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EPA

Hazardous Waste Operations and Emergency Response:

Uncontrolled Hazardous Waste Sites and RCRA Corrective Actions

Office of Emergency and Remedial Response
Emergency Response Division MS-101

Quick Reference Fact Sheet

INTRODUCTION

Under the authority of section 126 of the Superfund Amendments and Reauthorization Act of 1986 (SARA), the U.S. Environmental Protection Agency (EPA) and the U.S. Occupational Safety and Health Administration (OSHA) promulgated *identical* health and safety standards to protect workers engaged in hazardous waste operations and emergency response. The OSHA regulations, codified at 29 CFR 1910.120, became effective on March 6, 1990 (54 FR 9294). Corrections to the OSHA regulations were published on April 13, 1990 (55 FR 14072). The EPA regulations, published on June 23, 1989 at 54 FR 26654, incorporate the OSHA standards by reference and are codified at 40 CFR 311.

The EPA and OSHA worker protection standards for hazardous waste operations and emergency response (HAZWOPER) apply to three primary groups of workers: (1) employees engaged in voluntary and mandatory clean-ups at uncontrolled hazardous waste sites, including corrective actions at treatment, storage, and disposal (TSD) facilities regulated under the Resource Conservation and Recovery Act (RCRA); (2) employees engaged in routine hazardous waste operations at RCRA TSD facilities; and (3) employees engaged in emergency response operations without regard to location.

The purpose of this Fact Sheet is to explain the principle requirements of the EPA and OSHA worker protection standards as they apply to employees engaged in hazardous waste operations at uncontrolled hazardous waste sites, including employees who perform corrective actions at RCRA TSD facilities. The other two groups of employees affected by the regulations are addressed in a separate Fact Sheet entitled *Hazardous Waste Operations and Emergency Response: RCRA TSD and Emergency Response Without Regard to Location* (Publication No. 9285.2-07FS). The requirements that apply to individuals engaged in hazardous waste operations at RCRA TSD facilities and emergency responders who respond to emergencies without regard to location are specified at 29 CFR 1910.120(p) and (q), respectively.

The HAZWOPER requirements for workers who engage in hazardous waste operations and emergency response at uncontrolled hazardous waste sites are specified at 29 CFR 1910.120(a) through (o), and are summarized in Exhibit 1; these requirements also apply to those workers who perform corrective actions at RCRA TSD facilities. These requirements apply to any employee working at an uncontrolled hazardous waste site who has the potential to be exposed to hazardous substances. As such, the On-Scene Coordinator (OSC) and the Remedial Project Manager (RPM) are both covered by the standards and must fully implement the standards for other employees engaged in hazardous waste site clean-ups. These provisions also apply to any activities performed during the preliminary planning and evaluation stages of the remedial investigation and feasibility study (RI/FS), such as the preliminary assessment and site investigation (PA/SI).

In sum, all stages of a removal and remedial operation performed at a site in which there is a potential for exposure to hazardous substances must be conducted in accordance with the worker protection standards specified at 29 CFR

EXHIBIT 1
Hazardous Waste Operations and Emergency Response at Uncontrolled Hazardous Waste Sites
(29 CFR 1910.120(a)-(o))

(a) Scope, application, and definitions.

(b) Safety and health program.

(c) Site characterization and analysis.

(d) Site control.

(e) Training.

(f) Medical surveillance.

(g) Engineering controls, work practices, and personal protective equipment for employee protection.

(h) Monitoring.

(i) Informational programs.

(j) Handling drums and containers.

(k) Decontamination.

(l) Emergency response by employees at uncontrolled hazardous waste sites.

(m) Illumination.

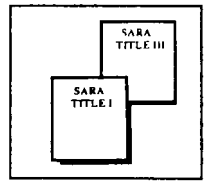
(n) Sanitation at temporary workplaces.

(o) New technology programs.

1910.120(a) through (o). The standards, however, do not apply to employees who do not have the potential to be exposed to hazardous substances. For example, administrative support personnel in the Incident Command Post may not be covered by HAZWOPER. These employees, however, must be made aware of the provisions of the emergency response plan. Specifically, they must be briefed on the procedures to take during an emergency at the site, and they must be familiar with general site operations, such as the location of work zones. Employees not covered by HAZWOPER are, of course, protected by other OSHA standards including the Hazard Communication Standard (HAZCOM).

In addition to the requirements specified at 29 CFR 1910.120(a) through (o), other worker protection requirements may also apply at uncontrolled hazardous waste sites. For example, 29 CFR 1910.120(q) applies to workers, such as local HAZMAT team members, who come on-site specifically to perform emergency response operations. The requirements specified at (q), however, do not apply to regular site employees who perform routine clean-up operations at the site and who may also perform emergency response operations; these individuals are covered by the requirements in 29 CFR 1910.120(e).

This Fact Sheet is divided into six parts. The first three parts describe the planning, training, and medical surveillance requirements for workers engaged in hazardous waste operations and emergency response at uncontrolled hazardous waste sites. The fourth part of this Fact Sheet discusses other requirements of HAZWOPER that must be implemented at uncontrolled hazardous waste sites. The fifth part of this Fact Sheet discusses employee rights under section 8 of the Occupational Safety and Health Act of 1970, as amended (OSH Act). The final part of this Fact Sheet provides important addresses and telephone numbers.



PART 1: PLANNING REQUIREMENTS

Part 1 of this Fact Sheet explains the purpose of the comprehensive safety and health program and the site-specific health and safety plan (HASP); describes the specific steps that must be taken to develop a HASP; explains the type of information that must be included in the HASP; and summarizes the responsibilities of the OSC, RPM, and the Environmental Response Team (ERT) in developing a HASP at an EPA-lead site.

There are many different types of entities, including state agencies, private corporations, and the federal government, that may have lead responsibility in cleaning up an uncontrolled hazardous waste site or a contaminated RCRA TSD facility. Each of these entities uses different titles to identify the person who has overall responsibility for site activities. For purposes of this Fact Sheet, this responsible person is referred to as the OSC/RPM, as it is at EPA-lead sites.

