

NNA.930714.0193

U.S. DEPARTMENT OF ENERGY

WM  
DOE



# YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT

## AUDIT REPORT:

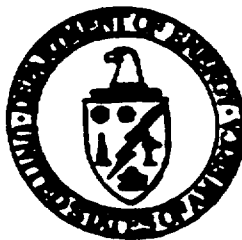
ENVIRONMENTAL MANAGEMENT AUDIT FY93B

OF THE

DESERT RESEARCH INSTITUTE  
AT THE

YUCCA MOUNTAIN SITE  
CHARACTERIZATION PROJECT

JUNE 1993



UNITED STATES DEPARTMENT OF ENERGY  
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE

9602080019 930702  
PDR WASTE  
WM-11

PDR

Part 4

## ENVIRONMENTAL MANAGEMENT AUDIT FY93B REPORT ORGANIZATION

### REPORT OVERVIEW

This audit report describes the results of Environmental Management Audit FY93B of the Desert Research Institute Yucca Mountain Site Characterization activities. The audit was conducted June 14-18, 1993 by the Technical and Management Support Services (T&MSS) Environmental Compliance and Permitting Department (ECPD) as directed by the Yucca Mountain Site Characterization Project Office (YMPO) Project and Operations Control Division (POCD) Director.

The EXECUTIVE SUMMARY briefly describes the audit process and summarizes the audit team findings. It includes a summary table of all findings arranged by subject area and distinguished as compliance, best management practice, or noteworthy practice findings.

- 9 1 1 9 0 4 5 4 3
- Section 1 INTRODUCTION, highlights the U.S. Department of Energy (DOE) and YMPO environmental oversight responsibilities, discusses the purpose and general objectives of this audit, and profiles the audited organization.
- Section 2 SITE LOCATION AND DESCRIPTION, briefly describes the Yucca Mountain Site Characterization Project (YMP) location and its setting.
- Section 3 AUDIT PROCESS, summarizes the areas evaluated during the audit, discusses the audit team composition, and describes audit methods and procedures.
- Section 4 ENVIRONMENTAL MANAGEMENT AUDIT FINDINGS, defines finding categories and discusses each specific audit finding. Each subject area contains an overview followed by presentations that include the following elements: finding number, category, title, statement, and discussion.

### Appendices

- Appendix A Environmental Management Audit Plan
- Appendix B Administrative Procedures, Training Plan, Field Operations Instruction
- Appendix C Audit Schedules
- Appendix D Audit Team Biographical Sketches
- Appendix E List of Audit Team Contacts and Interviews
- Appendix F List of Documents Reviewed by the Audit Team
- Appendix G University and Community College System of Nevada Environmental Safety and Health Statement

An Acronym List (fold out) is provided immediately following the appendices.

**ENVIRONMENTAL MANAGEMENT AUDIT FY93B REPORT**

**THE DESERT RESEARCH INSTITUTE  
AT THE  
YUCCA MOUNTAIN SITE  
CHARACTERIZATION PROJECT**

**Prepared for:**

**U.S. Department of Energy  
Yucca Mountain Site Characterization Project Office  
Project and Operations Control Division  
P.O. Box 98608  
Las Vegas, NV 89193-8608**

**Prepared by:**

**Science Applications International Corporation  
Technical and Management Support Services  
Environmental Compliance and Permitting Department  
101 Convention Center Drive  
Las Vegas, NV 89109-2005**

**JUNE 1993**

This page intentionally left blank.

## AUDIT FY93B TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
List of Tables .....	iii
EXECUTIVE SUMMARY .....	ES-1
1.0 INTRODUCTION .....	1-1
1.1 Oversight Responsibilities .....	1-1
1.2 Environmental Management Audit Purpose and Objectives .....	1-1
1.3 Desert Research Institute Profile .....	1-2
2.0 SITE LOCATION AND DESCRIPTION .....	2-1
2.1 Site Location .....	2-1
2.2 Site Description .....	2-1
2.2.1 Climate .....	2-1
2.2.2 Water Resources .....	2-1
2.2.3 Biological Resources .....	2-2
2.2.4 Cultural Resources .....	2-2
2.2.5 Demography .....	2-2
2.2.6 Land Use .....	2-2
3.0 AUDIT PROCESS .....	3-1
3.1 Audit Scope .....	3-1
3.2 Audit Schedule .....	3-1
3.3 Team Composition .....	3-1
3.4 Audit Techniques .....	3-2
3.5 Findings .....	3-2
3.5.1 Findings Support Data .....	3-2
3.5.2 Findings Development .....	3-3
3.6 Meetings .....	3-3
3.7 Working Papers and Records .....	3-3

# **AUDIT FY93B TABLE OF CONTENTS** **(continued)**

<u>Section</u>	<u>Page</u>
3.8 Post-Audit Activities .....	3-4
3.8.1 Project and Operations Control Division Briefing .....	3-4
3.8.2 Audit Report Review and Approval .....	3-4
3.8.3 Corrective Action Plan .....	3-4
3.8.4 Corrective Action Verification and Audit Close .....	3-5
4.0 ENVIRONMENTAL MANAGEMENT AUDIT FY93B FINDINGS .....	4-1
4.1 Environmental Management Performance Objectives and Criteria (EMP) .....	4-1
4.1.1 Overview .....	4-1
4.1.2 EMP Best Management Practice Findings .....	4-2
4.2 Resolutions of Environment, Safety and Health Concerns (REC) .....	4-4
4.2.1 Overview .....	4-4
4.2.2 REC Compliance Finding .....	4-5
4.3 Occurrence Reporting and Processing Operations Information (RAP) ....	4-6
4.3.1 Overview .....	4-6
4.3.2 RAP Compliance Finding .....	4-6
4.3.3 RAP Best Management Practice Finding .....	4-7
4.4 Environmental Safety and Health Protection Program of U.S. Department of Energy Operations (EPP) .....	4-8
4.4.1 Overview .....	4-8
4.4.2 EPP Compliance Findings .....	4-8
4.4.3 EPP Best Management Practice Finding .....	4-8
4.5 Environmental Training Program (ETR) .....	4-9
4.5.1 Overview .....	4-9

# **TABLE OF CONTENTS** (continued)

<u>Section</u>	<u>Page</u>
Appendix A Environmental Management Audit Plan .....	A-1
Appendix B Administrative Procedures, Training Plan, and Field Operations Instructions	
B1 Administrative Procedure (AP)-2.9, Occurrence Reporting and Processing of Operations Information .....	B1-1
B2 AP-5.43, Environmental Safety and Health Protection Program for U.S. Department of Energy Operations .....	B2-1
B3 AP-5.46, Environmental Compliance Auditing and Surveillance of Yucca Mountain Site Characterization Activities .....	B3-1
B4 AP-6.18, Resolutions of Environment, Safety and Health Concern ...	B4-1
B5 YMP 91-27, Yucca Mountain Site Characterization Project Training Management Plan .....	B5-1
B6 YMP-Field Operations Instruction (YMP-FOI)-3001, Yucca Mountain Field Training Programs .....	B6-1
B7 YMP-FOI-4705, YMP Worksite and Area Access, Controls, and Facility Permits .....	B7-1
Appendix C Audit schedules	
C1 Schedule for Environmental Management Audit FY93B .....	C1-1
C2 Daily Schedule - Audit Phase .....	C2-1
Appendix D Audit Team Biographical Sketches .....	D-1
Appendix E List of Audit Team Contacts and Interviews .....	E-1
Appendix F List of Documents Reviewed by the Audit Team .....	F-1
Appendix G University and Community College System of Nevada (UCCSN) Environmental Health and Safety Statement .....	G-1
Acronyms (fold out)	
List of Tables	
Table ES-1 Environmental Management Audit FY93B Findings Summary ...	ES-4



## **EXECUTIVE SUMMARY**

### **INTRODUCTION**

The U.S. Department of Energy (DOE) and the Yucca Mountain Site Characterization Project Office (YMPO) are committed to environmentally safe and sound performance of Yucca Mountain Site Characterization Project (YMP) activities. The primary YMP environmental program objective is to achieve full compliance and excellence in environmental matters through aggressive oversight of environmental performance.

The YMPO Project and Operations Control Division (POCD) Director is charged to insure that YMP activities employ sound environmental management practices to assure compliance with environmental program requirements. To that end, the POCD Director tasked the Technical and Management Support Services (T&MSS) Environmental Compliance and Permitting Department (ECPD) to develop a program to conduct environmental compliance and environmental management audits of YMP Participants.

This report documents results of Audit FY93B, an environmental management audit of Yucca Mountain Site Characterization Project activities of the Desert Research Institute (DRI). DRI, a part of the University and Community College System of Nevada (UCCSN), has been contracted through the U.S. Department of Energy, Nevada Operations Office (DOE/NV) to conduct archaeological and other scientific studies for the YMPO.

### **AUDIT SITE**

Preaudit, audit, and post-audit technical and administrative activities occurred primarily at two locations: the Yucca Mountain project site and T&MSS offices in the Bank of America Center. DRI management was very cooperative in ensuring that key project personnel/documents not normally on hand in Las Vegas, were available for the duration of the on-site audit phase. Therefore, no audit activities took place at the DRI offices in Reno or Las Vegas, NV.

### **AUDIT TEAM**

The audit team consisted of an Audit Team Leader, a Technical Coordinator, and five technical specialists from the T&MSS ECPD.

### **AUDIT PURPOSE AND OBJECTIVES**

The audit purpose was to assess DRI's environmental management program to determine if program structure and formality are sufficient to assure consistency with environmental procedures, regulations, and standards associated with YMP site characterization activities. The general audit objectives were: 1) determine YMP vulnerabilities, risks, and liabilities associated with environmental management practices, compliance status, and environmental conditions; 2) assure management that potential exposure to compliance problems is known and being reduced to acceptable levels; 3) verify adequacy of environmental management and organizational

structure; 4) determine compliance with DOE Orders and YMP environmental plans, policies, and procedures; and to 5) identify and assure correction of deficiencies.

## AUDIT SCOPE

The following protocols were included in the audit scope: Performance Objectives and Criteria for Environmental Management; Resolutions of Environment, Safety and Health Concerns; Occurrence Reporting and Processing of Operations Information; Environmental Safety and Health Protection Program of U.S. Department of Energy Operations; and the Environmental Training Program.

## AUDIT TECHNIQUES

Audit information was obtained and verified through the use of various techniques. First, interviews were conducted with DRI personnel. These interviews helped to determine the interaction between various DRI organizational units and to assess general understanding of environmental management systems and adherence to procedural requirements. Second, documents pertaining to environmental policies, procedures, and other relevant subjects were reviewed to verify the formality of the system and to confirm interview information. Third, direct observations of personnel, processes, and procedures further verified and supported data obtained through interviews and document reviews. Finally, audit checklists were developed and used to facilitate the audit techniques, to evaluate procedural and regulatory practices, and to identify areas of deficiency and areas of excellence.

## AUDIT FINDINGS

Environmental management audit findings may be assigned to one of three finding categories: best management practice, compliance, and noteworthy practice. Briefly defined, a compliance finding (CF) is a condition that may not comply with regulatory or procedural requirements; a best management practice finding (BMPF) indicates a condition where management practice(s) could be improved; and a noteworthy practice finding (NPF) identifies conditions of merit that are applicable to other YMP activities. Based on the judgement of the audit team, findings in two of the above categories were identified: best management practice findings and compliance findings.

The audit investigative process produced a total of eight findings in the BMPF and CF categories. The proportion of best management practice findings and compliance findings to total findings was approximately 65 percent and 35 percent, respectively. The majority of the best management practice findings resulted from application of environmental management and performance objectives and criteria to the existing DRI environmental organization/program for its YMP activities. BMPFs generally revealed that DRI has not established a formal environmental protection program for its YMP activities and that DRI has not documented within its organizational structure clear lines of responsibility and authority for environmental protection relative to its YMP archaeological studies. The compliance findings generally revealed that DRI is either not on distribution for Administrative Procedures (APs) and other documents pertinent to their YMP activities, or, if the procedures and plans have been obtained, they have not been widely distributed within DRI. As a result, DRI could not effectively ensure that its YMP-related

activities were conducted in accordance with YMP environmental protection procedural guidance. Table ES-1 summarizes Environmental Management Audit FY93B findings.

## **OBSERVATIONS/CONCLUSIONS**

DRI management, supervisors, and staff exhibited a high degree of understanding and acceptance of the importance of environmental protection and a positive attitude toward the environmental aspects of their job responsibilities. This outlook is highlighted by the DRI Project Manager's active participation and assistance in this audit and by the fully cooperative, helpful, and positive attitude of DRI personnel toward audit team members.

While findings from this audit are relatively few in number, the substance of the management and compliance deficiencies identified is not insignificant and requires correction. DRI management has indicated their intention to actively pursue corrective action and, in fact, some corrective actions have already been initiated. In addition, both the POCD Director and the T&MSS ECPD Manager have indicated that assistance to DRI will be provided whenever required.

Based on audit objectives, the following conclusions may be drawn with respect to the subject areas named in the audit scope: YMP vulnerability, risk, and liability associated with DRI environmental management and compliance practices are currently minimal-- primarily because of the limited scope of DRI activities at the YMP--and will improve with correction of identified deficiencies; DRI is aware of the findings cited in this report and is taking or will take action to correct identified deficiencies; for its YMP-related activities, DRI needs to develop a formal environmental protection program complemented by an organizational structure with clearly defined authority and responsibility; and DRI should take action to obtain all pertinent DOE Orders and YMP environmental plans/policies/procedures to ensure that activities are conducted in accordance with existing procedural guidance.

AUDIT PROTOCOL	BEST MANAGEMENT PRACTICE FINDINGS	COMPLIANCE FINDINGS	OBSERVATIONS/ ISSUES
Environmental Management Performance Objectives and Criteria (DOE/EH-0229)	3		<p>DRI's organizational structure does not formally address the functions, responsibilities and authorities for YMP-related environmental compliance and protection.</p> <p>DRI has no formal environmental protection program to insure that DRI conducts its YMP activities in accordance with YMP procedures and plans.</p> <p>DRI Managers have not formally stated their commitment to environmental excellence.</p>
Resolutions of Environment, Safety and Health Concerns (AP-6.18)		1	DRI is not in compliance with the provisions of AP-6.18 that establish a process to stop actions when imminent danger is suspected.

TABLE ES-1 ENVIRONMENTAL MANAGEMENT AUDIT FY93B FINDINGS SUMMARY

ES-5

AUDIT PROTOCOL	BEST MANAGEMENT PRACTICE FINDINGS	COMPLIANCE FINDINGS	OBSERVATIONS/ ISSUES
Occurrence Reporting and Processing of Operations Information (AP-2.9)	1	1	<p>DRI is not on distribution for AP-2.9 and therefore is not in compliance with those procedures that establish specific occurrence reporting and processing guidance for YMP participants.</p> <p>Individual responsibilities for YMP occurrence reporting and processing were not clearly established or defined within the DRI organizational structure.</p>
Environmental Safety and Health Protection Program of U.S. Department of Energy Operations (AP-5.43)	1	1	<p>DRI has not incorporated the required steps from AP-5.43 into their ES&amp;H Program or their Safety and Health Plan. These required steps include having a formal ES&amp;H Plan and conducting internal appraisals of the DRI ES&amp;H Program.</p> <p>DRI is not on the controlled distribution list for AP-5.43, nor were they familiar with the content in AP-5.43, prior to this audit.</p>

TABLE ES-1 ENVIRONMENTAL MANAGEMENT AUDIT FY93B FINDINGS SUMMARY (continued)

AUDIT PROTOCOL	BEST MANAGEMENT PRACTICE FINDINGS	COMPLIANCE FINDINGS	OBSERVATIONS/ ISSUES
ENVIRONMENTAL TRAINING PROGRAM (YMP/91-27)			

ES-6

TABLE ES-1 ENVIRONMENTAL MANAGEMENT AUDIT FY93B FINDINGS SUMMARY (continued)

## Section 1.0 - INTRODUCTION

### 1.1 Oversight Responsibilities

The U.S. Department of Energy (DOE) is committed to performing its activities in an environmentally safe and sound manner in accordance with applicable environmental statutes and regulations. A primary objective of the DOE and the Yucca Mountain Site Characterization Project Office (YMPO) is to provide oversight of environmental performance, in support of the broader goal of achieving full compliance and excellence in the environmental area. The environmental program is structured to achieve this objective and satisfy applicable statutory requirements. It is integrated with other programs under the direction of the DOE Office of Civilian Radioactive Waste Management (OCRWM).

The YMPO, as part of OCRWM, is responsible for all activities at the Yucca Mountain site. The Project Manager (PM) is the authorized official responsible for managing all Yucca Mountain Site Characterization Project (YMP) activities including the environmental protection program.

The YMPO Project and Operations Control Division (POCD) Director is responsible for the environmental program and for daily activities being performed in compliance with applicable environmental requirements, permit stipulations, and management procedures. To insure that YMP activities are undertaken and conducted in an environmentally sound manner, the Technical and Management Support Services (T&MSS) Environmental Compliance and Permitting Department (ECPD) was tasked to develop an environmental audit program and to conduct oversight assessments of YMP Participant organizations. The Desert Research Institute (DRI) was designated by the POCD Director as the subject of an environmental management audit under this program. This report documents the results of the DRI audit designated Environmental Management Audit FY93B.

### 1.2 Environmental Management Audit Purpose and Objectives

The environmental compliance policy of the DOE/YMP is full compliance with the letter and spirit of environmental laws, regulations, and requirements as an integral part of DOE/YMP operations. Within the context of this policy, the purpose of this audit as described in the audit plan (Appendix A) was to assess DRI's environmental management program to assure consistency with environmental procedures, regulations, and standards associated with YMP site characterization activities.

The general objectives of this audit were to: 1) determine YMP vulnerabilities, risks, and liabilities associated with environmental management practices, compliance status, and environmental conditions, and ; 2) assure management that potential exposure to compliance problems is known and being reduced to acceptable levels; 3) verify adequacy of environmental management and organizational structure; 4) determine compliance with DOE Orders and YMP environmental plans/policies/procedures; and to 5) identify and assure corrective action of deficiencies.

### 1.3 DRI Profile

The Desert Research Institute is an independent, statewide division of the University and Community College System of Nevada that conducts full-time environmental research. DRI has the world's largest multidisciplinary faculty conducting environmental research in arid lands. DRI's 400 scientists, technicians and staff carry out more than 100 research projects every year.

The institute has laboratories in Las Vegas, Reno, Stead, Laughlin, and Boulder City, Nevada. DRI is organized into five centers: Atmospheric Sciences, Biological Sciences, Energy and Environmental Engineering, Water Resources, and Quaternary Sciences. DRI's Yucca Mountain Site Characterization Project Archaeological Studies Program is organizationally a part of the Quaternary Sciences Center's Southern Nevada Archaeological Program.

Unlike universities, DRI does not grant tenure to its faculty. Salaries and research programs are funded through contracts and grants obtained in the competitive marketplace. The institute has an annual budget of more than \$20 million: about \$18 million through research contracts and grants, and about \$2 million from the State of Nevada.

DRI's scientists hold 75 doctorate and 85 master and bachelor degrees in more than 50 different disciplines. Every year DRI scientists write hundreds of proposals, presentations, papers, reports, and journal articles, and teach about 25 graduate courses at Nevada's universities and community colleges. DRI employs and advises up to 50 graduate student research assistants, and hires several high school science teachers as summer fellows each year. The institute manages several programs for the university system, including the Dandini Research Park in Reno, the Nevada Space Grant Consortium, and the Cooperative Institute for Aerospace Science and Terrestrial Applications, one of three national centers of excellence in land remote sensing.<sup>1</sup>

---

<sup>1</sup>Information extracted from Desert Research Institute Information Brochure, February 1993.

## Section 2.0 - SITE LOCATION AND DESCRIPTION

### 2.1 Site Location

The Yucca Mountain site is located in Nye County, Nevada, approximately 100 miles northwest of Las Vegas, Nevada. Primary ground access to the site is via U.S. Highway 95. The Project site is on the southwestern boundary of the Nevada Test Site (NTS) and includes U.S. Air Force (USAF) and Bureau of Land Management (BLM) lands. Access to USAF and BLM lands has been obtained by rights-of-way granted to DOE.

### 2.2 Site Description

The Yucca Mountain site is in the southern Great Basin of the Basin and Range Province, a regional setting characterized by linear mountain ranges separated by intervening valleys with few flowing streams or rivers.

The Project site encompasses ecological zones ranging from the Mojave Desert to the south through a transition zone that extends beyond the site boundary to the cooler and wetter Great Basin Desert to the north. Soils are generally rocky or sandy and dry primarily supporting low bushes and shrubs. Yucca Mountain, a long north-south aligned volcanic ridge of 4,900 feet elevation, is the major topographical feature of the site. The mountain slopes steeply west to Crater Flats and gradually east to Jackass Flats. The largest of five washes that cross the site east of Yucca Mountain is Fortymile Canyon that drains to the Armagosa Valley 15 to 20 miles south.

