DOE/EH-0373

Routine Environmental Audit

of the

K-25 Site

Oak Ridge, Tennessee

U.S. Department of Energy
Office of Environmental Audit
Washington, DC 20585

February 1994

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PREFACE

Preface

U.S. Department of Energy

Routine Environmental Audit Conducted at the Oak Ridge K-25 Site

The Secretary of Energy's July 20, 1993, Environment, Safety and Health Policy establishes daily excellence in protection of the worker, the public, and the environment as the hallmark and highest priority of all DOE activities. That policy also calls for a proactive program of continuous improvement to move the Department beyond minimal compliance with laws and regulations. To further that policy, the Office of Environment, Safety and Health (EH) has established as part of the internal oversight responsibilities within DOE, a program within the Office of Environmental Audit (EH-24), to conduct routine environmental audits of DOE programs and operating facilities. The ultimate goal of this program is enhancement of environmental protection and minimization of risk to public health and the environment through systematic and periodic evaluations of the Department's environmental programs within line organizations.

Through its environmental evaluation program, which provides measurable goals with milestones, EH-24 is committed to helping establish the DOE as a model of responsible environmental stewardship. In addition, this program will serve to reinforce the Secretary's goal of building on the efforts currently ongoing to attain and maintain compliance in cooperation with the regulatory authorities and other stakeholders.

This document contains the findings identified during the environmental management assessment of the Oak Ridge K-25 Site, conducted from February 14 through February 25, 1994. The assessment's objective is to advise the Secretary of Energy through the Assistant Secretary for Environment, Safety and Health, of the adequacy of management systems to ensure compliance with Federal, state, local and DOE environmental requirements, and to evaluate application of proactive management practices. The scope of the assessment was comprehensive and covered all areas of environmental management, and included focused reviews of waste management and decontamination and decommissioning programs.

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TABLE OF CONTENTS

ROUTINE ENVIRONMENTAL AUDIT
OF THE
K-25 SITE

TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

This report documents the results of the Routine Environmental Audit of the K-25 Site in Oak Ridge, Tennessee, conducted February 14 through February 25, 1994, by the U.S. Department of Energy's (DOE's) Office of Environmental Audit (EH-24) located within the Office of Environment, Safety and Health (EH). The Routine Environmental Audit for the K-25 Site was conducted as an environmental management assessment, supported through reviews of the Waste Management Program and the Decontamination and Decommissioning Program. The assessment was conducted jointly with, and built upon, the results provided by the "DOE Oak Ridge Operations Office Environment, Safety, Health and Quality Assurance Appraisal at the K-25 Site."

DOE 5482.1B, "Environment, Safety and Health Appraisal Program," established the mission of EH-24 to provide comprehensive, independent oversight of Department-wide environmental programs on behalf of the Secretary of Energy. The purpose of this assessment is to provide the Secretary of Energy and senior DOE managers with concise independent information as part of DOE's continuing effort to improve environmental program performance. The ultimate goal of EH-24 is enhancement of environmental protection and the minimization of risk to public health and the environment. The routine environmental audit is one method by which EH-24 accomplishes its mission, utilizing systematic and periodic evaluations of the Department's environmental programs within line organizations. The last environmental assessment conducted of the K-25 Site by EH-24 was as an element of the 1991 Tiger Team Assessment, which was used as the baseline for this assessment.

During this assessment, activities and records were reviewed and interviews were conducted with personnel from the Office of Environmental Restoration and Waste Management (EM), the Oak Ridge Operations Office (ORO), the DOE K-25 Site Office (KSO), the Martin Marietta Energy Systems (MMES) Environmental Restoration and Waste Management business unit and the MMES K-25 Site management. The Environmental Management Assessment of the K-25 Site was designed to evaluate the effectiveness of ORO and MMES in establishing management systems to carry out their environmental protection program responsibilities within the context of their EM-directed environmental restoration, waste management, and technology development missions.

The Assessment Team identified improvements in environmental management systems and programs that have occurred at the K-25 Site since the 1991 Tiger Team Assessment. Organizational changes have recently been initiated to matrix site environmental professionals into environmental program activities (such as D&D major projects); technical resources have nearly doubled in site environmental protection and compliance oversight programs; and environmental noncompliances have significantly decreased. Of special note is the excellence demonstrated by the Waste Management Division's recognition for two consecutive Mission Success Program Quality Awards based on the Malcolm Baldridge National Quality Award Criteria. The excellence necessary for this recognition was clearly demonstrated during the assessment.

The Assessment Team identified environmental management strengths which have contributed to noted improvements in the areas of dedicated key environmental staff, commitment to compliance throughout the organization, continual improvement, and excellence in internal and external communication.

However, some areas for improvement were also identified in environmental management systems. When implemented these improvements can serve as a catalyst for the site and programs to achieve environmental excellence.

Findings which represent limitations to environmental excellence relate to integration of the site's environmental protection program elements into D&D subproject activities, small construction projects, storage of large volumes of hazardous materials, and technology development programs. Additional limitations are related to deficiencies in MMES and ORO/KSO surveillance and assessment programs, and the lack of comprehensive systems to ensure that requirements, internal best management practices, and lessons learned effectively flow down to lower level procedures. The Assessment Team also recognized resource constraints as a limiting factor in KSO's ability to evaluate the sitewide environmental protection programs and goals with respect to landlord responsibilities and tenant program responsibilities managed by the Environmental Restoration Division and Waste Management Division in ORO.

Two key findings were identified which represent the Assessment Team's independent perspective of the core issues related to all the findings. First, there is no integrated sitewide framework, in either MMES or ORO, to identify and manage common risks and requirements associated with all site activities and programs in order to meet overall site environmental protection goals and objectives. A defined mechanism has not been established which could more effectively integrate the separate programmatic missions. Integration between programs is needed to better ensure that the full range of potential environmental impacts are addressed and to identify opportunities for sharing knowledge and maximizing the use of resources. The second key finding is that there is a need for strengthening the formality of management systems and procedures to ensure effective management and to demonstrate effective performance of program activities.

The Assessment Team recognizes the tremendous management challenges EM, ORO, and MMES are addressing daily in balancing needs for the ultimate cleanup of the site with the critical importance of the site as a center for environmental technology and waste management, as well as the difficult decision-making included in balancing site goals versus available program funding. This challenge, however, will only be fully met when all site activities are performed within an integrated K-25 Site framework, which encompasses all programmatic missions, and which ensures compliance, protection of the public health, and minimizes environmental impact.

SECTION 1.0

INTRODUCTION

1.0 INTRODUCTION

This report documents the results of the environmental management assessment of the K-25 Site located in Oak Ridge, Tennessee. The onsite portion of the assessment was conducted from February 14 through February 25, 1993, by the Office of Environmental Audit (EH-24).

DOE 5482.1B, "Environment, Safety and Health Appraisal Program," establishes the mission of EH-24 to provide comprehensive, independent oversight of Department-wide environmental programs on behalf of the Secretary of Energy. The ultimate goal of EH-24 is for the enhancement of environmental protection and minimization of risk to public health and the environment. EH-24 accomplishes its mission using systematic and periodic evaluations of the Department's environmental programs within line organizations, and by conducting supplemental activities that serve to strengthen self-assessment and oversight functions within program, field, and contractor organizations.

These evaluations function as a vehicle to apprise the Secretary and Program Managers of the current status and vulnerabilities of DOE's environmental activities and environmental management systems. Several types of evaluations are conducted, including:

- comprehensive baseline environmental audits;
- routine environmental audits;
- environmental management assessments; and
- special issue reviews.

The purpose, scope, and approach of the environmental management assessment of the K-25 Site is described below.

1.1 PURPOSE

The purpose of the environmental management assessment of the K-25 Site is to provide the Secretary of Energy, through the Assistant Secretary for Environment, Safety and Health, with concise information pertaining to the following areas:

- adequacy of environmental management programs and organizations;
- DOE vulnerabilities and liabilities associated with environmental management practices;
- compliance with DOE Orders and DOE environmental policies (as identified in Appendix F) which address environmental management programs;
- adherence to best management (and accepted industry) practices (BMPs) pertaining to environmental management programs; and
- noteworthy environmental management practices.

The information gathered during this assessment and embodied in this report will assist DOE in determining patterns and trends in environmental deficiencies and strengths. The DOE Office of Environmental Restoration and Waste Management (EM), the DOE Oak Ridge Operations Office (ORO), the DOE K-25 Site Office (KSO), and Martin Marietta Energy Systems (MMES) are expected to fully utilize this information to develop corrective actions, to make appropriate modifications to specific programs to prevent recurrence, and to supplement their formalized lessons learned programs to ensure broad applications to other operations, programs, and facilities.

1.2 SCOPE

The scope of the environmental management assessment was comprehensive, addressing all areas of environmental management and included a programmatic assessment of waste storage in the K-25 vaults and activities within the site's decontamination and decommissioning programs. Environmental management considerations were evaluated within and between ORO, KSO, and the K-25 Site management and operations (M&O) contractor, Martin Marietta Energy Systems. Additional consideration was given to reporting and oversight relationships with EM, ORO, and KSO for operations at the site. DOE oversight of operations at the K-25 Site occur through three ORO organizations. Programs under the overall scope of environmental restoration (restoration and D&D) are the oversight responsibility of the ORO Environmental Restoration Division. Programs within the overall scope of waste management (excluding the TSCA Incinerator) are the oversight responsibility of the ORO Waste Management Division. Other site programs, including general site operations and the TSCA Incinerator, are the oversight responsibility of the ORO K-25 Site Office. This assessment focused on KSO with respect to oversight of general environmental protection program responsibilities. Although the intended scope of the waste management programmatic evaluation was limited to storage of wastes in the K-25 vaults, during the conduct of the assessment, issues were brought to the Assessment Team's attention that required some expansion of the review beyond the original intention. For this reason, aspects of the waste management review included management of non-waste hazardous materials in the vaults and performance of the Pond Waste Project and hazardous waste accumulation practices, with respect to meeting permit and Consent Order requirements and reflected by the results of a concurrent TDEC and EPA inspection. At the request of ORO the scope of the assessment did not include a comprehensive review of the Pond Waste Management Project.

1.3 APPROACH

The environmental management assessment was conducted in accordance with the DOE Environmental Audit Program Guidance (DOE/EH-0232, January 1992), and the Protocols for Conducting Environmental Management Assessments of DOE Organizations (DOE/EH-0326, June 1993), and followed accepted assessment techniques. Further, the Assessment Team reviewed the formality of programs employing an approach that takes into account that not all organizations or activities require the same level of formality in the implementation of policies and programs. Inherent in this perspective is the presence of an active process, which considers a flexible approach to implementation based on all risk considerations, being employed in determining the formality with which that policy is implemented. This concept is stated in DOE 5480.19, "Conduct of Operations," and is an implied tenet of DOE 5700.6C, "Quality Assurance." It should be noted that this

risk-based approach concept is only applicable for deciding the rigor of implementing requirements, and is not to be used to eliminate required responsibilities.

The assessment was conducted by a team of professionals managed by a DOE Headquarters Team Leader from EH-24 and Deputy Team Leader from the Golden Field Office; a Group Coordinator and five environmental management systems specialists from Arthur D. Little, and one specialist from Applied Consultants, Inc. The names, areas of responsibility, affiliations, and biographical sketches of the team members are provided in Appendix A. The assessment included three phases: planning, onsite activities, and reporting.

Once the site selection and the type of assessment had been approved by EH-1, the Team Leader and the Deputy Team Leader contacted both EM and ORO personnel to begin development of a scope for the assessment. These initial contacts assisted EH-24 with development of the assessment plan, and provided both EM and ORO the opportunity to have EH-24 assess selected environmental programs that both EM and ORO considered essential to achieve K-25's mission. The initial contacts identified an opportunity to minimize site impacts and to expand the assessment's view of site activities, by coordinating with a routine Environmental, Safety, Health, and Quality Assurance Functional Appraisal conducted by ORO (ORO Functional Appraisal) of MMES' operations at K-25 as part of ORO's contractor oversight responsibility. Additionally, based on these planning meetings, two programmatic areas were selected for special focus during the assessment: storage of wastes in the K-25 vaults and management of environmental issues within decontamination and decommissioning (D&D) programs. Waste management was selected in order to gain a programmatic perspective on progress at the site since the 1991 Tiger Team Assessment. The D&D program was selected to gain a perspective on a developing program that represents a substantial portion of future site missions. The objective of reviews focused on such specific program areas, is to gain additional perspective on the actual performance of the site's general management systems.

Also as part of the planning stage, a memorandum was sent to the K-25 Site announcing the environmental management assessment and requesting information about the management systems and selected environmental programs in general. Pre-assessment site visits were conducted December 14-15, 1993 and January 11-13, 1994. The site's response to the information request memorandum combined with the pre-assessment site visit and the planning activities with EM and ORO formed the basis for the Plan for the DOE Routine Environmental Audit of the K-25 Site (see Appendix B), which included a preliminary agenda for onsite activities. The Assessment Team modified this agenda during the conduct of onsite activities as more information was obtained and additional areas of interest were identified. The final daily activity schedule is contained in Appendix C.

Before the Assessment Team arrived onsite at K-25, interviews were conducted with DOE Headquarters Office of Waste Management (EM-30) and Office of Environmental Restoration (EM-40) personnel responsible for management of environmental activities at ORO and the K-25 Site. Once onsite, assessment activities included interviews with ORO, KSO, and MMES K-25 site personnel, and discussions between the Assessment Team members and members of the Environmental Subteam of the ORO Functional Appraisal Team. Additional documents were also reviewed (including previous audit and self-assessment reports). The Assessment Team and the ORO Functional Appraisal Team

conducted daily debriefs and senior management briefings that were open to ORO, KSO, MMES personnel, and personnel from the Tennessee Department of Environment and Conservation, DOE Oversight Division (responsible for state activities under the Tennessee Oversight Agreement). A list of site documents reviewed and interviews performed are provided in Appendix D and E, respectively. Using these sources of information, the Assessment Team developed findings as discussed in Section 2.0 and 3.0 of this report.

Deficiencies identified by the Assessment Team were categorized as findings. Findings are conditions that, in the judgement of the Assessment Team, may not satisfy environmental regulations, DOE Orders, Consent Agreements with regulatory agencies, environmental permit conditions, DOE or contractor environmental policies and procedures, regulatory agency guidance, accepted best or industry practices or technical standards, DOE guidance, or professional judgement.

The section overviews and findings detailed in Section 3.0 are organized into the following eight categories: organizational structure; environmental commitment; environmental protection programs; formality of environmental programs; internal and external communication; staff resources, training and development; program evaluation, reporting and corrective action; and environmental planning and risk management. The environmental protection program section includes a detailed discussion of the status of D&D activities and waste management programs. Each finding is organized into three sections: the performance objective, the finding statement, and a discussion of the facts and observations supporting the finding. The particular standards against which the finding is being evaluated are specified as performance objectives. The findings are not arranged in order of relative significance.

1.4 BACKGROUND AND PROJECT DESCRIPTION

The K-25 Site is operated by Martin Marietta Energy Systems, Inc. The K-25 Site operated as the Oak Ridge Gaseous Diffusion Plant from 1943 to 1990, and, until 1985, produced enriched uranium to support the U.S. nuclear weapons and nuclear power programs. These uranium enrichment activities were placed in standby mode in 1985 and were permanently terminated in 1987. The shutdown of these activities created mission uncertainty, significantly reduced programmatic support, and left a legacy of inactive facilities and equipment—most of them aged, radioactively contaminated, and in disrepair—that require decommissioning in a safe and environmentally acceptable manner. Management of the K-25 Site is assigned to the DOE Oak Ridge Operations Office.

The K-25 Site is located on the Oak Ridge Reservation in Roane County. The K-25 Site occupies a 1500-acre site adjacent to the Clinch River about 10 miles west of downtown Oak Ridge, Tennessee (see Figure 1-1). According to the 1980 census, within a 13-mile radius of the site there are five municipalities with a combined population of approximately 50,000 and portions of five counties (Anderson, Knox, Loudon, Morgan, and Roane) with an overall population of 481,622. The K-25 Site is one of three large facilities on the Oak Ridge Reservation, which was built on farmland purchased in 1942 by the U.S. Army. The other two facilities are the Oak Ridge National Laboratory (ORNL) and the Oak Ridge Y-12 Plant.

The K-25 Site is located to the west of ORNL and approximately 6 miles north of U.S. Interstate 40 (see Figure 1-1). The site is situated on a fairly level, fenced, 640-acre tract

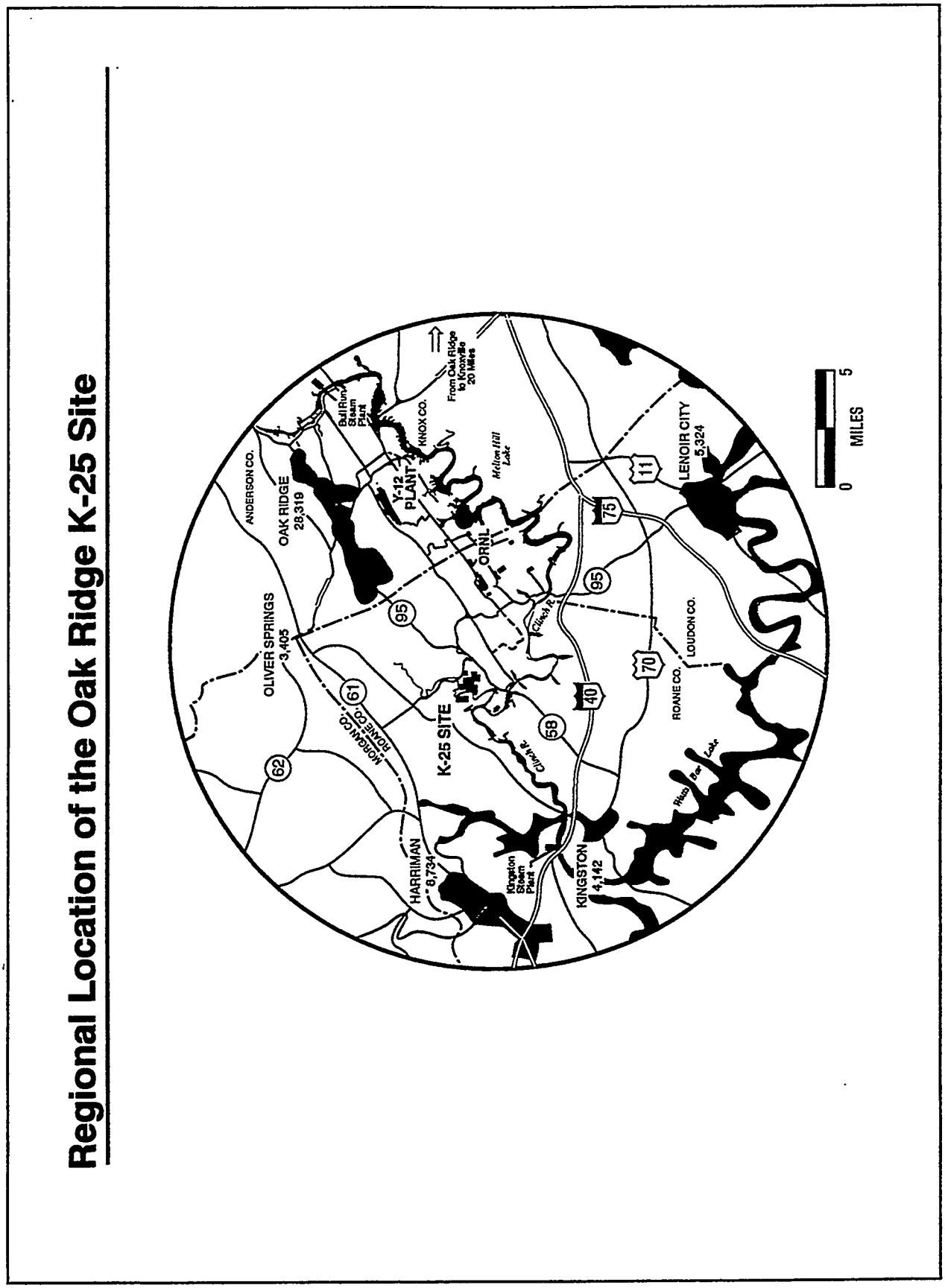

Figure 1-1. K-25 Location Map

of land bounded on the north and east by Blair Road, on the west by the Clinch River, and on the south by Tennessee Highway 58. Poplar Creek flows from northeast to southwest through the northwest section of the site area. The altitude of the Oak Ridge Reservation ranges from 741 to 1356 ft above mean sea level, with a maximum relief of approximately 600 ft.

The K-25 Site is dominated by the structures of the former uranium processing facilities (see Figure 1-2). These facilities include 5 gaseous diffusion cascade buildings and approximately 70 typical diffusion plant administrative, service, and maintenance support buildings, as well as specialized manufacturing facilities. The gaseous diffusion production and processing facilities are currently shutdown and, other than for permitted storage of waste in parts of some of the buildings, are accessed only during surveillance, maintenance, and decommissioning activities. At the present time, principal activities at the site include waste management operations (including operation of DOE's Toxic Substances Control Act (TSCA) Incinerator), environmental restoration, decontamination and decommissioning, and general site operations.

1.5 ENVIRONMENTAL PROGRAMS AND ORGANIZATION

The K-25 Site has three principal missions, each of which has significant environmental protection components: site operations, waste management, and D&D. Shutdown of the gaseous diffusion process has resulted in the need to manage a decades long environmental restoration program for D&D of contaminated site structures, cleanup of contaminated environmental media and management of wastes resulting from site activities and from elsewhere in DOE. Waste management activities encompass services for the treatment, storage, and disposal of mixed, low-level, solid, and hazardous waste for DOE including the operation of the TSCA Incinerator. Environmental restoration activities include performance of safe storage activities and surveillance and maintenance of shutdown uranium enrichment facilities; the planning and implementation of decontamination and decommissioning of these facilities; and K-25 Site environmental monitoring and remedial actions. Additional activities present on the site with environmental components include site landlord (management of site infrastructure such as water treatment, wastewater treatment, and power generation) and analytical laboratory services that support all site environmental programs.

In addition to the principal site missions for restoration and waste management, the K-25 Site serves as the base of operations for the MMES Environmental Restoration and Waste Management business unit which manages the K-25 Site and performs restoration and waste management activities at the K-25 Site, the Y-12 Plant, Oak Ridge National Laboratory, and at the Portsmouth, Ohio and Paducah, Kentucky gaseous diffusion enrichment plants.

Within DOE Headquarters, EM is the Program Office with responsibility for establishing program goals and objectives for the K-25 Site. Within EM, programmatic management for environmental restoration at K-25 is provided by the Office of Eastern Area Programs (EM-42) within the Office of Environmental Restoration (EM-40). DOE Headquarters waste management programmatic oversight is provided by the Office of Waste Operations (EM-32) within the Office of Waste Management (EM-30). At the local level, the DOE Oak Ridge Operations Office is responsible for DOE management of K-25 Site missions. Within ORO, the Assistant Manager for Environmental Restoration and Waste Management

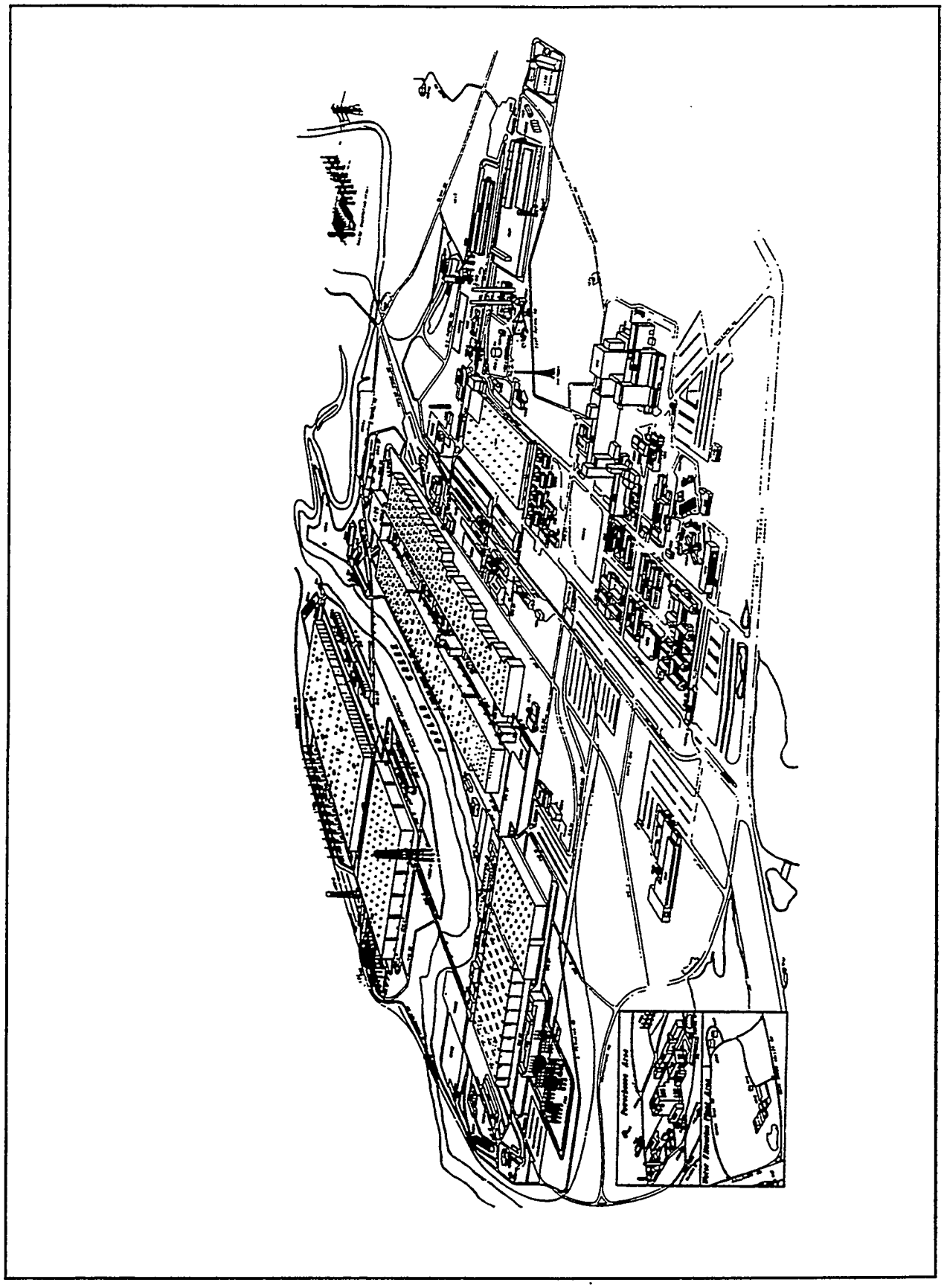

Figure 1-2. K-25 Site Map

(AMERWM) has three branches directly responsible for the principal activities at the site: the DOE K-25 Site Office which is responsible for oversight of contractor site management functions, landlord functions, and the TSCA Incinerator; the Waste Management Division which is responsible for most waste management programs; and the Environmental Restoration Division which is responsible for oversight of environmental remediation (including the Pond Waste Management Project), safe shutdown, and D&D. At ORO, the Environmental Protection Division (ENVPD), within the Office of the Assistant Manager for Environment, Safety, and Quality provides regulatory policy and guidance support to the three line organizations responsible for K-25. ENVPD also supports the environmental responsibilities of the three DOE oversight organizations by leading and participating in periodic comprehensive environmental, safety, health, and quality assurance appraisals of contractor operations at the site. The Assessment Team's understanding of the DOE ORO organization is represented in Figure 1-3.

MMES manages the environmental requirements associated with the three principal site missions through various responsibility levels. At the corporate level, a central environmental compliance department is responsible for providing environmental regulatory and policy support to the range of business units within Martin Marietta Energy Systems. Activities at the K-25 Site fall within the MMES Environmental Restoration and Waste Management (ERWM) business unit. Management of environmental compliance and environmental protection programs at the site are provided by the K-25 Environmental Management Division (EMD) which reports to the MMES K-25 Site Manager (with a dual reporting role to the environmental manager in MMES-ERWM). Environmental restoration activities (which include D&D and remedial action) are the responsibility of the site Environmental Restoration Division (which has a dual reporting role to the MMES-ERWM business unit environmental restoration director. Waste management activities are the responsibility of the site Waste Management Division (which has a dual reporting role to the MMES-ERWM business unit waste management director, except for operations of the TSCA Incinerator, which report separately to the K-25 Site Manager. The Assessment Team's understanding of the MMES K-25 organization is represented in Figure 1-5.

Actual performance of specific environmental functions at the site occurs in a wide variety of program levels, offices and organizations that, together, make up a tiered and matrixed environmental organization structure. EMD is a staff organization and is responsible for supporting site environmental permitting and permit management requirements, environmental review of projects, and environmental oversight through surveillances. Additional environmental oversight is performed through surveillances and assessments conducted by the Site Evaluation Group in the site's quality division. On the operational level, activities including waste incineration, wastewater treatment, hazardous material management, waste management, D&D, and environmental restoration all have significant environmental components, requirements, and potential environmental risks.

As the organizations that are principally responsible for the conduct of environmental projects and site activities affected by environmental regulations and Orders, the ERD, WMD, and EMD work closely to coordinate permit requirements, measure progress, and ensure compliance of the activities.

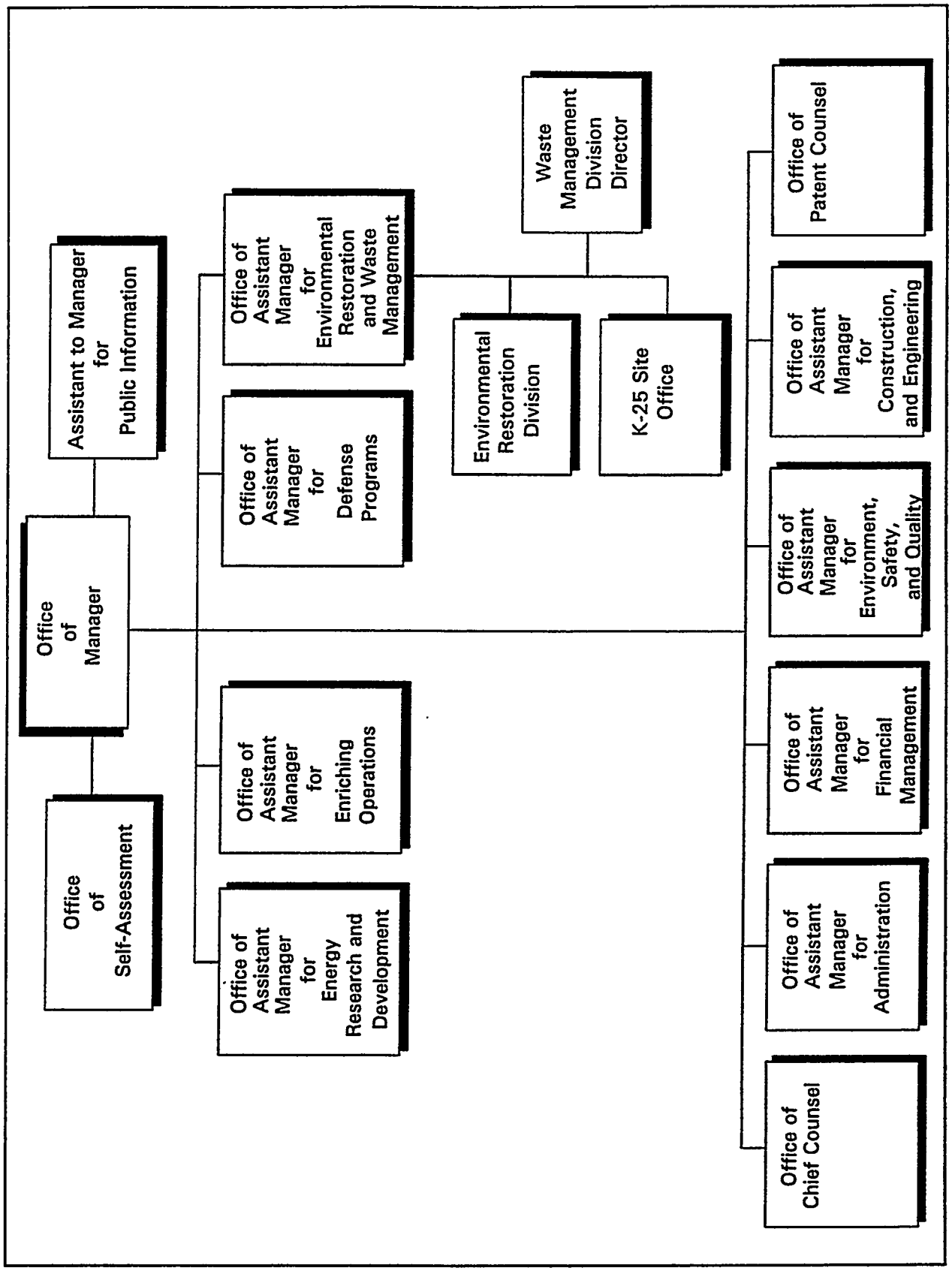

Figure 1-3. DOE ORO/K-25 Organization Chart

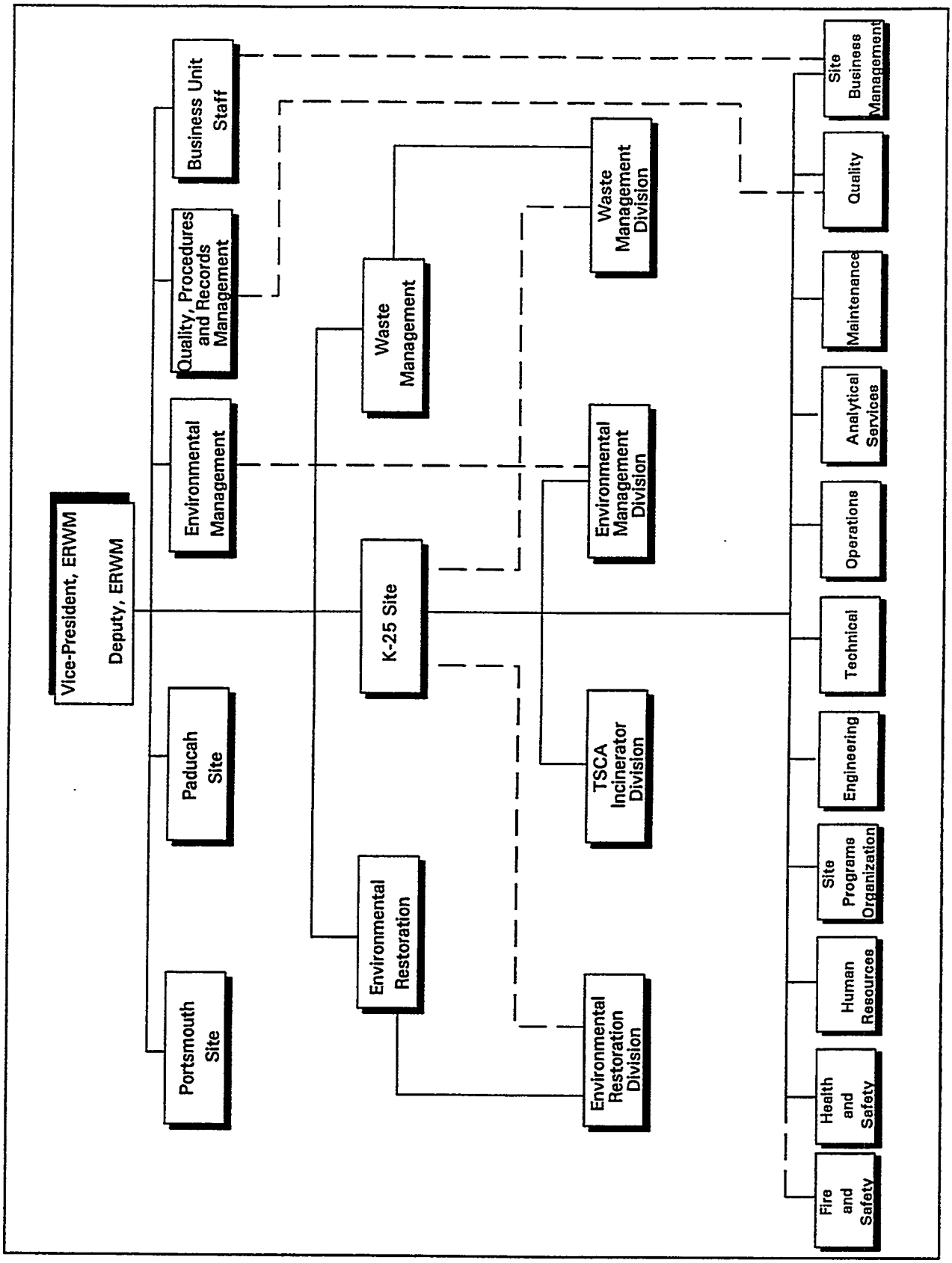

Figure 1-4. MMES/K-25 Organization Chart

SECTION 2.0

SUMMARY OF ENVIRONMENTAL MANAGEMENT ASSESSMENT RESULTS

2.0 SUMMARY OF ENVIRONMENTAL MANAGEMENT ASSESSMENT RESULTS

The following summarizes the results and conclusions of the environmental management assessment of the K-25 Site conducted from February 14 through February 25, 1994. The overall conclusion of the Assessment Team is that the K-25 Site has made significant progress in its environmental program since the 1991 Tiger Team Assessment. This progress has occurred in part due to the commitment to excellence in environmental performance exhibited throughout all levels of the organization. In an effort to provide management with a view of progress at the K-25 Site since the 1991 Tiger Team Assessment, an effort was made to relate the protocols and the issues raised by this assessment to similar issues raised in both the environmental section and management sections of the 1991 Tiger Team report. The Assessment Team did not conduct a detailed review of corrective actions required by the Tiger Team Assessment, nor attempt to validate closure of these actions. Instead, the evaluation of progress was performed by reviewing relevant findings in the Tiger Team report and comparing the Team's understanding of current environmental programs as they relate to the Tiger Team issues. In addition, the Assessment Team was led by the same individual who lead the Environmental Subteam of the 1991 Tiger Team Assessment, and consisted of three team members who were also technical specialists on the Tiger Team Assessment. This continuity allowed the Team to make a qualitative evaluation of progress made in environmental protection programs at the K-25 Site in the two years since the Tiger Team Assessment.