Safety and Health Program

Any employer whose workers engage in hazardous waste operations and emergency response at an uncontrolled hazardous waste site or who perform corrective actions at a RCRA TSD facility must develop and implement a written safety and health program. This program must be designed to identify, evaluate, and control safety and health hazards at any site, and to provide for emergency response during site operations. The written safety and health program must include an organizational structure; a site-specific health and safety plan (HASP); a comprehensive workplan; a medical surveillance program; and a description of the employer's standard operating procedures. For a complete list of the elements required in the written safety and health program, refer to 29 CFR 1910.120(b)(1)(ii).

The primary purpose of the safety and health program is to serve as the organization's comprehensive health and safety policy that applies to all employees of the company, irrespective of the location of the actual site where they are working. This program must be maintained by the employer and made available to any employee or employee representative; contractor, subcontractor, or other representative working for the employer who will be potentially exposed to hazardous substances; OSHA personnel; and personnel of federal, state, and local agencies with regulatory authority over the site. It is important to note that only one safety and health program should be developed by an employer, even if the employer has workers that perform operations at several different sites.

If an employer has already developed a safety and health program to meet the requirements of other federal, state, and local regulations, the employer may use the existing program to satisfy the HAZWOPER requirements, so long as any additional information not covered in the existing program but required under HAZWOPER is incorporated into the program.

Site-Specific HASP

Although the standards require employers to develop and implement only one safety and health program, a site-specific HASP must be developed and implemented for each site where workers are potentially exposed to hazardous substances.

The purpose of the site-specific HASP is to address the safety and health hazards that may exist at each phase of site operations and to identify procedures for protecting employees. Exhibit 2 presents a comprehensive list of the elements that must be included in the HASP.

Information gained during the site characterization, as specified at 29 CFR 1910.120(c), must be considered in developing the HASP. The site characterization may be divided into three stages: preliminary evaluation (PE), initial site entry, and ongoing monitoring. Under the requirements of 29 CFR 1910.120(b)(4), the HASP must be developed after the PE has been performed and before any site entry. The following is a brief discussion of the specific steps that must be taken to develop, implement, and maintain a HASP.

Step 1: Preliminary Evaluation

The first step in developing a HASP is to perform a preliminary evaluation (PE) of the site's characteristics. *The PE must be accomplished off-site, so as not to endanger the health and safety of site workers.* The purpose of the PE is to obtain preliminary information to help identify the specific hazards at the site and determine the appropriate safety and health control procedures (e.g., engineering controls, personal protective equipment (PPE), and any additional medical surveillance needs) that are necessary to ensure the protection of employees who perform tasks on-site. The specific information that must be obtained during the PE is summarized below and outlined in Exhibit 3. The information obtained during the PE should be used to develop the HASP.

There are several ways in which the information specified in Exhibit 3 can be obtained. For example, records of the site or interviews with persons who are knowledgeable about the site can provide useful information about the potential hazards at a site. Potentially useful sources of information include: company records, receipts, logbooks, or ledgers that describe site activities; records from state and federal pollution control regulatory and enforcement agencies and state occupational and health offices; local fire and police department records; site photos; and media reports.

In addition to interviewing knowledgeable persons and researching the history of the site,

EXHIBIT 2
The Specific Components of a HASP

- Key personnel.
- Safety and health risk or hazards analysis for each site task and operation found in the workplan.
- Employee training assignments to assure that each employee receives the training required before they engage in any operation that could potentially lead to exposure to a hazardous substance or to safety or health hazards.
- Personal protective equipment appropriate for each site task or operation conducted.
- Medical surveillance requirements.
- Employee and air monitoring equipment and environmental sampling techniques and instrumentation to be used.
- Site control measures that include at a minimum - a site map, a buddy system, site communications system (including emergency alerting), standard operating procedures or safe work practices, and identification of the nearest medical assistance.
- Decontamination procedures both for individuals and equipment on site and in places where there is a potential for exposure to a hazardous substance.
- An emergency response plan for safe and effective responses to emergencies.
- Confined space entry procedures.
- A spill containment program to contain and isolate the entire volume of any hazardous substance spilled in the course of a transfer.
- Hazard communications plan (29 CFR 1910.1200 and 29 CFR 1926.59).

data-gathering at the site perimeter (i.e., perimeter reconnaissance) may help in identifying site hazards and potential pathways for exposure, and determining the appropriate level of PPE for the initial site entry. *Perimeter reconnaissance activities during the PE must be conducted off-site.* To identify the appropriate sampling techniques for perimeter reconnaissance, the safety and health officer should review the information obtained during the records/interview research. The most important thing to remember is that the OSC/RPM must not, under any circumstances, allow a worker to enter the site to collect information for the PE.

THE PE MUST BE COMPLETED PRIOR TO ANYONE ENTERING THE SITE

Step 2: Developing the HASP

Once the PE is completed and the appropriate information is obtained, the OSC/RPM at the site must use the information gathered during the PE to develop the initial draft of the site-specific HASP. The initial draft of the HASP must include all elements listed in Exhibit 2. Specifically, it must identify each anticipated safety and health hazard for each work operation or activity, and describe how those hazards will be eliminated or controlled. In addition, the HASP should identify appropriate monitoring procedures and PPE for the initial site entry. The HASP must remain on-site at all times and only one HASP should be developed for each site.

NO ONE MAY ENTER THE SITE UNTIL THE HASP HAS BEEN DEVELOPED, APPROVED, AND IMPLEMENTED

Step 3: Initial Site Entry

Once the HASP is developed and implemented, the second stage of the site characterization and analysis (i.e., the initial site entry) may begin. The purpose of the initial site entry is to gather additional information and further evaluate the site's specific characteristics to identify and confirm existing site hazards and to aid in the selection of appropriate engineering controls and PPE.