#### 2.2.1 Climate

The climate at the Project site is characterized by considerable solar radiation, little precipitation, low relative humidity, and large temperature ranges. July and August have the highest average maximum daily temperatures (mid-nineties); December and January the lowest (low-fifties). Average annual precipitation is less than six inches and is concentrated in the winter months. Southerly winds are most common in the spring and summer; northerly winds dominate in fall and winter. Average monthly wind speeds range from approximately nine miles per hour in April to six miles per hour in November.

#### 2.2.2 Water Resources

Free-flowing surface water does not exist at the Project site. Drinking water is pumped from groundwater sources. Water tables are generally deep beneath the surface of the ranges and most valleys with recharge from precipitation falling at higher elevations to the north. The Project site overlies two aquifers--one local and relatively shallow (approximately 1,600 feet deep), the other regional and very deep (probably in excess of 4,100 feet). Most groundwater discharges south and southwest of the site in Armagosa Valley and Death Valley.

### 2.2.3 Biological Resources

Plant associations of two different botanical zones are recognizable at the Project site. At lower elevations, creosote bush, bursage, and blackbrush comprise the vegetation associations. Creosote bush, boxthorn, and hopsage characterize middle elevations, and boxthorn and hopsage dominate higher elevations. Despite the number of species found at the site, plant life is considered generally sparse, typical of any desert region.

As many as 46 species of mammals may occur in the vicinity of the site. Most numerous are rodents, followed by jackrabbits and cottontails. Mammalian predators include the coyote, and to a much lesser extent, the bobcat, badger, and kit fox. None of the species present are threatened/endangered but all fur-bearing animals are protected by the State of Nevada.

Site-specific surveys in 1982 recorded 35 bird species including 6 species of raptors. No permanent or seasonal bird species are threatened or endangered; the endangered Peregrine Falcon may occasionally migrate through the area.

Reptiles are represented at the site by eight species of lizards, four snake species, and one species of tortoise. The tortoise species is the Desert Tortoise, listed as threatened by the U.S. Fish and Wildlife Service (USFWS) and the subject of an intensive study program at the site.

### 2.2.4 Cultural Resources

Archaeological resources found at the site indicate significant past use by small, highly mobile groups of aboriginal hunter-gatherers. These aboriginal groups were followed by Euroamericans who made limited use of the site area for travel, transportation, prospecting, surveying, and possibly ranching. As a result of numerous archaeological surveys in the project area over 450 historical properties have been identified.

### 2.2.5 Demography

Counties bordering the Project site are essentially rural with low population density (approximately 0.5 person per km<sup>2</sup>). The county populations (1990 census) are as follows: Lincoln - 3,775; Nye - 17,781; Esmeralda - 1,344; and Inyo (California) - 18,281. Clark County, to the southeast and well outside the study area, has a population of 741,459 distributed as follows: Las Vegas - 258,295; Henderson - 64,942; North Las Vegas - 47,707; Boulder City - 12,567; Mesquite - 1,871; other - 356,077.

### 2.2.6 Land Use

The Project site is on lands controlled by the DOE, the USAF, and the BLM. Access to much of the land is restricted. Lack of surface water and the generally harsh desert conditions prevalent in the area limit opportunities for agriculture or recreation on lands immediately adjacent to the site. The nearest agricultural areas are the Armagosa Valley, 15 miles south, and the Pahrump Valley, 60 miles southeast. No BLM grazing leases have been issued for lands surrounding the site. Mining activity takes place at Bare Mountain, 12 miles away, and near the town of Beatty. Outdoor recreation occurs to the south and southwest of the site.

## **Section 3.0 - AUDIT PROCESS**

### **3.1 Audit Scope**

The scope of Environmental Management Audit FY93B included evaluations of DRI's environmental management program to determine if the program had sufficient structure and formality to assure consistency with environmental procedures, regulations, and standards associated with Yucca Mountain Site Characterization Project (YMP) activities. Specific subject areas, based on YMP Administrative Procedures (APs), Performance Objectives and Criteria for Conducting U.S. Department of Energy (DOE) Environmental Audits, the YMP Training Management Plan, and a YMP Field Operations Instruction (FOI) were evaluated during the audit. These specific areas were: Performance Objectives and Criteria for Environmental Management; Resolutions of Environment, Safety and Health Concerns; Reporting and Processing of Operations Information pertinent to the YMP environmental programs; Environmental Safety and Health Protection Program of U.S. Department of Energy Operations; and the effectiveness of DRI's environmental training program. The APs, Training Management Plan, and FOI that formed the basis for the audit are provided in Appendix B.

### **3.2 Audit Schedule**

All audit activities conducted during the pre-audit, audit, and post-audit phases of Environmental Management Audit FY93B are shown in Appendix C1. A detailed schedule of daily activities during the June 14-18, 1993 audit phase is also shown in Appendix C2.

### **3.3 Team Composition**

The DRI Environmental Management Audit FY93B was conducted by an audit team (AT) comprised of an Audit Team Leader (ATL), Technical Coordinator, and technical specialists from the Technical and Management Support Services (T&MSS) Environmental Compliance and Permitting Department (ECPD) as audit team members. AT member biographical sketches and primary audit responsibilities are listed in Appendix D.

The ATL managed the team and served as the primary contact point with the Project and Operations Control Division (POCD), the ECPD, and DRI. Additional ATL responsibilities were audit team organization, staffing, and support as necessary to ensure audit report accuracy, objectiveness, and thoroughness. The ATL provided overall policy guidance to the AT and was the liaison with DRI contacts for administrative matters. He was also responsible for review of daily reports, agenda revisions, staff supervision, records maintenance, audit report production, and audit closeout activities.

The Technical Coordinator, an experienced, technically qualified, senior environmental staff member, directed the technical efforts of the AT members and monitored audit results in close coordination with the Team Leader.

The AT core membership was composed of ECPD technical specialists. Team member selection was based on knowledge of contemporary environmental issues, statutes, regulations, and YMP regulations and administrative procedures for matters pertinent to their technical specialty areas.

### **3.4 Audit Techniques**

Various auditing techniques were employed to obtain information regarding compliance with regulatory requirements, to find out if written policies were being carried out in actuality, to assess whether operations were safe and environmentally wise, and to determine if good management practices were in evidence. Information was gathered through interviews with DRI personnel engaged in the YMP activities and with personnel in other Participant and support organizations. A summary table of audit contacts and interviews is provided in Appendix E. During both the pre-audit and audit phases, document reviews were conducted. The documents included environmental-related policies, procedures, work instructions, occurrence reporting, and other pertinent documents. The purpose of these document reviews was to gain an understanding of DRI operations and existing and potential problem areas in order to direct the audit focus to relevant areas. A list of documents reviewed is provided in Appendix F. Direct observation of personnel, work-site processes, and compliance procedures was a technique employed by all audit team members to verify and support information obtained through interviews and document reviews.

Audit checklists were developed directly from their respective procedures (Appendix B) or from DOE environmental management performance objectives to facilitate employment of the audit techniques described above. The checklists also helped to ensure that all aspects of an environmental management process or of a particular procedure were adequately covered. The checklists were used by the auditors to assess adherence to procedural and regulatory practices and to identify areas of management deficiency or environmental non-compliance. Prior to the audit, copies of all checklists were provided to DRI for review and to assist with audit preparation.

### **3.5 Findings**

#### **3.5.1 Findings Support Data**

Using the audit techniques described in Section 3.4 above, a variety of data were obtained by each AT member to support potential findings. These information elements included:

- The specific nature of the problem, issue, condition, or practice.
- A detailed location, if appropriate.
- The framework or perspective in which the problem exists.
- The regulatory standard or procedure being violated.
- Supporting information describing the problem or practice, or events leading to the problem.
- Information on whether DRI is aware of the issue and actions being taken to address the problem or practice

- Information on how the AT member learned of the problem or practice.

### 3.5.2 Findings Development

Development and validation of findings was an interactive process that involved discussion among the individual AT member, ATL, Technical Coordinator, and other team members to arrive at a well-documented, defensible finding statement. It should be noted that the existence of a planned or in-progress corrective action did not eliminate the basis for a finding, but such action was noted in the finding discussion.

All findings were reviewed by the ATL, Technical Coordinator, and other team members. The purpose of these reviews was to ensure that the findings were technically accurate and complete, in the correct format, and that they were clear, concise, and grammatically correct. In addition, potential findings under review by the audit team were briefed daily to REECO personnel to obtain verbal comments.

### 3.6 Meetings

The ATL conducted daily caucus sessions with the audit team. These caucus sessions were held for the benefit of the auditors to exchange information, review team observations, discuss potential findings, identify problem areas, and to make adjustments to the daily agenda. Caucus sessions helped ensure the progress of the audit plan and permitted modification or redirection of the plan, as appropriate. These sessions also served to validate data and provide additional assurance of the factual accuracy of observations and potential report findings prior to closeout of the on-site audit activities.

A daily debriefing was conducted for the benefit of the audited organization and was open to appropriate DRI personnel. These personnel interacted with AT members during discussion of issues and potential findings to help insure the technical accuracy of the information being used to develop the potential findings.

A formal closeout meeting at the conclusion of audit activities was conducted by the ATL. Meeting attendees included the Technical Coordinator, AT members, and DRI personnel. The purpose of the closeout meeting was to provide an overview of the audit process and discuss tentative results of the audit.

### 3.7 Working Papers and Records

Each team member used a logbook and maintained comprehensive, organized, and coherent working papers to describe information gathered, how it was gathered (e.g., direct observations, interviews, document reviews), the sources of information, and any other data necessary to support findings contained in this report. The working papers were developed as official records of the audit and their use began concurrently with the team member's

participation in the audit. The following items were developed or updated as part of the compliance audit records:

- Daily agenda
- Meeting notes and attendance sheets
- List of interviews
- List of documents reviewed
- Daily activities report
- Problems encountered on a daily basis

This audit generated no quality assurance records. Copies of the audit report, correspondence, logbooks, and all other documents created as a result of pre-audit, audit, and post-audit activities will be kept to document this audit and will comprise the audit administrative record file. This administrative record file will be submitted to the Las Vegas Local Records Center by the ECPD to be forwarded to the Central Records Facility.

### **3.8 Post-Audit Activities**

In addition to the preparation of this report, other post-audit activities include a briefing, the audit report review and approval process, development of a plan to correct identified deficiencies, verification of the corrective action, and audit closure.

#### **3.8.1 POCD Briefing**

Following the on-site audit phase and the audit closeout briefing to DRI personnel (Section 3.6 above), the ATL briefed the POCD Director, the T&MSS Assistant Project Manager (APM) for Environmental and Regional Programs, and the T&MSS ECPD Manager on the audit and findings.

#### **3.8.2 Audit Report Review and Approval**

The audit report will be provided to the T&MSS ECPD Manager for review and approval. On completion of the ECPD Manager's review/approval process, the audit report will be forwarded to the POCD Director for final review and approval.

#### **3.8.3 Plan to Correct Deficiencies**

The POCD Director will transmit the approved audit report to the DRI Project Manager for the YMP Archaeological Studies Program and formally request the development of a plan to address the audit findings. The DRI Project Manager or designee will prepare or direct the preparation of the plan by DRI personnel. When complete, DRI will submit the plan to the POCD Director for approval. The DRI Project Manager will be responsible for ensuring

implementation of the approved corrective actions and for tracking DRI adherence to the plan and any other activities undertaken to address the audit findings.

#### **3.8.4 Corrective Action Verification and Audit Close**

Verification of corrective action completion will be documented by the ATL and a brief, written report closing the audit will be submitted by the Team Leader to the POCD Director.

This page intentionally left blank

## Section 4.0 - ENVIRONMENTAL MANAGEMENT AUDIT FINDINGS

Audit findings may be conveniently divided into three general categories: best management practice findings (BMPF), compliance findings (CF), and noteworthy practice findings (NPF). Each finding category is defined below:

- BMPF - A condition where, in the absence of regulatory requirements and in the professional judgment of the audit team, management practices could be improved.
- CF - A condition that, in the judgement of the audit team, may not satisfy federal or state environmental regulations, applicable U.S. Department of Energy (DOE)/Yucca Mountain Site Characterization Project (YMP) orders and directives, permit conditions, or site policies/procedures.
- NPF - A condition or finding that, in the judgment of the audit team, is noteworthy and will have application to other YMP activities or participants.

The Technical and Management Support Services (T&MSS) environmental management audit team identified findings in two of the above categories: best management practice findings and compliance findings. Each finding category applicable to the audited subject area is presented in the following sections of this audit report. The findings presented in each section are not necessarily arranged in order of relative significance. Section 4.5, Environmental Training Program, had no findings.

### 4.1 Environmental Management Performance Objectives and Criteria (EMP)

#### 4.1.1 Overview

The U.S. Department of Energy (DOE) Environmental Management Performance Objectives and Criteria (POC) provide a framework for an environmental management program that is of sufficient structure and formality to assure that Yucca Mountain Site Characterization Project (YMP) activities are conducted in a manner consistent with the spirit and letter of environmental regulations and DOE orders. The environmental POCs generally concentrate on programmatic conditions not tied to specific regulations, statutes and standards. They focus on the objectives that must be achieved for effective environmental management, and are used as a tool to evaluate whether the existing management system can provide the needed discipline and control for environmental protection and compliance.

Three performance objectives and their associated criteria were used to assess the Desert Research Institute's (DRI) environmental management program for the YMP. These are (1) the formality of DRI's environmental protection program, (2) the organizational structure of the environmental protection program, and (3) culture and attitude. The formality of the environmental program considers whether or not YMP-related environmental protection activities are conducted in accordance with a defined program that is supported by controlled

documentation. The organizational structure should provide a clear definition of the functions, responsibilities, and authorities for an environmental protection program. The culture and attitude performance objective considers the extent to which an organization exhibits a positive attitude and a culture committed to environmental excellence.

The information for this audit was obtained through interviews with DRI personnel assigned to YMP activities, a review of YMP/DRI documents, and direct observations of work in progress at the DRI archaeological data recovery site at Alice Hill. Information thus obtained resulted in three best management practice findings. These findings generally revealed that DRI has not established a formal environmental protection program for its YMP activities and that DRI has not documented within its organizational structure clear lines of responsibility and authority for environmental protection relative to its YMP archaeological studies. Concerning culture and attitude, protection of cultural resources as an integral part of the YMP environmental compliance program is the mission of DRI's YMP activities. Audit interviews with DRI management and supervisory staff revealed a high degree of understanding and acceptance of the importance of environmental protection as well as a recognition of the environmental aspects of their job responsibilities. However, DRI managers have not formally stated their commitment to YMP environmental excellence nor are there any formal mechanisms or a framework for insuring participation by management in YMP environmental protection activities. A management-related consensus observation from the audit team was that deficiencies appear to exist in DRI's internal and external channels of communication for the transfer of YMP environmental information or for addressing environmental protection concerns.

#### **4.1.2 EMP Best Management Practice Findings**

**Finding Number:** EMP/BMP-1

**Finding Title:** Deficiency in Clearly Defined Organizational Structure to Support YMP Environmental Compliance and Protection.

**Regulatory Requirement:** None.

**DOE Policy Guidance:** DOE/EH--0229, Performance Objectives and Criteria for Conducting DOE Environmental Audits, POC EM.1, Organizational Structure.

**Finding:** DRI's organizational structure does not formally address the functions, responsibilities and authorities for YMP-related environmental compliance and protection.

**Discussion:** The YMP archaeological studies program is identified on a DRI organizational chart as a division of DRI's DOE/Nevada Operations office (NV) Environmental Research Program. This organizational chart indicates that environmental health and safety support for DRI's YMP activities is a functional area of the DOE/NV Environmental Research Program. Audit interviews indicated that the key positions for YMP environmental responsibility, authority, and accountability are the DOE/NV Environmental Research Programs Project Manager, the YMP Archaeological Studies Program Project Manager, the DRI Environmental, Health and Safety (EH&S) Officer, and the DRI Classified and Unclassified Security Officer. However, there does not appear to be any formal statement or other documentation that clearly

defines primacy in matters related to YMP environmental compliance and protection. The DRI EH&S Officer indicated that he was "by default" the YMP environmental compliance officer. Other managers and supervisors indicated that there are no formal policies or directives that identify specific responsibilities, authority, or accountability for YMP-related environmental protection and compliance. DRI does not appear to have any formal mechanism for field units to report YMP-related environmental concerns or issues to upper management, and there is no function with an oversight role for YMP environmental protection.

**Finding Number:** EMP/BMP-2.

**Finding Title:** Lack of Formal Environmental Management Program.

**Regulatory Requirement:** DOE Order 5480.19, Conduct of Operations Requirements for DOE Facilities.

**DOE Policy Guidance:** DOE/EH-0229, Performance Objectives and Criteria for Conducting DOE Environmental Audits, POC EM.4, Formality of Environmental Programs.

**Finding:** DRI has no formal environmental protection program to insure that DRI conducts its YMP activities in accordance with YMP procedures and plans.

**Discussion:** DOE Order 5480.19 provides that it is the policy of DOE "that the conduct of operations at DOE facilities be managed with a consistent and auditable set of requirements, standards, and responsibilities." The policy statement also addresses the use of procedures to control the conduct of activities, review of programs, and assessment of program effectiveness. The audit found that DRI does not maintain YMP procedures applicable to environmental compliance and protection for its YMP activities. DRI has no auditable policies, standards, and procedures that are supported by controlled documentation to guide environmental compliance and protection relative to its YMP-related work. Environmental training of DRI YMP staff beyond the required YMP General Employee Training (GET) is not supported or augmented by any coordinated internal training program. There did not appear to be any formal or identifiable lines of communication between management and field staff relative to YMP-related environmental compliance and protection. Similarly, there appears to be a deficiency in lines of communication between DRI and the Yucca Mountain Project Office (YMPO).

Two measures have been taken that could lay the foundation for an environmental protection program at DRI. The University and Community College System of Nevada (UCCSN), of which DRI is a part, has prepared a draft Environmental Health and Safety Statement (Appendix G) which provides "that the development, implementation and compliance monitoring of EH&S programs is integral to the UCCSN mission" and that "each institution shall develop EH&S programs that best address the EH&S problems specific to that institution." Secondly, DRI is currently preparing a YMP EH&S Plan.

The probable cause for this finding may be attributed to a combination of factors. Within its organizational structure, DRI has not formally documented specific management responsibility and authority for YMP-related environmental compliance and protection (Finding EMP/BMP-1 above). DRI has not been included, nor sought to be included, on controlled distribution for the

YMP procedures and plans for environmental protection. One individual within DRI obtained a limited number of procedures and plans, but these documents were not widely distributed within DRI. Approximately two years ago, a DRI staff member was advised by a former T&MSS supervisory-level employee that YMP procedures were not applicable to DRI. However, the YMP Environmental Management Plan (EMP), Section 4.7, and many of the YMP Administrative Procedures (APs) provide for specific applicability to all YMP participants, subcontractors, or supporting personnel. Because DRI's limited scope of YMP work and small project staff is linked directly to environmental protection, it is also probable that DRI has relied on its direct connection to the T&MSS Environmental Compliance and Permitting Department (ECPD) and the YMP Project Operations and Control Division (POCD) to insure that it is in compliance with YMP environmental compliance requirements.

**Finding Number:** EMP/BMP-3.

**Finding Title:** Management Commitment to Environmental Excellence.

**Regulatory Requirement:** None.

**DOE Policy Guidance:** DOE/EH-0229, Performance Objectives and Criteria for Conducting Environmental Audits, POC EM.2, Culture and Attitude.

**Finding:** DRI Managers have not formally stated their commitment to environmental excellence.

**Discussion:** It is a DOE policy that contractors share the Department's commitment to sound environmental management. As previously noted, DRI management and staff scientists recognize and accept environmental protection as an integral part of their YMP scientific work. A formal expression of commitment to environmental excellence by DRI management would document DRI's intentions to conduct its YMP-related activities in an environmentally sound manner. Management's formal commitment to environmental excellence would also serve as part of the framework for an effective environmental protection program.

The probable causal factor for this finding is that DRI does not have a formal environmental protection program that focuses on management commitments and objectives for insuring environmental compliance relative its YMP-related activities.

## **4.2 Resolutions of Environment, Safety and Health Concerns (REC)**

### **4.2.1 Overview**

The purpose of AP-6.18, Resolutions of Environment, Safety and Health Concerns (Appendix B4), is to 1) provide a process to stop activities when imminent danger involving the safety or health of YMP personnel, the public, or damage to the environment or natural barriers is suspected, 2) to initiate actions in response to these dangers, 3) to verify implementation of corrective actions, and 4) to restart work. This procedure is intended to implement response actions whenever serious environment, safety or health hazards appear to exist. Implicit in AP-

6.18 is the right and obligation of a project Participant to immediately cease operations when Participant personnel jeopardize themselves or the work environment. AP-6.18 contains the following key provisions:

- Defines practices/conditions that may require work interruption or stoppage for non-quality affecting work.
- Defines individual responsibilities to report practices/conditions that may represent unacceptable risk to life, health, environment, property, or completion of authorized YMP mission-essential work.
- Identifies those with responsibility and authority to alleviate environment, safety or health concerns.
- Describes the process to implement and verify corrective actions before an undue risk activity is resumed.

