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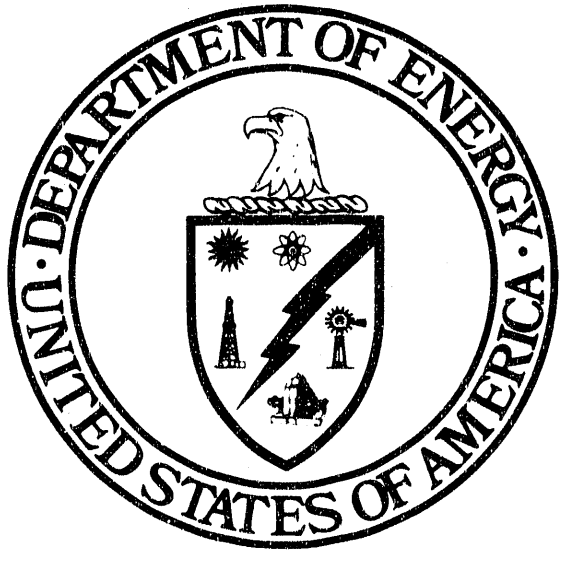
Environment, Safety and Health Progress Assessment

of the Fernald Environmental Management Project (FEMP)



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ENVIRONMENT, SAFETY, AND HEALTH PROGRESS ASSESSMENT

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Executive Summary

EXECUTIVE SUMMARY

This report documents the results of the Environment, Safety, and Health (ES&H) Progress Assessment of the Fernald Environmental Management Project (FEMP), Fernald, Ohio, conducted from October 15 through October 25, 1991. The Secretary of Energy directed that small, focused, ES&H Progress Assessments be performed as part of the continuing effort to institutionalize line management accountability and the self-assessment process in the areas of ES&H. The FEMP assessment is the pilot assessment for this new program. The objectives for the FEMP ES&H Progress Assessment were to assess: 1) how the FEMP has progressed since the 1989 Tiger Team Assessment; 2) how effectively the FEMP has corrected specific deficiencies and associated root causes identified by that team; and 3) whether the current organization, resources, and systems are sufficient to proactively manage ES&H issues.

An ES&H Tiger Team Assessment was performed at the Fernald site in 1989 to provide the Secretary of Energy with an ES&H compliance baseline and an assessment of ES&H program management (level of onsite effort: 200 person-weeks). The ES&H Progress Assessment was performed as a status check on the Tiger Team Action Plan Program, Self-Assessment Program, and ES&H Program Management (level of onsite effort: 20 person-weeks). The ES&H Progress Assessment was conducted by a team of professionals from various U.S. Department of Energy (DOE) offices and their support contractors, with expertise in the areas of the environment, safety, health, and management.

The FEMP, formerly known as the Feed Materials Production Center (FMPC), produced uranium metal products for the nation's defense programs between 1953 and 1989. In July 1989, uranium metal production at the FMPC was suspended. Primary activities onsite now include site characterization and remediation, waste characterization, waste and product packaging and shipping, and preparation for the permanent shutdown of facilities.

In October 1990, the DOE management responsibility for the FEMP was transferred from the Office of Defense Programs (DP) to the Office of Environmental Restoration and Waste Management (EM). The day-to-day operation of the site contractor is managed by the Fernald Office (FO) with administrative and technical assistance provided by the DOE Field Office, Oak Ridge (OR). Westinghouse Environmental Management Company of Ohio (WEMCO) has been the managing contractor since January 1986.

None of the concerns or improvement items identified by the ES&H Progress Assessment Team were deemed to result in undue risk to worker or public health and safety, or warrant a curtailment or cessation of activities of any facility or program. A voluntary cessation of activities related to lifting equipment, based on a Team observation, was initiated by WEMCO and related corrective actions were completed within 72 hours. ES&H concerns identified by the Team are generally known to Federal and State regulatory agencies and the DOE.

The ES&H Progress Assessment concluded that substantial progress has been made at the facility since the 1989 Tiger Team. The following are examples of where improvements were identified:

- Repackaging and characterizing low level thorium waste;
- Waste packaging and the creation of improved storage facilities;
- Relationships and lines of communication with State and Federal agencies responsible for environmental regulation;
- The removal actions at K-65 silos (decant sump tank and bentonite installation);
- Development of management systems for Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) activities;
- The analytical process for safety analysis;
- The asbestos control program;
- The whole-body counting facility;
- The programs for public outreach and community relations; and
- Information sharing with employees and the local community.

The following key concerns were noted by the ES&H Progress Assessment Team:

- DOE and WEMCO oversight of the FEMP is not in compliance with DOE Orders and is not adequate to assure effective management control and accountability of the ES&H programs.
- DOE and WEMCO have not developed self-assessment programs that ensure sustainable ES&H program compliance.
- Policy and procedure documents that are unclear and outdated, coupled with ineffective management communication of the importance of strict procedure adherence, are contributing to the FEMP ES&H noncompliance.
- The FEMP has not formalized its RCRA, CERCLA, and National Environmental Policy Act (NEPA) integration activities; this may impact its ability to assure timely, efficient, and comprehensive site remediation.

- The FEMP does not have a comprehensive program in place to achieve and maintain compliance with the U.S. Occupational Safety and Health Administration (OSHA) standards, including 29 CFR Part 1910 for general industry and Part 1926 for construction.

- The DOE and WEMCO corrective action program, as implemented at the FEMP, has not been fully effective in identifying and correcting the root causes of significant ES&H deficiencies.

- ES&H guidance provided through the DOE directive system is not timely. DOE does not obtain impacts of directives on the contractor's activities, obtain implementation plans, or develop common understanding between the parties.

The 1989 Tiger Team believed that the root causes for the problems they identified was that competing priorities precluded focusing adequate resources on environmental compliance, safety upgrades, and well-structured management systems. They also stated that to achieve future improvements in a timely manner and to achieve full compliance, there must be clear, communicated delineation of the site mission, adequate resources, a comprehensive plan of action, effective implementation of the plan, timely follow-up on action items, and an effective oversight of the process. The ES&H Progress Assessment Team believes that several of these conclusions continue to be valid today. The Team's evaluation of causal factors for its assessment results identified the following two root causes:

- DOE and WEMCO management have not provided sufficient resources or emphasis on the completion of actions required to establish a fully effective ES&H program which is necessary to assure that the new mission is accomplished safely and in compliance with all requirements.

- Inadequate oversight systems for the FEMP activities have exacerbated this diversion of attention by failing to identify it as a significant weakness and elevate it to the proper level of management attention.

The new site mission of environmental restoration and waste management must be performed with proper programs, systems, and procedures in place to assure that all regulatory and DOE ES&H requirements are met. The program must be sensitive to the long-term objectives of the environmental restoration program, and must meet short-term goals such as commitments in consent agreements and waste shipments. The site must develop and implement systems to assure that appropriate levels of management place attention on ES&H matters (e.g., OSHA, radiation protection) that are not directly related to the program mission. Daily DOE oversight is critical to the long-term success of site programs.

The FEMP continues to be in the process of adjusting to the changes in mission, realignment of DOE management responsibility, and changes in ES&H expectations. This climate of change has resulted in reactionary management performance, both DOE and contractor, over the last 2 years, focusing on needed ES&H upgrades predominately when prompted by audits, appraisals, and regulatory activity. Both DOE and the site contractor must develop and implement the management systems that will allow the facility to proactively identify and resolve ES&H issues.

Section 1.0

Introduction

1.0 INTRODUCTION

1.1 Environment, Safety, and Health (ES&H) Progress Assessment Program

In June 1989, Secretary of Energy, Admiral James D. Watkins, U.S. Navy (Retired), announced a 10-point Initiative to strengthen ES&H programs and waste management operations at the U.S. Department of Energy (DOE). One of the initiatives involved conducting independent Tiger Team Assessments of DOE operating facilities. To date, over 28 Tiger Team Assessments have been conducted. These large, comprehensive assessments established baselines for ES&H compliance levels, evaluated ES&H management programs, identified root causes of noncompliance, and provided for corrective action plans. As part of the continuing effort to institutionalize line management accountability and the self-assessment process, and to evaluate the actions taken in response to Tiger Team findings, the Secretary directed that small, focused, ES&H progress assessments be performed. The ES&H Progress Assessment at the FEMP, conducted from October 15 through October 25, 1991, is the pilot assessment for this new program.

One of the DOE's initial Tiger Team Assessments was conducted at the FEMP during July and August 1989 (level of onsite effort: 200 person-weeks). This assessment resulted in approximately 250 observations related to compliance with ES&H requirements which were summarized into 47 specific findings. The FEMP issued an action plan in June 1990, detailing 215 action items to address Tiger Team issues and their root causes. Revision 1 to the implementation plan was issued by the FEMP in March 1991, which updated action item closure status, and funding and schedule data for the action items. This report indicated that 69 percent of the original action items had been completed as of March 1991, with approximately 18 percent more scheduled for completion in 1991.

The objectives of the October 1991, FEMP ES&H Progress Assessment were to develop an updated picture of how the FEMP has progressed since the 1989 Tiger Team Assessment; how effectively the FEMP has corrected specific deficiencies identified by that team and the root causes of those deficiencies; and whether the current structure, resources, and systems are in place and functioning to identify weaknesses in a timely manner and effectively manage ES&H issues. The level of onsite effort for the ES&H progress assessment was approximately 20 person-weeks.

Accomplishing these objectives involved performing evaluations in three general areas:

- The progress and adequacy of the ES&H corrective actions resulting from the 1989 Tiger Team Assessment;

- The adequacy of the self-assessment programs of the Office of Environmental Restoration and Waste Management (EM), DOE Field Office, DOE Field Office, Oak Ridge (OR), Fernald Office (FO), WEMCO (previously known as Westinghouse Materials Company of Ohio (WMCO)); and

- The adequacy of DOE and WEMCO management structures, resources and systems to effectively address known ES&H problems and new ES&H initiatives.

The assessment was conducted by a team of specialists from various DOE offices and support contractors, with expertise in the areas of the environment, safety, health, and management. The Team Leader was a senior manager from the Office of the Assistant Secretary for Environment, Safety and Health (EH). Team members, with their areas of responsibility and work related experience, are identified in Appendix B.

The assessment process consisted of an onsite planning and briefing session, offsite review of documents, and onsite interviews, observations, inspections, and document review. The onsite briefing was conducted September 16-19, 1991. This activity included presentations by EM, FO, and WEMCO; a site/facility tour; the collection of documents for later review; and planning of the assessment strategy. Team members reviewed documents and developed more formal assessment plans between September 20 and October 14, 1991. Several team members also conducted interviews with DOE Headquarters personnel during this period. The second onsite visit was conducted October 15-25, 1991. During this period the team conducted interviews with DOE and WEMCO personnel, inspected facilities, observed operations, reviewed additional documents, developed the results of the assessment, drafted the assessment report, and held a formal closeout with site management. Daily team meetings were held to discuss issues and assessment progress. To facilitate the full understanding of the issues and encourage involvement in the assessment process, DOE and WEMCO personnel were requested to attend and participate in these meetings.

The approach used by the Team to perform the evaluations and reach the objectives detailed above, involved both horizontal and vertical reviews of ES&H activities at the FEMP in environmental programs, safety and health programs, and in general ES&H management. The horizontal reviews addressed the systems or programs in place to manage ES&H issues that the 1989 Tiger Team had identified as problems areas; including topics such as policy, organization, staffing, training, oversight, and ES&H management information systems. The vertical reviews were selected based on key findings identified by the 1989 Tiger Team and focused on how effectively specific FEMP technical disciplines had implemented these ES&H systems or programs. The vertical reviews looked at implementation at all levels, from the EM Program Office, through FO and WEMCO management, to the field personnel performing specific tasks (e.g., oversight, National Environmental Policy Act (NEPA), transportation and packaging). The correction of

1989 Tiger Team findings and their root causes and self-assessment activities were subjects reviewed by all team members in both the horizontal and vertical reviews. The observations of team members related to corrective actions and self-assessment were consolidated and evaluated from a sitewide perspective. Details of the specific subjects covered by these reviews are provided in Sections 2.4 through 2.8 and Appendix A of this report. The results of the team members' evaluations were categorized into one of three groups:

- **Concern.** A concern identifies an adverse condition discovered during an assessment that has potential significance to worker or public health and safety, environmental protection, nuclear safety, facility operations, or management performance.

- **Improvement Item.** An improvement item is a condition identified through an assessment that indicates a recommendation for improvement to reach excellence, but does not represent a deviation from DOE Orders or notices, rules, regulations, or technical safety requirements (TSRs), or a potential challenge to environment, safety, facility operations, or management performance.

- **Strength.** A strength is an example of exceptional performance or achievement of excellence. A strength may be a noteworthy practice, activity, or program that clearly exceeds the acceptable level of performance and that warrants documentation supported by findings of fact. Strengths may have general application to other DOE programs or operations. The purpose for documenting the strength is for communicating the strength within DOE. General application of a strength, either by its design or its execution, results in more effective and improved management or operational performance.

In addition, team members were asked to identify the potential causal factors and root causes for each concern and improvement item.

1.2 Fernald Environmental Management Project

The FEMP, formerly known as the Feed Materials Production Center (FMPC), is located about 20 miles northwest of Cincinnati, Ohio. Uranium metal products for the nation's defense programs were produced at the facility between 1953 and 1989. In July 1989, uranium metal production at FMPC was suspended to focus resources on environmental restoration activities. In November 1989, FMPC was placed on the Environmental Protection Agency's (EPA) National Priority List of federal facilities in need of remediation. In April 1990, the site entered into a Consent Agreement with the U.S. EPA under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). As part of this agreement, a comprehensive Remedial Investigation/Feasibility Study (RI/FS) is being conducted involving five Operable Units established at the FEMP. In June 1991, a Fernald Closure Plan was approved and the new mission for the FEMP is now clearly

environmental restoration and waste management. Primary activities onsite now include site characterization, waste characterization, waste and product disposal, and preparation for the permanent shutdown of facilities.

The FEMP site is approximately 1,000 acres. Project facilities, including warehouses, inactive production facilities, administrative buildings, laboratories, utilities, pits, ponds, and tanks are located on approximately 136 acres. WEMCO has been the managing contractor since January 1986 and employs approximately 1200 workers. Another 300 personnel are employed by various subcontractors at the FEMP. The DOE recently issued a draft request for proposal to select an Environmental Restoration Management Contractor (ERMC) that would manage the cleanup activities at the FEMP and the RMI Titanium Co. Extrusion Plant in Ashtabula, Ohio. This contract is expected to be awarded by the spring of 1992.