At a minimum, activities during the initial site entry should consist of a visual survey for

EXHIBIT 3
Specific Components of the Preliminary Evaluation (29 CFR 1910.120(c)(4))

- Site location and size.
- Description of response activity and/or the job to be performed.
- Duration of the planned activity.
- Site topography and accessibility by air and roads.
- Safety and health hazards expected at the site.
- Pathways for hazardous substance dispersion.
- Present status and capabilities of emergency response teams that would provide assistance for on-site emergencies.
- Hazardous substances and health hazards involved or expected at the site, and the chemical and physical properties of these substances.

potential hazards and, when there is potential for exposure, air monitoring. Multi-media sampling should also be performed if the OSC/RPM has reason to believe that contamination may have occurred.

An accurate and comprehensive visual survey of the site will assist the OSC/RPM in identifying and determining what additional information (e.g., sampling of soil or containers) may be needed. This visual survey could include noting the condition of waste containers (e.g., undamaged or rusted); noting any unusual conditions; and determining potential pathways for exposure.

When entering the site, entry personnel should monitor the air using direct reading instruments for immediately dangerous to life and health (IDLH) conditions (e.g., combustable or explosive atmospheres, oxygen deficiency, toxic substances) and for ionizing radiation. Such monitoring, however, need only be conducted if the PE produces information that indicates (1) existing IDLH conditions, or (2) the potential for ionizing radiation, or if the information from the PE is insufficient to reasonably conclude that neither of these two conditions exists. When monitoring, entry personnel should look for signs of actual or potential IDLH hazards or other dangerous conditions. Examples of hazards that may be identified at a site include confined space entry, visible vapor clouds, or areas that contain biological indicators such as dead vegetation. The specific monitoring requirements for initial site entry are specified at 29 CFR 1910.120(c)(6) and (h)(2).

In addition to air monitoring, multi-media sampling should be performed during the initial site entry, if the OSC/RPM believes contamination may exist. The soil sampling techniques employed will differ with each site. Prior to beginning site activities, it is imperative that the purpose of the effort and the ultimate use of the data be established. Specific strategies should be selected based on the information required.

One important goal of the initial site entry is to identify the risks and hazards at the site so that the work zones can be established. The three most frequently identified zones are the Exclusion Zone, the Contamination Reduction Zone, and the Support Zone (also known as the Clean Zone). The Support Zone should be an area of the site that is free from contamination and that may safely be used as a staging area for other hazardous waste operations at the site. For additional information and guidance on how to designate work zones, consult the Fact Sheet entitled *Establishing Work Zones at Uncontrolled Hazardous Waste Sites* (Publication No. 9285.2-06FS).

Any information concerning the chemical, physical, and toxicological properties of hazardous substances identified during the initial site entry must be made available to employees prior to the commencement of operations at the site.

INITIAL SITE ENTRY ACTIVITIES MUST, AT A MINIMUM, INCLUDE A VISUAL SURVEY AND, WHEN THERE IS POTENTIAL FOR EXPOSURE, AIR MONITORING

Step 4: Update the HASP

Once the initial site entry is completed, the OSC/RPM is responsible for updating the HASP to ensure that it adequately identifies any new

tasks or hazards at the site. At most sites, any air and multi-media sampling performed during the initial site entry will provide the OSC/RPM with more accurate information regarding the appropriate level of PPE to be worn by site employees and the proper designation of work zones.

UPDATE THE HASP AFTER THE INITIAL SITE ENTRY

Step 5: On-Going Site Activities

Once the HASP is revised to reflect the information gathered during the initial site entry, on-going monitoring must occur at the site to ensure that all new hazards are identified in a timely manner and that the appropriate controls are implemented to protect site employees.

If new tasks or hazards are identified at a site, do not develop a new HASP; instead, update the original HASP. If a subcontractor is working at a site, the subcontractor should carefully evaluate and identify all tasks associated with the subcontracted activities, and prepare a health and safety plan addressing any identified hazards. This plan should be submitted to the OSC/RPM who will incorporate it into the general site HASP after it has been reviewed for concurrence with the site workplan.

THE RULE IS: ONE SITE, ONE HASP

When developing a HASP, be careful to ensure that all required information as specified at 29 CFR 1910.120(b)(4)(ii) is addressed in the HASP. The remainder of this part of the Fact Sheet will explain the specific elements that must be included in the HASP.

Elements of the HASP

The information that must be included in the HASP is specified at 29 CFR 1910.120(b)(4)(ii) and summarized in Exhibit 2. Some of the areas that must be addressed in the HASP, such as the employer's monitoring and decontamination programs, are discussed in further detail below. In addition to the elements specified at 29 CFR 1910.120(b)(4)(ii), the HASP must identify key personnel and HAZCOM requirements and provide for pre-entry briefings to be held before site activity is initiated. These meetings should be held at any time they appear necessary to ensure that employees are adequately apprised of the safety and health procedures being followed at the site.

Monitoring program (29 CFR 1910.120(h)). The OSC/RPM's proposed monitoring program must be included in the HASP. The monitoring program must include procedures for initial entry monitoring, periodic monitoring, and monitoring of high risk employees. The monitoring requirements for initial site entry are specified at 29 CFR 1910.120(c)(6) and (h)(2) and are discussed in detail on p. 5.

In general, monitoring must be performed whenever there is any possibility that employees may be exposed to hazardous substances. The purpose of monitoring is to ensure that the proper engineering controls, work practices, and PPE are used to protect employees at the site.

Periodic monitoring should be conducted whenever there is any indication that exposures have risen above the permissible exposure limits (PELs), or other dangerous conditions exist such as the presence of flammable atmospheres or environments that are oxygen-deficient. Monitoring of high risk employees should be conducted on those employees suspected of having the highest exposures to hazardous substances and health hazards.

