HAZARDOUS WASTE OPERATIONS AND EMERGENCY RESPONSE

1.0 INTRODUCTION

Anyone who enters a hazardous waste site must recognize and understand the potential hazards to health and safety associated with the investigation and clean-up of that site. Personnel actively involved in investigations and clean-up must be thoroughly familiar with health and safety programs and procedures, and must be specially trained to work safely in contaminated areas. In addition, visitors to a site must receive adequate training on hazard recognition and on the site's Standard Operating Procedures to enable them to conduct their visit safely. This training only serves as general orientation to this topic. Site activities involving drum handling, underground storage tank removal, remediation operations and facility decontamination require more training which would be obtained in a comprehensive hazardous waste site health and safety seminar (e.g., 40-hr). Appendix 33-A provides sources for more information on training requirements and programs.

Learning Objectives
At the end of this module, you will be able to:

- Identify the responsibilities of hazardous waste site and emergency response personnel
- Explain the content and necessity of the medical surveillance program
- Describe training requirements, based on job function
- Explain the importance of using the appropriate personal protective equipment, as well as its limitations
- Explain the significance of the site-specific health and safety plans
- Describe the established procedures for emergency situations.

2.0 RESPONSIBILITIES

In order to conduct work with minimal risk to worker health and safety, all personnel working at the sites are responsible for meeting the following requirements:

- Obey all aspects of the site-specific health and safety plan
- Fulfill relevant training requirements
- Comply with any medical surveillance criteria
- Wear the appropriate protective clothing and equipment
- Know the location of emergency equipment
- Understand the emergency procedures
- Conduct all work in a safe manner and according to the site Standard Operating Procedures and any other applicable requirements.

The project leader is responsible for ensuring that team members comply with all applicable rules and regulations.

3.0 REGULATIONS AND STANDARDS

Prior to working at hazardous waste sites and/or emergency responses, personnel must first comply with the EPA Worker Protection Standard (40 CFR 311), EPA Standard Operating Safety Guides, and any other applicable rules and regulations.

3.1 EPA Worker Protection Standard

The EPA Worker Protection Standard (40 CFR 311) was developed to protect the health and safety of EPA personnel during hazardous waste operations and emergency response situations. This standard contains the same protection standard information as OSHA 29 CFR 1910.120, but it is intended to address the activities of federal, state, and local agency hazardous waste remediation responders. It includes measures for the following:

- Developing a safety and health program
- Site characterization and analysis
- Site control
- Training
- Medical surveillance
- Engineering controls, work practices, and personal protective equipment for employee protection
- Monitoring
- Informational programs
- Handling drums and containers
- Decontamination
- Emergency response.

3.2 EPA Standard Operating Safety Guides

EPA Standard Operating Safety Guides (EPA Publication No. 9285.1-03 June 1992) have been developed by the Environmental Response Division (ERD) of EPA's Office of Emergency and Remedial Response. These guidelines were developed to provide guidance for ensuring the health and safety of personnel who work at hazardous waste and emergency response sites. This guidance is intended for federal, state, and local managers and for personnel at sites where hazardous materials are present. The purpose of the guide is to supplement professional training, experience, and knowledge, and can be used as:

- A planning and management tool for field managers
- An educational tool that addresses fundamental aspects of the required health and safety program and plants at hazardous waste sites
- A reference document for site personnel who may need to review important aspects of on-site health and safety.

4.0 MEDICAL SURVEILLANCE

Workers handling hazardous waste and hazardous materials may experience high levels of physical and physiological stress. Routine daily tasks may expose remediation workers to toxic chemicals, safety hazards, biologic hazards, and radiation. In addition to chemical exposures, workers may develop heat stress while wearing protective equipment or working under temperature extremes, or face life-threatening emergencies such as explosions and fires. A medical surveillance program is necessary to assess and monitor workers' health and fitness both prior to employment and during the course of work. A medical program also provides for:

- Providing emergency and other treatment as needed
- Maintaining accurate records
  - To conduct future epidemiological studies
  - To adjudicate claims
  - To provide evidence in litigation
  - To report workers' medical conditions to federal, state, and local agencies.

