), (j)(5)(ii)</p> <p>(j)(2)(ii), (j)(5)(i)</p> <p>(j)(2)(iv)</p>			
<p>15. Do employees work safely around drums and containers, avoiding standing or leaning over them, or contacting them unnecessarily during sampling and transport?</p> <p>NOTES:</p>	HAZWOPER (j)(2)(vii)			
<p>16. Are containers of radioactive wastes left in place until their hazard to employees is evaluated?</p> <p>NOTES:</p>	HAZWOPER (j)(4)			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p>17. Where potentially shock-sensitive drums or containers are being handled, is an employee alarm system used to signal the beginning and ending of such handling operations? Is the alarm system perceptible above existing light and sound conditions?</p> <p>Is continuous communication maintained between the employee in charge of these operations, the command post, and the site safety and health supervisor? Is the communication equipment appropriate for the operation (i.e., effective and unlikely to cause an explosion)?</p> <p>NOTES:</p>	<p>HAZWOPER (j)(5)(iii)</p> <p>(j)(5)(iv)</p>	<p>■</p> <p>■</p>	<p>□</p> <p>□</p>	<p>□</p> <p>■</p>
<p>18. If packaged laboratory wastes are handled, are they treated as shock-sensitive or explosive until characterized?</p> <p>NOTES:</p>	<p>HAZWOPER (j)(5)(vi)</p>	<p>■</p>	<p>□</p>	<p>■</p>
<p>19. Where lab packs are handled, is an individual(s) on-site knowledgeable in the inspection, classification, and segregation of the containers within the pack? Are lab packs opened only when necessary and only by this individual(s)?</p> <p>NOTES:</p>	<p>HAZWOPER (j)(6)(i)</p>	<p>■</p>	<p>□</p>	<p>■</p>
<p>20. If crystalline material is noted on any container are the contents handled as shock-sensitive until the contents are identified?</p> <p>NOTES:</p>	<p>HAZWOPER (j)(6)(ii)</p>	<p>■</p>	<p>□</p>	<p>■</p>
<p>21. Are staging areas kept to a minimum and provided with appropriate entry and exit routes?</p> <p>NOTES:</p>	<p>HAZWOPER (j)(8)(ii), (j)(8)(iii)</p>	<p>■</p>	<p>□</p>	<p>■</p>
<p>22. Are employees warned of the potential hazards associated with the contents of drums and containers prior to transfer operations?</p> <p>NOTES:</p>	<p>HAZWOPER (j)(1)(vi)</p>	<p>■</p>	<p>■</p>	<p>□</p>
<p>23. Are employees familiar with their roles and responsibilities in the event of a spill?</p>	<p>HAZWOPER (j)(1)(vii), (j)(1)(viii)</p>	<p>■</p>	<p>■</p>	<p>□</p>

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
NOTES:				
24. Where appropriate, are employees familiar with drum and container sampling procedures that are written in the SSAHP? NOTES:	HAZWOPER (j)(7)			
25. Are employees familiar with the controls established by the employer for opening drums and containers in order to minimize the potential for fire or explosion? NOTES:	HAZWOPER (j)(2), (j)(3), (j)(5)(ii)			

J. 1910.120(k) and 1926.65(k): Decontamination

I. Purpose of Requirements

HAZWOPER paragraph (b)(4)(ii)(G) requires the employer to have written decontamination procedures that are in accordance with HAZWOPER paragraph (k). The intent of this requirement is for the employer to develop procedures to ensure that all employees and equipment leaving the Exclusion Zone (ExZ) are properly decontaminated. You should evaluate decontamination procedures to ensure that the employer minimizes migration of hazardous materials out of the ExZ and employee contact with contaminants. In addition, employers must determine the effectiveness of their decontamination procedures as part of their evaluation of the overall effectiveness of the site safety and health plan.

Written procedures must be incorporated as part of the SSAHP and employees must be trained in decontamination procedures used at the site. Determining whether the procedures are actually in effect can be accomplished through employee interviews and inspection of the decontamination area.

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
1. Does the SSAHP contain procedures for all phases of decontamination (decon) including:				
<ul style="list-style-type: none"> • Method of communicating procedures to employees before allowing them to enter the site; 	HAZWOPER (k)(2)(i)			
<ul style="list-style-type: none"> • SOPs that address methods for minimizing employee contact with hazardous substances or contaminated equipment; 	(k)(2)(ii)			
<ul style="list-style-type: none"> • Decontamination of employees leaving a hazardous area; 	(k)(2)(iii)			
<ul style="list-style-type: none"> • Decontamination or disposal of clothing or equipment leaving a hazardous area; 	(k)(2)(iii)			
<ul style="list-style-type: none"> • Decontamination or disposal of equipment and solvents used for decon; 	(k)(4)			
<ul style="list-style-type: none"> • Monitoring of decon procedures by site safety and health supervisor to determine effectiveness; 	(k)(2)(iv)			
<ul style="list-style-type: none"> • Steps to be taken when deficiencies are found; 	(k)(2)(iv)			
<ul style="list-style-type: none"> • Location of decon areas to minimize exposure to uncontaminated employees or equipment; 	(k)(3)			
<ul style="list-style-type: none"> • Decon, cleaning, laundering, maintenance or replacement of protective clothing and equipment; 	(k)(5)(i)			
<ul style="list-style-type: none"> • Steps to be taken when permeable clothing is splashed by contaminated materials; 	(k)(5)(ii)			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<ul style="list-style-type: none"> Unauthorized removal of equipment or protective clothing from change rooms; 	(k)(6)			
<ul style="list-style-type: none"> Informing commercial laundries of potentially harmful effects of contaminated PPE, if applicable, and 	(k)(7)			
<ul style="list-style-type: none"> Showers and change rooms? 	(k)(8)			
<p>2. Do employees follow procedures that minimize contact with hazardous substances or contaminated equipment?</p> <p>Do SOPs exist which describe procedures to minimize employee contact with hazardous substances or contaminated equipment?</p>	HAZWOPER (k)(2)(ii)			
NOTES:				
<p>3. Does the site safety and health supervisor monitor decon procedures to determine their effectiveness and correct any deficiencies?</p>	HAZWOPER (k)(2)(iv)			
<p><i>What to look for:</i> The employer must monitor decontamination procedures to determine their effectiveness, as required by HAZWOPER paragraphs (g)(5)(v) and (k)(2)(iv). EPA publication PB-92963414, Standard Operating Safety Guides, June 1992, Section 4.2.4, states that “periodic monitoring of the support zone will indicate whether changes in site activities or conditions have resulted in contamination.” Such monitoring could consist of wipe sampling of “decontaminated” items or surfaces in the Support Zone (SZ), such as surfaces in lunch and break areas, the “clean” side of the change/shower room, and the area immediately outside of the Contamination Reduction Zone (CRZ) .</p> <p>The employer should establish acceptable levels of contamination for these areas and ensure that contamination is maintained below the established levels. You should review these levels to determine how and why they were selected and if the levels prevent unnecessary exposures.</p> <p>Field analysis kits are available to determine the presence and in some cases concentrations of contaminants such as lead, polychlorinated biphenyls (PCBs), etc. These kits make field surface contamination detection and measurement available to the employer and OSHA.</p> <p>The employer can also estimate the surface concentration of a specific contaminant (a particulate) based on total surface dust and the soil concentration of the contaminant. For example, if lead is the contaminant of interest and the percentage of lead in the soil is known, then total dust on a surface can be monitored on a weight-per-cm² basis to determine the level of lead on the surface.</p>				
NOTES:				
<p>4. Are all contaminated clothing and equipment leaving a hazardous area disposed of or decontaminated appropriately?</p>	HAZWOPER (k)(2)(iii)			
<p><i>What to look for:</i> See question 3.</p>				

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
NOTES:				
5. Are all equipment and solvents used for decon decontaminated or disposed of properly? <i>What to look for: See question 3.</i> NOTES:	(k)(4)			
6. Is decon performed in areas that minimize the exposure of uncontaminated employees or equipment (i.e., from runoff or overspray)? NOTES:	(k)(3)			
7. If showers and change rooms are needed, are the following requirements of 1910.141(d)(3) met: <ul style="list-style-type: none"> • One shower provided for each ten employees; • Hot and cold water feeding on discharge line; • Individual clean towels; and • Body soap and cleansing agents? NOTES:	1910.141(d)(3)(ii) (d)(3)(iv) (d)(3)(v) (d)(3)(iii)			
8. Is separate storage for street clothes and protective clothing provided? NOTES:	1910.141(e)			
9. For clean-up operations of six months or more duration are two separate change areas provided, separated by a shower area? NOTES:	HAZWOPER (n)(7)(ii)			
10. Are showers and change rooms located in areas where exposures are below the PELs and published exposure levels? NOTES:	HAZWOPER (n)(7)(iii)			
11. Are decontamination procedures communicated to employees and implemented before any employee or equipment enters areas on-site where potential for exposure to hazardous substances exists?	HAZWOPER (k)(2)(i)			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
NOTES:				
12. When permeable clothing becomes wetted with hazardous substances, is it immediately removed and does the employee shower? Is the clothing disposed of or decontaminated before it is removed from the work zone?	HAZWOPER (k)(5)(ii)			
NOTES:				
13. Do unauthorized employees ever remove protective clothing or equipment from change rooms?	HAZWOPER (k)(6)			
NOTES:				

K. 1910.120(I) and 1926.65(I): Emergency Response

I. Purpose of Requirements

The purpose of HAZWOPER's paragraph (1) is for employers to develop and train employees in site-specific emergency response procedures. According to its requirements, employers must prepare and implement a written Emergency Response Plan (ERP). The ERP must include the following elements: 1) pre-emergency planning, including coordination with local emergency response organizations; 2) a means of alerting and, if necessary, safely evacuating employees; 3) the conduct of emergency response drills; 4) means for obtaining prompt medical and firefighting assistance; and 5) procedures for notifying community, State, and Federal officials of an emergency occurrence.