In addition to the monitoring requirements specified in 29 CFR 1910.120, there are other applicable OSHA standards, specifically Subpart Z, 29 CFR 1910.1000, that refer to particular air sampling and monitoring procedures for chemical contaminants. These standards also specify certain PPE and recordkeeping requirements for a variety of compounds. The compounds and their accompanying regulations are listed in Exhibit 4.

Site control program (29 CFR 1910.120(d)). The site control program in the HASP specifies the procedures that will be used to minimize employee exposure to hazardous substances before clean-up operations commence and during site operations. The site control program must be developed

EXHIBIT 4
Toxic and Hazardous Substances
Subpart Z, 29 CFR 1910.1000

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

during the planning stages of a hazardous waste clean-up operation, and must be modified as any new information becomes available. The site control program must, at a minimum, include a site map, work zones, communications, identification of the nearest medical assistance, and safe work practices.

Engineering controls and safe work practices must be specified in the site control program to protect employees from exposure to hazardous substances and other safety and health hazards. Engineering controls and work practices should be implemented to reduce and maintain employee exposure to levels at or below the PELs for those hazardous substances at the site. Examples of engineering controls that may be used include pressurized cabins and control booths on equipment. *If, for whatever reason, it is not possible to maintain employee exposure to levels at or below PELs, technical assistance should be obtained from other sources before proceeding with site activities (e.g., ERT or OSHA).*

PPE should be used as a last resort to protect employees against possible exposure to hazardous substances. It should only be used when engineering controls and work practices are insufficient to adequately protect against exposure. The PPE used at the site must be reflective of the potential site hazards identified during the PE and initial site characterization.

Decontamination program (29 CFR 1910.120(k)). The decontamination procedures should be developed and appropriately communicated to all employees before they enter a site where potential for exposure to hazardous substances exists. The OSC/RPM must develop and include decontamination procedures in the HASP that identify standard operating procedures at the site; such procedures should provide employees with information on how to minimize their contact with hazardous substances. In addition, the decontamination program must include procedures for employees who leave a contaminated area on the site. Such employees must be decontaminated and their equipment must be disposed of or decontaminated. The requirements for a decontamination program are codified at 29 CFR 1910.120(k).

Emergency response plan (29 CFR 1910.120(l)). One of the most important components of the HASP is the written site-specific emergency response plan. This plan must include a description of how anticipated emergencies would be handled at the site and how the risks associated with a response would be minimized. *The emergency response plan must be developed and implemented prior to commencing operations at a site.*

The requirements for an emergency response plan at an uncontrolled hazardous waste site are summarized in Exhibit 5 and are codified at 29 CFR 1910.120(l)(2).

In addition to these elements, the emergency response plan must include information relevant for conducting emergency operations at the site, such as information on site topography, layout, and prevailing weather conditions, and procedures for reporting incidents to local, state, and federal agencies. The emergency response plan must also be rehearsed regularly and reviewed periodically to ensure that it accounts for new or

EXHIBIT 5
Required Elements of an Emergency Response Plan at an Uncontrolled Hazardous Waste Site (29 CFR 1910.120(l)(2))

- Pre-emergency planning.
- Personnel roles, lines of authority, and communication.
- Emergency recognition and prevention.
- Safe distances and places of refuge.
- Site security and control.
- Evacuation routes and procedures.
- Decontamination procedures.
- Emergency medical treatment and first aid.
- Emergency alerting and response procedures.
- Critique of response and follow-up.
- PPE and emergency equipment.

changing site conditions or new information on potential hazards at the site.

In lieu of preparing an emergency response plan, OSC/RPMs may prepare an emergency action plan in accordance with 29 CFR 1910.38(a). This plan may only be developed in lieu of the emergency response plan if employees are evacuated from the site when an emergency occurs, and are not permitted to assist in responding to the emergency. An emergency action plan includes an evacuation plan in which persons responsible for an orderly exit are identified. These designated individuals will direct employees to leave the site, maintain a safe distance, and call the appropriate emergency response organization.

If an emergency action plan is prepared, arrangements must be made with the local response community (e.g., fire department or other local response services) for them to respond to emergencies that may occur during site operations. The local response community must be provided with sufficient information on site activities, including the types of operations being conducted at the site, the type and degree of contamination at the site, the location of work zones, and any other relevant information that may be necessary for an appropriate response. Such information must be provided prior to the commencement of site operations. *Regardless of whether an emergency action plan or an emergency response plan is prepared, local response officials must be notified of site operations prior to the commencement of any site activities.*

Spill containment program (29 CFR 1910.120(j)(1)(viii)). In the event of a major spill or a release on-site, the spill containment program must be implemented to contain and isolate the hazardous substance release.

Responsibilities of the OSC/RPM

The OSC/RPM is responsible for reviewing the HASP for consistency with the workplan and accepting the HASP for the site. The HASP must accurately reflect the work being performed at the site, and must be reviewed and approved again when any additions or revisions are made to the HASP throughout the course of work at the site.

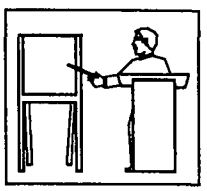
The OSC/RPM is also responsible for ensuring that employees are adequately informed of the procedures to report a health and safety violation, as well as the procedures for filing a workman's compensation report. Specifically, employees should be told that a health and safety complaint may be made either in writing or verbally, and that such complaints should be addressed to the OSC/RPM, the contractor's health and safety officer, and the EPA contract officer. The OSC/RPM should also ensure that workman compensation forms are available on-site. For additional information on employee rights, refer to Part 5 of this Fact Sheet.

Role of the Environmental Response Team (ERT)

If additional guidance is needed or desired, the OSC/RPM may submit the HASP to ERT for review or may request a site audit. It is important to note that ERT does not approve HASPs; ERT will only review them and provide recommendations. As soon as the HASP has been accepted by the OSC/RPM, covered operations at the site may commence; a plan may be implemented without ERT concurrence.

