PLANNING AND PREPARATION FOR FIELD ACTIVITIES

1.0 INTRODUCTION

Employees conducting field activities encounter a wide variety of potential health and safety hazards. Exposure to hazards will vary depending on the type and duration of the activity. It is essential that employees prepare and plan for their work activities to assure that they understand the potential for safety and health hazards and appropriate protection for those risks. The planning process includes techniques and procedures for:

- Identifying and researching the potential for occupational hazards and risks
- Evaluating risks/hazards and counteracting the potential for exposure
- Selecting and maintaining appropriate protective equipment, clothing, and other hazard control measures.

Learning Objectives
Health and safety protection for field employees begins with planning and preparation for field activities. At the end of this module, you will be able to identify key elements that must be considered when planning and preparing for field activities.

2.0 PLANNING FOR FIELD ACTIVITIES

The following sections outline the planning process for field activities.

2.1 The Team Approach in Contrast to Working Alone

Whenever possible, the planning and execution of field activities should be a team effort. By drawing on the experience and training of fellow team members, a safer, more comprehensive plan can be developed. Working alone can be dangerous if unexpected problems, injury, fire or chemical emergencies occur.
It is understood, however, that many field activities are conducted by individual employees. When working alone, it is especially important to thoroughly evaluate the potential risks/hazards before and during the field activity.

Appendix A provides a field activity checklist that should be used to plan for work activities.

2.1.1 Team Selection

The following are guidelines for team selection:

- **Select trained and experienced members**. When possible, select team members who have visited either the plant or a similar location.
- **Select physically qualified personnel**. It is good practice to inquire whether potential team members have experience conducting field activities under similar circumstances or whether they have any physical disabilities or limitations which may interfere with their work.
- **Select the appropriate number of individuals to accomplish the job safely**. During heavy

workloads or extreme weather conditions, anticipate that the work will take longer and that team members will have to be relieved on a regular basis for rest and recuperation. When hazards are anticipated, never assign a team member to work alone unless the worker has been provided with two-way communication.

2.1.2 Team Assessment of Potential Hazards

Prior to the field activity, team members should participate in group discussions. These discussions are held to identify potential hazards, suggest alternatives, propose controls to minimize exposure, and incorporate suggestions into a site-specific planning guide. The process for the discussion is:

- Select one member to be responsible for summarizing, in writing, the suggestions of team members.
- Ask team members to briefly outline their field experiences, as well as the training they have received.
- Ask team members to discuss their past experiences at that location or similar locations.
- Organize discussions along some prearranged and flexible format.
- If information is needed that cannot be provided by the team members during the discussion, appoint a team member to get that information and relay it to the person responsible for writing the summary.

2.2 Pre-Field Activity Evaluation

Prior to each field activity, a planning guide should be completed by the field team leader (or designee) to enable each person to effectively prepare for a variety of situations. The team leader is responsible for making sure that a copy of the planning guide, along with pertinent medical records or information, is taken along for reference. A second copy of the records should be filed with a supervisor before leaving for the location.

A sample planning guide is provided in Appendix B. The basic information to be included in the guide is described in the following sections.

2.2.1 Activity Location

Note the following:

- Project title and specific location of the site
- The site and its relative location with regard to roads, shelters, and emergency help centers
- Procedures for reaching and leaving the site and techniques for communicating that information to emergency help providers.

2.2.2 Historical Information

Review all EPA files pertaining to the activity for any historical information. Locate relevant data based files (inspection reports, complaints, etc.).

2.2.3 Schedule of Activity

Document the dates and duration of the field activity. This will help you keep a time schedule and will inform others how long you will be gone.

2.2.4 Site Contacts

List contact names, positions and telephone numbers of those people through whom you can be reached. These should be obtained upon arrival at the location or before beginning the field activity. This is essential if you must be contacted in the event of an emergency or schedule change.

2.2.5 Team Member Information

List the following information in the field planning guide:

- Names of all persons involved in the field activity
- Information indicating whether or not the persons are participating in a medical monitoring program
- Document whether the persons have had the required field and respiratory protection training
- Medical or physical restrictions of members.