In October 1990, the management responsibility for the FEMP was transferred from the Office of Defense Programs (DP) to the EM. DP retains some responsibility for nuclear products remaining onsite that have not been classified as waste. Within EM, the responsibility for management of the FEMP was formally consolidated in April 1991, and responsibilities of the Office of Waste Operations (EM-30) with regard to waste management were transferred to the Office of Environmental Restoration (EM-40). Day-to-day DOE oversight and management of the FEMP has been performed by FO, reporting through and supported by OR. A draft Memorandum of Agreement (MOA), currently in the approval stage, details the roles and responsibilities these various DOE organizations have been exercising since March 1991. In the new alignment, FO reports directly to EM, but OR retains a matrixed support role in numerous technical and administrative areas. The FO operates in compliance with OR Orders relating to these technical and administrative areas. Policy and programmatic direction to FO is provided by EM. The FO staff is being increased from a current level of 24 to a projected level of 100 by 1993 with the goal of a self-sufficient site office in 1993.

Section 2.0

Key Concerns, Root Causes, Program Strengths, and Assessment Overviews

2.0 KEY CONCERNS, ROOT CAUSES, PROGRAM STRENGTHS, AND ASSESSMENT OVERVIEWS

The following section describes the key concerns, root causes and program strengths identified during the ES&H Progress Assessment of the FEMP. The ES&H Progress Assessment is a fully integrated review of the environmental, health, safety, and management aspects of a facility. As such, the Team reviewed the findings of the 1989 Tiger Team Assessment of the FEMP to identify critical areas for review. This assessment was based on the professional judgment of the Team and a review of site operations and selected documents. The key concerns presented in this section are based on a review of those selected critical areas and define what is believed to be the most important issues facing the site at this time. Based on its review of the key issues, the Team noted a total of 34 Concerns and Improvement Items. The Team reviewed these Concerns and Improvement Items, assigned causal factors, and identified two root causes. The Team identified three Program Strengths.

2.1 Key Concerns

The following key concerns were noted by the ES&H Progress Assessment Team:

DOE and WEMCO oversight of the FEMP is not in compliance with DOE Orders and is not adequate to assure effective management control and accountability of the ES&H programs. Insufficient oversight of the FEMP was cited in the 1989 Tiger Team Assessment and the Corrective Action Plan confirmed the commitment to improve oversight at the FEMP. The ES&H Progress Assessment did not find noticeable improvement in oversight. It remains a contributing factor in many deficiencies:

- The Office of Environmental Restoration and Waste Management (EM) and Fernald Office (FO) ES&H oversight is undocumented, informal, and does not assure independent and multidisciplined reviews.

- Insufficient oversight has allowed WEMCO to develop procedures that are not consistent and responsive to DOE policies and directives.

- Corrective Action Plan closure and validation procedures have not been implemented by WEMCO or FO, and EM has not implemented its directive on verification/validation for Tiger Team Action Closure. The FO has implemented the prior EM November 1990, validation procedure.

- Lack of oversight has resulted in an ineffective self-assessment program.

- FO oversight of groundwater monitoring, waste characterization programs, and the Comprehensive Environmental Response,

Compensation, and Liability Act (CERCLA) clean up activities is inadequate.

- ES&H reviews of the safety analyses and design documents are not effectively performed by FO.

- Functional appraisals of Industrial Safety and Radiation Protection are deficient.

- WEMCO has not performed required functional appraisals and the required triennial appraisal is almost one year late.

These issues are reflected in the review Team's concerns relating to Management (see Concerns M/C-1 and M/C-2); Environment (see Concern E/C-2), and Safety and Health (see Concern S/C-2).

DOE and WEMCO have not developed self-assessment programs that ensure sustainable ES&H program compliance. Although EM has begun to develop a self-assessment program, and has performed a recent self-assessment of the FEMP, integration into a functioning, sitewide self-assessment program has neither been timely nor adequate. The lack of direction and guidance from EM (see Concern SA/C-2 and Improvement Item M/II-2) to FO, and from FO to WEMCO, is a significant contributor to deficiencies found in the WEMCO self-assessment program. FO's self-assessment program is at an even more formative stage than EM - developing procedures but not yet implementing the program (see Concern SA/C-2). WEMCO, in the absence of DOE guidance and expectations, developed the Evaluation and Assessment System (EASY) which is now being modified to address the criteria contained in the Secretary's July 31, 1990 Guidance letter. EASY was originally developed to be a predictive tool that monitored key performance indicators in technical areas. WEMCO cost plus award fee (CPAF) requirements were integrated at a later date, in an attempt to integrate the pre-existing system with the performance criteria. Review of WEMCO's program indicates that, although there are many audit activities underway, WEMCO's self-assessment program does not meet the Secretary's defined criteria. In particular, WEMCO's program contains deficiencies in procedure, scope, reporting, root cause analysis, integration of existing activities, and timeliness (see Concern SA/C-3 and Improvement Item H/II-1).

Policy and procedure documents that are unclear and outdated, coupled with ineffective management communication of the importance of strict procedure adherence, are contributing to the FEMP ES&H noncompliance. Substantial weaknesses in the management, control, clarity, accuracy, and distribution of documents were identified (see Concern M/C-2). These problems span the full range of documents at the FEMP, including requirements, directives, policies, plans, procedures, and instructions. These document problems exist for both the FO and WEMCO. WEMCO and FO acknowledge the problems with the FEMP documentation system, and cite various management efforts and corrective actions

initiated to support their intention to solve the problems. Nonetheless, the Team found a lack of top management recognition of the severity of this problem, no evidence of a comprehensive plan for correction, and little appreciation for its widespread impact on performance. Inadequate or absent procedures were a factor in over 50 percent of the findings of the 1989 Tiger Team. Nonetheless, the Team found that management had not adequately addressed the problem and had not established a comprehensive plan for correction. Inadequate documentation was a factor in the following concerns:

- DOE and WEMCO self-assessment (see Concerns SA/C-1, SA/C-2, and SA/C-3);
- Resource Conservation and Recovery Act (RCRA)/CERCLA/National Environmental Policy Act (NEPA) compliance (see Concerns E/C-1, E/C-2, E/C-6, and E/C-7);
- U.S. Occupational Safety and Health Administration (OSHA) compliance (see Concern S/C-1);
- Packaging and transportation (see Concerns S/C-3 and S/C-7, and Improvement Item S/II-2);
- DOE oversight (see Concerns S/C-2, S/C-5, and M/C-1); and
- Radiation protection (see Concern H/C-4).

The FEMP has not formalized its RCRA, CERCLA, and NEPA integration activities; this may impact its ability to assure timely, efficient, and comprehensive site remediation. The FEMP is a CERCLA National Priority List (NPL) site which contains RCRA regulated wastes. The site is currently regulated by U.S. EPA under an Amended Consent Agreement for cleanup of inactive waste sites, and the Ohio EPA under a Proposed Amended Consent Decree for its RCRA activities. Regulation by two environmental laws, which are administered by two separate regulatory agencies under two different legal documents, present a unique challenge to the FEMP. In addition, NEPA requirements must be fully integrated into cleanup activities to assure compliance. The FEMP is aware of this issue and the need to develop a comprehensive strategy for fully integrating RCRA, CERCLA, and NEPA. EM Headquarters must provide the policy and procedural direction to assist the site in developing a formalized comprehensive integrated strategy (see Concerns E/C-1 and E/C-4).

The FEMP does not have a comprehensive program in place to achieve and maintain compliance with the OSHA standards, including 29 CFR Part 1910 for general industry and Part 1926 for construction. Further, there is no documented plan to develop such a program, although elements of a program have been put in place (see Improvement Item M/II-1). Specific subparts of OSHA standards have

been emphasized for implementation but no program exists to achieve and maintain compliance with the overall standards.

The DOE and WEMCO corrective action program, as implemented at FEMP, has not been fully effective in identifying and correcting the root causes of significant ES&H deficiencies. The various deficiency identification systems at the FEMP are not properly and consistently utilized to assure that corrective actions have been completed, and that root causes have been identified and elevated to management's attention. These program inadequacies have also impacted the site's Action Plans to correct the 1989 Tiger Team findings and concerns. WEMCO's and FO's current Action Plan programs lack procedures that define the roles, responsibilities, and authorities of involved organizations; the process for validating and closing findings; and the requirements for reporting and change control. EM program guidance for the Action Plan process was issued in November 1990. This guidance was implemented by FO. EM and FO have only recently begun to implement a revised Action Plan procedure issued by EM on October 11, 1991. Findings have been closed by FO without reviewing and documenting the adequacy of the documents that form the basis for closure and without adequate field verification. Some WEMCO corrective actions for correcting the problems identified by the 1989 Tiger Team were insufficient or unnecessary. This results from the fact that WEMCO's corrective action program has not been implemented with consistent application of root cause analysis, and is weak with regard to documentation of corrective actions and verification of the basis for closure. There were also indications that lack of an adequate program has resulted in WEMCO closing findings without applying lessons learned to systemic sitewide problems (see Concerns AP/C-1, AP/C-2, AP/C-3, E/C-5, S/C-3, S/C-4, and S/C-6).

ES&H guidance provided through the DOE directive system is not timely. DOE does not obtain impacts of directives on the contractor's activities, obtain implementation plans, or develop common understanding between the parties. Particularly in the area of self-assessment, the lack and untimely flow of direction and communication to WEMCO have been direct contributors to the program's weakness (see Improvement Item M/II-2 and Concern SA/C-3). Lack of and untimely flow of directives were also detrimental to programs in the NEPA decision making process (see Concern E/C-6) and in the Occupational Safety area (see Concern S/C-5). Better organization of the directive flow from DOE Headquarters (HQ), EM, and FO to WEMCO would ensure timely implementation of guidance and assure a common understanding between all parties.

2.2 Root Causes

The Team analyzed the 34 Concerns and Improvement Items, assigning one or more causal factors for each. These causal factors were evaluated and the following two root causes were identified:

- **DOE and WEMCO management have not provided sufficient resources or emphasis on the completion of actions required to establish a fully effective ES&H program which is necessary to assure that the new mission is accomplished safely and in compliance with all requirements.** The emphasis on environmental remediation, driven as it is by the Department's concern for compliance and responsiveness to legal, regulatory, and political pressures, has detracted from the full implementation of a comprehensive ES&H program. Failure to direct sufficient management attention towards identifying and correcting systemic ES&H weaknesses at the beginning of the program jeopardizes the ultimate accomplishment of this new mission in a safe manner and in compliance with all requirements. The FO has identified staffing shortages and has recently submitted a reorganization plan to HQ for approval.

- **Inadequate oversight systems for the FEMP activities have exacerbated this diversion of attention by failing to identify it as a significant weakness and elevate it to the proper level of management attention.** For example, the triennial review should indicate that staffing, corrective actions systems, and functional appraisals are not performed as required. Functional appraisals would identify the lack of a documented OSHA program and problems identified in packaging and transportation. A functioning and searching self-assessment program would have identified these deficiencies to management.

2.3 Strengths

The Team identified three examples of exceptional performance or achievement of excellence during its review:

- The Community Relations Program at the FEMP is a success. The FEMP holds community meetings, roundtable discussions with the public on specific topics, and monthly meetings with FRESH. The Public Environmental Information Center (PEIC) is a model facility which was created to provide public access to information relating to the FEMP remediation activities.

- The FEMP has initiated an Asbestos Migration Study (ABS) as part of its Asbestos Control Program. This type of study is one of the first of its kind at any DOE site. Although the FEMP is at the beginning of the study, the conduct and results of the ABS may be of great value to other DOE sites and may, in the future, identify the need for additional studies at other sites.

- The in-vivo counting facility at the FEMP has state-of-the-art whole body counting instrumentation that already has been used in providing assistance to DOE sites that do not have such modern facilities.

2.4 Overview of Action Plan Programs Review

One of the objectives of the FEMP ES&H Progress Assessment was to determine how effectively the FEMP has corrected specific deficiencies identified by the 1989 Tiger Team and the root causes of those deficiencies. The ESE&H Progress Assessment Team accomplished this by examining the processes in use in the contractor and DOE line organizations for managing action plan activities. The action plan programs were reviewed to determine:

- If the roles, responsibilities, and authorities of the organizations involved in the process are clearly defined, formally documented, communicated, and understood;
- If the program provided for independent verification and evaluation of the status and quality of performance of action plan activities;
- If there is a formal process for revising action plan items and priorities;
- If the implementation of action plan items are formally tracked; and
- If a formal process exists for certifying that action items have been completed.

The 1989 Tiger Team Assessment of the FEMP produced approximately 250 observations related to compliance with ESE&H requirements that were summarized into 47 specific findings. In June 1990, the DOE approved for implementation an action plan detailing 215 action items to address Tiger Team issues and their root causes. Revision 1 to the implementation plan was issued by the FEMP in March 1991, to update closure status and funding, and schedule data for the action items. This report indicated that 69 percent of the original action items had been completed as of March 1991, with approximately 18 percent more scheduled for completion in 1991.

The Team's review of the action plan process indicates that EM has not provided the guidance or procedures necessary to effectively implement this process at the HQ or field level. In particular, the roles, responsibilities, and authorities of the EM and FO organizations have not been established for reporting and change control. EM has developed procedures for EM and FO validation of action item closure. This validation procedure is not being effectively implemented at FO, since FO does not determine the adequacy of the WEMCO corrective action adequacy, or document the basis for validated closure.

WEMCO did not develop a process or procedure specifically for implementing the Tiger Team Action Plan. There are no assigned roles, responsibilities, or authorities defined, and no reporting requirements, closure validation procedure, or change control. A combined (Tiger Team/Technical Safety Appraisal (TSA)) quarterly

report required by DOE HQ is prepared by WEMCO. PP-(FMPC)-0602, "Commitment Control," does assign roles and responsibilities, and directs users of the system where to go for the most current matrix of types of appraisals and corresponding change control/closure process. Tiger Team actions are one type of commitment and are therefore covered by the procedure. This procedure and system attempt to treat all commitments in a consistent manner with respect to source of the findings and methods of closure (logistics not technical basis).

The lack of an effective closure procedure results in two additional deficiencies. Namely, closures of action items that do not correct the original deficiency, and the failure to apply corrective actions across sitewide systemic deficiencies. The WEMCO Central Commitment Tracking System (CTS) is currently the only aspect of the Action Plan process that is functioning effectively and is currently the only control element in the process.

2.5 Overview of Self-Assessment Programs Review

On January 26, 1990, the Secretary of Energy issued a directive that all line management organizations institute a formalized self-assessment program. On July 31, 1990, the Secretary also issued guidance on the conduct of self-assessments. The Secretary's guidance identified eleven elements necessary for a successful self-assessment program. The guidance requires that a comprehensive, institutionalized, self-assessment program, approved by oversight authorities, regularly evaluates and reports to management and oversight authorities the status and quality of all aspects of ES&H performance, identifies root causes for deficiencies, and ensures that corrective actions are taken.