The purpose of this audit protocol was to evaluate DRI's knowledge and compliance with AP-6.18 and with overall environmental, safety and health concerns. Audit methodologies included personnel interviews, document reviews, and direct observation of archaeological site activities. The audit resulted in one compliance finding; there were no best management or noteworthy practice findings.

#### **4.2.2 REC Compliance Finding**

**Finding Number:** REC/CF-1

**Finding Title:** Procedural Non-Compliance

**Regulatory Requirement:** AP-6.18, Resolution of Environment, Safety and Health Concerns, applies to all YMP Participant field activities, activities in the Bank of America Center, and other locations as approved by the YMPO.

**Finding:** DRI is not in compliance with the provisions of AP-6.18 that establish a process to stop actions when imminent danger is suspected.

**Discussion:** When interviewed, the DRI Project Director indicated that DRI is not on controlled distribution for AP-6.18. This is the likely causal factor for the finding specified above. Further interviews with the DRI Project Manager, Security Officer, and the ES&H Officer confirmed the above, and further revealed that neither is there a DRI internal written procedure that is the functional equivalent of AP-6.18. Absent DRI possession/use of AP-6.18, it was decided to forego application of the AP-6.18-based checklist developed for this protocol.

As a result of this audit, it was the judgement of the Audit Team that DRI should either 1) directly incorporate the provisions of AP-6.18 into the DRI environmental management program for YMP activities, or 2) generate a DRI procedure parallel to AP-6.18 that would address resolutions of environment, safety and health concerns. The DRI Project Manager agreed upon issuing a procedure within a one or two month time frame.

### 4.3 Reporting and Processing of Operations Information (RAP)

#### 4.3.1 Overview

AP-2.9, Occurrence Reporting and Processing of Operations Information, (Appendix B1) assigns responsibility and provides a process for reporting occurrences and events related to all Yucca Mountain Site Characterization Project participants. This procedure defines a system to (1) identify any and all reportable conditions and events, (2) provide for the assignment of Facility Managers and Facility Representatives, (3) provide notice to appropriate management personnel, (4) set out a structure for decisions and actions relative to the unusual occurrence, and (5) provide for a record of the unusual occurrence and all related follow-up and corrective actions.

The purpose of this audit protocol was to examine the internal procedures and practices that had been developed by DRI to implement the provisions of AP-2.9, and to determine if the procedures were effectively ensuring reportable occurrences were handled properly. This was accomplished through interviews with DRI YMP field and management personnel and a review of the DRI Occurrence Reporting Plan and Processing Procedures and related internal memoranda. In addition, a visit was made to the Alice Hill archaeological data recovery site to observe DRI field operations and discuss with field personnel their understanding of the YMP occurrence reporting requirements.

The interviews and review of pertinent internal documents revealed that DRI was not on distribution for AP-2.9 and therefore their internal occurrence reporting plans and procedures had not been adapted to meet the requirements of the YMP procedure. As a result, formal internal guidance was not available for ensuring that occurrence reports were processed properly through the YMP management system. Also, it appeared that responsibilities had not been clearly defined within the DRI organizational structure to ensure all aspects of the occurrence reporting program were managed or implemented as effectively as possible.

#### 4.3.2 RAP Compliance Findings

**Finding Number:** RAP/CF-1

**Finding Title:** Procedural Non-Compliance

**Regulatory Requirement:** The Statement of Work for Contract NO. DE-AC08-90NV10845 specifies that "the contractor shall comply with the applicable federal, state, and local environmental laws,....and implementing regulations and rules" which have been incorporated as applicable into the YMP Administrative Procedures. Additionally, AP-2.9, Occurrence Reporting and Processing of Operations Information specifies that it "applies to all YMP offices, personnel, YMP Participants, and any subcontractor or supporting personnel and facilities."

**Finding:** DRI is not on distribution for AP-2.9 and therefore is not in compliance with those procedures that establish specific occurrence reporting and processing guidance for YMP participants.

**Discussion:** DRI has an internal document, Occurrence Reporting Plan and Processing Procedures which is based on DOE Order 5000.3B, Unusual Occurrence Reporting System and the supporting DOE/NV Order 5000.3A, Occurrence Reporting and Processing of Operations Information. Although this DRI document was developed primarily in support of DOE activities at the Nevada Test Site (NTS), it specifies that it is applicable to "all DRI personnel working at the NTS, other DOE facilities, or at DRI facilities where work on the DOE contract is performed." It was therefore considered by the DRI staff as being applicable to their YMP personnel and recurring internal training guidance reinforced the notification and reporting procedures outlined in that document.

DRI's current procedures direct all personnel to report occurrences through the NTS duty officer and the DOE Nevada Occurrence Reporting System Operations Center (NORSOC). Since DRI was not on distribution for AP-2.9 and was unaware of the specific YMP notification and processing requirements of AP-2.9, they lacked accurate written guidance for notifying the YMP Field Operations Center (FOC), site/project management personnel and, as necessary, the Project and Operations Division (POCD) in the event of a reportable occurrence. It should be noted, that as a result of GET training, DRI field personnel were generally aware of the existence of occurrence reporting procedures.

#### **4.3.3 RAP Best Management Practice Finding**

**Finding Number:** RAP/BMP-1

**Finding Title:** Delegation of Responsibilities

**Regulatory Requirement:** Not Applicable (N/A)

**Finding:** Individual responsibilities for YMP occurrence reporting and processing were not clearly established or defined within the DRI organizational structure.

**Discussion:** Overall responsibilities for the development, implementation, and training of occurrence reporting and processing procedures appeared to be focused primarily on the Occurrence Reporting (OR) Coordinator who is the Security Manager for all DRI activities. This individual has been assigned as the Facility Manager designee in DRI's Occurrence Reporting Plan and is responsible for processing occurrence information through DOE's Occurrence Reporting and Processing System (ORPS).

The five different research centers within DRI may have individual requirements and responsibilities for occurrence reporting that are not fully known to the OR Coordinator. The OR Coordinator indicated concern that individual research centers may have unique activities, procedures, and training requirements that may need to be incorporated into DRI's overall occurrence reporting program. However, responsibilities have not been assigned or defined within the project/center levels to identify these requirements to the OR Coordinator. As a result, the Coordinator may lack the information and assistance needed to conduct the occurrence reporting process in the most effective manner. This may be a causal factor that contributed to the compliance finding described in Section 4.1.3 above.

4.4 Environmental Safety and Health Protection Program of U.S. Department of Energy Operations (EPP)

4.4.1 Overview

YMP procedures have been developed to ensure that all YMP activities are undertaken and conducted in an environmentally sound manner. AP-5.43, Environmental Safety and Health Protection Program for U.S. DOE Operations (Appendix B2), was used to determine if YMP activities performed by DRI comply with YMP environmental, safety and health requirements. This AP is derived from requirements found in the YMP Safety and Health Plan, (YMP/90-37) and the YMP Environmental Management Plan, (YMP/CC-0006).

Audit data were collected from interviews with DRI personnel and review of YMP/DRI documents. The environmental, safety and health data collected provided the basis for one compliance finding and one best management practice finding in this area. In general, DRI personnel were not familiar with AP-5.43. DRI personnel are cognizant of environment, safety and health protection as the basis for their work, but they have not incorporated YMP procedural steps into their work activities.

4.4.2 EPP Compliance Finding

Finding Number: EPP/CF-1

Finding Title: Procedural Non-Compliance

Regulatory Requirement: AP-5.43 "applies to all YMP Participant organizations and their employees."

Finding: DRI has not incorporated the required steps from AP-5.43 into their ES&H Program or their Safety and Health Plan. These required steps include having a formal ES&H Plan and conducting internal appraisals of the DRI ES&H Program.

Discussion: DRI has written a YMP-specific DRI Safety and Health Plan. This plan, currently in draft form, has been reviewed by the YMP Site Manager. It has not been submitted for review by the YMP Project Manager, as required by AP-5.43. AP-5.43 also requires all YMP Participants to conduct internal environmental, safety and health appraisals, prepare and submit written appraisal reports to the YMP Project Manager, the DOE S&H Officer, and the POCD Director. Internal appraisals have not been conducted by DRI.

The probable causal factor for this finding is that DRI did not have/was not familiar with AP-5.43 (See also EPP/BMP-1 below).

4.4.3 EPP Best Management Practice Finding

Finding Number: EPP/BMP-1

Finding Title: Lack of Management Communication

**Regulatory Requirement:** None

**Finding:** DRI is not on the controlled distribution list for AP-5.43.

**Discussion:** DRI personnel did not have a copy of AP-5.43, nor were they familiar with the content in AP-5.43, prior to this audit.

#### **4.5 Environmental Training Program (ETR)**

##### **4.5.1 Overview**

The purpose of this protocol was to evaluate the DRI's Environmental Training Program to determine if training was provided to Participant employees in accordance with the policies and procedures of YMP/91-27, YMP Training Management Plan (Appendix B5). The following operation instructions were also used as a basis to determine training requirements for this audit protocol:

- YMP-Field Operations Instruction (FOI)-3001, Yucca Mountain Field Training Program (Appendix B6), establishes the guidelines to assure all project Participants, contractors, and sub-contractors have been appropriately trained for conducting field activities. General Employee Training (GET) and General Employee Radiological Training (GERT) shall be required for those individuals who need frequent unescorted access to perform field work. Personnel who have not completed GET/GERT shall be escorted at all times by an individual who has been trained. All project participants, contractors, sub-contractors and DOE personnel are required to comply with GET/GERT training requirements.
- YMP-FOI-4705, YMP Worksite and Area Access, Controls, and Facility Permits (Appendix B7), exists to ensure that adequate controls are established and maintained at selected YMP field work sites and areas. Such control may be required or justified for security reasons, to protect property, personal health and safety, to maintain/assure site technical integrity, and to control and/or protect environmental interests.

During the on-site phase of Audit FY93B, several DRI personnel were interviewed. Interviewees represented a cross-section of job responsibility and duty locations. All were asked to respond to checklist questions addressing the YMP environmental training program. Checklist responses indicated that each interviewee's familiarity with the YMP environmental training program was generally commensurate with their level of responsibility. That is to say, they were familiar with program elements that pertained directly to them. In some cases, however, awareness of training program requirements outside individual areas of responsibility, but pertinent to YMP overall training objectives, was lacking. This situation may be indicative of a communication deficiency between DRI organizational levels. DRI management personnel

recognized this situation, and actions were underway to improve awareness of YMP training requirements and responsibilities within DRI.

DRI personnel, including temporary and part-time employees, had completed all Initial and Recertification GET requirements. Employees are given an agenda to follow for initial training completion. The Project Director/Program Manager receives notification of the due date for employee Recertification training, and that notification, along with a study guide, is provided to the employee who is then responsible to individually schedule the training.

DRI was also in compliance with the provisions of YMP-FOI-4705. DRI personnel were aware of their responsibility to log on/off the project site each day and did so. In addition, measures have been taken to ensure that DRI archaeological sites are not disturbed, visitors are escorted, areas are flagged or roped off, and all site hazards are identified. DRI provided an informative tour and overview of the Alice Hill archaeological data recovery operations for the Audit Team.

APPENDIX A

AUDIT PLAN

FOR

ENVIRONMENTAL MANAGEMENT AUDIT FY93B

OF

THE DESERT RESEARCH INSTITUTE (DRI)

AT THE

YUCCA MOUNTAIN SITE  
CHARACTERIZATION PROJECT

This page intentionally left blank

91193 4133

AUDIT PLAN  
FOR THE  
ENVIRONMENTAL MANAGEMENT AUDIT  
OF  
DESERT RESEARCH INSTITUTE (DRI)  
AT THE  
YUCCA MOUNTAIN SITE  
CHARACTERIZATION PROJECT  
JUNE 1993

5

This page intentionally left blank

1000

06116

2

## 1.0

## INTRODUCTION

The Yucca Mountain Site Characterization Project Office (YMPO) Project and Operations Control Division (POCD) is responsible for Yucca Mountain Site Characterization Project (YMP) activities being performed in compliance with applicable environmental requirements and permit conditions. To insure that YMP activities are undertaken and conducted in an environmentally sound manner, the Technical and Management Support Services (T&MSS) Environmental Compliance and Permitting Department (ECPD) has been tasked by the POCD Director to conduct environmental audits of YMP Participant organizations and activities.

The objective of the environmental audit program is to evaluate and improve the environmental compliance status of YMP Participants and to reflect the responsibility of Participants for conducting operations in an environmentally safe and sound manner. The Desert Research Institute (DRI) is the subject of Environmental Audit FY93B under this program. DRI, a part of the University of Nevada System, has contracted through the U.S. Department of Energy (DOE) to conduct the YMP archaeological studies.

The environmental audit shall be conducted in accordance with the requirements of the Environmental Regulatory Compliance Plan (ERCP) (DOE/RW-0209), Section 4.4, Environmental Compliance Audit Program, as implemented by Administrative Procedure (AP)-5.46, Environmental Auditing and Surveillance of Yucca Mountain Site Characterization Project Activities.

The scope of Environmental Management Audit FY93B will consist of an assessment of DRI's environmental management program to determine if the program has sufficient structure and formality to assure consistency with environmental procedures, regulations and standards associated with YMP site characterization activities. The audit will evaluate whether the Participant's environmental management program can be expected to provide the discipline and control needed to conduct their operations in a manner that limits risks to the environment and protects the public health. An appropriate structure and formality is implicit within a set of DOE environmental management performance objectives and criteria (POC) that are designed to insure that the conduct of operations by the DOE and its contractors are in compliance with the letter and spirit of applicable environmental statutes, regulations, standards, and DOE orders. The audit scope will include, but not be limited to, the following areas: 1) performance objectives and criteria for environmental management; 2) identification and resolution of concerns that may represent a near-term threat to the public health or environment; 3) environmental protection efforts in the performance of field activities; 4) the implementation and effectiveness of DRI's environmental training program; and 5) the reporting and processing of operations information pertinent to the YMP environmental programs.

## 2.0

## AUDIT TEAM COMPOSITION AND RESPONSIBILITIES

The DRI Environmental Management Audit (FY93B) will be conducted by an audit team (AT) comprised of an Audit Team Leader (ATL), a Technical Coordinator, and technical specialists from the T&MSS ECPD.

The ATL will manage the team and serve as the primary contact point with the POCD, the ECPD, and DRI. The ATL is responsible for audit team organization, staffing, and support as necessary to ensure that the audit report is accurate, objective, and thorough. The ATL, with help from the Technical Coordinator, will provide overall policy guidance to the audit team and will be responsible for the detailed technical conduct and results of the audit. The Team Leader will act as liaison with DRI contacts for administrative matters such as meetings, facilities, safety, and security. The ATL is also responsible for review of daily reports, agenda revisions, staff supervision, records maintenance, audit report production, and audit closeout activities.

The Technical Coordinator will be an experienced, technically qualified, senior environmental staff member. The coordinator will manage and direct the technical efforts of the audit team members in close coordination with the Team Leader.

The core membership of the audit team will be comprised of ECPD technical specialists. Team members will be knowledgeable of contemporary environmental issues, techniques, statutes, regulations, and YMPO regulations and administrative procedures for matters pertinent to their technical disciplines or specialty areas. The names of AT members and their primary responsibilities are listed below:

<u>NAME</u>	<u>DISCIPLINE</u>
Sid Dodd	Audit Team Leader
Greg Fasano	Technical Coordinator
Bob Blakely	Performance Objectives and Criteria for Environmental Management
Asha Kalia	Resolutions of Environment, Safety and Health Concerns
Bob Thompson	Reporting and Processing Operations Information
Kathy Jensen	Environmental Safety and Health Protection Program of U.S. Department of Energy Operations
Debbie Springer	Environmental Training Program

Administrative support will be provided by ECPD administrative staff specialists.

### 3.0 AUDIT PHASES

For planning and execution purposes, audits may be conveniently divided into three phases: pre-audit, audit, and post-audit. The following sections describe the administrative

and technical activities which are planned to occur in the pre-audit, audit, and post-audit phases of this environmental management audit of DRI.

### **3.1            Pre-Audit Activities**

Pre-audit activities for the DRI FY93B environmental management audit include the following:

- Notice of the audit is provided to the Site Manager.
- Notice of the audit is provided to DRI.
- A pre-audit meeting is conducted.
- Audit information is reviewed, the audit plan is finalized, and an audit agenda is developed.
- The audit agenda and a request for counterparts is forwarded to DRI.
- Environmental management audit training for AT technical specialists is conducted.

The pre-audit meeting will be attended by the Audit Team Leader, Technical Coordinator, and Audit Team members. The purpose of the meeting is to: introduce the audit team; brief DRI personnel on the purpose and scope of the environmental management audit effort; become familiar with DRI management and operation; request information, as required; and coordinate plans for the audit with DRI.

The Audit Team Leader, with concurrence of the ECPD Manager and POCD Director, may make modifications to the audit team composition, the audit plan, and/or the audit checklist based on information obtained or observations during the pre-audit phase.

### **3.2            Audit Activities**

#### **3.2.1          Introductory Briefing**

The Audit Team Leader will begin the environmental management audit with an introductory briefing. The briefing will present the goals and objectives of the audit, explain planned activities, and review the daily agenda and applicable procedures. It is anticipated that DRI personnel will present an overview of their organization, operations, and environmental programs.

#### **3.2.2          Reporting Near-Term Threats to Public Health or the Environment**

Any acute condition or situation which is or could soon become dangerous to site personnel, the general public, or the environment is generally referred to as a "near-term threat". The Team Leader will be immediately notified if, during the audit phase, the AT

discovers any operation or activity at the site that poses a near-term threat to workers, public health or the environment, or represents a gross violation of regulatory requirements. The Team Leader will then notify DRI, the Site Manager, the ECPD manager, and the POCD Director.

### **3.2.3 Meetings**

The Audit Team Leader will conduct daily caucus sessions with the AT. These caucus sessions are for the benefit of the auditors to exchange information, review team observations, discuss potential findings, identify problem areas, and to make adjustments to the daily agenda. Caucus sessions will help ensure the progress of the audit plan and permit modification or redirection of the plan, as appropriate. These meetings will also serve to validate the factual accuracy of observations and potential report findings prior to the end of the audit phase.

A daily debriefing for the benefit of the audited organization will be conducted and will be open to appropriate DRI personnel. These personnel may interact with AT members during discussion of issues and potential findings to help insure the technical accuracy of the information being used to develop the potential findings.

### **3.2.4 Working Papers and Records**

Each team member will develop a logbook and maintain comprehensive, organized, and coherent working papers to describe information gathered, how it was gathered (e.g., observations, interviews, document reviews), the sources of information, and any other data necessary to support findings contained in the report. During an examination of a logbook, it should be clear by whom, when, and by what manner results were obtained. The working papers will be developed as official records. Use of the logbooks will begin concurrently with the team member's participation in the audit. The logbooks should be reasonably understandable and useful should someone other than the preparer review them. At the close of each day, the audit team member will sign and date the logbook after the last entry.

The following items will be developed or updated as part of the environmental management audit records:

- Daily agenda
- Meeting notes and attendance sheets
- List of interviews
- List of documents reviewed
- Daily activities report
- Problems encountered on a daily basis

### 3.2.5 Audit Checklists

Checklists have been developed to help ensure that all aspects of a particular procedure or subject area are adequately covered (Appendix B). The response section of each checklist item has a "not applicable (N/A)" check-off option. When the N/A response is checked, it indicates that the audited organization, DRI, is not directly responsible for the accomplishment of the action. The checklists will be used as a guide by the auditors to assess adherence to procedural, regulatory, and best management practices and to identify areas of non-conformance.

### 3.2.6 Audit Findings

The audit team will identify findings that fall into three general categories: best management practice (BMP) findings, compliance findings, and noteworthy practice findings.

BMP findings are conditions where, in the absence of regulatory requirements and in the professional judgment of the team specialist, Team Leader, and Technical Coordinator, management practices could be improved. In this audit, BMP findings will typically result from shortcomings in the structure or formality of environmental management programmatic controls as delineated in DOE's performance objectives and criteria.

Compliance findings are conditions that, in the judgement of the audit team, may not satisfy federal or state environmental regulations, applicable DOE Orders, YMP procedures, or site policies/procedures.

The third type of finding is a Noteworthy Practice Finding (NPF). This is a condition or finding that, in the judgment of the audit team, is noteworthy and may have application to other YMP activities or participants.

The findings will be presented in sections of the audit report specific to each audited area. The findings in each area will not necessarily be arranged in order of relative significance.

In addition to identifying findings, AT members will identify and document probable causal factors for each finding. Probable causal factors are those underlying reasons why findings occur or may continue to occur, and if addressed, should eliminate the findings in the future. Root causes will not be identified in the audit report. DRI will be required to further evaluate each finding and associated causal factors to determine root cause, which should be addressed in their corrective action plan.

A variety of information will be obtained by the AT member for a potential finding. These information elements include:

- The specific nature of the problem, issue, condition, or practice.
- A detailed location, if appropriate.