Progress toward meeting environmental performance goals at the K-25 Site is exemplified through: increased staffing the MMES Environmental Management Division, correction of previously identified deficiencies in the Waste Management Division, and significant reduction in the number of noncompliances since 1991.

Notwithstanding the noted progress, the Assessment Team identified weaknesses associated with the integration of programs on a sitewide basis and formalization of activities. The findings identified in the assessment are presented in Table 2-1.

2.1 STRENGTHS

Strengths are attributes that have promoted environmental management systems effectiveness within the facility. The Assessment Team identified the following strengths in the environmental programs at the K-25 Site:

- Key Environmental Staff. Dedicated environmental staff at the DOE K-25 Site Office (KSO) and K-25 Site have been a major factor in the environmental performance improvements noted since the 1991 Tiger Team Assessment with respect to formalization of management systems and efficient utilization of resources. MMES senior management has identified the need to flatten the hierarchy of the organization without placing too much burden on individual managers. The emerging structure is consistent with MMES and DOE goals to maximize efficiency and ensure environmental performance without sacrificing the needs of the stakeholders of the K-25 Site activities.

TABLE 2-1
ENVIRONMENTAL MANAGEMENT ASSESSMENT TEAM FINDINGS

Number	Title of Finding	Page
	Organizational Structure (OS)	
	No findings were identified.	
	Environmental Commitment (EC)	
	No findings were identified.	
	Environmental Protection Programs (EP)	
EP-1	Integration of Environmental Protection Programs and Activities	3-12
	Waste Management Program (WM)	
EP-2	Management of Hazardous Materials Stored in K-25 Site Vaults	3-18
	Decontamination and Decommission Program (D&D)	
EP-3	Subproject Planning for Decontamination and Decommissioning	3-24
	Formality of Environmental Programs (FP)	
FP-1	Formality of K-25 Site Procedural Systems	3-30
	Internal and External Communications (IC)	
	No findings were identified.	
	Staff Resources, Training, and Development (SR)	
SR-1	Environmental Management Resources in the DOE K-25 Site Office	3-38
SR-2	Environmental Training Programs	3-40
	Program Evaluation, Reporting, and Corrective Action (PE)	
PE-1	MMES Appraisals and Surveillances	3-43
PE-2	Formality of KSO Appraisals	3-45
	Environmental Planning and Risk Management (RM)	
RM-1	Environmental Review of Projects	3-51

- Commitment to Continual Improvement. Senior management has successfully instilled a sense of ownership and responsibility toward environmental protection, in K-25 Site employees. Performance Management Teams are common across the K-25 Site at all levels of the organization. This has enabled employee input to key management decisions ensuring consensus by all site staff, leading to improved communication of the management issues that are necessary to reach environmental excellence at K-25. The decision by the K-25 Site Manager to involve all operating divisions in the Mission Success program should be commended.

- Internal and External Communication. The site has established formal and effective communication systems for external communications under the Tennessee Oversight Agreement, including formal tracking of site visits and information requests. Internal communication of environmental information and issues was found to be effective through both top-down and bottom-up channels within the organizations.

- Waste Management Program (WM). Since the 1991 Tiger Team Assessment the MMES Waste Management organization, specifically, the K-25 Site Waste Management Division (WMD), has matured to a level of operational excellence.

  Overall improvements made by WMD include increases in technically knowledgeable regulatory, managerial, and operations staff. Matrixed support has also been provided by a competent, well-staffed Environmental Management Division. In addition, the following activities have been effectively accomplished: development and implementation of formal employee training programs; implementation of formalized policies and procedures; clear definition and understanding of organizational roles and responsibilities, and; increased communications and environmental awareness among all sitewide organizations regarding waste management issues. All of these activities have greatly improved the formality and level of detail given to meeting environmental regulatory compliance goals on a sitewide basis.

  These program strengths were clearly evident in the activities associated with storage of regulated wastes within the K-25 Building vaults. Improvements in programs for managing storage of low-level radioactive, mixed, and PCB wastes include development and implementation of comprehensive procedures for marking, labeling, and inspecting containers; utilization of computer-aided design configuration models for maximizing container storage capacity and aisle space, and; full implementation of a bar code waste container tracking system capable of tracking waste stored at K-25, which is received from on- and offsite locations.

  Although the ultimate container storage capacity needs for the K-25 Site may never been known, MMES has actively and effectively managed the near-term capacity planning and current management aspects of vault storage, taking into account each of the K-25 Site hazardous materials and waste "customers." These efforts have been rewarded in that WMD has

successfully applied for and received two consecutive Mission Success Program Quality Awards based on the Malcolm Baldridge National Quality Award Criteria.

2.2 KEY FINDINGS

Two key findings were developed from the findings in this assessment. A key finding links a group of findings related to the same issue, and is judged by the Assessment Team to be significant in addressing the environmental management deficiencies at the K-25 Site.

There is no integrated sitewide framework, in either MMES or ORO, to identify and manage common risks and requirements associated with all site activities and programs in order to meet overall site environmental protection goals and objectives.

The individual ER, WM, landlord, and overhead programs are utilizing risk based systems for management of their respective programs. However, the program managers have not fully defined and considered the potential environmental risks their programs may have on other K-25 programs or assessed areas not fully covered by these programs. Risk-based prioritization systems are not implemented on an inter-program, sitewide basis. As a result, the full range of environmental issues may not be evaluated and interface areas between programs may not be effectively managed to assure environmental excellence.

One example of the need for this type of inter-program planning and prioritization is the maintenance and repair of roofs at the K-25 Building. This activity, a decontamination and decommissioning (D&D) project managed by the Environmental Restoration Division (ERD), has been assigned a relatively low priority based on the risk-based project prioritization completed by ERD for the reservation-wide Environmental Restoration Program. The risks associated with not making these repairs are not assigned a high value with respect to D&D objectives and goals. However, because wastes and hazardous materials are stored in the K-25 Building under the responsibility of other divisions and programs (e.g., Waste Management Division), the risk associated with leakage of water from the K-25 roofs is considered significant by Waste Management Division in terms of potential corrosion of containers and resultant compliance and cost impacts. This key finding is representative of Findings EP-1, EP-2, EP-3, and RM-1.

Integrated planning and prioritization would better identify the true sitewide risks associated with activities managed under individual program organizations.

There is a need for strengthening the formality of management systems and procedures to ensure effective management and to demonstrate effective performance of program activities.

There are recognized and effective communication channels in place which have succeeded in instilling an organization-wide commitment to environmental protection. However, a commitment to excellence in performance must be supported by formality in procedures, well-understood sitewide systems for communicating and interpreting requirements, and effective measurement tools for evaluating performance against those requirements. For example, changes in higher level procedures are not consistently being incorporated into lower level procedures across all divisions, because there is no formal mechanism to review the lower level procedures as they are developed. Therefore,

incorporation of these changes may depend on individual recognition of the significance of the changes. In addition, the systems used to evaluate environmental performance at the site, such as checklists for surveillances and appraisals, lack formality in development and implementation. This key finding is representative of Findings FP-1, PE-1, and PE-2.

Establishment of more formal processes for key activities will capitalize on the inherent strengths of existing environmental programs.

2.3 FINDINGS SUMMARY

Strong environmental programs need to be supported by management systems to ensure the effectiveness of their development and implementation. Management systems typically involve the general activities of planning, organization, implementation, and control. The focus of the assessment is on the infrastructure, systems, programs, and tools to manage environmental issues, ***not*** on the compliance issues themselves.

To assist in the conduct of environmental management assessments, the following protocols have been developed. The protocols are based on and serve as implementing guidelines for the Environmental Management Section of Performance Objectives and Criteria for Conducting DOE Environmental Audits (DOE/EH-022). They are intended to provide guidance to the Assessment Team in conducting these reviews.

Following is a summary of results and findings by protocol topic.

Organizational Structure (OS). The Assessment Team had no findings in the organizational structure portion of the assessment. There was a strong indication, based on interviews with all levels of management, that a matrix approach to programs at K-25 is an efficient and effective way to ensure environmental protection. The formality of the organization is still developing; however, roles and responsibilities are understood and being practiced. The K-25 Site has an aggressive program for total quality management and is seeing the benefits through the acceptance of, and enthusiasm shown by, Performance Management Teams (PMTs). Of particular note should be the experience in, and dedication to, environmental protection demonstrated by the senior management team that the Vice President of Environmental Restoration and Waste Management (ERWM) has established. The senior management team is active in facility walkthroughs, frequent open-door meetings with staff, communicating environmental concerns, and rewarding environmental performance.

Environmental Commitment (EC). There were no findings identified in this portion of the assessment. The Assessment Team noted that senior management is committed to the pursuit of environmental excellence and that this commitment is shared throughout all levels of the organization. The Assessment Team also noted, however, that where there are measurable drivers, such as regulations, a high degree of environmental management attention is provided. Where compliance drivers are not as strong, there are less structured environmental management systems and measurement programs.

Environmental Protection Programs (EP). Three findings are included in the environmental protection program section of this assessment. One finding identified a deficiency in the integration of program planning for all of the many environmental programs and multiple site mission programs, which limits a truly sitewide environmental protection program.

A second finding identified in the review of waste management program/vault storage, focuses on the site's ability to implement procedures sitewide on a consistent basis to ensure that the environmental protection issues regarding all materials stored in vaults (wastes and other materials) is effectively addressed.

A third finding in this section is specific to D&D programs at K-25. This finding represents an important example of the first environmental protection program finding regarding program integration in that the informal systems for identification, communication, and management of potential environmental issues associated with D&D sub-projects, do not ensure integration of D&D with sitewide environmental programs. The issue is further compounded at the programmatic level by substantial uncertainty regarding future long term goals and objectives.

Formality Of Environmental Programs (FP). One finding regarding the development and implementation of procedures for controlling environmental protection activities was included in this portion of the assessment. The Assessment Team found that K-25 Site procedure management systems do not have an implemented process that ensures procedures, at lower levels, are consistent in terms of requirements interpretation and implementation. Continual absence of such a process to ensure consistency may expose DOE and MMES to further compliance risk, and is not consistent with senior management's stated goal of excellence in environmental performance.

Internal and External Communication (IC). No findings were identified in this portion of the assessment. External communications under the Tennessee Oversight Agreement and the Community Relations Program are systematic and effective. One issue was noted with respect to delivery of commitments under the Tennessee Oversight Agreement; however, the site has recognized this issue and is taking steps to resolve it in the atmosphere of cooperative working groups. Internal communications were found to be effective through both top-down and bottom-up channels within organizations. Particularly noteworthy was that three separate groups of line staff from different operational organizations indicated a high level of environmental awareness and satisfaction with the information communicated to them, and a high level of comfort in communicating environmental issues upward. Communications across program organizations were found to be less effective; however, no deficiencies were identified and the new organizational structure has recently been implemented to improve sitewide communication.

Staff Resources, Training, and Development (SR). The Assessment Team noted two findings in the staff resources, training, and development portion of the assessment. The first finding identified a concern with the monitoring of environmental training records at the K-25 Site. Related training issues were also noted during the 1991 Tiger Team Assessment, and although those issues were addressed, the current management system for ensuring environmental training record integrity is lacking.

The second finding was a concern that KSO oversight of the sitewide environmental management systems is restricted by a limitation in the environmental resources. It was acknowledged that these environmental resources are supplemented by use of subcontractors and alternate ORO resources, however, the current full-time dedicated resources are not consistent with the needs of a developing environmental program responsible for oversight of sitewide environmental protection programs which interface ER

and WM activities, landlord programs, and the Toxic Substance Control Act (TSCA) Incinerator at K-25.

Program Evaluation, Reporting and Corrective Actions (PE). Two findings related to program evaluations, reporting, and corrective actions were identified in this assessment. The findings identified deficiencies in the formality of MMES and KSO surveillances and appraisals. Primarily, documentation for the development of integrated assessment and functional appraisal scopes do not provide sufficient information on how the various functional areas are selected for review. More importantly, the rationale for not selecting certain functional areas is not documented. KSO and MMES surveillances and MMES integrated assessments of environmental program operations do not sufficiently document the level of review to support their conclusions.

Environmental Planning and Risk Management (RM). Three findings that are related to environmental planning were included in the environmental protection program portion of the assessment, due to the nature of the specific programs discussed. These findings identified deficiencies in the integration of environmental planning across programs, and deficiencies in project plans for D&D, with respect to sitewide environmental protection program interfaces. These issues reflect the need for further integration in long-term planning for the various site programs, as well as the importance of clarification in mission and end-point site goals.

One finding related to risk management was identified in this portion of the assessment. The ORO and K-25 Site environmental management systems do not ensure that all projects are reviewed to identify and address environmental impacts. For example, the systems do not effectively address small construction and engineering projects, demonstration projects, or activities in the buffer zone and interstitial areas between the ORR sites, which may pose a risk to the K-25 Site.

SECTION 3.0

ENVIRONMENTAL MANAGEMENT ASSESSMENT OVERVIEWS AND FINDINGS

3.0 ENVIRONMENTAL MANAGEMENT ASSESSMENT OVERVIEWS AND FINDINGS

The assessment findings in the following pages are not necessarily presented in order of importance. Rather, they are grouped by area of investigation, as listed in the Protocols for Conducting Environmental Management Assessments of DOE Organizations. The protocols are a primary resource used by the Office of Environmental Audit (EH-24) to conduct this type of assessment. In addition to the protocols, the Assessment Team consulted the DOE Environmental Audit Program Guidance and Performance Objectives and Criteria for Conducting DOE Environmental Audits.

In an effort to provide management with a view of progress at the K-25 Site since the 1991 Tiger Team Assessment, an effort was made to relate the protocols and the issues raised by this assessment to similar issues raised in both the environmental section and management sections of the 1991 Tiger Team Assessment report. The Assessment Team did not conduct a detailed review of corrective actions required by the Tiger Team Assessment, nor attempt to validate closure of these actions. Instead, the evaluation of progress was performed by reviewing relevant findings in the Tiger Team report and comparing the Team's understanding of current environmental programs as they relate to the Tiger Team issues. In addition, the Assessment Team was led by the same individual who lead the Environmental Subteam of the 1991 Tiger Team Assessment, and consisted of three team members who were also technical specialists on the Tiger Team Assessment. This continuity allowed the Team to make a qualitative evaluation of progress made in environmental protection programs at the K-25 Site in the two years since the Tiger Team Assessment.

Each area of investigation is introduced by an overview that describes: (1) the approach taken by the management or program specialist in conducting the assessment of that area; (2) K-25 Site programs and activities related to the area of investigation; (3) characterization of the strengths and weaknesses of K-25 activities; and (4) a brief summary of the specialist's findings. Each finding is organized into three sections: the performance objectives, the finding statement, and a discussion of the details of the finding. The performance objective specifies the particular practices or standards against which the finding is evaluated. In many cases, where the phrase "best management practice" appears in the performance objective, there are no specific regulatory or DOE references cited. Where this occurs, the best management practice is often based on the protocols described above. The finding statement concisely describes the issue that requires resolution. The discussion section sets out in detail the facts and observations supporting the finding.

Within each finding or overview, references to findings, interviews, and documents are made parenthetically. An example: "(see Finding OS-1)," in which "OS" stands for "Organizational Structure," and "1" is the finding number. Other abbreviations follow:

OS	Organizational Structure
EC	Environmental Commitment
EP	Environmental Protection Programs

FP	Formality of Environmental Programs
IC	Internal and External Communications
SR	Staff Resources, Training, and Development
PE	Program Evaluation, Reporting, and Corrective Action
RM	Environmental Planning and Risk Management

These abbreviations are used rather than the more conventional designations for environmental management findings to enable the reader to determine more easily the specific area of investigation to which the finding relates. Findings in the programmatic areas are in the section of this report entitled "Environmental Protection Programs" and will be preceded by "EP."

Several specialists on the Assessment Team covered more than one area listed above. In those cases, interviews and document reviews quite often were completed with multiple areas of responsibility in mind. To reduce duplication in referencing interviews and documents, they are identified as follows. An example of a referenced interview is "(I-A-1)" where "I" signifies an interview, "A" an individual team member, and "1" the sequential interview number. Documents referenced for this assessment are designated first by the letter "D" for document, followed by the letter designating each specialist (listed below), followed by a sequential number (e.g., D-A-1). The lists of documents reviewed and interviews conducted are presented in Appendices D and E, respectively.

Designator Letter	**Team Member**
A	Paul Farrow
B	Rana Gupta
C	Christopher Martel
D	Mark Heuberger
E	Richard D'Ermilio
F	Mario Vigliani
G	Deborah Turner

3.1 ORGANIZATIONAL STRUCTURE

3.1.1 Overview

The purpose of the organizational structure portion of the K-25 Site Environmental Management Assessment was to evaluate whether the K-25 organizational structure was congruent with the operation goals of the K-25 Site; to determine whether roles and responsibilities are well defined, clearly communicated and understood, and supported by appropriate management systems and documentation; and whether authorities are delegated to organizational levels that can ensure effective implementation of environmental programs.

The general approach to this portion of the assessment included a review of background documents provided by DOE and the K-25 Site, onsite interviews with key personnel, and telephone interviews with contractor organizations. Documents reviewed included organizational charts, organizational charters, position descriptions, quality objectives, environmental program plans, and a variety of other documents. Interviews were conducted with selected MMES managers and directors, MMES employees with environmental responsibilities in the K-25 Site's organization, and with DOE K-25 Site Office (KSO) staff.

The Vice President of the MMES Environmental Restoration and Waste Management (ERWM) business unit has primary responsibility and authority for overall line management and operations. Overall environmental management responsibility resides with the K-25 Site Manager who has a director responsible for the Environmental Management Division (EMD).

The organizational structure within ERWM has undergone considerable change since the 1991 Tiger Team Assessment. The current structure can be summarized as a matrixed organization with clear lines of authority, a relatively flat hierarchy, and an emphasis on management team activities across the divisions. The division directors report to managers who report directly to the Vice President of ERWM.

The DOE Oak Ridge Operations Office (ORO) staff maintains overall responsibility for environmental monitoring, compliance, and protection activities at the K-25 Site. They are also responsible for the development of a general environmental statement that reflects the statement of policy in DOE Order 5400.1, "General Environmental Protection Programs," which contains broad environmental protection goals for all facilities and activities. Within ORO, the Assistant Manager for Environmental Restoration and Waste Management (AMERWM) has overall responsibility for activities and programs managed by the Environmental Restoration Division (ERD), Waste Management Division (WMD), and the K-25 Site Office in executing the responsibilities of the DOE Headquarters Office of Environmental Restoration and Waste Management.

The current ERWM organization has a parallel structure to the ORO organization. The ORO Assistant Manager of ERWM has a direct report, KSO Site Manager, who is a counterpart to the MMES K-25 Site Manager. Similar counterparts exist for ORO ERD and ORO WMD who report directly to the AMERWM.

The available ERWM organization charts do not clearly reflect the current operating structure, as many changes have occurred 10 to 20 days prior to this assessment. Division missions were available and well understood by the staff within the divisions. However, the overall K-25 Site mission is less clearly defined and understood, and was observed by the Assessment Team to be inconsistent with the defined division missions. The Assessment Team found that the principal DOE QA organizations, who provide funding to K-25, EM-30 and EM-40, also have different perspectives of the K-25 site, which contributes to the lack of definition of the mission statement. This issue was also identified in the environmental planning portion of this report.

Primary authority and accountability for environmental management functions rests at the division level, with division managers accountable for problem resolution. The current Environmental Protection Implementation Plan (EPIP) reflected the organizational structure and reporting requirements. However, the EPIP did not address cross-functional responsibilities. This concern with programmatic interfaces is discussed in Finding EP-1 of this report.

Key environmental managers at the K-25 Site have a span of control and responsibility that are in agreement with the current staffing levels and programs. The roles of deputy director and/or manager have been established in some organizations (e.g., Waste Management, K-25 Site, and ERWM) to ensure that timely management response is achievable, and that coverage for the manager remains consistent. The reporting levels between the Vice President, ERWM, and the environmental professionals having the most comprehensive knowledge of relevant environmental conditions within the organization are consistent with best management practices for organizations who have a strong environmental commitment.

As the new matrixed organization develops, careful attention will be needed to clearly define the interfacing roles and responsibilities across divisions. This interface is a critical element of a matrixed organization. Existing memorandums of understanding (MOUs) and organization charters do not necessarily reflect the most recent organizational changes. As a result, it was not clear to the Assessment Team that the interfaces have been defined other than by verbal communication. However, at the operation level, the formation of cross functional work teams in the last year has successfully managed the transition to cross-divisional working activities and this will be an excellent conduit to ensure understanding of the interfaces as they are defined.

The independence and reporting level of the EMD director is consistent with best management practices for ensuring objective oversight of the operation. In addition to the Site Manager, the director of EMD has immediate access to the MMES Compliance, Evaluation and Policy organization (CEP) environmental compliance director, and to a recently appointed ERWM Environmental Management manager for guidance issues or conflict resolution. This division is independent from the Vice President of ERWM. This organizational change is consistent with the objective of the site (and DOE) to become a more cost effective operation.

This Assessment Team found that roles and responsibilities within divisions are clearly defined, communicated, and well understood. Each division has a charter with subsequent roles and responsibilities defined, and a sampling of job descriptions (performance plans) revealed that individual staff have documented responsibilities. Performance plans for

management address the need for environmental protection, and there was evidence that performance reviews consider this a critical element in determining yearly performance. Nevertheless, these performance plans showed that the percentage of time expected to be spent on each responsibility was not defined, and as such could lead to a conflict in priorities. Time requirements for certain key responsibilities such as that of a part-time Divisional Training Officer (DTO) were not documented (see Finding SR-2).

During the 1991 Tiger Team Assessment, management findings were distilled into five key findings. The organizational changes that have occurred were directed at addressing the causal factors for two of the findings and have demonstrated success for the environmental programs (this Assessment Team did not address Safety and Health issues). An example of improved utilization of environmental staff along with integration of programs, both findings of the 1991 Tiger Team Assessment, is the appointment of a single Tennessee Oversight Agreement (TOA) coordinator for the K-25 Site. A formal communication system has been established with the TOA coordinator, and a TOA implementation plan for the K-25 Site clearly outlines roles and responsibilities for the K-25 Site staff.

Overall, the Assessment Team found the organizational structure appropriate for effectively meeting the operational goals of the K-25 Site. The commitment to continually improve operations is well recognized by the senior management, and this is reflected in the recent decision of all 18 divisions to complete their applications for the Missions Success Award in 1996. This program, based on the criteria of the Malcolm Baldridge National Quality Award is aggressive, and an ideal mechanism to demonstrate the strong management organization present at K-25. There were no findings identified in this portion of the assessment.

3.2 ENVIRONMENTAL COMMITMENT

3.2.1 Overview

The purpose of the environmental commitment portion of the K-25 Site Environmental Management Assessment was to assess the organization's commitment to attaining environmental excellence. Specifically, the assessment included an evaluation of the level of senior management commitment to environmental excellence, the existence of overall environmental policies, and personnel involvement at all levels of the organization. Definitions of environmental commitment utilized in the Assessment include the following:

- Senior Management Support - the existence of senior management support to ensure environmental excellence and the necessary emphasis on the importance of and commitment to the organization's environmental goals.

- Environmental Policy - the existence of overall environmental policies essential to establish a framework and direction to the organization's environmental expectations.

- Line Management Support - a sense of responsibility for environmental protection shown by managers and operating personnel at all levels and in all functions.

The general approach used in this portion of the assessment included a review of K-25 Site background documents prior to the site visit and onsite document review and interviews. Key documents reviewed included environmental policy statements, implementation plans, and long-range plans. Interviews were conducted at all levels of the organization, including the MMES Vice President of Environmental Restoration and Waste Management (ERWM), the K-25 Site Manager, division managers, department managers, and operations level staff.

The K-25 Site's commitment to the pursuit of environmental excellence was noted in the 1991 Tiger Team Assessment (D-B-26). This environmental management assessment also notes the continued effort to communicate and formalize that commitment through increased employee involvement and accountability. While there is an element of environmental management commitment related to noncompliance-driven programs that requires further attention (see below), overall, the Assessment Team observed that the K-25 Site has a high degree of environmental commitment which is supported by the enthusiasm of the employees.

DOE commitment at both the DOE Oak Ridge Operations Office (ORO) and DOE K-25 Site Office (KSO) levels is focused on challenging MMES to meet the total compliance goals they have set for themselves. DOE takes MMES' total compliance goal seriously. Examples of this are monthly tracking of any noncompliances, accompanied by a performance rating and a bi-annual review of environmental performance accompanied by financial reward/punishment (I-B-3 and I-B-9). This assessment does note one finding (SR-1) in the area of Staff Resources, Training, and Development, which addresses insufficient resource allocation by DOE to oversee environmental programs at the K-25 Site, thereby limiting DOE's ability to thoroughly assess MMES' performance versus the compliance objective.

The MMES K-25 Site's senior management has clearly committed itself to the pursuit of environmental protection. Measures to communicate environmental performance as a consideration in all operations, were noted by the Assessment Team. Examples include environmental compliance tracking reports required by all divisions, and environmental performance charts and graphs posted in Division Director's offices. Senior management interviewed were knowledgeable concerning environmental initiatives presently underway at the K-25 Site. Senior management expressed that they convey environmental protection as a priority to Division Directors, and respond to noncompliances with positive discipline, examples of which were cited to the Assessment Team (I-B-11).

Each division director is required to prepare a management plan, which addresses environmental performance, and update this plan on a monthly basis. Overviews of plans by the plant manager and all division directors are conducted weekly with a specific division's plans being reviewed each week. This schedule typically provides for quarterly reviews of all plans. The K-25 Site Manager reports the K-25 Site's environmental performance to the MMES officers including the Senior Vice President of Compliance. The Vice President of ERWM presents the data monthly to the MMES Board of Directors. The performance measures used by the division directors are the same as those presented by the K-25 Site Manager and the ERWM Vice President to the MMES officers and Board of Directors, which exemplifies senior management's effort for clear and consistent communication of environmental performance (I-B-11).

An inconsistency was noted by the Assessment Team between compliance-driven programs and programs with environmental risks, but few regulatory drivers. Where there are measurable drivers, such as state and Federal regulations, or DOE Orders, a high degree of management attention is provided. Where compliance drivers are not as strong, there are less structured environmental management systems and measurement programs.

This inconsistency is highlighted by MMES' Environmental, Safety and Health Strategic Plan. The plan states, "Excellence in ES&H compliance means an exemplary program that meets the intent as well as the letter of applicable requirements with efficiency and efficacy, is robust and knowledgeable about present and future expectations, provides advice to regulation writers, and exemplifies leadership. An excellent program recognizes the differences in mandatory requirements and other requirements or best practices, which may be met through a graded approach based on risk-benefit analysis (D-B-24)." The first sentence speaks to the compliance orientation which accompanies compliance-driven programs. The second sentence speaks to those programs where regulations are not as strong, but a high degree of attention is required to ensure environmentally excellent performance. While this plan indicates a degree of commitment that reaches beyond compliance, actual programs at the K-25 Site tend to focus on a compliance perspective.

A specific example of the difference in priority between compliance oriented practice and practices that may reach beyond compliance is noted Finding EP-2 in the waste management program portion of this assessment. This finding addresses differences in inspection practices of hazardous waste versus other hazardous materials. Environmental regulations for hazardous materials storage are not as strict as those for hazardous wastes, yet the environmental risks may be similar. Implementation of recently developed procedures to improve management of hazardous materials has been slow due to the lower priority placed on them as a result of limited regulatory drivers.

Several formal environmental mission statements have been developed by senior management; however, the Assessment Team noted that several interviews of staff at the division director level and below were unable to identify where such a document would be located (I-B-6, I-B-10, and I-B-10). While a formal overriding site environmental policy or mission is not known to all employees, awareness of environmental protection, as a concern to be placed on the same plane as operational issues, was prevalent (D-B-1 and D-B-3; I-B-10).

Certain divisions are provided a matrixed Environmental Management Division (EMD) employee where operational and project related environmental concerns are greatest. In this way, environmental knowledge and compliance are reinforced throughout those affected divisions (I-B-4 and I-B-14).

In addition, training has enhanced awareness. One hourly employee stated, to the Assessment Team, that he has received more training in the last two years, than in the last 15 years (I-B-10).

Hourly workers are aware of several available channels, to communicate environmental concerns upward through the organization. They expressed, to the Assessment Team, their obligation to report concerns, and their challenge to incorporate waste management and risk reducing ideas into everyday operations (I-B-10). Further discussion of success in communication may be found in the overview of the internal and external communication portion of this report.

Related to the inconsistency mentioned above, senior management is highly focused on total compliance. Line staff demonstrates a level of environmental responsibility that goes beyond compliance and indicates a sense of ownership. In interviews conducted with groups of line and hourly staff, enthusiasm and knowledge of environmental programs were demonstrated to the Assessment Team (I-B-10, I-B-14, and I-F-27). Line and hourly employees receive daily information in areas, such as risk reduction, waste reduction and pollution prevention, which exceed compliance-only goals (I-B-10 and I-B-14). One hourly worker stated, "If you insult the environment, it's not through ignorance — it would be because you don't care" (I-B-10). This degree of commitment to excellence will serve to foster long term environmental performance throughout the K-25 Site.

There were no findings identified in the environmental commitment portion of this assessment.

3.3 ENVIRONMENTAL PROTECTION PROGRAMS

3.3.1 Overview

The purpose of the environmental protection programs portion of the K-25 Environmental Management Assessment was to evaluate the management system that Martin Marietta Energy Systems (MMES) has established to ensure that all applicable environmental plans and programs required by DOE Orders, Federal, and state regulations are identified, developed and implemented. Appendix F includes the DOE Orders, regulations and guidelines used in conducting this assessment.

The approach included a review of MMES systems to identify, develop and implement required environmental programs and plans. It was also considered important by the Assessment Team to review the environmental planning documents for consistency and integration due to the site's multiple missions. These reviews were accomplished by examining the environmental programs and plans that have been developed, and by a limited review of the National Pollutant Discharge Elimination System (NPDES) Sampling Program, and the Environmental As Low as Reasonably Achievable (ALARA) Program. A more detailed review was conducted of the Waste Management Division's vault storage activities, and the Decontamination and Decommissioning (D&D) Program. Overviews and findings for the vault storage activities and D&D program are provided in following sections.

Prior to arriving onsite, the Assessment Team reviewed DOE K-25 Site Office (KSO) and MMES environmental plans, programs, and procedures. The on-site portion of the assessment included examining additional documents, and interviewing personnel in the MMES Environmental Management Division, Quality Division, and Waste Management Division responsible for the development and implementation of the environmental programs. Representatives of DOE Oak Ridge Operations Office (ORO), KSO and the Tennessee Department of Environment and Conservation (TDEC) DOE Oversight Division were also interviewed with respect to their involvement in the programs.

The management system developed by MMES involves many individuals in the Environmental Management Division (EMD) and Environmental Compliance organization responsible for reviewing forthcoming regulations, and evaluating their potential impacts on K-25 Site operations. EMD is responsible for ensuring that MMES is in compliance with applicable environmental DOE Orders, Federal, and state regulations by tracking and implementing upcoming regulatory obligations and best management practices. The management system employed by EMD to ensure compliance was reviewed and found generally effective. However, there is insufficient integration of environmental plans and programs across the K-25 Site and with the Oak Ridge Reservation (ORR). This issue was previously identified in the 1991 Tiger Team Assessment (see Finding MF-1 and MF-3). Additionally, the ORO Functional Appraisal effort conducted concurrent with this assessment identified that the K-25 Site Storm Water Pollution Prevention Plan, which affects most organizations and activities, lacked site-specific procedures and implementation programs (see Finding WPC-94-02-25-A).