The ES&H Progress Assessment Team evaluated the DOE and WEMCO self-assessment programs to determine whether these elements had been incorporated. In addition, Secretary of Energy Notice (SEN)-6D-91, issued on May 16, 1991, directed that separate Self-Assessment Offices be established in each DOE Program Office and that all self-assessment organizations be completely operational at Headquarters and in the field by the end of FY91.

The DOE and WEMCO have not established effective self-assessment programs that meet the criteria detailed in DOE guidance documents.

The Office of Environmental Restoration and Waste Management (EM) Headquarters Self-Assessment Program is directed by the Self-Assessment Office (EM-23) and is not yet fully operational, with only draft general guidance in place. The EM (EM-40), with overall responsibility for the management of the FEMP, has not yet developed procedures to perform self-assessments. The EM Program Support Division (EM-43) conducted an initial "pilot" self-assessment of the FEMP during the period September 24-30, 1991, concurrent with the ES&H Progress Assessment.

The DOE Field Office, Oak Ridge (OR), which was responsible for the FEMP site when the Secretarial requirements for self-assessment were first established. In August 1990, OR received a copy of Secretarial self-assessment program guidance to Program Senior Officials (PSOs). In anticipation of PSO direction, OR prepared program guidance and sent it to all OR line organizations, including the Fernald Office (FO), in October 1990. Based largely on this guidance, a draft self-assessment program plan was prepared by OR and provided to FO in December 1990 for comment. This draft plan covered all OR environmental restoration and waste management organizations, including FO. Despite these activities, there is no record of FO receipt of the Secretarial guidance until February 1991, when it was requested of OR. At the FO request, a copy of the guidance was transmitted to the site and was provided to WEMCO on February 12, 1991. OR had a finding in the November 1990 Environment, Safety, Health, and Quality Assurance (ESH&QA) functional appraisal of the FEMP, that there was a need for improvement in the area of self-assessment.

The FO self-assessment program has not been formalized and the program elements, detailed in a draft Environment, Safety, and Health Self-Assessment Program Plan (September 1991), have not been developed or implemented.

The WEMCO approach to meeting the requirements for a sitewide self-assessment program is provided in a draft plan for WEMCO's Evaluation and Assessment System (EASY). The EASY program was initiated in 1990 and consists of a structured system of continuing evaluations by six WEMCO departments, for six management elements (Operations, Feedback, Data, Time/Money, Requirements, and Human Resources), in six technical functions (Environmental Compliance, Environmental Restoration, Personnel Protection, Radiological Protection, Waste Management and Construction Management).

Each department defines the information that will be reported for a management element. A reporting schedule requires quarterly reports from each department in one technical functional area, with an annual report issued by each department in each technical area. The quarterly and annual reports for the six functional areas are due over a period extending to May 29, 1992. The plan requires an Assessment Team to review the annual reports in the individual functional areas, conduct interviews with department personnel, observe department activities, review other internal and external appraisals, and consolidate the findings into a site self-assessment report. Although annual reports (July 1990 through June 1991) for the Environmental Compliance functional area have been submitted by all departments, the review Team has not been formed, and thus no site assessment report has been generated. To date, the individual department level quarterly reports do not contain any analysis of the data presented, and the annual reports contain only limited analysis and specification of needed corrective actions. Plans are to complete the site assessment by December 31, 1991.

A March 13, 1991, letter from WEMCO to the FO indicated that five of the eleven self-assessment guidance document program elements were fully satisfied by

existing WEMCO programs, and that changes were in progress to address the remaining six elements.

The ES&H Progress Assessment reviewed WEMCO self-assessment activities, pertinent procedures, the draft EASY program plan, and quarterly and annual EASY self-assessment reports, and concludes that the program and its implementation do not contain the elements detailed in the Secretarial guidance and do not result in an effective self-assessment program. Inadequacies include the following: no formal charter; no comprehensive scope; lack of implementing procedures; inadequate reporting systems; and inadequate root cause analysis systems.

The Team notes that in addition to the sitewide assessment programs, such as QA audits and surveillances, various FEMP departments have ongoing internal self-assessment activities such as inspections, surveillances, trending of performance indicators, and the Industrial, Radiological Safety & Training (IRS&T) is establishing an independent group tasked with assessment of IRS&T department activities.

In summary, although many individual self-assessment activities are already in place and functioning at the FEMP, the DOE and WEMCO integration of these elements into a functioning, comprehensive self-assessment program has been neither timely nor adequate.

The untimely communication of the DOE guidance memorandum and the lack of direction and communication of expectations within and from DOE are significant contributors to the weaknesses apparent in both the DOE and WEMCO self-assessment programs.

2.6 Overview of ES&H Management Systems Review

The Team reviewed various aspects of the DOE (Headquarters (HQ), the DOE Field Office, Oak Ridge (OR), and the Fernald Office (FO)), and WEMCO ES&H management systems selected based on previous Tiger Team areas of concern, or because the area of review or its importance were believed to be highly characteristic of ES&H program performance. On this basis, the following specific ES&H topics were chosen for review: planning, procedures, organization with particular emphasis on human resources (staffing and training), oversight with particular emphasis on the Cost Plus Award Fee (CPAF) system, guidance received through the directive system, the ES&H management information system (commitment tracking and closure, trending, root cause analysis), and the Self-Assessment program. In some of these areas, the Team probed a topic through the various elements to obtain the equivalent of a vertical slice of how the system performed, such as in the area of procedures, staffing, CPAF, and self-assessment. The subsequent review was conducted by a review of pertinent documents, interviews, and, where appropriate, field inspection of records and processes.

The review of planning activities found that WEMCO has long-term (30 year and 5 year) and short-term (annual budget) planning processes. These plans are driven by programmatic, legal (Consent Decree), regulatory (DOE Orders, U.S. Occupational Safety and Health Administration (OSHA), EPA) and budget constraint requirements. The planning processes were found to appropriately integrate ES&H needs into these plans and to reflect the changed mission from production to environmental remediation.

The previous Tiger Team expressed concerns in the human resources areas resulting from the possible change in the FEMP mission (production to remediation), and the ability of the site to obtain and maintain the appropriate mix of qualified staff. In the intervening period, the mission was changed and WEMCO has performed appropriate reviews. WEMCO has developed plans that have analyzed the needs, availability, retraining of existing staff, and recruitment required. These activities are well underway and appear appropriate to accomplishment of the new mission. The review also indicated that WEMCO was not encountering significant difficulties in finding or hiring qualified ES&H staff (professional or technician level) and has reached the point where they are actively seeking entry level personnel to assure long-term continuity. Subcontractor levels of support are stable and are expected to decrease, because the initial surge in preparing permit applications and backfilling of vacant ES&H positions is nearing an end. Most of WEMCO's ES&H staffing increases are not the result of changed mission but instead are the result of the need for compliance with DOE and other regulatory requirements. WEMCO's training program is developing along the lines of DOE accreditation program requirements and is in various stages of development. When fully implemented, the training program should meet all DOE requirements. However, the program is currently fulfilling the needs of staff retraining. Management is providing strong support, has centralized the activity, and is providing adequate resources to the program.

FO has developed a draft FO Reorganization Plan that proposes a self-sufficient Field Office of over 100 full-time equivalents (FTEs) by the end of FY 93. ES&H independent and line support activities are fully discussed and staffing levels appear adequate to accomplish the mission. Recruitment of the sizeable increase in ES&H staffing is not anticipated to be a major problem by FO based on their experience to date and on WEMCOs experience (see Improvement Item M/II-3). Current FO ES&H staffing is inadequate to accomplish the oversight responsibilities and is supplemented by a draft Memorandum of Agreement (MOA) with OR. This support, to date, has primarily been in the area of periodic fire protection surveillances and multidisciplined appraisals of WEMCO. Greater use of available OR ES&H resources is needed to accomplish FO's ES&H responsibilities, particularly in safety document review (see Concern M/C-1).

Pervasive deficiencies in the WEMCO procedures system were found including inadequate and/or outdated procedures. Although management has a written policy (FMPC-101) on strict procedure adherence, the continued operation with outdated procedures and the failure to follow procedures undermines the credibility

of managements stated policy. The lack of policy and procedures has also adversely affected the ES&H management information system, the result of which is poor information or use of available data for management decision makers (see Concern M/C-2).

CPAF is a special kind of oversight which, not only evaluates performance, but because of its financial implications, has the purpose of incentivizing and rewarding the accomplishment of DOE goals and objectives. This is a potentially potent tool in the ES&H arena since more than 50 percent of the award fee is for ES&H performance. While DOE has made continual improvements in the CPAF process over the years, it has not yet reached the goal of a motivating tool and can more nearly be described as a demotivator. This is primarily due to the failure to provide measurable performance criteria defining expectations for each adjectival rating. Without such definition of largely objective criteria, the contractor cannot make judgements as to what resources to apply to which activities. In addition, the Office of Environmental Restoration and Waste Management (EM) plays a major role in the CPAF process but does not get sufficiently involved in all aspects of the process (see Improvement Item M/II-1).

As stated above, FO oversight is deficient in the areas of safety document review. The surveillance program was also found to be deficient in the degree of formality and rigor applied to the process and the closure of findings. The WEMCO oversight program was also found not to be in compliance with DOE requirements in the area of triennial reviews and functional appraisals (see Concern M/C-1).

Fundamental to an effective ES&H program is the communication of ES&H requirements with site-specific guidance from which the contractor can determine impacts and establish implementation plans, all of which assure the achievement of a common understanding of the requirements between the parties. This is not being accomplished at the FEMP, due primarily to DOE's failure to provide timely, site-specific guidance or to require the necessary interactions through the directive process (see Improvement Item M/II-2).

2.7 Overview of Environmental Programs Review

In the area of Environmental Programs, the Team focused its energies on reviewing selected activities associated with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Remedial Investigation/Feasibility Study (RI/FS) process, Waste Management, Groundwater Monitoring (especially Resource Conservation and Recovery Act (RCRA) Program Monitoring) and the integration of National Environmental Policy Act (NEPA) into the site's CERCLA clean-up mission. In reviewing selected environmental programs, the Team focused on the follow-up of Action Items associated with past Tiger Team Findings relating to the above functional areas. Additionally, team members took a vertical slice into the CERCLA, NEPA, RCRA, and Groundwater Monitoring Programs to assess the strengths of program implementation.

As a result of the review of environmental programs, the Team believes that the Fernald Office (FO) and WEMCO are making good progress towards understanding the needs associated with the site's new mission, and developing the management systems needed to assure long-term compliance. The FO presently is "gearing up" for the challenge and has plans to increase its staff by more than 100 professionals. The lack of adequate numbers of qualified staff has severely restricted the FO's ability to provide the level of oversight and direction to its contractor that is desired by the Secretary. The FO and WEMCO are only now appreciating the sophisticated nature of the Secretary of Energy's Self-Assessment Program, and taking steps to ensure quality follow-up and closure of Action Items. In the CERCLA arena, more attention must be provided to guide the assimilation of Administrative Record documentation and environmental monitoring sample planning and management must be improved to fully achieve the mission of the FEMP.

The site has begun to take steps to integrate its RCRA/CERCLA/NEPA programs, but these steps have largely been isolated and do not reflect a comprehensive, coordinated, and integrated approach to the management of multiple regulations. RCRA groundwater monitoring issues are present due to the increased number of identified RCRA units and the pit area construction. In the area of Waste Management, the focus has been on achieving conformance with the Proposed Amended Consent Decree with other waste characterization issues not receiving the attention due. The area of NEPA has shown improvement over the past way of doing business, but issues remain in the coordination of NEPA activities between the Office of Environmental Restoration and Waste Management (EM), the DOE Field Office, Oak Ridge (OR), FO, WEMCO, and Advanced Sciences Incorporated (ASI)/IT Corporation (IT) and their overall integration into the CERCLA process.

The Environmental Programs Team approached this ES&H Progress Assessment by reviewing selected documents, interviewing EM, FO, OR, and contractor staff and reviewing selected environmental operations (e.g., groundwater monitoring). Because of the brevity of this assessment the Team relied heavily on inquiry as its means of gathering information, with a few selected verification activities.

Waste Management

In the area of Waste Management, the Team focused on following up on activities undertaken to complete Tiger Team Finding E-06 and Action Item 14. Specifically, waste characterization activities were reviewed with selected FO and WEMCO personnel to understand the management systems in place to assure compliance with waste characterization activities. The Team reviewed the site Materials Evaluation Process which is used to make waste determinations, reviewed sampling plans, and evaluated the operational activities associated with this monumental task. The review Team believes that WEMCO has made significant progress towards establishing a management system for waste characterization. Policies, procedures, guidance, and training is conducted to ensure the Proposed

Amended Consent Decree schedules are met. The site has established the Plan-of-the-Day process to coordinate its efforts and integrate production, environmental, scheduling, and budgeting professionals' energy towards reaching a common goal. The single drawback of such an approach has been to overlook non-Consent Decree requirements such as those found in the Waste Analysis Plan and Ohio Administrative Code (OAC). The vertical slice taken in the Waste Management area focused on the coordination and integration of RCRA/CERCLA activities. The complexities associated with being a superfund site regulated by a RCRA Consent Decree and the CERCLA Consent Agreement are only beginning to be recognized and addressed by the FEMP. The site must meet the challenge of integrating and coordinating its RCRA and CERCLA programs if it is to meet the challenge of its new mission. Environmental monitoring, unit closures, emergency response, and permitting are but a few of the issues the site must address with a comprehensive strategy. The site has taken steps to meet this challenge, but will need to accelerate its pace to assure long-term compliance with its regulatory and legal obligations.

Related to the RCRA/CERCLA integration issue, is that of proper data management. With the thousands of environmental monitoring samples generated annually, it is critical that Quality Assurance/Quality Control (QA/QC) programs be in place and functioning and that samples submitted to offsite laboratories be properly managed through recordkeeping and tracking mechanisms. To further complicate this issue, the site, as does every other DOE facility, faces a national crisis in laboratory capacity. This issue must be properly addressed to ensure timely analysis of radiological samples needed to provide the site with the data it needs to make informed decisions regarding site remediation and other environmental issues. This problem has manifested itself in the expiration of environmental samples used to develop the Annual Environmental Report and the exceeding of holding times for RI/FS samples. The site is exploring avenues for addressing the issues of laboratory capacity and data management by seeking additional certified laboratories and instituting tracking mechanisms for samples submitted to offsite laboratories for analysis.

There were three concerns associated with the Waste Management review. The failure to formalize a strategy to fully integrate and coordinate RCRA/CERCLA activities (see Concern E/C-1), the failure to totally address waste characterization program requirements (see Concern E/C-4), and Environmental Monitoring Report issues (see Concern E/C-5).