II. Compliance Checklist

	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p>1. Does the employer have a written emergency response plan (ERP)?</p> <p><i>What to look for: If the employer has an Integrated Contingency Plan (ICP), OSHA recognizes this type of document as demonstrating compliance with the emergency response plan requirements of 1910.120(l), (p)(8), and (q); 1910.38; 1926.35; and 1910.119(n). An ICP or One-Plan allows employers to prepare an integrated ERP that meets the requirements of multiple federal agency regulations with a single plan. It does not, however, change the employer's duty to comply with OSHA regulations. The ICP must meet the applicable OSHA requirements and should be reviewed carefully. A copy of the National Response Team's One-Plan guidance is available on the OSHA website.</i></p> <p>NOTES:</p>	HAZWOPER (b)(4)(ii)(H), (l)(1)(i)			
<p>2. If the employer does not have an ERP but expresses an intent to evacuate all employees and not allow any personnel to respond, does the employer have an emergency action (EAP) plan in accordance with 29 CFR 1910.38(b) or 1926.35?</p> <p><i>What to look for: If the employer intends to evacuate employees and has not prepared and communicated the emergency action plan, then 1910.120(l)(1)(ii) or 1926.65(l)(1)(ii) must be cited. According to OSHA Instruction CPL 02-01-037 (CPL 2-1.37) of July 9, 2002, employers who choose total evacuation by the exemption of 1910.38 but do not comply must be cited under 1910.120(l)(1)(ii) or 1926.65(l)(1)(ii) only. The EAP checklist below provides references to the individual requirements of an EAP, but all citations must be issued under the HAZWOPER standard. The determination that the employer intends to evacuate all employees must be documented on the Narrative, OSHA-1A Form.</i></p> <p>NOTES:</p>	HAZWOPER (l)(1)(ii)			
<p>3. Emergency Action Plan (EAP) compliance checklist (for ERP checklist, go to #4): All citations must be issued as either 1910.120(l)(1)(ii) or 1926.65(l)(1)(ii).</p>				

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<ul style="list-style-type: none"> Is the Plan in writing? Employers with 10 or fewer employees do not need a written plan. They may communicate the plan orally. Does it cover the appropriate actions the employer and employees take to protect employees during a hazardous substance emergency? 	1910.38(b), 1926.35(a), 1910.38(c)(3), 1926.35(b)(2)			
<ul style="list-style-type: none"> Is the written plan at the workplace and made available for employee review? 	1910.38(b), 1926.35(e)(3)			
<ul style="list-style-type: none"> Are emergency escape procedures and emergency escape routes assigned? 	1910.38(c)(2), 1926.35(b)(1)			
<ul style="list-style-type: none"> Has the employer designated and trained a sufficient number of persons to assist in the safe and orderly evacuation of employees (generally necessary when over 20 employees are on-site)? 	1910.38(e), 1926.35(e)(1)			
<ul style="list-style-type: none"> Are procedures established to account for all employees after the emergency evacuation has been completed? 	1910.38(c)(4), 1926.35(b)(3)			
<ul style="list-style-type: none"> Does the employer have procedures for notifying both inside and outside parties of incidents so that employees are not at risk? (Examples of at-risk employees may include employees who are required to remain in a temporarily safe area to shut down sites where the employer does not have specific procedures to notify the local fire department other outside responders and has not verified that key responders are capable of a timely response). 	1910.38(c)(1)			
<ul style="list-style-type: none"> Is there an employee alarm system that complies with 29 CFR 1910.165? 	1910.38(d), 1926.35(c)(1)			
<ul style="list-style-type: none"> If an employee alarm system is used for other purposes, are there distinctive signals for each purpose? 	1910.38(d)			
<ul style="list-style-type: none"> Does the EAP include provisions to review the plan with each employee covered by the plan initially, and when the plan or the employee's responsibilities under the plan change? 	1910.38(f), 1926.35(e)(2)			

What to look for: The plan must verify that employees will not respond to emergencies unless so designated by the employer. If the employer intends to have employees handle incidental releases, then the training, tools, equipment, and PPE appropriate for handling incidental releases of the hazardous substance must be available in the work area. The definition of an incidental release can be found in 1910.120(a)(3).

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p>6. Does the SSAHP provide for regular rehearsal of emergency response procedures as part of the overall training for emergency response?</p> <p>NOTES:</p>	HAZWOPER (I)(3)(iv)			
<p>7. Is the emergency response plan periodically reviewed and regularly updated?</p> <p>NOTES:</p>	HAZWOPER (I)(3)(v)			
<p>8. Is the emergency response plan coordinated with the response plans of all other site employers?</p> <p>NOTES:</p>	HAZWOPER (I)(2)(i)-(ii)			
<p>9. Does the SSAHP describe an emergency alarm system? If so:</p> <ul style="list-style-type: none"> • Is other than voice communication used as a means of sounding the alarm (Note: voice communication is permitted on sites with 10 or fewer employees); • Are spare alarm devices and components that are subject to wear available for prompt restoration of the system; • Are back-up means of alarm, such as employee runners or telephone, provided when the system is out of service; and • Does the alarm system provide positive notification whenever a deficiency exists in the system? <p><i>What to look for: The alarm system should be checked for compliance with 29 CFR 1910.165 and evaluated as to applicability for the particular site. You should ensure that a common alarm signal system serves all site employees, regardless of whether they are employed by the prime contractor or a subcontractor.</i></p> <p>NOTES:</p>	<p>HAZWOPER (I)(3)(vi)</p> <p>1910.165 (b)(5)</p> <p>1910.165 (c)(2)</p> <p>1910.165 (d)(3)</p> <p>1910.165 (d)(4)</p>			
<p>10. Does your contact with local emergency responders (i.e., fire and rescue, local hospital) and local, State, and Federal agencies indicate that the emergency response plan is compatible and integrated with the disaster, fire, and/or emergency response plans of those organizations?</p>	HAZWOPER (I)(3)(iii)			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
Does a mutual agreement exist between the employer, the local fire department, and other outside responders regarding each responder's role in an emergency response?	HAZWOPER (I)(3)(iii)			
Have local emergency responders been provided and have readily available a copy of the site's emergency response plan?	HAZWOPER (I)(3)(iii)			
Do local emergency responders have procedures for rescuing and/or treating personnel who are potentially contaminated?	HAZWOPER (I)(3)(iii)			
Have local emergency responders been provided with information on the nature of hazardous substances present at the site and the potential hazards associated with exposure to those substances?	HAZWOPER (I)(3)(iii)			
Have local emergency responders participated in rehearsals or drills of emergency situations?	HAZWOPER (I)(3)(iii)			
<p><i>What to look for: Many hazardous waste sites rely on outside services to provide emergency response. Some sites handle certain types of emergencies with their own HAZMAT team, and intend to use outside services for large-scale incidents, or for emergency medical services. Very few sites handle emergency response with no reliance upon outside services. OSHA requires that the hazardous waste site employer reach a mutual agreement with local emergency response organizations about the site's emergency response needs. To verify that this mutual agreement exists, you are required to contact the local fire department at a minimum to confirm the fire department's knowledge of the agreement with the site about its emergency response needs. You should interview outside emergency service providers (i.e., local fire departments, hospitals) to ensure that the employer's emergency action plan or emergency response plan is consistent and integrated with the service provided by these agencies.</i></p> <p>NOTES:</p>				
11. Are there suitable facilities for emergency flushing of the eyes and body located near areas where hazardous materials such as acids or caustics are stored (e.g., near the wastewater treatment plant)?	1910.151(c)			
NOTES:				
12. When telephones serve as means of reporting emergencies, are emergency telephone numbers posted near telephones, on employee notice boards, or in other conspicuous locations? Do employees know the locations of emergency telephone numbers?	1910.165 (b)(4)			
NOTES:				

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p>13. Are employees who are designated to respond to emergencies trained in how to respond?</p> <p><i>What to look for:</i> Paragraph (e)(7) does not specify the training requirements for responders. It does however require that employees who are required to respond to hazardous emergency situations are trained how to respond to expected emergencies. Annual refresher training is also required (e)(8). Employers may not be required to comply with the more detailed emergency response provisions of paragraph (q) of HAZWOPER. Both (q) and NFPA 472, however, provide guidance for training levels and competencies that OSHA considers necessary for emergency response operations.</p> <p>You should determine whether employees responding to hazardous materials emergencies have the training, competency, and proper equipment to perform their assigned tasks in a manner that will be safe for them and others involved in the emergency.</p> <p>NOTES:</p>	HAZWOPER (e)(7)			
<p>14. Are employees aware of their emergency roles, lines of authority, and communication procedures?</p> <p><i>What to look for:</i> You should ask how the employer ensures the competency of each emergency responder and emergency incident commander. You should review the pertinent sections of the plan with the emergency response coordinator and with those individuals who are expected to respond. This will allow you to verify the employees' understanding of their response duties.</p> <p>NOTES:</p>	HAZWOPER (I)(2)(ii)			
<p>15. Do employees know all evacuation routes and procedures and the locations of places of refuge?</p> <p>NOTES:</p>	HAZWOPER (I)(2)(iv) and (vi)			
<p>16. Do employees know what decontamination procedures to follow in the event of an emergency?</p> <p>NOTES:</p>	HAZWOPER (I)(2)(vii)			
<p>17. Have employees participated in rehearsals of emergency situations?</p> <p>NOTES:</p>	HAZWOPER (I)(3)(iv)			
<p><i>What to look for:</i> You should determine the frequency and kinds of emergency response rehearsals the employer conducts. You should also determine if these rehearsals are critiques and then reviewed with the employees.</p>				

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
18. Do employees know the meaning of emergency alarm signals, as described in the SSAHP? NOTES:	HAZWOPER (I)(2)(vi)			
19. Can employees hear/see the emergency alarm clearly against ordinary operational noise or light levels? NOTES:	1910.165 (b)(2)			
20. Is the emergency alarm distinctive and recognizable as a signal to evacuate the work area? NOTES:	1910.165 (b)(3)			
21. Do all employees of all contractors on-site seem to understand the emergency alarm system? NOTES:	1910.165 (b)(3)			
22. Is the alarm tested at least yearly for reliability and adequacy? NOTES:	1910.165 (d)(4)			

L. 1910.120(m) and 1926.65(m): Illumination

I. Purpose of Requirements

The illumination requirements in HAZWOPER are designed to ensure that site areas accessible to employees are adequately lighted. Where night shifts are used, these requirements are particularly important. You should ensure that illumination is adequate during all work shifts.

II. Compliance Checklist

	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p>1. Is site lighting sufficient to allow employees to work effectively and safely in all work areas, including general site areas; excavation, storage, loading, and maintenance areas; tunnels or underground areas; shops; active storerooms; sanitary facilities; dining areas; first aid stations; and offices?</p> <p>Is site lighting sufficient to allow employees to work effectively and safely during all work shifts?</p> <p><i>What to look for: You should also consider the appropriateness of lighting equipment for the location, especially hazardous locations. For definitions of working classifications of hazardous locations, you should refer to 29 CFR 1910.307 and 1910.399(a) for both general industry and construction sites.</i></p> <p>NOTES:</p>	HAZWOPER (m)			
<p>2. Where illumination is needed, are the minimum illumination levels of Table H-120.1 in 1910.120(m) and/or Table D-65.1 in 1926.65(m) being met?</p> <p>NOTES:</p>	HAZWOPER (m)			

M. 1910.120(n) and 1926.65(n): Sanitation

I. Purpose of Requirements

The purpose of the sanitation requirements are to ensure that, even on temporary work sites, facilities are provided to allow employees to maintain an acceptable level of personal hygiene and to reduce the likelihood of exposure to hazardous substances through ingestion or dermal contact. Regardless of the duration of work activities, employers are required to provide toilets, washing facilities, and adequate supplies of drinking water. Where employee operations exceed six months in duration, showers and change rooms are also required.