2.2.6 Site Access Requirements

Determine what permits are required for access to certain parts of the location or for entrance to the plant. Note any special problems with gaining access to the location, especially radiation monitoring, in the field planning guide.

2.2.7 Transportation

Note the types of motor vehicles, boats, or aircraft to be used for a field activity in the field planning guide. Conduct a thorough inspection of the transportation vehicle(s) before each field activity.

2.2.8 General Hazards

Once you are familiar with the physical layout of the site, undertake an assessment of potential hazards. The following are some examples of hazards to be assessed:

- Driving distance
- Transporting hazardous chemicals and hazardous wastes
- Transporting test equipment, supplies and materials
- Moving/materials handling hazards
- Thermal hazards
- Heat/cold stress
- Weather-related conditions
- Fire and explosion potential
- Chemical hazards
- Hazardous waste storge
- Radiological sources
- Biological risks
- Atmospheric hazards/air quality
- Water hazards
- Noise levels
- Ergonomic hazards
- Confined space and permit-required entry

- Physical and mechanical hazards
- Heights and fall-protection.

If possible, obtain a toxic substance list from facility personnel. Where adverse weather conditions are a possibility it may be necessary to carry out some preliminary investigations. Obtain a long-range weather forecast from the local television or radio station, the Coast Guard, or the National Weather Service if the location is to be visited within three days to a week. Another potential hazard to consider is height. Taking samples at high elevations can be dangerous if the proper equipment is not available.

2.2.9 Personal Protective Equipment

Prior to field inspections, assess the conditions of the location to determine the types of medical assessment, personal protective equipment and clothing necessary. The types of protective clothing and gear should be specifically designed for the types of chemicals or hazards which are identified or anticipated at the field location. Respiratory protection, medical fitness, fit testing, decontamination procedures, and post assessments should be documented.

2.2.10 Field Equipment, Materials and Supplies

Miscellaneous equipment such as extra decontamination equipment, clothing, fall protection equipment, footwear, water, rope, tape, matches, and non-perishable food should be kept on hand in the event of an emergency.

2.2.11 Emergency Warning Signals

Plants and fixed facilities usually have a warning system which alerts employees to an emergency situation. Make sure you are aware of the emergency warning systems and procedures for fire evacuation, severe weather, or toxic release signals. If specialized training is required, document the type, contact persons, and personal protective equipment needed.

2.2.12 Communications

Conduct an evaluation of the available communication systems at specific location(s).

If by telephone:

- Identify the exact location at the field, verify that communication equipment is working, and assure that power sources are charged.
- Identify the telephone numbers of emergency resource and assistance personnel in the area.
- Call and verify the accuracy of these numbers.

If by two-way radio:

- Determine if there could be interference with the signals, especially when adverse weather conditions arise or abnormal terrain is present.
- Check the emergency communication system; if the radios depend on batteries, be sure to supply extra sets of fresh batteries.

2.3 On-site Evaluation

To minimize hazards, conduct the following steps before beginning a work routine.

2.3.1 Health and Safety Briefing/Orientation

Include the following in the health and safety briefing/orientation:

- Presentation of the site health and safety policy and procedures
- Description of the known hazards and their locations
- Information on evacuation routes, warning signs, medical staffing, and other on-location emergency help
- Location of on-site emergency and rescue equipment
- Location of the in-house hazard communication program.

2.3.2 Walk-through Survey

During a tour of the location, be extremely alert for the following hazards:

- Broken railings or ladders
- Dangerous or unprotected/unguarded machinery
- Low or heated pipes
- Unstable construction
- Open trenches, excavations or unsafe scaffolding
- Natural physical hazards
- Unusual vapors, gases, odors, or fumes
- Overhead hazards
- Walking/work surfaces for slips, trips, and falls.

2.3.3 Unplanned/Unexpected Hazards

Record unexpected hazards encountered during the work on the planning guide as well as instructions on how these hazards should be avoided and controlled.