Groundwater Monitoring

In the area of Groundwater Monitoring, the Team focused its attention on confirming compliance with Tiger Team Finding E-19 and corresponding Action Item #50. The Team found that the site has made significant progress in institutionalizing its Environmental Monitoring, Groundwater Monitoring Programs, since the Tiger Team Assessment of 1989. This is evidenced through the formalization of Groundwater Monitoring activities via a series of policies and

procedures as well as a training program to "certify" authorized sampling technicians. The site developed its RCRA Annual Groundwater Monitoring Report on time, revised its Groundwater Quality Assurance Program Plan (GQAPP), and developed the Groundwater Monitoring Program Plan to meet DOE standards. The site contractor, WEMCO, has taken the lead in attempting to coordinate/integrate groundwater monitoring activities between the RCRA/CERCLA programs. WEMCO has added professional staff to its EM Group, but still needs additional qualified professionals (i.e., Geologists, Hydrogeologists) to assure compliance with the complexities of the RCRA/CERCLA groundwater monitoring standards.

The Team reviewed groundwater monitoring sampling activities at Well 1081, reviewed selected technical documents and interviewed groundwater monitoring staff. The groundwater monitoring review included a vertical slice into the implementation of the RCRA Groundwater Monitoring Program. Until June 30, 1991, the site monitored only one RCRA land disposal unit onsite, Waste Pit #4. The groundwater system design does not appear to meet the technical requirements of RCRA because it cannot adequately characterize the rate and extent groundwater contamination because of the close proximity of surface impoundments in this area and the corresponding restriction on well placement. The failure to meet the technical requirements of RCRA Groundwater Monitoring Systems is identified as ES&H Progress Assessment Concern E/C-3.

RI/FS Project Management

In the area of RI/FS Project Management, the Team focused on follow-up on activities undertaken to complete Tiger Team Findings E-09 and E-10 and Action Plan Items 20, 22, 143, 130, 575, and 576. Specifically, RI/FS Project Management activities were reviewed with selected DOE, WEMCO, and ASI personnel to understand the management structure and systems being used to assure compliance with the Amended Consent Agreement recently negotiated with U.S. EPA Region V.

Since the 1989 Tiger Team Assessment, many improvements have been made by the FEMP to plan, manage, and administer the CERCLA remediation activities. An Amended Consent Agreement was negotiated with U.S. EPA Region V and establishes compliance milestones consistent with projected resource needs. As a result of these negotiations, the relationship with both U.S. EPA and Ohio EPA have improved significantly, however, there is still a potential for future conflicts, since the state is not a party to the CERCLA Agreement (see Concern E/C-1). The FEMP has initiated a number of changes to improve project management. A "CERCLA Integrator" position, currently held by the WEMCO Executive Vice President, is providing high level management attention to CERCLA remediation activities. Organizations are structured on an Operable Unit basis, and Operable Unit Managers provide for clear lines of authority and accountability. A number of meetings are held by WEMCO, FO, and ASI staff and management to assure that remediation projects are proceeding in accordance with project cost and scope, and regulatory schedules and issues are resolved in a timely manner. WEMCO has

developed detailed resource loaded schedules for accomplishment of commitments and will provide the basis for change control. A Change Control Board (CCB) is chaired by FO and meets regularly to review modifications to project scope, cost, and schedules. Project tracking systems are in place to manage project scope, cost, and schedules. FO and WEMCO are using different data management systems and efforts are being made to assure consistency in commitment tracking systems. The WEMCO Commitment Control Tracking System includes tracking of Amended Consent Agreement milestones.

The establishment and maintenance of the Administrative Record has improved dramatically since the 1989 Tiger Team Assessment. The Public Environmental Information Center that houses a copy of the record is an excellent facility and has received positive feedback from the public and the regulators. The FEMP must continue to work towards maintaining a timely and defensible determination on documents submitted for the record.

There are a number of significant issues that will require close attention in the future. The potential for a change in RI/FS contractors as a result of the Environmental Restoration Management Contract (ERMC) is of major concern in proceeding with RI/FS activities. Future lab capacity to support increasing demands for environmental monitoring and site characterization is another area requiring attention by DOE and WEMCO. EM must work closely with other DOE Headquarters (HQ) organizations and FO to formalize review and concurrence of documents developed to satisfy enforceable milestones. In addition, FEMP and EM must proactively plan for long-term goals that go beyond just milestones, i.e., lay groundwork for ultimate cleanup standards and innovative technologies.

The Team reviewed various management and tracking systems, organizational structure, and oversight of the RI/FS project. The vertical slice taken in the RI/FS Project Management Area was the CERCLA Administrative Record. There is one concern associated with the RI/FS Project Management review. The failure to provide adequate oversight of CERCLA activities and development of an adequate self-assessment program by DOE is noted (see Concerns E/C-1, SA/C-1, SA/C-2, and SA/C-3).

K-65 Silos

In the area of the Tiger Team Finding E-11 on the K-65 Silos, the Team focused its attention on the process used to verify closeout of Action Plan Items 39, 43, 57, 61, 69, 129, 150, 154, and 158. The Team found that the site is making good progress on implementation of remediation efforts for the K-65 Silos as part of OU4. Sampling of the silos contents has been completed and characterization results are scheduled for April 30, 1992. Silos 1 and 2 Removal Action is in progress and on schedule for completion by December 1, 1991. The Team's vertical slice of the K-65 Silos reviewed the process for verifying closure of Tiger Team Action Plan Items. The review consisted of a site tour, a review of Tiger Team Action Plan Item closeout files, review of selected technical documents, and

interviews with WEMCO OU4 personnel and FO surveillance staff. The closeout of DOE Action Plan items indicated that the verification process did not, until recently, provide documentation indicating FO field verification (see Improvement Item E/II-2). There are no K-65 actions that have been closed and not verified.

NEPA

The NEPA integration review focused on evaluating progress made by the FEMP in addressing the findings of the 1989 Tiger Team and implementing the action items developed in response to that review. The Team conducted interviews and reviewed documents relating to the level of FO and WEMCO NEPA staffing, training of FO and WEMCO staff, NEPA procedures applicable to the site, coordination and oversight relationships (FO, WEMCO, and ASI), Program Office/Site Office interaction during document review and approval, NEPA document tracking, and NEPA/CERCLA Integration.

The Team Review of NEPA integration was based on interviews with staff from the DOE site office, the site contractor (WEMCO), its NEPA/CERCLA subcontractor (ASI), and the headquarters program office (EM); review of site documents that address NEPA policy and procedures; and demonstrations of computer-based document tracking and training systems in place or under development at the site.

The FEMP has made considerable progress in implementing the action items from the previous Tiger Team review, and in addressing the findings of that evaluation. Positive developments include the integration of NEPA values into the CERCLA process, as evidenced by the FEMP Amended Consent Agreement of September 1991; development of an informative and timely document tracking system; support for staff training in NEPA; a significantly improved NEPA/CERCLA public involvement/community relations program; and a strong cooperative relationship among FO, WEMCO, and ASI. The two areas of concern remain: 1) the adequacy of NEPA procedures and decision making, and their consistency with the procedures and standards established DOE-wide (see Concern E/C-6), and 2) the timely approval of NEPA documents integrated with the CERCLA approval process (see Concern E/C-7).

2.8 Overview of Safety and Health Programs Review

The Team reviewed the overall safety and health program and performed selected detailed program reviews of the WEMCO safety and health program and the direction and oversight of the program by DOE, including the Office of Environmental Restoration and Waste Management (EM), the DOE Field Office, Oak Ridge (OR), and the Fernald Office (FO). The Team approached the review through a combination of document reviews, interviews, and facility inspections. An assessment was performed of key areas cited in the 1989 Tiger Team report in order to determine the progress in these key areas and their adequacy at the time of this review.

Four specific programs were originally selected for review: the Analytical Process to establish the safety envelope, Radiation Protection, Industrial Hygiene, and Packaging and Transportation Safety. The Analytical Process was selected because it was the key safety finding of the 1989 Tiger Team. The remaining subjects were selected because they were previously found to have significant deficiencies. As a result of onsite observations, one additional area, Occupational Safety, was reviewed with a specific emphasis on the U.S. Occupational Safety and Health Administration (OSHA) compliance program.

As a part of the specific program reviews, consideration was given to general management system considerations (such as human resource management), the action plan closure process, and the Cost Plus Award Fee (CPAF) process.

In general, significant progress has been made in the safety and health programs, most notably in the Analytical Process which was the subject of the key safety finding by the 1989 Tiger Team. The WEMCO program in this area is virtually in full compliance with DOE requirements.

Analytical Process

The original Tiger Team identified a key concern regarding the analysis process which supports definition of the site safety envelope (risk profile). Two key elements of the analysis process are the formal safety analysis program and the evaluation of facilities with respect to DOE General Design Criteria. Specific findings in the original Tiger Team Report in this regard were designated as S-01 and S-02, respectively.

The Team's review of the analytical process to establish the safety envelope consisted of an evaluation of three major components:

- Formal risk analyses including safety assessments and safety analysis reports;
- Operational safety requirements which prescribe limits, administrative controls, and surveillance requirements based upon the formal analysis results; and
- Assessment of facilities against current design criteria.

Specific elements reviewed by team members included the hazard identification process, recent safety analysis reports, safety assessments, design criteria evaluations, site specific guidance, operational safety requirements, the operational readiness review process, and the independent safety review process. The Safety and Health Team conducted a walkdown of a new facility being prepared for operations, utilizing information contained in the draft Final Safety Analysis Report (FSAR) for this facility.

The hazard screening process was examined and selected Safety Assessments were reviewed in detail. Several draft FSARs that are under development were examined as was the internal review process. Specific design criteria evaluations, operational safety requirements, independent safety committee reviews, and readiness reviews were examined, as were site specific guides for these efforts. The Team also performed a detailed inspection and review of proposed operations at a new facility currently being prepared for start of operations. This inspection and review was performed with the contractor start-up engineer and emphasized both normal operations and potential abnormal events with special focus on mitigating design features for the latter.

The operating contractor, WEMCO, has established a program which appears to meet with DOE requirements relating to establishing the safety envelope and determining the acceptability of risks. However, there were concerns in this area related to field office oversight and effective communication of current safety guidance to the field (see Concerns S/C-2, S/C-4, and S/C-5). An area of potential improvement was also identified with respect to the WEMCO Operational Readiness Review process (see Improvement Item S/II-1).

A notable aspect of the safety analysis process is the translation of important information in the safety analysis documentation into related drawings, procedures, and hardware. The Manager, Nuclear, Fire and System Safety has developed a system whereby important safety systems are denoted on facility drawings, Operational Safety Requirements (OSRs) are denoted in facility procedures, and special equipment tags are provided for safety-related components. This system is applied to procurement, as well as for quality assurance purposes.

The walkdown with the startup engineer (I-S-15) and discussions with a project engineer (I-S-27) revealed that they both had extensive knowledge and involvement with the safety analyses being done for their respective facilities.

The depth and quality of the safety analysis documentation selected for review was judged to be notable, as was the contractor's independent safety committee reviews.

Radiation Protection

The review of radiation protection programs covered evaluations of the following programs identified by previous Tiger Team findings:

- Radiological Posting Requirements;
- Radiation Work Permits;
- Radiation Technician Training;
- Laundry Facility;

- Source Control; and
- Oversight.

In addition, the following topics were covered:

- Self Evaluation;
- Entry/Exit Controls;
- Containments;
- External Dosimetry; and
- Internal Dosimetry.

Several concerns were noted in the area of Radiation Protection. Radiation Posting was found to be out of compliance with DOE Orders. A review of Radiation Work Permits found procedural deficiencies and a lack of quality assurance. Other deficiencies were also noted in the Laundry Facility and Entry/Exit Controls (see Concerns H/C-1 and H/C-2).

The review also revealed a concern in the area of FO Oversight of Radiation Protection in that the FO Health Physicist is not formally conducting appraisals and surveillances (see Concern H/C-3 and M/C-1). In the Radiation Protection area, the Causal Factor of this concern is lack of resources.

Additionally, because all of the radiation protection concerns point to a lack of consistency in the overall Radiation Protection Program, the ES&H Progress Assessment Team felt this should be highlighted as a separate concern (see Concern H/C-4).

The overall impression on the Radiation Protection Program at the FEMP is that in some areas, e.g., internal and external dosimetry, training, source control, the FEMP either has a program that is in compliance with DOE Orders, that runs smoothly and is well managed, or is in the process of being on track. Other areas, as noted above, appear to be neglected. A comprehensive Radiation Protection Program at the FEMP will require a high level of management attention.

A review of the in-vivo facility at the FEMP showed that it is a state-of-the art facility that is well managed by competent personnel. The exemplary management and technical capabilities of the in-vivo facility at the FEMP can be used as a resource throughout the DOE complex (see Strength H/S-2).

A review of the Evaluation and Assessment System (EASY) self-assessment program used at the FEMP, showed that there is a lack of input toward the criteria

used from the Radiation Protection department and may not be responsive to the needs of the Radiation Protection Program (see Improvement Item H/II-1).

Industrial Hygiene

Previous Tiger Team findings in the area of Industrial Hygiene were all in the area of Asbestos Control. The topics covered by this review were:

1. Asbestos Migration Studies;

2. Documentation of Asbestos Inventories; and

3. Long Range Planning for Containment and Removal of Asbestos.

The overall impression of the Asbestos Control Program is that it was a well documented, smooth running program that is receiving proper management review and validation.

The unique nature of the Asbestos Migration Studies that the FEMP has initiated may be of value to other DOE sites (see Strength H/S-1).

Packaging and Transportation Safety

The Team review of packaging and transportation safety included radioactive and hazardous material handling and storage issues. The review examined organizational responsibilities, management practices, policies and procedures, incident reports, emergency response, training, self-assessment, and compliance. Observations of waste loading and shipment and limited facility walkthroughs were used to assess actual packaging and transportation practices.

Offsite transportation of radioactive and hazardous materials at the FEMP are being conducted safely and effectively. The FEMP is committed to an ambitious program of waste shipments to the Nevada Test Site (NTS). WEMCO's FY 1991 goal for waste shipments was 37,000 drum equivalents (DEs). Actual shipments totalled 43,522 DEs. The FY 1991 goal is 100,000 DEs to be shipped to NTS. In addition, they plan to reduce the FEMP backlog inventory by 50,000 DEs by alternate methods, for a total of 150,000 DEs of low level waste (LLW) reduction in FY 1992.

Communications between the transportation experts at the FEMP and the NTS are excellent. NTS audits, however, have identified a variety of packaging and sampling deficiencies. To ensure that the NTS disposal option remains open, management attention should be given to improving organization, procedures, self-assessment, and oversight. Management diligence is necessary because the availability of offsite disposal options is essential to the site's environmental remediation mission.

Onsite packaging and transportation is being done safely. Policy and procedure documents need revision and upgrading (see Concern S/C-7). WEMCO management is aware of this and is committed to improving the documentation. This is particularly important because certain handling and packaging responsibilities are divided among different organizations. Lack of an overall plan could result in a proliferation of documents, conflicting procedures, and ambiguous responsibilities.