In general, it is the Agency's policy to encourage the development of an effective HASP and to assist the Regions with the task of reviewing and processing HASPs. As such, ERT will provide consultation and assistance if such assistance is requested. For further information on ERT assistance, contact the OSWER Health and Safety Manager in ERT in Edison, New Jersey, at

(FTS) 340-6740 or (908) 321-6740. Regional Health and Safety Officers may also be available for plan review and consultation. Refer to your Regional directory for the relevant addresses and telephone numbers.



PART 2: TRAINING REQUIREMENTS

This part of the Fact Sheet addresses the HAZWOPER training requirements that apply to employees engaged in hazardous waste operations and emergency response at uncontrolled hazardous waste sites and employees who perform corrective actions at RCRA TSD facilities.

General Training Requirements

Each employer at a site is responsible for ensuring that their respective employees are properly trained and equipped prior to commencing work at a site. The HAZWOPER training required for site workers must identify the hazards present on-site, the medical surveillance requirements, certain elements of the HASP, and operating practices and procedures, including the use of PPE and proper engineering controls. The specific issues and topics that are required to be addressed during training are specified at 29 CFR 1910.120(e)(2). The amount of training required for site workers is linked directly to an employee's potential for exposure to hazardous substances and to other health hazards at the site, and is specified at 29 CFR 1910.120(e)(3) and (4). *Employees may not participate in or supervise any site activity until they have been adequately trained.*

The HAZWOPER standards specify hourly requirements for four different categories of site workers. The amount of training a worker must receive is commensurate with the employee's potential for exposure; the hourly training requirements are described briefly below and summarized in Exhibit 6.

General site workers at an uncontrolled hazardous waste site include equipment operators and general laborers engaged in routine hazardous waste removal. These routine site workers must have a minimum of 40 hours of instruction off-site and 24 hours of field experience under the supervision of a trained and experienced supervisor.

EXHIBIT 6
Initial Training Requirements for Employees at Uncontrolled Hazardous Waste Sites (29 CFR 1910.120(e))

Routine Site Employees	40 Hours Off-Site 24 Hours Field Experience
Occasional Employees and Routine Site Employees Unlikely to be Exposed Above PELs	24 Hours Off-Site 8 Hours Field Experience
Supervisors	8 Hours of Specialized Training, in addition to the Requirements for the Employees they Supervise
Site Employees Assigned Site Emergency Response Duties	Trained to a Level of Competency in Addition to above Requirements
All Site Workers	8 Hours Annual Refresher Training

Workers who are on-site only occasionally to perform a specific job, such as groundwater monitoring, and who are unlikely to be exposed over PELs, are required to have a minimum of 24 hours of instruction off-site and a minimum of eight hours of supervised field experience.

Routine site workers who work only in areas where the exposure levels are monitored and determined to be below PELs are also required to receive 24 hours of instruction off-site and 8 hours of supervised field experience.

Supervisors of the three groups of employees described above are required to receive the same amount of initial training and field experience as the employees they supervise, plus 8 additional hours of specialized training in managing hazardous waste operations. For example, if a supervisor only manages employees who work on site occasionally, the supervisor must

have a minimum of 24 hours of instruction off-site and 8 hours of supervised field experience, plus an additional eight hours of specialized management training.

In addition to the requirements listed above, any worker who receives 24 hours of training and who then becomes a general site worker or whose job function requires that a respirator be worn, must have an additional 16 hours of instruction off-site and 16 hours of supervised field experience before commencing the new duties at the site.

Some of the training requirements specified above may be waived if the employee has had prior work experience or training. For example, certain training requirements may be waived if the employee has had experience working at an uncontrolled hazardous waste site or if the employee has participated in training courses offered by independent and federal organizations (e.g., EPA). If the employer believes that an employee has sufficient prior experience or training to waive some or all of the HAZWOPER training requirements, the employer must document the basis for his belief, denoting length and type of experience or training.

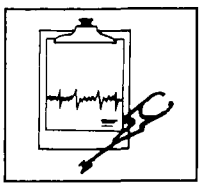
Although there are no specific additional training requirements for employees with emergency response duties at a site, such employees must be trained commensurate with the duties that will be assumed.

Refresher Training

All employees who perform clean-up operations at uncontrolled hazardous waste sites, including managers and supervisors, must receive a minimum of eight hours of annual refresher training. The purpose of refresher training is to maintain certain competencies. There are several ways to satisfy the annual refresher training requirement. For example, as explained on p. 7 of this Fact Sheet, the emergency response plan of the HASP must be rehearsed regularly. These rehearsals can be used to meet some of the annual refresher training requirements. Attendance at applicable seminars and critiques of actual responses are also acceptable methods of satisfying the annual refresher training requirements. Proper documentation of attendance, however, should be maintained.

Training Accreditation

On January 26, 1990, OSHA published a Notice of Proposed Rulemaking (NPRM) (55 FR 2776) that proposed accreditation procedures for programs to train employees engaged in clean-up operations at uncontrolled hazardous waste sites, and for employees engaged in certain hazardous waste operations at RCRA TSD facilities. The NPRM also proposed amendments to 29 CFR 1910.120 to include appropriate references to the provisions set forth in the proposed rule. If this regulation is promulgated as it was proposed, all employees subject to 29 CFR 1910.120 at uncontrolled hazardous waste sites will be required to attend an accredited training program or to document equivalent training and experience.



PART 3: MEDICAL SURVEILLANCE REQUIREMENTS

Part 3 of this Fact Sheet discusses the medical surveillance requirements in HAZWOPER that apply to employees engaged in hazardous waste operations and emergency response at uncontrolled hazardous waste sites, including employees who perform corrective actions at RCRA TSD facilities.

General Medical Surveillance Requirements

The HAZWOPER medical surveillance requirements (29 CFR 1910.120(f)) provide the framework for a medical monitoring program for workers at uncontrolled hazardous waste sites. The standards contain provisions for baseline, periodic, and termination medical examinations.