The management systems portion of the 1991 Tiger Team Assessment identified several instances where K-25 environmental programs and plans were not integrated at the K-25 Site and with ORR environmental programs and plans (see Finding MF-1 and MF-3).

Although progress has been made in integrating the K-25 Groundwater Monitoring Program with the ORR Groundwater Monitoring Program, full integration within and between other K-25 Site programs still does not exist (see Finding EP-1 in this report).

This assessment's evaluation of the NPDES Sampling Program, Environmental ALARA Program, hazardous material storage in vaults practices, and the D&D Program were also previously identified by the Environmental Subteam of the Tiger Team Assessment (see Finding SW/CF-2, SW/CF-7, RAD/CF-2, WM/CF-1, and RAD/CF-4 respectively).

The 1991 Tiger Team Assessment identified several deficiencies with MMES' NPDES Sampling Program and the Radiological Liquid Effluent Sampling Program (see Finding SW/CF-2, SW/CF-7, and RAD/CF-8). The two programs were recently combined with the reissuance of the NPDES Permit. The assessment of the NPDES Sampling Program revealed that necessary program components are in place. Additionally, the continued improvements to the NPDES Compliance Program over the past three years are evident by the reduction in NPDES noncompliances.

The 1991 Tiger Team Assessment identified that an Environmental ALARA Program had not been implemented (see Finding RAD/CF-2). The corrective action for this finding is scheduled to begin by March, 1994 for completion by March, 1996. However, since the 1991 Tiger Team Assessment, attempts have been made by MMES to improve the program and implement the environmental ALARA philosophy. A review of the improvements revealed that the program still lacks measurable goals and does not satisfy the requirements for formality and integration among sitewide environmental protection plans, programs, and activities. Nor do the attempts to implement the environmental ALARA policy follow the requirements of DOE 5400.5, Chapter II, Section 2. However, steps are being taken by MMES to correct this deficiency, and the Assessment Team encourages MMES to continue developing this program and practicing ALARA initiatives.

In 1991, a review of environmental practices for the storage of hazardous materials and wastes in the K-25 vaults by the Tiger Team identified several instances of noncompliance with state and Federal regulations (see Finding WM/CF-1). This assessment found that effective programs have been developed and implemented by MMES to ensure compliance with hazardous waste requirements. The success of the programs were evident to the Assessment Team when inspections were concurrently performed by the TDEC and Federal EPA of approximately 70 satellite accumulation areas. No nonconformances were identified. However, the Assessment Team found that the level of formality of inspections for other hazardous materials in vault storage do not receive the same level of attention as waste, even though they may present an equal environmental risk. The overview and finding for the K-25 vault storage practices are discussed in Section 3.3.3.1 of this report.

The 1991 Tiger Team Assessment also revealed that surveillance and maintenance of surplus facilities did not adequately provide for the reduction of potential radiological environmental hazards (see Finding RAD/CF-4). This Assessment Team's evaluation of the D&D Program identified that D&D project activities are not formally integrated into sitewide environmental protection planning. Instead, environmental planning is reactive to project plans. Therefore, the effectiveness of prevention and control measures prior to project initiation may not be optimum. The overview and finding for the D&D portion of this assessment are discussed in Section 3.3.3.2 of this report.

Overall, MMES has made appropriate progress since the 1991 Tiger Team Assessment and most corrective actions to Tiger Team findings appear to be on schedule. The substantial growth of staff in the Environmental Management Division has helped to establish the infrastructure necessary for developing and managing required environmental protection programs, as well as for the continuance of Tiger Team corrective actions.

3.3.2 Finding

EP-1: Integration of Environmental Protection Programs and Activities

Performance Objective: DOE 5400.1, "General Environmental Protection Programs," requires DOE facilities to design and implement a comprehensive environmental protection program. Best management practices suggest that all of a facility's environmental activities be performed within a clearly defined and communicated architecture of environmental programs, projects, and activities. Such an architecture ensures that all such activities are performed in a manner that ensures effective performance through integrated development of goals and objectives and consistency of missions, procedures, and performance.

Finding: K-25 Site program planning documents do not provide an integrated framework for planning and coordinating environmental protection program requirements, regulatory requirements, and significant environmental activities across the multiple site missions.

Discussion: DOE 5400.1, "General Environmental Protection Programs," requires each DOE facility to design and implement a comprehensive sitewide environmental protection program. The Order requires the development of management tools which are intended to ensure a comprehensive sitewide program: the "Environmental Protection Implementation Plan" (EPIP) and the "Long Range Environmental Protection Plan" (LREPP). The EPIP is intended to provide an overall framework for the design and implementation of the site's environmental protection program. The LREPP is intended to provide a comprehensive set of environmental objectives and implement schedules for integration into the site's long-range budget and planning activities. The planning process used by K-25 is described in the Environmental Planning and Risk Management section of this report.

Although the development of an LREPP is not required for sites having a Environmental Restoration and Waste Management Five Year Plan, the K-25 Site has developed an LREPP and utilizes it as their sitewide environmental planning document (I-G-14). Other environmental program planning documents written by MMES include the K-25 Site Environmental Protection Implementation Plan (D-G-1), Oak Ridge K-25 Site Monitoring Program Management Plan (D-G-21), regulatory-specific program plans, and various other program planning documents for the waste management and environmental restoration activities. Additionally, MMES Central has developed an organizational wide ES&H Strategic Plan (D-G-19) that outlines MMES's ES&H goals and objectives. To date, MMES has not developed the site-specific ES&H goals and objectives implementation plan required by the ES&H Strategic Plan for the K-25 Site. Interviews with MMES indicated that, when developed, the implementation plan would then be used as a driver for integration of all environmental protection program activities (I-G-16).

As discussed in the organizational structure portion of this report, the current organizational structure and reporting lines are outlined in the EPIP. However, the description of programs, responsibilities, and subordinate environmental plans and procedures contained in the EPIP and LREPP focus principally on the EMD management and their oversight of environmental activities. A review of numerous programs and program planning documents indicates clearly that each document is written primarily to address a specific organization's responsibility and to satisfy a requirement of a regulation or DOE Order. For example:

- Accountability, responsibility, and procedures for environmental protection project management activities are not defined or referenced in the EPIP or LREPP. Additionally, activities that are conducted by MMES Central as outlined in the Oak Ridge Reservation Environmental Monitoring Plan (D-G-24) are not clearly defined in the EPIP.

- EMD has developed a series of program management plans for specific regulatory or DOE requirements such as the Clean Water Act (CWA)/NPDES Program Plan, Toxic Substances Control Act (TSCA) Program Plan, Clean Air Act (CAA) Program Plan, etc. These program plans do not reflect the concepts and practices of pollution prevention and environmental ALARA.

- EMD has developed the Oak Ridge K-25 Site Storm Water Pollution Prevention Plan (SWPPP) to address the implementation of the K-25 Site's NPDES program (D-G-32). Remedial action and construction and maintenance activities are not fully integrated with or meet the requirements of SWPPP. The K-1070 Operable Unit SW 31 Spring Project did not institute adequate erosion and sediment control measures. Construction related activities are not controlled by a formal set of procedures that address NDPES requirements. The ORO Appraisal Team noted several projects that resulted in sediment transport to storm drains (see Finding WPC-94-02-25-A and WPC-94-02-25-D).

Development of comprehensive sitewide environmental protection programs is inhibited under the current nature of guidance and program direction being provided from the various EM and EH Headquarters program offices. Individual EM Program Offices's Orders and guidance documents address specific environmental compliance aspects that need to be incorporated into the program. However, these Orders and guidance do not address integration of the compliance requirements with a sitewide environmental protection program. This issue becomes more complex and difficult to address when a site has responsibility to multiple program offices.

An example of this inconsistency can be found in the Draft Decontamination and Decommissioning Guidance Document (January 1994) issued by the Office of Environmental Restoration, EM-40, which was reviewed as part of the D&D program portion of this assessment (D-G-31). The guidance document makes reference to specific requirements under regulations such as RCRA, NPDES and CERCLA but does not address the fulfillment of these regulatory requirements within the structure of an integrated site environmental protection program. Issues related to the D&D program are further discussed in the Environmental Planning and Risk Management, and Decontamination and Decommissioning sections of this report.

The ability to identify and optimize the management of program-specific environmental compliance activities and the sitewide environmental protection requirements has not been established by the current interface of environmental protection implementation plans, programs plans, and project management plans. Integration of the oversight responsibilities and activities of the EMD with the programmatic responsibilities and activities of WMD, ERD, and other K-25 organizations is essential to prevent duplication of efforts, ensure the establishment of a fully compliant program, and ensure efficient and cost effective management of the K-25 Site environmental program.

3.3.3 Programmatic/Technical Assessment

This section provides an overview of two environmental technical programs, and reports the findings of the technical specialists. The technical specialists conducted functional appraisals in support of the KSO Oversight program. The specialists evaluated objective evidence to confirm that applicable elements of the programs had been developed, documented, and effectively implemented in accordance with specific environment, safety, and health requirements. They also assisted on the environmental management assessment and provided evidence to support the conclusions of the management specialists.

3.3.3.1 Waste Management Program/Vault Storage

3.3.3.1.1 Overview

The purpose of the waste management program portion of the K-25 Environmental Management Assessment was to evaluate the effectiveness of sitewide environmental management programs through an indepth review of environmental management functions within the vault storage element of the site's waste management program. Based on the variety of materials stored in vaults at the K-25 Site, the assessment scope was modified to include review of vault storage activities not specifically managed within the site's waste management program, but which have the potential for environmental impact if improperly handled.

The general approach included interviews with the DOE Oak Ridge Operations Office, DOE K-25 Site Office, and K-25 Site contractor personnel responsible for waste management programs, observation of a limited number of vault storage activities, and a review of documentation supporting this area.

Since its evolution into a multi-program facility, including decontamination and decommissioning activities, waste management, and environmental restoration, a primary activity at the K-25 Site remains the storage of low-level, radioactive, mixed, and PCB wastes within the K-25 Building vaults and in the K-31, and K-33 Buildings. In addition, these vaults are used to store idle equipment, classified wastes, and miscellaneous hazardous materials (e.g., lithium hydroxide monohydrate).

Sitewide management of materials stored within the vaults is accomplished through the interactions of several K-25 Site organizations. Maintenance of the superstructure of the buildings where vault storage occurs is the responsibility of the Site Operations Division. Management of materials stored in any one vault is the responsibility of the organization that occupies the vault, and maintenance of the vault space itself becomes a responsibility of that organization as well.

Approximately 50 percent of existing vault storage space is occupied and managed by the MMES Waste Management Division for storage of low-level radioactive, mixed, and PCB-contaminated wastes generated at the K-25 Site, ORNL, Y-12, and the Portsmouth and Paducah Gaseous Diffusion Plants. A number of other vaults are managed by the Materials Management Department, including vaults that contain approximately 23 million pounds (approximately 55,000 overpack drums) of lithium hydroxide monohydrate powder shipped from DOE's Y-12 Plant approximately 16 years ago.

The programmatic review of vault storage activities led the Assessment Team to conclude that overall, the K-25 Site waste management practices regarding vault storage have improved significantly since the 1991 Tiger Team Assessment. Waste management program deficiencies with the potential to affect vault storage activities identified during the 1991 Tiger Team Assessment included the following:

- The absence of a waste management program plan that clearly identified roles and responsibilities for all aspects of sitewide waste management activities (Finding WM/CF-5).

- Hazardous and mixed waste storage vaults were not operated in conformance with applicable regulatory and DOE standards. Specifically, (1) issues identified during container inspections were not corrected, (2) containers were not stored in a manner that provided adequate aisle space, (3) containers were not properly marked and labelled, and (4) poor climate control, in the K-25 vaults, promote premature corrosion of containers (Finding WM/CF-1).

- In general, formal procedures for conducting various vault storage waste management activities were not fully developed and roles and responsibilities of site organizations involved in container storage were not clearly defined or understood (Finding WM/CF-1).

- Training programs for waste management personnel were not sophisticated enough to track required employee training and notify employee supervisors of the need to receive refresher training (Finding WM/CF-7).

Overall, the conclusion of the Tiger Team was that K-25 sitewide environmental management systems had not been fully developed to the point where the program could ensure adequate protection of the environment from containers in vault storage areas.

In addition to the waste management deficiencies identified above, the 1991 Tiger Team Assessment also concluded that the K-25 Site did not have a sitewide program or plan to manage toxic and chemical materials that are not specifically regulated (see Finding TCM/CF-2).

During this environmental management systems assessment, the K-25 Site waste management program strengths that were identifiable during the programmatic review of vault storage operations included: formalization of operational procedures throughout the Waste Management and Environmental Management Divisions; development of computer-aided design configuration models for planning vault container storage that maximizes required aisle space; and full development and implementation of a bar code container tracking system capable of tracking waste stored at the K-25 Site, which is received from on-and off-site locations.

Improvements in waste management staffing levels and expertise, combined with an MMES organizational change that utilizes a comprehensive, multi-site approach for managing vault storage needs relative to waste management activities among all of the Oak Ridge Reservation sites and Portsmouth and Paducah facilities, have greatly increased MMES's ability to minimize the environmental impact of the K-25 Site waste storage activities. Sitewide programs for managing hazardous materials (i.e., toxic and chemical materials) have also been improved.

Although the progress made by the K-25 Site Waste Management Division since the 1991 Tiger Team Assessment has been significant, much of that progress has been driven primarily by regulatory and environmental operating permit requirements. In contrast, programs to manage environmental issues associated with the storage of toxic and chemical materials (not regulated waste) have not matured at a rate equal to waste management programs primarily because applicable regulatory requirements are not as comprehensive.

One vault storage programmatic finding was identified in this portion of the assessment in that the level of formality of inspections for hazardous materials in vault storage (specifically lithium hydroxide monohydrate) is not consistent (e.g., less comprehensive), with that for inspection of regulated wastes. Although inspection of hazardous materials stored in vaults is not required by regulation as is inspection of hazardous waste, some hazardous materials at the K-25 Site may present environmental risks equal to or greater than the environmental risks from regulated wastes.

Since the 1991 Tiger Team Assessment, MMES's Environmental Management Division has prepared a sitewide hazardous materials management program plan that includes a comprehensive procedure and log for inspecting hazardous materials in storage. The procedure and log were issued over six months ago and have already been implemented by many, but not all, organizations actively storing hazardous materials, although the required sitewide implementation date is August 1994.

The vault storage finding, (see Finding EP-2), is representative of two environmental management system issues raised elsewhere in this report: (1) formality of environmental programs, (see Finding FP-1), in that the vault storage inspection activities between the two different K-25 site organizations observed have not been formally integrated to ensure consistent use of the most comprehensive inspection procedures for providing sufficient environmental protection, and (2) environmental commitment (see Overview), that the principal driver for environmental performance is compliance oriented, and is not consistent with senior management's stated goal of excellence.

3.3.3.1.2 Finding

EP-2 Management of Hazardous Materials Stored in K-25 Site Vaults

Performance Objective: DOE 5400.1, "General Environmental Protection Programs," states "it is DOE policy to conduct its operations in an environmentally sound manner that limits risks to the environment."

DOE 5480.19, "Conduct of Operations Requirements for DOE Facilities," states 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, use of procedures to control conduct of operations, review programs, and assessment of program effectiveness.

Best management practices suggest that an organized and integrated approach to identify, evaluate, and manage environmental risks be consistently implemented across the organization and that the programs or standards developed include the management of environmental risks not covered by regulatory requirements.

Finding: K-25 Site vault storage container inspection procedures for identifying potential environmental issues associated with hazardous materials are not consistent with regulated waste inspection procedures.

Discussion: Vault storage that includes mixed, hazardous and low-level waste, and hazardous materials is a primary ongoing activity at the K-25 Site. Management of the K-25 Building itself where much of the vault storage occurs is the responsibility of the site. However, management responsibility for material stored in any one vault belongs to the owner of that material or the vault occupant.

Approximately 50 percent of vault storage space is used for the storage of low-level, radioactive, mixed, and PCB wastes, where approximately 30,000 drums are owned and managed by the Waste Management Division (WMD). A number of other vaults are managed by the site Materials Management Department and used to store various materials including approximately 23 million pounds of lithium hydroxide monohydrate shipped from DOE's Y-12 Plant over 16 years ago (I-D-14).

Although the progress made by the WMD regarding vault storage of regulated wastes has been significant since the 1991 Tiger Team Assessment, management of regulated wastes is driven primarily by applicable environmental regulations and the K-25 Site's waste storage permits. Notwithstanding the WMD vault storage program improvements, a concern raised during the 1991 Tiger Team Assessment regarding dampness in the vaults and the potential effect on container integrity (i.e., corrosion) over time has not been fully addressed (see Finding WM/CF-1). In accordance with the approved Tiger Team Corrective Action response plan, engineering modifications to dehumidify vaults have not yet been explored or implemented (I-D-1 and I-D-3). Improvements to the WMD's container inspection activities directed at addressing the container corrosion issue include more formalized, detailed inspection procedures for hazardous wastes (detailed inspection logs have been developed and are used), and the use of a corrosion identification guide (D-D-2, D-D-10, and D-D-33). The corrosion-specific identification guide was developed in-part by a metallurgical expert employed at the Y-12 Plant and includes photographs of acceptable versus non-acceptable container corrosion. The guide is used by waste management

personnel tasked with conducting weekly inspections of containers in vaults, all of which are subject to conditions of dampness due to the physical environment within the vaults.

In contrast to the formality of regulated waste inspections implemented by the Waste Management Division, inspections conducted of hazardous materials by the Materials Management Department, which include classified materials and lithium hydroxide monohydrate, are not as comprehensive and formal (D-D-18).

An issue raised during the 1991 Tiger Team Assessment related to the management of hazardous materials (i.e., toxic and chemical materials) was that the K-25 Site did not have a sitewide program or plan to manage toxic and chemical materials that were not specifically regulated (see Finding TCM/CF-2). However, following the 1991 Tiger Team Assessment, the Environmental Management Division, having been tasked with developing corrective actions to address toxic and chemical materials findings, prepared a K-25 Site Hazardous Materials Management Program Plan (D-D-42).

This program plan formalized the site's approach to managing hazardous materials by identifying sitewide toxic and chemical materials management roles and responsibilities, and providing direction for hazardous materials management through development of Standard Practice Procedures (SPPs), plans, and training. An important part of the sitewide hazardous materials management program was the development of a procedure for hazardous materials storage and inspection, which was issued in August 1993 by Environmental Management Division (D-D-33). Implementation of this procedure will become a sitewide requirement in August 1994.

To exemplify this point, the Assessment Team reviewed the container inspection practices of the Materials Management Department for the lithium hydroxide monohydrate and found that although dampness is also an issue in lithium storage vaults, container inspection logs do not indicate that containers are checked for evidence of corrosion. In addition, the hazardous material storage and inspection log developed by EMD is not used by Materials Management Department staff during lithium inspections. The inspection log used by the site materials supervisor conducting the container inspections was developed by staff within the Materials Management Department and does not indicate whether container corrosion is checked nor does it provide information regarding corrective actions taken to address unsatisfactory storage conditions including corrosion (D-D-2). During an interview, it was determined that the individual responsible for conducting many of the monthly inspections of over 55,000 steel overpack containers of lithium hydroxide monohydrate and the department supervisor responsible for the material were not aware of the existence of the corrosion evaluation guide used by WMD staff during their inspections, or the EMD Standard Practice Procedure for conducting inspections of hazardous materials (I-D-14).

As is the case with waste management operations at the K-25 Site, efforts have been made to formalize the management of hazardous materials. However, interviews with EMD and WMD staff indicate that successful sitewide implementation of toxic and chemical materials policies and procedures has occurred primarily when activities are driven by regulatory compliance (I-D-3 and I-D-17).

Containerized lithium hydroxide monohydrate is inspected once monthly. This compares to more frequent inspections of waste materials mandated by regulation, even though, from

an environmental risk standpoint, the potential impact on the environment from a release of either material may be equivalent. It should also be noted that the lithium is a corrosive powder, in fiber containers, which has already been overpacked into plastic-lined, steel containers due to the potential of environmental exposure caused by a fire sprinkler incident and deterioration of some of the containers.

Although efforts have been made to improve hazardous material inspection activities on a sitewide basis, comprehensive inspections of lithium hydroxide monohydrate are currently not being conducted, indicating that inconsistencies in the level of formality of managing hazardous materials versus regulated wastes still exist.

The differences in management approaches, specifically, the level of rigor by which hazardous wastes are inspected, support a deficiency in the ability of MMES to appropriately prioritize activities that may potentially effect the environment. In addition, the finding indicates that MMES container practices driven largely by the need to comply with regulations, outpace those not specifically regulated, which in itself speaks to the observations in the environmental commitment section of this report that actual sitewide management practices remain oriented towards regulatory compliance as the principal objective. Issues associated with formality of environmental programs and environmental commitment can be referenced in Sections 3.2 and 3.4 of this report (see Finding FP-1 and Environmental Commitment Overview, respectively).

3.3.3.2 Decontamination and Decommissioning Program

3.3.3.2.1 Overview

The purpose of the decontamination and decommissioning portion of the K-25 Environmental Management Assessment was to evaluate effectiveness of sitewide decontamination and decommissioning (D&D) programs at K-25. This activity was accomplished through an in depth review of environmental management functions as they relate to ultimate disposition of the K-25 Site. The assessment encompassed planning phases which have occurred as well as those which are ongoing or planned.

The approach to this portion of the assessment included interviews with K-25 MMES personnel from within and outside the D&D organization, MMES Central ER, DOE K-25 Site Office and DOE Oak Ridge Operations Office, and the DOE Headquarters Office of Environmental Restoration (EM-40). The approach also consisted of review of documents related to the D&D program at the K-25 Site as well as DOE Orders, draft DOE guidance documentation, and other industry documentation related to D&D.

In December 1987, DOE made the decision to proceed with permanent shutdown of the gaseous diffusion facilities at K-25. Consequently, of the 92 major buildings located on the K-25 Site, 82 are categorized as surplus with no future long term mission except D&D. A near term mission is storage of waste. These facilities are of various size and configuration and some contain significant amounts of process equipment and related utility, ventilation, and cooling systems. There is extensive asbestos insulation in most buildings as well surplus hazardous material such as PCB's, chromium, and lead. In addition, uranium contamination at various levels of enrichment, and other radionuclides, exists.

A gaseous diffusion plant D&D feasibility study was issued in 1988 and recommended that D&D efforts at the K-25 Site be conducted using a phased approach. Phase I had the objective of removal and disposition of hazardous substances within the plant, supported by surveillance and maintenance to ensure health, safety, and environmental risks of the surplus facilities were maintained at an acceptable level. This was to be followed by Phase II which would encompass the actual disposition of equipment and structures.

Costs associated with final D&D of the K-25 Site facilities have been estimated to be in the range of the singles to tens of billions of dollars (I-E-1). Cost estimates were based on using current technology and varying assumptions concerning recycling and waste disposal. Due to the magnitude of the expected costs, additional efforts related to improving D&D technologies aimed at reducing costs have also been seen as goals of the project. The National Academy of Sciences is beginning a comprehensive study of gaseous diffusion plant decontamination and decommissioning, as an effort toward developing new, more cost effective, technologies.

From an external regulatory standpoint there are few drivers directly associated with completion of D&D activities. The primary DOE Order governing D&D is DOE 5820.2A, Chapter V, "Decommission of Radioactively Contaminated Facilities." The current version (September 26, 1988) sets forth specific requirements to develop and document programs to provide for the surveillance, maintenance, and decommissioning of contaminated facilities. However, the requirements of this Order are broad in nature and are

inconsistently interpreted across various DOE complex organizations, including the K-25 Site. EM-40 is addressing their inconsistency by developing specific guidance intended to supplement the Order and assist organizations in meeting requirements, until a new D&D Order is issued (D-E-10).

While it is clear that Phase II efforts represent the most significant challenges from an environmental restoration standpoint, the environmental implications associated with Phase I activities can be significant and were the primary focus of this programmatic assessment. Current projects in the D&D program at the K-25 Site which have environmental implications include removal of toxic and hazardous materials to support safe shutdown. In addition, contamination of existing structures and the activities of some projects also create the potential for radionuclide releases to the environment. Additional environmental implications associated with waste generation and transportation are likely as Phase I D&D projects proceed or are added.

At the K-25 Site, D&D activities are the organizational responsibility of the D&D department which reports directly to the K-25 Site ER manager. Activities conducted within the K-25 D&D program are defined and tracked as subprojects under the MSA OR-1, DOE Oak Ridge Environmental Restoration Project. The individual subprojects which have been established are managed by D&D project managers using matrixed support from other groups such as engineering, health and safety, environmental management, or contractors for specific tasks. The Surveillance and Maintenance (S&M) Program, which is a function of the K-25 Site D&D Program, is conducted and managed by the Site Operations Division with a matrix reporting relationship to the K-25 Site ER Manager. Environmental compliance management support for individual projects is matrixed from the Environmental Management Division.

Overall, the D&D program at the K-25 Site is still in its developmental stages. Activities have begun on Phase I projects such as asbestos and PCB removal, however, completion of Phase I is still a number of years away (D-E-12). Currently, the S&M Program represents a significant portion of the D&D budget at the K-25 Site. S&M activities include routine surveillance of all shutdown facilities and maintenance to correct identified deficiencies such as roof leaks.

This assessment has found that environmental management responsibilities and interfaces at the subproject level within the D&D Program are not sufficiently formalized or defined to ensure consistency and proper integration with sitewide environmental management goals and objectives for environmental protection (see Finding EP-3). The lack of definition regarding environmental integration coincides with a general lack of formality in project management documentation. Project management plans developed during 1993 have not yet been formally approved. The overall K-25 Site D&D program continues to proceed without formal delineation of long-term goals and objectives, although this may be addressed through a recent initiative which consists of development of a draft sitewide Strategic Plan for the K-25 D&D Program. The K-25 situation exists, in part, due to a lack of regulatory or DOE guidance for establishing environmental objectives for D&D activities, and due to the magnitude of potential costs of various options for final facility disposition.

The issue of definition and integration of sitewide environmental protection in D&D activities relates to concerns raised in the Environmental Protection Program portion of this assessment (see Finding EP-1 and the Environmental Planning and Risk Management

Section Overview). In this area, the Assessment Team has raised a concern that upper tier planning documents at the site are not prepared in a manner which integrates environmental protection goals or requirements into all site activities.

One finding was identified in this portion of the assessment, relating to subproject planning for decontamination and decommissioning (see Finding EP-3).

3.3.3.2.2 Finding

EP-3: Subproject Planning for Decontamination and Decommissioning

Performance Objective: Best management practice suggests that organizations plan for environmental management in all activities to ensure that environmental needs are adequately addressed and environmental goals can be met. All projects, programs or activities that may impact the environment should be carefully reviewed to identify and address environmental risks as early as possible and throughout the project and ensure that environmental protection considerations are adequately included in planning for other organizational functions.

DOE 5820.2A, Chapter V, "Decommissioning of Radioactively Contaminated Facilities," establishes specific requirements to develop and document programs to provide for the surveillance, maintenance, and decommissioning of contaminated facilities, including a requirement to develop plans for each decontamination and decommissioning (D&D) work effort. DOE Headquarters Office of Environmental Restoration (EM-40) Draft Decontamination and Decommissioning Guidance supplements DOE 5820.2A and provides expansion of these requirements. DOE 5400.1, "General Environmental Protection Program," Section 5, states that the DOE is committed to good environmental management of all its programs and at all its facilities to correct existing environmental problems, to minimize risks to the environment or public health, and to anticipate and address potential environmental problems before they pose a threat to the quality of the environment or the public welfare.

Finding: The K-25 site D&D Program and plans do not provide an adequate framework to ensure integration of all subproject activities with overall site environmental protection programs.

Discussion: Of the 92 major buildings located on the K-25 Site, 82 of these are categorized as surplus with no future long term mission except cleanup and D&D. A near term mission is storage of waste. The facilities are of various size and configuration and some contain significant amounts of process equipment and related utility, ventilation, and cooling systems. The 82 buildings contain over 300 acres of floor space. There is extensive asbestos insulation in most buildings as well as surplus hazardous material including PCB's, chromium, and lead. In addition, uranium contamination at various levels of enrichment and other radionuclides are present (D-E-12 and D-E-18).

Current D&D activities at the K-25 Site are funded and operated under the DOE Oak Ridge Operations Office (ORO) Work Breakdown Structure (WBS) of Major Systems Acquisition (MSA) OR-1, Oak Ridge Environmental Restoration Project (D-E-18). At the K-25 Site, these activities are tracked as OR-1 subprojects under Activity Data Sheet 4701 (D-E-12). The subprojects reflect efforts that were designed and initiated in the late 1980's following a gaseous diffusion plant D&D feasibility study (I-E-3). Work on individual projects was initiated at that time and has continued based on information presented in yearly budgetary and work scope submittals by MMES and authorized by DOE (I-E-3).

Although project planning for D&D efforts has occurred, there is no overriding K-25 Site approved program plan to specifically address the sitewide D&D process. This issue was identified by an MMES internal audit in 1991 (D-E-14). A Lifecycle Baseline Report for the

K-25 D&D was developed in 1991, updated in August 1993 (D-E-12) and is used by the site as an overall guide for the D&D program. This document contains a technical work scope and assumptions necessary to formulate cost estimates for each D&D project, but does not contain the elements of mission, strategy, and logic that define a program plan. A K-25 Site D&D Strategic Plan was initiated in 1993 but remains in draft form (D-E-7). At a higher level, the MSA-1 Environmental Restoration Program Project Management Plan (D-E-18) encompasses the general management approach to be used in conducting environmental restoration at all sites in the DOE Oak Ridge Environmental Restoration Program, including K-25.

Project management plans for the ongoing D&D subprojects were drafted in 1993. The majority of these management plans have not been formally approved by ORO due to resource and prioritization factors (D-E-4, 5, 6, and 16; I-E-14). These and other baseline planning documents such as the Lifecycle Baseline Report (D-E-12) do not provide sufficient information to establish the interface between D&D subproject activities and sitewide environmental goals and objectives. Specifically, there are few references to the interface between specific D&D activities and site environmental management commitments, particularly environmental surveillance requirements, annual site environmental reporting (DOE 5400.1), and environmental ALARA (DOE 5400.5), etc.).

Current subprojects in the D&D program which have environmental implications include removal of toxic and hazardous materials to support safe shutdown. In addition, contamination of existing structures and the activities of some projects also create the potential for radionuclide releases to the environment. Surveillance and maintenance of existing structures should be performed in a manner that takes into account the potential environmental impact of routine and/or accidental releases. The D&D organizational structure includes the K-25 Environmental Management Division (EMD) as a matrixed resource, however formal documentation at the subproject level provides little information as to the specific nature of the responsibilities or environmental issues that may need to be addressed in environmental planning, review, verification, or reporting. In preparing subproject documentation, the D&D organization utilizes a document requirements matrix (D-E-20). However use of the matrix in determining the need for documentation is informal and the matrix itself does not reference all potential environmental regulatory drivers, DOE Orders, or site standard practice that may need to affect or interact with the subproject.

Another important environmental consideration is the ultimate defensibility of decisions made in implementation of the D&D program. A review of planning documents (D-E-4) and a deficiency found in the Environmental Quality Assurance section of the recent ORO Functional Appraisal report (see Findings EQA-94-02-F and EQA-94-02-G) indicate that methods for characterizing facilities have not been systematically developed within appropriate quality assurance processes. Methods of appropriate quality are needed to ensure usability and defensibility of characterization data.

Many of the environmental issues associated with D&D projects and D&D program development at the K-25 Site are further affected by limited external regulatory requirements or DOE guidance directly applicable to the D&D activities. However, the site's stated goal is environmental excellence and DOE's regulatory goal is to minimize impacts on the environment. The Assessment Team found that current practices to address D&D environmental implications rely heavily the understanding and

decision-making of matrixed support personnel. These practices should be further defined and documented to enhance DOE and MMES management ability to evaluate and measure the performance of D&D projects against environmental goals (e.g. environmental ALARA) and to optimize management's ability to ensure integration of these activities with sitewide environmental protection programs.

3.4 FORMALITY OF ENVIRONMENTAL PROGRAMS

3.4 1 Overview

The purpose of the formality of environmental programs portion of the K-25 Environmental Management Assessment was to assess whether environmental protection activities at the K-25 Site are being conducted in accordance with formal programs supported by documentation, inspections and procedures. DOE 5480.19, "Conduct of Operations Requirements for DOE Facilities," provides requirements and guidelines for the development of directives, plans and procedures relating to the conduct of operations. This Order states that it is DOE policy that facilities have procedures in place to control the conduct of their operations, and that these operations be managed with a consistent and auditable set of requirements.

This portion of the assessment focuses on evaluating the systems to track and translate regulatory requirements; to prepare and manage procedures for implementation of policies and programs; the use of routine inspections to ensure compliance, and systems used for recordkeeping and reporting.

The general approach to this assessment was to review DOE Orders and background documents provided by MMES and DOE. Onsite activities included additional document review and interviews with DOE K-25 Site Office (KSO) and MMES senior management and staff who are directly responsible for or utilize these systems.

MMES has several effective systems in place to track and translate environmental regulations. Regulatory tracking conducted by MMES provides The Environmental Management Division (EMD) with several sources of information and regulatory analysis. In addition, EMD also possesses its own system for regulatory tracking and translation, by referencing a computerized CD-ROM Code of Federal Regulations (CFR), several periodicals and environmental reports. Regulations identified by either MMES or EMD are translated into procedures and formally communicated to all divisions. Within EMD, there are working groups, each reflecting major Federal regulations, such as the Clean Air Act, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and Toxic Substances Control Act (TSCA). These groups work with appropriate divisions to ensure proper implementation of regulatory requirements.

While a finding is noted below addressing the incorporation of regulations into lower level procedures, the Assessment Team does not note any issues resulting from a lack of regulatory tracking. The K-25 Site's practice of matrixing EMD personnel into some divisions having special environmental compliance needs, also facilitates regulatory management. This assessment found the regulatory tracking and integration to be sound.

There are four levels of procedures within MMES management. Level One, or MMES procedures, apply to several sites; Level Two, sitewide Standard Practice Procedures (SPPs) apply to all divisions within the K-25 Site; Level Three and Four procedures, or Standard Operating Procedures (SOPs) operate within divisions. The K-25 Site has a Procedures and Records Management Division to manage all SPPs, onsite. The Procedures and Records Management Division manages the K-25 Site's procedural needs and requirements through four management practices:

- managing the requirement, SPP-1500, "Control of Site Procedures" or the procedure on procedures, which outlines such processes as new procedure creation, updating, and usage;

- providing training on procedure writing and procedure implementation;

- working with the Site Evaluation (SE) group to ensure proper management within divisions; and,

- facilitating a lessons learned group with division representatives to foster cross-divisional communication.