2.3.4 Buddy System

Whenever possible, conduct field activities in pairs. When entering a suspected hazardous environment, one team member should always remain behind with constant visual or voice communication with the second. Where only one EPA employee has been assigned to a location, that person should request to be accompanied by an on-location employee who is familiar with the area.

2.4 Identifying Emergency Services

All emergency services should be identified and contacted to inform them of the date and time the field activity will occur at the location. Following are some examples of the types of emergency services that should be contacted:

- Fire
- Police
- Rescue

- Medical
- Hazardous material response.

3.0 SITE SAFETY AND HEALTH PLANS FOR HAZARDOUS WASTE SITE AND EMERGENCY RESPONSE OPERATIONS

If performing hazardous waste site or emergency response operations (HAZWOPER), a site-specific health and safety plan (SSHP) will be needed. The EPA's Emergency Response Team (ERT) has developed the Health and Safety Planner (HASP), which is a software system containing a generic health and safety plan. This menu-driven software system is designed to assist health and safety officers in designing, implementing, and updating SSHPs. HASP allows the user to retrieve data on chemical hazards, suggests appropriate monitoring devices, identifies likely routes of exposure, and recommends levels of personal protective equipment based on those hazards and the tasks that will be performed at the site. For more information on HASP, refer to EPA's Quick Reference Fact Sheet on available guidance for HAZWOPER (Publication 9285.2-10FS). Other valuable documents are ERT's Standard Operating Safety Guides (June, 1992) and the NIOSH/OSHA/USCG/EPA Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (1986).

Refer to
"Hazardous Waste Operations and Emergency Response," for more detailed information on HAZWOPER or SSHPs. For more information on how to audit HAZWOPER activities and SSHPs, refer to the EPA document Health and Safety Audit Guidelines (EPA/540/G-89/010).

4.0 SUMMARY

When performing field activities, there is no substitute for effective planning. Organizing your activities in advance of trips is crucial to the health and safety of EPA personnel. Never participate in any field activity without devoting a block of time to anticipate and plan for hazards and emergencies.

Prior to engaging in field activities, you should be familiar with:

- The process for assessing the potential hazards, including a pre-field and on-site evaluation.
- The types of information which should be part of the evaluation including location, historical information, PPE, transportation, equipment and supplies, communications, walk-through survey information, and emergency signals, services, and telephone numbers.

EXERCISE

Answer the following questions as true or false:

1. _____ The team approach is recommended in contrast to working alone.

2. _____ A pre-field activity evaluation involves gathering information on general hazards, personal protective equipment and vehicle use.

3. _____ Communications are always by two-way radio.

4. _____ The health and safety briefing includes a description of unknown hazards.

5. _____ The location of on-site hidden hazards should be identified during pre-field activities.

6. _____ Examples of hidden hazards include: broken ladders, low pipes and open trenches.

EXERCISE KEY

Answer the following questions as true or false:

1. ***T*** The team approach is recommended in contrast to working alone.

2. ***T*** A pre-field activity evaluation involves gathering information on general hazards, personal protective equipment and vehicle use.

3. ***F*** Communications are always by two-way radio.

4. ***F*** The health and safety briefing includes a description of unknown hazards.

5. ***F*** The location of on-site hidden hazards should be identified during pre-field activities.

6. ***T*** Examples of hidden hazards include: broken ladders, low pipes and open trenches.

APPENDIX A: Field Activity Checklist

Before the activity:

___ Gather maps or photographs of the location

___ Review any existing EPA files

___ Obtain information about past events

___ Secure telephone numbers of emergency services

___ Inform local emergency centers of work dates and times

___ Check two-way radio signals

___ Secure extra sets of batteries for two-way radios

___ Obtain weather forecast

___ Assess potential hazards

On location:

___ Obtain briefing from the site/facility safety representative about any known hazards

___ Request information on evacuation warning signals, available medical staff or emergency help

___ Tour the location prior to beginning work

___ Check the location for hazards

___ Locate a telephone at the location and verify that it is functional

___ Alert safety department, medical or emergency staff, and workers as appropriate, when and where the work will be performed

___ Determine what EPA-furnished safety equipment is necessary and/or required by the company and obtain it

APPENDIX B: Sample Safety and Health Planning Guideline for Field Activities

ACTIVITY LOCATION:

Project Title: _____

Facility/Site: _____

Location: _____

_____

HISTORICAL INFORMATION:

EPA files exist _____ Yes _____ No

If yes, list pertinent historical information and location of data-based files.