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
1. Is an adequate supply of drinking water available on-site? NOTES:	HAZWOPER (n)(1)(i)			
2. Where portable containers are used to dispense drinking water, are the containers designed and used to prevent water contamination? Are employees prohibited from dipping water from containers? Are such water container used only for drinking water and clearly marked as to the nature of their contents? If disposable cups are used, are they stored in a sanitary container and used only once? Is a receptacle provided for disposing of used drinking cups? NOTES:	HAZWOPER (n)(1)(ii) (n)(1)(iii) (n)(1)(iv) (n)(1)(iv)			
3. Are the potable and nonpotable water systems kept completely separated, with no open or potential cross-connections? Are outlets for nonpotable water clearly marked, indicating that the water is unsafe for drinking, washing, or cooking? NOTES:	HAZWOPER (n)(2)(ii) (n)(2)(i)			
4. Are sufficient toilet facilities provided on-site based on Table H-120.2 of 1910.120(n)(3) and/or Table D-65.2 of 1926.65(n)(3)? NOTES:	HAZWOPER (n)(3)			
5. Do food service facilities and operations for employees meet applicable local ordinances and requirements?	HAZWOPER (n)(4)			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
NOTES:				
6. If temporary sleeping quarters are provided, are they heated, ventilated, and lighted?	HAZWOPER (n)(5)			
NOTES:				
7. Are adequate washing facilities, equipped to enable employees to remove hazardous substances from themselves, provided on-site?	HAZWOPER (n)(6)			
<i>What to look for: You should ensure that the washing facilities are located in areas where exposures are below permissible exposure limits and published exposure levels.</i>				
NOTES:				
8. If site operations exceed 6 months in duration, have showers and change rooms been provided in accordance with 1910.141 or 1926.51?	HAZWOPER (n)(7)			
<i>What to look for: Paragraph (n) of 1910.120 and 1926.65 contains requirements for employers to provide potable water, toilet facilities, showers, and change rooms at temporary work locations. These facilities should be inspected to determine whether the employer is in compliance with paragraph (n), as well as with the requirements contained in the Sanitation standard(s) 1910.141 and/or 1926.51. These standards have noted differences and should be reviewed prior to issuing citations.</i>				
<i>Where there is no difference between the HAZWOPER standard and the Sanitation standard or where the HAZWOPER standard is more stringent, the HAZWOPER standard should be cited.</i>				
<i>Where the HAZWOPER standard is less stringent, the appropriate Sanitation standard should be cited. In such cases, you may wish to include a reference in the citation to 1910.120(a)(2)(i) or 1926.65(a)(2)(i) respectively.</i>				
NOTES:				
9. Are showers and change rooms located in areas where exposures are below established exposure levels, or if this is not possible, are these rooms ventilated to reduce exposures below established levels?	HAZWOPER (n)(7)(iii)			
NOTES:				
10. Where showers are required, are procedures in place to ensure that employees shower at the end of their work shift and when leaving the hazardous waste site?	HAZWOPER (n)(7)(iv)			
NOTES:				

N. 1910.120(o) and 1926.65(o): New Technology Programs

I. Purpose of Requirements

OSHA's requirements for new technology programs are intended to encourage employers to seek improved methods for controlling hazards. To ensure ongoing employee protection, employers are required to develop and implement procedures for new technology review and introduction. The site safety and health plan must include these procedures.

II. Compliance Checklist

	OSHA Reference	Records Review	On-Site Conditions	Interviews
1. Does the site safety and health plan contain procedures for evaluating and introducing new technology and equipment for improved hazard control and employee protection?	HAZWOPER (o)(1)			
Have product developments in areas such as chemical protective clothing, monitoring and chemical detection instrumentation, and decon been reviewed and evaluated for site-specific use?	(o)(2)			

What to look for: Methods and equipment that improve the quality of safety and health in the workplace are always being developed. HAZWOPER requires employer to keep abreast of the new technology emerging in hazardous waste operations regarding safety and health and to develop procedures to introduce it into the workplace.

In evaluating compliance, you should verify that:

- (1) *The employer's new technology program is incorporated into the written safety and health plan.*
- (2) *The employer reviews areas of new technologies such as innovations in chemical protective clothing, monitoring and chemical detection instrumentation, biological monitoring, and decontamination supplies. Sources of information that may be used by the employer include product catalogs and vendor exhibits at conferences.*
- (3) *The employer has a procedure for evaluating the effectiveness and implementation of useful new technologies. Safety and health hazards associated with the new technology must be identified and included in the evaluation. Manufacturers' literature may be used as evidence that the employer evaluates new technologies.*

Citations for violations of this paragraph should be limited to programmatic deficiencies of the employer's new technology program or lack of such a program. Examples include inadequate evaluation of the effectiveness of the new technology before implementation, or failure to adequately identify the safety and health hazards associated with the technology.

NOTES:

2. Is the employer using effective technology and equipment to control hazards and protect employee safety and health?	HAZWOPER (o)(1)			
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II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p><i>What to look for: In evaluating compliance, you should verify that the employer has trained employees on the safe use of new technologies before the technologies are implemented on the site.</i></p> <p><i>If the new technology poses safety and health hazards that are inadequately controlled, you should cite as violations the paragraphs where the hazards are addressed (i.e., monitoring, decontamination, site control, or training).</i></p> <p>NOTES:</p>				

O. Heat Stress Program

I. Purpose of Requirements

The purpose of a heat stress program or procedures on hazardous waste sites is to ensure that employees are adequately protected from adverse effects related to heat stress. Elements of the program include developing criteria for the issuance of heat alerts, implementing work/rest regimens when site conditions warrant, providing employees with sheltered rest areas and adequate water intake, conducting medical monitoring to identify signs of heat stress, and training employees to recognize the signs and symptoms of heat stress-related illness.

The information and guidance provided in this section are drawn from the following sources:

- ! Heat Stress Guideline contained in the OSHA Technical Manual (http://www.osha.gov/dts/osta/otm/otm_iii/otm_iii_4.html);
- ! NIOSH's "Criteria for a Recommended Standard: Occupational Exposure to Hot Environments" (<http://www.cdc.gov/niosh/86-113.html>) (1986); and
- ! EPA's "A Guide to Heat Stress In Agriculture" (1993).

See the paragraph (h) checklist in this appendix for citing the lack of a heat stress monitoring program or procedures. See the paragraph (g) checklist for situations in which excessive PPE could result in heat stress. Citations under 5(a)(1) may also be considered, but CSHOs should refer to the FIRM, CPL 02-00-103 (CPL 2.103), Section 7, when preparing such citations.

II. Compliance Checklist	Records Review	On-Site Conditions	Interviews
1. If there is a potential for heat stress, is there a written heat stress prevention program as part of the SSAHP or safety and health SOPs?			
NOTES:			
2. Does the heat stress program include?			
• Environmental monitoring for heat stress conditions;			
• Provision for selecting appropriate PPE to minimize the risk of heat stress;			
• Biologic monitoring for signs of heat stress (including pulse rate, oral temperature, and/or blood pressure measurements);			
• Implementation of work/rest schedules based on the results of environmental monitoring;			
• Provision for cool rest areas, including shelters within the exclusion zone			
• A liquid replacement; and			
• An acclimatization program for workers when they begin work under hot conditions.			

II. Compliance Checklist	Records Review	On-Site Conditions	Interviews
NOTES:			
<p>3. Has the employer implemented a heat stress training program?</p> <p><i>What to look for:</i> You should determine if the training program addresses the heat-related hazards of the site. The training should be provided to both workers and supervisors, and should address the following topics:</p> <ul style="list-style-type: none"> • Causes, risk factors, and types of heat illness; • Information on heat stress and its effects, including symptoms of heat stress; • Procedures for controlling heat-related illnesses; • Worker and supervisor responsibilities under the heat stress; • Procedures for reporting incidents and attaining first aid or other medical care; and • How PPE can increase heat stress. <p>NOTES:</p>			
<p>4. Does the employer regularly monitor heat conditions (i.e., dry bulb or adjusted dry bulb temperatures) to determine the risk of heat stress and to establish appropriate work/rest regimens? (Note: Wet bulb globe temperature is not the most appropriate measure of environmental heat conditions when employees are wearing vapor impermeable protective clothing.)</p> <p>NOTES:</p>			
<p>5. Does the employer monitor (and have the necessary equipment to monitor) the temperature, blood pressure, and pulse rate of employees exposed to heat stress environments?</p> <p>Do environmental heat measurements trigger implementation of physiologic monitoring?</p> <p>Are physiologic measurements taken during rest breaks and used to modify work/rest schedules?</p> <p>NOTES:</p>			
<p>6. Has the employer established procedures for reporting heat-related symptoms and illnesses and for providing medical attention or rapid cool-down for employees subject to heat stress?</p> <p><i>What to look for:</i> You should determine if first aid personnel are properly trained to address heat-related incidents and illnesses. Proper transportation to medical facilities for potential heat stroke victims should also be evaluated.</p>			

II. Compliance Checklist	Records Review	On-Site Conditions	Interviews
NOTES:			
7. Do the employer's OSHA 300 log and OSHA 301 forms indicate any heat stress problems?			
NOTES:			
8. Does the site safety and health officer have the authority to downgrade the required level of PPE, when it is safe to do so, to reduce the potential for heat stress?			
NOTES:			
9. Does the employer have a mechanism for informing employees of the work/rest regimen or modification of that regimen based on changed conditions?			
NOTES:			
10. Do workers have ready access to drinking water supplies, shaded rest areas, and/or air-conditioned or fan-cooled areas?			
NOTES:			
11. Does the PPE selected for employees in the ExZ account for the need to reduce heat stress while also providing protection from chemical and other hazards at the site?			
NOTES:			
12. Are work operations scheduled to avoid physically demanding work during periods of extreme heat?			
<p><i>What to look for: The list below describes various tasks and the associated workload involved. The heavier the workload, the more heat the body produces and the hotter a worker becomes. For many tasks, working faster increases workload levels.</i></p>			
<u>Light</u>		<u>Heavy</u>	
– Sitting at ease	– Transferring heavy materials		
– Sorting light materials	– Shoveling		
– Driving mobile equipment on paved roads	– Digging		
	– Walking 4 mph		