A medical program should be developed based on the specific needs, location, and potential exposures of employees at the site. A medical evaluation program should provide the following components:

- Surveillance
- Treatment
- Recordkeeping
- Program review.

To assure adequate baselining of workers pre-employment medical conditions and documentation of potential effects of exposure and contamination, the following medical surveillance should be provided:

- Pre-employment screening
- Periodic medical examinations
- Termination examinations.

4.1 Pre-employment Screening

The pre-employment screening has two primary functions:

- Determination of an individual's fitness for duty, including the ability to work while wearing protective equipment

4.1.1 Determination of Fitness for Duty

Workers at hazardous waste sites and emergency responses are often required to perform strenuous tasks and wear personal protective equipment that may cause heat stress and other problems. To ensure that prospective employees are able to meet work requirements, the pre-employment screening should focus on the following areas:

- Occupational and medical history
- Physical examination
- Ability to work while wearing protective equipment.

4.1.2 Baseline Data for Future Exposures

Pre-employment screening can be used to establish baseline data to subsequently verify the effectiveness of protective measures and to later determine if exposures have adversely affected the worker. Baseline testing may include both medical screening tests and biologic monitoring tests. Given the problem in predicting significant exposures for these workers, there are no clear guidelines for prescribing specific tests. The following approach presents the types of tests that may be indicated:

- A battery of tests based on the worker's past occupational and medical history and an assessment of significant prior exposures
- Standard established testing for specific toxins in situations where workers may receive significant exposures to chemical agents
- Where applicable, pre-employment blood specimens and serum frozen for future testing and comparative assessment.

4.2 Periodic Medical Examinations

Periodic medical examinations should be developed and used in conjunction with pre-employment screening examinations. Comparison of sequential medical exams with baseline data is essential to determine biologic trends that may indicate early signs of adverse health effects, and thereby facilitate appropriate protective measures.

The frequency and content of examinations will vary, depending on the nature of the work and the types of exposures. Generally, medical examinations are recommended at least yearly, however, more frequent examinations may be necessary, depending on the:

- Extent of the potential or acute exposure
- Type of chemicals involved
- Duration of the work assignment
- Individual worker's medical profile
- Prior exposures, as determined in the baseline exams.

Periodic screening exams can include:

- Interval medical history, focusing on changes in health status, illnesses, and possible work-related symptoms
- Physical examination
- Additional medical testing, depending on available exposure information, medical history, and examination results (e.g., pulmonary function tests, audiometric tests, vision tests, blood and urine tests). Multiple testing for a large range of potential exposures is not always useful as it may involve invasive procedures, be expensive, and produce false-positive results. Testing should be specific for the possible medical effects of the worker's exposure.

4.3 Termination Examination

At the end of employment at a hazardous waste site, personnel may have a medical examination to assess and document their medical condition. This examination may be limited to obtaining an interval medical history of the period since the last full examination if all three following conditions are met:

- The last full medical examination was within the last 6 months
- No exposure has occurred since the last examination
- No symptoms associated with exposure occurred since the last examination.

If any of these criteria are not met, a full examination is medically necessary at the termination of employment. A termination examination is necessary to document the worker's medical condition and effects of potential exposure, if any.

5.0 PERSONNEL TRAINING REQUIREMENTS

Employees may not engage in field activities until they have been trained to a level commensurate with their job function and responsibilities and with the degree of anticipated hazards. The training program should involve both classroom instruction in a wide range of health and safety topics and hands-on practice such as drills and simulated incidents. The objectives of training programs for employees engaged in hazardous waste site and emergency response activities are:

- To ensure that workers are aware of the potential hazards they may encounter
- To provide the knowledge and skill necessary to perform the work with minimal risk to worker health and safety
- To make workers aware of the purpose and limitations of safety equipment
- To ensure that workers can safely respond to emergency situations.