_____

_____

_____

_____

SCHEDULE OF ACTIVITY:

Dates/Duration of Field Activity: _____

SITE CONTACTS:

Names	Position	Tel. Number
_____	_____	_____
_____	_____	_____
_____	_____	_____

TEAM MEMBER INFORMATION:
Training Received:

Name	Medical Monitoring	Field	Respiratory Protection	Medical/ Physical Restrictions
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

LODGING ARRANGEMENTS: Motel/Hotel _____

Location _____ Telephone _____

SITE ACCESS REQUIREMENTS:

Identification _____

Permits _____

Visitors agreement _____

Special problems _____

Type of communication needed _____

_____

TRANSPORTATION:

Vehicle(s) and Equipment:

List Motor Vehicle(s) Used _____

Make(s) _____ License plate(s) _____

Mobile Laboratory _____ Other (list) _____

Vehicle safety check made? _____ Yes _____ No

List type of vehicle to be used _____

Boat/airplane will be used? _____ Yes _____ No

Boat/plane safety check made? _____ Yes _____ No

Site-Specific Information

ASSESS GENERAL HAZARDS:

Driving distance	_____	Radiological sources	_____
Transporting Chemicals	_____	Biological risks	_____
Transporting test equipment/ supplies	_____	Atmospheric hazards/air quality	_____

Moving hazards	_____	Water hazards	_____
Thermal hazards	_____	Noise levels	_____
Heat/cold stress	_____	Ergonomic hazards	_____
Weather conditions	_____	Confined space/ permit required entry	_____
Fire and explosion potential	_____	Physical/ mechanical hazards	--_____
Chemical hazards	_____	Heights/fall protection	_____
Hazardous Waste Storage	_____		

TOXIC SUBSTANCES (LIST):

_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

HAZARD MONITORING EQUIPMENT (LIST):

_____ _____ _____

_____ _____ _____

_____ _____ _____

PERSONAL PROTECTIVE EQUIPMENT/CLOTHING: (check if needed)

Eyes and Head

Safety glasses _____ Type _____

Face shield _____ Goggles _____

Hard hat _____ Type _____

Hearing protection _____ Type _____

Other _____

Body, Hands, Feet

Coveralls _____ Type_____

Foul weather gear _____

Fully encapsulating gear _____

Safety footwear _____ Type _____

Boot/shoe covers _____

Gloves _____ Type _____

Other special equipment/clothing _____

_____
_____

Respiratory Protection

Air-Purifying Respirator _____ Type _____

Cartridge, Filters _____ Type _____

SCBA _____ Type _____

Emergency Escape Mask _____ Type _____

Airtank(s) Full _____ Yes _____ No

Special Health and Safety Equipment

Life belt _____

Safety line _____

Other _____

_____

Decontamination Supplies

Waste bags and ties _____

Cleaning solution _____

Disposable brushes _____

Disposable towels and towelettes _____

Disposable containment tubs _____

FIELD EQUIPMENT/MATERIALS/SUPPLIES (VERIFY):

Rope _____ String _____ Tape _____

Matches _____ Food _____ Additional clothing _____
Potable water _____

EMERGENCY SIGNALS AND COMMUNICATION:

Fire signal is _____

Evacuation signal is _____

Severe weather signal is _____

Toxic release signal is _____

EMERGENCY AND RESCUE:

Is first aid available in the area? _____ Yes _____ No

Location _____ Telephone # _____

Is ambulance available? ___ on site ___ on call Tel. # _____

Nearest hospital with emergency services: Location _____

_____ Telephone # _____

Heavy and special rescue services/equipment available: Yes/No

Specify: _____

Note:

A copy of this summary should be taken along for reference in the event of an emergency. A second copy should be filed with a supervisor before leaving for the site. Such information is particularly important for visits to sites where crews may be stranded or lost.