II. Compliance Checklist	Records Review	On-Site Conditions	Interviews
<p><u>Moderate</u></p> <ul style="list-style-type: none"> - Using a chain saw - Off-road operation of mobile equipment - Periodic handling of moderately heavy materials - Pushing or pulling light-weight carts or wheelbarrows <p><u>Very Heavy</u></p> <ul style="list-style-type: none"> - Heavy shoveling or digging - Climbing stairs, ramps, or ladders - Lifting more than 44 pounds at 10 lifts per minute - Walking faster than 4 mph, jogging, running <p>NOTES:</p>			
<p>13. Does the employer provide tools and equipment that reduce the physical demands on workers who are required to work in extreme heat conditions while wearing PPE?</p> <p>NOTES:</p>			
<p>14. Does the potential for heat stress appear to have been considered in the selection of PPE?</p> <p><i>What to look for: You should also evaluate whether PPE is used in conjunction with the following: reflective clothing, ice and/or water-cooled garments, wetted undergarments (used with reflective or impermeable clothing), and circulating air systems.</i></p> <p>NOTES:</p>			
<p>15 Are employees familiar with the signs of heat stress? Have they received training in how to recognize and avoid heat stress?</p> <p><i>What to look for: the signs and symptoms of various heat-related illnesses should include:</i></p> <p><i>Early heat illness: Mild dizziness, fatigue, or irritability; decreased concentration, impaired judgment.</i></p> <p><i>Heat rash: Tiny, blister-like red spots on the skin; pricking sensations; commonly found on clothed areas of the body.</i></p> <p><i>Heat cramps: Painful spasms of leg, arm, or abdominal muscles; heavy sweating, thirst; occur during or after hard work.</i></p> <p><i>Heat exhaustion: Fatigue, headache, dizziness, muscle weakness, loss of coordination, fainting, collapse; profuse sweating; pale, moist, cool skin; excessive thirst, dry mouth; dark yellow urine; fast pulse, if conscious; low or normal oral temperature, rectal temperature usually 99.5-101.3°F; may also have heat cramps, nausea, urge to defecate, rapid breathing, chills, tingling of the hands or feet, confusion, giddiness, slurred speech, irritability.</i></p> <p><i>Heat stroke: Often occurs suddenly; headache, dizziness, confusion, irrational behavior, coma; sweating may slow down or stop; fast pulse, if conscious; rapid breathing; rectal temperature 104° F and over; may also have convulsions, nausea, incoherent speech, very aggressive behavior..</i></p>			

II. Compliance Checklist	Records Review	On-Site Conditions	Interviews
NOTES:			
16. Is a work/rest regimen regularly followed when work must be performed under conditions of heat stress?			
NOTES:			
17. Have the employees every informed site management that they have experienced signs and symptoms of heat stress?			
NOTES:			

P. 1910.252(a) and 1926.352: Hot Work Fire Prevention and Protection

I. Summary

The requirements of 1910.252(a) and 1926.352 ensure that employees are adequately protected from hazards associated with welding operations. Where standards are different, their requirements are separated below. You must determine whether the welding operations fall with 1910 or 1926 and evaluate the operations accordingly. If the elements of an effective hot work program are not covered by the appropriate hot work standard, then HAZWOPER requirements should be cited.

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
1a. Does the site safety and health plan contain procedures for cutting and welding in other than specifically designated areas, based on the fire potential of site conditions? 1b. Does the site safety and health plan contain an effective fire protection and prevention program applicable throughout all phases of construction, repair, alteration, or demolition work? NOTES:	1910.252 (a)(2)(xiii)(A) 1926.24			
2a. Does the site safety and health plan designate an individual responsible for authorizing cutting and welding operations in areas not specifically designated for such processes? 2b. Does the site safety and health plan provide for frequent and regular inspections of hot work areas, materials, and equipment by a competent person designated by the employer? NOTES:	1910.252 (a)(2)(xiii)(B) 1926.20(b)(2)			
3. Does the site safety and health plan provide for the individual responsible for authorizing cutting and welding operations to issue written permits granting such authorization? NOTES:	1910.252 (a)(2)(iv)			
4. Do permits specify precautions to be followed during cutting or welding in areas not specifically designated for such processes? NOTES:	1910.252 (a)(2)(iv)			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
5. Does the site safety and health plan provide that cutters or welders and their supervisors are suitably trained in the safe operation of their equipment and the safe use of the process? NOTES:	1910.252 (a)(2)(xiii)(C) 1926.20(b)(4) & 1926.21(b)(2)			
6. Does the site safety and health plan provide for advising all subcontractors about all flammable materials or hazardous conditions of which they may not be aware? NOTES:	1910.252 (a)(2)(xiii)(D) 1926.65(i)			
7. Does the site safety and health plan provide that fire watchers be trained in the use of fire extinguishing equipment? NOTES:	1910.252 (a)(2)(iii)(B) 1926.352(e)			
8. Where welding operations are to be performed in a contaminated environment, does the site safety and health plan address the combined hazards? NOTES:	HAZWOPER (b)(4)(ii)(A)			
9. Does the individual responsible for authorizing hot work operations inspect the area before cutting or welding is performed? Does this individual specify precautions to be followed in the form of a written permit? Is the hot work permit conspicuously posted in the area in which work is being performed? NOTES:	1910.252 (a)(2)(iv), 1926.20(b)(2) 1910.252 (a)(2)(iv) 1910.252 (a)(2)(iv)			
10. In those instances when objects to be cut or welded are moveable and the site has an area specifically designated for cutting and welding, are objects taken to the designated area before hot work operations are performed?	1910.252 (a)(2)(xiii)(A), 1926.352(a)			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
NOTES:				
<p>11. If objects to be welded or cut cannot readily be moved, are all movable fire hazards in the vicinity taken to a safe place?</p> <p>If fire hazards cannot be moved to a safe place, are guarding devices used to confine heat, sparks, and slag and to protect the immovable fire hazards?</p>	<p>1910.252 (a)(1)(i), 1926.352(a)</p> <p>1910.252 (a)(1)(ii), 1926.352(b)</p>			
NOTES:				
<p>12. In those instances when objects to be welded or cut cannot be moved and all fire hazards cannot be removed, are special precautions taken to protect combustibles from ignition sources?</p>	<p>1910.252 (a)(2), 1926.352(b)</p>			
NOTES:				
<p>13a. Are precautions taken to ensure that floor openings or cracks in the flooring are closed?</p> <p>If this is not possible, are precautions taken to ensure that any readily combustible materials on the floor below the hot work operation are not exposed to sparks?</p> <p>13b. Are similar precautions also taken with regard to cracks or holes in walls, open doorways, and open or broken windows?</p> <p>When welding, cutting, or heating is performed on walls, floors, and ceilings, are special precautions taken to control heat transfer or direct penetration of sparks to an adjacent area?</p> <p>Are the same precautions taken on the opposite side of the wall, floor, or ceiling?</p>	<p>1910.252 (a)(2)(i)</p> <p>1926.352</p>			
NOTES:				
<p>14. Is suitable fire extinguishing equipment ready for instant use? (Such equipment may consist of pails of water, buckets of sand, a hose, or portable extinguishers, depending on the nature and quantity of the combustible material exposed.)</p>	<p>1910.252 (a)(2)(ii), 1926.352(d), & 1926.150 (a)(1)-(4)</p>			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
NOTES:				
15a. Are fire watchers on duty during, and for at least a half hour after completion of, hot work operations performed in the vicinity of combustible materials or in locations where conditions could result in other than a minor fire?	1910.252 (a)(2)(iii)			
Do fire watchers have fire extinguishing equipment readily available?				
15b. Are additional personnel assigned during, and for a sufficient time after completion of, hot work operations performed where normal fire prevention precautions are insufficient to protect against the possibility of a fire?	1926.352(e)			
Do these additional personnel have suitable fire extinguishing equipment immediately available in the work area?	1926.352(d)			
NOTES:				
16. Are combustibles relocated to at least 35 feet from the work area where hot work is performed?	1910.252 (a)(2)(vii)			
Where relocation is impracticable, are combustibles protected with flame-proof covers or otherwise shielded?	1910.252 (a)(2)(vii)			
NOTES:				
17. Is hot work prohibited where the application of flammable paints or the presence of other flammable compounds or heavy dust concentrations create a hazard?	1926.352 (c)			
NOTES:				
18. Does the supervisor take steps to ensure that combustibles are moved or properly shielded during hot work?	1910.252 (a)(2)(xiv)(C)			
Does the supervisor ensure that hot work operations are scheduled so that site activities that might expose combustibles to ignition do not begin during hot work operations?				
Does the supervisor secure authorization for hot work operations from the designated management representative?				

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
NOTES:				
<p>19. Are hotwork requirements contained in the SSAHP or SOPs available to all site employees and other personnel such as contractors and subcontractors?</p> <p>Do employees know the identities of supervisors or others authorized to issue hot work permits?</p>	HAZWOPER (b)(1)(v)			
NOTES:				

Q. 1910.146: Permit-required Confined Space Program

I. Purpose of Requirements

[Note: Although 1910.146 does not apply to construction operations, this checklist is being provided for guidance in inspecting permit-required confined spaces]

The requirements of 1910.146, implemented on a hazardous waste site, ensure that employees are adequately protected from safety and health hazards associated with confined spaces. To provide this protection, employers must develop and implement a written permit-required confined space program. The program must include training employees to recognize permit spaces, using a written permit system to authorize permit space work, and providing and training employees in the proper use of PPE to work within permit spaces.

While HAZWOPER calls for the establishment of confined space entry procedures (1910.120(b)(4)(ii)(I), it does not address permit spaces with the detail provided by 1910.146. The requirements of the permit space standard are targeted specifically toward work performed in permit spaces and are more protective of employee safety and health. Employers who decide that their employees will enter permit spaces must establish a permit space program in accordance with 1910.146(d).