A record of training should be maintained in each employee's personnel file to confirm that the individual assigned to a task has had adequate training for that task, and that the employee's training is up-to-date.

Specific recommendations for the areas to be covered in training sessions are summarized in Table 33.1. Tables 33.2-33.4 contain information on the specific types and levels of training required by OSHA's 29 CFR 1910.120.

5.1 General Site Workers

General site workers, such as equipment operators, general laborers, technicians, and other supervised personnel, should attend training sessions that apply to their individual jobs and responsibilities. Additionally, site workers should receive training that provides an overview of the site hazards and the means of controlling those hazards. Training topics should include, but not be limited to:

- Site safety plans
- Safe work practices
- Nature of anticipated hazards
- Handling emergencies and self-rescue
- Rules and regulations for vehicle use
- Safe use of field equipment
- Handling, storage, and transportation of hazardous materials
- Use, care, and limitations of personal protective clothing and equipment
- Safe sampling techniques.
- Employee rights and responsibilities.

Table 1: Recommended Training by Job Category

Training Topic	Emphasis of Training	General Site Worker	On-Site Mgmt. & Supervisors	Health & Safety Staff
Biology, Chemistry, and Physics of Hazardous Materials	Chemical and physical properties, chemical reactions, chemical compatibilities.	R	R	R
Toxicology	Dosage, exposure routes, toxicity, IDLH values, PELs, recommended exposure limits (RELs), TLVs.	R	R	R
Industrial Hygiene	Monitoring workers' need for and selection of PPE.	O	R	R
	Calculation of doses and exposure levels; hazard evaluation; selection of worker health and safety protective measures.	O	R	R
Monitori	Selection, use,	R	R	R

ng Equipment	capabilities, limitations, and maintenance.			
Hazard Evaluation/				
Recognition	Techniques of sampling and assessment.	R	R	R
	Evaluation of field and lab results.	O	R	R
	Chemical/Physical.	R	R	R
	Risk assessment.		O	R
Site Safety Plan	Safe practices, safety briefings and meetings, Standard Operating Procedures, site safety map.	R	R	R
Standard Operating Procedures	Hands-on practice.	R	R	R
	Development and compliance.	O	R	R
Engineering Controls	The use of barriers, isolation, and distance to minimize hazards.	R	R	R
Personal Protective Clothing and Equipment (PPE)	Assignment, sizing, fit-testing, maintenance, use, limitations, and hands-on training.	R	R	R
	Selection of PPE.	R	R	R
Medical Program	Medical monitoring, first aid, stress recognition.	R	R	R
	CPR and emergencies drills.	O	R	R
	Design and planning.		O	R
	Implementation.	R	R	R
Decontamination	Hands-on training using simulated field conditions.	R	R	R
	Design and maintenance.	R	R	R
Legal and	Applicable safety and health regulations	O	R	R

Regulatory Aspects	(OSHA, EPA).			
Emergencies/				
Accidents	Emergency help, self-rescue, drills, alarms, reporting.	R	R	R
	Emergency response, investigation, and documentation	O	R	R
Hazard Communication	Per 29 CFR §1910.200 and §1926.59 (as applicable).	R	R	R
Employee Rights		R	R	R

R = Recommended Training
O = Optional

Source: EPA Standard Operating Safety Guides

Table 2: Training for Emergency Response Operations

For emergency responses, training is based upon the specific duties and function of a responder. There are established levels of response for the emergency phase.