- The framework or perspective within which the problem or practice exists.
- The regulatory standard or procedure not being satisfied.
- Supporting information describing the problem or practice, or events leading to the problem.
- Information on whether DRI is aware of the issue and actions being taken to address the problem or practice.
- Information on how the AT member learned of the problem or practice.

The individual team member will discuss the information elements and the potential finding with the Audit Team Leader, Technical Coordinator, and other team members. It will be jointly determined whether or not the information constitutes a finding, and whether additional information should be obtained. Development and validation of a finding is an interactive process which should result in a well-documented, defensible finding statement. It should be noted that the existence of a planned or in progress corrective action does not eliminate the basis for a finding, but will be fully described in the finding discussion.

All findings will undergo one or more reviews by the Team Leader and Technical Coordinator. The Team Leader may request that team members review findings other than their own if they are knowledgeable in another area. The purpose of these reviews is to ensure that the findings are technically accurate and complete, the format is correct, and that they are clear, concise, and grammatically correct before they are incorporated in the audit report.

### **3.2.7 Technical Accuracy Review**

To the extent possible, all potential findings developed by the audit team will undergo a technical accuracy review before the on-site closeout of the audit. This review may be accomplished by having appropriate DRI personnel review findings and provide comments, and/or through meetings of the technical specialist, the ATL and Technical Coordinator, and DRI personnel knowledgeable about the findings under review to obtain verbal comments.

### **3.2.8 Closeout Meeting**

A formal closeout meeting at the conclusion of the audit phase will be conducted by the Team Leader. Meeting attendees will include the Team Leader, Technical Coordinator, audit team members, and appropriate personnel from DRI.

The purpose of the closeout meeting is to provide an overview of the audit process and discuss tentative results of the audit. The Team Leader will also provide a schedule of post-audit activities to the audited organization.

### **3.3            Post-Audit Phase**

#### **3.3.1           Briefing**

As soon as possible after the audit closeout, the POCD Director, the T&MSS Assistant Project Manager (APM) for Environmental and Regional Programs, and the T&MSS ECPD Manager will be provided a briefing on the audit and findings.

#### **3.3.2           Audit Report Preparation**

The Audit Team Leader, assisted by the Technical Coordinator and audit team members will complete the audit report following the audit closeout meeting. The audit report format will be as shown in Appendix B.

#### **3.3.3           Audit Report Review and Approval**

The audit report will be provided to the T&MSS ECPD Manager for review and approval. On completion of the ECPD Manager's review/approval process, the audit report will be forwarded to the POCD Director for final review and approval.

#### **3.3.4           Corrective Action Plan**

The POCD Director will transmit the approved audit report to the DRI Technical Project Officer (TPO) and formally request the development of a corrective action plan to address the audit findings. The TPO or designee will direct the preparation of the corrective action plan by DRI personnel. When complete, the TPO will submit the plan to the POCD Director for approval. The TPO will be responsible for ensuring implementation of the approved corrective action plan and for tracking DRI adherence to the plan and any other activities undertaken to address the audit findings.

#### **3.3.5           Corrective Action Verification and Audit Close**

Verification of the completion of corrective actions will be documented by the Audit Team Leader and a written report closing the audit will be submitted by the Team Leader to the POCD Director.

### **4.0            RECORDS**

There are no quality assurance records generated as a result of this audit. Copies of the audit report, correspondence, logbooks, and all other documents generated by pre-audit, audit, and post-audit activities will be kept to document this audit and will comprise the audit administrative record file. This administrative record file will be submitted to the Las Vegas Local Records Center by the ECPD to be forwarded to the Central Records Facility.<sup>1</sup>

119611

APPENDIX A  
EXAMPLE OF TABLE OF CONTENTS  
FOR THE  
ENVIRONMENTAL MANAGEMENT AUDIT REPORT

1 6 5 2 1  
0 6 1 1 1  
This page intentionally left blank

## TABLE OF CONTENTS

### EXECUTIVE SUMMARY

#### 1.0 INTRODUCTION

- 1.1 Oversight Responsibilities
- 1.2 Environmental Management Audit Purpose and Objectives

#### 2.0 SITE LOCATION AND DESCRIPTION

- 2.1 Site Location
- 2.2 Site Description

#### 3.0 MANAGEMENT AUDIT PROCESS

- 3.1 Audit Scope
- 3.2 Audit Schedule
- 3.3 Team Composition
- 3.4 Audit Techniques
- 3.5 Findings
- 3.6 Meetings
- 3.7 Working Papers and Records
- 3.8 Post-Audit Activities

#### 4.0 ENVIRONMENTAL MANAGEMENT AUDIT FINDINGS

- 4.1 Performance Objectives and Criteria for Environmental Management
  - 4.1.1 Overview
  - 4.1.2 Findings
- 4.2 Resolutions of Environment, Safety and Health Concerns
  - 4.2.1 Overview
  - 4.2.2 Findings
- 4.3 Reporting and Processing Operations Information
  - 4.3.1 Overview
  - 4.3.2 Findings
- 4.4 Environmental Safety and Health Protection Program of U.S. Department of Energy Operations
  - 4.4.1 Overview
  - 4.4.2 Findings
- 4.5 Environmental Training Program
  - 4.5.1 Overview

4.5.2 Findings

APPENDICES

- A Audit Plan
- B Environmental Plans and Procedures
- C Audit Schedules
- D Biographical Sketches of Audit Team Personnel
- E List of Audit Team Contacts/Interviews
- F List of Documents Reviewed by the Audit Team

ACRONYMS

APPENDIX B  
CHECKLISTS FOR THE  
ENVIRONMENTAL MANAGEMENT AUDIT  
OF  
THE DESERT RESEARCH INSTITUTE (DRI)  
AT THE  
YUCCA MOUNTAIN SITE  
CHARACTERIZATION PROJECT  
JUNE 1993

11197  
This page intentionally left blank

## ENVIRONMENTAL MANAGEMENT AUDIT CHECKLIST

### Performance Objectives and Criteria For Environmental Management

Formality of Environmental Programs: Environmental protection activities should be conducted in accordance with formal programs supported by controlled documentation.

1. Are environmental protection programs defined in formal policies, standards, and procedures?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

2. Is there a formal system to translate YMP procedures into DRI internal policies, standards, and procedures?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

3. Is there a system in place to verify that procedures for any DRI activities that might impact the environment contain environmental protection sections?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

### ENVIRONMENTAL MANAGEMENT AUDIT CHECKLIST

4. Is there a review system in place to ensure that procedures address all activities necessary to implement environmental policies, that the procedures are technically correct and current, and that the procedures have a level of detail appropriate to DRI YMP activities?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

5. Are DRI's policies and procedures part of a formal document control system?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

6. Are DRI's environmental procedures and standards issued from an organizational level with the authority to mandate implementation?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

7. Does DRI's document control system ensure that personnel have access to the current versions of environmental procedures and requirements?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

## ENVIRONMENTAL MANAGEMENT AUDIT CHECKLIST

Organizational Structure: The organizational structure should be established in such a manner that the functions, responsibilities, and authorities for environmental protection programs are clearly defined. Both oversight roles and line management responsibilities should be accommodated.

8. Are organizational responsibility, authority, and accountability for environmental protection programs defined in formal documents such as organizational charts, policy manuals, quality assurance manuals, mission statements, and unit charters?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

9. Are responsibility, authority, and accountability for the implementation of environmental protection programs assigned to all of the line-organization units?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

10. Has an environmental coordinator or support group been established with responsibility for defining DRI YMP activity-wide standards, oversight, and technical support for line organizations?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

### ENVIRONMENTAL MANAGEMENT AUDIT CHECKLIST

11. Are functional relationships between the environmental coordinator or support group and the line units formally defined and understood?

YES\_\_\_ NO\_\_\_ N/A\_\_\_

REMARKS:

12. Does the environmental coordinator or support group charged with responsibility for environmental oversight and the development of internal standards have sufficient independence and management support to implement their responsibilities?

YES\_\_\_ NO\_\_\_ N/A\_\_\_

REMARKS:

13. Is authority to make decisions related to environmental protection, including stop-work authority, assigned to the organizational levels that can provide the most timely response to mitigate potentially adverse impacts?

YES\_\_\_ NO\_\_\_ N/A\_\_\_

REMARKS:

14. Is there a formal mechanism for reporting environmental concerns and unresolved issues to higher levels of management?

YES\_\_\_ NO\_\_\_ N/A\_\_\_

REMARKS:

### ENVIRONMENTAL MANAGEMENT AUDIT CHECKLIST

15. Do the line and support organizational units understand and accept their respective roles and do they work in a cooperative relationship?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

16. Is the effectiveness of the environmental organizational structure periodically subjected to a formal review and are revisions made when warranted?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

## ENVIRONMENTAL MANAGEMENT AUDIT CHECKLIST

Culture and Attitude: The organization should exhibit a positive attitude and a culture committed to environmental excellence.

17. Does DRI have a formal statement of policy that places priority for environment, safety, and health above mission?

YES\_\_\_\_ NO\_\_\_\_ N/A\_\_\_\_

REMARKS:

18. Have managers at all levels formally stated their commitment to environmental excellence?

YES\_\_\_\_ NO\_\_\_\_ N/A\_\_\_\_

REMARKS:

19. During interviews, have both management and staff demonstrated an understanding and acceptance of the importance of environmental protection?

YES\_\_\_\_ NO\_\_\_\_ N/A\_\_\_\_

REMARKS:

20. Do individuals demonstrate a recognition of the environmental aspects of their job responsibilities?

YES\_\_\_\_ NO\_\_\_\_ N/A\_\_\_\_

REMARKS:

### ENVIRONMENTAL MANAGEMENT AUDIT CHECKLIST

21. Do individuals demonstrate a sense of "ownership" of environmental protection?

YES\_\_\_\_ NO\_\_\_\_ N/A\_\_\_\_

REMARKS:

22. Are managers at all levels personally involved with and participate directly in environmental protection activities (e.g., audits and self-assessments, write and review procedures, serve on ES&H advisory committees)?

YES\_\_\_\_ NO\_\_\_\_ N/A\_\_\_\_

REMARKS:

23. Is environmental protection an integral part of the budget and planning process?

YES\_\_\_\_ NO\_\_\_\_ N/A\_\_\_\_

REMARKS:

24. Is there a positive, open, and cooperative relationship between line and oversight groups?

YES\_\_\_\_ NO\_\_\_\_ N/A\_\_\_\_

REMARKS:

ENVIRONMENTAL MANAGEMENT AUDIT CHECKLIST

25. Does management encourage and readily accept input on environmental issues from all employees?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

26. Are management and staff fully cooperative and open with internal and external oversight groups?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

27. Is environmental compliance considered the minimum acceptable standard?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

ENVIRONMENTAL MANAGEMENT AUDIT CHECKLIST

Occurrence Reporting and Processing of Operations Information  
Administrative Procedure (AP)-2.9

Facility Occurrence Procedure Implementation

1. Has the DRI Technical Project Officer (TPO) or Yucca Mountain Site Characterization Project (YMP) Site Manager (SM) identified facilities or groups of facilities for occurrence reporting procedure implementation?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

Remarks:

2. Has a facility manager (FM) for each identified facility or group been designated by the TPO/SM?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

3. Has the YMP Project Manager (PM) been notified of these designations?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

4. Has the YMP PM designated a Department of Energy (DOE) Facility Representative (FR) for each facility or group?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

AP-2.9 AUDIT CHECKLIST (page 2 continued)

5. Has the YMP PM notified the DOE/Nevada Operations Office (NV) Emergency Preparedness Branch of the FM and DOE FR designations?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

6. Have any unique and specific requirements that apply to the facilities been defined by the FM?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

7. Has the FM prepared an internal occurrence reporting procedure for the facility to implement compliance with AP-2.9?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

8. Has the FM forwarded the procedure to the SM/FR for review and acceptance?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

9. Have the SM/FR reviewed and accepted the internal occurrence reporting procedures?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

AP-2.9 AUDIT CHECKLIST (page 3 continued)

REMARKS:

10. Have all personnel who use the facility been trained by the FM on the proper implementation of the internal occurrence reporting procedure?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

11. Has the FM implemented the internal occurrence reporting procedure?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

12. Has the FM distributed copies of the internal occurrence reporting procedures to the DOE/NV Emergency Preparedness Branch, the YMP PM, and the DOE FR?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

Reportable Occurrence Handling

(Note: Each reportable occurrence should be evaluated against the following checklist items)

13. Were all reportable occurrences that involved DRI reported to the Field Operation Center (FOC) regardless of geographic location?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

AP-2.9 AUDIT CHECKLIST (page 4 continued)

REMARKS:

14. For occurrences that adversely affected the environment, did the YMP PM/SM notify the Project Operations and Control Division (POCD) Director?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

15. Were reportable occurrences detected by DRI personnel reported to the FM and the appropriate DOE FR?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

16. When a reportable occurrence was detected, did DRI personnel take mitigation measures dictated by the circumstances?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

17. Was the initial occurrence reported to the FOC/FR?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

AP-2.9 AUDIT CHECKLIST (page 5 continued)

REMARKS:

18. Were significant changes, if any, reported to the FOC/FR?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

19. Did the DRI FM perform preliminary occurrence categorization in accordance with DOE Order 5000.3A?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

20. If the occurrence involved environmental subjects, did the FM contact the POCD for assistance in categorization?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

21. Were emergency occurrences categorized within two hours of occurrence?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

22. If categorized as an emergency, did the FM complete the notification process within fifteen minutes of categorization as required by DOE Order 5000.3A?

AP-2.9 AUDIT CHECKLIST (page 6 continued)

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

23. If categorized as an unusual occurrence, did the FM complete the notification process within two hours of categorization as required by DOE Order 5000.3A?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

24. If categorized as an off-normal occurrence, did the FM complete the notification process in writing within 24 hours of categorization as required by DOE Order 5000.3A?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

25. If applicable, did the FM make a verbal follow-up notification for each of the following conditions:

- a. Any further degradation in the level of safety, or worsening conditions, including those that required declaring an emergency action level.
- b. Any change from one categorization level to another.
- c. Termination of an emergency.

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

26. Did the FM, with the assistance of the FOC and/or the FR, establish a communication link with the SM, YMP PM, or POCD Director (as applicable)?

AP-2.9 AUDIT CHECKLIST (page 7 continued)

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

27. After establishment of a communication link, did the FM discuss the occurrence categories and confirm the reporting requirements?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

28. Did the FM (with FOC and/or FR assistance) officially notify the Office of Civilian Radioactive Waste Management (OCRWM)?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

29. Did the SM notify the DOE/NV Nevada Occurrence Reporting System Operations Center (NORSOC)?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

30. Did the FM, in accordance with applicable procedures and DOE Order 5000.3A, proceed with written occurrence reporting to include:

- a. Corrective action plans
- b. Follow-up responses
- c. Data base entry
- d. Closure

AP-2.9 AUDIT CHECKLIST (page 8 continued)

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

31. Did the TPO and/or FM record and archive all information pertaining to each occurrence?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

AP-2.9 AUDIT CHECKLIST (page 9 continued)

Reference Documents

AP-2.9, Occurrence Reporting and Processing of Operations Information

DOE Order 5484.1, Environmental Protection, Safety, and Health Protection Information Reporting Requirements

DOE Order 5000.3A, Occurrence Reporting and Processing of Operations Information

YMP Safety and Health Plan, YMP/90-37, Rev. 1.

Project Glossary, YMP/89-15

1197 4515

This page intentionally left blank

ENVIRONMENTAL MANAGEMENT AUDIT CHECKLIST

Environmental Safety and Health Protection Program  
for U.S. Department of Energy Operations  
Administrative Procedure (AP)-5.43

1. Had DRI developed and implemented environmental programs, plans, and procedures in accordance with YMP Safety and Health Plan, YMP/90-37, and/or Environmental Management Plan, YMP/93-04?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

2. Had the plans been submitted to the Project Manager?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

3. Had DRI conducted internal environmental appraisals?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

4. Was a copy of the environmental appraisal(s) sent to the Project and Operations Control Division (POCD) Director?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

AP-5.43 AUDIT CHECKLIST (page 2 continued)

References

AP-5.7, Safety and Health Compliance Inspection

AP-5.38, Safety and Health Appraisal

AP-5.43, Environmental Safety and Health Protection Program for U.S.  
Department of Energy Operations

AP-5.46, Environmental Compliance Auditing and Surveillance of  
Yucca Mountain Site Characterization Project Activities

## ENVIRONMENTAL MANAGEMENT AUDIT CHECKLIST

Resolutions of Environment, Safety and Health Concerns  
Administrative Procedure (AP)-6.18

### Initial Actions

1. If DRI personnel found questionable activities or conditions on-site at the Yucca Mountain Site Characterization Project (YMP) were they reported to the Field Operation Center (FOC)?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

2. If found at the Bank of America Center (BAC) complex (formally the Valley Bank Center), were questionable actions or conditions reported to the Yucca Mountain Site Characterization Project Office (YMPO) Safety and Health (S&H) Staff?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

3. Did the FOC, S&H Staff, or the Project Operations and Control Division (POCD) Operations Control Branch Chief (OCB), as applicable, notify the appropriate party to take action? (Note: Appropriate party is defined as one with authority to request Site Manager [SM] intervention and/or to stop questionable activities)

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

4. Did the appropriate party make a determination that the questionable activity or condition represented imminent danger?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_ (If yes, go to #5; if no, go to #18)

AP-6.18 AUDIT CHECKLIST (page 2 continued)

REMARKS:

5. Did the FOC, the S&H Staff, or OCB contact the responsible Facility Manager (FM) or DRI Technical Project Officer (TPO) and order immediate action, as appropriate, to protect lives, property, natural barriers, and the environment?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

6. Did the responsible FM/TPO take immediate action to protect lives and property, as ordered?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

7. Did the FM/TPO evaluate the activity/condition and determine the actions needed and the time required to abate the concern?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

8. Did the FM/TPO verbally report the actions taken to the appropriate party, FOC or S&H Staff, and the cognizant YMPO Division Director (DD) or Branch Chief?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

AP-6.18 AUDIT CHECKLIST (page 3 continued)

REMARKS:

9. Where normal operations were delayed for more than two hours, did the FM/TPO comply with the occurrence reporting requirements of AP-2.9, Occurrence Reporting and Processing of Operations Information?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

10. Was equipment operation or access to the hazardous area restricted by the FM/TPO using the appropriate DRI procedure or YMPO Field Operating Instruction (FOI) for posting warning signs or setting up barricades?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

11. Were the SM, cognizant YMPO Branch Chief, and other appropriate parties notified by the FM/TPO of restricted activity?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

12. When necessary, did the FM/TPO implement other appropriate actions?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

AP-6.18 AUDIT CHECKLIST (page 4 continued)

13. Was the appropriate party, FOC, or S&H Staff notified by the FM/TPO of actions taken to respond to the concern?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

14. Were notifications made and actions taken by the FM/TPO documented on a Resolution of ES&H Concerns Form?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

15. Were copies of the Resolution of ES&H Concerns form forwarded to the appropriate party, FOC, or ES&H Staff?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

16. In accordance with U.S. Department of Energy (DOE) Order 5483.1A, did an appropriate party inspect the work location(s) and verify the investigation adequacy?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

17. Did the appropriate party notify the initiator (the person who discovered the questionable activity/condition) of the response(s) to the concern and complete appropriate documentation?

AP-6.18 AUDIT CHECKLIST (page 5 continued)

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

(Note: Checklist items beginning with #18 should be used when the risk described by the initiator was evaluated by an appropriate party to be less severe than imminent danger, but one that did represent an environment, safety and health concern.)

18. Was the questionable activity investigated by an appropriate party within two working days to evaluate the initiator's concern?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

19. Did the appropriate party evaluate the questionable activity/condition as a significant risk?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_ (If yes, go to #21; if no, go to #20)

REMARKS:

20. Did the appropriate party notify the initiator verbally and in writing of the following:

- a. The concern had been investigated.
- b. No action was deemed necessary.
- c. The reason for the determination.
- d. The initiator's right to request a higher authority decision review.