A medical surveillance program must include monitoring for the following four groups of employees:

- Employees who are, or may be, exposed to PELs or health hazards for 30 or more days a year;
- Employees who wear a respirator for 30 or more days a year;
- Members of organized HAZMAT Teams; and

- Employees who are injured due to overexposure during an emergency incident, or who show symptoms of illness that may have resulted from exposure to hazardous substances.

If employees fall within the first three groups specified above, they must undergo a baseline medical examination prior to a site assignment. After this initial examination, employees must have a follow-up medical examination once a year; an attending physician may suggest a shorter or longer interval, but this period may not exceed two years. The content of these examinations should be determined by the attending physician, but certain key elements must be included. For example, the physician must complete a medical and work history and determine the employee's fitness for the type of duties to be assigned, including the employee's ability to wear PPE. Once the medical examination has been completed, the employer must obtain and furnish the employee with a copy of the physician's written opinion. The physician's written opinion must include the results of the medical examination and tests, any recommended work limitations, and the physician's opinion concerning the medical condition of the employee.

In addition to the initial and follow-up examinations, employees must receive a medical examination as soon as possible if they are injured or become ill from exposure to hazardous substances on-site or during an emergency, or they develop signs or symptoms that indicate a possible overexposure to hazardous substances. In addition, employees who are reassigned or terminate employment and, therefore, will no longer be exposed to hazardous substances must receive a final examination. This examination is only required if the employee has not had an examination within the past six months. All required medical examinations must be provided without cost to the employee, without loss of pay, and at a reasonable time and place.

Additional guidance on these medical surveillance requirements can be found in:

- *U.S. EPA OERR Medical Monitoring Program Guidelines*, OSWER Directive 9285.3-04. To obtain a copy of these guidelines, contact the Environmental Response Team (ERT) of EPA in Edison, New Jersey. (Refer to Exhibit 8 for the appropriate address and telephone number.)

- *Standard Operating Safety Guides*, OSWER Directive 9285.1-OIC. To obtain a copy of this document, contact ERT in Edison, New Jersey.

- *Hazmat Team Planning Guidance,* Publication Number EPA/540/G-90/003. To obtain a copy of this document, contact the National Technical Information Service at (703) 487-4600.

- *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities* (Chapter 5 Medical Monitoring), Publication Number 017-033-00419-6. To obtain a copy of this document, contact the Superintendent of Documents at the U.S. Government Printing Office in Washington, D.C. 20402 ((202) 783-3238).

Medical Records

Medical records for employees must be maintained for a period of thirty years following termination of employment. These records must include the name and social security number of the employee; the physician's written opinions, including recommended occupational limitations and results of examinations and tests; any employee medical complaints related to exposure to hazardous substances; and a copy of the information provided to the examining physician by the employer. The employer is responsible for retaining the records if the employee or physician leaves the area, or the company goes out of business. For additional information on medical recordkeeping equirements, refer to 29 CFR 1910.20.

PART 4: OTHER REQUIREMENTS

This part of the Fact Sheet discusses other requirements in HAZWOPER that apply to employees engaged in hazardous waste operations and emergency response at uncontrolled hazardous waste sites. Specifically, this part outlines the requirements for: (1) handling drums and containers, (2) illumination and sanitation requirements, and (3) informational and new technology programs.

Requirements for Handling Drums and Containers (29 CFR 1910.120(j))

When performing site operations, HAZWOPER specifies some basic requirements for handling drums and containers on-site. In general, site operations should be organized to minimize the amount of drum and container movement. However, if drums or containers must be moved, the following are a few of the requirements that must be met.

- Drums and containers must be inspected prior to being moved. If this is not possible because the drums are buried beneath the earth or stacked several tiers high, the drums or containers should be moved to an accessible location and then inspected prior to further handling.

- Prior to the movement of drums, all employees who have a potential to be exposed to hazardous substances as a result of the transfer operation must be notified of the potential hazards associated with the contents of the drums or containers.

In addition to the above requirements, HAZWOPER provides specific procedures for: (1) opening drums and containers; (2) selecting and operating material handling equipment; (3) handling radioactive and shock-sensitive wastes and laboratory waste packs; (4) sampling the contents of drums or containers; (5) shipping and transporting drums or containers; and (6) handling tanks and vaults containing hazardous substances.

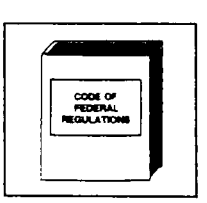
Illumination and Sanitation Requirements (29 CFR 1910.120(m) and (n))

The employer is responsible for ensuring that appropriate procedures exist at the site to maintain certain minimum illumination intensities and an adequate supply of water. There must be two separate systems for furnishing water: a potable and a nonpotable system. The potable system should provide drinking water only; the nonpotable system should provide water for fire fighting purposes. There are also requirements for toilet facilities, food handling, sleeping quarters, washing facilities, and shower/change rooms.

Informational and New Technology Programs (29 CFR 1910.120(i) and (o))

Two additional programs that must be developed, implemented, and included as part of the employer's safety and health program are the information and new technology programs. A program must be developed and implemented to inform employees of the nature, level, and degree of exposure that may occur as a result of performing hazardous waste operations. In developing this informational program, the employer should consult the Hazard Communications Standard (HCS) (29 CFR 1910.1200 and 29 CFR 1926.59). The HCS may contain information that would be useful to incorporate into the informational program or emergency response plan for a site.

In addition to developing an informational program, the employer must include as part of the safety and health program procedures for introducing new and innovative technologies into the work area. The purpose of the new technology program is to ensure that new and improved technologies and equipment are developed and introduced to provide for the improved protection of employees engaged in hazardous waste clean-up operations. As part of the new technology program, the employer must carefully evaluate new technologies, equipment, and control measures, such as absorbents and neutralizers, as they are introduced and made available on the market. The evaluation, which must be completed prior to using the new technology at the site, must identify the effectiveness of the new equipment, method, or material. Any data or information obtained during the evaluation must be made available to OSHA upon request.