Training Level	**Duties and Functions**
First Responder Awareness Level:	Trained to understand and recognize hazards, their potential outcomes, and realize the need for additional resources.
Example: Personnel discovering a release and reporting the incident.	
First Responder Operations Level:	Trained to contain the release from a safe distance, keep it from spreading, and prevent exposure by implementing appropriate PPE and basic decontamination procedures. This response is in a defensive manner, generally without being exposed to risk.
Example: Personnel providing skimming and boom placement services.	
HAZMAT Technician:	Trained to respond to releases for the purposes of stopping the release by performing advance control, containment, and/or confinement operations within the capabilities of the resources and PPE available. This response is in an aggressive manner; personnel are expected to approach the point of release so they must additionally be able to operate field survey equipment and understand basic

	chemical/toxicology terminology and behavior.
Example: Personnel plugging, patching, or otherwise stopping the release.	
HAZMAT Specialist:	Trained to respond with and provide support to the technician, but also have duties requiring more direct or specific knowledge of the various substances being contained.
Example: Personnel acting as site liaison with other government authorities in regard to site activities.	
On-Scene Incident Commander:	Trained to assume control of the incident scene by implementing incident command system and emergency reponse plan.

Table 3: Training requirements for Emergency Response

Level	Responder	Training
1	First responder awareness	Sufficient proven training or experience in specific competencies
2	First responder operations	Level 1 competency plus 8 hours of additional proven training or experience in specific competencies
3	Hazardous materials technician	24 hours of Level 2 training and additional proven training or experience in specific competencies
4	Hazardous materials specialist	24 hours of Level 3 training and additional proven training or experience in specific competencies
5	On-Scene Incident Commander	24 hours of Level 2 training plus proven experience in additional competencies

Table 4: OSHA HAZWOPER Training Requirements for Post-Emergency Response

Types/Levels of Training	Minimum Requirements
General Site Workers	
Off-Site Training	40 Hours
Supervised Field Experience	24 Hours
Workers On-Site Occasionally for a Specific Limited Task	
Off-Site Training	24 Hours
Supervised Field Experience	8 Hours
Workers Regularly On-Site in Areas with Exposures under PELs	
Off-Site Training	24 Hours
Supervised Field Experience	8 Hours
Management and Supervisors	

Initial Training Supervised Field Experience Specialized Training	40 Hours 24 Hours 8 Hours
Minimum Reduced Training Time (CPL2-2.51) for Oil Spills Only	4 Hour Minimum

General site workers should engage in actual field training activities under the direct supervision of a trained, experienced supervisor, in addition to the classroom instruction (e.g., 3 days of on-the-job training).

Some general site workers who may be exposed to unique hazards or who may occasionally supervise others should receive additional training in the following subjects:

- Site surveillance
- Site safety plan development
- Use and decontamination of fully encapsulating personal protective clothing and equipment
- Use of instruments to measure explosivity, reactivity, oxygen level, etc.
- Safe use of specialized sampling and monitoring equipment
- Topics specific to identified site activities or hazards.

5.2 Supervisors and Onsite Managers

Onsite management and supervisors, such as Project Team Leaders, should receive the same training as the general site workers for whom they are responsible. Supervisory personnel should also receive additional training (e.g., 8 hours) to enhance their ability to assess hazardous waste sites, provide guidance and make informed decisions. This additional training should include:

- Management of hazardous waste site clean-up operations and emergency responses
- Management and coordination of the site work zones
- Communication with the press and local community.

5.3 Health and Safety Staff

Health and safety staff with specific responsibilities for health and safety guidance on site should be familiar with the training provided to general site workers and their supervisors. The health and safety staff should receive advanced training in health and safety issues, policies, and techniques.

5.4 Visitors

Visitors to the site, including officials, reporters, and senior-level management, must receive a briefing on safety. Those visitors should not be permitted in the Exclusion Zone unless they have been trained, fit-tested, and medically approved for respirator use. Visitors should observe site conditions from the clean area (e.g., using binoculars). Any onsite visitors must be provided with personal protective equipment (PPE) (e.g., hard hats, steel-toed shoes) appropriate to the work area or associated hazards.