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p>1. Does the SSAHP contain a permit space entry program for preventing unauthorized employee entry into permit spaces and for ensuring the safety of authorized employees when entering and working in permit spaces?</p> <p>NOTES:</p>	HAZWOPER (b)(4)(ii)(I)			
<p>2. Has the employer established a written permit system, including written procedures for preparing, issuing, and implementing entry permits and for returning the permit space to service following termination of entry?</p> <p style="padding-left: 40px;">Does the permit system designate by name or title the individuals who may authorize entry?</p> <p>NOTES:</p>	1910.146 (d)(10)			
	1910.146 (e)(2)			
<p>3. Do the permits establish the length of time for which permit may remain valid?</p> <p style="padding-left: 40px;">Does the individual authorizing entry sign the permits, verifying that all actions and conditions necessary for safe entry have been performed?</p> <p>NOTES:</p>	1910.146 (e)(4)			
	1910.146 (e)(2), (j)(2)			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p>4. Does the checklist portion of the permit include the following information?</p> <ul style="list-style-type: none"> • Permit space to be entered, reasons for entering the space, and the date and authorized duration of the entry; • The identities of entrants and the names of attendants; • The name of the individual serving as the entry supervisor and a space for the signature or initials of the individual who originally authorized entry; • Hazards of the permit space; • Measures for isolation of the permit space; • Measures, such as lockout/tagout, and equipment and procedures for purging, inerting, ventilating, and flushing, used to remove or control potential hazards; • Acceptable environmental conditions, quantified with regard to the hazards identified in the permit space, which must be maintained during entry; • Testing and monitoring equipment and procedures by which the employer will verify that acceptable environmental conditions are being maintained during entry; • Rescue and other service that would be summoned in case of emergency and the means of communication with those services; • Rescue equipment to be provided on-site, if necessary; • The communication procedures and equipment used by authorized entrants and attendants to maintain contact; • The PPE, such as respirators, clothing, and retrieval lines, provided to ensure employee safety, and • Any other information that must be evaluated to ensure safe entry. 	<p>1910.146 (f)(1), (f)(2) (f)(3)</p> <p>(f)(4),(f)(5)</p> <p>(f)(6)</p> <p>(f)(7)</p> <p>(f)(8)</p> <p>(f)(8)</p> <p>(f)(9), (f)(10)</p> <p>(f)(13)</p> <p>(f)(11)</p> <p>(f)(13)</p> <p>(f)(12), (13)</p> <p>(f)(13)</p> <p>(f)(14)</p>			
NOTES:				

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p>5. Does the employer's permit system include provisions for authorizing hot work operations in a permit-required confined space?</p> <p>Are hot work authorizations noted prominently on entry permits or on separate hot work permits that are attached to entry permits?</p> <p>NOTES:</p>	1910.146 (f)(15)			
	1910.146 (f)(15)			
<p>6. Upon completion of the entry covered by the permit, does the individual who authorized the entry cancel the permits?</p> <p>NOTES:</p>	1910.146 (e)(5)			
<p>7. Has the employer ensured that authorized entrants receive the appropriate training, including hazard recognition, communication procedures for confined space entry, use of protective equipment, and criteria for exiting the permit space?</p> <p>NOTES:</p>	1910.146 (g), (h)			
<p>8. Has the employer ensured that employees who work as attendants during permit space entry receive the appropriate training, including hazard recognition, communications procedures for permit space entry, and rescue?</p> <p>NOTES:</p>	1910.146 (g), (i)			
<p>9. Has the employer ensured that individuals authorizing or in charge of entry receive the appropriate training, including entry authorization and supervision, and removal of unauthorized personnel?</p> <p>NOTES:</p>	1910.146 (d)(8), (g)(1), (j)(5)			
<p>10. Does the written permit space program indicate that the employer has designated a rescue team?</p> <p>Is there evidence that the employer evaluated and selected the rescue team based on the following criteria:</p> <ul style="list-style-type: none"> The team's capability to reach the victim(s) within a time frame that is appropriate for the permit space hazard(s) identified; 	1910.146 (k)(1)			
	(k)(1)(iii)(A)			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<ul style="list-style-type: none"> The team's proficiency in performing the needed rescue services; and The team's ability to provide the necessary rescue equipment. <p>NOTES:</p>	(k)(1)(iii)(B)			
<p>11. If the employees have been designated as the rescue team, is the team provided and trained in the proper use of PPE and rescue equipment?</p> <p>Is the team trained to perform the assigned rescue functions?</p> <p>Has the team received the same training as that required for authorized entrants?</p> <p>NOTES:</p>	1910.146 (k)(2)(i)			
<p>12. If employees have been designated as the rescue team, does the team practice permit space rescues at least once each year?</p> <p>Does at least one member of the team maintain current certification in basic first aid and CPR?</p> <p><i>What to look for: The employer must have a written exposure control plan as required by 1910.1030(c)(1)(i) when employees are assigned first aid duties. The employer must also offer hepatitis B vaccinations to workers who are expected to provide first aid. If the worker declines the vaccination, the employer must document this as required by 1910.1030(f)(2)(iv).</i></p> <p>NOTES:</p>	1910.146 (k)(2)(iv)			
<p>13. Does the employer ensure that the rescue team members are aware of the potential hazards they may confront while performing rescue at the site?</p> <p>NOTES:</p>	(k)(1)(iv)			
<p>14. When a subcontractor employee enters a permit space, does the employer provide subcontractors with information on permit space hazards?</p> <p>NOTES:</p>	1910.146 (c)(8)(ii), (c)(9)(i)			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
<p>15. Does the employer's written permit space program include provisions for entering permit spaces using alternate procedures in accordance with (c)(5)?</p> <p><i>What to look for: If the employer is using alternate procedures, the data must demonstrate that there are no non-atmospheric and that the ventilation will keep the air inside the permit space safe for entry. This should include initial data in the form of: - Volume of the space to be entered; - Capacity and configuration of the ventilation equipment to be used; - Identified atmospheric hazards and potential hazards; - The sampling results from routine testing of the space from the time ventilating has begun through final determination of acceptable entry conditions; and - Atmospheric hazards created by the work in the space.</i></p> <p>NOTES:</p>	1910.146 (c)(5)			
<p>16. Are permits issued prior to entry into permit spaces?</p> <p>Are permits made available at the time of entry to authorized entrants or their authorized representatives?</p> <p>NOTES:</p>	1910.146 (e)(1), (e)(2) (e)(3)			
<p>17. Is the authorized entrant provided with the proper PPE, such as retrieval lines, respirators, or clothing, needed for safe entry?</p> <p>NOTES:</p>	1910.146 (d)(4)			
<p>18. Does the individual authorizing or in charge of entry ensure that the necessary procedures, practices, and equipment for safe entry are in effect before allowing entry?</p> <p>NOTES:</p>	1910.146 (j)(2)			
<p>19. Are attendants stationed outside the permit space(s) at all times during entry operations?</p> <p>Do attendants maintain effective and continuous contact with authorized entrants during entry?</p> <p>NOTES:</p>	1910.146 (i)(v) (i)(3)-(5)			
<p>20. Does the individual authorizing or in charge of entry determine at appropriate intervals that entry operations remain consistent with the terms of the entry permit and that acceptable entry conditions are present?</p>	1910.146 (j)(6)			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
NOTES:				
21. Are the necessary measures taken to conclude an entry operation, such as closing off the permit space and canceling the permit?	1910.146 (e)(4), (e)(5)(i), & (ii)			
NOTES:				
22. If there are permit spaces that have the potential for an IDLH condition, would the designated rescue team be able to respond to a rescue summons in a timely manner?	1910.146 (k)(1)(i)			
<p><i>NOTE: What will be considered timely will vary according to the specific hazards involved in each entry. For example, 19120.134, Respiratory Protection, requires that employers provide a standby person or persons capable of immediate action to rescue employee(s) wearing respiratory protection while in work areas defined as IDLH atmospheres.</i></p>	(k)(1)(ii)			
<p>Is the needed rescue equipment accessible to the permit space in a timely manner?</p>				
NOTES:				
23. Are signs or other “equally effective means” used to notify employees about what hazards may be present and that only authorized entrants may enter the permit spaces?	1910.146 (c)(2)			
<p><i>What to Look for: Ordinarily, information about permit spaces is most effectively and economically communicated through the use of signs. Consequently, signs would be the principal method of warning under the standard. Alternative methods, such as additional training, may be used where they are truly effective in warning all employees who could reasonably be expected to enter the space. The alternative method must be at least as effective as a sign. In some cases, employers may have to provide training in addition to signs, to protect employees who do not speak English or would have difficulty understanding or interpreting signs. (One method by which OSHA can gauge an employer’s effectiveness is through random interviews of affected employees.) If a space has a locked entry cover or panel, or an access door that can only be opened with special tools, the use of signs may be unnecessary if the employer ensures that all affected employees are informed about such spaces and know that they are not to be opened without taking proper precautions, including temporary signs, to restrict unexpected or unknowing entry.</i></p>				
NOTES:				
24. Have employees received appropriate training to serve as an attendant?	1910.146 (g)(1)			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
NOTES:				
25. Are employees familiar with the written permit space procedures contained in the SSAHP or SOPs?	1910.120 (b)(4)(ii)(I)			
NOTES:				
26. Did the employer consult with affected employees and their authorized representatives on the development and implementation of the permit spaces program?	1910.146 (I)(1)			
Did the employer make available to the affected employees and their authorized employees all information required in the permit space program?	1910.146 (I)(2)			
NOTES:				
27. Have all affected employees been trained in recognizing permit space hazards?	1910.146 (g)(1)			
NOTES:				
28. Are new confined space permits issued if confined space work to resume after work breaks?	1910.146 (c)(7)(iv), (e)(4)			
NOTES:				
29. Is the authorized entrant or the authorized representative of the entrant given the opportunity to observe the pre-entry testing and any subsequent testing?	1910.146 (c)(5)(ii)(C), (c)(5)(ii)(F), (d)(3)(ii), (d)(5)(iv)			
NOTES:				
30. Is the authorized entrant representative of the entrant given the opportunity to request that the confined space be re-evaluated if there is reason to believe the evaluation of the space was not adequate?	1910.146 (d)(5)(v)			
NOTES:				
31. Is the authorized entrant or the authorized representative of the entrant immediately being provided the results of the permit space testing?	1910.146 (d)(5)(vi)			

II. Compliance Checklist	OSHA Reference	Records Review	On-Site Conditions	Interviews
NOTES:				

Appendix A — HAZWOPER, CERCLA, and SARA Background Information and the Process of Site Clean-up

Appendix A consists of three parts. Part I provides background information regarding HAZWOPER, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and the Superfund Amendments and Re-authorization Act (SARA). Part II provides a list of contacts such as government agencies to help you prepare for hazardous waste site inspections. Part III gives a description of removal actions and remedial actions and the stages of each. This is done to help familiarize you with the steps of different clean-up operations.

I. Background information

A. CERCLA

Commonly known as Superfund, CERCLA was enacted by Congress on December 11, 1980. This law created a tax on the chemical and petroleum industries and provided broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. Over five years, \$1.6 billion was collected and the tax went to a trust fund for cleaning up abandoned or uncontrolled hazardous waste sites.

CERCLA:

1. Established prohibitions and requirements concerning closed and abandoned hazardous waste sites;
2. Provided for liability of persons responsible for releases of hazardous waste at these sites; and
3. Established a trust fund to provide for cleanup when no responsible part could be identified.

B. SARA

CERCLA was amended by SARA on October 17, 1986. SARA Title I required OSHA to develop standards for the protection of employee health and safety during hazardous waste operations.

OSHA published an interim final rule in December 1986. In August 1987 OSHA issued a Notice of Proposed Rulemaking and Public Hearings that set forth OSHA's proposed language, based on the outline given in SARA Title I. This language eventually became the HAZWOPER rule.

The final HAZWOPER standard was published in the Federal Register on March 6, 1989, and became effective March 6, 1990. The U.S. Environmental Protection Agency also adopted HAZWOPER in 40 CFR Part 311 for public employees (either compensated or non-compensated) who perform operations within the scope of 29 CFR 1910.120(a)(1)(i) through (a)(1)(iii) in States where Federal OSHA has enforcement authority. In the State-plan States, state and local employees are covered under the State OSHA program, to the extent permitted by state law.