Some compliance problems were noted, specifically in the areas of inadequate corrective actions (see Concern S/C-3). However, in those instances where immediate and significant problems were previously identified (damaged, deteriorated, and leaking drums; missing or illegible labels; unprotected storage pads) corrective action has been good. Some examples of inadequate labeling were noted, so this problem should continue to receive attention, particularly with the need to create new satellite storage areas and to regularly move materials during storage building construction.

Packaging and transportation activities are handled well at the FEMP, in part, because of the staff's experience. Many individuals have years of experience working together. They continue to cooperate effectively despite various reorganizations that have dispersed packaging, handling, and storage responsibilities. These new organizations are needed to deal with increased emphasis on nonradioactive hazardous materials and CERCLA/RCRA compliance. Nonetheless, a position of authority and coordination over packaging, labeling, and waste issues should exist. As part of a reexamination of packaging and transportation documents, managers or groups (such as the Transportation Safety Committee) should examine packaging and transportation responsibilities across organizational lines.

Occupational Safety

During this onsite review, the team leader identified an unsafe maintenance operation. As a result, the status of the occupational safety program was investigated by a team member. A programmatic deficiency was identified in that no comprehensive program exists to achieve and maintain compliance with mandatory OSHA standards for occupational safety. While there are indications that safety is a top priority, and safety performance is indicated to be average, and perhaps improving, a need exists regarding achievement of overall compliance with occupational safety standards. The absence of a plan to achieve compliance appears to stem from causal factors including insufficient policy direction from DOE (see Concern S/C-1).

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Appendix A-1

Assessment Details
Introduction

Appendix A-1:

Assessment Details
Introduction

The objectives for the FEMP ES&H Progress Assessment were to develop an updated picture of the FEMP ES&H performance since the 1989 Tiger Team Assessment. The Assessment examined how effectively the FEMP has corrected specific deficiencies identified by that team and the root causes of those deficiencies, and whether the current structure, resources, and systems are in place and functioning to identify weaknesses in a timely manner and effectively manage ES&H issues. Accomplishing these objectives involved performing evaluations in three general areas:

- The progress and adequacy of the ES&H corrective actions resulting from the 1989 Tiger Team Assessment;
- The adequacy of the Office of Environmental Restoration and Waste Management (EM), DOE Field Office, Oak Ridge (OR), Fernald Office (FO) and WEMCO self-assessment programs; and
- The adequacy of DOE and WEMCO management structures, resources, and systems to effectively address identified ES&H problems and new ES&H initiatives.

The approach used by the Team to perform the evaluations and reach the objectives detailed above involved both horizontal and vertical reviews of ES&H activities at the FEMP in environmental programs, safety and health programs, and in general ES&H management. The horizontal reviews addressed the systems or programs in place to manage ES&H issues that the 1989 Tiger Team identified as problems areas; including topics such as policy, organization, staffing, training, oversight, and ES&H management information systems. The vertical reviews were selected based on key findings identified by the 1989 Tiger Team, and focused on how effectively specific the FEMP technical disciplines had implemented these ES&H systems or programs. The vertical reviews looked at implementation at all levels, from the EM Program Office, through the Site Office and WEMCO management, to the field personnel performing specific tasks (e.g., oversight, National Environmental Policy Act (NEPA), transportation, and packaging). The correction of 1989 Tiger Team findings and their root causes and self-assessment activities were subjects reviewed by all team members in both the horizontal and vertical reviews. The corrective actions and self-assessment observations of team members were consolidated and evaluated from a sitewide perspective.

Details of the reviews conducted are summarized in five subsections:

- Action Plan Programs;
- Self-Assessment Programs;
- ES&H Management Systems;
- Environmental Programs; and
- Safety and Health Programs.

A Summary Table and detailed description of the results of the Teams' assessments follows this appendix. These results were categorized into one of three groups: concern, improvement item, or strength (see Section 1.1 for definitions). In addition, team members were asked to identify the potential causal factors and root causes for each concern and improvement item.

Summary: ES&H Progress Assessment

Concerns, Improvement Items, and Strengths

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E/C-1	Resource Conservation and Recovery Act (RCRA)/Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Integration Program	A-5-1
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Number	Title	Page
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H/II-1	Radiation Protection Group Input in Development of Criteria in the WEMCO Evaluation and Assessment System (EASY) Self-Assessment Program	A-6-20
H/S-1	Asbestos Migration Study	A-6-21
H/S-2	In-vivo Counting Facility at FEMP	A-6-22

Appendix A-2

Assessment Details
Action Plan Programs
Concerns, Improvement Items, and Strengths

Appendix A-2:

Assessment Details
Action Plan Programs
Concerns, Improvement Items, and Strengths

Assessment Concern Number: AP/C-1

Assessment Concern Title: DOE Administration of Corrective Action Plans

Performance Objective

S-1 transmittal of the Tiger Team Report requires the Program Senior Official (PSO) and, through the PSO, the DOE line organization to develop an action plan and response to the Tiger Team Assessment findings. To ensure that corrective actions are taken and root causes focus on long-term solutions, the PSO must ensure that clearly defined roles, responsibilities, and authorities are established, reporting requirements are developed, validated closure procedures are developed, and a process for change control is instituted.

Concern

The ES&H Progress Assessment Team found that the FEMP Corrective Action Plan has not been effectively administered by the Headquarters (HQ) program office, the Office of Environmental Restoration and Waste Management (EM), and the Fernald Office (FO), as evidenced by the lack of written formalized action plan procedures with clearly defined roles and responsibilities, effectively implemented closure and validation processes, reporting requirements, and change control.

Findings of Fact/Discussion

A primary objective of the ES&H Progress Assessment at the FEMP was to evaluate how effectively the FEMP has corrected specific deficiencies identified by the 1989 Tiger Team and the root causes of those deficiencies. The ES&H Progress Assessment Team looked at the chain of command within the line management structure at the FEMP and the program office (EM) at Headquarters to determine what guidance and directives were issued regarding the administration, validation, and reporting for the Tiger Team Corrective Action Plan.

The 1989 Tiger Team Assessment conducted at the FEMP resulted in 250 observations related to compliance with ES&H requirements which were summarized into 47 specific findings. The FEMP Corrective Action Plan approved by the Secretary in June 1990, established 215 action items to address the Tiger Team findings and their root causes. Subsequent to the S-1 approval of the implementation of the final action plan, WEMCO performed an analysis of the root

causes of the 1989 Tiger Team Findings. FEMP issued Revision 1 to the corrective action plan in March 1991. This revision updated closure status and funding, and schedule data for the corrective actions. The revision did not cite any problems with the corrective action process, explain how any of the corrective actions at the FEMP had changed due to the Amended Consent Agreement, or to root cause analysis performed by the site.

There is inadequate DOE program guidance and direction for establishing an effective administrative procedure for documenting and validating the closure of corrective actions, and there is not sufficient programmatic management attention to defining roles, responsibilities, and authorities for the corrective action process. Action plan findings are being closed by FO without determining if the documents that form the basis for closing the findings are adequate.

EM issued program guidance regarding a procedure for verification/validation of FEMP corrective actions in November 1990. The procedure was not fully implemented and there was no interaction between FO and EM to discuss how EM intended the validation procedure to be implemented. The procedure (D-M-38) "Verification/Validation Procedures - Tiger Team Action Plan Closure" was not given to WEMCO until the EM-43 self-assessment visit in September 1991. The procedure, which EM revised and reissued on October 11, 1991, also provided no guidance regarding what constituted acceptable documentation for closure. FO has not yet instituted the revised procedure issued October 11, 1991. Many corrective actions have been designated complete by WEMCO, but have not been validated by the FO. This has resulted in a backlog of corrective actions awaiting review and validation by FO.

In many instances, the FEMP corrective action plan lacked detailed descriptions of the problems and how the corrective actions were to correct root causes contributing to the problems. The March 1991 revision of the FEMP plan should have included more detailed descriptions of corrective actions, root cause analysis, and the overall result to be achieved by the corrective action. The Quarterly Reports required by SEN-7A are intended to stimulate review and coordination between site elements and program offices to discuss problems and share information. The FO apparently did not discuss the status of the corrective action plan to any extent with EM. It appears that neither office perceived any problem with the administration of the corrective action plan.

Apparent causal factors contributing to this concern are the lack of policy implementation, no guidance provided through procedures or other documents, lack of adequate qualified staff to administer a program, and lack of proper supervision to ensure implementation of a quality follow-up program.

Assessment Concern Number: AP/C-2

Assessment Concern Title: WEMCO Administration of Corrective Action Plan

Performance Objective

S-1 transmittal of the Tiger Team Report requires the Program Senior Official (PSO), and, through the PSO, the DOE line organization and site operating contractor, to develop an action plan and response to the Tiger Team Assessment Findings. To assure that corrective actions are taken and root causes focus on long-term solutions, the site contractor must ensure that clearly defined roles, responsibilities, and authorities are established, reporting requirements are developed, validated closure procedures are developed, and a process for change control is instituted.

Concern

The ES&H Progress Assessment Team found that the Tiger Team Corrective Action Plan for the FEMP has not been effectively administered. WEMCO management has not instituted a structured, controlled administrative procedure defining the roles, responsibilities, and authorities of the organization for developing effective corrective action closure procedures, reporting requirements, and change control.

Findings of Fact/Discussion

The FEMP Tiger Team Corrective Action Plan was completed in June 1990. This Corrective Action Plan was one of the first to be done in accordance with the Secretary's Directive of December 22, 1989. At the time the Action Plan was approved by the Secretary (June 11, 1990), WEMCO claimed that 30 percent of the deficiencies identified by the Tiger Team assessment had been corrected, but a verification/validation procedure had not yet been instituted by DOE.

WEMCO has not developed procedures that define the roles, responsibilities, and authorities of the involved organizations, defined a procedure for validated closure of findings, defined reporting requirements (other than SEN-7A requirements), or change control procedures.

There are indications (see Concern M/C-1) that the lack of an adequate validated closure program has resulted in WEMCO closure of findings that do not effectively address the original concern and which have not been applied to systemic sitewide problems.

Currently, the only control mechanism the Team identified for tracking changes and completion of the action plan process is the WEMCO Central Commitment Tracking System (PP-(FMPC)-0602). The commitment control system is an administrative/ logistical control system that does not provide for technical basis and

documentation for closure, nor does it provide cross references to root causes or other systemic issues.

The primary causal factors for this deficiency are the lack of implementing procedures and management oversight.

Assessment Concern Number: AP/C-3

Assessment Concern Title: Corrective Action Program

Performance Objective

A formal corrective action program, which includes deficiency identification systems, tracking and trending of deficiencies, root cause analysis, a lessons learned dissemination system, and verification of the completion and effectiveness of corrective actions is established and implemented.

Concern

The WEMCO corrective action program, as implemented at the FEMP, has not been fully effective in identifying and correcting the root causes of significant environment, safety, health, and quality assurance (ESH&QA) deficiencies.

Findings of Fact/Discussion

Corrective action programs must include certain key elements to be fully effective in identifying, documenting, and correcting specific deficiencies; identifying and correcting related (generic) concerns; identifying and correcting the root causes of individual deficiencies; and identifying and correcting adverse trends. These program elements include the following:

- Systems to assure that the inspection process provides adequate coverage of important activities (both depth and breadth);
- Provision for thorough documentation of the problems, the requirements or practices deviated from, the party responsible for action, the action taken, and verification of corrective action;
- Provision for identifying whether the issue is generic to other site activities and identifying root causes and effective corrective actions to prevent recurrence; and
- Tracking and trending processes to assure timely closure and to identify adverse trends and generic issues.

There are numerous types of oversight and internal appraisal systems in place at the FEMP with various methods for documenting deficiencies. These systems and methods include quality assurance (QA) audits (Observations and Findings documented on Corrective Action Reports (CARs)); QA surveillances (Observations and deficiencies documented on Deviation Reports (DRs)); numerous section and department level inspection and appraisal activities with results documented on a variety of report forms; root cause analyses, corrective action plans, and other internal appraisals with results documented with memoranda or letters; external

appraisals, with some findings documented on External Corrective Action Reports (XCARs) and some documented only by the external report; Minor Event Reports (MERs) and Occurrence Reports; Management Inspection of Facilities Program (MIFP) with deficiencies reported on an inspection report.

The Team reviewed samples of the above listed FEMP corrective action systems and discussed the processes with responsible individuals. The Team identified several major weaknesses in these systems including a lack of procedures, failure to follow existing procedures, an inadequate level of detail in determining corrective actions, failure to require or to perform adequate root cause determinations, and in many cases, a lack of formal closure and corrective action verification. The corrective action program, as presently implemented at the FEMP, does not conform to the requirements and procedures detailed in the WEMCO Quality Assurance Program Plan. The overall FEMP corrective action program suffers from the following two key weaknesses:

- There is very little coordination between the various systems and no single, consistent system(s) or documentation required to be used to identify and resolve deficiencies of a similar type or severity; and

- There is a general lack of formality in both the system requirements and in the implementation of these systems.

Following are a few of the examples of the weaknesses and discrepancies identified by the ES&H Progress Assessment Team:

DRs and CARs:

Site Standard Operating Procedure SSOP-0023, Deviation and Corrective Action Reporting, Rev. 0, 06-27-91 (D-M-126), does not clearly detail program requirements and is not being implemented as written:

- Section 2.0, Scope, states that this procedure is used for deviations and corrective actions observed during audits, reviews, surveillances, inspections or tests. However, many of these activities at the FEMP do not utilize this procedure to document deviations or corrective actions.

- The terminology and the forms used in this procedure are unclear. Section 3.4 defines a deviation as "a departure from a specified requirement discovered during an audit, review, surveillance, inspection or test." Section 3.6 defines a disposition, block 3 on the DR form, as "action necessary to correct or resolve a specific deviation." However, Section 3.2 defines corrective action as only applying to "significant conditions adverse to quality" - those issues that are documented on a CAR. Section 5.0 states that "deviations

shall be evaluated for root cause determinations," but the DR form does not provide for documenting this evaluation.

- Section 5.2 states that repetitive nonsignificant deviations (an undefined term) of the same kind noted over a short period of time require corrective action. Most deviations, however, require some kind of corrective action. In addition, this procedure does not describe how this determination of "repetitive nonsignificant deviations" will be made or by whom.

- Section 5.3 requires that a trend analysis be performed on Deviation and Corrective Action Reports (DCARs) (now separated into DRs and CARs), DRs, CARs, and XCARs. However, no analysis schedule is specified and no analysis has been performed for XCARs. The Team reviewed the trend analysis of DCARs for the first six months of 1991 and determined that it did not identify procedures and procedure adherence as an adverse condition or trend, although 92 percent of the deviations were identified to the apparent cause category of "personnel" and 78 percent to the deviation type called "noncompliance with written procedure or requirement."