6.0 PERSONAL PROTECTIVE EQUIPMENT

The types and levels of personal protective equipment that will be needed will be dependant on the assessment of potential hazards present at the site. PPE should be selected to provide the best possible protection against the chemicals and environment to which the workers will be exposed. The types of protective equipment which may be needed include:

- Eye and face protection
- Foot protection
- Respiratory protection
- Hearing protection
- Hand protection
- Body protection.

Detailed information on PPE is provided in "Personal Protective Clothing and Equipment."

7.0 SITE-SPECIFIC HEALTH AND SAFETY PLANS

Site-specific health and safety plans must be developed to identify, evaluate, and control safety and health hazards at each site where workers are potentially exposed to hazardous substances.

The site characterization is the basis for developing the site health and safety plan, and provides information needed to identify site hazards, select proper PPE, and implement safe work practices. Site characterization generally proceeds in three phases:

- Prior to site entry, an off-site characterization, including data gathering and perimeter reconnaissance
- An on-site survey
- Ongoing monitoring to provide a continuous source of information about site conditions and potential changes in exposure.

The plan must be modified to reflect any changes in site conditions or work practices.

Some of the areas that must be addressed in the site-specific health and safety plans are:

- Monitoring
- Site control
- Decontamination
- Emergency response
- Medical surveillance.

8.0 EMERGENCY SITUATIONS

The nature of work at hazardous waste sites makes emergencies a continual possibility. No matter how infrequently they may actually occur, emergencies happen quickly and unexpectedly and require immediate response. At a hazardous waste site, an emergency may be as limited as a worker experiencing heat stress or as vast as an explosion that spreads toxic vapors throughout the community. Any hazard on site can precipitate an emergency; chemicals, biologic agents, radiation, or physical hazards may act alone or in combination to create explosions, fires, spills, toxic atmospheres, or other dangerous and harmful situations.

Advance planning, including anticipation of different emergency scenarios and thorough preparation for contingencies, is essential to protect worker and community health and safety, especially due to the variability of site emergencies. For this purpose, a contingency plan should be developed that sets forth policies and procedures for responding to site emergencies and incorporates the following:

- Personnel (e.g., roles, lines of authority, communication)
- Site layout and operations (e.g., mapping, security and control, evacuation routes, decontamination stations)
- Emergency medical treatment
- Equipment
- Emergency procedures
- Documentation
- Reporting.

8.1 Personnel

The specific roles of individuals and groups should be established, as well as training requirements which must be fulfilled and communication systems which may be used in the event of an emergency. This component of the plan includes not only onsite and offsite personnel with specific emergency response roles, but also others who may be onsite, such as contractors, other agency representatives, and visitors.

8.2 Site Layout and Operations

Detailed information about the site is essential for advance planning. For this purpose, a site map is a valuable tool because it serves as a graphic record of the locations and types of hazards, a reference source, and a method of documentation.

Safe distances can generally only be determined at the time of an emergency, based on a combination of site- and incident-specific factors. Planning and outlining potential emergency scenarios will help familiarize personnel with points to consider. Onsite refuges can be set up for localized emergencies that do not require site evacuation. Other refuges can also be set up in the Support Zone, or offsite at the safe exit destination.

Site security and control is necessary in an emergency to determine who is onsite and to control the entry of personnel into the hazardous areas.

8.3 Emergency Treatment

Provisions for emergency treatment should be made at each site. Pre-planning is vital. When developing plans, procedures, and equipment lists, the range of actual and potential hazards specific to the site should be considered, including chemical, physical, and biologic hazards. In addition to workers, contractors, visitors, and other personnel may require emergency treatment.

Emergency medical treatment should be integrated with the overall site emergency response program. The following are recommended guidelines for establishing an emergency treatment program:

- Train a team of site personnel in emergency first aid.
- Train personnel in emergency decontamination procedures in coordination with the Emergency Response Plan.
- Predesignate roles and responsibilities to be assumed by personnel in an emergency.
- Establish an emergency/first-aid station on site, capable of providing (1)general first aid and (2) stabilization for patients requiring offsite treatment.
- Arrange for a physician who can be paged on a 24-hour basis.
- Set up an on-call team of medical specialists for emergency consultations.
- Make plans in advance for emergency transportation to, treatment at, and contamination control procedures for a nearby medical facility.