While MMES has successfully implemented this system so that procedures are created and updated according to a formalized system, this system does not ensure consistent interpretation and implementation of lower-level procedures throughout all divisions. This assessment has identified one finding in the area of procedures, which notes that changes in environmental regulations or management practices are not being reflected in all affected procedures (see Finding FP-1). The absence of this assurance undermines the efforts of the Procedures and Records Management Division and the EMD to manage regulatory compliance.

The Environmental Compliance Assessments Group in the EMD is responsible for conducting a variety of inspections for compliance and routine surveillance purposes upon Program Manager requests. Checklists are used to conduct the inspections which are based on regulations and procedures provided by the Program Managers. However, the procedures themselves are not evaluated as part of the inspections. This issue is further discussed in the program evaluation, reporting and corrective action portion of this report.

The Procedures and Records Management Division's role in recordkeeping and reporting mirrors that of its procedural responsibilities. The Procedures and Records Management Division manages site recordkeeping practice by developing and managing procedures on records and document control, providing training on site procedures, working with SE to evaluate performance, and facilitating lessons learned groups to foster communication.

Since recordkeeping and reporting occurs on a division-specific basis, each division is responsible for keeping its own records and interacting with the EMD for permitting and regulatory information. All site records are not centralized within any division, instead each division sets up its own system to satisfy the specific needs of individual regulatory or information management requirements. The recordkeeping and reporting system provides flexibility within divisions to design their own network thereby permitting divisions to best serve their own and customers' needs. EMD's regulatory working groups, matrixed personnel, and division recordkeeping personnel facilitate divisions' recordkeeping needs and implementation of K-25 Site requirements.

Although there are deficiencies related to recordkeeping and reporting noted in the recent report ORO Functional Appraisal report (see Finding EQA-94-02-18-L and QA-94-02-25-J) and one concern raised in the Overview of the Internal and External Communication section of this report, these issues are incident-specific. For example, problems cited were a lack of resources for one, and an organizational change for another (D-B-11). No

systemic problems are noted as a result of these deficiencies. These deficiencies are presently either undergoing or have undergone corrective actions.

Overall, documentation reviewed and interviews conducted by the Assessment Team indicates the presence of a sound recordkeeping and reporting system. One finding was identified in formality of environmental programs that relates to the formality of K-25 site procedural systems (see Finding FP-1).

3.4.2 Finding

FP-1: Formality of K-25 Site Procedural Systems

Performance Objective: Best management practice suggests that formal programs and management systems be in place to manage day-to-day environmental compliance. As an element of an effective environmental management system, formal programs should be present for creating and maintaining procedures which control activities that support or impact environmental programs. Use of formal procedures to control the conduct of operations is a concept contained in DOE 5480.19, "Conduct of Operations Requirements for DOE Facilities," that is crucial to meeting the compliance objectives of environmental programs. The Order states that it is DOE policy that facilities have procedures to control the conduct of their operations, and that operations be managed with a consistent and auditable set of requirements.

Finding: MMES at the K-25 Site has not implemented a process which ensures that procedures throughout the K-25 Site, at lower levels, are issued or revised on a timely basis and in a consistent manner, in terms of requirement interpretation and implementation, to meet new or revised requirements.

Discussion: The K-25 Site has established a formal Procedure, SPP-1500, "Control of Site Procedures," which outlines the creation, verification, acceptance and alteration of Standard Practice Procedures (SPPs). In addition, the K-25 Site has a Procedures and Records Management Division to oversee the management systems associated with procedures. These systems play an integral role in the K-25 Site's management of procedural development and implementation. The MMES procedural hierarchy reflects four management levels : Energy Systems (Level 1), the K-25 Site (Level 2), divisions (Level 3) and loosely, working groups within the divisions (Level 4). Level three and four procedures or Standard Operating Procedures (SOPs) are applicable to, and created and maintained by, individual divisions. SPPs require commentary from and acceptance by all divisions, SOPs require commentary from and acceptance by all departments within divisions.

Should an SPP be changed due to regulatory changes the affected organizations review draft copies and are subsequently distributed controlled copies of the changes so that they can update their Level 3 and 4 procedures. However, there is no formal tracking mechanism to ensure that division personnel identify and appropriately alter all affected sitewide SOPs. Additionally, should an SOP in a division be altered due to the identification of a better management practice, there is no formal mechanism to ensure that all related SOPs, in other divisions, are identified and altered.

In addition, the K-25 Site inspection and surveillance program does not evaluate procedures but instead relies on existing procedures to conduct it surveillances. Although procedures are reviewed as part of a separate program, the procedures are not evaluated as part of surveillances, to ensure that they are updated to reflect changes in regulations. This issue is further discussed in the program evaluation, reporting and corrective action, portion of this report (see Finding PE-2).

The ORO Functional Appraisal Team identified a situation where multiple procedures, both SPPs and SOPs, were found to be both outdated and/or contained incorrect regulatory

information (see Finding WPC-94-02-25-E). This finding was contested by the K-25 Site (I-B-16). The Assessment Team determined from interviews with site personnel that a noncompliance occurred as a result of an outdated SOP (I-B-11). An example, cited in the waste management programs section of this report, notes the inconsistency in rigor of inspections made between hazardous materials and hazardous waste storage areas in vaults, where substantially different inspection methods are used for materials with similar environmental risks (see Finding EP-2).

The Standards/Requirements Identification Document (S/RID) system, presently in its planning stage to address recommendations made by the Defense Nuclear Facility Safety Board (DNFSB) will address the concern raised in this finding for moderate hazard K-25 Site facilities and, at the Site level, the Site support organizations responsible for health, safety and environmental protection related requirements. This system will allow the K-25 Site to identify and implement procedure changes when requirements in S/RIDs data base are changed. This system, however, is not comprehensive in that the S/RID system is scheduled to be implemented for facilities onsite based on a determination of the hazards associated with the facilities and for implementation of requirements at the Site level. This approach may exclude flow-down and review of requirements carried down to level 3 and 4 procedures for some K-25 Site facilities and environmental activities.

The K-25 Site does have a sitewide system to communicate across divisions. Martin Marietta Energy Systems (MMES) in Procedure ESP-QA-16.3, and K-25 in SPP-1322, have implemented a Lessons Learned system to ensure that K-25 Site and applicable industry experiences are communicated and shared with other MMES sites to improve quality, reliability, and safety. This system involves a data base to record information, a designated process of communication, a Site Validator and Site Lessons Learned Coordinator, a Site Lessons Learned Specialist, and a code that delineates the relative criticality of a message. This system serves not only intersite, but also intrasite needs. The code, or alert is administered using the Lessons Learned Interim System, a computerized E-Mail system that facilitates rapid communication.

The Lessons Learned Interim System is a tool to communicate best management practices throughout MMES. It does not ensure sitewide updating of procedures and the system provides no assurance of alteration to all procedures that are affected by regulatory or management drivers.

Current systems are not adequate to track the need for changes to lower level procedures when requirements change. Continued absence of such a mechanism to ensure consistency may expose DOE and MMES to further compliance risk, and is not consistent with senior management's stated goal of excellence in environmental performance.

3.5 INTERNAL AND EXTERNAL COMMUNICATION

3.5.1 Overview

The purpose of the internal and external communication portion of the K-25 Environmental Management Assessment was to assess whether formal and informal channels of communication are effectively used to emphasize management commitment to environmental protection; to promote awareness and support of environmental policies and programs throughout the organization; and to share information with external organizations, including regulatory agencies and the local community.

The approach included interviews with staff at DOE Headquarters Office of Waste Management (EM-30), DOE Headquarters Office of Environmental Restoration (EM-40), and DOE Oak Ridge Operations Office (ORO), and with management and line staff across various organizations. Interviews were also conducted with K-25 Site personnel responsible for external communications with regulatory agencies; community relations staff; management personnel responsible for internal communications; hourly line staff workers in various operational organizations, including a group from the Maintenance Division; a group of operators and maintenance staff from the TSCA Incinerator Division; and a group of hourly wage workers performing laundry, sheet metal, and maintenance functions.

Interviews were also conducted with a representative of the Tennessee Oversight Agreement Office. Documents reviewed included the Tennessee Oversight Agreement Implementation Plan and Monthly Reports, internal memorandums and bulletins regarding environmental information, internal and external meeting minutes, the Community Relations Plan for the K-25 Site, and information distributed to the public under the Community Relations program.

Internal Communication

Internal communication of environmental information is accomplished through the employee training programs, internal memorandums and bulletins, staff meetings, cross-functional management teams, and the activities of environmental coordinators. For example, in the Maintenance Division, there are routine Health, Safety, Environmental, and Waste Management Bulletins (I-B-14). The Environmental Management Division (EMD) sponsors monthly environmental forums and distributes Regulatory Guidance Bulletins (I-F-9). Divisional organizations receive matrix support from EMD and/or have a designated environmental coordinator. Staff at the K-25 Site have also gained awareness of environmental issues through the numerous internal and external assessments and audits at the site (I-F-9). Daily K-25 Site Manager "stand-up meetings" and weekly Site Manager's Walkdowns conducted through various plant areas as an element of the Site Manager's Facility Excellence Program further contribute to employee awareness. The Community Relations Plan for the K-25 Site includes contribution of environmental information to internal communications systems consisting of the electronic daily news system, weekly manager's newsletters, and biweekly newspapers (D-F-20).

Interviews conducted with both ORO and MMES staff within the ER, WM, and K-25 Site organizations consistently indicated that internal communications are effective both through top-down and bottom-up channels within program organizational lines

(I-F-8, 9, 17, and 24). Particularly noteworthy are the results of interviews conducted with a number of hourly employees at the line staff level. These interviews were conducted with five operations and maintenance staff from the TSCA Incinerator, four staff from the Maintenance Division, and five staff from a mix of laundry, sheet metal, and maintenance functions (I-F-27, I-B-10, and I-B-14). The staff consistently indicated a high level of satisfaction with the communication of environmental information to them, as well as a high degree of comfort in reporting environmental concerns upward through their direct supervisor or indirectly via a non-supervisor or hot line (also see the environmental commitment section of this report).

Lateral communication channels across program organizations are less established and effective (I-F-2, I-F-4, and I-F-7); however, recent organizational restructuring should improve sitewide communication, as further discussed in the organizational structure section of this report.

External Communication

External communications related to environmental programs are performed primarily through the Tennessee Oversight Agreement (TOA) and the Community Relations Program.

The TOA, effective May 13, 1991, requires DOE to provide financial and technical support to the Tennessee Department of Environment and Conservation (TDEC) for oversight of DOE activities at Oak Ridge Reservation (ORR) sites. A Department of Energy Oversight Division (TDEC/DOE-O) has been established in Oak Ridge. Responsibility for coordination of TOA activities at the K-25 Site is in EMD, under the oversight of the KSO environmental representative. To facilitate communications, a TOA coordinator has been established for each site in the ORR. The TOA Implementation Plan for the K-25 Site outlines roles and responsibilities, administrative controls, and commitments under the agreement. Monthly TOA Progress Reports are prepared to document visits to the site by TDEC/DOE-O, to provide information requested by TDEC/DOE-O, and to provide a status report on TOA commitments. The Environmental Management Division (EMD) has established a formal communications system to respond to information requests from TDEC/DOE-O, and has implemented a data base tracking system to track information requests and site visits.

Overall, the external communications systems established for the TOA are formal and effective (I-F-6, 7, 8, 12, and 18). However, issues have been noted by the Environmental Management Division and TDEC/DOE-O with respect to the completion of deliverable commitments under the TOA (I-F-12 and I-F-18). In particular, deliverables required under the TOA have in some cases not met the expectations of TDEC/DOE-O for technical content and schedule. This appears to be due in large part to the lack of specificity for the content of the deliverable commitments in the TOA. The issue is further illustrated by the TOA monthly progress report for November, 1993, which summarizes the status of TOA commitments. The report indicates the status for five of the fifteen listed commitments as "awaiting feedback from TDEC/DOE-O on the proposed scope of this deliverable," and indicates that a sixth commitment is "awaiting clarification of the . . . requirements." The December, 1993 progress report indicates no change in status of these commitments. The K-25 Site has recognized this issue and has indicated that they intend to address it by the formation of working groups consisting of state, DOE, and site representatives to more clearly define deliverable requirements and schedules. An additional concern cited by

TDEC/DOE-O relates to the accessibility of monitoring data. Commitment A.7.1.2 under the TOA requires that compliance data will be accessible within 30 days following the end of the month in which it is submitted and surveillance data will be accessible within 60 days following the end of the month in which it is collected (D-F-18). The data has been made accessible to TDEC/DOE-O within the required timeframes, but in an electronic format which is difficult for TDEC/DOE-O to interpret (I-F-12). These issues are being managed in an atmosphere of cooperation and in the context of a formal agreement.

General public relations and community relations activities associated with Environmental Restoration activities under the Federal Facility Agreement and CERCLA are primarily conducted through the Community Relations Program managed by the K-25 Site Public Affairs Office. The Information Resource Center (IRC) has been established in the city of Oak Ridge to house the Administrative Record required under CERCLA and to serve as a public information repository. Overall, the Community Relations Program was found to be well-established, effective, and proactive (I-F-23). The program includes public meetings, Citizen Working Groups, and Quarterly Stakeholder Briefings. A total of 24 public meetings have been held for the ORR-wide ER program since initiation of the community relations program in 1991, in excess of the number specifically required for activities under CERCLA (I-F-23). In April, 1993, the site conducted a Center for Environmental Technology (CET) ceremony and approximately 1000 people participated in public tours of the site, the first time that the site has been opened to the public (I-F-23). According to the Public Affairs Office, K-25 receives the least public attention of the three ORR Sites (I-F-23). Public meetings specific to the K-25 Site have been limited to those required under the CERCLA process for the Pond Waste Project and the SW-31 Seeps and meetings related to the site's NPDES and RCRA permits (I-F-23 and I-F-31).

No findings were identified for Internal and External Communications. No findings relative to community relations activities were identified during the previous Tiger Team Assessment. One finding relative to the administrative record was identified during the Tiger Team Assessment; however, a follow-up of this issue was not within the scope of the current assessment.

3.6 STAFF RESOURCES, TRAINING, AND DEVELOPMENT

3.6.1 Overview

The purpose of the staff resources, training, and development portion of the K-25 Site Environmental Management Assessment was to ensure that the level of staff resources are sufficient and utilized effectively to develop and implement the organization's environmental protection programs; that a formal program is in place to ensure that all personnel have received environmental protection training appropriate for their job responsibilities; and that the organization provides staff development and career advancement opportunities for environmental staff.

The general approach to this portion of the assessment was to review DOE Orders, the K-25 Site documents, and best management practices prior to the onsite portion of the assessment. Activities included reviewing documents pertaining to staff resources, training, and development. Specifically, these documents included position descriptions, performance evaluation forms, training material, training records, and relevant procedures. The approach also included interviews with K-25 Site staff who represent relevant administrative departments (human resources, training), K-25 Site environmental staff, division staff, and KSO staff.

In general, environmental staffing levels at the K-25 Site are sufficient to achieve the environmental performance goals. However, two findings related to staff resource and training issues are noted, both providing concern that in key oversight functions, less than adequate resource allocation is given. In addition, the Program Evaluation, Reporting, and Corrective Action section of this report addresses a concern that may be related to insufficient KSO staff resources (see Finding PE-2).

The recent organizational structure changes within MMES, along with the associated role and responsibility changes, has made resource alignment more controlled than was observed during the 1991 Tiger Team Assessment. As the changes are implemented and communicated across the K-25 Site, it is probable that some identified functional gaps will be filled by matrixing of staff. However, additional senior technical staff will be required in some areas as the K-25 Site program evolves. Currently, the Environmental Management Division (EMD) has identified three open technical positions that cannot be easily filled by matrixing other experienced staff. Senior management, including the Vice President of ERWM, and human resources, are aware of this situation.

A direct result of limited staff resources can be that an individual is stretched to fulfill multiple roles. There is evidence that conflicting priorities may be resulting in less than adequate follow through of K-25 Divisional Training Officer (DTO) responsibilities (see Finding SR-2). Additionally, KSO employs contractors/consultants on a routine basis to fulfill their responsibilities of oversight of EMD (see Finding SR-1).

The technical experience and managerial backgrounds of key environmental staff are appropriate for their responsibilities. The staff interviewed were of a very high caliber, both on technical and management issues. Several key staff were rated as "Distinguished, DS" within MMES last year. The Central Environmental Compliance Organization located in the Compliance, Evaluation and Policy office is an additional resource to MMES for experienced technical assistance. KSO can utilize the Environmental Protection Division

(EPD) of ORO to supplement its resources. Both of these examples indicate that additional resources can be made available for short term activities.

Long term environmental staffing requirements are identified within MMES by the Division Director and verified by senior management.

A review of formal job descriptions indicated inconsistency in completeness, correctness, and applicability. As a result of the recent organizational changes, and associated roles and responsibilities changing, the divisions are addressing this issue. Functional job descriptions are reflective of existing duties, but these do not necessarily translate to an individual's roles and responsibilities under the new organization.

In the performance review process, recognition of an individual's environmental performance is called for; however, environmental performance goals do not consistently appear as a line item in the individual's performance plan. Protection of the workforce is emphasized in individual performance plans by attention to safety; however, while health and safety are justifiably the priority, environmental parity is essential to support the continued drive for environmental excellence.

MMES does have a recognition and incentive system for good environmental performance as part of its Significant Event Awards program. A large percentage (about 80 percent) of the program money goes to environmental, health, and safety initiatives, both for spontaneous and sustained achievements.

MMES has a well documented Training Program Plan and Compliance Training Matrix that incorporates required environmental training. Input to this plan and matrix have typically been from the division directors who have specific regulatory driven environmental training requirements. Over the years, non-required training has been entered into the system. This has resulted in an overly complex environmental training requirements module, that the current Training Management Information System (TMIS) cannot handle effectively.

The K-25 Site is working to upgrade the TMIS and integrate it with the TMS system currently being used at the Y-12 Plant. As part of the upgrade, the K-25 Site DTOs (with division director input) are re-evaluating baseline environmental training requirements (and other training) for staff in their division, and as a result, some non-regulatory required training may be eliminated for some individuals. This effort will go a long way to eliminate the bottlenecks that have been associated with new training achievements being submitted for entry into the system. Entries are often delayed and therefore show as a deficiency, when in fact the individual was not required by regulation to take that training element. In addition to reducing the time to enter, the re-evaluation of baseline training should result in a cost savings to the K-25 Site training budget. Deficient personnel training records was also noted in the recent ORO Functional Appraisal report.

As discussed in the finding on training in this section, the role and responsibilities of the DTOs are not consistently being fulfilled, primarily due to staff alignment issues (see Finding SR-2). The Assessment Team observed, that while the Conduct of Training SPP (SPP-9010) does suggest input by the K-25 Site Training Manager on DTO performance evaluations, it falls short of a formal reporting relationship to ensure guidance and direction for DTO development.

There are three levels of oversight to monitor the effectiveness of the training programs: participant evaluation, instructor evaluation, and course and instructor certification. The quality of training and qualifications of instructors (internal and external) are reviewed both by subject matter experts and human resources personnel at MMES.

General employee training is given to all new employees, visitors, and contractors. The environmental portion of this training involves a written test after review of video presentation and written material. The content is adequate for a base understanding of environmental protection.

Staff development opportunities for the environmental professionals are, by the nature of the program focus at the K-25 Site, abundant. Recent organizational changes have seen several environmental staff receive promotions and opportunities for further growth. In addition, MMES is providing managerial and professional training for those staff who need to expand their existing skills.

Overall, the staff resource, training, and development portion of the assessment identified two findings related to Environmental Management Resources in the DOE K-25 Site Office, and the K-25 Site Environmental Training Programs (see Findings SR-1 and SR-2).

3.6.2 Findings

SR-1: Environmental Management Resources in the DOE K-25 Site Office

Performance Objective: Best management practices suggest that an organization responsible for oversight and assessment of environmental management have adequate staff resources to accomplish its mission.

Finding: KSO oversight of the K-25 sitewide environmental management systems is restricted in its scope by limited technical staff resources.

Discussion: The KSO staff, reporting to ORO, maintain overall DOE responsibility for environmental monitoring, compliance, and protection activities at the K-25 Site. The role of the dedicated environmental staff within KSO is primarily to oversee the MMES, K-25 Environmental Management Division (EMD). The mission of EMD is to ensure overall environmental protection at the K-25 Site. This encompasses 6 major roles and 26 defined responsibilities (D-A-8). In addition to the approximately 60 staff in EMD, there is a degree of reliance from all MMES staff to meet the goal of overall environmental protection. The level of EMD staffing has increased considerably since the Tiger Team Assessment in 1991, however, the same time period, the number of dedicated KSO environmental staff was increased by one.

The dedicated KSO environmental staff are lacking the combined experience necessary to provide the depth and breadth of oversight essential to ensure compliance and overall environmental protection (I-A-6 and I-A-7). A high level of reliance is placed on one individual of this staff, and access to this staff member is becoming more difficult (I-A-25). Currently, a subcontractor is used to provide additional technical input on a regular basis. KSO also utilizes staff from ORO EPD for additional support.

Providing DOE with assurance that K-25 has appropriate environmental protection is a critical mission for KSO. Oversight of the EMD activities should be consistent and comprehensive. The primary mechanisms for KSO oversight activities are scheduled weekly meetings with EMD, monthly Performance Evaluation Committee meetings, quarterly program review meetings, report review and approval, surveillance and windshield inspections, ORO EPD functional appraisals and external audits. KSO oversight includes review and approval of regulatory reports that are significant in size and frequency of submission. For example, for the K-25 Site, the NPDES Discharge Monitoring Report (DMR) includes monthly reporting more than 100 outfalls. Thorough review and approval of this report is a considerable resource undertaking.

Not all oversight activities are documented (I-A-6 and I-C-12). Protocols used for oversight are checklists which do not provide comprehensive detail of reviewed items or allow for documentation to assist in applying and verifying corrective actions and these protocols do not exist for all oversight activities (I-C-12 and I-G-15) (see also Finding PE-1). Development of comprehensive protocols and documentation of observations in a manner to assist corrective actions, would be a major resource commitment in terms of time and technical knowledge.

The level of compliance at the K-25 Site has improved since the 1991 Tiger Team Assessment. However, there is a need to ensure the K-25 operation is moving forward in

its goal for environmental excellence and that compliance is not the only benchmark of environmental protection. As regulations and programs change (or accelerate) at K-25, additional reporting to DOE and the regulatory agencies will require placing additional burden on a currently limited resource. To achieve this, appropriate resources need to be determined and made available.

SR-2: Environmental Training Programs

Performance Objective: Best management practices suggest that an organization should have a formal program in place to ensure that all personnel have received environmental protection training that is appropriate for their job responsibilities or required by environmental regulations.

Finding: K-25 Site monitoring of environmental training records is not sufficient across the divisions to ensure that all staff have their required environmental protection training.

Discussion: Line management has the ultimate responsibility for the training and development of personnel and subcontractor personnel under its supervision in accordance with established site training procedures. It is the role of each division training officer (DTO) to identify training needs, coordinate training development and implementation, and to ensure division compliance (D-A-25). In addition to the monitoring of training records, the DTO has the responsibility of forwarding information of completed training courses and programs to the Training and Development Division for entry into the Training Management Information System (TMIS). The level of effort necessary to perform the DTO function varies with the size of the individual division (I-A-18 and I-A-20). The monitoring of division training records to ensure environmental regulatory compliance is an important function that affects sitewide activities.

In one division, a review of personnel environmental training records indicated that training deficiencies exist, and that inadequate monitoring was a reported reason for expiration dates not being brought to the attention of the division director (I-A-16 and I-A-18).

A review of an MMES EMD surveillance report for RCRA surveillances indicated that training issues contributed to 15 procedural findings in a 4-month period (D-A-28). Although no regulatory findings were identified, this frequency of training deficiencies strongly indicates that not all divisions are monitoring training requirements in a routine or timely manner.

The Assessment Team randomly selected a single employee training record, and the TMIS system indicated several deficiencies. However, on inspection of the individual's file and badge (which displays training records), it was noted that the training had in fact been completed successfully several months earlier (I-A-11 and I-A-16).

For core training activities (such as GET), the monitoring also occurs at the Training and Development Department (TDD), providing a level of oversight. However, this monitoring does not routinely occur at TDD (or within the individual division) for environmental non-core training activities.

These environmental training related deficiencies or inaccuracies indicates that the monitoring and surveillance of training is not receiving the management attention essential to demonstrate excellence in the workplace. The Assessment Team's understanding is that the training system is being re-evaluated, which is a positive sign. In the interim, additional monitoring by the Division Directors and DTOs is essential to avoid potential regulatory issues.

3.7 PROGRAM EVALUATION, REPORTING, AND CORRECTIVE ACTION

3.7.1 Overview

The purpose of the program evaluation, reporting, and corrective action portion of the K-25 Environmental Management Assessment was to evaluate MMES's and KSO's programs that assess the design adequacy and implementation effectiveness of environmental protection systems as well as the reporting and followup activities associated with these appraisals. Appendix F includes the DOE Orders, regulations and guidelines used in conducting this assessment.

The approach to conducting this portion was to review the design of MMES's and KSO's appraisal programs by ensuring that all environmental protection programs and activities were being assessed, and that procedures governing the development, consistency and depth of the appraisal process were in place. Implementation of the appraisal programs was evaluated by reviewing the results of appraisal efforts, and interviewing individuals who conduct and manage them.

Prior to arriving onsite, KSO's and MMES's Program Plans and procedures for conducting appraisals were reviewed. The onsite portion included reviewing additional documents such as appraisal reports and schedules. Interviews of relevant MMES and KSO personnel were also conducted.

MMES's Environmental Compliance Assessment (ECA) Group within the Environmental Management Division conducts surveillances of select operational environmental protection programs and activities. The Site Evaluations (SE) Group in the Quality Division conducts integrated assessments of division ES&H programs and activities. MMES's Central Quality conducts appraisals of the SE Group.

The DOE line organizations, ER, WM, and the Site landlord assess the programs and activities under their direction. The Environmental Restoration organization assesses the activities for the D&D and RA programs. Waste Management assesses the activities for the transport, storage and disposal operations. The Site Landlord, KSO has the responsibility for assessing the general environmental protection activities for the K-25 Site.

KSO conducts windshield tours, surveillances and walkthroughs, and utilizes DOE Oak Ridge Operations Office (ORO) functional appraisals of MMES environmental protection programs and activities as part of their line organization oversight responsibilities. Currently, KSO employs two environmental specialists, and is required to draw upon other specialists in KSO and ORO for assistance when needed. The lack of KSO staff dedicated to environmental oversight of K-25 is further explained in Finding SR-1 of this report.

This assessment evaluated the MMES ECA Surveillance Program and SE Integrated Assessments Program, and KSO's surveillances and use of functional appraisals. The MMES Surveillance and Integrated Assessment Programs were found to lack sufficient guidance to ensure consistency in reviewing the depth and breadth of discipline areas. As a result, surveillances and integrated assessments may not accurately represent the status of environmental protection programs and activities when reported to DOE and MMES management. These issues are discussed in Finding PE-1. The evaluation of KSO's

surveillances and walkthroughs and use of functional appraisals identified deficiencies similar to those in the MMES programs and are discussed in Finding PE-2.

The 1991 Tiger Team Assessment identified that improvements were needed regarding MMES's triennial review process, and documentation, corrective action, and management information for the oversight program (see Finding MF-18). The Assessment Team identified similar deficiencies in MMES's ECA and SE assessment programs' documentation and management information.

The 1991 Tiger Team Assessment identified that KSO was inadequately executing its line management oversight function by not conducting walkdowns, surveillances, and appraisals on a regular basis (see Finding MF-17). Although KSO appears to have improved the regularity in which they conduct walkdowns, surveillances and appraisals since the Tiger Team, the documentation and formality in which they are conducted continues to be an issue.

The corrective action process was reviewed by the ORO Functional Appraisal team at the request of KSO. MMES's status with respect to Tiger Team Assessment corrective actions was included in their report.

Overall, the appraisal programs of both MMES and KSO will require a greater level of detail and formality to ensure quality, consistency, and defensibility. Since the 1991 Tiger Team Assessment, MMES has improved the staffing of surveillances and appraisals; however, their use of auditing tools and available guidance on the conduct of audits requires improvement. KSO appears to have made some strides towards correcting the Tiger Team finding, but appraisal efforts still require greater formality to document management information being utilized to prioritize concerns and affect corrective action.

3.7.2 Findings

PE-1: MMES Appraisals and Surveillances

Performance Objective: Numerous DOE Orders, including DOE 5480.19, "Conduct of Operations," DOE 5480.1B, "Environment, Safety and Health Program for DOE Operations," DOE 5700.6C, "Quality Assurance," and DOE 5482.1B, "Environment, Safety, and Health Appraisal Program," establish requirements for self-assessment and appraisal programs at all levels of the organization. These requirements include the design and documentation of appraisal, surveillance and self-assessment programs that provide written guidance and criteria to ensure relevance, depth, and continuity.

Finding: The design of MMES's appraisal and surveillance programs does not provide sufficient guidance and criteria to ensure depth, quality and defensibility.

Discussion: MMES has established programs to assess environmental protection performance and compliance with regulatory requirements. The Environmental Compliance Assessments Group (ECA) in the Environmental Management Division has developed and implemented a program for conducting surveillances of environmental activities. The reports generated from the surveillances are used to inform DOE and MMES management of the current status on environmental compliance (D-C-50). However, surveillances are conducted at the request of individual EMD regulatory Program Managers, and the scope of the surveillances is defined by the Program Managers. As a result, comprehensive reviews of all environmental activities are not conducted (I-C-7, I-C-8, and I-C-9).

The ECA uses checklists to conduct surveillances. The checklists are developed by ECA based on applicable regulations and procedures provided by the individual Program Managers, and then are approved by the Program Managers and the ECA Manager. Although procedures are reviewed as part of a separate program, the procedures are not evaluated as part of surveillances, to ensure that they are updated to reflect changes in regulations. Instances have occurred where procedures used in developing checklists were incorrect and the checklist were used a few times before the error was identified (I-C-7).

The thoroughness of surveillances cannot be determined from information provided by auditors on the checklists (D-C-50, 54, 55, 56, 57, and 70). Responses to questions regarding environmental compliance issues are limited to "yes," "no," or "not applicable". Information provided by auditors in the Comments column is limited, and does not provide sufficient detail to support the basis for their conclusion. For example, the ECA checklist for inspecting tank storage and/or treatment units against requirements of the RCRA permit, possesses numerous questions that require a detailed review of records, equipment, etc. Completed checklists do not provide details on how many records, equipment, etc. were inspected to arrive at the conclusion that the requirements are being met (D-C-54 and D-C-70). As a result, the impression may be communicated that areas are in full compliance, which may not be valid if only a sample was inspected.

Integrated assessments are organized and managed by the Site Evaluations Group (SE) in the Quality Division of MMES. Integrated assessments are conducted for all divisions across the site except for the Environmental Management Division, Quality Division and Health and Safety Division. These divisions are assessed by the MMES Central Quality Organization. A similar checklist approach is used by SE, and the deficiencies described

for ECA surveillances are also applicable to the conduct of integrated assessments. Prior to performing an integrated assessment, participating members (i.e., technical experts from Y-12, ORNL, and the MMES Corporate) are required to develop checklists based on applicable regulations. However, there is no verification to ensure that participants develop checklists, and those that are developed are not reviewed or approved prior to the assessment (I-C-10).

Overall, the guidance and criteria provided for conducting surveillances and integrated assessments does not ensure consistency or comprehensiveness. As a result, the programs as they are currently conducted may not accurately document the environmental regulatory compliance status of the K-25 Site to DOE and MMES management. However, MMES has expended a great deal of effort over the past year to improve management of Satellite Accumulation Areas (SAAs). While the Assessment Team was onsite, a surprise EPA/TDEC inspection of over 70 SAAs took place and no nonconformances were identified.

PE-2: Formality of KSO Appraisals

Performance Objective: DOE 5482.1B, "Environment, Safety, and Health Appraisal Program," describes the Departmental policy which is to ensure protection of the environment and health and safety of the public, and to ensure compliance with applicable statutory requirements. The Order instructs Head of Field Organizations to conduct management appraisals, technical safety appraisals, functional appraisals, and internal appraisals. The Order also establishes the formality by which the appraisals must be conducted.

Finding: The KSO appraisal process does not provide sufficient formal guidance and criteria to ensure consistency, depth, and defensibility of appraisal results, or adequate coverage of environmental activities.

Discussion: KSO has developed procedures to conduct surveillances and walkthroughs of select environmental activities (D-C-75), and functional appraisals of MMES (D-C-74, and D-C-77). A separate procedure addresses corrective actions (D-C-76). The procedure for conducting surveillances and walkthroughs of environmental activities requires that checklists be developed, results be documented and corrective actions tracked. The procedure for corrective action requires a corrective action for all regulatory deficiencies, and that it be based on an evaluation of root causes, prioritization, and other factors. However, KSO does not always develop checklists, issue reports of surveillances, or require corrective action plans for deficiencies that are considered "quick fixes" (i.e., "items that can be fixed within 30 days without additional funding, or that require procedures to be written") (I-C-12). Although informal criteria is used, no single document was identified that describes the overall approach, rationale, and priority basis for selecting which deficiencies require a corrective action plan.

For more comprehensive assessments of MMES performance, KSO utilizes functional appraisals of programs. The procedure for conducting functional appraisals includes responsibilities and schedules that the participants must meet. Participant responsibilities include developing assessment plans and lines of inquiry. KSO reviews assessment plans and eliminates those functional areas not considered to be a priority. However, there is no document which provides formal guidance for evaluating which functional areas will be included or excluded from functional appraisals (I-C-12). As a result, functional appraisals may not provide adequate coverage of environmental activities and programs.

DOE 5482.1B requires the functional appraisal process to include the use of written guidance and criteria to ensure relevance, depth, and continuity. However, KSO's guidance and criteria are informal, and may not provide minimum acceptable standards for functional disciplines to ensure consistency in depth and coverage (I-C-14). Additionally, the reporting of the validation of previous deficiencies and closeout of corrective actions, in the Functional appraisal report, does not express the thoroughness needed to ensure closure. For example, a deficiency was identified in a previous appraisal that hazardous waste ID numbers were not being included on every container as required. The corrective action included training hazardous waste generators and handlers to place the ID numbers on the containers. The written verification, in the report for closeout of this finding stated, "EPA hazardous waste numbers, are routinely included on containers. Therefore, this deficiency is closed." The depth of the review to verify the closeout of this finding as

stated in the report does not reflect adherence to KSO procedures that corrective action be based on evaluation of root causes.