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_ (If yes, go to #33)

REMARKS:

AP-6.18 AUDIT CHECKLIST (page 6 continued)

21. Did the appropriate party verbally contact the FM/TPO and request an evaluation of the initiator's concern?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

22. Did the responsible FM/TPO implement the actions addressed in checklist items 7 through 14?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

23. Did the appropriate party accomplish the actions described in checklist items 16 and 17?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

Problem Resolution

24. Was a corrective action plan developed by the responsible FM and submitted to the appropriate party (copy to SM if the questionable activity was on-site at the YMP)?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

25. Was the corrective action plan determined by the appropriate party/SM to be adequate to eliminate the risk(s)?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_ (If yes, go to #29; if no, go to #26)

AP-6.18 AUDIT CHECKLIST (page 7 continued)

REMARKS:

26. Did the responsible FM agree that the corrective action plan was inadequate?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_ (If yes, go to #30; if no, go to #27)

REMARKS:

27. Did the responsible FM escalate the decision to the responsible Division Director (DD) and inform the appropriate party/SM?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

28. Did the DD determine the corrective action plan to be adequate?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_ (If yes, go to #29; if no, go to #30)

REMARKS:

29. Was the corrective action plan implemented by the responsible FM?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

AP-6.18 AUDIT CHECKLIST (page 8 continued)

30. Were plan inadequacies corrected by the responsible FM and was the plan resubmitted to the appropriate party/SM?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_ (If yes, go to #25)

REMARKS:

31. Did the appropriate party verify that the corrective actions were effective and that long term actions to prevent similar occurrences had been initiated?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_ (If yes, go to #32; if no, go to #30)

REMARKS:

32. Did the appropriate party recommend to the responsible DD that normal activity resume?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

33. Did the DD concur with the recommendation on the resolutions of concern form, sign it, and transmit it to the SM?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

34. Did the SM approve resumption of normal activities by signing the resolutions of concerns form?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

AP-6.18 AUDIT CHECKLIST (page 9 continued)

REMARKS:

35. Did the responsible FM resume normal activities as documented by his signature in the appropriate block on the resolutions of concern form?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

This page intentionally left blank

ENVIRONMENTAL MANAGEMENT AUDIT CHECKLIST

The Desert Research Institute (DRI)  
Environmental Training Program

1. Were environmental training programs for environmental staff and other employees defined in documents such as policies and procedures?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

2. Did environmental training programs have clearly defined requirements for the preparation of training materials?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

3. Were requirements clearly established for documentation of environmental training program content?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

4. Was a process in place to evaluate and establish environmental training needs for all personnel?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

5. Are new employees given initial training in the environmental aspects of their specific areas of responsibility?

ENVIRONMENTAL TRAINING AUDIT CHECKLIST (page 2 continued)

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

6. Were training needs incorporated in professional development plans for environmental protection personnel?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

7. Was there a formal process to ensure that environmental training courses were developed at an appropriate depth and provided adequate coverage of Federal and State regulations and DOE and YMPO orders, regulations, procedures, and principles of environmental protection?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

8. Was there a formal documented process for the periodic evaluation of the effectiveness of environmental training programs?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

9. Had environmental training requirements for temporary employees, visitors, and subcontractors been established?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

ENVIRONMENTAL TRAINING AUDIT CHECKLIST (page 3 continued) C1,  
2/4/93

REMARKS:

10. Were DRI personnel aware of the resources available to them regarding environmental regulations compliance?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

11. Did personnel know who to contact with questions about environmental compliance?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

12. Did personnel know who to contact in case of a contaminant/hazardous waste release?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

13. Were personnel aware of the appropriate reporting requirements for a hazardous waste release?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

14. Were records generated and maintained for the training received by each individual?

ENVIRONMENTAL TRAINING AUDIT CHECKLIST (page 4 continued) C1,  
2/4/93

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

15. Was the system for keeping training records auditable and did it have provisions to ensure completeness and accuracy of the training records?

YES \_\_\_\_\_ NO \_\_\_\_\_ N/A \_\_\_\_\_

REMARKS:

**APPENDIX B**

**ADMINISTRATIVE PROCEDURES  
TRAINING PLAN  
FIELD OPERATIONS INSTRUCTIONS**

100  
1611  
This page intentionally left blank

APPENDIX B1

AP-2.9

OCCURRENCE REPORTING AND  
PROCESSING OF OPERATIONS  
INFORMATION

This page intentionally left blank

**YMP-054-R0 YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE**  
**DOCUMENT APPROVAL SHEET**

Title

OCCURRENCE REPORTING AND PROCESSING OF OPERATIONS INFORMATION

NO. AP-2.9

[ ] O

[X] Non O

**APPROVAL**

PROJECT MANAGER:

Carl P. Gertz

12/14/90

Signature

Date

DIRECTOR OF QUALITY ASSURANCE:

N. Voltura for D. G. Horton

12/12/90

Signature

Date

N/A

N/A

N/A

(OTHER, AS REQUIRED)

Signature

Date

REVISION 0 EFFECTIVE DATE: 12/26/90

**REVISIONS**

**INITIAL AND DATE**

REVISION 1

REVISION 2

REVISION 3

REVISION 4

PROJECT MANAGER:

*[Signature]* 7/12/92

DIRECTOR, QA:

N/A

Site Manager

*Winifred G. Wilson*

(OTHER, AS REQUIRED)

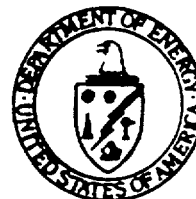
7/17/92

EFFECTIVE DATE:

7/27/92

Complete  
Revision

**INFORMATION COPY**



Page 1 of 10

TRAINING REQUIRED

☒ YES

☐ N/A

NUMBER OF DAYS REQUIRED FOR TRAINING 10

COMMENTS: self study for personnel required to maintain training on procedure.

Discussed with  
T. McCauley 7/13/92.  
7:30  
7/13/92

*[Signature]* FOR  
TRAINING OFFICER/TRAINING MANAGER

7/13/92  
DATE

OMP-06-04

YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-2.9

OCCURRENCE REPORTING AND PROCESSING OF OPERATIONS  
INFORMATION

Revision:

1

Page 2 of 10

### 1.0 PURPOSE AND SCOPE

#### 1.1 PURPOSE

This procedure assigns responsibility and provides a process for reporting occurrences and events related to all Yucca Mountain Site Characterization Project (YMP) Participants, and for processing such information to provide appropriate and timely corrective actions, in accordance with the latest revision of U.S. Department of Energy (DOE) YMP Safety and Health Plan (YMP/90-37).

#### 1.2 SCOPE

This procedure defines a system to (1) identify any and all reportable conditions and events, (2) provide for the assignment of Facility Managers (FMs) and Facility Representatives (FRs), (3) provide notice to appropriate management personnel, (4) set out a structure for decisions and actions relative to the unusual occurrence, and (5) provides for a record of unusual occurrence and all such actions.

### 2.0 APPLICABILITY

This procedure applies to all YMP offices, personnel, YMP participants, and any subcontractor or supporting personnel and facilities. YMP participants with work locations remote from Nevada (e.g., Lawrence Livermore National Laboratory, Sandia National Laboratories, Los Alamos National Laboratory, etc.) who are governed by other DOE-compliant occurrence reporting systems, will utilize their reporting systems, internal procedures, and instructions to report related YMP incidents through their channels upward. However, for the YMP, the Field Operations Center (FOC) is to be informed or notified of all occurrences.

### 3.0 DEFINITIONS

Terms in this procedure are used as defined in the YMP Safety and Health Plan, DOE Order 5000.3A, and Project Glossary. The following definitions are adopted for the purposes of this procedure.

#### 3.1 EVENT

An event is a real-time occurrence (e.g., death, or serious injury, environmental damage, pipe break, valve failure, loss of power, or loss of DOE-owned equipment).

#### 3.2 CONDITION

A condition is an occurrence which may have adverse safety, health, security, operational, or environmental implications. A condition is more

YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-2.9

OCCURRENCE REPORTING AND PROCESSING OF OPERATIONS  
INFORMATION

Revision:

1

Page 3 of 10

programmatic in nature than an event (e.g., an error in engineering analysis or calculation, an anomaly associated with design or performance, or an item indicating a weakness in the management process).

### 3.3 FACILITY

A facility is any equipment, structure, system, process, or activity that fulfills a specific purpose. Examples include the data consolidation and retrieval system, the sample management facility, and the integrated data system.

### 3.4 FACILITY REPRESENTATIVE

For each major facility or group of lesser facilities, the Facility Representative (FR) is that DOE individual assigned responsibility by the YMP Project Manager for monitoring the performance and operations of the facility. This individual shall be the primary point of contact with the contractor and will be responsible to the appropriate Program Senior Official and YMP Project Manager for implementing the requirements of this procedure. The FR may delegate these responsibilities to a designee.

### 3.5 FACILITY MANAGER

A Facility Manager (FM) is that individual, or designee, who has direct line responsibility for operation of a facility or group of related facilities, and who has authority to direct physical changes to the facility. An FM is usually, but not always, a contractor employee.

### 3.6 OCCURRENCE REPORT

An occurrence report is a written evaluation of an event or a condition. The report is prepared in sufficient detail to enable the reader to

- (1) assess the occurrence's significance, consequences, or implications; and
- (2) evaluate the actions being proposed or employed to correct the condition or avoid recurrence.

### 3.7 REPORTABLE OCCURRENCE

A reportable occurrence is an event or condition to be reported in accordance with the criteria defined in DOE Order 5000.3A.

### 3.8 EMERGENCY

An emergency is the most serious occurrence and requires an increased alert status for onsite personnel and, in specified cases, for offsite authorities. The types of occurrences that are to be categorized as emergencies are defined in DOE Order 5000.3A.

YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-2.9

OCCURRENCE REPORTING AND PROCESSING OF OPERATIONS  
INFORMATION

Revision:

1

Page 4 of 10

### 2.9 UNUSUAL OCCURRENCE

An unusual occurrence is a nonemergency occurrence that has significant impact or potential for impact on safety, environment, health, security, or operations.

### 3.10 OFF-NORMAL OCCURRENCE

An off-normal occurrence is an abnormal or unplanned event or condition that adversely affects, potentially affects, or is indicative of degradation in the safety, security, environmental, or health protection performance or operation of a facility.

### 3.11 NEVADA OCCURRENCE REPORTING SYSTEM OPERATIONS CENTER

Nevada Occurrence Reporting System Operations Center (NORSOC) is the manned operations center to which all DOE/NV occurrences are initially reported, and through which subsequent reporting requirements are facilitated.

## 4.0 RESPONSIBLE PARTIES

The following YMP individuals or organizations are responsible for activities identified in Section 5.0 of this procedure.

1. YMP Project Manager
2. Technical Project Officer (TPO)
3. DOE FR
4. FM
5. Yucca Mountain Site Manager (SM) - Nevada Test Site, Area 25
6. Yucca Mountain Site Office FOC
7. Yucca Mountain Project Office
8. Project Operations and Control Division (POCD) Director

YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-2.9

OCCURRENCE REPORTING AND PROCESSING OF OPERATIONS  
INFORMATION

Revision:

1

Page 5 of 10

### 5.0 PROCEDURE

A flowchart of the following processes described in this procedure is attached as Figure 1.

RESPONSIBLE PARTY	STEPS	PROCEDURE
-------------------	-------	-----------

#### FACILITY OCCURRENCE PROCEDURE IMPLEMENTATION

- |                     |    |   |
|---------------------|----|---|
| TPC/SM              | 1. | Identify facilities or groups of facilities. Designate an FM for each facility or group identified. Notify the YMP Project Manager of these designations.   |
| YMP Project Manager | 2. | Designate an FR for each facility or group identified in Step 1.  |
|                     | 3. | Notify the DOE/Nevada Operations Office (NV) Emergency Preparedness Branch of these designations for the listing of FMs and DOE FRs.  |
| FM                  | 4. | Define any unique and specific requirements that apply to the facilities.   |
|                     | 5. | Prepare an internal occurrence reporting procedure for the facility to implement compliance with this administrative procedure. Forward the procedures to the SM/FR for review and acceptance.  |
| SM/FR               | 6. | Review and accept the internal occurrence reporting procedures.   |
| FM                  | 7. | Train all personnel who utilize the facility on the proper implementation of the internal occurrence reporting procedure.   |
|                     | 8. | Implement the internal occurrence reporting procedures.   |
|                     | 9. | Distribute copies of the internal occurrence reporting procedures to the DOE/NV Emergency Preparedness Branch, YMP Project Manager, and FR. Forward procedures for a non-Participant (i.e., DOE) facility to the Document Control Center for distribution in accordance |

YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-2.9

OCCURRENCE REPORTING AND PROCESSING OF OPERATIONS  
INFORMATION

Revision:

1

Page 6 of 10

RESPONSIBLE PARTY

STEPS

PROCEDURE

FM

with Administrative Procedure (AP)  
AP-1.5Q, Issuance and Maintenance of  
Controlled Documents.

### REPORTABLE OCCURRENCE HANDLING

- |                        |     |  |
|------------------------|-----|--|
|                        | 10. | Report any occurrence involving YMP Participants to the FOC regardless of geographic location.   |
| YMP Project Manager/SM | 11. | Notify the PCOD Director if the occurrence adversely affects the environment.  |
| All YMP Personnel      | 12. | Take mitigation measures dictated by the circumstances when any participant individual detects a reportable occurrence and reports it to the FM and appropriate FR.  |
|                        | 13. | Verbally report the initial occurrence and any significant changes to the FOC/FR.  |
| FM                     | 14. | Perform preliminary categorization in accordance with DOE Order 5000.3A. Contact PCOD for assistance in categorization if occurrence involves environmental subjects.  |
|                        | 15. | Complete the process of notification within the following time frames, as required by DOE Order 5000.3A. If the occurrence is:<br><br>a. An emergency, notify within fifteen minutes of categorization. Categorize within two hours of the occurrence. |
- NOTE: The YMP Project Manager can declare an emergency occurrence at YMP.
- b. An unusual occurrence, notify within two hours of categorization.

YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-2.9

OCCURRENCE REPORTING AND PROCESSING OF OPERATIONS  
INFORMATION

Revision:

1

Page 7 of 10

RESPONSIBLE PARTY

STEPS

PROCEDURE

FM

c. An off-normal occurrence, notify in writing within 24 hours of categorization.

16. Make a follow-up verbal notification for each of the following conditions:

a. Any further degradation in the level of safety, or worsening conditions, including those that require declaring an emergency action level.

b. Any change from one categorization level to another.

c. Termination of an emergency.

FM with the assistance  
of FOC and/or FR

17. Establish a communication link (verbal, if possible) with the SM or YMP Project Manager, POCD Director (as applicable).

NOTE: The FOC will notify the SM.

18. Discuss the occurrence categories and confirm the Reporting requirements.

19. Officially notify Office of Civilian Radioactive Waste Management.

SM

20. Notify the DOE/NV NORSOC.

FM

21. Proceed with written occurrence reporting, including corrective action, action plans, follow-up responses, data base entry, and closure in accordance with applicable procedures and DOE Order 5000.3A.

TPO and/or FM

22. Record and archive all information pertaining to such occurrences.

YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-2.9

OCCURRENCE REPORTING AND PROCESSING OF OPERATIONS  
INFORMATION

Revision:

1

Page 8 of 10

### 6.0 REFERENCES

Refer to the latest revision of the documents listed below unless otherwise stated.

#### 6.1 REFERENCE DOCUMENTS

DOE Order 5000.3A, Occurrence Reporting and Processing of Operation Information

DOE Order 5484.1, Environmental Protection, Safety, and Health Protection Information Reporting Requirements

NV Order 5000.3A, Occurrence Reporting and Processing of Operations Information

YMP Safety and Health Plan, YMP/90-37, Rev. 1

#### 6.2 INTERFACE DOCUMENTS

Project Glossary, YMP/89-15

AP-1.5Q, Issuance and Maintenance of Controlled Documents

### 7.0 FIGURES AND ATTACHMENTS

Figure 1, AP-2.9 Flowchart

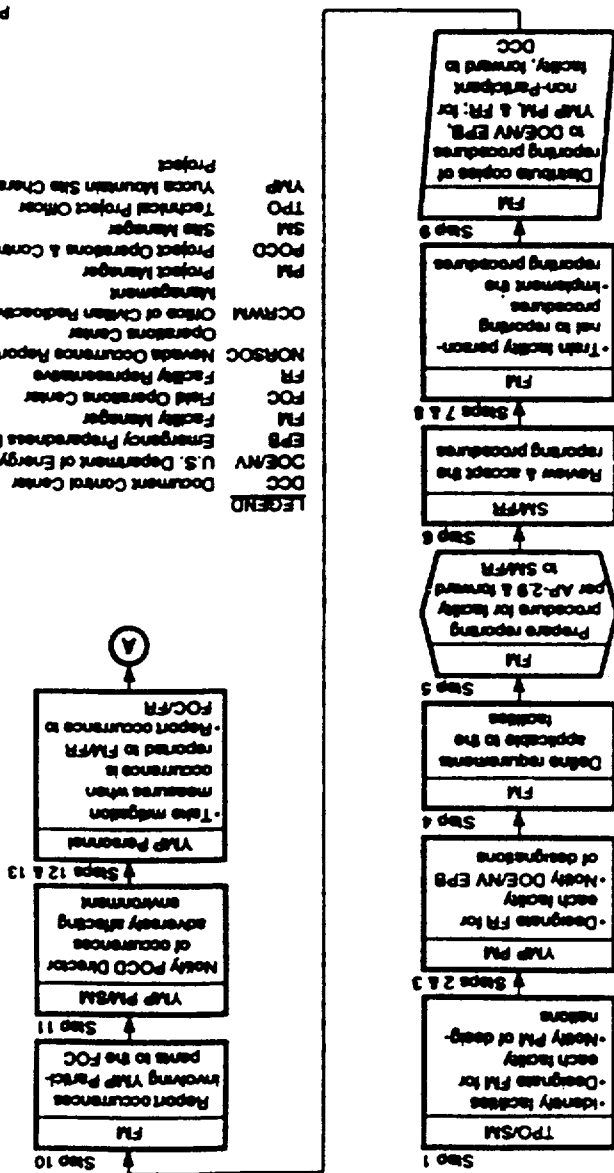
### 8.0 RECORDS

Records are retained in the NORSOC system.

Figure 1 - AP-2.9 Flowchart

Page 1 of 2  
AP-2.9 0804-22-92

**LEGEND**  
DCC Document Control Center  
DOE/NV U.S. Department of Energy/Nevada  
EPB Emergency Preparedness Branch  
FMI Facility Manager  
FOC Field Operations Center  
FR Facility Representative  
NORSOC Nevada Occurrence Reporting System  
OCCRMV Office of Civilian Radioactive Waste Management  
PML Project Manager  
POCD Project Operations & Control Division  
SMI Site Manager  
TPO Technical Project Officer  
YMP Yucca Mountain Site Characterization Project



# YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-2.9

OCCURRENCE REPORTING AND PROCESSING OF OPERATIONS  
INFORMATION

Revision:  
1

Page 10 of 10

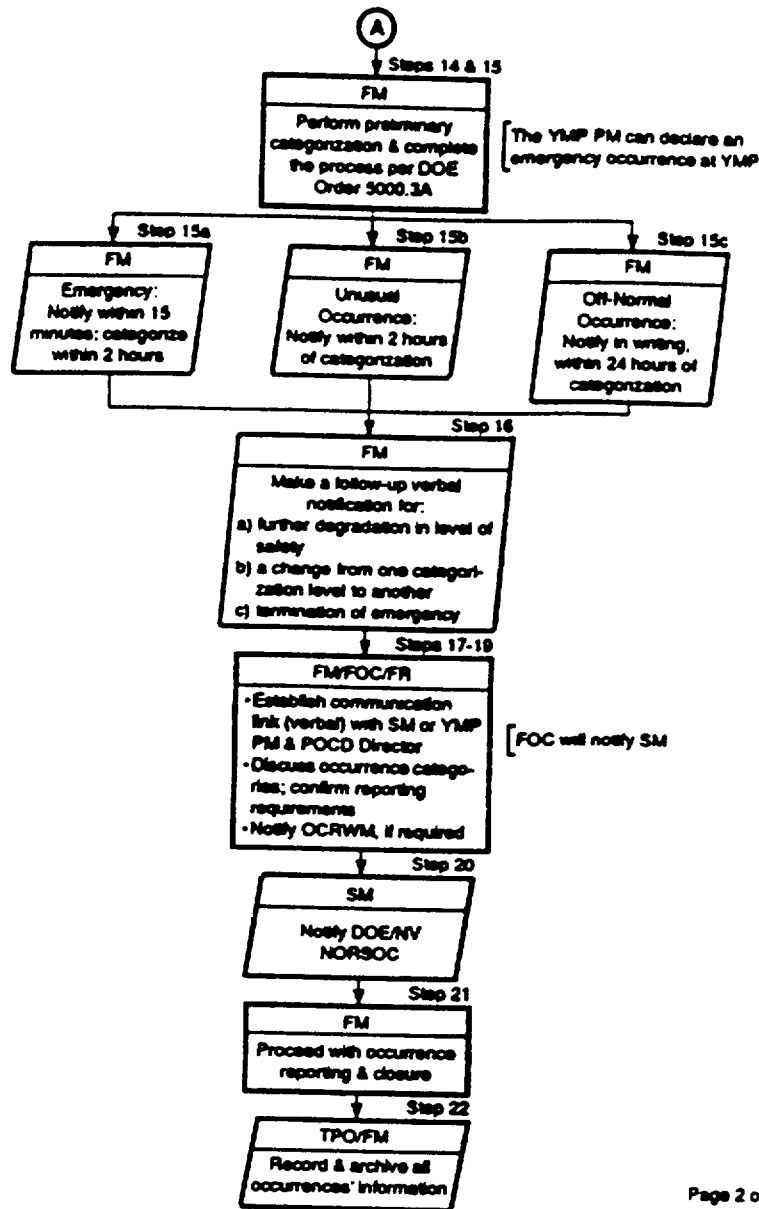


Figure 1 - AP-2.9 Flowchart (continued)

APPENDIX B2

AP-5.43

ENVIRONMENTAL SAFETY AND HEALTH  
PROTECTION PROGRAM FOR U.S.  
DEPARTMENT OF ENERGY OPERATIONS

11190  
This page intentionally left blank

**YMP-054-R0 YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE  
7/12/91 DOCUMENT APPROVAL SHEET**

<b>Title</b> ENVIRONMENTAL SAFETY AND HEALTH PROTECTION PROGRAM FOR U.S. DEPARTMENT OF ENERGY OPERATIONS	<b>NO.</b> AP-5.43 ( ) O X Non O
--	--

APPROVAL

N/A

N/A

PROJECT MANAGER:

Signature

Date

N/A

N/A

DIRECTOR OF QUALITY ASSURANCE:

S & H Compliance Manager :

Signature

Date

EOC Manager

(OTHER, AS REQUIRED)

Signature

Date

REVISION 0 EFFECTIVE DATE: 9/22/92

REVISIONS

INITIAL AND DATE

REVISION 1

REVISION 2

REVISION 3

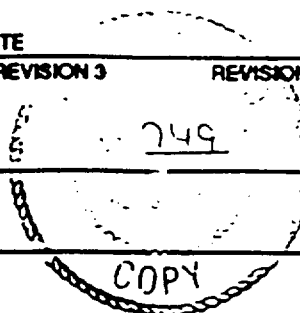
REVISION 4

PROJECT MANAGER:

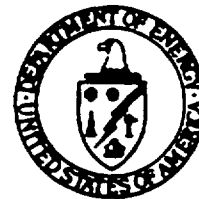
DIRECTOR, QA:

(OTHER, AS REQUIRED)

EFFECTIVE DATE:



INFORMATION COPY



YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-5.43

ENVIRONMENTAL SAFETY AND HEALTH PROTECTION  
PROGRAM FOR U.S. DEPARTMENT OF ENERGY OPERATIONS

Revision:

0

Page 2 of 5

### 1.0 PURPOSE AND SCOPE

#### 1.1 PURPOSE

The purpose of this procedure is to develop steps to ensure the coordination of the environment, safety and health efforts at the Yucca Mountain Site Characterization Project (YMP) work sites and to maintain the safety and well being of YMP employees and the general public, consistent with the guidance provided in the YMP Safety and Health Plan, (YMP/90-37) and the Environmental Management Plan (YMP/CC-0006).