8.4 Equipment

In an emergency, specialized equipment will be necessary to rescue and treat victims, to protect response personnel, and to mitigate hazardous conditions on site. All equipment should be in working order, fueled, and available in the event that an emergency occurs. The following are some examples of equipment which may be applicable to a specific site:

- Self-Contained Breathing Apparatus (SCBAs) and personal protective clothing and equipment specialized for known site hazards
- Decontamination solutions appropriate for onsite chemical hazards
- Emergency eyewash stations or sources
- Emergency showers or wash stations
- Reference books containing basic first-aid procedures and information on treatment of specific chemical injuries
- Stretchers, air splints, resuscitators, blankets, antiseptics, ice, etc.
- Fire-fighting equipment and supplies (agency personnel may only use portable fire extinguishers)
- Spill-containment equipment
- Special hazardous-use tools such as remote pneumatic impact wrenches, nonsparking bung wrenches and picks
- Containers to hold contaminated materials.

8.5 Emergency Response Procedures

Response operations usually follow a sequence that starts with the notification of an emergency situation and continues through the preparation of equipment and personnel for the next emergency. The emergency response procedures section of the plan should provide a comprehensive discussion of rules and responsibilities of site workers and supervisory personnel, emergency communication and situation containment procedures. These general steps are usually followed:

- Notification
- Size-up (e.g., what happened, casualties, what can be done)
- Rescue/Response action
- Follow-up (e.g., notify required agencies, restock, review and revise plan).

8.6 Documentation

The investigation and documentation of the incident is important in all cases, but especially so when the incident has resulted in personal injury, onsite property damage, or damage to the surrounding environment. Documentation may be used:

- To help avert recurrences
- In future legal action
- For assessment of liability by insurance companies
- For situation review by government agencies.

9.0 SUMMARY

Because of the unpredictable and potentially dangerous environment of hazardous waste sites and emergency responses, it is especially important for personnel to possess the

appropriate skill and knowledge necessary to conduct their work with minimal risk. Before work can commence on hazardous waste sites and at emergency responses, the following steps must be taken to ensure the health and safety of workers, visitors, and the surrounding community:

- A site-specific health and safety plan must be established based on the site characterization.
- A medical surveillance program must be implemented.
- Training requirements for site workers and supervisory personnel must be fulfilled.
- The appropriate personal protective equipment must be available.
- Procedures must be established for emergency situations.

Key concepts presented in this module are:

- The responsibilities of hazardous waste site and emergency response personnel
- The content and necessity of a medical surveillance program
- Training requirements, based on job function
- The importance and limitations of personal protective equipment
- The significance of site-specific health and safety plans
- Procedures for emergency situations.

Measures you can take to ensure safety include:

- Know how to safely complete your job duties
- Understand the hazards and potential sources of exposure at the site
- Participate in a medical surveillance program, if appropriate
- Ensure that you have received the appropriate training prior to engaging in any waste site or emergency response activities
- Know how to select and use the proper personal protective equipment for a given situation
- Review and be familiar with the site health and safety plan
- Review and be familiar with the site emergency plan. Know your roles and responsibilities in the event of an emergency.
- Know the location of emergency equipment (if your job involves emergency responses).

EXERCISE

Read the questions listed below and fill in the blank with the appropriate response.

1. A medical surveillance program is primarily used to assess and monitor _____ both prior to employment and during the course of work, but may also be used for providing _____ and maintaining _____.