3.8 ENVIRONMENTAL PLANNING AND RISK MANAGEMENT

3.8.1 Overview

The purpose of the environmental planning and risk management portion of the K-25 Environmental Management Assessment was to assess the extent and effectiveness of technical and financial planning related to environmental management. Additionally, the assessment addressed the site's systems for identifying, assessing, and addressing potential environmental risks.

The scope of the environmental planning portion of the assessment included short and long-term environmental planning, integration of technical and financial planning, resource allocation, and prioritization of projects. It was also considered important by the Assessment Team to review the environmental planning documents for consistency and integration due to the site's multiple missions.

The scope of the risk management section was to address the adequacy of systems designed to identify environmental hazards and to minimize and correct environmental risks, including risk management program design and approach, risk-based prioritization systems, and review of projects to identify and address environmental risks.

The approach for this assessment included interviews with DOE Headquarters, DOE-WMD, DOE-ERD, DOE K-25 Site Office (KSO) and MMES personnel responsible for project and program planning, risk management, risk-based prioritization systems, and environmental review of projects.

Environmental Planning

Long-range planning for environmental programs at K-25 is conducted on four vertical tiers and laterally across organizations under the overall organization of the DOE Office of Environmental Restoration and Waste Management. On the first tier, the DOE Environmental Restoration and Waste Management Five-Year Plan Fiscal Year 1993-1997 (August 1991) sets national objectives for Environmental Restoration and Waste Management Programs and lists major milestones for the K-25 Site (D-F-2). At the site level tier, the Environmental Protection Implementation Plan (EPIP) is intended to provide sitewide environmental protection goals and objectives, and the K-25 Site Long Range Environmental Protection Plan (LREPP) provides an overview of programs and strategies for environmental programs at K-25 and provides information for subsequent budget documents. The LREPP addresses a 5-year cycle of planning, with an emphasis on the first 2 years and more general projections into the last 3 years. The LREPP is updated annually and revised every 3 years, at a minimum. At the program level tier, implementation and management plans are prepared, both for the Oak Ridge Reservation (ORR) and the K-25 Site. These plans include the Oak Ridge Reservation Site Management Plan for the Environmental Restoration Program, the K-25 Site Landlord Plan, and the K-25 Site Waste Management Plan. Finally, at the project-level tier, project-specific work plans and management plans are prepared.

Activity Data Sheets (ADS) are the fundamental budget formulation documents used by the K-25 Environmental Restoration and Waste Management Programs. ADSs are developed by the K-25 programs and identify proposed projects, with information on

priority and funding levels, budget reporting codes, and a short narrative description. ADSs are the basic unit of description necessary to develop a 5-year plan and are updated annually. Prioritization of projects and resource allocation is performed using a Risk-Based Prioritization System and an Integrated Resource Management System, as described in the Risk Management section (see below). Technical and financial input for the ADSs provided by the individual site divisions is rolled up into program budgets submitted to ORO. A Life Cycle Baseline Plan is maintained for each ADS. The technical scope, assumptions, and budget for individual activities included in the Work Breakdown Structure of the ADSs is provided in the Current Year Work Plans. ADSs are submitted to DOE Headquarters by ORO on an annual fiscal year basis along with technical scope summaries and schedules. Funding of portions of the ADSs is then revised on an ongoing basis by DOE Headquarters program management during the budget approval process (D-F-1, D-F-2, and D-F-22; I-F-1, 2, 3, and 4).

Review of the environmental planning processes in place for the K-25 Site programs indicate that short and long-term strategic, technical, and financial planning is conducted for individual organizational functions at K-25, and that this planning generally incorporates environmental considerations. However, the assessment indicates that management systems are not in place to ensure that sitewide general environmental protection program activities are most effectively integrated into all program and project activities by flow down through the vertical tiers of planning documents and by lateral integration of planning across programs. Activities at the K-25 Site are managed and overseen primarily on a program and project-specific basis. The ability to identify and optimally manage the program-specific environmental compliance and the sitewide environmental protection requirements has not been established by the current level of interface between environmental protection implementation plans, program plans, and project management plans.

These issues related to environmental planning have been addressed in two findings included in the Environmental Protection Program section of the assessment (see Finding EP-1, Integration of Environmental Planning and Activities, and Finding EP-3, Project Planning for Decontamination and Decommissioning).

It is the view of the Assessment Team that these planning issues are in part reflective of the complexity and diversity of the site programs, and in part reflective of the historic lack of integrated long-term planning and missions between these programs. Integrated long-term planning is also constrained by a lack of definition of the end-point mission and land use for the site, which in turn creates uncertainties in endpoint decisions for remedial actions, D&D, and waste management activities.

The long-term site mission and goals have not been clearly and consistently communicated throughout the organizations and operating groups to develop a consistent understanding and awareness of the site's environmental mission. Interviews with personnel across organizations from DOE Headquarters through the site indicate inconsistent understanding of the principal mission and priority for the site. The mission is alternately understood by personnel in individual organizations as site remediation, D&D, waste management, TSCA Incinerator operation, and the Center for Environmental Technology and Waste Management. While the individual programs at the site do by definition have different individual objectives, the lack of communication of a common endpoint and mission may

foster separation of the programs, impede integration of planning across the programs, and serve as a barrier to effective endpoint planning for the site.

Additionally, the long-term land use for the site has not been defined or communicated internally and externally. This may foster a lack of long-term vision and direction for the remedial action and D&D programs, could prevent endpoint decisions for remedial action and D&D programs, and may impede or prevent completion of projects. This type of planning will need to be integrated into long-term environmental restoration and D&D planning to achieve endpoint decisions.

Risk Management

Formal risk management systems in place at the K-25 site include risk determination for issues and projects through the Risk-Based Prioritization Methodology (RBPM) using the MMES Risk Matrix. This method evaluates projects by determining the risk that would exist if the issue is not resolved or the project is not completed. The results of this risk-based prioritization are used in the allocation of resources for projects through the Integrated Resource Management System. This system is used for risk evaluation, issue and project prioritization, resource allocation, and funding requests for K-25 Site Overhead and Landlord Programs. More recently, an RBPM system has been incorporated by the RA D&D, and WM programs. The Center for Risk Management at Oak Ridge National Laboratory (ORNL) plays a coordinating role for risk prioritization and risk assessment for the three ORR sites.

The Standard Practice Procedure (SPP) for the Integrated Resource Management System specifies the establishment of environmental issues evaluation teams and health and safety issues evaluation teams. A Project Evaluation Group (PEG) has been established to systematically review and evaluate the risks and/or benefits of ERWM programs, issues, activities, and projects. The Project Evaluation Group is composed of a cross section of senior managers from the different program organizations. A Senior Management Group (SMG) provides review and concurrence for the budgeting process.

The Risk Matrix used in the RBPM evaluates the relative probability for a total of 22 consequences in seven categories: public health and safety, environmental protection, site personnel safety, regulatory compliance, external confidence, mission and operational performance, and business efficiency. The greatest weight is given to consequences in public health and safety. The second greatest weight is assigned to consequences in site personnel safety, followed closely by environmental protection. The remaining categories are lower in weight by approximately one order of magnitude. This is an appropriate weighing to account for environmental protection issues. However, the lowest level consequence for environmental protection resulting in a risk value, "Significant Ecological Damage," has a threshold value of $1,000,000, such that projects with estimated ecological damage below this value are not assigned a risk value (D-F-1). Therefore, relatively few projects or issues would be indicated as a having a risk associated with environmental protection, whereas a greater number of projects would meet the threshold value for regulatory compliance. The practical result of this system is a greater emphasis on compliance than environmental protection unless the ecological damage is great. It was beyond the scope of this assessment to determine the adequacy of the probability and consequence estimates which are input to the system for individual projects.

It should be noted that the RBPM system being used by the Environmental Restoration Division, the Environmental Risk Based Benefit Assessment Matrix (ERBAM), is in draft form and has not been formally implemented. Additionally, the draft ERBAM reviewed during the assessment (which includes remedial action and D&D activities), differs from the RBPM in that environmental protection and compliance are listed as a single category (I-F-4 and I-F-22).

In addition to the risk-based prioritization system, quantitative baseline human health and ecological risk assessments are performed as part of the Remedial Action Program under the Federal Facility Agreement and Comprehensive Environmental Response, Liability, and Compensation Act requirements. The assessment did not include an evaluation of these risk assessments.

Additionally, a number of systems are in place to review new projects for potential environmental risks. The Environmental Restoration and Waste Management Programs have mechanisms in place for coordination with the Environmental Management Division (EMD) for review of environmental compliance and environmental protection issues. This coordination is typically specified in program and project-level planning documents and is accomplished through matrix support and oversight from EMD. Additional mechanisms in place include coordination with EMD in the National Environmental Policy Act review process, Safety Work Permits, and the K-25 Site Excavation/Penetration Permit process. However, these systems do not ensure that some small projects or project changes are reviewed to identify and address environmental impacts. This deficiency is identified in Finding RM-1 of this report.

One finding was identified in the environmental planning and risk management portion of the assessment related to the environmental review of projects (see Finding RM-1).

3.8.2 Finding

RM-1: Environmental Review of Projects

Performance Objective: Best management practice suggests that all new projects, programs, or activities that may impact the environment or facility environmental programs should be carefully reviewed to identify and address potential environmental risks as early possible and throughout the project.

A formal and defined project review and approval process, which includes environmental considerations, should be established at the facility for all projects which have a potential for environmental risk. Projects that should be included in this review, include but are not limited to, construction projects, remediation projects, R&D projects, and facility-level maintenance projects.

DOE 5400.1, "General Environmental Protection Program," Section 5.a, states that it is DOE policy to correct existing environmental problems, to minimize the risks to the environment or public health, and to anticipate and address potential environmental problems before they pose a threat to the quality of the environment or the public welfare.

Finding: The DOE Oak Ridge Operations Office (ORO) and K-25 Site systems for environmental review of projects do not ensure that certain projects and activities that may impact the environment are identified, reviewed, and managed to evaluate and address environmental risks.

Discussion: Risk-based prioritization systems have been established for the various programs at the K-25 Site, including RA and D&D, Waste Management, and K-25 Site Overhead projects. Additionally, a number of systems are in place to review new projects for potential environmental impacts. The ER and WM programs have mechanisms in place for coordination with the Environmental Management Division (EMD) for review of environmental compliance and environmental protection issues. This coordination is typically specified in program and project-level planning documents, and is accomplished through matrix support and oversight from EMD. Additional mechanisms in place include coordination with EMD in the National Environmental Policy Act review process, Safety Work Permits, and the K-25 Site Excavation/Penetration Permit process. However, these systems do not ensure that some new projects, particularly small projects or project changes, are reviewed to identify and fully address environmental impacts. For example, the systems do not effectively address some small construction and engineering projects, demonstration projects, or activities in the buffer zone and interstitial areas between the Oak Ridge Reservation (ORR) sites which may pose a risk to the K-25 Site.

The ORO and MMES systems do not ensure that some small construction and engineering activities conducted at the site by the Engineering Division, subcontractors, and other groups are reviewed for environmental impacts. For example:

- The MMES Engineering Procedure EP-D-06 for Excavation/Penetration Permits (D-F-14) does not include requirements for environmental review. The permit form does not include information on environmental impacts, or a signature by EMD, or an environmental coordinator. The K-25 EMD Procedure EMD-1303 for Health, Safety, and Environmental Management

Procedure for Excavating operations at the Oak Ridge K-25 Site has not been completed (D-F-17). The K-25 Standard Practice Procedure SPP-7110 for Excavation Permits does include a requirement for EMD review of all permits and, based on interviews, excavation/penetration permits in practice are being routed to EMD for environmental review (I-F-30). However, the permits are not required for a number of work activities, including "excavations 12 inches or less in depth, with a surface area not in excess of 25 ft^2, using hand-held tools;" "work associated with the maintenance, removal, or replacement of roadways/driveways and appurtenances, sidewalks, and designated landfills or burial sites;" work in "soil borrow areas predesignated by Central Engineering;" and work in "areas predesignated by Central Engineering as containing no utilities" (D-F-23). As an example of the potential results of this deficiency for a project change, asphalt paving material and soils from an asphalt repaving project conducted by engineering were inappropriately disposed of in a drainage area (I-F-4 and I-F-9).

- A program is not in place for review and oversight of construction and maintenance activities to ensure the requirements of the Surface Water Pollution Prevention Plan (SWPPP) are met. Inadequate sediment and erosion controls have been implemented at several projects including the Phase I Remedial Design for the K-1070 Operable Unit SW-31 Spring Project. This observation was also included in the recent ORO Functional Appraisal report (ORO/WPC-94-02-25-A, D).

- Interviews with Project, Design, and Engineering staff indicate that EMD is not always involved in the early stages of some small construction projects and project changes.

There is no formal K-25 Site program plan or associated procedure that states requirements for environmental review and oversight for demonstration projects conducted as part of the Center for Environmental Technology (CET) Group under the K-25 Site Programs Office (I-F-13, 14, 20, and 28). It should be noted that the project manager responsible for these projects is aware of the need for environmental review and specific demonstration projects have undergone this type of review. The CET group uses the Guidance Manual for Conducting Technology Demonstration Activities, prepared by MMES-ORNL in 1991 (D-F-16). Additionally, a Job Planning Checklist, which includes an item for environmental review is used for individual projects. However, the example of a completed checklist reviewed during the assessment did not indicate the basis for a check and did not have a sign-off by a representative from EMD or other environmental oversight staff (I-F-20). Without a formal site program plan and associated procedures for all demonstration projects conducted under this program, there is a potential that future demonstration projects, which typically involve external groups, may not undergo the necessary reviews and oversight to ensure that environmental requirements are followed and that K-25 Site environmental policies are adhered to. Potential risks may be associated with disposal of materials used in the projects, environmental impacts associated with construction activities related to the projects, and Comprehensive Environmental Response, Compensation, and Liability Act requirements. According to interviews, the Site Programs Office, which manages the CET group, intends to prepare a formal planning

document for Industry/Site Developmental Projects which will address the review and oversight requirements (I-F-28).

Projects and activities which occur in the buffer zone and interstitial Oak Ridge Reservation space between the K-25 Site, ORNL, and the Y-12 Plant, are the programmatic responsibility of ORNL. ORO, KSO, and the K-25 Site do not have a program in place to ensure review of these activities which could potentially impact the site or have an environmental risk to the site. For example:

- The reservation-wide Southern Pine Beetle control project activities, which involve clear-cutting of interstitial forest areas, have a potential to impact water quality at the K-25 Site. Based on interviews, EMD identified this activity as a potential risk, reviewed this activity for potential impacts to Mitchell Branch, and made recommendations to mitigate impacts, including flagging of the buffer zone; however, there was no formal requirement for notification of EMD and no formal requirement for EMD to review this type of activity. Additionally, there is no formal documentation of EMD's review, the results of the review, or the recommendations made regarding potential impacts from the activity (I-F-30). Formal systems should be in place to ensure that all such activities undergo review and formal documentation is necessary to ensure accountability.

Although environmental review and oversight is provided for the majority of projects at the site and appears to be well established for the principal site programs, formal procedures and systems are less well-established for the types of activities cited in the finding. For these types of activities, the formal and informal lines of communication between the project organizations, the environmental organizations, and site organizations are less well established and there is a need for formality in procedures to ensure that environmental review is completed in all cases where potential risk is present.

APPENDIX A

BIOGRAPHICAL SKETCHES OF THE ASSESSMENT TEAM

NAME: Charles Lewis

AREA OF RESP: Team Leader

ASSOCIATION: U.S. Department of Energy, Office of Environmental Audit

EXPERIENCE: 16 Years

- U.S. Department of Energy, Office of Environmental Audit (EH-24)
  - Environmental Engineer. Principal responsibilities include leading multi-disciplinary teams of professionals in performing environmental assessments and audits at DOE facilities.
- State of Maryland, Department of Environment
  - Experience includes 9 years with the State of Maryland, Department of the Environment as Program Administrator, Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) programs; Division Chief, CERCLA Pre-Remedial Division; Section Head, Hazardous Waste Enforcement Division; and Investigator with the Hazardous Waste Inspection Team.
- Private Environmental Consultant
  - Worked as a project manager, design engineer, and water/wastewater treatment plant operator for environmental consulting firms.

EDUCATION: B.T., Civil Engineering, Rochester Institute of Technology

OTHER: Certified Hazardous Materials Manager (CHMM)
DOE Certified Accident Investigator

NAME: Deborah A. Turner

AREA OF RESP: Deputy Team Leader

ASSOCIATION: U. S. Department of Energy, Golden Field Office

EXPERIENCE: 5 years

- U.S. Department of Energy, Golden Field Office

  — Environmental Engineer, ES&H/Operations Division, Golden Field Office (GO). Responsible for overseeing all aspects of the environmental management and compliance programs for the operations of the National Renewable Energy Laboratory and all other prime actions handled through GO. Serve as the NEPA Compliance Officer for GO.

  — Environmental Engineer, ES&H and Compliance Branch, Pinellas Area Office (PAO). Responsible for environmental compliance, permitting, and surveillance for all environmental programs, in coordination with the Environmental Restoration and Waste Management Program managers. Served as NEPA Contact for PAO.

- University of Florida

  — Project Manager, Crystal River Project. Oversaw all aspects of sampling, analysis and reporting of radiological surveillance program at the Crystal River Power Plant.

EDUCATION: M.E., Environmental Engineering, University of Florida
B.S.E., Environmental Engineering, University of Florida

NAME: Richard D'Ermilio (CHMM)

AREA OF RESP: Waste Management/Vault Storage

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 8 Years

- Arthur D. Little Inc., Cambridge, MA
  - — Participated in Tiger Team Assessments of the Pittsburgh Energy Technology Center, National Renewable Energy Laboratory (formerly SERI), Los Alamos National Laboratory, Oak Ridge K-25 Site, and the Fermi National Accelerator Laboratory as a waste management specialist for the Environmental Subteams, and as a team member on the ES&H Progress Assessments of the Oak Ridge Y-12 Plant and Argonne National Laboratory. Also participated as the toxic and chemical materials specialist at the NPOSR Tiger Team, and evaluated the effectiveness of waste management programs for the SSC Environmental Management Assessment.
- A.W. Chesterton Company
  - — Responsible for the corporate hazardous and special waste management program, including identifying and characterizing hazardous wastes, formulating and implementing a waste tracking program, interacting with waste disposal/treatment vendors, and managing empty containers.
  - — Developed and implemented facility-specific emergency contingency planning procedures.
  - — Trained facility employees in proper accumulation and management of hazardous and special waste.
  - — Developed a corporate underground storage tank (UST) management program.
- Chemical Waste Management
  - — Managed a waste disposal contract for the Federal Government Defense Reutilization and Marketing Office (DRMO) that involved identifying, characterizing, packaging, and removing surplus hazardous materials located at Federal Government facilities throughout New England.
- S.E.T. Environmental
  - — Managed a project for Commonwealth Edison of Illinois that involved the removal of soils and decontamination of sites contaminated with polychlorinated biphenyls (PCBs).

EDUCATION: B.A., Environmental Science, State University of New York College at Purchase

OTHER: Certified Hazardous Materials Manager

NAME: Paul E. Farrow

AREA OF RESP: Organizational Structure; Staff Resources, Training, and Development

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 18 Years

- Arthur D. Little, Inc., Cambridge, MA
  - Primary area of consulting is management system assessments as they relate to environmental, health and safety functions of organizations. Key areas include resource alignment with organizational structure to ensure effective and efficient operation of EHS processes.
  - For a not-for-profit organization carried out a management system assessment of the quality assurance program. This organization manufactures a vital commodity for health industry, and the quality assurance function is critical to ensuring the safety of patients.
  - Responsible for a nationwide seminar series "Managing the Environment Business." Led a team of 5 senior professionals on a 22 venue seminar series. Topics included market assessment, production schedules, resource management, quality control, profitability, and business plan development.
  - U.S. Army Toxic and Hazardous Materials Agency (USATHAMA), managed GC/MS sample analysis of volatile and semi-volatile organics. Completed certification in accordance with 1987 USATHAMA QA/QC procedure for 100+ analytes, in support of USATHAMA's CLASS program (Contract Laboratory Analytical Support Services).
- VG Instruments
  - Method development and instrument modification tailored to customers' specific requirements.
  - Worked with leading laboratories worldwide, coordinated VG's entry into the market of custom built instruments for specialized applications.
  - Managed analytical laboratory at Winter Olympics in Sarajevo 1984.
- Schering AG (Previously Fisons Agrochemicals and FBC Ltd), Saffron Walden UK
  - Analytical chemist. Support of formulation, residue, and metabolism departments. Analytical method development and experimental design in support of new product registration. Managed analytical services department, providing analytical services such as GC/MS, HPLC, GC, NMR, IR, and basic physical property measurements.

EDUCATION: GRSC, Chemistry, Graduate of the Royal Society of Chemistry, Hatfield Polytechnic, Hatfield, UK

NAME: Rana K. Gupta

AREA OF RESP: Environmental Commitment; Formality of Environmental Programs

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 5 Years

- Arthur D. Little, Inc., Cambridge, MA

  — Facilitated an Environmental, Health and Safety (EHS) audit for a U.S. multinational firm with operations in Singapore, China, Taiwan, and Hong Kong. Provided regulatory documentation and analysis for ESH audits to be conducted in facilities in each of the countries. In addition, acted as liaison between Arthur D. Little staff in Taiwan and client in U.S. for pre-audit arrangements and logistics.

  — Assisted in the project management of a country-wide, due diligence project involving 25 facilities. Responsibilities included providing home-base support and logistical aid to teams in the field, working with laboratories responsible for analyzing paint, radon, and water samples, editing reports, acting as liaison with client and preparing final drafts for the client.

  — Audited two facilities (an incinerator and a wastewater treatment plant) for Arthur D. Little Site*WATCH*® reports. Through interviews and document review, areas such as environmental management systems and organizational structure were analyzed. Also performed financial statement analysis of the owner-companies, to determine financial resource capabilities.

  — Developed a dynamic computer model to simulate economic, technologic, and market trends for strategic decision making in automobile plastics recycling. The model allows for variable alterations to affect model results, thereby providing several scenarios to evaluate market opportunities for players in the plastics and automobile industry.

  — Developed a model for a Fortune 500 company to facilitate long-terms strategic an costing decisions regarding pollution control investment in third work countries. The model, to run on a spreadsheet will use both deterministics and stockastic calculations to forecast pollution control technology requirements for manufacturing facilities in got countries. Host country analysis involves a model developed to evaluate the environmental, regulatory evolution of countries over a period of decades.

EDUCATION: M.B.A., Finance/International Business, New York University
M.S., Operations Research, Stanford University
B.A., Mathematics, Earlham College

NAME: Gregory T. Haugan, Jr.

AREA OF RESP: Technical Editor

ASSOCIATION: META, Inc.

EXPERIENCE: 9 Years

- META, Inc., Arlington, VA
  - — Technical Editor. Provided technical editing support to DOE during the National Institute for Petroleum and Energy Research Tiger Team Assessment, the Y-12 Plant ES&H Progress Assessment, the Morgantown Energy Technology Center ES&H Progress Assessment, the Waste Isolation Pilot Plant Environmental Management Assessment, and National Renewable Energy Laboratory Environmental Management Assessment.
  - — Technical Editor. Provided technical editing support to DOE in conducting its Programmatic Environmental Impact Statement.
  - — Information Management Specialist. Participated in 16 Tiger Team Assessments managing a team responsible for onsite administrative support, report production, and technical editing. Team member on seven ES&H Progress Assessments providing administrative support, onsite report production, and technical editing.
- UDI Contractors, Inc.
  - — Project Manager and Administrator. Supervised field operations and managed office administration for a construction management firm. Initiated the corporate safety program and monitored OSHA compliance.
- GLH Inc.
  - — Program Analyst. Specialized in research, report writing, and project management software for an information resources management consulting firm.

EDUCATION: Graduate Studies, General Administration,
University of Maryland
B.A., General Studies, University of Maryland

NAME: Mark O. Heuberger

AREA OF RESP: Internal and External Communications; Environmental Planning and Risk Management

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 11 years

- Arthur D. Little, Inc., Cambridge, MA
  - — Participated in DOE Tiger Team Assessments at Los Alamos National Laboratory, Pittsburgh Energy Technology Center, Fermilab, and the Strategic Petroleum Reserves.
  - — Management of site investigation activities associated with base closure at Fort Devens, Massachusetts.
  - — Conduct management systems assessments, due diligence assessments, audits, and site investigations for a variety of commercial and government facilities.
- HMM Associates, Inc.
  - — Managed a remedial investigation and feasibility study completed at an EPA Superfund site in compliance with the requirements of the CERCLA. Served as project manager, technical lead, and primary contact with Potentially Responsible Parties (PRPs), the State environmental agency, and EPA.
  - — Managed numerous hazardous waste site assessments, hydrogeologic investigations, and remedial investigations involving interfacing with local, State and Federal regulatory agencies.
- Harding - Lawson Associates, Inc.
  - — Supervised geotechnical and environmental evaluation of sites for excavation and construction of dams, tailings ponds, and waste storage facilities.
- FMC Corporation
  - — Developed and implemented a wide range of site investigations involving geologic mapping, interpretation of aerial photography and satellite imagery, chemical sampling and analysis and geophysical techniques including magnetic, electromagnetic, gravity, electrical resistivity, and radiometric studies.

EDUCATION: M.S., Geology, University of Nevada - Reno
B.S., Earth Sciences, Dartmouth College
Certified Professional Geologist

NAME: Christopher B. Martel

AREA OF RESP: Environmental Protection Programs; Program Evaluation, Reporting, and Corrective Action

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 11 Years

- Arthur D. Little, Inc., Cambridge, MA

  — Senior Consultant. Participated in Tiger Team Assessments of the Energy Technology Engineering Center, the Stanford Linear Accelerator, the National Institute for Petroleum and Energy Research, the Idaho National Engineering Laboratory, the K-25 Site, and the Ames Laboratory. Participated in ES&H Progress Assessments and Environmental Audits of the Fernald Environmental Management Project, Savannah River Site, and the Savannah River Ecology Laboratory.

  — Project manager for radiological hazard assessments conducted for clients in the mining and biotechnology industries, and research and development laboratories. Assessments included conducting extensive surveys, material sampling, air sampling, estimating worker internal and external doses, and provided detailed guidance on administrative and engineering controls in the workplace.

  — Performed several quantitative risk assessments for the transport of low-level and high level radioactive waste shipments, and large quantity shipments of radioactive materials.

  — Performed remedial investigations to quantify environmental levels of a variety of radionuclides on several sites that included research reactors, accelerators, depleted uranium working facilities, and research laboratories.

  — Conducted radiological health and safety audits at oil and gas operations, hospitals, biotechnology laboratories, chemical plants, research and development laboratories, and government institutions.

EDUCATION: M.S., Health Physics, University of Lowell
B.S., Environmental Sciences, University of Lowell

OTHER: Certified in the Comprehensive Practice of Health Physics by the American Board of Health Physics
Certified Hazardous Waste Site Supervisor
Member of the National and New England Chapter of the Health Physics Society.

NAME: Mario Vigliani

AREA OF RESP: Decontamination and Decommissioning

ASSOCIATION: Applied Consultants, Inc.

EXPERIENCE: 10 Years

- Applied Consultants, Inc. Woburn, MA

  — Health Physicist/Principal. Support a diversity of projects in the areas of radiation protection management, emergency response preparedness, decontamination and decommissioning, regulatory compliance, waste management, quality assurance, and training.

  — Provide technical and management consulting support and project oversight to several large commercial decommissioning and decontamination projects, including site assessment, decommissioning planning, regulatory interface and compliance, health and radiation safety, audits and appraisals, quality assurance, waste management, and training.

  — Perform radiation protection and emergency preparedness audits and appraisals for commercial nuclear power production facilities, source and byproduct materials licenses, and DOE facilities.

  — Provide consultation and health physics expertise to environmental firms, research institutions, manufacturing facilities, and defense installations in the areas of decontamination and decommissioning, emergency preparedness, health and radiation safety, regulatory compliance, and mixed waste management.

EDUCATION: M.S., Radiological Sciences and Protection, University of Lowell
B.S., Radiological Health Physics, University of Lowell

NAME: Roger Voeller

AREA OF RESP: Technical Group Coordinator

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 15 years

- Arthur D. Little, Inc.
  - Lead surface water specialist for the Tiger Team Assessment of the Los Alamos National Laboratory; Group Coordinator for the Tiger Team Assessment of the National Institute for Petroleum Energy Research; Team Coordinator for the Special Issue Review of Quality Assurance Management in Environmental Monitoring Programs.
  - Senior Consultant in Arthur D. Little's Environmental, Health, and Safety Directorate. Professional responsibilities are focused primarily in the field of environmental auditing, management systems assessments, and training. Participated or led over 50 environmental audits and facility management evaluations.
- Ocean Spray Cranberries, Inc.
  - Corporate Environmental Engineer with responsibility for compliance activities at facilities throughout the United States. Advisor to senior management on programs for achieving compliance with current and pending laws and regulations.
  - Led company technical efforts to improve environmental performance in response to Ocean Spray's receipt of the nation's first EPA criminal indictment under the Clean Water Act.
  - Managed all technological aspects of a $24 million capital improvement program for industrial wastewater treatment at nine facilities.

EDUCATION: M.S., (in process) Environmental Engineering, Northeastern University
B.S., Chemical Engineering, University of Oklahoma

NAME: Helen C. Walters

AREA OF RESP: Team Administrator

ASSOCIATION: META, Inc.

EXPERIENCE: 26 Years

- META, Inc., Arlington, VA

  — Administrator. Provided administrative support for the U.S. Department of Energy (DOE) on 10 Tiger Team Assessments, 5 Environmental Audits, 5 Environmental Management Audits and 1 Progress Assessment. Provides administrative support for final Tiger Team and Environmental Audits and Environmental Management Assessment reports.

  — Provided support for production of the Self-Assessment Training course for the Office of Special Projects (EH-5).

  — Provided support for production of the Seminar on Radiological Concepts training course for the Office of Environmental Audit (EH-24).

  — Assisted in production of the draft Administrative Support Procedures and Guidance for the Office of Environmental Audit.

- Cate & Associates, Chartered, Arlington, VA

  — Administrator. Served as Executive Assistant with administrative responsibilities for filing estate accounting in excess of $125,000 to the Commissioner of Accounts; liaison with attorneys and the courts with regards to these accounts; and handled accounts receivable and payable.

- National Council of Farmer Cooperatives, Washington, DC

  — Administrator. Responsible for administration of financial and human resources for a staff of 13 professional and 13 support staff. Duties in the area of finance included the preparation and oversight of an annual operating budget of $2.5 million with reporting responsibility to a committee composed of board members. Duties in the area of human resources included hiring and training of all support staff, and developing and coordinating employee benefits packages. Responsible for accommodating 65 employees in newly constructed, 17,000-square-foot office space.

EDUCATION: B.S., Business, Kent State

APPENDIX B

Plan for the

DOE Routine Environmental Audit

of the

K-25 Site

Oak Ridge, Tennessee

U.S. Department of Energy

Office of Environmental Audit

February 14 - 25, 1994

TABLE OF CONTENTS

PLAN FOR THE DOE ROUTINE ENVIRONMENTAL AUDIT OF THE K-25 SITE

1.0 INTRODUCTION

The DOE Environmental Audit Program is carried out by the Office of Environmental Audit (EH-24) within the Office of Environment, Safety and Health (EH). The program was created in 1985 with a goal to provide a continuing program of internal, independent oversight of line management's environmental performance, in support of DOE's broader goal of achieving full compliance and excellence in the environmental area. The objectives of the program in achieving this goal include:

- Providing continued leadership in follow-on to the environmental component of the Tiger Team Assessment program;
- Conducting comprehensive, baseline environmental audits of facilities that were not addressed in the Environmental Survey and did not receive Tiger Team Assessments;
- Conducting environmental management assessments within line programs, including adequacy of self-assessment programs;
- Conducting a continuing program of field/technical re-audits of major and other DOE facilities;
- Conducting focused, special issue assessments to assess high priority issues at a particular site, or issues which cut across site and program lines; and
- Supporting line management self-assessment programs through continuing updates and automation of audit protocols, training, and other mechanisms of transferring the special auditing expertise of EH-24 to the field.

The Routine Environmental Audit of the K-25 Site during the period of February 14 - 25, 1994, will be an Environmental Management Assessment. It will evaluate the effectiveness of environmental management programs established by DOE line organizations and their support contractors. The assessment will be conducted in accordance with the DOE Environmental Assessment Program Guidance (January 1992) and Protocols for Conducting Environmental Management Assessments of DOE Organizations (June 1993).

Strong environmental programs need to be supported by management systems to ensure the effectiveness of their development and implementation. Management systems typically involve the following general activities:

- *Planning* - providing the framework for establishing organization goals and policies, developing strategies for their achievement, and allocating resources to carry out those strategies. Planning results in establishing overall direction.

- *Organization* - providing structure and delineating roles, responsibilities, authorities, and accountabilities for accomplishing tasks. Organization is necessary to effectively direct and coordinate available resources.

- *Implementation* - providing the initiating mechanisms such as processes and procedures to produce the work effort. Implementation ensures that programs are carried out in a manner which results in a specific level of performance.

- *Control* - providing the framework for measuring, evaluating, and correcting performance. Control systems keep the organization/program on track so that goals are met and continuous improvement opportunities are sought.

To assess the effectiveness of K-25's environmental programs, the assessment takes a broad programmatic view of environmental systems, infrastructure, program and tools to manage environmental issues, not on the compliance issues themselves.

From an organizational perspective, the scope of the assessment will include environmental management issues at the DOE Office of Environmental Restoration and Waste Management (EM), DOE Oak Ridge Operations Office (ORO), and site levels, including contractors and subcontractors (e.g., Martin Marietta). The assessment team will focus on line management's performance in developing and implementing environmental programs, consistent with DOE expectations for environmental excellence.

From a functional perspective, the scope of the K-25 assessment is comprehensive in that it covers a full range of relevant management systems. These include:

- Organizational Structure;

- Environmental Commitment;

- Environmental Protection Programs;

- Formality of Environmental Programs;

- Internal and External Communication;

- Staff Resources, Training, and Development;

- Program Evaluation, Reporting, and Corrective Action; and

- Environmental Planning and Risk Management.

In addition, the Environmental Management Assessment will evaluate these management systems specifically with respect to the Decontamination and Decommissioning (D&D) programs and aspects of Waste Management Programs.

At the request of the DOE K-25 Site Office, the Environmental Management Assessment will be conducted jointly with the Oak Ridge Operations Office ESH&QA Functional

Appraisal. The State of Tennessee has been invited to be an observer during the joint assessment.

The information in this Audit Plan is based on information received by the Assessment Team as of the end of the day on February 4, 1994.