#### 1.2 SCOPE

The scope of this procedure is designed to ensure that YMP participants develop and implement environment, safety and health programs.

### 2.0 APPLICABILITY

This procedure applies to all YMP participant organizations and their employees.

### 3.0 DEFINITIONS

Terms in this procedure are used as defined in the Project Glossary, YMP/89-15. The following additional definitions are adopted for purposes of this procedure.

#### 3.1 SAFETY AND HEALTH PROTECTION PROGRAM FOR U.S. DEPARTMENT OF ENERGY OPERATIONS

The Safety and Health Protection Program for U.S. Department of Energy (DOE) Operations is an organized set of activities performed as independent functions. Its purpose is to ensure that all aspects of safety and health-related activities at the program, project and contractor level are addressed. It encompasses those requirements, activities, and functions in the conduct of all operations that are concerned with:

- a. limiting the risk to the well being of both operating personnel and the general public, and
- b. protecting property against accidental loss and damage.

#### 3.2 SAFETY AND HEALTH IMPLEMENTATION PLAN

The Safety and Health Implementation Plan is a concise description of the approach, resources, and time period planned for implementing DOE Orders that include a description of the execution of safety and health protection, safety and health responsibilities and authorities.

YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-5.43  
ENVIRONMENTAL SAFETY AND HEALTH PROTECTION  
PROGRAM FOR U.S. DEPARTMENT OF ENERGY OPERATIONS

Revision:  
0

Page 3 of 3

### 3.2 ENVIRONMENTAL PROGRAM

The Environmental Program is an organized set of activities to ensure that facilities are operated and managed in a manner that will protect, maintain, and restore environmental quality, minimize potential threats to the environment, and comply with environmental regulations and DOE policies.

### 4.0 RESPONSIBLE PARTIES

The following YMP individuals or organizations are responsible for activities identified in Section 5.0 of this procedure.

1. Project Manager (PM)
2. YMP participants
3. U.S. Department of Energy (DOE) Safety and Health (S&H) Staff
4. Director, Project and Operations Control Division (POCD)
5. Technical and Management Support Services (T&MSS) Environmental Compliance and Permitting Department (ECPD)

### 5.0 PROCEDURE

A flowchart of the following processes described in this procedure is attached as Figure 1.

<u>RESPONSIBLE PARTY</u>	<u>STEPS</u>	<u>PROCEDURE</u>
PM	1.	Ensure that YMP participants develop and implement environmental, safety and health programs.
Director, POCD	2.	Prepare Administrative Procedures (APs) and other directives for the Environmental Program.
YMP Participants	3.	Develop and implement environment, safety and health programs, plans and procedures in accordance with YMP Safety and Health Plan, YMP/90-37 and/or Environmental Management Plan, YMP/CC-0006; submit plan to PM.

YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No AP-5.43

ENVIRONMENTAL SAFETY AND HEALTH PROTECTION  
PROGRAM FOR U.S. DEPARTMENT OF ENERGY OPERATIONS

Revision:

0

Page 4 of 5

### RESPONSIBLE PARTY

### STEPS

### PROCEDURE

YMP Participants

4. Conduct internal environment, safety and health appraisals. Prepare written reports and send to PM. Send a copy of safety and health appraisals to DCE S&H. Send a copy of environmental appraisals to Director, PCOD.

Director, PCOD/DCE/S&H

5. Conduct appraisals of environmental, safety and health programs, plans, and facilities. Provide overview of environmental safety and health activities.

ECOD

6. Perform environmental audits and surveillances.

## 6.0 REFERENCES

Refer to the latest revision of the documents listed below unless otherwise stated.

### 6.1 REQUIREMENTS DOCUMENTS

YMP Safety and Health Plan, YMP/90-37

Environmental Management Plan, YMP/CC-0006

### 6.2 INTERFACE DOCUMENTS

AP-5.7, Safety and Health Compliance Inspection

AP-5.38, Safety and Health Appraisal

AP-5.46, Environmental Compliance Auditing and Surveillance of Yucca Mountain Site Characterization Project Activities

## 7.0 FIGURES AND ATTACHMENTS

Figure 1, AP-5.43 Flowchart

## 8.0 RECORDS

There are no Quality Assurance records generated as a result of this procedure. All other documents generated as a result of this procedure are non-record documents.

YMP-053-R0  
7/12/94

# YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

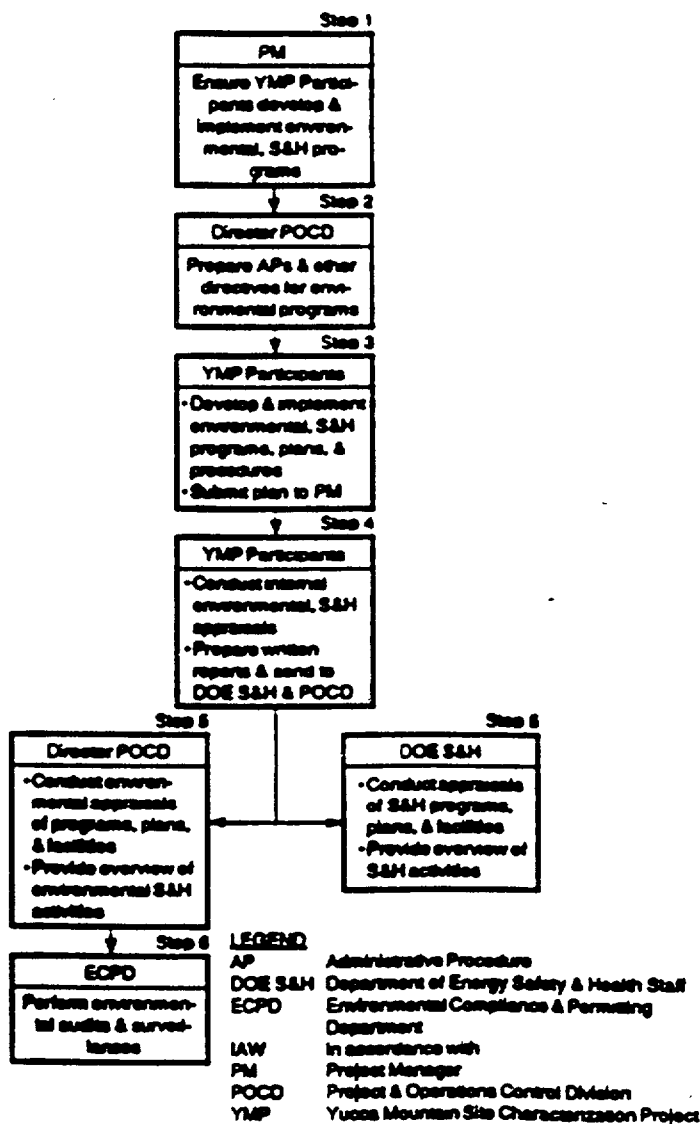
Procedure No.: AP-5.43

ENVIRONMENTAL SAFETY AND HEALTH PROTECTION  
PROGRAM FOR U.S. DEPARTMENT OF ENERGY OPERATIONS

Revision:

0

Page 5 of 5



AP5.43.0000-17-02

Figure 1 - AP-5.43 Flowchart

11197 4551

This page intentionally left blank

6111

APPENDIX B3

AP-5.46

ENVIRONMENTAL COMPLIANCE AUDITING AND  
SURVEILLANCE OF YUCCA MOUNTAIN SITE  
CHARACTERIZATION PROJECT ACTIVITIES

01197 1615

This page intentionally left blank

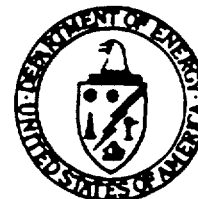
5

**YMP-054-R0 YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE  
7/12/91 DOCUMENT APPROVAL SHEET**

Title ENVIRONMENTAL COMPLIANCE AUDITING AND SURVEILLANCE OF YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT ACTIVITIES		NO. AP-5.46 [ ] O [X] Non O
PROJECT MANAGER:	<u>Robert M. Banta</u> Signature <i>For Contract</i>	<u>8/5/92</u> Date
DIRECTOR OF QUALITY ASSURANCE:	<u>N/A</u> Signature	<u>N/A</u> Date
Director P&OCD (OTHER, AS REQUIRED)	<u>[Signature]</u> Signature	<u>8-5-92</u> Date
REVISION 0 EFFECTIVE DATE:		<u>8/14/92</u>

	REVISIONS			
	REVISION 1	REVISION 2	REVISION 3	REVISION 4
PROJECT MANAGER:	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
DIRECTOR, QA:	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
<u>N/A</u> (OTHER, AS REQUIRED)	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
EFFECTIVE DATE:	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

INFORMATION COPY



Page 1 of 19

TRAINING REQUIRED ☐ YES ☒ N/A NUMBER OF DAYS REQUIRED FOR TRAINING N/A

COMMENTS: *New document, training will be afforded upon request. Per telecon with Karen Olsson. AP 8-10-92*

Gregory A. Manser for RAM  
TRAINING OFFICER/TRAINING MANAGER DATE 8/10/92

YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-5.46

ENVIRONMENTAL COMPLIANCE AUDITING AND SURVEILLANCE OF  
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT ACTIVITIES

Revision:

0

Page 2 of 13

### 1.0 PURPOSE AND SCOPE

#### 1.1 PURPOSE

The purpose of this procedure is to assign responsibilities and establish a process for the Yucca Mountain Site Characterization Project Office (YMPO) to audit and surveil Yucca Mountain Site Characterization Project (YMP) environmental compliance activities. The purpose is to ensure that YMP activities are being performed in compliance with applicable environmental regulatory, monitoring, and mitigation requirements, permit conditions and stipulations, and applicable environmental portions of YMP requirements documents.

This procedure implements the requirements of the Environmental Regulatory Compliance Plan DCE/RW-0209 (ERCP) (Section 4.4 Environmental Compliance Audit Program).

#### 1.2 SCOPE

The scope of this procedure covers all site characterization field activities and all YMP participants that are required to comply with environmental regulatory requirements. This procedure does not preclude periodic field inspections by cognizant environmental compliance specialists, nor does it relieve any worker of the responsibility to report potential environmental problems immediately.

### 2.0 APPLICABILITY

This procedure applies to all site characterization field activities performed by YMPO staff and YMP participants at the Nevada Test Site, on the YMP Right-of-Way Reservation (ROWR), and at other locations unless exempted by the Project Manager.

### 3.0 DEFINITIONS

Terms in this procedure are used as defined in the Project Glossary, YMP/89-15. The following additional definitions are adopted for the purpose of this procedure.

#### 3.1 ENVIRONMENTAL COMPLIANCE AUDIT

An Environmental Compliance Audit is the act of systematically determining the environmental status of a given facility, site, activity or field work in order to verify compliance with established requirements and determine the effectiveness of implementation.

YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-5.46

ENVIRONMENTAL COMPLIANCE AUDITING AND SURVEILLANCE OF  
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT ACTIVITIES

Revision:

0

Page 3 of 13

### 3.2 ENVIRONMENTAL COMPLIANCE SURVEILLANCE

An Environmental Compliance Surveillance is a routine, unannounced "spot check" during normal YMP activities (i.e., non-emergency event or situation). To ensure that deficient practices or conditions are not occurring. A surveillance shall be performed periodically, as determined by the Project and Operations Control Division (POCD), and may cover any or all of the items investigated during an Environmental Compliance Audit.

### 3.3 CORRECTIVE ACTION

A corrective action is a measure(s) taken to rectify conditions that are not in compliance with environmental requirements.

## 4.0 RESPONSIBLE PARTIES

The following YMP individuals or organizations are responsible for activities identified in Section 5.3 of this procedure.

1. YMPO Project and Operations Control Division (POCD)
2. Technical and Management Support Services (TMSS) Environmental Compliance and Permitting Department (ECPD)
3. Audit Team
4. Audit Team Leader (ATL) and/or Surveillance Team Leader (STL)
5. Responsible Staff Person (RSP)
6. YMP Participant Technical Project Officer (TPO)

## 5.0 PROCEDURE

A flowchart of the following processes described in this procedure is attached as Figure 1.

<u>RESPONSIBLE PARTY</u>	<u>STEPS</u>	<u>PROCEDURE</u>
--------------------------	--------------	------------------

### PREPARING FOR THE AUDIT

NOTE: An audit is formally scheduled (i.e., announced) prior to its undertaking.

POCD

1. Request ECPD to conduct an environmental compliance audit or surveillance on a

**YMP-053-R0 YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT**  
**7/12/91 PROCEDURE**

Procedure No.: AP-5.46

ENVIRONMENTAL COMPLIANCE AUDITING AND SURVEILLANCE OF  
 YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT ACTIVITIES

Revision:

1

Page 4 of 10

RESPONSIBLE PARTY

STEPS

PROCEDURE

PCOD

specific YMP activity once every six months, or as deemed necessary. If an audit is requested, proceed to Step 2. If a surveillance is requested, proceed to Step 30.

ECPD

2. Assign an ATL.

ATL

3. Review existing environmental compliance documentation pertaining to an activity or organization, including, but not limited to, the following items:

- a. Land access and environmental compliance approval for an activity received from Administrative Procedure (AP) AP-8.1, Land Access and Environmental Compliance.
- b. Environmental requirements specified in any requirements documents (e.g., APs, Hazardous Materials Management and Handling Plan (HMMHP) YMP/91-35, and ERCP) written for the activity
- c. Environmental permit conditions applicable to the activity
- d. Land access and/or RCWR conditions applicable to the activity
- e. Federal and state environmental regulations

4. Assemble an Audit Team to perform the audit.

NOTE: The qualifications of Audit Team members would vary depending on the activity and type of audit to be conducted.

5. Prepare an activity-specific audit checklist, with assistance from the Audit Team, as required. Attachment 1 provides a list of potential checklist items organized by general environmental category.

YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-5.46

Revision:

0

Page 5 of 19

ENVIRONMENTAL COMPLIANCE AUDITING AND SURVEILLANCE OF  
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT ACTIVITIES

### RESPONSIBLE PARTY

### STEPS PROCEDURE

ATL

6. Prepare an audit plan to describe the details of the proposed audit that would, at a minimum, identify the following items:

- a. Audit scope
- b. Name of activity to be audited
- c. Requirements governing the activity
- d. Organization to be audited
- e. Names of the Audit Team members
- f. Audit schedule
- g. Audit checklist
- h. Applicable documents

POCD

7. Submit the audit plan and checklist to the POCD for approval.
8. Approve the audit plan and checklist.
9. Notify the Site Manager of the proposed audit.
10. Notify the TPO of the audit and request that an RSP be named as the point-of-contact for the audit.

### CONDUCTING THE AUDIT

ATL

11. Contact the designated RSP of the activity or organization being audited to initiate the audit and request any needed assistance, including scheduling audit activities, locating people or documents, and visiting the activity job-site.
12. Supervise and coordinate the audit to be conducted by the Audit Team.

YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-5.46

ENVIRONMENTAL COMPLIANCE AUDITING AND SURVEILLANCE OF  
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT ACTIVITIES

Revision:

0

Page 6 of 13

<u>RESPONSIBLE PARTY</u>	<u>STEPS</u>	<u>PROCEDURE</u>
Audit Team	13.	Conduct the audit following approved audit plan by completing the audit checklist as instructed by the ATL.
	14.	Submit the completed checklist to the ATL for compilation.
ATL	15.	Compile the completed checklists from Audit Team Members and receive clarification from them, if necessary.
	16.	Notify the RSP, TPO, Site Manager, and POCD of any deficient practices or conditions identified.
RSP	17.	Take immediate action to resolve deficiencies, including stopping work, if necessary.
	18.	Notify ATL of immediate corrective action taken.
RSP and ATL	19.	If deficiencies warrant, initiate unusual occurrence reporting, in accordance with AP-2.9, Occurrence Reporting and Processing of Operations Information; and/or report the questionable activities or conditions, in accordance with AP-6.18, Resolutions of Environmental, Safety and Health Concerns.

### REPORTING

ATL	20.	Document audit results in a report that contains, as a minimum, the following elements: <ul style="list-style-type: none"><li>a. Date of audit</li><li>b. Description of the activity or item audited</li><li>c. The requirements governing the activity</li></ul>
-----	-----	--

YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-5.46

ENVIRONMENTAL COMPLIANCE AUDITING AND SURVEILLANCE OF  
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT ACTIVITIES

Revision:

0

Page 7 of 13

RESPONSIBLE PARTY	STEPS	PROCEDURE
ATI		<ol style="list-style-type: none"><li>d. Persons conducting the audit</li><li>e. Persons contacted during the audit</li><li>f. Audit results/observations</li><li>g. Deficiencies identified during the audit (see Step 16)</li><li>h. Summary of any immediate corrective action taken (see Step 18)</li><li>i. Recommendations for future corrective action</li><li>j. Effectiveness of environmental compliance implementation</li></ol>
	21.	Sign and submit the audit report to the T&MSS ECPD Manager.
ECPD	22.	Review, approve, sign, and submit the audit report to POCD.
POCD	23.	Review, approve, sign, and transmit the audit report to the TPO with copies to the Project Manager, the responsible Division Directors, and the Site Manager. Audit reports should be issued within 30 days of completion of the audit. The report will establish the appropriate date for a response.
<b>CORRECTIVE ACTION</b>		
TPO	24.	Develop corrective action plan and submit to POCD.
POCD	25.	Review and approve the corrective action plan.
TPO	26.	Take corrective action and notify POCD when corrective action has been completed.

YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-5.46

ENVIRONMENTAL COMPLIANCE AUDITING AND SURVEILLANCE OF  
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT ACTIVITIES

Revision:

0

Page 8 of 10

### RESPONSIBLE PARTY

### STEPS PROCEDURE

PCPD

27. Instruct the ECPD to verify that corrective action is complete and adequate.

ECPD

28. If adequate corrective action was taken, notify the PCPD. If not, return to Step 24.

PCPD

29. Send written confirmation to the IPO and ATL that adequate corrective action was taken, and officially close the audit.

### PREPARING FOR THE SURVEILLANCE

ECPD

30. Assign an STL.

NOTE: Surveillance is unannounced.

STL

31. Review existing/available environmental compliance documentation pertaining to an activity or organization, including, but not limited to, the following items:
- a. Land access and environmental compliance approval for an activity received from following the process described in AP-9.1
  - b. Environmental requirements specified in any requirements documents (e.g., APs, HMMHP, and ERCP) written for or about the activity
  - c. Environmental permit conditions applicable to the activity
  - d. Land access and/or ROWR conditions applicable to the activity
  - e. Federal and state environmental regulations

YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-5.46

ENVIRONMENTAL COMPLIANCE AUDITING AND SURVEILLANCE OF  
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT ACTIVITIES

Revision:

0

Page 9 of 13

RESPONSIBLE PARTY

STEPS PROCEDURE

### CONDUCTING THE SURVEILLANCE

STL

32. Obtain an Environmental Compliance Surveillance Report (ECSR) form (see Attachment 2) and review prior to surveillance of activity or organization.
33. Notify the RSP on site commensurate with initiation of the surveillance.
34. Conduct surveillance and complete the appropriate sections of the ECSR form.