PART 5: EMPLOYEE RIGHTS UNDER SECTION 8 OF THE OSH ACT

Section 8 of the OSH Act, *Inspections, Investigations, and Recordkeeping*, gives employees certain rights to inspect documents, and request and participate in inspections. Exhibit 7 provides a summary of the principle provisions of section 8 of the OSH Act.

OSHA has authority to inspect a site on their own initiative at any reasonable time. Under paragraph (f)(1) of section 8, however, an

EXHIBIT 7
Principal Provisions of
Section 8 of the OSH Act

Paragraph 8(c)(1):

- Employers are required to inform employees of their rights under the OSH Act

Paragraph 8(c)(3):

- Employees are entitled access to any required records that indicate the person's exposure to toxic materials

Paragraph 8(e):

- An employee and employer representative must be given the opportunity to accompany OSHA during any workplace inspection

Paragraph 8(f):

- An employee or employee representative may request an OSHA inspection if the person believes that there is a violation of a safety or health standard that threatens physical harm, or that causes an imminent danger

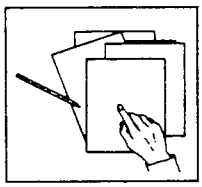
employee or employee representative also can request an OSHA inspection if the person making the request believes either that there is a violation of a safety or health standard that threatens physical harm, or that an imminent danger exists. The request must be written and signed, and must include a reasonable statement of the violation or danger. An employer is entitled to get a copy of the request, but the employee can ask OSHA not to disclose his name. When an employee makes a request under this provision, OSHA *must* conduct an inspection if they determine that there are reasonable grounds to believe a violation or danger exists. If OSHA makes a contrary determination, the person who made the request must be notified.

Under paragraph (f)(2), before or during an inspection, an employee or employee representative has the right to notify OSHA in writing of any violation of the OSH Act that the person has reason to believe exists in the workplace. If the person making the request asks, OSHA must explain any determination not to sanction the employer.

If there is an OSHA inspection, under section 8(e), an authorized employee representative must be given the chance to accompany OSHA during any inspection. If there is no authorized employee representative, the OSHA inspector has a further duty to consult with a reasonable number of employees on matters of health and safety. Under section 8(e), employers are also provided with the opportunity to designate a representative to accompany OSHA on the inspection. An important point to remember, however, is that under no circumstances may the employer designate the employee representative.

Section 8 sets out three other important employee rights. Paragraph (c)(1) requires employers to post a notice or use some other appropriate means to inform employees of how the OSH Act protects them, as well as what employee obligations are. Further, where the OSH Act requires measuring or monitoring potentially toxic materials or harmful physical agents (e.g., Subpart Z, 29 CFR 1910.1000), paragraph (c)(3) gives an employee or an authorized employee representative the right to observe any such activity, and to have access to the records. This same paragraph states that an employee or former employee is entitled to have access to any required records that indicate the person's exposure to toxic materials or harmful physical agents. When an employee is so exposed, the employer must notify him of an exposure above levels prescribed by an applicable OSHA standard, and inform the employee of actions taken to correct the conditions that led to the impermissible exposure.

There are other provisions of the OSH Act that set forth employee rights. For additional information, consult the OSH Act. Another useful source to consult on this subject is the OSHA publication entitled *Employee Workplace Rights* (OSHA Publication No. 3021). To obtain a copy of this document, contact OSHA's Publications Office. (Refer to Exhibit 8 for the appropriate address and telephone number.) When ordering the document, be certain to specify the publication number.



PART 6: SOURCES OF ADDITIONAL INFORMATION AND REFERENCE MATERIALS

Part 6 of this Fact Sheet provides information on where you can obtain a copy of a generic HASP; describes a set of Guidelines that can help an OSC/RPM assess the efficacy of a HASP; and provides important addresses and telephone numbers for additional information on HAZWOPER requirements.

Generic HASPs

ERT has developed a computer software package to assist field personnel in preparing a site-specific health and safety plan, complete with all the elements required by HAZWOPER. You can obtain a copy of the generic HASP by contacting:

ERC - Health and Safety
U.S. EPA/ERT
2890 Woodbridge Avenue
Building 18 (MS-101)
Edison, NJ 08837-3679
Attention: Generic HASP

Single copies are available without charge. Requestors must specify their desired disk size (i.e., either 3 1/2 or 5 1/4 inch disk) and whether a high density or double density disk is preferred.

Health and Safety Audit Guidelines

ERT has developed step-by-step guidance for evaluating the comprehensiveness and efficacy of the preliminary evaluation and the HASP for activities at uncontrolled hazardous wastes sites. These "Health and Safety Audit Guidelines" may be used in conducting a health and safety site audit, or simply to assist OSC/RPMs in determining whether a HASP is *likely* to comply with the HAZWOPER requirements.

A copy of the "Health and Safety Audit Guidelines" (Publication Number EPA/540/G-89/010) may be obtained by calling the National Technical Information Service at (703) 487-4600.

Additional Sources of Information

The following is a brief summary of where to obtain additional information on the HAZWOPER standards. Please refer to Exhibit 8 for the appropriate addresses and telephone numbers of the contacts referenced below.

- If you have questions regarding the existing relationship between EPA and OSHA with respect to the implementation of the standards, contact the ERT in Edison, NJ.

- For information about EPA's training courses, contact ERT's Operations Section in Cincinnati, OH.

- For information and guidance on the substance of 29 CFR 1910.120, contact the appropriate OSHA Regional office. If additional information is needed, contact the OSHA Office of Health Compliance Assistance in Washington, D.C.

- For information on how to obtain technical assistance from OSHA, contact the appropriate OSHA Regional office. (Refer to Exhibit 8 for appropriate addresses and telephone numbers.)