2.0 ENVIRONMENTAL MANAGEMENT ASSESSMENT IMPLEMENTATION

The K-25 Site Environmental Management Assessment will be conducted by a team consisting of a Team Leader from the Office of Environmental Audit (EH-24), a Deputy Team Leader from the DOE Golden Field Office, a Group Coordinator six management systems specialists from Arthur D. Little, Inc. (ADL), and a management specialist from Applied Consultants, Inc. The names and assignments are listed below:

Chuck Lewis	DOE	Team Leader
Deborah Turner	DOE	Deputy Team Leader
Roger Voeller	ADL	Group Coordinator
Paul Farrow	ADL	Organizational Structure; Staff Resources, Training, and Development
Rana Gupta	ADL	Environmental Commitment; Formality of Environmental Programs
Chris Martel	ADL	Environmental Protection Programs; Program Evaluation, Reporting, and Corrective Action
Mark Heuberger	ADL	Internal and External Communications; Environmental Planning and Risk Management
Richard D'Ermilio	ADL	Waste Management
Mario Vigliani	Applied Consultants, Inc.	Decontamination and Decommissioning

2.1 PRE-ASSESSMENT ACTIVITIES

Pre-assessment activities for the K-25 Environmental Management Assessment included the issuance of an introduction and information request memorandum, a site visit, and initial review of documentation which was sent to the assessment team by K-25 as a result of the information request memorandum and coordination with the ORO Functional Appraisal Team management.

The initial site visit was conducted on January 11 - 13, 1994, by the DOE Team Leader, Deputy Team Leader, Group Coordinator, and a management specialist. The purpose of the visit was to brief site personnel on the purpose and scope of the Environmental Management Assessment, to become familiar with K-25 and its operations, to review information being supplied by K-25 and request additional information, and to coordinate activities for the upcoming assessment.

2.2 ONSITE ACTIVITIES AND REPORTS

The onsite activities for the Environmental Management Assessment will begin February 14 and continue through February 25, 1994. Onsite activities will include file/record reviews and interviews with K-25 management and staff (including both DOE Project Office and K-25 Site personnel). The ORO Functional Appraisal will begin on February 7 and closeout on February 25, 1994.

The agenda for the assessment (including a preliminary interview schedule) is shown in Appendix C in this report. The interview schedule reflects the assessment team's best attempt to identify relevant personnel to be interviewed, and is coordinated with the ORO Functional Appraisal.

During the assessment, the Assessment Team will conduct daily debriefing jointly with the ORO Functional Appraisal sessions and brief K-25 Site management to review progress and concerns to date. A factual accuracy review of all findings will begin in the middle of the second week of the assessment. A closeout briefing will be conducted at the conclusion of the onsite portion of the assessment. A summary of the results of the assessment, including key findings, will be presented by the assessment team leader at that time. Also at the closeout, a draft assessment report will be provided to K-25 for review and comment.

2.3 POST-SITE ACTIVITIES

Following the onsite activities, K-25 Site management will have the opportunity to submit final comments on the draft assessment report. After reviewing these comments, EH-24 will issue a final report. It has been agreed that K-25 Site management will be responsible for preparing a single action plan which addresses both the Environmental Management Assessment and the ORO Functional Appraisal. EH-24 will review and approve only those aspects of the Corrective Action Plan relative to the Environmental Management Assessment. The following is a tentative schedule for completion of these post-site activities.

March 14	Site comments on draft report due
March 25	Final assessment report issued by EH-24
TBD	Draft action plan due (six weeks after closeout)
TBD	EH-24 comments on draft action plan
TBD	Final action plan due

3.0 ORGANIZATIONAL STRUCTURE

3.1 ISSUE IDENTIFICATION

The Environmental Management Assessment activities for Performance Objectives and Criteria (POC) EM.1, Organizational Structure, will assess whether the K-25's organizational structure ensures environmental protection, compliance, and excellence. In particular, the assessment will be designed to consider whether the K-25 environmental management organization structure has clear lines of authority, well-defined roles and responsibilities, and sufficient organizational structure.

The general approach to the assessment will include a review of documentation regarding organizational structure, and interviews with management and staff. Areas of particular interest will include:

- With recent MMES and K-25 organization changes is there sufficient overlap to ensure continued operation of correct environmental protection programs in place. How are changes managed and new roles and responsibilities formalized?

- What, if any, is the overlap with other ORO sites in terms of environmental programs. Are they communicating; pooling resources where appropriate; relationship with MMES (consistency).

- What is the interface between Environmental Management, D&D, Waste Management, and Environmental Restoration Program.

- How does MMES ensure that D&D, Environmental Restoration, and Waste Management operations do not interfere with each others goals?

- The degree to which the K-25 environmental organization is consistent with the overall structure of the K-25 "family" of organizations. We will analyze the formal structure and working relationships within and between various DOE contractor organizations.

- The degree to which actual lines of environmental management authority and responsibility are consistent with formal documents that define organizational roles, responsibilities and authority.

- The degree to which authority to make decisions related to environmental protection is assigned to the organizational levels that can provide the most timely and appropriate response;

- The reporting "distance" between the person with primary responsibility for the environmental support function and the overall manager of the organization;

- The definition and understanding of functional relationships between environmental support groups and line units;

- The existence of management systems and procedures to promote responsibility and maintain accountability;

- The degree to which the environmental management organization leverages managers effectively; and

- The occurrence and results of periodic reviews of the environmental organizational structure.

Coordination with other assessment and functional appraisal team members will be routine and extensive. Special attention will be paid to coordination with Line Responsibility (EM.2), Internal Communication (EM.5), and Staff Resources (EM.6).

3.2 RECORDS REQUIRED

In addition to those documents reviewed prior to the assessment, the following records will be examined at K-25:

- Formal documents that define organizational responsibility, authority, and accountability for environmental protection programs;

- Formal job descriptions for environmental staff, as well as other key line management and operating personnel;

- Formal measures of job performance;

- Descriptions of any environmental recognition, award, or incentive programs; and

- Environmental planning documents.

4.0 ENVIRONMENTAL COMMITMENT

4.1 ISSUE IDENTIFICATION

The Environmental Management Assessment activities for POC EM.2, Environmental Commitment, will review and evaluate the organization's commitment to achieving environmental excellence. The assessment team will evaluate whether the principal K-25 organizations demonstrate a positive attitude and proactive approach to environmental management. Some key indications of environmental commitment that will be evaluated are the following:

- Demonstration of senior management's commitment to environmental protection through formal statements, managerial decisions and actions, attitude, and interest;
- Establishment of organizational policy, which places ongoing environmental protection equal to site cleanup, waste management, operations, and safety and health issues; and
- Awareness of and responsibility for environmental protection at all levels and across various functions of the organization.

The general approach to assessing this performance objective will include interviews with personnel at various levels and in several functional areas within the organization. The assessment will also be based on documentation that provides insight into the organization's environmental protection programs and activities. Evidence and findings from all other aspects of the Environmental Management Assessment will be considered in the overall determination of the organization's level of environmental commitment. Areas of particular interest will include:

- Existence and organizational understanding of the formal policy statement on the environment and issue-specific policies, as appropriate;
- Senior management interest and involvement in and knowledge of environmental issues and programs;
- General understanding and acceptance of the importance of environmental protection by all K-25 personnel (including subcontractors and trades);
- Line management's sense of responsibility for environmental performance, in part defined by the extent to which line management both obtains routine information regarding environmental performance and acts upon that information;
- Environmental awareness of staff in other functional areas such as engineering, construction, procurement, legal, and public affairs;
- Level of environmental protection, program development, and implementation;

- Status of progressive environmental programs such as pollution prevention; and

- Allocation of adequate human, financial, and technical resources.

4.2 RECORDS REQUIRED

The following documents will be reviewed to support the assessment of environmental commitment:

- Environmental policy statements;

- Issue-specific policies addressing more focused environmental concerns;

- Environmental program descriptions, guidance manuals, and implementation plans;

- Senior management statements of support for environmental protection that are included in internal or external reports, speeches, newsletters, or other documents;

- Internal reports on environmental protection activities and issues;

- Examples of environmental awareness programs or activities;

- Environmental training program manuals and supporting materials; and

- Other relevant material identified during the course of the assessment.

5.0 ENVIRONMENTAL PROTECTION PROGRAMS

5.1 ISSUE IDENTIFICATION

The Environmental Management Assessment activities for POC EM.3, Environmental Protection Programs, will evaluate whether K-25 has the environmental programs in place to ensure compliance with Federal, state, and local environmental laws and regulations. Further, the assessment will determine if the site provides for timely and correct implementation of those DOE Orders designed to protect the environment and public health. The emphasis of the review will be on determining whether effective and comprehensive programs are in place and whether there is sufficient planning, oversight, and staff training regarding these programs. The key issues involve conformance of K-25 environmental protection programs with the performance objectives and prescriptive requirements of the following DOE Orders and other applicable environmental protection statues (including the implementing regulations of these statutes):

- DOE Orders:
  - 5400.1, "General Environmental Protection Program"
  - 5400.2A, "Environmental Compliance Issue Coordination"
  - 5400.5, "Radiation Protection of the Public and the Environment"
  - 5400.9, "Sealed Radioactive Source Accountability"
  - 5480.2A, "Radioactive Waste Management"
  - 5480.4, "Environmental Protection, Safety, and Health Protection Standards"
  - 5700.6C, "Quality Assurance"
- Environmental Statutes (not a comprehensive listing)
  - Clean Water Act (CWA)
  - Safe Drinking Water Act (SDWA)
  - Clean Air Act (CAA)
  - Resource Conservation and Recovery Act (RCRA)
  - Toxic Substances Control Act (TSCA)

In addition, the K-25 environmental protection programs will be evaluated for their adequacy in light of all permits and agreements entered into with Federal, state and local governments and associations.

The general approach to the assessment will include interviews with DOE K-25 Site Office and K-25 personnel responsible for environmental program development and implementation. Prior to arriving onsite, and during the assessment, reviews will be performed of documentation supporting those programs or demonstrating their proper implementation. Areas of particular interest will include:

- What systems are in place to track the environmental status of projects as they progress from planning stages to implementation and completion in terms of changes in scope and regulatory requirements?
- How effective is the oversight provided by the Site and Operations Office?

- Determination of regulatory requirements and incorporation of those requirements (regulatory drivers) into appropriate environmental protection programs;
- Determination that all activities and contractors are included in environmental protection planning documents;
- Relationship between line environmental activities, such as ER and WM, and the Environmental Management Division, regarding program ownership.
- Identification and regular monitoring of current or planned environmental releases, including NPDES monitoring requirements;
- Activities relative to long term surveillance and maintenance programs;
- Prevention and minimization of environmental releases, including environmental ALARA programs;
- Emergency response provisions;
- Groundwater monitoring;
- Ambient and effluent radioactivity monitoring;
- Direct radiation monitoring for offsite dose;
- Policies and procedures relating to quality assurance; and
- Effective and consistent implementation of environmental programs.

K-25 functional areas will be assessed with respect to selected environmental issues such as D&D and waste management. This analysis will examine how comprehensively and coherently these issues are managed throughout the K-25 organization. Issues will be selected for this vertical cut analysis based upon their importance to the overall K-25 environmental protection effort.

5.2 WASTE MANAGEMENT PROGRAM

5.2.1 ISSUE IDENTIFICATION

This portion of the assessment will include an evaluation of the effectiveness of site-wide environmental management programs through an in-depth review of environmental management functions within the vault storage element of the site's Waste Management Program. At K-25, waste management programs are managed and funded as line programs that can be viewed as having dual compliance responsibilities: compliance with the regulatory requirements that are specific to individual program/project activities, and compliance with site-wide environmental management programs that are the responsibility of the Environmental Management Division. The scope of the assessment will be narrow from a technical standpoint and will focus on storage of waste in vaults. From a management standpoint, the scope will be broad, encompassing a number of the

management elements discussed earlier in this plan. In this way, the effectiveness of line management performance in implementing environmental management activities will be evaluated. Management of waste storage in vaults involves interrelationships between a number of K-25 organizational elements: Environmental Restoration, Waste Management, Decontamination and Decommissioning, Central Waste Management, and Environmental Management. The management of such interrelationships will be a key area of interest.

The general approach to the assessment will include interviews with the DOE Field Office, K-25 Site Office and K-25 site contractor and personnel responsible for Waste Management Programs, and a review of documentation supporting this area. The approach will be coordinated with the assessments of each of the other management system elements included in the overall approach to the assessment. Areas of particular interest will include the following:

Organization Structure

- Organizational structure for Waste Management (vault storage) Programs.
- Reporting relationships among organization elements involved in vault storage.
- Documentation of well defined roles and responsibilities for all personnel whose activities may impact environmental performance associated with vault storage.
- Effectiveness of integration into the overall organizational structure of employees' roles and responsibilities.

Environmental Commitment

- Evidence of formal environmental policies which place environmental protection associated with managing existing vaults over preparation for use of new vault locations.
- Distribution, accessibility, and understanding by all vault storage program employees and staff of K-25 site environmental policies (including vault storage program specific policies).
- Cooperation of vault storage program management and staff with internal and external oversight groups.

Environmental Protection Programs

- Existence of a program or programs to manage waste in vaults.
- Environmental radiation programs applicability to vault usage (entry and exist procedures).
- Inclusion of vault storage issues in the site Environmental Protection Implementation Plan.

- Vault storage equipment preventative maintenance programs.
- Vault storage emergency preparedness plans.
- Quality Assurance program plans associated with vault storage.

Formality of Environmental Programs

- Vault storage program management methods including formal systems for tracking and interpreting regulatory changes and DOE policies.
- The effectiveness of incorporation of new guidance into vault storage operations.
- Procedures and standards issued by Waste Management regarding vault use and management.
- If and how routine vault location equipment is inspected and documented.
- How vault storage program performance is documented and reported through appropriate levels of management (Environmental Status Reports).

Internal and External Communication

- Evidence that environmental information (specific to vault issues) is effectively communicated to all K-25 site vault users through formal or informal means and if that information is understood.
- The use of programs to increase vault program employee and staff environmental awareness.
- Communication among all organizations regarding current and future vault storage needs and requirements to the organization primarily responsible for managing the vaults.
- Evidence that an effective working relationship exists among ORO, KSO, and all MMES organizations associated with operation and management of the K-25 Site vault storage program.
- Evidence that both internal and external points of contact for the vault program have been established.
- Existence of a formal communication program which addresses any environmental concerns of external parties as well as internal organizations regarding operation and management of the K-25 site vaults.

Staff Resources, Training, and Development

- Vault program staffing levels, both in management and operations, that are sufficient to achieve environmental performance and goals.

- Training of staff members to appropriately perform their vault storage program duties.

- Evidence that appropriate job descriptions have been established for vault storage program management and operations staff; that environmental aspects of job responsibilities are included in employee performance appraisals; and that each of these activities is well documented.

- Evidence that vault storage training programs are formal, well documented, supported by appropriate training materials and qualified trainers; and that environmental training is conducted in a comprehensive manner for all employees associated with the vault storage program.

Environmental Planning and Risk Management

- Establishment of long as well as short term goals for vault storage at the K-25 site; communication and understanding of these goals by all DOE and contractor organizations operating on site.

- Environmental protection considerations, environmental protection implementation plan; and adequate inclusion in the site's plan of current and future vault storage needs.

- Consideration of environmental protection as an integral part of the budget and planning process associated with preparation of new vaults for use as waste storage.

- That vault storage capacity and management have been considered in the K-25 site's formal risk management program.

- Whether "new projects" e.g., D&D of locations for future vault storage, are assessed regarding their potential impacts on the environment.

Program Evaluation, Reporting, and Corrective Action

- Whether the vault storage program has been included in routine ongoing internal and independent oversight appraisals.

- Whether the qualifications of those individuals tasked with routine surveillance and appraisal of vault storage area operations are appropriate relative to that task.

- Consistency of vault storage program audits and appraisals with other K-25 Site self-assessment guidelines and the formality of assessment activities (i.e., written procedures, documented findings, tracking, and corrective actions).

Coordination with other assessment and functional appraisal team members will be routine and extensive. This "vertical cut" into the vault storage program will evaluate both the operational and managerial aspects of waste storage in K-25 site vaults. The assessment

will evaluate vault storage program activities as they relate to the performance objectives and criteria for environmental management listed above.

Special attention will be paid to both the organizational and operational interactions among all parties associated with vault storage, as well as the long term use of vault storage and whether that use is consistent with future long term goals and objectives for the K-25 site.

5.2.2 RECORDS REQUIRED

In addition to those documents reviewed prior to the assessment, the following records will be examined at the K-25 site:

- Documents describing vault storage program staff roles and responsibilities
- Waste management and environmental management policies and procedures specific to routine vault storage operation
- Vault storage emergency preparedness plan
- Vault equipment inspection documentation
- Vault storage container tracking records
- Environmental training documentation including training program syllabus, trainer qualifications, and training records for all employees trained
- Job descriptions of vault storage program management and operations staff
- Vault storage surveillance reports, tracking records, and corrective action documentation

5.3 DECOMMISSIONING AND DECONTAMINATION PROGRAM

5.3.1 ISSUE IDENTIFICATION

The Decommissioning and Decontamination (D&D) portion of the Environmental Protection Program assessment will evaluate the effectiveness of sitewide D&D programs at K-25. This activity will be accomplished through an indepth review of environmental management functions as they relate to ultimate disposition of the K-25 Site. The assessment will encompass planning phases which have occurred and are ongoing as well as mechanisms which exist to effect coordination, implementation, management, and completion of overall decommissioning objectives.

A D&D project for a site the magnitude of K-25 represents an extremely significant and complex undertaking which necessitates the expenditure of large amounts of time and resources. It is therefore imperative that the proper management systems are not only in place, but are proactively utilized to effect the most comprehensive and efficient use of available resources toward completion of stated environmental goals. Because of the long time periods involved, it is particularly important that these management systems be poised to anticipate and adapt to the changes that will occur, regulatory and otherwise,

which will inevitably impact and influence the progress and requirements placed on the K-25 D&D program.

The general approach to the assessment will include interviews with ORO, KSO, and K-25 site personnel responsible for D&D programs as well as review of various documents and records related to D&D program. The approach will also be coordinated with assessments of other management systems elements, which bear a relationship to the D&D program. Areas of particular interest will include:

- Organization structure for D&D, including authority and responsibility, project management and reporting methods.
- Formality of programs, including level of documentation of plans and procedures for surveillance, maintenance, and decommissioning elements.
- Systems for documentation and coordination of information related to contaminated facilities, structure, and areas.
- Assessment, surveillance, and characterization programs, including methods for reporting, managing, and integrating data generated.
- Effectiveness of maintenance and safe storage programs, including any interim mitigative measures taken to limit the size of affected areas, as appropriate.
- Programs for evaluating and addressing the impact of external factors on the D&D effort, short and long term.
- Programs for prioritization of goals and objectives, evaluating timeliness of operations and measures of success (self-assessment).

5.3.2 RECORDS REQUIRED

In addition to those documents reviewed prior to the assessment, the following records will be examined onsite:

- Individual project plans;
- Results of ongoing environmental effluent and release monitoring;
- Results of internal audits and self-assessments;
- Emergency response plans;
- NESHAPs documentation and correspondence;
- Preventive maintenance and inspection procedures;

- Reports to management, DOE headquarters, and regulatory agencies; and
- Other records as determined onsite.

6.0 FORMALITY OF ENVIRONMENTAL PROGRAMS

6.1 ISSUE IDENTIFICATION

The Environmental Management Assessment activities for POC EM.4, Formality of Environmental Programs, are designed to determine whether environmental protection activities are conducted in accordance with formal programs supported by controlled documentation. Specifically, the assessment is designed to evaluate:

- How DOE and MMES ensure that subcontractors comply with DOE requirements;
- The existence and effectiveness of formal systems to track and interpret regulations and DOE Orders and incorporate them into policies, standards, and procedures;
- The extent to which environmental programs and procedures are developed and effectively implemented throughout the organization;
- K-25's system for conducting routine inspections to assure facility compliance and identify potential problems and communicate this information to DOE;
- Systems for maintaining and retaining records, and for assuring timely completion of regulatory and management reporting requirements.

The general approach to the assessment will include interviews with K-25 personnel responsible for tracking new environmental requirements and incorporating them into policies and procedures, as well as staff and line managers, and other personnel responsible for implementing environmental programs. Areas of particular interest will include:

- The extent to which staff responsible for regulatory tracking is up-to-date on new, proposed, and emerging regulatory issues;
- The development of guidance documents for operational staff to assist them in assuring a high level of environmental compliance and protection.
- Systems to distribute regulatory information, procedures, and guidance to all relevant personnel and operational groups within DOE and contractor organizations;
- The process of creating and approving new procedures, and the existence of procedures covering major areas of risk;
- The extent to which subcontractor activities meet site formality standards;
- The extent to which K-25's procedures and standards are reviewed and revised to address environmental considerations;

- Contractor oversight procedures and systems, including programs for routine site inspections and compliance checks;
- Systems for recordkeeping and document control;
- Systems to prepare environmental reports for DOE, external oversight organizations and internal management; and
- Formal systems to identify, report, investigate, and track trends and to correct identified environmental problems.

6.2 RECORDS REQUIRED

The assessment will include review of key documents supporting environmental programs prior to and during the site visit. Documents of particular interest include:

- Program specific and general ES&H policies, procedures, and guidance manuals;
- Environmental protection plans and environmental management plans;
- Self-assessment plans and reports;
- Regulatory tracking protocols and procedures, and related information on file;
- Inspection checklists, logs, and procedures;
- Reports of corrective action implementation;
- Incident reports;
- Examples of other environmental records and reports; and
- Documentation and records of environmental performance.

7.0 INTERNAL AND EXTERNAL COMMUNICATION

7.1 ISSUE IDENTIFICATION

The Environmental Management Assessment activities for POC EM.5, Internal and External Communication, will be designed to determine whether formal and informal channels of communication are effectively used to emphasize management commitment to environmental protection; to promote awareness and support of environmental policies and programs throughout the organization; and to share information with external organizations, such as regulatory agencies, environmental groups, and the community. The review will focus on the methods of communication used and their effectiveness. Key issues that will be addressed include the following:

Internal Communication

- Extent, effectiveness, and timeliness of communication of K-25 environmental policies, standards, guidance, and performance to employees, including those K-25 standards triggered by new or anticipated regulatory requirements;
- Extent and effectiveness of routine management reporting of environmental performance and issues;
- Communication of environmental activities and best management practices between staff and line personnel, and laterally across divisions;
- Employees' general environmental awareness and their awareness of their individual environmental responsibilities;
- Mechanisms for "bottom-up" communications of environmental concerns; and
- Effectiveness of communication of environmental information between the oversight organizations and K-25 operations organizations, contractors and subcontractors.

External Communications

- What, if any, is the overlap with other ORO sites in terms of environmental programs. Are they communicating; pooling resources where appropriate; relationship with MMES (consistency);
- Frequent and timely formal communication of environmental risks and protection efforts to external organizations;
- Provision for external parties to be involved in key decisions related to environmental protection particularly in community relations programs under CERCLA;

- DOE and MMES relationships with the State of Tennessee under the Tennessee Oversight Agreement;

- Responsiveness to environmental concerns expressed by external parties; and

- External recognition of commitment of K-25 to environmental protection. The general approach to the assessment will include interviews with K-25 personnel responsible for implementing environmental communication programs and with staff who are the audience or "customers" for these programs. As appropriate, interviews will also be conducted with selected external parties (regulatory agencies, environmental interest groups, and representatives of the local community). The assessment will also include a review of documentation supporting internal and external communication programs.

The scope of internal communication programs is interpreted widely, and is viewed as including staff meetings, memoranda, management reports, task forces, training programs, newsletters, speeches, and other relevant forms of communication. Given this wide scope, and the overlap with other assessment functional areas, communication with other assessment team members will be routine and extensive.

7.2 RECORDS REQUIRED

In addition to those documents reviewed prior to the assessment, the following records will be examined at K-25:

- Samples of relevant management reports and staff meeting minutes;

- Forms and guidelines for internal anonymous reporting of environmental issues;

- Guidance documents for interpretation and implementation of environmental regulations and policies;

- Internal K-25 memoranda or newsletters that communicate and promote environmental awareness;

- Documentation of information and awareness programs for affected external parties;

- Letters and/or other correspondence from external stakeholders regarding any comments or suggestions about K-25 environmental protection efforts; and

- Press releases relating to environmental activities and programs.

8.0 STAFF RESOURCES, TRAINING AND DEVELOPMENT

8.1 ISSUE IDENTIFICATION

The Environmental Management Assessment for POC EM.6, Staff Resources, Training and Development, will involve a review and analysis of K-25 operations to verify that staff resources are sufficient to develop and implement environmental protection programs; that all personnel have received environmental protection training commensurate with their job responsibilities; and that professional development opportunities for environmental staff are equal to those of their peers in non-environmental positions. Specifically, the assessment will verify the following:

- Quantity of staff is sufficient and properly allocated to ensure environmental goals are met.
  - Staffing levels today are adequate for achieving K-25's environmental performance goals.
  - There is a system for identifying K-25's short-term and long-term staffing requirements.
  - Staffing support for environmental protection activities is provided in a timely and responsive manner.
  - Program milestones are met.
  - Degree to which subcontractor personnel are used to meet performance goals.
- Qualifications of staff are sufficient to ensure environmental goals are met.
  - The education, training, and experience of the environmental support staff (including contractors) are adequate to effectively conduct their assigned duties.
  - Appropriate job qualifications are established and maintained for environmental positions.
  - Environmental responsibilities are built into job descriptions of key line management and staff positions.
  - Designation of job qualifications for new environmental staff.
- Measurement of job performance for environmental positions is appropriate.
  - Environmental protection factors are included in performance evaluation standards.
  - Superior work in the environmental field is rewarded.
  - Poor performance is disciplined.
- Training programs are in effect to ensure that all staff obtain the environmental training necessary for their positions.
  - There is a process to evaluate and establish environmental training needs.

  - There is a mechanism to ensure that training programs provide adequate coverage of DOE Orders, Federal and state regulations, and internal policies and procedures.
  - There is a system to ensure that all employees, including new employees and contractors, receive the training deemed appropriate.
  - Records of environmental training are maintained in a satisfactory recordkeeping system.
  - The training program is evaluated for effectiveness on a periodic basis.

- Environmental staff are provided career opportunities and advancement, and are encouraged to develop supervisory and other professional skills.

The general approach to the assessment will include interviews with DOE Oak Ridge Operations Office, DOE K-25 Site Office, and K-25 contractor personnel regarding staff resources, training, and development, as well as a review of relevant and available documentation.

8.2 RECORDS REQUIRED

In addition to documents reviewed prior to the onsite assessment, documents to be examined at K-25 may include the following:

- Documented requests for environmental staff;
- A sample of resumes or "171" forms for selected environmental staff and other staff with some environmental responsibilities;
- Performance evaluation standards for both environmental and non-environmental personnel;
- Documentation of training courses;
- Training history and educational records for a sample of environmental staff and line managers; and
- Presentation materials for environmental protection training programs.

9.0 PROGRAM EVALUATION, REPORTING, AND CORRECTIVE ACTION

9.1 ISSUE IDENTIFICATION

The Environmental Management Assessment activities for POC EM.7, Program Evaluation, Reporting and Corrective Action, will assess whether the organization has self-assessment and oversight programs in place to effectively evaluate environmental protection activities, report environmental concerns, implement corrective actions, and progressively improve environmental management activities. The key elements of the review are the following:

- The effectiveness of the oversight provided by the DOE Site and Operations Office;
- Design of self-assessment and appraisal programs, including their objectives, scope, coverage, frequency, and assignment of responsibilities;
- Program implementation;
- Followup from the assessments/appraisals, including reporting format and distribution, corrective action planning, tracking, and implementation, performance trending and analysis, and continuous improvement actions based on lessons learned;
- Progress on meeting Tiger Team corrective action milestones; and,
- Selection of qualified staff to conduct audits and appraisals.

The general approach to assessing this management area will include interviews with staff who are responsible for environmental oversight and interviews with line management who are responsible for self-assessment. The assessment team will also review other relevant documentation not previously provided in the pre-assessment documents. Based on the review of pre-assessment information, the following issues will be further evaluated during the assessment:

- The DOE and K-25 understanding of all requirements of program evaluation mechanisms, including self-assessments, audits, and appraisals;
- Scope and approach of self-assessments and appraisals;
- Adequacy of DOE and K-25 self-assessments in meeting the intent of DOE self-assessment policy and guidance;
- Coverage of all activities with potential environmental impacts and the depth and frequency of the reviews;
- Assignment of responsibilities for self-assessments/appraisals and qualifications/training of those conducting the assessments;
- Distribution of assessment findings and reports to appropriate managers;

- System for setting priorities for corrective actions;
- Systems for tracking and ensuring completion of corrective actions (i.e., ESAMS);
- Existence of "lessons learned" initiatives or programs;
- Assessment of late/incomplete corrective actions;
- Identification of performance indicators and evaluation of adequacy; and
- Analysis and integration of findings and corrective actions from multiple assessments, appraisals, and surveillances to assure correction of root causes and efficient resource use.

9.2 RECORDS REQUIRED

In addition to those documents reviewed prior to the assessment, the following documents will be examined at K-25:

- Description of the programs, procedures, and responsibilities relating to environmental performance evaluation;
- Reports for audits and appraisals conducted by both internal and external organizations;
- Corrective action plans;
- Documentation of the corrective action tracking system;
- List of environmental performance indicators and reports demonstrating evaluation against these indicators;
- Trending or lessons learned documentation; and
- Documentation of the qualifications/training of staff responsible for conducting environmental oversight activities.

10.0 ENVIRONMENTAL PLANNING AND RISK MANAGEMENT

10.1 ISSUE IDENTIFICATION

The Environmental Management Assessment activities for POC EM.8, Environmental Planning and Risk Management, will include evaluating the effectiveness of project-wide environmental planning activities. The scope of the planning portion of the assessment will include environmental activities as well as more standard business planning activities, such as budgeting, priority setting, and allocation of resources. Short and long-term planning will be addressed. In addition to planning, this portion of the assessment will evaluate the adequacy of systems designed to identify environmental hazards and to minimize and control environmental risks.

The general approach to the assessment will include interviews with the DOE Operations and Site Offices, and the K-25 contractor personnel responsible for environmental planning and risk management, and a review of documentation supporting this area. Areas of particular interest will include the following:

Environmental Planning

- Technical and financial planning relating to environmental management and the extent to which such planning is conducted and integrated with overall organizational planning (including mechanisms for resource allocation and priority setting, and the extent to which actual resource allocation is consistent with environmental objectives);
- The adequacy of funding for environmental protection activities;
- The relative priority that environmental issues are given with respect to operations in the planning and budgeting process;
- The organization's system for staying current with emerging environmental issues; and
- Planning's role in identification of environmental protection/program requirements for demonstration projects.

Risk Management

- Inventory of hazardous materials onsite. Is there a sufficient Environmental Planning/Risk Management program in place to deal with newly identified hazards.
- What system has MMES developed for the ongoing assessment of risk and the prioritization of mitigative measures?
- Risk management program design and approach, including program scope and coverage, assignment of responsibilities to appropriate staff, procedural documentation, and the specific mechanisms for identifying hazards and

associated risks, assessing the acceptability of identified risks, and implementing risk mitigation actions.

- The existence and adequacy of a formal project/program review process which includes environmental considerations.

10.2 RECORDS REQUIRED

The assessment will include review of key documents relating to environmental planning and risk management. Documents of particular interest include:

- Descriptions (if available) of budgeting mechanisms at K-25;
- Short and/or long-term business plans;
- Latest budget requests from all organizational units of K-25, specifying purposes for all planned expenditures, and approved budgets for the same; and
- Descriptions of risk management programs and reports of risk assessments.

APPENDIX C

SCHEDULE OF ONSITE ACTIVITIES

SCHEDULE FOR ASSESSMENT						
Sun., Jan. 30	**Mon., Jan. 31**	**Tues., Feb. 1**	**Wed., Feb. 2**	**Thurs., Feb. 3**	**Fri., Feb. 4**	**Sat., Feb. 5**
		EH-24 full team meeting in Cambridge for protocol review; final assessment plan; and interview schedule				
Sun., Feb. 6	**Mon., Feb 7**	**Tues., Feb. 8**	**Wed., Feb. 9**	**Thurs., Feb. 10**	**Fri., Feb. 11**	**Sat., Feb. 12**
	EM/HQ interviews		Conference call EH-24/OR/KSO /MMES			
Sun., Feb. 13	**Mon., Feb 14**	**Tues., Feb. 15**	**Wed., Feb. 16**	**Thurs., Feb. 17**	**Fri., Feb. 18**	**Sat., Feb. 19**
Team meeting 7:30 pm at the Garden Plaza Hotel	**AM:** • Get Training • Interviews begin **4 PM:** • FA daily debrief • Brief closed team meeting onsite	**8 AM:** • C. Lewis brief site management • D. Turner daily report to EH-24 management • Interviews begin **4 PM:** • FA daily debrief • Brief closed team meeting onsite	**8 AM:** • C. Lewis brief site management • D Turner daily report to EH-24 management • Interviews begin **4 PM:** • FA daily debrief • Brief closed team meeting onsite	**8 AM:** • C. Lewis brief site management • D. Turner daily report to EH-24 management • Interviews begin **4 PM:** • FA daily debrief • Closed team meeting: Team members provide "one-liners" and verbal defense. Both progress and deficiencies. Meeting to "lump, split, and clarify overlapping issues	**8 AM:** • C. Lewis debriefs site management; roll-up positive and negative findings for site • D. Turner daily report to EH-24 management • Interviews begin **4 PM:** • Final FA daily debrief: verbal presentation of preliminary findings • Closed team meeting: review final list of preliminary findings	**11 AM:** First draft of all findings due to review sub-groups (define groups, how to coordinate editing) **2 PM:** First draft of all overviews due to review sub-group **5 PM:** All findings and overviews to META for copying • Complete package of findings and overview to each team member available at hotel Saturday evening

SCHEDULE OF ONSITE ACTIVITIES (Continued)

SCHEDULE FOR ASSESSMENT						
Sun., Feb. 20	Mon., Feb 21	Tues., Feb. 22	Wed., Feb. 23	Thurs., Feb. 24	Fri., Feb. 26	Sat., Feb. 26
AM: Each team member review and comment on entire package. (Work at site not required?) **2 PM:** Onsite, distribute your comment to each author. Meet with each other on comments as appropriate. **3 PM:** Final review loop **4 PM:** Onsite team meeting to establish FAR schedule **COB:** FAR package ready for site	**AM:** Provide site with FAR schedule • Team meeting to develop key concerns, first draft writing assignments **PM:** FAR package No. 1 to site **COB:** FAR package No. 2 ready for site	**8 AM:** All appendices to META • FAR No. 1[1] **PM:** FAR No. 2 packages to site • Team meeting to develop key concerns, first draft writing assignments	**AM:** FAR No. 2 **PM:** Key findings to review loop • Draft executive summary • Final overviews and findings to C. Lewis	**AM:** Final overviews and findings to META • Executive Summary to META • Develop joint close-out briefing with OR **PM:** Draft report to print - estimate 25 copies	**AM:** Close-out **PM:** Travel from site	

[1] As team members complete FARs and make final changes to their packages, they should work with the Functional Appraisal Team to ensure maximum integration of the two reports.