### REPORTING

35. Identify to RSP any items requiring immediate action. Complete and sign the ECSR form and submit copies to the RSP, TPO, and POCD within 10 working days of the surveillance.

### CORRECTIVE ACTION

RSP

36. If immediate action is required, take corrective action(s) immediately. Proceed to Step 38.
37. If immediate action is not required (or if action taken was insufficient, see Step 41), assure that any deficient practices or conditions are corrected within 5 working days upon receipt of ECSR form.
38. Coordinate with the ECPD (mainly the STL) to ensure satisfactory correction action(s) was/were taken.
39. Upon completion of corrective actions, complete item 11 on the ECSR form and submit form to ECPD.

YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-5.46

ENVIRONMENTAL COMPLIANCE AUDITING AND SURVEILLANCE OF  
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT ACTIVITIES

Revision:

0

Page 10 of 13

<u>RESPONSIBLE PARTY</u>	<u>STEPS</u>	<u>PROCEDURE</u>
ECPD/STL	40.	Conduct a follow-up surveillance to verify that corrective action has taken place. Complete item 13 on ECSR form.
STL	41.	If corrective action was not taken as required, immediately inform RSP and return to Step 37.
	42.	If correction action was taken as appropriate, send ECSR form to POCD for signature.
POCD	43.	Ensure that adequate corrective action was taken, and sign ECSR form to officially close the surveillance period.
	44.	Send original ECSR form to ECPD and copies to the TPO and RSP.

### 6.0 REFERENCES

Refer to the latest revision of the documents listed below unless otherwise stated.

#### 6.1 REQUIREMENTS DOCUMENTS

Environmental Regulatory Compliance Plan, DOE/RW-0209

Environmental Management Plan, YMP/CC-0006

#### 6.2 INTERFACE DOCUMENTS

AP-1.18Q, Records Management: Las Vegas Record Source Responsibilities

AP-2.9, Occurrence Reporting and Processing of Operations Information

AP-6.13, Authorization for Use of Regulated Hazardous Substances and Materials

AP-6.18, Resolutions of Environmental, Safety and Health Concerns

AP-6.24, Operating the Hazardous Waste Project Accumulation Area Facility

YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-5.46

ENVIRONMENTAL COMPLIANCE AUDITING AND SURVEILLANCE OF  
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT ACTIVITIES

Revision:  
0

Page 11 of 19

AP-6.25, Operating Hazardous Waste Satellite Accumulation Areas

AP-9.1, Land Access and Environmental Compliance

Hazardous Materials Management and Handling Plan (HMMHP), YMP/91-35

Materials Reporting and Handling Plan, as required by AP-6.13 and described in the HMMHP

Project Glossary, YMP/89-15

### 7.0 FIGURES AND ATTACHMENTS

Figure 1, AP-5.46 Flowchart

Attachment 1, Example Environmental Compliance Audit Checklist

Attachment 2, Environmental Compliance Surveillance Report

### 8.0 RECORDS

There are no quality assurance records generated as a result of this procedure. A complete administrative record file will be kept to document each activity review and action taken to protect the environment. These administrative record packages will be submitted to the Las Vegas Local Records Center by the ECPD to be forwarded to the Central Records Facility (in accordance with AP-1.18Q).

# YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-5.46

ENVIRONMENTAL COMPLIANCE AUDITING AND SURVEILLANCE OF  
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT ACTIVITIES

Revision:  
0

Page 12 of 13

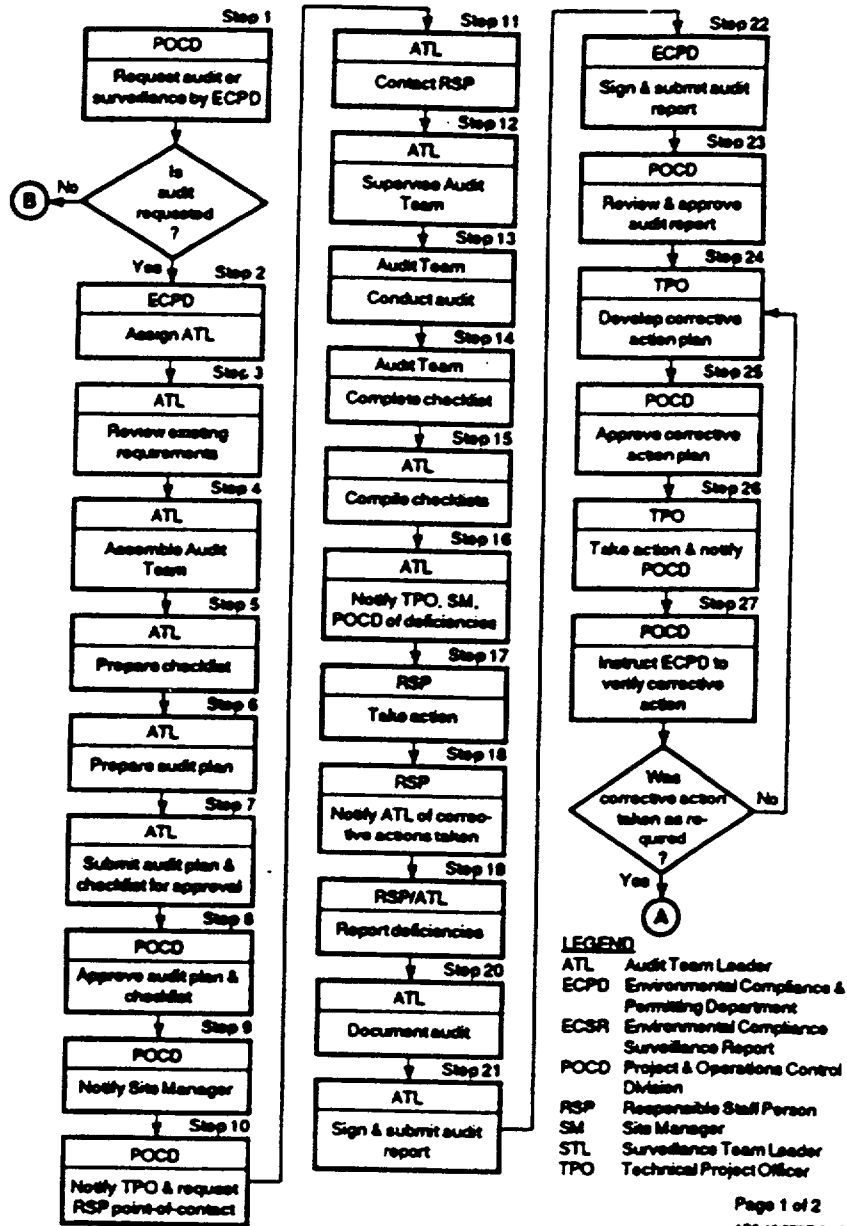


Figure 1 - AP-5.46 Flowchart

YMP-053-R0  
7/12/91

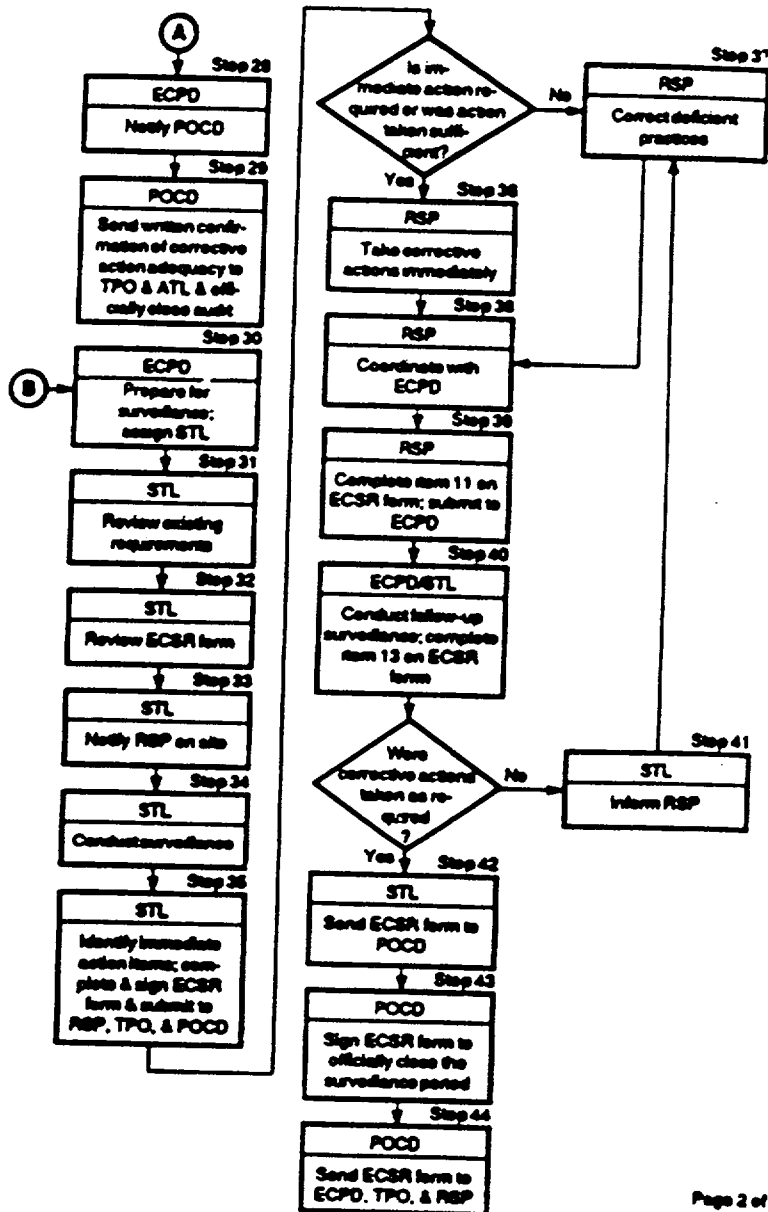
# YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-5.46

ENVIRONMENTAL COMPLIANCE AUDITING AND SURVEILLANCE OF  
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT ACTIVITIES

Revision:  
0

Page 13 of 19



Page 2 of 2  
AP-5.46/97-21-02

Figure 1 - AP-5.46 Flowchart (continued)

# YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT

YMP-053-R0 7/12/91

## PROCEDURE

Procedure No. AP-5.46

ENVIRONMENTAL COMPLIANCE AUDITING AND SURVEILLANCE OF YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT ACTIVITIES

Revision: 0

Page 14 of 22

1. ACTIVITY TITLE:

2. REGULATION CONCERNING ACTIVITY:

3. ACTIVITY LOCATION:

4. ACTIVITY DESCRIPTION:

5. PERSON INTERVIEWED:

6. QUESTIONNAIRE: (SAMPLE)

Activities to be audited would generally fall into one of the categories described below. The categories are broadly defined and may be subdivided into sub-categories, where appropriate. The categories each require compliance with appropriate federal and state requirements, as well as Yucca Mountain Site Characterization Project commitments made to minimize impacts. A checklist developed by using questions from each applicable category would allow for consideration of all environmental requirements and constraints that exist for an activity into one checklist. It would not be necessary to include all categories in every audit, and other categories may need to be included in some audits, e.g., radiological and safety and health categories.

Land disturbing activities: This category includes activities that remove or alter the surface of the land, and/or change topographical features. Includes biological, cultural, and archaeological impacts. Checklists would include such commitments as development of soil stockpiles with mulch or vegetative cover, and engineering to slope angles of storage piles to minimize erosion, or commitments to protect archaeological resources and/or wildlife.

Has land access and environmental compliance approval been obtained following AP-8.1?

Was a copy of the BLM ROWR available at the job-site?

Was off-road driving or parking observed?

Were reclamation activities being performed as required?

Were animals being harassed?

Were any threatened or endangered species present or nearby (in close proximity to the site)?

Attachment 1 - Example Environmental Compliance Audit Checklist

B3-14

YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-5.46

ENVIRONMENTAL COMPLIANCE AUDITING AND SURVEILLANCE OF  
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT ACTIVITIES

Revision:

0

Page 15 of 19

- o Had all personnel working at the site received environmental awareness training?
  - o Had archaeological resources been discovered?
  - o Was erosion noticeable?
  - o Was there any evidence of archaeological resources currently on site?
2. Air quality affecting activities: This category includes activities that generate dust, volatile organics (from fuels and solvents), emissions from motors (stationary sources and mobile vehicles), residuals from blasting operations, or other pollutant emissions. Requirements would include such items as determination of proper implementation of dust reduction procedures, the installation or utilization of mechanisms to reduce other forms of emissions, and compliance with permit conditions.
- o Had an air quality permit been received?
  - o Were permit conditions being satisfied?
  - o Was dust being controlled properly?
  - o Were gaseous emissions being controlled?
3. Surface water affecting activities: This category includes activities that alter drainages or the quality of surface waters, (may interrelate with Item 1 above).
- o Had necessary discharge or construction permits been received?
  - o Were permit conditions being satisfied?
  - o Were effluent streams being properly monitored?
  - o Were tracers used? Had approval to use the tracer been received?
  - o Were activities occurring in the 100-year floodplain?
  - o Was runoff being controlled to minimize erosion?
  - o Was runoff from potentially contaminated areas being controlled?

Attachment 1 - Example Environmental Compliance Audit Checklist (continued)

YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-5.46

ENVIRONMENTAL COMPLIANCE AUDITING AND SURVEILLANCE OF  
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT ACTIVITIES

Revision:

0

Page 16 of 19

4. Groundwater affecting activities: This category includes activities that impinge upon the saturated zone and that affect the quantity or quality of that water; may include injection and pumping procedures.
- o Had necessary appropriation and/or injection permits been received?
  - o Were permit conditions being satisfied?
  - o Were water withdrawals or injection streams being properly monitored?
  - o Were tracers used? Had approval to use the tracer been received?
5. Hazardous materials/wastes activities: This category includes activities that include the use, storage, transportation and disposal, and that may allow the release of hazardous materials or their wastes into the environment.
- o Were hazardous materials being used?
  - o Had these materials been approved following AP-6.13?
  - o Were hazardous waste storage containers in good condition and properly labeled?
  - o Were storage areas properly constructed and labeled?
  - o Did storage areas have adequate containment, including secondary containment?
  - o Were hazardous waste storage containers kept closed?
  - o Had any spills occurred?
  - o If so, were the spills promptly and adequately cleaned-up?
  - o Was the spill appropriately documented and reported, if applicable?
  - o Had a Satellite Accumulation Area (SAA) been established?
  - o Were the procedures for the operation of the SAA (AP-6.25, Operating Hazardous Waste Satellite Accumulation Areas) being followed?

Attachment 1 - Example Environmental Compliance Audit Checklist (continued)

YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-5.46

ENVIRONMENTAL COMPLIANCE AUDITING AND SURVEILLANCE OF  
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT ACTIVITIES

Revision:

0

Page 17 of 19

- o Was a Contingency Plan in place?
  - o Was an Emergency Preparedness Plan in place?
  - o Were personnel properly trained?
  - o Were records correct and properly filed?
  - o Were the procedures for the operation of the Project Accumulation Area (AP-6.24, Operating the Hazardous Waste Project Accumulation Area Facility) being followed?
  - o Were waste minimization practices established and being followed, in accordance with the Hazardous Materials Management and Handling Plan (HMMHP), Appendix C, Waste Reduction and Minimization?
6. Non-hazardous wastes activities: which include activities that generate, store or are associated with the disposal of non-hazardous wastes.
- o Were non-hazardous wastes being disposed of properly?
  - o Were non-hazardous wastes removed from the site in a timely manner (i.e., trash picked up and removed from the area as frequent as necessary)?
  - o Did uncovered trash containers exist?
  - o Was there evidence of hazardous wastes being disposed of with the non-hazardous wastes?

### VII. RECOMMENDED CORRECTIVE ACTION:

\_\_\_\_\_  
Audit Team Member/Date

\_\_\_\_\_  
Audit Team Leader/Date

Attachment 1 - Example Environmental Compliance Audit Checklist (continued)

YMP-053-F0  
7/12/91

# YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-5.46

Revision:  
0

ENVIRONMENTAL COMPLIANCE AUDITING AND SURVEILLANCE OF  
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT ACTIVITIES

Page 18 of 19

YMP-100-F0 8/14/92		YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT ENVIRONMENTAL COMPLIANCE SURVEILLANCE REPORT		Report No.: Page 1 of ____
<p>1 Date/Time: _____</p> <p>2 Activity: _____ 3 Observer: _____</p> <p>4 Location: _____</p> <p>5 Regional Contact/Coordinator: _____ 6 Surveillance Team/Coordinator: _____</p> <p>7 Initial Investigation: _____ Ref. No. Comments</p> <p>_____ Site Condition</p> <p>_____ Archaeological/Geological</p> <p>_____ Regulated Material Use</p> <p>_____ Ethnology</p> <p>_____ Radiation</p> <p>_____ Other</p> <p>8 Data/Documentation: _____ 9 IMMEDIATE ACTION REQUIRED? YES ____ NO ____</p> <p>10 Surveillance Team Leader Signature _____ Date _____</p>				

AP-5.46

Attachment 2 - Environmental Compliance Surveillance Report

B3-18

YMP-053-R0  
7/12/91

# YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-5.46

ENVIRONMENTAL COMPLIANCE AUDITING AND SURVEILLANCE OF  
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT ACTIVITIES

Revision:

0

Page 19 of 19

YMP-100-R0  
8/14/92

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT ENVIRONMENTAL COMPLIANCE SURVEILLANCE REPORT

Report No.: \_\_\_\_\_

Page 2 of \_\_\_\_\_

### 11 Corrective Action Taken

12

\_\_\_\_\_  
Responsible Staff Person Signature

\_\_\_\_\_  
Date

### 13 Corrective Action Verification

14

\_\_\_\_\_  
Surveillance Team Leader Signature

\_\_\_\_\_  
Date

### 15 Surveillance Closure

16

\_\_\_\_\_  
POCD Signature

\_\_\_\_\_  
Date

### 17 Distribution

AP-5.46

Attachment 2 - Environmental Compliance Surveillance Report (continued)

4575

21197

This page intentionally left blank

APPENDIX B4

AP-6.18

RESOLUTIONS OF ENVIRONMENT,  
SAFETY AND HEALTH CONCERNS

4573

31197

This page intentionally left blank

AP-054-R0 YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE  
7/12/91  
DOCUMENT APPROVAL SHEET

Title RESOLUTIONS OF ENVIRONMENT, SAFETY AND HEALTH CONCERNS NO. NO. AP-6118  
HSIA [ ] 103  
ED STAMP [X] Non O

APPROVAL

PROJECT MANAGER: Original signed by Maxwell Blanchard for C. P. Gertz Signature Date 7/15/91  
DIRECTOR OF QUALITY ASSURANCE: N/A DGH 1/15/91 N/A Signature Date  
Site Manager Winfred A. Wilson 1/14/91  
(OTHER, AS REQUIRED) Signature Date

REVISION 0 EFFECTIVE DATE: 2/1/91

REVISIONS

	REVISION 1	REVISION 2	REVISION 3	REVISION 4
PROJECT MANAGER:	<i>[Signature]</i>			
DIRECTOR, QA:	N/A			
Site Manager (OTHER, AS REQUIRED)	<i>Winfred Wilson</i>			
EFFECTIVE DATE:	8/6/91 Complete Revision			

INFORMATION COPY



Page 1 of 14

TRAINING REQUIRED ☒ YES ☐ N/A NUMBER OF DAYS REQUIRED FOR TRAINING 10

COMMENTS:  
SELF-STUDY FOR  
BASELINED  
PERSONNEL

*[Signature]* 7/25/91  
TRAINING OFFICER/TRAINING MANAGER DATE

OMP-08-04

YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-6.18

RESOLUTIONS OF ENVIRONMENT, SAFETY AND HEALTH CONCERNS

Revision:

1

Page 2 of 14

### 1.0 PURPOSE AND SCOPE

#### 1.1 PURPOSE

This procedure assigns responsibilities and establishes a process to stop activities when imminent danger involving the safety or health of Yucca Mountain Site Characterization Project (YMP) personnel, the public or damage to the environment, or natural barriers is suspected. It also establishes a process to initiate actions in response to these dangers, to verify implementation of abatement/corrective actions, and to restart work.

#### 1.2 SCOPE

This procedure applies to all YMP field activities and activities in the Valley Bank Complex and other locations as approved by the Yucca Mountain Site Characterization Project Office (YMPO). The intention of this procedure is not to influence or interfere with quality-affecting activities, but to implement response actions whenever serious environment, safety or health hazards appear to exist, including hazards associated with quality-affecting activities.

This procedure encompasses the following:

- a. The definition of practices or conditions that may require work to be interrupted or temporarily stopped for nonquality affecting reasons.
- b. The definition of responsibilities of individuals to report practices or conditions that may represent an unacceptable risk to life, health, environment, and property or to the completion of authorized work essential to the YMP mission.
- c. The identification of individuals with authority and responsibility to order immediate action to alleviate a environment, safety or health concern.
- d. The description of the process required for implementing and verifying corrective actions before resuming a questionable (undue risk) activity.