2. What are two main functions of a pre-employment screening?
_____
_____

3. The training program should provide a combination of _____ and _____, such as drills and simulated incidents.

4. Personnel responding to an emergency spill and acting to stop the leak by plugging and patching must be trained to the level of:

A. First Responder Awareness Level
B. First Responder Operations
C. HAZMAT Technician
D. On-Scene Incident Commander

5. General site workers involved in post-emergency response operations must have _____ hours of off-site training and _____ hours of supervised field experience.

6. The _____ is the basis for developing the site health and safety plan, and provides information needed to identify site hazards, select PPE, and implement safe work practices.

7. What are the five areas that must be addressed in the site-specific health and s safety plans?
_____, _____, _____
_____, and _____.

8. A _____ can be a valuable tool for site layout and operations, as it serves as a graphic record of the locations and types of hazards, a reference source, and a method of documentation.

9. List some examples of emergency equipment which may be applicable to a site:
_____
_____
_____
_____

10. Emergency response procedures normally follow these four general steps:
_____
_____
_____
_____

EXERCISE KEY

Read the questions listed below and fill in the blank with the appropriate response.

1. A medical surveillance program is primarily used to assess and monitor ***workers' health and fitness*** both prior to employment and during the course of work, but may also be used for providing ***emergency and other treatment*** and maintaining ***accurate records.***

2. What are two main functions of a pre-employment screening?

   Determination of an individual's fitness for duty
   Provisions of baseline data

3. The training program should provide a combination of ***classroom lectures and hands-on exercises***, such as drills and simulated incidents.

4. Personnel responding to an emergency spill and acting to stop the leak by plugging and patching must be trained to the level of:

   A. First Responder Awareness Level
   B. First Responder Operations
   C. HAZMAT Technician
   D. On-Scene Incident Commander

5. General site workers involved in post-emergency response operations must have ***40*** hours of off-site training and ***24*** hours of supervised field experience.

6. The ***site characterization*** is the basis for developing the site health and safety plan, and provides information needed to identify site hazards, select PPE, and implement safe work practices.

7. What are the 5 areas that must be addressed in the site-specific health and safety plans?

   Monitoring, site control, decontamination, emergency response, and medical surveillance

8. A ***site map*** can be a valuable tool for site layout and operations, as it serves as a graphic record of the locations and types of hazards, a reference source, and a method of documentation.

9. List some examples of emergency equipment which may be applicable to a site:

SCBAs and protective clothing and equipment appropriate for site hazards
Decon solutions appropriate for on-site chemical hazards
Reference books
Spill-containment equipment
Special hazardous-use tools
Fire-fighting equipment and supplies

10. Emergency response procedures normally follow these four general steps:

Notification
Size-up
Rescue/Response Action
Follow-up

APPENDIX A

For more information on employee training requirements and programs, see:

Hazardous Materials Incident Response Training (HMIRT) Program: Course Schedule. Write to:U.S. EPA/ERT, 26 West Martin Luther King, Cincinnati, OH 45268 or Call:(513) 569-7537 or FTS 684-7537.

The HMIRT program is designed for emergency responders and personnel who investigate and clean up uncontrolled hazardous waste sites. The HMIRT program has a curriculum of 12 courses that provide specific training in worker health and safety and in various technical operations that must be performed by site personnel engaged in hazardous materials response activities.

National Institute for Environmental Health Sciences (NIEHS) Worker Health and Safety Training Programs.

Write to:The National Clearinghouse on Occupational and Environmental Health, c/o Workplace Health Fund, 815 16th Street NW, Suite 301, Washington, DC, 20006
or Call:(202) 942-7833

The National Clearinghouse, established by NIEHS, provides information and support services for occupational and environmental health education. The Clearinghouse can provide information about training programs across the country funded by NIESH Federal training grants.

National Institute for Environmental Health Sciences (NIEHS) Training Grant Program, Technical Workshop on Training Quality Report: Minimum Criteria for Worker Health and Safety Training for Hazardous Waste Operations and Emergency Response (1990).

Accreditation of Training Programs for Hazardous Waste Operations," Proposed Standard (55 FR 2776, January 26, 1990).