- Section 6.1.18 specifies a different signatory for a block on the DR/CAR form than is reflected on the forms.

- The DR/CAR forms do not provide for responsible action parties to sign off that corrective actions have been completed.

- The procedure does not specify any timeframe requirements or guidance for documenting, dispositioning, taking action, reviewing responses, and verifying closure for noted deviations.

- The Team reviewed 25 DR/CARs (D-M-124 and D-M-125) and identified numerous discrepancies. Examples of these discrepancies are as follows:

  - Neither YES nor NO blocks for Occurrence Report reportability required was checked on 16 reports.

  - There was no disposition specified for three reports eight months after problem identification.

  - Verification of disposition is signed off without documenting the basis of the verification. The organization identifying the deviation and the activity that identified them (inspection, surveillance) are not usually specified.

- Four reports were marked "accept-as-is," but the disposition required further action or testing to verify acceptability.

- The root cause was not adequately addressed or corrective action was inadequate on seven reports. For example, completed DR 91-098 (which should have been issued as a CAR) noted a deviation where oil had not been drained from a pump prior to its placement in a sealand container for shipment and, as a result, oil was spilled. The disposition was to remove the spilled oil and survey for contamination. The response did not address assurance that all remaining oil was removed from the pump or why it had not been removed prior to placement in the container. DR 91-053 (D-M-124) (which also should have been a CAR) identified where a subcontractor performed brazing without qualified welder and approved brazing standards. The disposition was "accept-as-is" upon successful completion of piping pressure test and send a letter "reminding" the contractor of specification requirements. The possibility of a procedural or inspection program deficiency was not addressed. The potential for other work done by this or other contractors without the required welder and procedure qualification was not addressed. The need to have the welders qualify to the procedure after the fact was not addressed. The DR did not specify how or when this deviation was discovered or whether work was stopped when it was discovered.

Audits and Surveillances

Audit I91-13, Waste Characterization, Certification, and Shipping (D-M-138), performed in August 1991, identified a generic problem with inadequate procedures and, to some extent, adherence to procedures. Seventy-six critical observations were made regarding the adequacy of eight procedures. The audit summary identified that procedures do not, in all cases, correspond to actual practice and, in some instances, procedures are nonexistent. However, only one CAR was written related to one specific instance where a field condition did not meet procedure requirements. An overall action plan was requested, but had not been established at the time of this assessment.

- Audit I91-04, Certification and Shipment of Material (D-M-138), was conducted in April 1991. The audit results conclude "a management system is not in place to provide documented assurance that all applicable requirements pertaining to the preparation, packaging, and shipment have been met, that all inspections, examinations, and reviews have been conducted, and all documentation is complete." The audit details seven observations and four findings (documented as CARs). The observations included issues such as that document controls required by the Nevada Test Site acceptance criteria

procedure were not being performed at the FEMP, and additional procedural requirements are needed to ensure that non-routine shipments meet all requirements, and there does not appear to be a documented system for determining what procedures are applicable to shipments of packaged radioactive materials and low level waste (LLW). However, the audit did not require any response to the seven observations and none were generated. In addition, the Team considered that the responses to at least two of the CARs did not address the root cause (91-196 and 91-199) (D-M-125).

- Audits I90-1, I91-03, I90-11, and I90-12 (D-M-138) did not require responses to observations which indicated various inconsistencies and discrepancies in procedures and site practices, many that should probably have been documented on a CAR. In addition, there has been no follow-up to assure that actions were taken and effective, and none is scheduled (or required by procedure).

- Numerous similar problems were identified by the Team for QA surveillances: failure to require responses to observations, observations that meet the definition of a deviation, and inadequate responses to or resolution of observations and inspection results. These same concerns were identified by the Team for several other site inspection programs such as the monthly industrial hygiene inspections and Radiological Safety Discrepancy Reports (see Concern M/C-2). In addition, findings and conclusions identified in two subcontracted special assessments/audits performed in 1991 (D-M-63 and D-M-104) were not analyzed for root causes, nor were action plans developed to address the systemic issues that were identified in the summaries and conclusions. These assessments identified hundreds of deficiencies related to site cranes and hoists and 1086 deficiencies related to electrical installations, plus numerous "observations." WEMCO has completed actions on many of the specific deficiencies and trained 13 personnel for crane and hoist inspection and repair. However, while these assessments provided for correction of numerous individual unsafe and unreliable conditions, significant systemic issues that will affect future operations were not addressed.

- A special Westinghouse corporate assessment of the WEMCO safety program, conducted in April 1991 (D-M-114), identified numerous recommendations to improve site safety programs and compliance. WEMCO has not formally responded to this report, developed any corrective action plan, or input the findings of this report into the Central Commitment Tracking System (CTS).

Management Inspection of Facilities (MIPF) Program

The Team determined that this program was generally well structured and administered, and was achieving a measure of success. However, the MIFP also did not utilize the DR or CAR process to document any identified deviations.

Minor Event Reporting (MER) System

The MER system is administered in accordance with Site Policy and Procedure FMPC-704 (D-M-115). This procedure and its implementation are inadequate with regard to corrective action. The listing of example "minor" events in FMPC-704 include such potentially significant events as "an unplanned release of radioactive material to ...uncontrolled areas," "unexpected radiation exposure to an individual," and "the loss of control of radioactive materials or processes involving radioactive materials." The procedure does not require determination of root causes. Section 6.2 directs that the Performance Assessment and Communications Department (PA&C) trend MERs and identify to management "chronic problem areas or conditions adverse to quality" via issuance of a DR/CAR. However, a review of completed MERs indicates that DR/CARs are not generated although the events clearly meet the site definition of a deviation. For example MER 91-01-015 (D-M-116) details the cutting of a pipe without a radiation work permit which resulted in uncontrolled radioactive contaminated debris requiring special cleanup activities, and cleanup and surveys of personnel. This event was not documented on any other pertinent site system such as the Radiological Safety Deficiency Report or a CAR. FMPC-704 does not require independent verification that corrective actions are complete.

Formal Root Cause Analyses Programs

Several WEMCO departments are performing, or planning to perform, some form of rigorous root cause analysis for identified deviations. The Environmental Compliance and Quality Assurance (EC&QA) Department has recently issued a root cause analysis procedure to be used in analyzing surveillance observations. No analyses have been performed to date, and the specific frequency and schedule for these analyses have not been established. The Industrial, Radiological Safety and Training (IRS&T) Department has also recently issued a root cause analysis procedure (D-M-145), but has not established what data will be subject to the process. The oldest and most used analysis is performed by the PA&C Department, used primarily for analyzing findings from external appraisals. PA&C has issued four root cause analysis reports since April 1990. This program also suffers from a lack of formality. There is no formal, approved procedure to detail the analysis process or requirements.

The Team reviewed the reports of the four completed root cause analyses (D-M-110 through D-M-113) and identified a significant concern with the lack of aggressive and effective action by management to correct the causes identified. All four of the analyses identified the lack of procedures, inadequate procedures,

and failure to follow procedures as a root cause of the findings that were evaluated. However, as described throughout this report, the ES&H Progress Assessment Team has identified that numerous significant weaknesses persist related to procedures and procedure adherence. Furthermore, when WEMCO, Fernald Office (FO), DOE Field Office, Oak Ridge (OR), and the Office of Environmental Restoration and Waste Management (EM) managers were asked by the Team members to identify key ESH&QA issues at the FEMP, the issue of procedure adequacy and procedure adherence was never mentioned.

The investigations into several shipping and storage incidents in the spring of 1991 did result in an action item to review the Site Operating Procedure system. As a result of this action, the Reporting and Documentation Control (R&DC) Section of the Performance Assessment and Communications Department was tasked by the WEMCO president to evaluate the site procedures system. Initial efforts resulted in a consolidated listing of numerous weaknesses in the program and identified many improvement items. This effort, summarized in WMCO:PA&C(R&DC):9-117 (June 27, 1991), appears to be quite thorough, but does not appear to adequately involve all site organizations and management in the corrective actions, focusing primarily on actions that can be taken by the R&DC Section. The proposed solutions have not been formalized, assigned to responsible parties, input to the CTS, etc. In addition, fundamental actions are not included, such as: a determination by all site units of precisely what procedures (and types of procedures) are required; what procedures need to be generated; and what existing procedures can be cancelled. In summary, this initial effort needs significant additional management attention to provide the resources and plant wide involvement and support needed to effectively address an issue of this magnitude.

When considered on an individual basis, many of the examples cited above may not be of great significance. However, when viewed collectively, they clearly indicate a corrective action program that requires significant management attention. In summary, there really is no sitewide program for deficiency identification and corrective action at the FEMP; only a collection of individual, uncoordinated systems. None of these systems have been implemented with the consistent application of root cause analysis and most indicate a weakness with regard to documentation of corrective actions, verification, and the basis for closure. The result is that, although there are personnel and systems identifying conditions and processes that need correction, there is an absence of structure, motivation, and management direction to assure that corrective actions are taken, and that generic issues and root causes are addressed. FEMP personnel at the operating level are aware of many of the individual procedural inadequacies described above, but there is no indication that management fully recognizes the systemic deficiencies or the level of noncompliance.

The Team considers the root cause for the specific system weaknesses detailed above to be the lack of a clearly understood sitewide policy and program for deficiency identification and correction systems. This lack of direction has permitted various site units to develop various individual systems with limited

scopes, that often lack key elements of effective systems, and are often ineffectively implemented. This fragmented collection of systems does not make use of that wealth of information to identify generic ESH&QA weaknesses, nor provide management with valuable data needed for overall site self-assessment.

Appendix A-3

Assessment Details
Self-Assessment Programs
Concerns, Improvement Items, and Strengths

Appendix A-3:

Assessment Details
Self-Assessment Programs
Concerns, Improvement Items, and Strengths

Assessment Concern Number: SA/C-1

Assessment Concern Title: Office of Environmental Restoration and Waste Management (EM) Self-Assessment Program

Performance Objective

A comprehensive, institutionalized, self-assessment program, approved by oversight authorities, regularly evaluates and reports to management and oversight authorities the status and quality of all aspects of ES&H performance, identifies root causes for deficiencies, and ensures that corrective actions are taken.

Concern

The EM has not established an effective self-assessment program that meets the criteria detailed in DOE guidance documents.

Findings of Fact/Discussion

On January 26, 1990, the Secretary of Energy issued a directive that all line management organizations institute a formalized self-assessment program. On July 31, 1990, the Secretary also issued guidance on the conduct of self-assessments. The Secretary's guidance identified eleven elements necessary for a successful self-assessment program. The Team evaluated the EM-40 self-assessment program to determine whether these elements had been incorporated. In addition, SEN-6D-91, issued on May 16, 1991, directed that separate Self-Assessment Offices be established in each DOE Program Office and that all self-assessment organizations be completely operational at Headquarters and in the field by the end of FY91.

The EM (EM-40), with overall responsibility for the management of FEMP, has not yet developed procedures to perform self-assessments. The EM Program Support Division (EM-43) conducted an initial "pilot" self-assessment of FEMP during the period September 24-30, 1991, concurrent with the ES&H Progress Assessment. The EM-40 assessment was performed in accordance with a plan, objective, and criteria, developed specifically for the FEMP, and lessons learned from this activity will be used in the development of a formal Self-Assessment Program. Due to the timing of its performance, the Team did not assess the adequacy of this pilot project.

In summary, although individual EM self-assessment activities are already in place and functioning at the FEMP, the integration of these elements into a functioning, sitewide self-assessment program has been neither timely nor adequate.

The lack of direction and communication of expectations from DOE management are significant contributors to the weaknesses apparent in the EM-40 Self-Assessment Program.

Assessment Concern Number: SA/C-2

Assessment Concern Title: Fernald Office (FO) Self-Assessment Program

Performance Objective

A comprehensive, institutionalized, self-assessment program, approved by oversight authorities, regularly evaluates and reports to management and oversight authorities the status and quality of all aspects of ES&H performance, identifies root causes for deficiencies, and ensures that corrective actions are taken.

Concern

The FO has not established an effective self-assessment program that meets the criteria detailed in DOE guidance documents.

Findings of Fact/Discussion

On January 26, 1990, the Secretary of Energy issued a directive that all line management organizations institute a formalized self-assessment program. On July 31, 1990, the Secretary also issued guidance on the conduct of self-assessments. The Secretary's guidance identified eleven elements necessary for a successful self-assessment program. The Team evaluated the FO self-assessment program to determine whether these elements had been incorporated. In addition, Secretary of Energy Notice (SEN)-6D-91, issued on May 16, 1991, directed that separate Self-Assessment Offices be established in each DOE Program Office and that all self-assessment organizations be completely operational at Headquarters and in the field by the end of FY91.

In August 1990, the DOE Field Office, Oak Ridge (OR) received a copy of Secretarial self-assessment program guidance to Program Senior Officials (PSOs). In anticipation of PSO direction, OR prepared program guidance and sent it to all OR line organizations, including the FO, in October 1990. Based largely on this guidance, a draft self-assessment program plan was prepared by OR and provided to FO in December 1990 for comment. This draft plan covered all OR environmental restoration and waste management organizations, including FO. Despite these activities, there is no record of FO receipt of the Secretarial guidance until February 1991, when it was requested of OR. At FO request, a faxed copy of the guidance without the attachments was sent to FO, who in turn transmitted it to the contractor on February 12, 1991. The November 1990 Environment, Safety, Health, and Quality Assurance (ESH&QA) functional appraisal of the FEMP performed by OR included a finding that there was a need for improvement in the area of self-assessment.

The FO Self-Assessment Program has not been formalized and the elements, detailed in a draft Environment, Safety, and Health Self-Assessment Program Plan (September 1991), have not been developed or implemented.

The lack of direction and communication of expectations from EM are significant contributors to the lack of a FO Self-Assessment Program.

Assessment Concern Number: SA/C-3

Assessment Concern Title: WEMCO Self-Assessment Program

Performance Objective

A comprehensive, institutionalized, self-assessment program, approved by oversight authorities, regularly evaluates and reports to management and oversight authorities the status and quality of all aspects of ES&H performance, identifies root causes for deficiencies, and ensures that corrective actions are taken.

Concern

The WEMCO has not established an effective self-assessment program that meets the criteria detailed in DOE guidance documents.

Findings of Fact/Discussion

On January 26, 1990, the Secretary of Energy issued a directive that all line management organizations institute a formalized self-assessment program. On July 31, 1990, the Secretary also issued guidance on the conduct of self-assessments. The Secretary's guidance identified eleven elements necessary for a successful self-assessment program. The Team evaluated the DOE and WEMCO self-assessment programs to determine whether these elements had been incorporated. In addition, Secretary of Energy Notice (SEN)-6D-91, issued on May 16, 1991, directed that separate Self-Assessment Offices be established in each DOE Program Office and that all self-assessment organizations be completely operational at Headquarters and in the field by the end of FY91. The Fernald Office (FO) did not transmit the July 1990 Secretarial guidance document to WEMCO until February 12, 1991.