OSHA's "Incorporation of General Industry Safety and Health Standards Applicable to Construction Work and Technical Amendments; Final Rules,"

published June 30, 1993, assigned the codification of 29 CFR 1926.65 for HAZWOPER in construction.

II. Pre-Inspection Sources of Information

Upon scheduling a hazardous waste site for inspection, you may want to contact other government agencies or review public site documents to determine the site's history and current status. Review of these documents will allow you to be better prepared to make decisions about the level of protection needed to conduct the inspection, the sampling that may be needed at the site, the level(s) of worker protection that is potentially justified, the types of decontamination that may be warranted, and other decisions related to site safety and health. Potential contacts include:

A. U.S. Environmental Protection Agency (EPA) Office(s) with Jurisdiction

Multiple offices may need to be contacted, depending on the potential or known pollution areas, such as soil, water, and air. EPA is a source for such documents as the Record of Decision (ROD), previous court transcripts, site maps, photos (including aerial and satellite photos), risk assessments, core drilling results, soil and water sampling records, air monitoring records, field notes, the SSAHP, and much more. For hazardous waste remediation projects (Superfund), the EPA Remedial Project Manager (RPM) responsible for the site can be contacted through the EPA Area Office to obtain this information.

In addition to Federal EPA, many States have their own environmental protection agencies that operate in conjunction with EPA. They may have designations such as the Department of Natural Resources, the Division of Land Pollution Control, the Department of Soil and Water, etc. These State offices can often provide information that may not be available from Federal EPA, especially on sites where the State may control the enforcement action.

B. The U.S. Department of Transportation (DOT)

DOT often has information when the clean-up operation follows an emergency response (e.g., a transportation accident such as a train wreck or the rupture of a chemical pipeline). DOT can furnish detailed information on accident sites, including chemical information, locations of vehicles, volumes of materials, and photos of the accident scene.

C. The U.S. Army Corps of Engineers (Corps)

The Corps often serves as the on-site construction manager representing the EPA, and is in direct contact with the site remediation contractors on a daily basis. The on-site Corps representative, the Quality Assurance (QA) Officer, usually makes a daily walkaround of the site and notes deficiencies of contract requirements (including safety and health) on a QA form. These forms are available for your review and can provide a history of safety and health deficiencies noted by the Corps. The Corps Resident Engineer may have an office on-site and is the contracting authority for site contractors. This person has the authority to modify the contract specifications, including safety and health requirements.

D. State Fire Marshall's Office

The State Fire Marshall's Office can be contacted concerning various sites, such as underground storage tank (UST) locations or sites that may pose a threat to municipalities. The Fire Marshall's Office is a source for documents such as state permits for site remediation.

E. Local Libraries

You may prefer to obtain information about the site without alerting other agencies. Public libraries frequently have information about federally recognized hazardous waste sites. The library nearest the site, or a regional library, may have the case file for a site if it is being cleaned up under the direction of EPA. Reference librarians can provide you a duplicate copy of the EPA documents described in II.A above.

F. Case Law

Previous EPA decisions and orders regarding the site may offer useful information. The EPA's Office of Administrative Law Judges (OALJ) conducts hearings and renders decisions in proceedings between the EPA and persons, businesses, government entities, and other organizations that are alleged to be regulated under environmental laws. Information about cases may be accessed on the OALJ homepage at <http://www.epa.gov/aljhome/> Additional help locating legal documentation may be obtained by contacting the OALJ main office at (202) 564-6255.

An additional source of EPA legal information is the EPA's Environmental Appeals Board (EAB). All decisions issued by the EPA Administrative Law Judges are subject to review by the EAB. The Appeals Board homepage is <http://www.epa.gov/eab/> and includes EAB decisions and orders. The EAB's main office phone number is (202) 501-7060.

III. Removal Actions and Remedial Actions

Under CERCLA, two kinds of response actions were authorized: removal actions and remedial actions. OSHA would conduct hazardous waste site inspections only during certain stages of removal actions and remedial actions. For a removal action, you may be on site during the Removal Site Evaluation (RSE) or during the Removal Action (clean-up operations). For a remedial action, you may be on site during the remedial investigation or remedial actions/interim remedial actions. A summary and description of removal and remedial actions are given below.

A. Removal Actions

Removal actions are taken to address releases or threatened releases requiring prompt response. The EPA also responds to the immediate threats posed by abandoned hazardous waste sites undergoing long-term clean-up. Occasionally, a removal action will be initiated following an emergency response operation (1910.120(q)). As long as an emergency response team is still in control of the site and a safety or health hazard exists, the emergency situation continues to be in effect. Once the immediate threat has been stabilized and the Incident Commander (IC) has declared the response activity over or finished, any remaining clean-up would be considered a post-emergency operation. Following the emergency response operation and prior to the removal action, a

comprehensive health and safety plan is generated and clean-up activities then fall under 1910.120(b)-(o) for hazardous waste sites.

1. Stages of a Removal Action

- (1) Discovery: A hazardous substance release or an immediate threat posed by an abandoned hazardous waste site facility is reported to the EPA. Occasionally, a removal action is initiated as a post-emergency operation or clean-up following an emergency response operation.
- (2) Removal Site Evaluation (RSE): As part of the RSE, the EPA On-Scene Coordinator (OSC) initially conducts an off-site preliminary assessment to help identify specific hazards and determine the appropriate response measures and safety measures to ensure the health and safety of the responders. Following an off-site preliminary assessment, the OSC conducts an on-site investigation to gather additional information and further evaluate the site risks and hazards.
- (3) Assessment of RSE Results Against Regulatory Criteria: If the results of the RSE do not meet regulatory criteria, the site is deferred to the State Authority, Remedial Program, or it is determined that there should be no further action. If the site does meet the criteria, the OSC obtains approval for a removal action.
- (4) Removal Action: When the OSC obtains approval for a removal action, the action is initiated, and clean-up contractors go to the site.

B. Remedial Actions

Remedial actions are taken to permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life-threatening. Remedial actions can involve complex and highly contaminated sites that often require several years to fully study the problem, develop a permanent remedy, and clean-up the hazardous waste. These actions can be conducted only at sites listed on EPA's National Priorities List (NPL). These are the sites that most people think of when they hear about the Superfund Program.

1. Stages of a Remedial Action

- (1) Preliminary Assessment: The initial stage of the clean-up program is a facility-wide study to determine if there are sites that pose hazards to public health or the environment. Available information is collected on the source, nature, extent, and magnitude of actual and potential hazardous substance releases at facility sites.
- (2) Site Inspection: This stage consists of sampling and analysis to determine the existence of actual site contamination. Information gathered is used to evaluate the site and determine the response action needed. Uncontaminated sites do not proceed to later stages of the process.

- (3) Remedial Investigation: The remedial investigation may include a variety of site investigative, sampling, and analytical activities to determine the nature, extent, and significance of the contamination. The focus of the evaluation is determining the risk to the general population from the contamination.
- (4) Feasibility Study: Concurrent with the remedial investigations, feasibility studies are conducted to evaluate remedial action alternatives to determine which would provide the protection required.
- (5) Remedial Design: Detailed design plans for the chosen remedial action alternative are prepared.
- (6) Remedial Action: The chosen remedial alternative is implemented.
- (7) Interim Remedial Action: Remedial actions can be taken at any time during the clean-up process to protect public health or to control contaminant releases to the environment.

Appendix B — List of Equipment Recommended for OSHA Personnel Conducting Inspections at Uncontrolled Hazardous Waste Sites

I. General Equipment

The following equipment should be available to conduct inspections and may be useful on a case-by-case basis:

A. Sampling Equipment.

1. Sample bottles;
2. Zip-lock plastic bags for samples;
3. PVC bags, 8 mil.;
4. Labels;
5. Markers (e.g., Sharpie);
6. Tags;
7. Chemical wipes;
8. Wipe test – Whatman 41 filter paper;
9. Chain of custody;
10. Shipping container(s); and
11. Shipping tape.

B. Decontamination Equipment

1. PVC bags for decontamination;
2. Plastic buckets, 5-gallon;
3. Cold water detergent;
4. Long-handled stiff bristle brush; and
5. PVC plastic drop tarps and tiedowns.

C. Miscellaneous Equipment

1. Small explosion-proof flashlight with batteries;
2. Knife, folding pocket-type;
3. Scissors;
4. Qualitative fit test equipment to be used consistent with 1910.134(f);
5. First aid kit;
6. Duct tape, high tack adhesive;
7. pH paper
8. Thermal underwear, lightweight, 100% cotton or polypropylene;
9. Socks, cotton or polypropylene;
10. Warning signs;

11. Waterproof log book, pencils, and chemical-resistant pens;
12. Fire extinguisher, small;
13. Polypropylene/nylon barrier rope;
14. Barrier tape;
15. Pop-up tent;
16. Binoculars
17. Face shield; and
18. Radio-frequency transceiver.

II. Equipment for CRZ or ExZ Entry.

In addition to any of the necessary equipment above, the following equipment is recommended for OSHA personnel who will enter the Contamination Reduction Zone (CRZ) or the Exclusion Zone (ExZ) at a hazardous waste site or a corrective action site. The specific hazards of the work zone determine the equipment needed for entry.

A. Clothing.

1. Fire-resistant jumpsuit;
2. Chemical splash suit, hooded;
3. Rain gear, two-piece suit; and
4. Hard hat, adjustable.

B. Footwear

1. Leather safety boots;
2. Chemically resistant boots: non-sparking, non-conductive material 12-inch height, safety toe, and steel shank; and
3. Disposable boot covers.

C. Eye Protection

1. Safety glasses, prescription if necessary;
2. Safety glasses, prescription if necessary, for regular use under self-contained breathing apparatus (SCBA) (short leg or adapter kit); and
3. Chemical splash goggles.

D. Respiratory Protection

1. SCBA, pressure-demand, 30 minutes, with extra tank (only where CSHO training and job hazards warrant);
2. Full-face, air-purifying combination canister approved for organic vapor with dust, mist, fume pre-filter; and
3. SCBA, emergency escape, 5 minutes.

E. Gloves

1. Cotton or polypropylene inner gloves (for wicking moisture under other gloves);
2. lightweight synthetic inner gloves;
3. Chemical, outer glove, 14-inch length, 22-millimeter thickness (nitrile rubber); and
4. Working gloves, leather

F. Monitoring Equipment

1. Detector tubes
2. Photoionization detector (e.g., HNU)
3. Personal sampling equipment

Appendix C — Glossary

Access Control Points: Points that are established to control entry to and exit from established work zones at hazardous waste sites. Access control points should be established between the Exclusion Zone (ExZ) and Contamination Reduction Zone (CRZ), and between the Contamination Reduction Zone and Support Zone (SZ).