SCHEDULE OF ONSITE ACTIVITIES

Paul Farrow, Organizational Structure; Staff Resources, Training, and Development					
	Monday, February 14	Tuesday, February 15	Wednesday, February 16	Thursday, February 17	Friday, February 18
am	• GET Training • Interview: G. Butterworth, WMD, MMES	• Interviews: T. Tison, ORO, KSO L. Clark, KSO R. Frounfelker, KSO K. Amburn, KSO	• Interviews: T. Ramsey, QA, MMES K. Downer, EMD, MMES J. Forstrom, EMD, MMES	• Interviews: J. Lyons, ER, MMES G. Person, D&D/ER, MMES S. Goodpasture, EMD, MMES	• Telephone Interviews: B. Parish, WM, MMES G. Aplund, ER, MMES J. Spinner, MK-F • Interview: S. Lowe, PRM, MMES
pm	• Interviews: B. Milligan, QA, MMES L. Long, ERWM, MMES 4:00 Environmental debrief • Team meeting	• Interviews: M.E. Boyd, HR, MMES H. Crothers, EMD, MMES 4:00 Environmental debrief • Team meeting	• Interview: L. Hall, VP ERWM, MMES 4:00 Environmental debrief • Team meeting	• Interviews: T. Pierce, HR, MMES T. Riggs, HR, MMES 4:00 Environmental debrief • Team meeting	• Telephone interview: J. O'Hern MK-F • Interviews: R. Eby, Operations, MMES C. Baker, EMD, MMES 4:00 Environmental debrief • Team meeting

SCHEDULE OF ONSITE ACTIVITIES (continued)

Rana Gupta, Environmental Commitment; Formality of Environmental Programs					
	Monday, February 14	Tuesday, February 15	Wednesday, February 16	Thursday, February 17	Friday, February 18
am	• GET Training • Interview: T. Ramsey, QA, MMES	• Interviews: B. Adams, HR, MMES K. Downer, EMD, MMES	• Interview: S. Lowe, PMO, MMES	• Interviews: T. Tison, KSO, DOE F. Shirley, Maintenance Division, MMES R. Eby, Operations, MMES	• Interviews: L. Hall, VP ERWM, MMES • Joint interviews: J. Dalton, Maintenance, MMES; J. Thompson, Maintenance, MMES
	• Interview: C. Peterson, Operations, MMES 4:00 Environmental debrief • Team meeting	• Interview: R. Frounfelker, KSO L. Pierce, HR, MMES 4:00 Environmental debrief • Team meeting	• Interview: G. Butterworth, WMD, MMES 4:00 Environmental debrief • Team meeting	• Review documents 4:00 Environmental debrief • Team meeting	• Interview: M. Johnson, Maintenance, MMES R. Buhaley DOE 4:00 Environmental debrief • Team meeting

SCHEDULE OF ONSITE ACTIVITIES (continued)

Chris Martel, Environmental Protection Programs; Program Evaluation and Corrective Action					
	Monday, February 14	Tuesday, February 15	Wednesday, February 16	Thursday, February 17	Friday, February 18
am	• GET Training • Interviews: J. Forstrom, EMD, MMES B. Shoemaker, PPS, MMES	• Interviews: L. Shipe, EMD, MMES T. Brennan, EMD, MMES M. Coffey, EMD, MMES	• Interviews: M. Swearinger, EMD, MMES C. Swanson, EMD, MMES	• Interviews: J. Donelly ORO R. Frounfelker, KSO K. Amburn, KSO	• Interview: P. Gross ORO
pm	• Review documents 4:00 Environmental debrief • Team meeting	• Interview: J. Murphree, SESD, MMES 4:00 Environmental debrief • Team meeting	• Interviews: B. Dagley, EMD, MMES M. McNutt, QAD, MMES 4:00 Environmental debrief • Team meeting	• Review documents 4:00 Environmental debrief • Team meeting	• Write Findings/Overviews 4:00 Environmental debrief • Team meeting

SCHEDULE OF ONSITE ACTIVITIES (continued)

Rich D'Ermilio, Waste Management Programs					
	Monday, February 14	Tuesday, February 15	Wednesday, February 16	Thuraday, February 17	Friday, February 18
am	• Travel to Site	• Interview: M. Shelton, WMD, MMES	• Interviews: L. Jones, Central Facilities, MMES P. Peterson, Operations, MMES P. Stumb, Operations, MMES	• Interviews: R. Eby, Operations, MMES • Joint interview: P. Butler, WMD; T. Price, WMD; B. McKeehan WMD, MMES	• Interview: H. Bailey, EMD; B. Parish, WMD, MMES K. Downer, EMD, MMES G. Butterworth, WMD, MMES • Joint interview: T. Perry, E&S Activity; D. Appino, E&S Activity, MMES
pm	• Interview: L. Long, ERWM, MMES 4:00 Environmental debrief • Team meeting	• Interviews: C. Frye, CWM, MMES G. Person, D&D/ER, MMES 4:00 Environmental debrief • Team meeting	• Interviews: R. Frounfelker, KSO S. Goodpasture, EMD, MMES 4:00 Environmental debrief • Team meeting	• Interviews: C. Baker, EMD, MMES • Joint interview: A. Lingerfelt, Site Services; R. Cox, Site Services, MMES 4:00 Environmental debrief • Team meeting	• Interviews: D. Whitehead, WMD, MMES T. Puett, EMD, MMES 4:00 Environmental debrief • Team meeting

SCHEDULE OF ONSITE ACTIVITIES (continued)

Mario Vigliani, Decontamination and Decommissioning Program					
	Monday, February 14	Tuesday, February 15	Wednesday, February 16	Thursday, February 17	Friday, February 18
am	• GET Training • Joint Interview: J. Powell, ERW, ORO; M. Jugan, ERWM, ORO	• Joint Interview: J. Lyons, ER, MMES; G. Person, D&D/ER, MMES; R. Faulkner, D&D, MMES	• Interviews: R. Frounfelker, KSO K. Downer, EMD, MMES J. Forstrom, EMD, MMES • Joint interview: P. Stumb, Operations, MMES; C. Peterson, Operations, MMES	• Interview: G. Person, D&D/ER MMES • Joint interview: A. Lay, EMD; K. Downer, EMD, MMES	• Interviews: F. DeLozier, Central ER, KSO J. Powell, ERWM, KSO
pm	• Interview: D. Carden, ERWM, ORO 4:00 Environmental debrief • Team meeting	• Document review 4:00 Environmental debrief • Team meeting	• Interviews: B. Holmes, ER/RA, MMES R. Sheeley, D&D, MMES 4:00 Environmental debrief • Team meeting	• Interview: J. Underwood, Project Manager, MMES 4:00 Environmental debrief • Team meeting	• Interview: G. Person, D&D/ER MMES 4:00 Environmental debrief • Team meeting

SCHEDULE OF ONSITE ACTIVITIES (continued)

Mark Heuberger, Internal and External Communications; Environmental Planning and Risk Management					
	Monday, February 14	Tuesday, February 15	Wednesday, February 16	Thursday, February 17	Friday, February 18
am	• GET Training	• Interviews: B. Holmes, ER, MMES T. Tison, ORO, KSO R. Frounfelker, KSO,	• Interviews: J. Kinsall, TDEC, TOA Office M. Baer, Programs, MMES F. Van Rhyn, Programs, MMES C. Peterson, Operations, MMES P. Stumb, Operations, MMES	• Interviews: N, Baer, Programs, MMES J. Lyons, ER, MMES G. Butterworth, WMD, MMES J. Armstrong, Community Relations, MMES	• Interview: G. Person, WMD, MMES
pm	• Interview: M. Whitten, Business Management, MMES 4:00 Environmental debrief • Team meeting	• Interviews: K. Downer, EMD, MMES J. Powell, ERD, ORO J. Forstrom, EMD, MMES 4:00 Environmental debrief • Team meeting	• Interviews: J. Forstrom, EMD, MMES S. Thornton, EMD, MMES B. Holmes, MMES, ER 4:00 Environmental debrief • Team meeting	• Interview: B. Sleeman, ERD, ORO 4:00 Environmental debrief • Team meeting	• Interviews: B. Simon, TSCA Incinerator Division, MMES Incinerator Staff, MMES M. Baer, Programs, MMES 4:00 Environmental debrief • Team meeting

APPENDIX D

LIST OF SITE DOCUMENTS REVIEWED BY THE ASSESSMENT TEAM

LIST OF SITE DOCUMENTS REVIEWED BY THE ASSESSMENT TEAM

Document #	Title/Description	Author	Organization	Recipient	Document Date
Paul Farrow - Organizational Structure; Staff Resources, Training, and Development					
D-A-1	Organizational Charts K-25	Various	MMES	Distribution	2/1/94
D-A-2	Environmental Protection Implementation Plan	MMES	EMD	KSO	11/93
D-A-3	EH-24 Environmental Management Audit Inbriefing	L. Hall, et al.	MMES	Audit Team	2/14/94
D-A-4	Radiological Training	Not indicated	MMES	Not indicated	4/93
D-A-5	GET Study Guide	A. Jones	MMES	Distribution	7/93
D-A-6	Welcome to the K-25 Site	Various	MMES	Distribution	2/14/94
D-A-7	Organizational Charts, K-25 and various others	Not indicated	MMES	Distribution	2/1/94
D-A-8	Environmental Management Division, Organizational Chart, (and others)	EMD	MMES	Not indicated	2/93
D-A-9	Management Plan	C. Baker	MMES	Not indicated	8/93
D-A-10	Organizational Charts K-007	Not indicated	MMES	Not indicated	12/93
D-A-11	Environmental Management Division Organizational Chart, Roles, and Responsibilities	K. Downer	MMES, EMD	Not indicated	2/1/94
D-A-12	Action Item Analysis, Training	B. Milligan	MMES	Not indicated	2/14/94
D-A-13	ES&H Strategic Plan	G. Fee et al	MMES	DOE	8/93
D-A-14	Quality Program Plan Y/QD-15	Not indicated	MMES	DOE	8/93
D-A-15	ESH&QA Appraisal Plan K-25	ORO EPD	DOE	MMES	1/12/94
D-A-16	Organizational Charts - Various	Not indicated	DOE	Not indicated	Not indicated
D-A-17	K-25 Tiger Team Assessment Findings and Actions	Not indicated	MMES	Not indicated	12/22/93
D-A-18	Mission Success Assessment Process	Not indicated	MMES	All MMES Managers and Directors	1994
D-A-19	Organizational Charts for Corporate Compliance, Evaluation, and Policy	Not indicated	MMES	Not indicated	1994
D-A-20	Individual MMES Performance Plans	Various	MMES	Not indicated	1994

LIST OF SITE DOCUMENTS REVIEWED BY THE ASSESSMENT TEAM (continued)

Document #	Title/Description	Author	Organization	Recipient	Document Date
D-A-21	Various EMD Charters	EMD	MMES	Not indicated	1993
D-A-22	Various EMD Position Descriptions	Various	MMES	Not indicated	Not indicated
D-A-23	K-25 Conduct of Training Standard Practice Procedure	Not indicated	MMES	Not indicated	Not indicated
D-A-24	National Environmental Management Academy	Not indicated	DOE	Not indicated	Not indicated
D-A-25	ERWM/K-25 Training Roles	Not indicated	MMES	T. Riggs	2/1/94
D-A-26	Weekly NewsWire	Public Affairs Department	MMES	Managers	2/7/94
D-A-27	Training Implementation Matrix Report	T. Riggs	MMES	Not indicated	6/93
D-A-28	Evaluation of Findings from Scheduled and Unscheduled RCRA Surveillances	L. Johnson, et al	MMES	Not indicated	8/93
D-A-29	Performance Plan for DTO	Not indicated	MMES	DTOs	Not indicated
D-A-30	Compliance Tracking Matrix for K-25 Site	Not indicated	MMES	Not indicated	3/93
D-A-31	Site Programs Organization Tracking Program Plan	E. Dagley, S. Hickey, B. Perkins, L. Amburn	MMES	Not indicated	1/93
D-A-32	Training Program Composition by Content Reports	Not indicated	MMES	Not indicated	1993
D-A-33	Preliminary Draft ESH&QA Appraisal at K-25	Various	ORO	MMES	2/18/94
D-A-34	Corrective Action Reporting Systems Full Text Report	Not indicated	MMES	Not indicated	12/22/93
D-A-35	Conduct of Training SPP 9010	G. Kitts	MMES	Distribution	5/20/93
Rana Gupta - Environmental Commitment; Formality of Environmental Programs					
D-B-1	Internal Correspondence re: Compliance	C. Hopkins	MMES	Energy Systems Employees	8/22/91
D-B-2	Flow Diagram of the Procedures and Records Management Organization - Program Development and Continuous Improvement	Not indicated	MMES	Not indicated	Not indicated

LIST OF SITE DOCUMENTS REVIEWED BY THE ASSESSMENT TEAM (continued)

Document #	Title/Description	Author	Organization	Recipient	Document Date
D-B-3	Environmental Protection Statement - DOE Oak Ridge Field Office	J. La Grone	ORO	Not indicated	4/9/92
D-B-4	Internal Correspondence re: Environmental Protection Statement	L. Hall	MMES	All K-25 Site Employees	5/6/92
D-B-5	Procedure ESP-QA-163, Lessons Learned and Alerts Systems	Not indicated	MMES	Distribution	12/20/91, Rev. 1
D-B-6	Memorandum Transmitting Random Sample Environment Related Lessons Learned or Alerts from Database	R. Gupta	ADL	C. Harmon	2/16/94
D-B-7	Procedure SPP-1322, K-25 Site Lessons Learned Program	L. Oxendine	MMES	Distribution	3/13/92 Rev. O
D-B-8	Procedure 345, Secondary Containment for Oil and Hazardous Materials	Not indicated	MMES	Distribution	3/87
D-B-9	Procedure SPP-4109, Discharge of Accumulated Water	R. Rich	MMES	Distribution	5/1/93, Rev. O
D-B-10	Procedure 800.54, Hazardous Materials Secondary Containment	Not indicated	MMES	Distribution	4/12/91
D-B-11	Preliminary Draft Environment, Safety, Health, and Quality Assurance Appraisal at the K-25 Site	Various	ORO	MMES	2/18/94
D-B-12	Procedure SPP-1520, Document Control	M. Johnston	MMES	Distribution	7/15/92, Rev. 1
D-B-13	Training Action Plan for the Operations Division Manager	Not indicated	MMES	Not indicated	2/15/94
D-B-14	Mission Statement and Roles and Responsibilities for the Quality Control Department	Quality Control Department	MMES	Not indicated	9/17/93
D-B-15	Annual Self-Assessment for the Oak Ridge K-25 Site Environmental Management Division	EMD	MMES	H. Conner	8/93
D-B-16	K-25 Site Environmental Management Division Procedures	EMD	MMES	Distribution	2/3/94
D-B-17	Martin Marietta Energy Systems, Inc., Policy, Standards, and Procedures	Various	MMES	Distribution	6/18/93

LIST OF SITE DOCUMENTS REVIEWED BY THE ASSESSMENT TEAM (continued)

Document #	Title/Description	Author	Organization	Recipient	Document Date
D-B-18	Procedure SPP-2004, Required Reading	V. Jefferson	MMES	Distribution	8/9/93 Rev. O
D-B-19	Oak Ridge K-25 Site Waste Reduction Activities Report	B. Barritt	MMES	DOE	3/92, Rev. 1.0
D-B-20	Oak Ridge K-25 Site Pollution Prevention Program Plan	Not indicated	MMES	DOE	12/91 Rev. 1
D-B-21	Policy ERWM-004, Environmental, Safety, and Health Policy	Not indicated	MMES	Distribution	1/14/94, Rev. O
D-B-22	Policy ES-EH-100, Energy Systems Environmental, Safety, and Health Policy Statement	Not indicated	MMES	Distribution	11/15/91, Rev. O
D-B-23	Procedure SPP-1500, Control of Site Procedures	J. Leheur	MMES	Distribution	3/22/93
D-B-24	Procedure SPP-1510, Records Management	M. Johnson	MMES	Distribution	11/30/92, Rev. 0
D-B-25	Environment, Safety and Health Strategic Plan	G. Fee, et al.	MMES	Distribution	8/93
D-B-26	Tiger Team Assessment Oak Ridge K-25 Site	EH-5	DOE	Distribution	12/91
D-B-27	K-25 Site Standards/Requirements ES&H Configuration Guide Table of Contents	Not indicated	MMES	Not indicated	1/94
D-B-28	Letter re: Standards/Requirements Identification Document S/RID Facility Group Plan	L. Hall	MMES	T. Tison	12/30/9
D-B-29	Impact Assessment Report, Original Notice 1300.X1, Oak Ridge Operations Standards/Requirements Program	C. Chmielewski	MMES	Not indicated	10/27/93
Chris Martel - Environmental Protection Programs; Program Evaluation, Reporting, and Corrective Action					
D-C-1	K-25 Site Monitoring Program	Not indicated	Not indicated	Not indicated	2/94
D-C-2	Sampling and Environmental Support Department	S. Woodfin	MMES	Not indicated	3/16/92
D-C-3	Draft Environmental Monitoring Plan for the Oak Ridge Reservation	Not indicated	Not indicated	Not indicated	12/3/93
D-C-4	Pollution Prevention Program SPP-4612	D. Eikelberg	MMES	Distribution	10/1/94, Rev. 0

LIST OF SITE DOCUMENTS REVIEWED BY THE ASSESSMENT TEAM (continued)

Document #	Title/Description	Author	Organization	Recipient	Document Date
D-C-5	Compilation of Corporate Audit Record (CAR) ENV-01 through ENV-68	Various	MMES	Not indicated	7/13/92 - 7/16/92
D-C-6	ALARA Workplan for Radionuclide Air Emissions, K1435, Room 6	N. Harold, J. Akers	DOE/K-25	Not indicated	10/27/93
D-C-7	Internal Correspondence re: Compliance Inspection at K-25	C. Stair	MMES	Not indicated	3/5/93
D-C-8	Oak Ridge K-25 Site Implementation Plan for the Clean Air Act Amendments of 1990	Not indicated	DOE/K-25	DOE	8/92
D-C-9	K-25 Site Hazardous Waste Generator Handbook	Not indicated	MMES	Not indicated	9/92, Rev.1
D-C-10	Quality Assurance Program SPP-1301	G. Bowles	MMES	Distribution	8/24/92, Rev. O
D-C-11	1992 Annual Report of Hazardous Waste Activities for the Oak Ridge K-25 Site	Not indicated	MMES	DOE	2/93
D-C-12	Notification for Emergencies and Reportable Occurrences SPP-5002	R. Hill	MMES	Distribution	11/15/93, Rev. 0, Change 1
D-C-13	Environmental Surveillance Program SPP-4002	F. Adams	MMES	Distribution	3/31/93, Rev. 0
D-C-14	Environmental Management Department Procedures No. EMD-202, Radiation Protection of the Public and Environment	J. Adams	MMES	Distribution	10/17/91
D-C-15	SOP No. 802, K-25 Site Radiation Protection Program	Not indicated	Not indicated	Distribution	3/91
D-C-16	Memorandum of Understanding between Director, Waste Management Division and the Director, K-25 Site Office	L. Radcliff	MMES	Director, K-25 Site Office	10/91
D-C-17	Memorandum of Agreement between K-25 Site Office and Environmental Restoration Division	Not indicated	MMES	KSO	1/93, Rev. 1
D-C-18	Standard No. ESS-EH-102 - Subject: Energy Systems Environmental, Safety, and Health Activities	Not indicated	MMES	Distribution	9/30/91, Rev. 0

LIST OF SITE DOCUMENTS REVIEWED BY THE ASSESSMENT TEAM (continued)

Document #	Title/Description	Author	Organization	Recipient	Document Date
D-C-19	Standard No. ESS-EP-101 - Subject: Environmental Protection Program	Not indicated	MMES	Distribution	2/25/92, Rev. O
D-C-20	Standard No. ESS-EP-120 - Subject: Environmental Monitoring Programs	Not indicated	MMES	Distribution	5/10/93, Rev. O
D-C-21	Standard No. ESS-EP-130 - Subject: Compliance with Clean Water Act (CWA) Standards and National Pollutant Discharge Elimination System (NPDES) Permit Requirements	Not indicated	MMES	Distribution	4/6/92, Rev. O
D-C-22	Standard No. ESS-EP-134 - Subject: Groundwater Protection Program	Not indicated	MMES	Distribution	3/22/93, Rev. O
D-C-23	Standard No. ESP-EP-163 - Subject: National Environmental Policy Act Review and Compliance	Not indicated	MMES	Distribution	5/27/92, Rev. O
D-C-24	Procedure No. EMD-201 - Subject: Maintaining Exposures to Hazardous Materials and Radiation Levels that are ALARA	Not indicated	MMES	Distribution	9/16/92
D-C-25	Oak Ridge K-25 Resource Conservation and Recovery Act Permits Management - SPP-4014	Not indicated	MMES	Distribution	8/23/93, Rev. O
D-C-26	Oak Ridge K-25 Groundwater Protection Program - SPP-4005	Not indicated	MMES	Distribution	4/20/92, Rev. O
D-C-27	Standard ESS-EP-129 Subject: Stratospheric Ozone Protection Programs	Not indicated	MMES	Distribution	3/10/93, Rev. O
D-C-28	Transmittal letter re: Updated Environmental Protection Implementation Plan	L. Hall	MMES	T. Tison	11/6/92
D-C-29	Oak Ridge K-25 Site Stratospheric Ozone Protection Plan	Not indicated	MMES	DOE	8/92
D-C-30	Environmental Management Division Management Plan	EMD	MMES	Distribution	2/93
D-C-31	Environmental Management Division Organizational Charters	EMD	MMES	Not indicated	9/93
D-C-32	Environment, Safety and Health Strategic Plan	G. Fee, et al.	MMES Corporate	Distribution	8/93
D-C-33	Oak Ridge K-25 Site Environmental Protection Implementation Plan	EMD	MMES	KSO	11/93

LIST OF SITE DOCUMENTS REVIEWED BY THE ASSESSMENT TEAM (continued)

Document #	Title/Description	Author	Organization	Recipient	Document Date
D-C-34	Oak Ridge K-25 Site Environmental Monitoring and Permitting Department Management Plan	Environmental Monitoring and Permitting	MMES	Distribution	8/93
D-C-35	Procedure ESP-EP-153 Subject: Identification and Reporting of Environmental Noncompliances	Not indicated	MMES	Distribution	5/28/93, Rev. 1
D-C-36	Quality Assurance Plan for the Environmental Monitoring Department at the Oak Ridge K-25 Site	Not indicated	MMES	Distribution	11/92
D-C-37	Quality Program Plan	Not indicated	MMES	Not indicated	4/93
D-C-38	Compliance Milestones to EPA/TDEC	Not indicated		EPA, TDEC	2/15/94, Rev. 3
D-C-39	Standard ESS-EP-122 Subject: Approval Process for Changes in Environmental Monitoring Programs	Not indicated	MMES	Distribution	3/5/93, Rev. O
D-C-40	Procedure SPP-4001, Environmental Surveillance	F. Adams	MMES	Distribution	3/31/93, Rev. O
D-C-41	Procedure SPP-4004, Groundwater Protection Program	L. Shipe	MMES	Distribution	4/20/92, Rev. O
D-C-42	Procedure SPP-4006, Air Source Compliance Verification	D. Lyles	MMES	Distribution	5/18/92
D-C-43	Minutes: ALARA Working Committee Meeting	Not indicated	MMES	Attendees	12/16/93
D-C-44	Draft Oak Ridge K-25 Site ALARA Goals for Calendar Year 1994	Not indicated	MMES	Distribution	Not indicated
D-C-45	Procedure SPP-4000, Clean Water Pollutant Discharge Elimination System (CWA/NPDES) Compliance Program	B. Shoemaker	MMES	Distribution	9/30/92, Rev. O
D-C-46	Oak Ridge K-25 Site Monitoring Program Management Plan	Not indicated	EMD	DOE	8/93
D-C-47	Evaluation of Findings from Scheduled and Unscheduled RCRA Surveillances at the Oak Ridge K-25 Site	L. Johnson, R. Sherles, M. Swearingen	MMES	DOE	8/93
D-C-48	Scheduled Surveillances to be Conducted at RCRA 90-Day and Satellite Accumulation Areas	Not indicated	MMES	Not indicated	12/2/93

LIST OF SITE DOCUMENTS REVIEWED BY THE ASSESSMENT TEAM (continued)

Document #	Title/Description	Author	Organization	Recipient	Document Date
D-C-49	Environmental Compliance Assessments Department FY 93-94 Assessment Schedule	Not indicated	MMES	Distribution	Not indicated
D-C-50	Environmental Compliance Assessments Group Planned Activities for FY 1994	Not indicated	MMES	Distribution	12/1/93
D-C-51	Environmental Surveillances and Results Overheads	Not indicated	MMES	Not indicated	2/14/94
D-C-52	Standard ESS-QA-16.4 Subject: Energy Systems Action Management System (ESAMS)	Not indicated	MMES	Distribution	8/3/92, Rev. O
D-C-53	Environmental Compliance Assessment Section - Program Overview	Not indicated	EPAD	Not indicated	Not indicated
D-C-54	Resource Conservation and Recovery Act Permit for the Oak Ridge K-25 Site Tank Storage and/or Treatment Units Permit Number: TNHW-057	Not indicated	EMD	Not indicated	1/7/94, Rev. O
D-C-55	Groundwater Sampling Procedures, Checklist, and Surveillance Schedule	Not indicated	EMD, EPAD	Not indicated	8/30/93, Rev. O
D-C-56	Air Source Compliance Verification	Not indicated	EMD, EPAD	Not indicated	9/14/93, Rev. O
D-C-57	Underground Storage Tank Checklist	Not indicated	EMD, EPAD	Not indicated	1/13/94, Rev. O
D-C-58	Energy Systems Action Management System (ESAMS) Users Manual	C. Eubanks, P. Johnson	MMES	Not indicated	12/92
D-C-59	Internal Correspondence Transmitting: Environmental Management Division Annual Self-Assessment Report	L. Long	MMES	H. Conner, Jr.	12/8/93
D-C-60	Procedure SPP-1325, Self-Assessment Program	C. Davidson	MMES	Distribution	9/16/93, Rev. 1, Change 1
D-C-61	Procedure SPP-1320, Corrective Actions	T. Hayes	MMES	Distribution	9/30/92, Rev. 1
D-C-62	Procedure SPP-1329, Auditing	M. McNutt	MMES	Distribution	7/26/93, Rev. O
D-C-63	Procedure SPP-4007, Environmental Compliance Assessments Program	C. Wigfall	MMES	Distribution	3/31/93, Rev. O

LIST OF SITE DOCUMENTS REVIEWED BY THE ASSESSMENT TEAM (continued)

Document #	Title/Description	Author	Organization	Recipient	Document Date
D-C-64	Procedure SPP-1330, Surveillance	M. McNutt	MMES	Distribution	7/26/93, Rev. O
D-C-65	Compilation of Random Environment Related Entries Samplings from the MMES Database	Various	MMES	Various	Various
D-C-66	Internal Correspondence Transmitting Copy of Final Audit Report for the K-25 Site Environmental Compliance Technical Audit held August 30 through September 3, 1993	C. Stair	MMES	R. Eby	Various
D-C-67	Procedure IAD-SPP-1530, Compliance Management Process	W. Webb	MMES	Distribution	4/30/94, Rev. O Change 1
D-C-68	Letter Transmitting: K-25 Plant Waste Management Facilities Surveillance Report	L. Radcliffe	KSO	C. Frye	5/13/92
D-C-69	Final Report Integrated Assessment of the K-25 Site Analytical Services Division	Not indicated	MMES	Distribution	5/17-21/93
D-C-70	Technical Division Integrated Assessment	Not indicated	Environmental Subteam	Distribution	8/18/93
D-C-71	Incoming Mail Log Report	Not indicated	Not indicated	Not indicated	2/14/94
D-C-72	Operating Manual No. KSO-10.1, Award Fee Process	D. Reed	KSO	Distribution	4/21/92
D-C-73	Note: Subject: EM Oversight Integrated Schedule for 1993-1994	T. Conner	EW-96	L. Velazquez	12/10/93
D-C-74	Procedure, Self-Assessment	T. Conner	KSO	Distribution	9/8/93
D-C-75	Procedure, Surveillance and Walkthroughs	D. Reed	KSO	Distribution	4/30/93
D-C-76	Procedure, Corrective Action	T. Conner	KSO	Distribution	9/8/93
D-C-77	Procedure, Conducting Functional Appraisals of ESH&QA Activities AMESQ·SPP18.1	Not indicated	ORO	Distribution	2/92
D-C-78	Series of Status Reports from MMES Corrective Action Reporting System	Not indicated	MMES	DOE	7/17/92
D-C-79	Martin Marietta Energy Systems Closed Actions for Environmental Management	Not indicated	MMES	DOE	2/4/92

LIST OF SITE DOCUMENTS REVIEWED BY THE ASSESSMENT TEAM (continued)

Document #	Title/Description	Author	Organization	Recipient	Document Date
D-C-80	1991 K-25 Tiger Team Assessment Findings and Actions	Not indicated	MMES	DOE	12/22/93
D-C-81	ESAMS Action Item Status Report Oak Ridge K-25 Site	Not indicated	MMES	DOE	2/15/94
D-C-82	Environmental Management Division, Compliance Actions, Schedule and Status, Status of Open Actions for BALOGA	EMD	MMES	Not indicated	12/93
D-C-83	The Spill Prevention Control and Countermeasures Plan for the Oak Ridge K-25 Site	Not indicated	HSEMD	Distribution	7/91
D-C-84	Standard, ESS-EP-130, Compliance with Clean Water Act (CWA) Standards and National Pollutant Discharge Elimination System (NPDES) Permit Requirements	Not indicated	MMES	Distribution	4/6/92, Rev. 0
D-C-85	Waste Minimization Plans	Not indicated	MMES	Distribution	9/30/91, Rev. 0
D-C-86	Quality Assurance Plan for the Environmental Management Division Radionuclide Emission Measurements for Compliance with National Emission Standards for Hazardous Air Pollutants at the Oak Ridge K-25 Site	Not indicated	MMES	Distribution	5/92
D-C-87	Volume 1 and 2, Oak Ridge Reservation Environmental Report for 1992	Various	MMES	DOE	9/93
D-C-88	Memorandum re: ORR Annual Emissions Report: Radionuclide NESHAP - Oak Ridge K-25 Site	L. Hall	MMES	T. Tison	6/8/93
D-C-89	Letter re: K-25 Facility National Pollutant Discharge Elimination System Permit No. TN0002950	T. Tison	KSO	L. Hall	10/8/92
Rich D'Ermilio - Waste Management Programs					
D-D-1	Roles and Responsibilities for the Management of Low-Level Waste - Oak Ridge K-25 Site	J. Holbert	MMES	Distribution	5/93
D-D-2	Internal Correspondence re: RCRA/TSCA Visual Container Inspection Standards	J. Dillon	MMES Metallurgical Engineering	M.S. Burris	9/29/89

LIST OF SITE DOCUMENTS REVIEWED BY THE ASSESSMENT TEAM (continued)

Document #	Title/Description	Author	Organization	Recipient	Document Date
D-D-3	Description of K-25 Waste Management Division's Waste Transportation and Storage Department's Roles and Responsibilities	Not indicated	MMES	Distribution	3/93, Rev. 2
D-D-4	Oak Ridge K-25 Site Waste Management Plan	Not indicated	MMES	EM	12/93, Rev. 1
D-D-5	Letter transmitting Organizational Charts for the Oak Ridge K-25 Site	J. Harris	K-25 Site Document Response Center	R. Voeller	2/4/94
D-D-6	Procedure SPP-4600, Management of Waste	L. Carver	MMES	Distribution	2/8/94, Rev. 1, Change 1
D-D-7	Procedure SPP-4601, Low-Level Waste Management	M. Shelton	MMES	Distribution	5/20/93, Rev. 1
D-D-8	Procedure SPP-4606, Waste Container Labeling	A. Keebler	MMES	Distribution	10/15/92, Rev. O
D-D-9	Procedure SPP-4609, Guide to the Documentation of Roles and Responsibilities for Waste Management Programs	L. Carver	MMES	Distribution	1/27/94, Rev. O
D-D-10	Procedure WSO-OP-2001, Waste Storage Inspection Requirements	S. Livesay	MMES	Distribution	8/13/93, Rev. 2
D-D-11	Procedure WSO-OP-2015, Waste Container Storage Unit Operations	M. Martines, T. Broussard	MMES	Distribution	8/15/93, Rev. 1
D-D-12	K-25 Environmental Management Division Management Plan	EMD	MMES	Not indicated	Not indicated
D-D-13	D&D Asbestos Abatement Project Waste Management Plan	Not indicated	MMES	Not indicated	11/23/92
D-D-14	Waste Management Plan for K-25 D&D, Phase 1 PCB Capacitor Removal, Storage, and Disposal	Not indicated	MMES	Not indicated	12/92
D-D-15	Compilation of Reports re: Environmental Compliance Surveillance Report for RCRA TSD Units, Waste Management Division	Various	MMES and DOE	Not indicated	Various

LIST OF SITE DOCUMENTS REVIEWED BY THE ASSESSMENT TEAM (continued)

Document #	Title/Description	Author	Organization	Recipient	Document Date
D-D-16	Draft DOE and Martin Marietta Energy Systems, Inc., Responsibilities for RCRA Compliance Deliverable Documents	R. Frounfelker	MMES	KSO	2/11/94
D-D-17	Interoffice Memorandum re: List of External/Internal Documents for Review	D. Appino	MMES	G. Mencer	2/19/93
D-D-18	Monthly Inspection Stores Vaults	Not indicated	MMES	Not indicated	1/94
D-D-19	Procedure 347, Responsibility for Maintaining Site Buildings/Facilities	Not indicated	MMES	Distribution	9/91
D-D-20	K-25 Oak Ridge K-25 Site Environmental Protection Implementation Plan, November 9, 1993 to November 9, 1994	EMD	MMES	KSO	11/93
D-D-21	Procedure SPP-1320, Corrective Actions	T. Hayes	MMES	Distribution	9/30/92, Rev. 1
D-D-22	Corrective Action Reporting System (C.A.R.S.) Full Text Report, Source 1276	Not indicated	MMES	Not indicated	2/16/94
D-D-23	Oak Ridge K-25 Roles and Responsibilities for the Management of Low-Level Waste	Not indicated	MMES	DOE	5/93
D-D-24	Pond Waste Management Project, Compliant Storage, Operations Work Instruction Package	H. Bailey, Jr,. W. McLendon	MMES	Not indicated	2/15/94 Rev. O
D-D-25	Procedure SPP-1319, Integrated Resource Management System	E. Harmon	MMES	Distribution	11/16/93, Rev. O
D-D-26	Guidance for Application of Risk-Based Prioritization	C. Harman	MMES, ER	Not indicated	1/29/93, Rev. 1
D-D-27	Energy Systems Risk Matrix Summary Guidelines for Consequence Determination	Not indicated	MMES	Not indicated	Not indicated
D-D-28	Project Evaluation Group Committee	Not indicated	MMES	Not indicated	Not indicated
D-D-29	Senior Management Group Committee	Not indicated	MMES	Not indicated	Not indicated
D-D-30	Documentation for Approved Overhead Modules is Contained in the Integrated Resource Management System (IRMS) Database	Not indicated	MMES	Not indicated	Not indicated