The WEMCO approach to meeting the requirements for a sitewide self-assessment program is detailed in a document titled "A Plan for WEMCO's Evaluation and Assessment System" (EASY). The EASY program was initiated in draft form in early 1990, and has been used on a trial basis until it was issued as an interim site document, IN-6022, on September 27, 1991. The EASY Program consists of a structured system of continuing evaluations by six WEMCO departments, for six management elements (Operations, Feedback, Data, Time/Money, Requirements, and Human Resources), in six technical functions (Environmental Compliance, Environmental Restoration, Personnel Protection, Radiological Protection, Waste Management and Construction Management). Each department defines the information that will be reported for a management element. A reporting schedule requires quarterly reports from each department in one technical functional area, with an annual report issued by each department in each technical area. The quarterly and annual reports for the six functional areas are due over a period extending to May 29, 1992. The plan requires an Assessment Team to review the annual reports in the individual functional areas, conduct interviews with

department personnel, observe department activities, review other internal and external appraisals, and consolidate the findings into a site self-assessment report. Although annual reports (July 1990 through June 1991) for the Environmental Compliance functional area have been submitted by all departments, the review team has not been formed and thus no site assessment report has been generated. To date, the individual department level quarterly reports do not contain any analysis of the data presented, and the annual reports contain only limited analysis and specification of needed corrective actions.

A March 13, 1991 letter from WEMCO to the FO indicated that five of the guidance document program elements were fully satisfied by existing WEMCO programs, and that changes were in progress to address the remaining six elements. The ES&H Progress Assessment Team reviewed WEMCO self-assessment activities, pertinent procedures, the draft EASY program plan, and quarterly and annual EASY self-assessment reports, and concludes that the program, and its implementation, do not contain the elements detailed in the Secretarial guidance and do not result in an effective self-assessment program. Inadequacies include the following:

- No formal charter. This is acknowledged by WEMCO and a charter is scheduled for issue by December 31, 1991.

- Not comprehensive in scope. The EASY program does not clearly define the various assessment documents (audits, surveillances, inspections, appraisals, etc.) that will be included in an overall assessment. In addition, although the line technical assessment coverage detailed in EASY is comprehensive, the annual reviews will result in fragmented assessments because they do not address all functional areas.

- Lack of implementing procedures. There are no written lower tier procedures in place to implement the EASY plan which was issued on September 27, 1991, as IN-6022.

- Inadequate reporting systems. The EASY plan does not provide a formal reporting system that documents, communicates, and tracks findings and corrective actions. Issued quarterly and annual reports do not contain sufficient analysis of data or specific corrective actions that are input into systems for tracking to closure. Inputs to department reports are typically verbally communicated from the section level to a coordinator with no written documentation or review for accuracy.

- Inadequate root cause analysis systems. There is no formal site level procedure for root cause analysis. Several department level procedures for root cause analysis have recently been issued, but do

not clearly relate to the self-assessment program or to specific deficiency identification programs.

The Team notes that in addition to the sitewide assessment programs such as quality assurance audits and surveillances, various FEMP departments have ongoing internal self-assessment activities such as inspections, surveillances, trending of performance indicators, and the Industrial Radiological Safety and Training (IRS&T) is establishing an independent group tasked with assessment of department activities.

In summary, although many individual self-assessment activities are already in place and functioning at the FEMP, the WEMCO integration of these elements into a functioning sitewide self-assessment program has been neither timely nor adequate.

The untimely communication of the DOE guidance memorandum and the lack of direction and communication of expectations from DOE are significant contributors to the weaknesses apparent in the WEMCO Self-Assessment Program.

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Appendix A-4

Assessment Details
ES&H Management Systems
Concerns, Improvement Items, and Strengths

Appendix A-4:

Assessment Details
ES&H Management Systems
Concerns, Improvement Items, and Strengths

Assessment Concern Number: M/C-1

Assessment Concern Title: Oversight

Performance Objective

Staff are actively involved in assessment (e.g., appraisals, audits, and surveillances) and reviews of Field Office and site contractor activities to ensure that such activities are conducted with formality and rigor and that they comply fully with ES&H requirements established by law (i.e., Consent Decree), regulation (i.e., U.S. Occupational Safety and Health Administration (OSHA)) and DOE policy (i.e., Secretary of Energy Notices (SENs) and the DOE 5400 series).

Concern

DOE ES&H oversight is inadequate to assure compliance with applicable DOE requirements in that it is undocumented, informal, and does not assure independent and multidisciplined review of safety documents. WEMCO's ES&H oversight program is not in compliance with applicable DOE Orders regarding triennial reviews and functional appraisals.

Findings of Fact/Discussion

The Fernald Office (FO) has not, in the past, performed appraisals required by DOE 5482.1B of WEMCO activities, relying on the DOE Field Office, Oak Ridge (OR) to perform these. OR accomplished this requirement by periodic multidisciplined reviews of WEMCO (the most recent was performed in November 1990). In the future, this will be the responsibility of FO, and until FO is self-sufficient, FO will request assistance from OR through a Memorandum of Agreement (MOA) (D-M-40 in final draft form) for this service (I-M-7 and I-M-8). Currently FO's two man ES&H staff spend approximately 20 percent of their time in the field performing surveillance type inspections of WEMCO. This process is not documented, few reports are written, no procedures for their performance exist, no schedules exist, findings are not always incorporated into the WEMCO Central Commitment Tracking System (CTS), and the basis for validating closure of these and other findings (Tiger Team, Technical Safety Appraisals, OR appraisals) is not documented or always field validated. FO ES&H review of WEMCO safety documents (i.e., Safety Analysis Reports (SARs)) is accomplished by FO staff actively participating in the WEMCO Independent Review Committee review of safety documents. This permits expeditious handling of DOE comments and

provides DOE with direct knowledge of the Committee's performance. However, it has the potential to inhibit the Committee's review (although no evidence to this effect was found) and due to the small FO staff, it does not provide for independent or multidisciplined review of the document when formally submitted to FO. This could be mitigated by use of OR resources through the MOA but no such requests have been made to date (I-M-8) (see Concern H/C-3).

The WEMCO ES&H oversight program was found to be deficient in performance of several of the appraisal areas. The last triennial review, which was performed by a Westinghouse Corporate review committee, was performed in January 1988. The next such review is scheduled for the end of this year, therefore, this requirement will be almost a year overdue. Functional appraisals of ES&H activities have not been performed by WEMCO since 1988. The vice president of Industrial, Radiological Safety and Training (IRS&T) has recognized this deficiency and has received management agreement to establish and staff a small group (three to four professionals) to perform appraisals on a continuing basis over a 3-year period to meet the requirement of applicable DOE Orders (I-M-19 and I-M-22) (see Concerns E/C-2, S/C-1, S/C-2, S/C-3, and S/C-4).

As indicated above WEMCO was aware of the cited deficiencies and has taken appropriate actions to correct them, which is not the case for FO. The primary causal factor for these deficiencies is the lack of implementing procedures.

Assessment Concern Number: M/C-2

Assessment Concern Title: Procedure Systems

Performance Objective

In accordance with DOE 5480.19 and DOE 5700.6B, activities that affect environment, safety, health, and quality assurance (ESH&QA) shall be performed using controlled, written instructions and procedures appropriate to the activity being performed.

Concern

A lack of procedures, inadequate and outdated procedures, and the lack of a clearly communicated management philosophy regarding strict procedural adherence significantly inhibit the establishment of effective ESH&QA programs at the FEMP.

Findings of Fact/Discussion

A solid framework of clear, up-to-date, written instructions detailing administrative, operational, and oversight activities are necessary to implement and maintain effective ESH&QA programs. This framework consists of tiers of documents including requirements and directives, policies, plans, procedures, and instructions. Coupled with this framework of procedures must be a clearly communicated and implemented management policy of strict procedural adherence. DOE 5480.19, *Conduct of Operations Requirements at DOE Facilities*, and DOE 5700.6B, *Quality Assurance*, both detail the importance of procedure systems to ESH&QA activities.

The ES&H Progress Assessment Team identified weaknesses in the management control systems for the establishment, revision, and maintenance of procedures at the FEMP. The Team also identified that a policy of strict adherence to procedures, and the need to correct erroneous procedures had not been clearly communicated to site personnel. The Team observed an attitude of acceptance that many activities involving ESH&QA were performed without procedures, or that actual practice no longer conformed to existing procedures.

The ES&H Progress Assessment Team identified numerous instances of a lack of procedures, outdated procedures, and failure to comply with procedures in many different areas at the FEMP. These weaknesses were identified at the Fernald Office (FO) as well as WEMCO.

The FO has not developed any procedure system to control its site activities. Therefore, all details of the critical ES&H oversight program are informal and undocumented. There is no formal direction to the FO ES&H staff regarding the level of oversight required, what activities must be evaluated, how to document oversight findings, or how to track and close those findings. As a result, the FO

staff has little documentation of its activities and findings, and the status of findings and required actions.

WEMCO does not have a clear hierarchial break between policies and procedures. There is no segregated series of documents that detail WEMCO policy. One category of site document in the site document system is identified as "Site Policy and Procedure" (PP). The PPs are amalgams of company/management policy and a procedure specifying detailed implementation action steps. A good example is PP-0103, Site Document System (D-M-130). This document states a WEMCO policy of operation of the FEMP in compliance with DOE requirements, corporate directives, and state and Federal laws and regulations. It also defines the site documents system and provides the detailed steps to be taken to develop, prepare, and control these documents.

The Team identified weaknesses in the procedure system in many areas. Specific examples of these weaknesses are as follows:

- PP-0103, Site Document System: PP-0103 does not provide sufficient detail for the effective control of site procedures in several areas.

- Guidance and direction related to who must concur and approve new procedures or revisions to procedures is adequate. There are no directions or controls on the review process to facilitate timely document review and approval. The October 1, 1991, Site Document Review Status Report identifies procedure reviews that are overdue from 98 to 259 days.

- PP-0103 requires annual reviews of "site level" procedures and biennial reviews of department level procedures. However, it does not detail how these reviews are to be documented or tracked.

- Personnel stated that, although not clearly indicated in the PP, the policy and past practice has been to reissue every procedure after review, even if no changes were required. However, there are many issued procedures for which the last issue exceeds one or two years. Personnel were also unable to supply other documentation to reflect performance of the required reviews.

- This PP does not clearly detail when a written procedure is required or what type of procedure must be developed.

- This PP does not detail a policy on procedure use (for example, when they must be out and in use at a worksite) or specific actions to take when conditions or activities do not match procedural steps. Paragraph 5.5.1 states that "If a manager cannot comply with the requirements of the document as of the issue date, the manager must

take whatever actions are necessary to bring their organization into compliance as expeditiously as possible". This guidance is too vague to provide adequate, consistent controls over the use of procedures.

- Document control weaknesses were also identified for the site document system. The Documentation Control (DC) organization (part of the Performance Assessment and Communications (PA&C) department) does not perform periodic audits to assure that "controlled" documents issued to individuals are maintained up-to-date or that periodic procedure reviews are performed. Temporary revision documents for the Site Services Department procedures, called a Change In Operation (CIO), expire after six months. However, DC only removes expired CIOs from the 52 Operations Procedure Record Book Stations approximately every six weeks. Between reviews, Book Stations may contain expired procedure changes.

- Written department and section level implementation procedures have not been developed for many ES&H related activities. For example:

  - There are no department or section level procedures to implement the Evaluation and Assessment System (EASY) self-assessment program.

  - There are no section level procedures to detail various quality control activities that are performed in the Analytical Laboratory which are identified in the laboratory section quality assurance (QA) plan, such as the Results Outside 95 percent Confidence Limits reports. Therefore, the required frequency of reports and the manner of documenting, reporting, correcting, tracking, trending, and verifying closure of findings are not formalized beyond the general descriptions in the QA plan. As a result, section personnel were unable to provide documentation that reflected the evaluation and corrective actions taken as a result of these reports. Although appropriate action may have been taken, it has not been documented. Three QA reports required to be generated by the Analytical Laboratory QA Plan have not been performed as required; Bimonthly Quality Control Reports, Quality Assurance Determinations/Production Determination Ratios, and Annual Summary, Distribution of Out of Control Results.

  - The root cause analysis used by the PA&C Department for major external appraisal findings has not been formalized into a procedure. The process, as used for analyzing the 1989 Technical Safety Appraisal (TSA) and Tiger Team findings, has been detailed in an unapproved document issued by memorandum in March 1990 (D-M-109). Several major root

cause analyses have been performed using this format, but the lack of procedural formality has contributed to the weaknesses identified with the identification/documentation of root cause corrective action items and their closure (see Concern AP/C-3). The process document provides for identifying "Corrective Action Objective" based on the analysis, but does not detail how, or in what format (Corrective Action Report (CAR)), these objectives are to be translated into discrete action items, and does not provide or reference the means for follow-up to verify closure and effectiveness.

- Environmental Quality Procedure EQP-7.01, Administration and Conduct of Surveillance (D-M-23), does not adequately define or describe the methods of documenting and resolving the results of the surveillance. For example, undefined terms such as "deficiency" and "observation" are referred to, and deficiencies are only required to be documented on a Deviation Report (DR) without consideration of the issue for significance which would warrant issuance of a CAR. A sampling of surveillances reviewed by the Team identified that items that appeared to meet the site definition of a DR or CAR were documented as observations, that responses were not always required for observations, that disagreements over the validity of observations were not always resolved to closure, and that completion of actions committed to in response to surveillance observations were not tracked to closure nor verified. EQP-7.01 requires root cause analysis of observations, but not the apparently more significant deficiency (or DR).

- Implementation procedures do not exist for performing Nuclear Criticality Safety (NCS) Inspection Reports. These inspections are performed using directions contained in an attachment to the *Topical Manual for Nuclear Criticality Safety* (D-M-105). Neither the report form or the instructions provide for documentation of the actual corrective action taken or for verification of action taken. A review of recent inspection reports identified that corrective action and verification of corrective action completion and NCS Group approval of proposed corrective action is not well documented.

- The Industrial, Radiological Safety and Training (IRS&T) Department does not have procedures detailing the use of Radiological Safety Discrepancy Reports (RSDRs). The Team reviewed 15 RSDRs written since June 24, 1991 (D-M-106) and identified that they do not always get formal or even informal responses. There is no closure or verification done or required by health physics personnel. There is no trending or

root cause analysis performed for these findings. The RSDR form does not indicate that IRS&T management or other senior WEMCO management get copies of these reports or perform any review of these deficiencies.