Acclimatization: The adapting of an employee to new temperature, altitude, climate, environment, or situation.

Attendant: The individual stationed outside one or more permit-required confined spaces who monitors the authorized entrants and who performs all attendant's duties assigned in the employer's permit space program.

Authorized Entrant: An employee who is authorized by the employer to enter a permit-required confined space.

Biological Hazards: Infectious agents presenting an actual or potential hazard to the well-being of employees, either directly through infection or indirectly through disruption of the environment. Such hazards also include plant exposures (e.g., poison ivy, poison oak, and molds), animal exposures (e.g., stings and snake bites), medical wastes (e.g., bloodborne pathogens), and bioremediation agents or their toxins (e.g., bacteria used to clean up oil spills).

Blinding/Blanking: Inserting a solid barrier across the open end of a pipe leading into or out of a confined space and securing the barrier in such a way as to prevent leakage of material into the confined space.

Buddy System: A system for organizing employees into work groups in such a manner that each employee in the group is observed by a least one other employee in the group at all times. The purpose of the buddy system is to provide rapid assistance to employees in the event of an emergency.

Bulk Container: A cargo container used for transporting large quantities of substances.

Bung: A screw or cap used to cover the small opening of a metal drum or barrel.

Chemical Hazard: Any regulated or non-regulated hazardous material (solids, liquids, and gases; natural or man-made; including petroleum products) with the potential for causing harm to people, the environment, or property when released.

Clean-up Operation: An operation where hazardous substances are removed, contained, incinerated, neutralized, stabilized, cleaned up, or in any other manner processed or handled with the ultimate goal of making the site safer for people or the environment.

Confined Space: A space that has all of the following characteristics:

- ! Is large enough and so configured that an employee can bodily enter and perform work;
- ! Is not intended for continuous occupancy; and
- ! Has limited or restricted means for entry and exit.

Contamination Control Line: The boundary between the Support Zone and the Contamination Reduction Zone. The contamination control line separates the low-contamination area from the clean support zone.

Contamination Reduction Zone (CRZ): The transition area between the Exclusion Zone (ExZ) and the Support Zone (SZ) used to reduce and limit the amount of contamination on people and equipment, and in the air, water and soil that may be transferred into un Hazardous areas. The CRZ contains decontamination facilities, and functions as a "buffer zone" surrounding the ExZ.

CSHO: OSHA Compliance Safety and Health Officer.

Decant: The separation of liquid from solid by physical means such as draining or pouring off the liquid. Usually drums of a sludge, two-phase material, or other liquid, semi-liquid, or solid material are decanted with the liquid being either pumped into another drum or absorbed onto sawdust or other absorbent.

Decontamination: The effective removal of hazardous substances from personnel, materials, and equipment to the extent necessary to preclude the occurrence of adverse health effects resulting from exposure.

Decontamination Line: A sequence of stations located in the contamination reduction zone (CRZ) used in the decontamination of personnel or equipment.

Double Block and Bleed: A method used to isolate a confined space from a line, duct, or pipe by physically closing two in-line valves on a piping system and opening a "vented-to-atmosphere" valve between them.

Emergency (Site): A sudden and unexpected event, taking place on the site, and requiring urgent action for control or remediation in order to minimize the danger to people, the environment, or property.

Emergency Release: A release of hazardous substance(s) that presents a potential safety or health hazard.

Emergency Response: A response effort from employees outside of the immediate release area to an occurrence that results, or is likely to result, in an uncontrolled release of hazardous substance.

Engulfment: The surrounding and effective capture of a person by a liquid or finely divided (flowable) solid substance that can be aspirated to cause death by filling or plugging the respiratory system, or that can exert enough force on the body to cause death by strangulation, constriction, or crushing.

EPA Levels of Protection: The personal protective equipment ensembles identified as Level A, B, C, or D, and listed in Appendix B of 29 CFR 1910.120 and in the four-agency manual entitled "Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities" (1985).

Exclusion Zone (ExZ): The area, located on the site, where contamination is either known or expected to occur and where the greatest potential for exposure exists. Also known as the "Hot Zone."

Facility: (a) Any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or publicly owned treatment works), well, pit, pond, lagoon, impoundment, ditch, storage container, motor vehicle, rolling stock, or aircraft, or (b) any site or area where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located. Water-borne vessels or consumer products in use by a consumer are not considered to be facilities.

Grappler: A device used for handling or moving materials from a safe distance.

Hazard Analysis: The process to define and evaluate the activity being performed to identify the sequence of work and the specific hazards anticipated, and to develop control measures to be implemented to eliminate or reduce each hazard to an acceptable level.

Hazardous Area: A place on a hazardous waste site or corrective action site where access is restricted to personnel who have specialized training and who are using personal protective equipment as necessary because of the possibility of exposure to health or safety hazards.

Hazardous Chemical: Any chemical that presents a physical hazard or a health hazard upon exposure.

Hazardous Material: See hazardous substance.

Hazardous Substance: Any substance listed below, exposure to which results or may result in adverse effects on the health or safety of employees:

- ! Any substance defined under section 101(14) of CERCLA;
- ! Any biological agent or other disease-causing agent that, after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any person, either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction), or physical deformations in such persons or their offspring;
- ! Any substance listed by the U.S. Department of Transportation as a hazardous material under 49 CFR 172.101 and appendices; and
- ! Hazardous waste as defined below.

Hazardous Waste: A waste or combination of wastes as defined in 40 CFR 261.3 or those substances defined as hazardous wastes in 49 CFR 171.8.

HAZMAT Team: A hazardous materials response team organized and designated by the employer, that is 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 fire brigade a HAZMAT team. A HAZMAT team, however, may be a separate component of a fire brigade or fire department.

HAZWOPER: Acronym for the Hazardous Waste Operations and Emergency Response standard.

Hotline: The outer boundary of the Exclusion Zone. The Hotline separates the areas of contamination from the rest of the site.

Hot Work: Work that produces arcs, sparks, flames, heat, or other sources of ignition.

Hot Work Permit: The employer's written authorization to perform operations (e.g., riveting, welding, cutting, burning, and heating) capable of providing a source of ignition.

Immediately Dangerous to Life or Health (IDLH) : Any atmospheric condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would impair the ability of a person to escape an area. [NOTE: Some materials—hydrogen fluoride gas and cadmium vapor, for example—may produce immediate transient effects that, even if severe, may pass without medical attention, but are followed by sudden, possibly fatal collapse 12 to 72 hours after exposure. The victim recovers from transient effects, “feels normal,” and then collapses. Such materials in hazardous quantities are considered to be “immediately” dangerous to life or health.]

Inerting: The displacement of the atmosphere in a container, vessel, or permit-required confined space by a non-combustible gas (such as nitrogen) to such an extent that the resulting atmosphere is non-combustible. [NOTE: This procedure produces an IDLH oxygen-deficient atmosphere.]

Key Personnel: Those personnel/organizations considered to be essential to ensure the safe operation of the facility, site, project, or task.

Lab Pack: A package of hazardous waste containing several smaller packages of compatible chemical waste. Usually chemical waste from laboratories which do not generate large quantities of any one chemical waste are disposed of in lab packs.

LEL/LFL and UEL/UFL: Acronyms for lower explosive limit/lower flammable limit and upper explosive limit/upper flammable limit. The range of concentrations of a flammable gas or vapor in air in which combustion or explosion can occur. A concentration below the lower limit is not sufficient to support combustion, and above the upper limit the mixture is too "rich" to burn.

Line Breaking: The intentional opening of a pipe, line, or duct that is or has been carrying flammable, corrosive, or toxic material, an inert gas, or any fluid at a volume, pressure, or temperature capable of causing injury.

Lockout/Tagout: The placement of a lock/tag on the energy-isolating device in accordance with an established procedure, indicating that the energy-isolating device shall not be operated until removal of the lock/tag in accordance with an established procedure.

Mixed Waste: Waste materials that present both chemical and radiological hazards.

Off-site Personnel: Those personnel assigned to locations off the site with specific responsibilities for emergency response, safety and health, or other support at the site. Examples include multi-disciplinary advisors, ambulance services, medical support, etc.

On-site Essential Personnel: Those required personnel, available on the site, who by virtue of their position, responsibilities, and/or expertise, are considered essential to the overall safe operation of the site.

On-site Optional Personnel: Those personnel, who at the discretion of site management, may be included as part of the site safety and health and emergency response key personnel. Examples include scientific advisors, logistics officers, photographers, etc.

Overpack: An oversized container into which a leaking drum can be placed for transport.

Oxygen-deficient Atmosphere: An atmosphere containing less than 19.5% oxygen by volume.

Oxygen-enriched Atmosphere: An atmosphere containing more than 23.5% oxygen by volume.

Permissible Exposure Limit (PEL): The employee's permitted exposure to any material or physical agent listed in Table Z-1, Z-2, or Z-3 of 29 CFR 1910.1000, Air Contaminants.

Permit-Required Confined Space (PRCS): A confined space that has one or more of the following characteristics:

- ! Contains or has potential to contain a hazardous atmosphere;
- ! Contains a material that has the potential to engulf an entrant;
- ! Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or
- ! Contains any other recognized serious safety or health hazard.

Permit System: The employer's written procedure for preparing and issuing permits for entry and for returning the permit-required confined space to service following termination of entry.

Personal Protective Equipment (PPE): Clothing and equipment used to shield or isolate individuals from the chemical, physical, and biological hazards that may be encountered at a hazardous waste site. PPE should protect the respiratory system, skin, eyes, face, hands, feet, head, body, and hearing.

Physical Controls: Physical barriers put into place that limit personnel exposure to hazards.

Physical Hazards: Those work-related sources of actual or potential danger (e.g., machinery, trip and fall, hoisting and rigging, shoring and trenching) to which employees may be exposed.

Project Manager: The person appointed by the employer to have control over the project site where occupational activities are being performed.

Qualified Person: A person who, by reason of training, education, and experience, is knowledgeable in the operation to be performed and is competent to judge the hazards involved.

Radiological Hazard: Internal or external body exposure or potential exposure to the effect of ionizing radiation through inhalation, ingestion, or skin contact with radioactive isotopes or materials or objects contaminated with radioactive isotopes; or through tissue penetration from a radiation generator or a container of radioactive isotopes.

Remediation: Reduction or removal of unacceptable levels of hazardous materials from environmental media such as water or soil to reduce the health hazards to the public from the hazardous materials.

Rescue Service: The personnel designated to rescue employees from hazardous areas.

Risk: The quantitative or qualitative expression of possible loss that considers both the probability that a hazard will cause harm and the consequences of that event. Risk = (Probability) x (Severity).

Site Safety and Health Supervisor: The individual located at a hazardous waste site who is responsible to the employer and has the knowledge and authority to implement the site safety and health plan and to verify compliance with applicable safety and health requirements.