Implicit in this Administrative Procedure (AP) is the right and obligation of the contractor to immediately cease operations when the conduct of Participant personnel jeopardizes themselves or the work environment.

YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-6.18

RESOLUTIONS OF ENVIRONMENT, SAFETY AND HEALTH CONCERNS

Revision:

1

Page 3 of 14

### 2.0 APPLICABILITY

This procedure is to be used only when practices or conditions exist or are encountered that present a clear and undue risk to the health and safety of Project personnel, the public, the environment, natural barriers or equipment.

NOTE: The initiator should first attempt to resolve concern through his own chain of command. This procedure is to be used when other processes fail to address the concern in a timely manner, or if the activity or condition presents an imminent danger.

### 3.0 DEFINITIONS

NOTE: Terms in this procedure are used as defined in the Project Glossary. The following additional definitions are adopted for the purposes of this procedure.

#### 3.1 FIELD ACTIVITY

Field activity is any activity conducted that is related to the Exploratory Studies Facility (ESF), surface and nonsurface-based testing operations, and any other construction or maintenance and operation type work that is performed on the YMP support area and Area 25 or at an off-site location.

#### 3.2 QUESTIONABLE ACTIVITY OR CONDITION

Questionable activity or condition is an activity observed or condition encountered, which, if not corrected or is allowed to persist, would represent a hazardous activity with undue risk for any of the reasons listed in Section 3.3.

#### 3.3 ENVIRONMENT, SAFETY AND HEALTH CONCERN

Any activity or condition that gives rise to undue risk for any of the following reasons:

- a. Undue risk to the safety or health of YMP personnel or the public
- b. Significant risk of an uncontrolled release of either radioactive or hazardous materials
- c. Undue risk of substantial damage to YMP equipment, scientific data collection activities, or site integrity

YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-6.18

RESOLUTIONS OF ENVIRONMENT, SAFETY AND HEALTH CONCERNS

Revision:

1

Page 4 of 14

- d. Significant risk to the environment or noncompliance with applicable environmental laws, regulations, permits, or environmental orders issued by the U.S. Department of Energy (DOE)
- e. Suspected or anticipated risk of jeopardizing natural barriers essential for waste isolation or the ability to develop essential site characterization data
- f. Any activity or condition that, if allowed to persist, would likely result in one or more of the above conditions

### 3.4 IMMINENT DANGER

Imminent danger is any condition or practice which is such that a hazard exists that could reasonably be expected to cause death or serious physical harm to employees (permanent or prolonged impairment of the body or temporary disablement requiring hospitalization), unless immediate actions are taken to mitigate the effects of the hazards and/or remove employees from the hazard.

### 3.5 UNDUE RISK

Undue risk is a level of identifiable risk that is unacceptable to DOE. It has the potential to impact people or the environment only on site.

### 3.6 SIGNIFICANT RISK

Significant risk is a quantitative/qualitative expression of possible loss which considers both the probability that a hazard will cause harm and the consequences of that event. It has the potential to impact large numbers of people either onsite or offsite or will have a major impact on the environment.

## 4.0 RESPONSIBLE PARTIES

NOTE: The following YMP individuals or organizations are responsible for activities identified in Section 5.0 of this procedure:

1. YMPO Site Manager (SM)
2. YMPO Division Director(s) (DD)
3. Responsible Facility Manager (FM) for specific activity
4. Parties with authority to request SM intervention and/or to stop questionable activities (appropriate party):

YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-6.18

RESOLUTIONS OF ENVIRONMENT, SAFETY AND HEALTH CONCERNS

Revision:

1

Page 5 of 14

- a. YMPO Safety and Health Staff (S&H Staff)
  - b. YMPO Operations Control Branch Chief (OCB)
  - c. Technical and Management Support Services (T&MSS) Safety and Health Compliance Department Manager
  - d. T&MSS Environmental Compliance and Permitting Department Manager
  - e. YMPO Construction Operations and Test Support Manager
  - f. YMPO Field Testing Coordinator (or designee)
  - g. Other individuals designated in writing by a YMPO DD
  - h. Responsible Technical Project Officer (TPO)
5. YMP Personnel (Any individual is authorized to request that an activity which is thought by the individual to represent imminent danger be halted until the responsible DD and the SM authorize work to resume.) (Initiator)
  6. Field Operations Center (FOC)
  7. YMPO S&H Staff

NOTE: The authority to stop work activities under this procedure is separate and independent of quality assurance (QA) responsibility to stop work as specified in the Office of Civilian Radiological Waste Management (OCRWM) QA Requirements Document, DOE/RW-0215.

### 5.0 PROCEDURE

NOTE: A flowchart of the following processes described in this procedure is attached as Figure 2.

<u>RESPONSIBLE PARTY</u>	<u>STEPS</u>	<u>PROCEDURE</u>
<b>INITIAL ACTIONS</b>		
Initiator	1.	Report questionable activities or conditions to Field Operations Center if at Yucca Mountain or YMPO Safety and Health Staff if in Valley Bank Complex.
FOC, S&H Staff or OCB	2.	Notify appropriate party (Item 4 of Section 4.0) to take action.

YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-6.18

RESOLUTIONS OF ENVIRONMENT, SAFETY AND HEALTH CONCERNS

Revision:

1

Page 6 of 14

RESPONSIBLE PARTY

STEPS

PROCEDURE

Appropriate Party

3. Determine if questionable activity or condition represents imminent danger.
  - a. If an activity/condition presents imminent danger or damage to the environment, proceed to Step 4.
  - b. If an activity/condition does not present imminent danger, or damage to the environment, proceed to Step 14.

FOC, S&H Staff  
or OCB

4. Contact the responsible FM or TPO by telephone or radio, and order immediate action, as appropriate, to protect lives, property, natural barriers and the environment.

Responsible FM  
or TPO

5. Take immediate action to protect lives and property, as ordered.
6. Evaluate activity/condition and determine the actions needed and time required to abate the concern.
7. Verbally report actions taken to the Appropriate Party, FOC or S&H and the cognizant YMPD DD or Branch Chief.
8. If normal operations are delayed for more than two hours to resolve the concern, comply with occurrence reporting required by AP-2.9.
9. Restrict operation of equipment or access to hazardous area using appropriate Participant procedure or YMPD Field Operating Instructions (FOI) for posting warning tags or setting up barricades.
10. Notify SM, cognizant YMPD Branch Chief, and other appropriate parties of restricted activity.
11. Implement other actions as appropriate.

YMP-053-R0 YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT  
7/12/91 PROCEDURE

Procedure No.: AP-6.18

RESOLUTIONS OF ENVIRONMENT, SAFETY AND HEALTH CONCERNS

Revision:

1

Page 7 of 14

RESPONSIBLE PARTY

STEPS

PROCEDURE

Responsible FM  
or TPO

12. Verbally notify Appropriate Party, FOC or S&H Staff of actions taken to respond to concern. Document actions and notifications by completing Sections 1, 2 and 3 on Attachment 1, Resolution of ES&H Concerns Form and forward copies to the Appropriate Party, FOC or YMP S&H Staff.

Appropriate Party

13. Inspect questioned work location(s), and verify adequacy of investigation, in accordance with DOE Order 5483.1A. Notify initiator of response(s) to the concern and complete appropriate documentation (Attachment 1). Go to Step 20.

NOTE: Steps beginning with 14 are followed when the risk described by the initiator is evaluated by the Appropriate Party to be less severe than imminent danger, but still represents an environment, safety and health concern.

14. Evaluate initiator's concern by investigating the questionable activity within two working days.

15. If the questionable activity is deemed not to represent a significant risk, go to Step 16; otherwise go to Step 17.

16. Notify initiator verbally and in writing that the concern has been investigated and that no action is deemed necessary, the reason for this determination, and his right to request a review of this decision by higher authority. Proceed to Step 27.

17. Verbally contact the FM or TPO, and request an evaluation of the initiator's concern.

YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-6.18

RESOLUTIONS OF ENVIRONMENT, SAFETY AND HEALTH CONCERNS

Revision:

1

Page 8 of 14

RESPONSIBLE PARTY

STEPS

PROCEDURE

Responsible FM  
or TPO

18. Implement Steps 6 through 12 of this procedure.

Appropriate Party

19. Implement Step 13.

**PROBLEM RESOLUTION**

Responsible FM

20. Develop a corrective action plan, and submit to Appropriate Party and copy to SM if questionable activity is at the site.

Appropriate Party or SM

21. Determine if the corrective action plan is adequate to eliminate the risk(s).

a. If the corrective action plan is not adequate, return to responsible FM. Proceed to Step 22.

b. If the corrective action plan is adequate, approve, and notify responsible FM. Proceed to Step 25.

Responsible FM

22. Consider corrective action plan's inadequacy.

a. If in agreement, proceed to Step 24.

b. If not in agreement, escalate decision to DD (Step 23). Inform SM or Appropriate Party.

DD

23. Determine if corrective action plan is adequate.

a. If corrective action plan is inadequate, inform responsible FM and SM. Proceed to Step 24.

b. If corrective action plan is adequate, inform responsible FM and SM. Proceed to Step 25.

Responsible FM

24. Correct plan inadequacies, resubmit to SM, and proceed to Step 21.

YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-6.18  
RESOLUTIONS OF ENVIRONMENT, SAFETY AND HEALTH CONCERNS

Revision:  
1

Page 8 of 14

<u>RESPONSIBLE PARTY</u>	<u>STEPS</u>	<u>PROCEDURE</u>
Responsible FM or TPO	18.	Implement Steps 6 through 12 of this procedure.
Appropriate Party	19.	Implement Step 13.
<b>PROBLEM RESOLUTION</b>		
Responsible FM	20.	Develop a corrective action plan, and submit to Appropriate Party and copy to SM if questionable activity is at the site.
Appropriate Party or SM	21.	Determine if the corrective action plan is adequate to eliminate the risk(s).  a. If the corrective action plan is not adequate, return to responsible FM. Proceed to Step 22.  b. If the corrective action plan is adequate, approve, and notify responsible FM. Proceed to Step 25.
Responsible FM	22.	Consider corrective action plan's inadequacy.  a. If in agreement, proceed to Step 24.  b. If not in agreement, escalate decision to DD (Step 23). Inform SM or Appropriate Party.
DD	23.	Determine if corrective action plan is adequate.  a. If corrective action plan is inadequate, inform responsible FM and SM. Proceed to Step 24.  b. If corrective action plan is adequate, inform responsible FM and SM. Proceed to Step 25.
Responsible FM	24.	Correct plan inadequacies, resubmit to SM, and proceed to Step 21.

YMP-053-R0  
7/12/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-6.18

RESOLUTIONS OF ENVIRONMENT, SAFETY AND HEALTH CONCERNS

Revision:

1

Page 10 of 14

AP-6.14, Reportable Geologic Conditions

QMP-01-02, Stop Work

### 7.0 FIGURES AND ATTACHMENTS

Figure 1, AP-6.18 Initial Actions Flowchart

Figure 2, AP-6.18 Problem Resolution Flowchart

Attachment 1, Resolution of ES&H Concerns

### 8.0 RECORDS

Records packages of documentation generated as a result of this procedure shall be assembled and submitted to the appropriate Local Records Center in accordance with requirements specified in approved procedures. No QA records are generated as a result of this procedure.

YMP-053-R0  
7/12/91

# YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

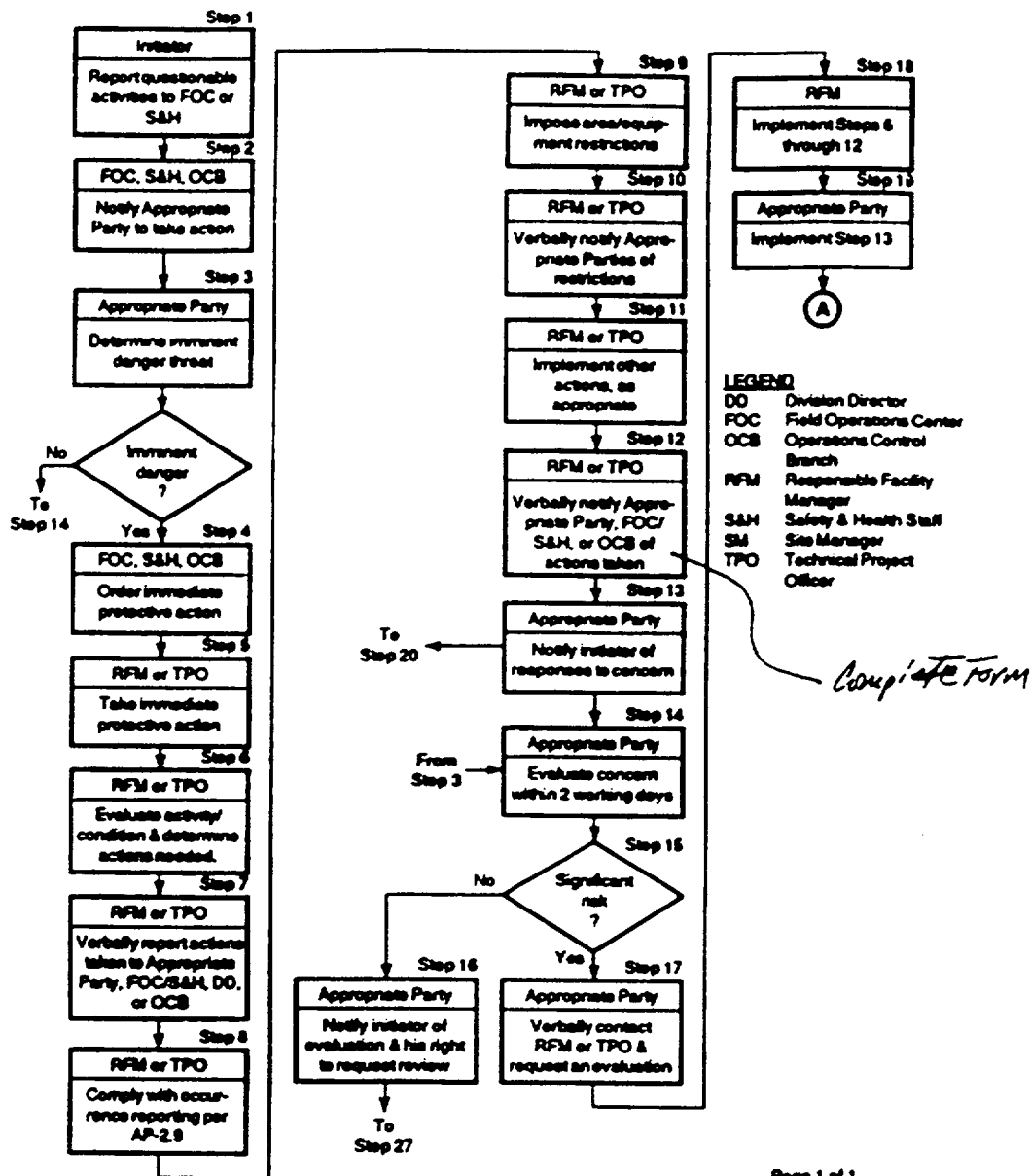
Procedure No.: AP-6.18

RESOLUTIONS OF ENVIRONMENT, SAFETY AND HEALTH CONCERNS

Revision:

1

Page 11 of 14



Page 1 of 1  
AP-18.0827-3-91

Figure 1 - AP-6.18 Initial Actions Flowchart

**YMP-053-R0 YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT  
7/12/91**

Procedure No.: AP-6.18

RESOLUTIONS OF ENVIRONMENT, SAFETY AND HEALTH CONCERNS

Revision: 1

Page 12 of 14

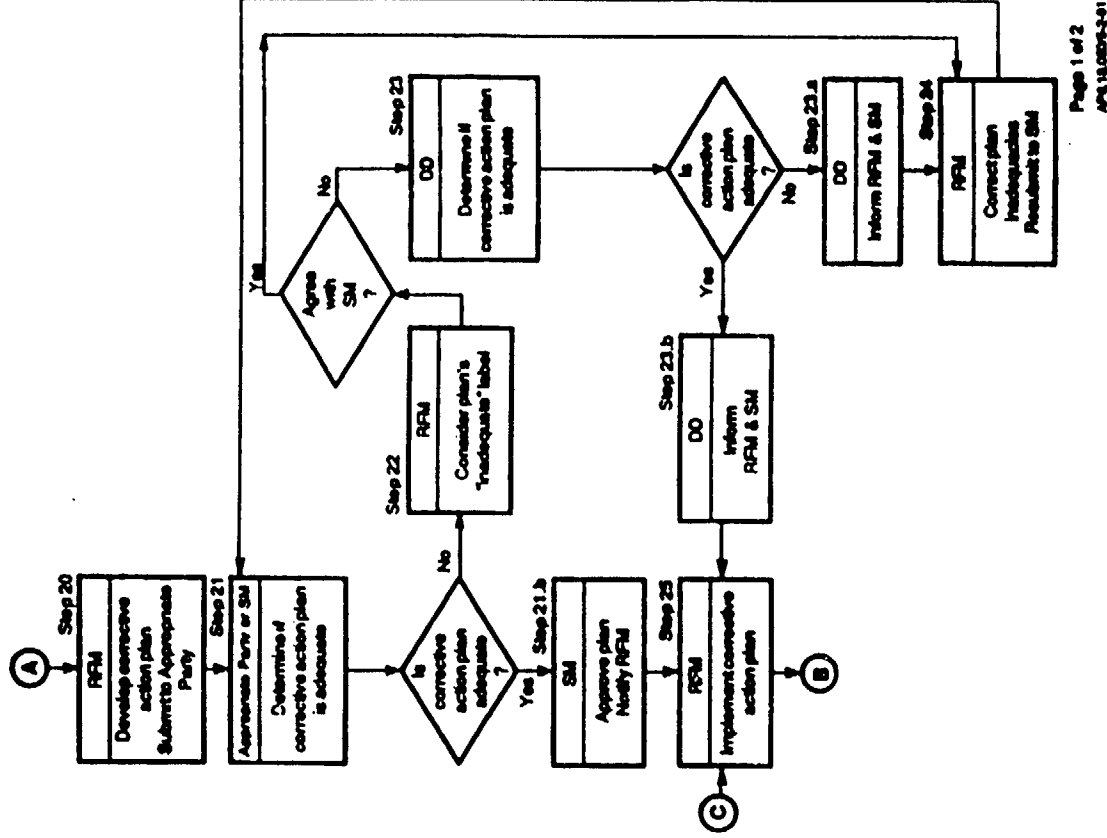


Figure 2. AP-6.18 Problem Resolution Flowchart

Figure 2 - AP-6.18 Problem Resolution Flowchart

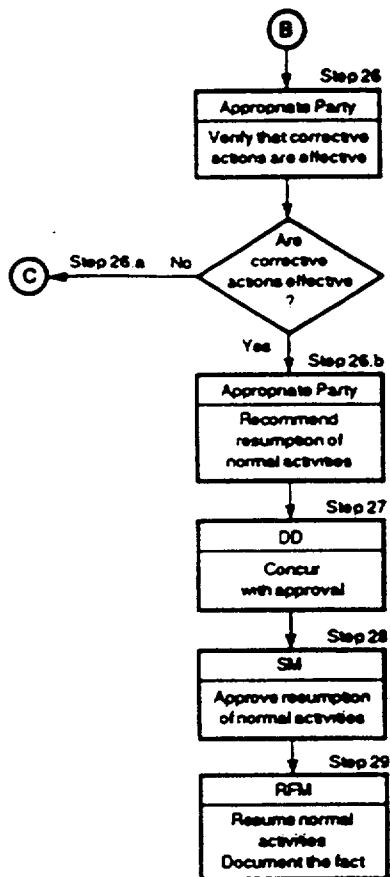
YMP-053-R0  
7/12/91

# YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-6.18  
RESOLUTIONS OF ENVIRONMENT, SAFETY AND HEALTH CONCERNS

Revision:  
1

Page 13 of 14



Page 2 of 2  
APA 18.0807-3-91

Figure 2. AP-6.18 Problem Resolution Flowchart (continued).

Figure 2 - AP-6.18 Problem Resolution Flowchart (continued)

YMP-053-R0  
7/12/91

# YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT PROCEDURE

Procedure No.: AP-6.18

RESOLUTIONS OF ENVIRONMENT, SAFETY AND HEALTH CONCERNS

Revision:

1

Page 14 of 14

YMP-053-R0  
6/6/91

## YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT RESOLUTION OF ES&H CONCERNS

DATE CONCERN RECEIVED: \_\_\_\_\_

1. CONCERN: (Brief Description)

2. ACTIONS TAKEN:

3. NOTIFICATIONS:

NAME OF PERSON NOTIFIED:

DATE:

TIME: (Military)

4. CORRECTIVE ACTIONS TAKEN:

VERIFIED BY:  
(Signature/Date)

DO Signature

Date

SM Signature

Date

Normal Activities have resumed.

FM Signature

Date

AP-6.18

Figure 2 - AP-6.18 Problem Resolution Flowchart (continued)