- There are four other HAZWOPER Fact Sheets that are available:

  -- *Hazardous Waste Operations and Emergency Response: General Information and Comparison* (Pub. No. 9285.2-09FS) explains the scope of the HAZWOPER standards, and distinguishes them from regulations and consensus standards covering the same or similar subject matter;

  -- *Hazardous Waste Operations and Emergency Response: RCRA TSD and Emergency Response Without Regard to Location* (Pub. No. 9285.2-07FS) explains the principal HAZWOPER requirements for emergency response without regard to location and routine hazardous waste operations at RCRA TSD facilities.

-- *Establishing Work Zones at Uncontrolled Hazardous Waste Sites* (Pub. No. 9285.2-06FS) describes the requirements and procedures for establishing support zones at uncontrolled hazardous waste sites.

-- *Hazardous Waste Operations and Emergency Response: Available Guidance* (Pub. No. 9285.2-10FS) describes guidance materials developed by the Environmental Response Team of EPA to help workers engaged in hazardous waste operations and emergency response understand the HAZWOPER requirements.

Copies of these Fact Sheets may be obtained by calling or writing ERT in Edison, NJ. Please specify the title and directive number of the Fact Sheet(s). (Refer to Exhibit 8 for the appropriate address and telephone number.)

EXHIBIT 8
Important Telephone Numbers and Addresses

- U.S. EPA/ERT
  2890 Woodbridge Avenue
  Building 18 (MS-101)
  Edison, NJ 08837-3679
  (908) 321-6740 or (FTS) 340-6740

- U.S. EPA/ERT
  Operations Section
  26 West Martin Luther King
  Cincinnati, OH 45268
  (513) 569-7537 or (FTS) 684-7537

- U.S. Department of Labor, OSHA
  Office of Health Compliance Assistance
  200 Constitution Avenue, NW
  Washington, D.C. 20210
  (202) 523-8036 or (FTS) 523-8036

- U.S. Department of Labor, OSHA
  Publications Office
  Room N 3101
  200 Constitution Avenue, NW
  Washington, D.C. 20210
  (202) 523-9667

OSHA Regional Offices

- U.S. Department of Labor, OSHA
  Region 1
  133 Portland Street, 1st Floor
  Boston, MA 02114
  (617) 565-7164 or (FTS) 835-7164

- U.S. Department of Labor, OSHA
  Region 2
  201 Varick Street, Room 670
  New York, NY 10014
  (212) 337-2325 or (FTS) 660-2378

- U.S. Department of Labor, OSHA
  Region 3
  Gateway Building, Suite 2100
  3535 Market Street
  Philadelphia, PA 19104
  (215) 596-1201 or (FTS) 596-1201

- U.S. Department of Labor, OSHA
  Region 4
  1375 Peachtree Street, NE, Suite 587
  Atlanta, GA 30367
  (404) 347-3573 or (FTS) 257-3573

- U.S. Department of Labor, OSHA
  Region 5
  230 South Dearborn Street
  32nd Floor, Room 3244
  Chicago, IL 60604
  (312) 353-2220 or (FTS) 353-2220

- U.S. Department of Labor, OSHA
  Region 6
  525 Griffin Street, Room 602
  Dallas, TX 75202
  (214) 767-4731 or (FTS) 729-4731

- U.S. Department of Labor, OSHA
  Region 7
  911 Walnut Street
  Kansas City, MO 64106
  (816) 426-5861 or (FTS) 867-5861

EXHIBIT 8 (continued)
Important Telephone Numbers and Addresses

OSHA Regional Offices (continued)

- U.S. Department of Labor, OSHA
  Region 8
  1951 Stout Street
  Denver, CO 80204
  (303) 844-3061 or (FTS) 564-3061

- U.S. Department of Labor, OSHA
  Region 9
  71 Stevenson Street, Suite 415
  San Francisco, CA 94105
  (415) 744-6670 or (FTS) 484-6670

- U.S. Department of Labor, OSHA
  Region 10
  1111 Third Avenue, Suite 715
  Seattle, WA 98101-3212
  (206) 442-5930 or (FTS) 399-5930

EPA Regional Offices

- U.S. Environmental Protection Agency
  Region 1
  John F. Kennedy Federal Building
  Room 2203
  Boston, MA 02203
  (617) 565-3715 or (FTS) 835-3715

- U.S. Environmental Protection Agency
  Region 2
  Jacob K. Javitz Federal Building
  26 Federal Plaza
  New York, NY 10278
  (212) 264-2657 or (FTS) 264-2657

- U.S. Environmental Protection Agency
  Region 3
  841 Chestnut Building
  Philadelphia, PA 19107
  (215) 597-9800 or (FTS) 597-9800

- U.S. Environmental Protection Agency
  Region 4
  345 Courtland Street, NE
  Atlanta, GA 30365
  (404) 347-4727 or (FTS) 257-4727

- U.S. Environmental Protection Agency
  Region 5
  230 South Dearborn Street
  Chicago, IL 60604
  (312) 353-2000 or (FTS) 353-2000

- U.S. Environmental Protection Agency
  Region 6
  1445 Ross Avenue, 9th Floor
  Dallas, TX 75202
  (214) 655-6444 or (FTS) 255-6444

- U.S. Environmental Protection Agency
  Region 7
  726 Minnesota Avenue
  Kansas City, KS 66115
  (913) 551-7000 or (FTS) 276-7000

- U.S. Environmental Protection Agency
  Region 8
  999 18th Street, Suite 500
  Denver, CO 80202-2405
  (303) 293-1603 or (FTS) 293-1603

- U.S. Environmental Protection Agency
  Region 9
  215 Fremont Street
  San Francisco, CA 94105
  (415) 556-6322 or (FTS) 556-6322

- U.S. Environmental Protection Agency
  Region 10
  1200 6th Avenue
  Seattle, WA 98101
  (206) 442-1200 or (FTS) 399-1200

- Call the Emergency Planning and Community Right-to-Know Information Hotline for the addresses and telephone numbers of state emergency response commissions and local emergency planning committees in your area. The telephone numbers for the Hotline are: toll-free 800-535-7672, or 202-475-9652 in the Washington, D.C. area.