Site-Specific Training: Training designed to instruct employees in the unique features of a hazardous waste site.

Support Zone (SZ): The uncontaminated area where workers are unlikely to be exposed to hazardous substances or dangerous conditions. Also called the Clean Zone.

Task: A well-defined unit of work having an identifiable beginning and end with two or more elements. A task is a series of jobs performed in support of a particular project.

Thermal Destruction Facility (TDF): An incinerator located at a hazardous waste site. The incinerator may be permanently located, such as at a RCRA-permitted facility, or temporarily located (i.e., transportable) at a remediation site.

Treatment, Storage, and Disposal Facility (TSDF): A permitted or interim-status facility, as regulated under 40 CFR Parts 264 and 265 (RCRA regulations), where hazardous waste is disposed of, stored, or treated prior to disposal.

Work Plan: That part of a safety and health program that addresses the tasks and objectives of site operations and the logistics and resources required to reach those tasks and objectives.

Appendix D — Reference Material for HAZWOPER

NOTE: Sources for the listed publications are provided at the end of this appendix.

A Guide to Heat Stress in Agriculture. Environmental Protection Agency; May 1993 (EPA-750-6-92-001).

Criteria for a Recommended Standard: Occupational Exposure to Hot Environments, NIOSH; April 1986. (DHHS Publication No. 86-113)

Dangerous Properties of Industrial Chemicals, Seventh Edition, 1989, N. Irving Sax, Richard J. Lewis, Sr. (eds.)

Federal Register, Vol. 63, No. 230, April 27, 1999, pages 66018-66040: Permit Required Confined Spaces; Amendments to the Final Rule. (29 CFR 1910.146)

Federal Register, Vol. 59, No. 161, August 22, 1994, pages 43268-43280: OSHA Technical Corrections and Additions to Appendices for Hazardous Waste Operations and Emergency Response Final Rules.

Federal Register, Vol. 58, No. 9, January 14, 1993, pages 4462-4563: Permit Required Confined Spaces; Final Rule. (29 CFR 1910.146)

Federal Register, Vol. 57, No. 95, May 15, 1992, pages 20944-20954: Hazardous Materials; Training for Safe Transportation; Final Rule. (49 CFR Parts 171-177)

Federal Register, Vol. 57, No. 36, February 24, 1992, pages 6356-6417: Process Safety Management of Highly Hazardous Chemicals; Explosives and Blasting Agents; Final Rule. (29 CFR 1910.119)

Federal Register, Vol. 56, No. 75, April 18, 1991, pages 15832-15833: Hazardous Waste Operations and Emergency Response; Final Rule; Corrections.

Federal Register, Vol. 55, No. 72, April 13, 1990, pages 14072-14075: Hazardous Waste Operations and Emergency Response; Final Rule; Corrections.

Federal Register, Vol. 55, No. 18, January 26, 1990, pages 2776-2794: Accreditation of Training Programs for Hazardous Waste Operations; Notice of Proposed Rulemaking.

Federal Register, Vol. 54, No. 120, June 23, 1989, pages 26654-26658: Worker Protection Standards for Hazardous Waste Operations and Emergency Response; Final Rule. (40 CFR Part 311)

Federal Register, Vol. 54, No. 42, March 6, 1989, pages 9294-9336: Hazardous Waste Operations and Emergency Response; Final Rule. (29 CFR Subpart 1910.120)

{ Federal Register, Vol. 77 ~~52~~, No. 163, August 24, 1987 ~~58~~, March 26, 2012, pages ~~31852-31886~~ 17574-17896: Hazard Communication; Final Rule. (29 CFR 1910.1200) }

Federal Register, Vol. 52, No. 85, May 4, 1987, pages 16241-16243: Hazardous Waste Operations and Emergency Response; Interim Final Rule; Corrections.

Federal Register, Vol. 51, No. 244, December 19, 1986, pages 45654-45675: Hazardous Waste Operations and Emergency Response; Interim Final Rule.

Guidelines for the Selection of Chemical Protective Clothing, Third Edition, 1987. Schwope, et al. (eds.) American Conference of Governmental Industrial Hygienists, Cincinnati, Ohio.

Health and Safety Audit Guidelines, SARA Title I, Section 126, December 1989, United States Environmental Protection Agency: Office of Solid Waste and Emergency Response, Office of Emergency and Remedial Response, and Emergency Response Division.
(EPA/540/G-89/010)

"Memorandum of Understanding Between the United States Coast Guard, U.S. Department of Transportation, and the Occupational Safety and Health Administration, U.S. Department of Labor, Concerning Their Authority to Prescribe and Enforce Standards or Regulations Affecting the Occupational Safety and Health of Seamen Aboard Vessels Inspected and Certificated by the United States Coast Guard," March 4, 1983.

Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, NIOSH, OSHA, USCG, EPA; October 1985. (Publication No. 85-115)

OSHA Instruction CPL 02-00-046 (CPL 2.46), March 22, 1982, "Memorandum of Understanding Between the Occupational Safety and Health Administration and the United States Coast Guard."

OSHA Instruction CPL 02-00-094 (CPL 2.94), July 22, 1991, "OSHA Response to Significant Events of Potentially Catastrophic Consequence."

OSHA Instruction CPL 02-00-100 (CPL 2.100), May 5, 1995, "Application of the Permit-Required Confined Spaces (PRCS) Standard, 29 CFR 1910.146."

OSHA Instruction CPL 02-00-103 (CPL 2.103), September 26, 1994, "Field Instruction Reference Manual."

OSHA Instruction CPL 02-00-111 (CPL 2.111), November 27, 1995, Citation Policy for Paperwork and Written Program Requirement Violations."

OSHA Instruction CPL 02-00-120 (CPL 2-0.120), September 25, 1998, "Instruction Procedures for the Respiratory Protection Standard."

OSHA Instruction CPL 02-00-124 (CPL 2-0.124), December 10, 1999, "Multi-Employer Citation Policy."

OSHA Instruction CPL 02-02-030 (CPL 2-2.30), November 14, 1980, "29 CFR 1913.10(b)(6), Authorization of Review of Medical Opinions."

OSHA Instruction CPL 02-02-032 (CPL 2-2.32), January 19, 1981, "29 CFR 1913.10(b)(6), Authorization of Review of Specific Medical Information."

OSHA Instruction CPL 02-02-033 (CPL 2-2.33), February 8, 1982, "29 CFR 1913.10, Rules of Agency Practice and Procedure Concerning OSHA Access to Employee Medical Records—Procedures Governing Enforcement Activities."

OSHA Instruction CPL 02-02-051 (CPL 2-2.51), November 5, 1990, "Inspection Guidelines for Post-Emergency Response Operations Under 29 CFR 1910.120."

OSHA Instruction CPL 02-02-054 (CPL 2-2.54), February 10, 1992, "Respiratory Protection Program Manual."

OSHA Instruction CPL 02-02-059 (CPL 2-2.59A), April 24, 1998, "Inspection Procedures for the Hazardous Waste Operations and Emergency Response Standard, 29 CFR 1910.120, and 1926.65, Paragraph (q): Emergency Response to Hazardous Substance Releases."

OSHA Instruction STD 01-05-019 (STD 1-7.3), September 11, 1990, "29 CFR 1910.147, The Control of Hazardous Energy (Lockout/Tagout) – Inspection Procedures and Interpretive Guidance."

OSHA Instruction CSP 01-01-024 (STP 2-1.154C), June 10, 1991, "Hazardous Waste Operations and Emergency Response; Final Rule and Corrections."

OSHA Instruction CSP 01-00-002 (STP 2-0.22B), March 21, 2001, "State Plan Policies and Procedures Manual."

Pocket Guide to Chemical Hazards and Other Databases, NIOSH; April 1999. Publication No. 99-115.

Recommended Practice for Responding to Hazardous Materials Incidents; National Fire Protection Association Standard 471; February 7, 1997.

Standard for Professional Competence of Responders to Hazardous Materials Incidents; National Fire Protection Association Standard 472; February 7, 1997.

Standard for Professional Competence of Responders to Hazardous Materials Incidents; National Fire Protection Association Standard 472; 2002 Edition.

Standard on Liquid Splash-Protective Suits for Hazardous Chemical Emergencies; National Fire Protection Association Standard 1992; 1990 Edition.

Standard on Support Function Protective Garments for Hazardous Chemical Operations; National Fire Protection Association Standard 1993; 1990 Edition.

Standard on Vapor-Protective Suits for Hazardous Chemical Emergencies; National Fire Protection Association Standard 1991; 1990 Edition.

Standard Operating Safety Guides; EPA; 1992. Office of Emergency and Remedial Response. EPA Publication No. 9285.1-03. NTIS No. PB92-963414.

State of Washington Industrial Safety and Health Administration, May 3, 1991, "Inspection Guidelines for Post-Emergency Response Operations Under WAC 296-62-300."

SOURCES OF PUBLICATIONS

EPA Information

The EPA publication heat stress can be ordered from The National Service Center for Environmental Publications (NSCEP) via telephone at 1-800-490-9198. Ordering information is also available on-line at <http://www.epa.gov/ncepihom/>. The NSCEP's mailing address is:

National Service Center for Environmental Publications
P.O. Box 42419
Cincinnati, OH 45242-2419

OSHA Information on the Web

A wide variety of OSHA materials including standards, interpretations, directives, preambles, and the four-agency document, *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities*, are available on the OSHA website (<http://www.osha.gov/>) at no cost. The OSHA website also includes news releases, fact sheets, recent Federal Register notices, interpretation letters, and other information.

The GPO Access Home Page provides access to recent Federal Register documents (dated 1995-1999; Volumes 60, 61, 62, 63 and 64) via the World Wide Web at: <http://www.gpoaccess.gov/index.html>. A Help Line for this service is available at 202-512-1530.

Federal documents may also be obtained from National Technical Information Service (NTIS), (800-553-6847). NTIS is also on-line at <http://www.ntis.gov/>. NTIS's mailing address is:

U.S. Department of Commerce
National Technical Information Service
Springfield, VA 22161

NIOSH Information

Many NIOSH documents are available on the NIOSH website (<http://www.cdc.gov/niosh/%20homepage.html>). NIOSH documents may also be obtained by calling the NIOSH publications office at 1-800-35-NIOSH (1-800-356-4674). The NIOSH Publications Office mailing address is:

NIOSH Publications
4676 Columbia Parkway, Mailstop C-13
Cincinnati, OH 45226-1998

NFPA Information

NFPA documents may be ordered via phone at 1-800-344-3555 or via the internet at <http://www.nfpa.org/catalog/Home/index.asp>. The NFPA's mailing address is:

National Fire Protection Association
1 Batterymarch Park
PO Box 9101
Quincy, MA 02269-9101

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Support Zone (SZ).....	25, 63, C-1, C-2, C-6