LIST OF SITE DOCUMENTS REVIEWED BY THE ASSESSMENT TEAM (continued)

Document #	Title/Description	Author	Organization	Recipient	Document Date
D-D-31	Oak Ridge K-25 Site Emergency Readiness Assurance Plan, October 1, 1993 through September 30, 1998	Not indicated	MMES	DOE	10/93, Rev. 2
D-D-32	Lithium Hydroxide, Crystal, Reagent, Record Identification Number 00253	Not indicated	MMES	Not indicated	Not indicated
D-D-33	Procedure SPP-4111, Material Storage and Inspection	T. Puett	MMES	Sitewide Distribution	8/6/93
D-D-34	Memorandum of Understanding Between Director, Waste Management Division and the Director, K-25 Site	Not indicated	KSO	MMES WMD	10/91
D-D-35	Procedure SPP-4601, Low-Level Waste Management	M. Shelton	MMES	Distribution	5/20/93, Rev. 1
D-D-36	Procedure SPP-4004, Management of Hazardous Wastes Subject to Land Disposal Restrictions	H. Clancy	MMES	Distribution	8/15/92, Rev. 0
D-D-37	Letter re: K-25 Plant Waste Management Facilities Surveillance Report	L. Radcliffe	ORO	C. Frye	5/13/92
D-D-38	Procedure SPP-4002, Environmental Surveillance Program	F. Adams	MMES	Distribution	3/31/93, Rev. 0
D-D-39	Procedure SPP-4014, K-25 Site Resource Conservation and Recovery Act Permits Management	J. Brahmbhatt	MMES	Distribution	8/23/93, Rev. 0
D-D-40	1991 Tiger Team Assessment of the K-25 Site	EH-5	DOE	Distribution	12/91
D-D-41	Memorandum of Agreement Between K-25 Site Office and Environmental Restoration Division	Not indicated	KSO	MMES ERD	1/93, Rev. 0
D-D-42	Oak Ridge K-25 Site Hazardous Materials Management Program Plan	Not indicated	MMES, EMD	K-25/DOE	9/93
D-D-43	Excerpts from K-25 Site Corrective Actions Plan - Tiger Team	Not indicated	MMES, EMD	DOE EH-24	3/92
D-D-44	Draft Oak Ridge Y-12 Plant Criteria for the Storage of Lithium Metal and Lithium Compounds at DOE Facilities	Not indicated	MMES, Y-12 Lithium Storage Assessment Team	Not indicated	12/93

LIST OF SITE DOCUMENTS REVIEWED BY THE ASSESSMENT TEAM (continued)

Document #	Title/Description	Author	Organization	Recipient	Document Date
D-D-45	K-25 Site Surveillance and Maintenance Plan for the K-25 Site Decontamination and Decommissioning Facilities	Not indicated	MMES, Site Facility Operations	DOE	12/92
D-D-46	Evidence File for Closure of Tiger Team Corrective Action for WM/CF-1	MMES, WMD and EMD	MMES	DOE	Various 1992 and 1993
Mario Vigliani - Decontamination and Decommissioning Program					
D-E-1	Oak Ridge K-25 Site Emergency Readiness Assurance Plan, October 1, 1993 through September 30, 1998	Not indicated	ERWM	DOE	Not indicated
D-E-2	Oak Ridge K-25 Environmental Protection Implementation Plan, November 9, 1993 to November 9, 1994	Not indicated	EMD	DOE	Not indicated
D-E-3	FY 1994 Draft Current Year Work Plan, WBS Title: K-25 Facility Decontamination and Decommissioning	Not indicated	MMES	Not indicated	12/14/93
D-E-4	Project Management Plan for the Cooling Tower Removal Project for the K-25 Facilities	Not indicated	MMES	Not indicated	11/22/93
D-E-5	Project Management Plan for the Deposit Removal Project for the K-25 Facilities	Not indicated	MMES	Not indicated	7/22/93, Rev. O
D-E-6	Draft Project Management Plan for the Radiation Contamination Control Project for the K-25 Facilities	Not indicated	MMES	Not indicated	12/3/93
D-E-7	Draft Strategic Plan, K-25 Site Decontamination and Decommissioning Program 1994	D. Charles, R. Faulkner, G. Person, B. Prince,	MMES	Not indicated	Not indicated
D-E-8	6.0 Charter K-25 Site D&D Program	Not indicated	MMES	Not indicated	11/1/93
D-E-9	K-25 Site D&D Overview	Not indicated	MMES	Not indicated	Not indicated
D-E-10	Draft Decontamination and Decommissioning Guidance Document	Not indicated	DOE EM-40	Not indicated	1/14/94 Draft 3
D-E-11	Draft Decontamination and Decommissioning Plan for the Oak Ridge Gaseous Diffusion Plan	Not indicated	MMES	Not indicated	3/30/89

LIST OF SITE DOCUMENTS REVIEWED BY THE ASSESSMENT TEAM (continued)

Document #	Title/Description	Author	Organization	Recipient	Document Date
D-E-12	Draft K-25 Site Decontamination and Decommissioning Program Life Cycle Baseline Summary	Not indicated	MMES	DOE	8/93
D-E-13	Organizational Manual K-25 Site Facility Operations Organization	Not indicated	MMES	Not indicated	12/30/93
D-E-14	Oak Ridge K-25 Site Decontamination and Decommissioning Project (Decontamination and Decommissioning and Site Facilities Operations Organizations) Management Plan	Not indicated	MMES	DOE	9/91
D-E-15	K-25 ER Functional Organization Chart	ERD	MMES	Distribution	2/14/94
D-E-16	Final Draft Report Surveillance and Maintenance Plan for K-25 Site Surplus Facilities	Not indicated	Battelle Oak Ridge Operations	MMES	1/27/94
D-E-17	Remarks at the Site Decommissioning Management Plan (SDMP) Workshop, Rockville, Maryland	I. Selin	NRC	Not indicated	11/19/92
D-E-18	Environmental Restoration Program Project Management Plan for the DOE Oak Ridge Field Office Major System Acquisition OR-1	Not indicated	MMES	DOE	12/92
D-E-19	First Draft Environmental Restoration Program Major System Acquisition OR-1 Project Plan	Not indicated	ORO	DOE	10/92, Rev. 3
D-E-20	Internal Correspondence re: Decontamination and Decommissioning (D&D) Program Documentation Checklist	K. Brady	MMES	T. Burwinkle S. Davis S. Howell J. Lyons W. Schloesslin P. Stumb	7/27/93
Mark Heuberger - Internal and External Communications; Environmental Planning and Risk Management					
D-F-1	Guidance for Application of Risk-Based Prioritization, Revision 1	C. Harmon	MMES	Not indicated	1/29/93
D-F-2	DOE EM Five Year Plan Fiscal Year 1993-1997	Various	DOE	Distribution	8/91
D-F-3	K-25 Site SPP-1318: Integrated Resource Management System	C. Harmon	MMES	Distribution	11/16/93
D-F-4	Site Building Assignment Responsibilities	Not indicated	Not indicated	Not indicated	2/4/94

LIST OF SITE DOCUMENTS REVIEWED BY THE ASSESSMENT TEAM (continued)

Document #	Title/Description	Author	Organization	Recipient	Document Date
D-F-5	Oak Ridge Reservation Site Management Plan for the Environmental Restoration Programs	Not indicated	MMES	DOE-EM	11/93
D-F-6	Site Development Plan, The Oak Ridge K-25 Site	Not indicated	KSO	DOE	7/93
D-F-7	D&D Facility Risk Ranking Study, Completion of Phase 1 of the DOE-OR D&D Analysis Program	G. Sharp, K. Brady, D. Gunter	ORNL	MMES	1/94
D-F-8	Memorandum re: Memorandum of Understanding between the Office of Waste Management and the Office of Environmental Restoration (MOU)	J. Lytle, R. Whitfield	DOE	Distribution	9/15/92
D-F-9	Waste Generation Forecast for DOE-ORO's Environmental Restoration OR-1 Project: FY 1994 - FY 2001	Not indicated	MMES	DOE-EM	9/93 Revision
D-F-10	DOE Oak Ridge Operations Environmental Restoration OR-1 Project Waste Management Plan	Not indicated	MMES	DOE-EM	9/93
D-F-11	Oak Ridge K-25 Site Long-Range Environmental Protection Plan	D. Aho	MMES	Not indicated	12/92
D-F-12	Oak Ridge K-25 Site Environmental Protection Implementation Plan	EMD	MMES	KSO	11/93
D-F-13	EP-D-06 Engineering Procedure	W. Thomas	MMES	Not indicated	4/26/93
D-F-14	Oak Ridge K-25 Waste Management Plan	Not indicated	KSO	DOE-EM	12/93
D-F-15	Oak Ridge K-25 Site Opening Day Briefing	Various	MMES	Audit Team	2/14/94
D-F-16	Guidance Manual for Conducting Technology Demonstration Activities	Various	MMES-ORNL	Distribution	1991
D-F-17	K-25 Site EMD Procedures	EMD	MMES	Distribution	2/3/94
D-F-18	Tennessee Oversight Agreement Implementation Plan - Oak Ridge Site	S. Thornton	MMES	DOE	6/93
D-F-19	Tennessee Oversight Agreement Monthly Progress Report	S. Thornton	MMES	DOE	12/93
D-F-20	Community Relations Plan for the K-25 Site	Various	MMES	DOE	12/92

LIST OF SITE DOCUMENTS REVIEWED BY THE ASSESSMENT TEAM (continued)

Document #	Title/Description	Author	Organization	Recipient	Document Date
D-F-21	Project Plan for the K-700 Powerhouse Area Demonstration Project (Draft)	Various	MMES	DOE EM-40	11/93
D-F-22	Budget Formulation and Activity Data Sheet Development Field Guidance for FY 1996	Various	DOE	Distribution	1/24/94
D-F-23	K-25 Site SPP-7110 Excavation/ Penetration Permits	D. Morgan	MMES	Distribution	9/30/92
Deborah Turner - Deputy Team Leader					
D-G-1	Oak Ridge K-25 Site Environmental Protection Implementation Plan - K/EM-59	EMD	MMES	KSO	11/93
D-G-2	KSO-1.2 - Organization and Responsibilities	L. Clark	KSO	KSO	11/27/91
D-G-3	KSO-2.1 - Environmental, Health, and Safety Policy	L. Clark	KSO	KSO	10/30/91
D-G-4	Environmental Protection Statement (Memo)	L. Hall	MMES	All MMES Employees	5/6/92
D-G-5	Positive Discipline Guidelines for Environmental Noncompliances	MMES	MMES	MMES Division Directors	Not indicated
D-G-6	Printout of Scheduled Surveillances for EMD	Not indicated	MMES	Not indicated	Not indicated
D-G-7	Environmental Compliance Assessments Department FY 1993-1994 Assessment Schedule	MMES/EMD	MMES, EMD	MMES/EMD	Not indicated
D-G-8	Performance Evaluation Plan for Martin Marietta Energy Systems, Inc. First Half FY 1994	ORO	ORO	MMES	11/30/93
D-G-9	Memorandum re: Environmental Compliance Status Report	M. Mitchell	MMES	D. Bostock, C. Carnahan, etc.	2/2/94
D-G-10	KSO-1.8 - Environment, Safety, and Health Strategic Long-Range Planning	L. Conner	KSO	KSO	2/2/93
D-G-11	KSO-10.3 - Surveillances and Walk-Throughs	D. Reed	KSO	KSO	4/30/93
D-G-12	KSO-10.2 - Self-Assessment	L. Conner	KSO	KSO	9/8/93
D-G-13	Site Manager's Goals for 1994	B. Eby	MMES	MMES Division Directors	11/3/93

LIST OF SITE DOCUMENTS REVIEWED BY THE ASSESSMENT TEAM (continued)

Document #	Title/Description	Author	Organization	Recipient	Document Date
D-G-14	K-25 Site Long-Range Environmental Protection Plan Update - K/EM-21	R. Ward	MMES, EMD	KSO	1/8/93
D-G-15	Signed Memorandum of Understanding (MOU) - between ER, WM and Uranium Enrichment	J. Bennett	DOE, HQ	ORO and HQ	4/27/92
D-G-16	Memorandum of Understanding between the Office of Waste Management and the Office of Environmental Restoration (MOU)	J. Lytle, R. Whitfield	DOE, HQ	ORO and HQ	9/15/92
D-G-17	K-25 Site Long-Range Environmental Protection Plan - Planning Tiers - Memorandum to Audit Team	R. Ward	MMES, EMD	DOE Audit Team	2/16/94
D-G-18	Environmental Management Division Annual Self-Assessment Report - K/EM-52	K. Downer	MMES, EMD	H. Conner	8/24/93 Cover Memo dated 12/8/93
D-G-19	Environment, Safety and Health Strategic Plan - ES/ESH/INT-2	G. Fee, et al.	MMES Corporate	MMES	8/93
D-G-20	Environment, Safety, and Health Strategic Long-Range Plan	KSO	KSO	KSO	8/92
D-G-21	Oak Ridge K-25 Site Monitoring Program Management Plan K/EM-46	Not indicated	EMD	MMES	8/93
D-G-22	Quality Assurance Plan for the Environmental Monitoring Department Environmetnal Surveillance Program at the Oak Ridge K-25 Site K/EM-19	Not indicated	EMD	MMES	11/92
D-G-23	ESS-EP-120: Environmental Monitoring Programs	J. Rogers	MMES	MMES	5/10/93
D-G-24	Environmental Monitoring Plan for the Oak Ridge Reservation DOE/OR-1066	Not indicated	MMES	DOE	11/93
D-G-25	Oak Ridge K-25 Site Clean Water Act / National Pollutant Discharge Elimination System Compliance Program Management Plan K/EM-55	Not indicated	MMES	DOE	9/93
D-G-26	Oak Ridge Reservation Environmental Report for 1992, Volume 1	Not indicated	MMES Cerntral	Distribution	9/93
D-G-27	ESH&QA Functional Appraisal of the K-25 Site (Draft)	Various	ORO	MMES	2/94

APPENDIX E

LIST OF CONTACTS/INTERVIEWS CONDUCTED BY THE ASSESSMENT TEAM

LIST OF SITE DOCUMENTS REVIEWED BY THE ASSESSMENT TEAM (continued)

Document #	Title/Description	Author	Organization	Recipient	Document Date
D-G-28	Groundwater Protection Program, SPP-4005	L. Shipe	MMES	MMES	4/20/92, Rev. 0
D-G-29	Environmental Management Division Organization Charters K/EM-30	EMD	MMES	Distribution	11/93, Rev. 1
D-G-30	Pollution Prevention Program SPP-4612	D. Eikelberg	MMES	MMES	10/1/94, Rev. 0
D-G-31	Decontamination and Decommissioning Guidance Document (Draft)	EM-40	DOE	Distribution	1/94
D-G-32	Oak Ridge K-25 Site Storm Water Pollution Prevention Plan	EMD	MMES	KSO	9/93

LIST OF CONTACTS/INTERVIEWS CONDUCTED BY THE ASSESSMENT TEAM

Ref. #	Date	Auditor	Organization	Topic
Paul Farrow - Organizational Structure; Staff Resources, Training, and Development				
I-A-1	2/14/94	P. Farrow	MMES, WMD	Organizational structure; staff resources, training, and development
I-A-2	2/14/94	P. Farrow	MMES, QA	Staff resources, training, and development
I-A-3	2/14/94	P. Farrow	MMES, ERWM	Organizational structure; staff resources, training, and development
I-A-4	2/15/94	P. Farrow	ORO, KSO	Organizational structure
I-A-5	2/15/94	P. Farrow	KSO	Organizational structure; staff resources, training, and development
I-A-6	2/15/94	P. Farrow	KSO	Organizational structure; staff resources, training, and development
I-A-7	2/15/94	P. Farrow	KSO	Organizational structure; staff resources, training, and development
I-A-8	2/15/94	P. Farrow	MMES, HR	Staff resources, training, and development
I-A-9	2/15/94	P. Farrow	MMES, EMD	Organizational structure
I-A-10	2/15/94	P. Farrow	MMES, QA	Organizational structure
I-A-11	2/16/94	P. Farrow	MMES, EMD	Organizational structure; staff resources, training, and development
I-A-12	2/16/94	P. Farrow	MMES, EMD	Staff resources, training, and development
I-A-13	2/16/94	P. Farrow	MMES, VP ERWM	Organizational structure
I-A-14	2/17/94	P. Farrow	MMES, ER	Organizational structure
I-A-15	2/17/94	P. Farrow	MMES, D&D/ER	Staff resources, training, and development
I-A-16	2/17/94	P. Farrow	MMES, EMD	Staff resources, training, and development

LIST OF CONTACTS/INTERVIEWS CONDUCTED BY THE ASSESSMENT TEAM (continued)

Ref. #	Date	Auditor	Organization	Topic
I-A-17	2/17/94	P. Farrow	MMES, HR	Staff resources, training, and development
I-A-18	2/17/94	P. Farrow	MMES, HR	Staff resources, training, and development
I-A-19	2/18/94	P. Farrow	MMES, WM	Staff resources, training, and development
I-A-20	2/18/94	P. Farrow	MMES, ER	Staff resources, training, and development
I-A-21	2/18/94	P. Farrow	MMES, Procurement and Records Management	Organizational structure
I-A-22	2/18/94	P. Farrow	MK-Ferguson	Organizational structure
I-A-23	2/18/94	P. Farrow	MK-Ferguson	Organizational structure
I-A-24	2/18/94	P. Farrow	MMES, Operations	Organizational structure; staff resources, training, and development
I-A-25	2/18/94	P. Farrow	MMES, EMD	Staff resources, training, and development
Rana Gupta - Environmental Commitment; Formality of Environmental Programs				
I-B-1	2/14/94	R. Gupta	MMES, QA	Formality of environmental programs
I-B-2	2/14/94	R. Gupta	MMES, Operations	Environmental communications and formality of environmental programs
I-B-3	2/15/94	R. Gupta	ORO, ERWM	Environmental communications
I-B-4	2/15/94	R. Gupta	MMES, EMD	Environmental communications and formality of environmental programs
I-B-5	2/15/94	R. Gupta	KSO	Environmental communications
I-B-6	2/15/94	R. Gupta	MMES, HR	Environmental communications and formality of environmental programs
I-B-7	2/16/94	R. Gupta	MMES, PMO	Formality of environmental programs
I-B-8	2/16/94	R. Gupta	MMES, WMD	Environmental communications and formality of environmental programs

LIST OF CONTACTS/INTERVIEWS CONDUCTED BY THE ASSESSMENT TEAM (continued)

Ref. #	Date	Auditor	Organization	Topic
I-B-9	2/17/94	R. Gupta	ORO, KSO	Environmental communications
I-B-10	2/17/94	R. Gupta	MMES, Maintenance	Environmental communications
I-B-11	2/17/94	R. Gupta	MMES, Plant Manager	Environmental communications and formality of environmental programs
I-B-12	Intentionally left blank.			Environmental communications
I-B-13	2/18/94	R. Gupta	MMES, VP ERWM	Environmental communications
I-B-14	2/18/94	R. Gupta	MMES, Maintenance	Environmental communications and formality of environmental programs
I-B-15	2/18/94	R. Gupta	MMES	Records management
I-B-16	2/18/94	R. Gupta	DOE	Formality
Chris Martel - Environmental Protection Programs; Program Evaluation, Reporting and Corrective Action				
I-C-1	2/14/94	C. Martel	MMES, EMD	Environmental protection planning
I-C-2	2/14/94	C. Martel	MMES, PPS	NPDES compliance and emergency response
I-C-3	2/15/94	C. Martel	MMES, EMD	Environmental monitoring plan and program
I-C-4	2/15/94	C. Martel	MMES, EMD	Environmental ALARA
I-C-5	2/15/94	C. Martel	MMES, EMD	NPDES sampling
I-C-6	2/15/94	C. Martel	MMES, SEDS	NPDES sampling
I-C-7	2/16/94	C. Martel	MMES, EMD	Environmental compliance assessments
I-C-8	2/16/94	C. Martel	MMES, EMD	Environmental compliance assessments
I-C-9	2/16/94	C. Martel	MMES, EMD	Environmental compliance assessments
I-C-10	2/16/94	C. Martel	MMES, QAD	Integrated assessment process
I-C-11	2/17/94	C. Martel	ORO	Functional appraisal
I-C-12	2/17/94	C. Martel	KSO	Line operation oversight
I-C-13	2/17/94	C. Martel	KSO	Surveillances and appraisals

LIST OF CONTACTS/INTERVIEWS CONDUCTED BY THE ASSESSMENT TEAM (continued)

Ref. #	Date	Auditor	Organization	Topic
I-C-14	2/18/94	C. Martel	ORO, Environment and Protection	Functional appraisal process
Richard D'Ermilio - Waste Management Program				
I-D-1	2/3/94	R. D'Ermilio	MMES, WMD	Vault waste storage
I-D-2	2/14/94	R. D'Ermilio	MMES, ERWM	K-25 long-range goals and vault storage
I-D-3	2/15/94	R. D'Ermilio	MMES, WMD	Waste management division vault storage programs
I-D-4	2/15/94	R. D'Ermilio	MMES, CWM	Vault storage capacity planning
I-D-5	2/15/94	R. D'Ermilio	MMES, D&D/ER	Decontamination and decommissioning needs for vault storage
I-D-6	2/16/94	R. D'Ermilio	MMES, Central Facilities	Planning for vault storage
I-D-7	2/16/94	R. D'Ermilio	MMES, Operations	Maintenance responsibilities for K-25 site buildings; Building manager position and responsibilities
I-D-8	2/16/94	R. D'Ermilio	KSO	Oversight of waste management activities
I-D-9	2/16/94	R. D'Ermilio	MMES, EMD	Environmental management department training programs
I-D-10	2/17/94	R. D'Ermilio	MMES, K-25 Site	Vault storage
I-D-11	2/17/94	R. D'Ermilio	MMES, WMD	Inspected vaults
I-D-12	2/17/94	R. D'Ermilio	MMES, EMD	Pond waste project and vault storage
I-D-13	2/17/94	R. D'Ermilio	MMES, Site Services	Lithium storage in vaults
I-D-14	2/18/94	R. D'Ermilio	MMES, EMD	Pond waste project and vault storage
I-D-15	2/18/94	R. D'Ermilio	MMES	Pond waste project and vault storage
I-D-16	2/18/94	R. D'Ermilio	MMES, WMD	Waste management department training program
I-D-17	2/18/94	R. D'Ermilio	MMES, WMD	Vault storage

LIST OF CONTACTS/INTERVIEWS CONDUCTED BY THE ASSESSMENT TEAM (continued)

Ref. #	Date	Auditor	Organization	Topic
I-D-18	2/18/94	R. D'Ermilio	MMES, Central Environmental Compliance Group	Regulatory tracking, directives, and implementation
I-D-19	2/21/94	R. D'Ermilio	MMES, WMD	Waste training and progress since the Tiger Team
I-D-20	2/21/94	R. D'Ermilio	MMES, EMD	Toxic and chemical materials program development and Tiger Team corrective action milestones since 1991
Mario Vigliani - Decontamination and Decommissioning Program				
I-E-1	2/14/94	M. Vigliani	ORO, ERWM, ERD	K-25 decontamination and decommissioning program
I-E-2	2/14/94	M. Vigliani	ORO, ERWM	Decontamination and decommissioning quality assurance
I-E-3	2/15/94	M. Vigliani	MMES, ER	K-25 decontamination and decommissioning program
I-E-4	2/16/94	M. Vigliani	KSO	KSO and decontamination and decommissioning program
I-E-5	2/16/94	M. Vigliani	MMES, EMD	Environmental Management Department support to decontamination and decommissioning
I-E-6	2/16/94	M. Vigliani	MMES, EMD	Tiger Team finding
I-E-7	2/16/94	M. Vigliani	MMES, Operations	Safety and maintenance program
I-E-8	2/16/94	M. Vigliani	MMES, ER/RA	Remedial action program
I-E-9	2/16/94	M. Vigliani	MMES, D&D	Contamination control project
I-E-10	2/17/94	M. Vigliani	MMES, D&D/ER	K-25 decontamination and decommissioning program planning
I-E-11	2/17/94	M. Vigliani	MMES, EMD	Environmental Management Department support to decontamination and decommissioning
I-E-12	2/17/94	M. Vigliani	MMES, Project Manager	Tiger Team finding
I-E-13	2/18/94	M. Vigliani	MMES, Central ER	Tiger Team finding

LIST OF CONTACTS/INTERVIEWS CONDUCTED BY THE ASSESSMENT TEAM (continued)

Ref. #	Date	Auditor	Organization	Topic
I-E-14	2/18/94	M. Vigliani	ORO, ERD	Tiger Team finding
I-E-15	2/18/94	M. Vigliani	MMES, D&D/ER	Recycle baseline
Mark Heuberger - Internal and External Communication; Environmental Planning and Risk Management				
I-F-1	2/7/94	M. Heuberger	EM-30	Waste management planning
I-F-2	2/7/94	M. Heuberger	EM-30	Waste management planning
I-F-3	2/7/94	M. Heuberger	EM-40	Decontamination and decommissioning planning
I-F-4	2/7/94	M. Heuberger	EM-40	Remedial action and landlord planning
I-F-5	2/14/94	M. Heuberger	MMES, Business Management	Budgeting, risk-based prioritization
I-F-6	2/15/94	M. Heuberger	MMES, ER	Remedial action planning
I-F-7	2/15/94	M. Heuberger	ORO, KSO	K-25 site organization
I-F-8	2/15/94	M. Heuberger	KSO	K-25 environmental oversight
I-F-9	2/15/94	M. Heuberger	MMES, EMD	Environmental Management Department roles and responsibilities
I-F-10	2/15/94	M. Heuberger	ORO, ERD	Decontamination and decommissioning planning
I-F-11	2/15/94	M. Heuberger	MMES, EMD	Environmental Management Department
I-F-12	2/16/94	M. Heuberger	TDEC	Tennessee Oversight Agreement communications
I-F-13	2/16/94	M. Heuberger	MMES, Programs	Landlord programs and demonstration projects
I-F-14	2/16/94	M. Heuberger	MMES, Programs	Landlord programs and demonstration projects
I-F-15	2/16/94	M. Heuberger	MMES, Operations	Safety and maintenance oversight
I-F-16	2/16/94	M. Heuberger	MMES, Operations	Safety and maintenance activities
I-F-17	2/16/94	M. Heuberger	MMES, EMD	Oversight and communications

LIST OF CONTACTS/INTERVIEWS CONDUCTED BY THE ASSESSMENT TEAM (continued)

Ref. #	Date	Auditor	Organization	Topic
I-F-18	2/16/94	M. Heuberger	MMES, EMD	Tennessee Oversight Agreement communication
I-F-19	2/16/94	M. Heuberger	MMES, Facility Operations	Remedial action issues
I-F-20	2/17/94	M. Heuberger	MMES, Programs	Site programs office
I-F-21	2/17/94	M. Heuberger	MMES, ER	Environmental restoration
I-F-22	2/17/94	M. Heuberger	MMES, WMD	Decontamination and decommissioning planning
I-F-23	2/17/94	M. Heuberger	MMES, Community Relations	External communications
I-F-24	2/17/94	M. Heuberger	ORO, ERD	Environmental restoration planning
I-F-25	2/18/94	M. Heuberger	MMES, WMD	Decontamination and decommissioning planning
I-F-26	2/18/94	M. Heuberger	MMES, TID	Communications
I-F-27	2/18/94	M. Heuberger	MMES	Communications and awareness
I-F-28	2/18/94	M. Heuberger	MMES, Programs	Demonstration projects
I-F-29	2/21/94	M. Heuberger	ORNL, CRM	Role management
I-F-30	2/21/94	M. Heuberger	MMES, EMD	Environmental review of projects
I-F-31	2/22/94	M. Heuberger	MMES, EMD	Environmental review of projects
I-F-32	2/22/94	M. Heuberger	MMES, EMD	Environmental review of projects
I-F-33	2/22/94	M. Heuberger	KSO	Environmental review of projects
I-F-34	2/22/94	M. Heuberger	MMES, C/E	Environmental review of projects
Deborah Turner - Deputy Team Leader				
I-G-1	1/12/94	D. Turner	ORO, ERWM	Decontamination and decommissioning programs
I-G-2	1/12/94	D. Turner	Tennessee Department of Environmental Conservation, DOE Oversight Group	Purpose of the assessment

LIST OF CONTACTS/INTERVIEWS CONDUCTED BY THE ASSESSMENT TEAM (continued)

Ref. #	Date	Auditor	Organization	Topic
I-G-3	1/12/94	D. Turner	KSO	KSO environmental program
I-G-4	1/13/94	D. Turner	MMES, ERWM	MMES environmental program
I-G-5	1/13/94	D. Turner	MMES, Plant Manager	New organizational structure
I-G-6	1/13/94	D. Turner	MMES, Safety and Health	MMES organizational structure
I-G-7	1/13/94	D. Turner	MMES, HR	Training
I-G-8	1/13/94	D. Turner	MMES, Quality Division	Corrective action program
I-G-9	1/13/94	D. Turner	MMES, Quality Division	Corrective action, tracking system
I-G-10	2/14/94	D. Turner	Tennessee Department of Environment and Conservation; DOE-O	Assessment scope and external communication
I-G-11	2/15/94	D. Turner	ORO, ERWM	Environmental commitment
I-G-12	2/15/94	D. Turner	MMES, EMD	Environmental commitment and formality of programs
I-G-13	2/15/94	D. Turner	KSO	Environmental commitment and formality of programs
I-G-14	2/16/94	D. Turner	MMES/EMD	Decontamination and decommissioning program and environmental planning documents
I-G-15	2/17/94	D. Turner	KSO	Program evaluation, corrective actions, communications and environmental planning documents
I-G-16	2/17/94	D. Turner	MMES, EMD	Formality of programs and environmental planning documents

APPENDIX F

LIST OF REQUIREMENTS AND GUIDELINES EVALUATED AS PART OF THE K-25 ROUTINE ENVIRONMENTAL AUDIT

LIST OF REQUIREMENTS AND GUIDELINES EVALUATED AS PART OF THE ROUTINE ENVIRONMENTAL AUDIT OF THE K-25 SITE

Requirements/ Guidelines	Sections/Title	Authority
Executive Order 12088	Pollution Control Plan	Office of the President
DOE 3410.1B	Training	DOE
DOE 5400.1	General Environmental Protection Program	DOE
DOE 5400.4	CERCLA Requirements	DOE
DOE 5480.19	Conduct of Operations Requirements for DOE Facilities	DOE
DOE 5482.1B	Environmental Safety and Health Appraisal Program	DOE
DOE 5700.6B,C	Quality Assurance	DOE
DOE 5820.2A, Ch.5	Radioactive Waste Management, Decommissioning of Radioactively Contaminated Facilities	DOE
33 USC 1344	Clean Water Act	EPA
40 CFR 82	Stratospheric Ozone Protection Plan	EPA
40 CFR 112	Oil Pollution Prevention	EPA
40 CFR 122, 123, 124	National Pollutant Discharge Elimination System (NPDES)/State Pollution Discharge Elimination System (SPDES)	EPA
40 CFR 262-268, 270	Resource Conservation and Recovery Act (RCRA)	EPA
40 CFR 300	CERCLA	EPA
ORR FFA	Oak Ridge Reservation Federal Facilities Agreement	DOE, EPA, TDEC
TOA	Tennessee Oversight Agreement	DOE, TDEC
Guidance	Budget Formulation and Activity Data Sheet Development Field Guidance for the FY 1996 Planning and Budget Cycle	DOE
Draft Guidance	Decontamination and Decommissioning Guidance Document-Draft 3	DOE
29 CFR 1910.120	Hazardous Waste Operations and Emergency Response	EPA

APPENDIX G

GLOSSARY OF ACRONYMS AND ABBREVIATIONS

GLOSSARY OF ACRONYMS AND ABBREVIATIONS

Acronym/ Abbreviation	Definition
ADS	Activity Data Sheet
ALARA	As Low As Reasonably Achievable
AMERWM	Assistant Manager of ERWM
CAA	Clean Air Act
CEP	(MMES) Compliance, Evaluation, and Policy
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CET	The Center of Environmental Technology
CWA	Clean Water Act
D&D	decontamination and decommissioning
DOE	U.S. Department of Energy
DP	Defense Programs
DTO	Division Training Officer
EC	environmental commitment
EH	Office of the Assistant Secretary for Environment, Safety and Health
EH-24	Office of Environmental Audit
EM	Office of Environmental Restoration and Waste Management
EM-30	DOE Headquarters Office of Waste Management
EM-40	DOE Headquarters Office of Environmental Restoration
EMD	Environmental Management Division
ENVPD	ORO Environmental Protection Division
EP	environmental protection programs
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
EPIP	Environmental Protection Implementation Plan
ERD	Environmental Restoration Division
ERWM	Environmental Restoration and Waste Management
FP	formality of environmental programs

GLOSSARY OF ACRONYMS AND ABBREVIATIONS (Continued)

Acronym/ Abbreviation	Definition
IC	internal and external communications
K-25	DOE Oak Ridge K-25 Site
KSO	DOE K-25 Site Office
LREPP	Long Range Environmental Protection Plan
M&O	management and operating (Contractor)
MMES	Martin Marietta Energy Systems
MOU	memorandum of understanding
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
ORO	DOE Oak Ridge Operations Office
ORR	Oak Ridge Reservation
OS	organizational structure
PE	program evaluation, reporting, and corrective action
QA	Quality Assurance
RCRA	Resource Conservation and Recovery Act
RM	environmental planning and risk management
SE	Site Evaluation (Group)
SPCC	Spill Control and Countermeasure
SPP	Standard Practice Procedure
SR	staff resources, training, and development
TDEC	Tennessee Department of Environment and Conservation
TMIS	Training Management Information System
TOA	Tennessee Oversight Agreement
TSCA	Toxic Substance Control Act
WMD	Waste Management Division