- There are no formal section or department level procedures to govern the performance of Industrial Hygiene Inspections and the correction and verification of action for deficiencies. Written instructions were developed in September 1990, but they do not provide for verification of closure and have not been put into a reviewed and approved procedure.

- There are no formal procedures for performance of the Daily Subcontractor/Vendor Inspection. The inspection form does not clearly detail or require corrective action or response and does not provide for closure or verification of corrective action. The Team reviewed several completed inspection reports and corrective action/responses were not provided.

- Trending of External Corrective Action Reports (XCARs) have not been performed as required by Section 6.5.1 of SSOP-0023, Deviation and Corrective Action Reporting (D-M-126).

The WEMCO Central Commitment Tracking System (CTS), while not fully operational (expected by year end), will have all the capabilities needed to effectively track, status, and report on all commitments resulting from any source. A procedures manual and training for users on the system is nearing completion. The current system is being used to prepare weekly, monthly, quarterly and special reports. The quarterly reports are sent to FO for their use and will soon be supplemented by monthly reports. The periodic reporting is not in a readily useable form for management decision making. There is little analysis of the data, no flagging of variances or changes from previous reports, no prioritization scheme currently in use, and only ad hoc trending of the database. Only recently has WEMCO employed independent verification of closure of action items in the database. In particular, QA has been assigned this task and is performing 100 percent review of documents in the files and 50 percent field verification. A weakness in the CTS is the identification and input of all pertinent commitments. This is especially applicable to action requests that are received in informal communications (verbal and memorandums) and that are directed to WEMCO staff (vs. the WEMCO president).

Previous appraisal activities, both external and internal, have identified inadequacies with procedures at the FEMP. The FEMP Root Cause Analysis of 1989 TSA and Tiger Team Assessment (D-M-109) findings attributed almost 60 percent of the findings to lacking or inadequate procedures, failure to follow procedures, or failure to implement requirements. The Root Cause Analysis-

Resource Conservation and Recovery Act (RCRA) Surveillances, March 1990 (D-M-110), identified four out of six root causes as related to lack of procedures or failure to follow procedures. The WEMCO Root Cause Analysis of the November 1990, ESH&QA Functional Appraisal (D-M-112) identified the lack of procedures and failure to follow procedures were the root causes for many of the reported deficiencies. The investigations into several shipping and storage incidents in the spring of 1991, did result in an action item to review the Site Operating Procedure system. As a result of this action, the Reporting and Documentation Control (R&DC) Section of the PA&C Department was tasked by the WEMCO president to evaluate the site procedures system. Initial efforts resulted in a consolidated listing of numerous weaknesses in the program and identified many improvement items. This effort, summarized in WMCO:PA&C(R&DC):91-117 (June 27, 1991), appears to be quite thorough, but does not appear to adequately involve all site organizations and management in the corrective actions, focusing primarily on actions that can be taken by the R&DC Section. The proposed solutions have not been formalized, assigned to responsible parties, input to the CTS, etc. In addition, fundamental actions, such as a determination by all site units precisely what procedures (and types of procedures) are required, what procedures need to be generated, and what existing procedures can be cancelled, are not included. In summary, this initial effort needs significant additional management attention to provide the resources and plant wide involvement and support needed to effectively address an issue of this magnitude.

WEMCO is generally aware of the procedural deficiencies identified, however, the lack of policy decisions such as procedural adherence, root cause analysis, and information reporting appear not to have been considered. The primary causal factors for these deficiencies are lack of policy and procedures.

Assessment Improvement Item Number: M/II-1

Assessment Improvement Item Title: Cost Plus Award Fee (CPAF) Process Improvements

Performance Objective

The CPAF Process is comprehensive, realistic and fully effective in evaluating, guiding, and motivating enhanced contractor ES&H performance.

Improvement Item

Definitive and measurable criteria and greater involvement of the Office of Environmental Restoration and Waste Management (EM) during all phases of the CPAF process are needed to effectively evaluate and motivate enhanced contractor ES&H performance.

Findings of Fact/Discussion

The CPAF process has shown steady improvement over the past several years, and the essential elements of the process are in accord with current DOE policy and practice, including a weighing of greater than 50 percent for ES&H performance. Although the machinery of the process is in place, its implementation by DOE is not as effective as it should be in motivating ES&H improvements by the contractor. The primary reason for this is the lack of measurable criteria that define the level of performance expected to achieve each adjectival rating. Since DOE's expectation is that the contractor will "exceed minimum performance standards" which is equivalent to "Satisfactory" performance (E-M-62) it is desirable to specify what constitutes performance for each level of adjectival rating. This provides the basis by which the contractor can determine what resources to apply to attain predetermined, objective goals. Currently, the Award Fee Plan (E-M-62) in the Safety and Health area has one Performance Objective with 36 subordinate Performance Criteria, most of which contain subjective judgement language such as "maintain effective," "implement," and "ensure effective." There is no relative importance provided for these activities, few specific quantifications of desired results, and no indication of what is necessary to achieve higher ratings. While the current criteria does address some U.S. Occupational Safety and Health Administration (OSHA) requirements, such as 29 CFR 1910.120, and generic compliance with existing OSHA and newly issued OSHA requirements, it does not place sufficient emphasis on implementing OSHA requirements as directed by the Secretaries Action Request of July 25, 1991 which was transmitted to all Program Senior Officials (PSOs) (see Concern S/C-1).

With EM's assumption of responsibility for the FEMP they have become a principal player in the CPAF process and EM-40 has become the Award Fee Determination Official. While EM has been actively involved in initial and final phases of the CPAF process (the development of the Award Fee Plan and in the fee

determination), it has not been as active as desirable during the interim periods. Monthly meetings are held between WEMCO and the Fernald Office (FO) during which each party has ample opportunity to communicate performance, discuss problems, and adjust emphasis. EM rarely attends these meetings and, therefore, has limited ability to impact the process.

DOE and WEMCO indicated their awareness of these deficiencies and the desire for more specific criteria and greater involvement of EM. The primary causal factor for this deficiency is the lack of implementing procedures.

Assessment Improvement Item Number: M/II-2

Assessment Improvement Item Title: Directive System

Performance Objective

The directive system ensures that ES&H laws, regulations, DOE Orders, Secretary of Energy Notices (SENs), and other DOE requirements are translated into site-specific guidance, and that such guidance is formally transmitted in a timely fashion to the site contractor.

Improvement Item

ES&H guidance provided through the directive system is not timely, does not obtain impacts on the contractor's activities, obtain implementation plans, nor assure common understanding between the parties.

Findings of Fact/Discussion

Currently the DOE Field Office, Oak Ridge (OR) is responsible for transmittal of DOE directives to WEMCO and the Fernald Office (FO). This is accomplished through a Directive Transmittal Memorandum form (D-M-60) from the OR Personnel and Management Analysis Branch to identified contacts at FO and WEMCO. Recently, this transmittal has been supplemented by a second form which indicates applicability to the contractor and provides an OR contact for further information. These OR transmittals, which are not supplemented by FO, give no site specific administrative or contractual guidance on how these directives are to be implemented, do not require implementation plans except where specifically required by the directive, and generally arrive at the FEMP six months (a few were in the three to four month range) after the Headquarters (HQ) issuance. Therefore, FO is not sure that WEMCO has the same understanding of the directive requirements, nor does it know the impact, degree of compliance, or how or when it will be implemented (see Concern S/C-5).

Guidance and direction given by DOE regarding Conduct of Operations and Self-Assessment were reviewed as part of the Team's vertical slices. It was found that WEMCO received timely and extensive guidance from the Program Senior Official (PSO) and FO regarding Conduct of Operations and only the transmittal of the S-1 July 31, 1990, letter (without all attachments) on self-assessment (D-M-70) from FO, six and a half months later due to OR's failure to transmit the Secretary's letter. This latter transmittal did not provide any guidance but instead asked WEMCO to make a comparison of its Evaluation and Assessment System (EASY) Program to the Self-Assessment Program and develop an implementation plan to bring EASY into compliance with the S-1 requirements (I-M-4 through I-M-7).

Although WEMCO has developed suitable systems for handling directive matters, it was found that legal review was not an integral part of converting ES&H requirements into WEMCO policy and implementing procedures. This is particularly important in the environmental area (I-M-20).

WEMCO was not aware of the desirability of greater legal involvement in the directive system. The primary causal factor for this deficiency is the lack of policy.

Assessment Improvement Item Number: M/II-3

Assessment Improvement Item Title: Fernald Office (FO) Reorganization Plan

Performance Objective

Secretary of Energy Notice (SEN)-6D-91 requires that the ES&H roles, responsibilities, and authorities of the organization are clearly defined, formally documented, communicated, and understood.

Improvement Item

Better definition of roles, responsibilities, and authorities and some organizational realignments would appear desirable in the proposed FO Reorganization Plan.

Findings of Fact/Discussion

As a result of the reassignment of responsibility for the FEMP from the DOE Field Office, Oak Ridge (OR) to the Office of Environmental Restoration and Waste Management (EM), the former Fernald Site Office has developed a reorganization plan (D-M-39) that would create a Fernald Field Office. This draft is currently under review by Headquarters (HQ), and seems to be responsive to HQ Management Decision, *The Future Role of the FO*. It is also consistent with a position paper currently in HQ for concurrence which formalizes these decisions. This plan would have FO become a fully self-sufficient Field Office by the end of FY93. During the ramp up in staffing, OR would provide support to FO under a Memorandum of Agreement (MOA). A supplement (D-M-40) being negotiated deals with specific ES&H support that OR would supply to FO, on a reimbursable basis, when requested by FO. The supplement indicates the equivalent of approximately four man-years of effort for FY92 (I-M-4, I-M-6, and I-M-7).

The proposed draft FO Reorganization Plan is a comprehensive document with organization charts, functional statements, and manpower impacts defined. The following observations are made regarding this plan recognizing that the document is still a working draft:

- Independent ES&H oversight is assigned to an Office of Assessment. The staff for this office are not defined as ES&H professionals.

- The bulk of the ES&H capability will be in the Assistant Manager for Technical Support (ASTS) organization and will provide technical ES&H support to the line organizations.

- Quality Assurance, which is normally considered an independent oversight function, is proposed to be included in the ASTS

organization, a line support organization. This could bring into question their independence and objectivity.

- The emergency planning function is proposed to be assigned to the Assistant Manager for Site Operations. Emergency planning requires considerable interaction with, and support from, ES&H professional who are in the AMTS organization.

- The roles, responsibilities, and authorities regarding issuance of ES&H requirements need to be better defined. Similarly, clarification regarding coordination with outside agencies, is also needed.

The Team discussed staffing plans with FO and found that they were well conceived and FO believes qualified ES&H professionals will be available, based on their own and WEMCO experience. Despite the plan and local experience, the ability of FO to accomplish such a large recruitment effort in the timeframe given will require substantial management commitment and oversight.

Appendix A-5

Assessment Details
Environmental Programs
Concerns, Improvement Items, and Strengths

Appendix A-5:

Assessment Details
Environmental Programs
Concerns, Improvement Items, and Strengths

Assessment Concern Number: E/C-1

Assessment Concern Title: Resource Conservation and Recovery Act (RCRA)/Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Integration Program

Performance Objective

It is critical to the new mission of the FEMP that it ensure long-term compliance with its regulatory obligations. The site is regulated by the United States Environmental Protection Agency (EPA) under the CERCLA/Superfund Amendment and Reauthorization Act (SARA) statutes, the Amended Consent Agreement (Agreement), and the Ohio Environmental Protection Agency (OEPA) which administers the RCRA program through its statutes, regulations and Proposed Amended Consent Decree (Decree). A fully integrated and coordinated strategy and program plan is essential to ensure conformance with these two regulatory bodies.

Concern

The FEMP does not have a formal, written RCRA/CERCLA Integration Program Plan.

Findings of Fact/Discussion

The FEMP is a National Priority List (NPL) Site under the EPA's Superfund Program, and, as such, must abide by its CERCLA/SARA statutes and regulations. Additionally, to further assure the proper and timely remediation of the site, DOE and EPA have recently entered into an Amended Consent Agreement. The Amended Consent Agreement was entered into due to alleged noncompliance with the original Consent Agreement.

To further complicate regulatory issues at this site, the FEMP is regulated by the OEPA for its RCRA activities. The site is currently operating under an unsigned Proposed Amended Consent Decree between DOE and OEPA. Again, this is a revised Decree that was amended due to alleged noncompliance with the original Decree.

FEMP is primarily regulated under two bodies of environmental law, CERCLA and RCRA, which are administered by two separate agencies, and two different legal documents, Amended Consent Agreement and Proposed Amended Consent Decree. It is critical to the success of the FEMP mission that it ensure compliance with its regulatory obligations. Also, its environmental activities must be fully coordinated and integrated to ensure that the ultimate cleanup of the FEMP is efficient, effective, and protects human health and the environment. Though many efforts have been made to integrate and coordinate RCRA/CERCLA activities, there is no formal written program plan to guide and assure the long-term success of these initiatives. To illustrate the need for such coordination and integration, the following four examples are provided.

Hazardous Waste Management Unit Closure

The Part B permit application includes 51 RCRA units, including 38 units which have recently been identified as part of Task 2/3 under the Consent Decree. The site is requesting that some units be permitted under RCRA, some closed under RCRA, some remain operational though a RCRA permit is not requested, some closed under the CERCLA process, and finally identifies some that have already been closed under RCRA auspices. Should RCRA units be closed under RCRA standards, the site must assure that all CERCLA remediation standards (which may be different or additional) be met. Further, OEPA must make a decision as to whether it will allow RCRA units to be closed under the CERCLA process and whether it will allow RCRA units to remain operational even though they do not meet minimum RCRA regulatory standards and therefore cannot be permitted. If a decision is made to not allow these critical units to remain operational, the site will need to fund millions of dollars to upgrade these facilities to minimum technological standards. To help ensure RCRA/CERCLA integration for the closure of RCRA units, the Fernald Office (FO) and WEMCO have recently met with OEPA to discuss this issue (D-E-58; I-E-18).

Environmental Monitoring Coordination and Integration

In the area of groundwater monitoring, the site has struggled in the past with the coordination and integration of its groundwater monitoring network. At one time, the Remedial Investigation/Feasibility Study (RI/FS) contractor discontinued RCRA groundwater monitoring activities because WEMCO and FO oversight no longer existed after the loss of coordination personnel. The WEMCO (EM) organization now has a funded vacancy for a Site Sample Coordinator who will be responsible for integrating all environmental monitoring onsite, but as yet, the coordination is not present.

Groundwater Monitoring Program

The site lacks an effective RCRA groundwater monitoring program and proposes to integrate and enhance its RI/FS groundwater monitoring network to meet the intent of the RCRA program. This proposal will require that the groundwater monitoring

program be fully integrated and coordinated to work properly. The site does not have an exemption from RCRA groundwater monitoring requirements, and may need to seek a legally binding document which merges its RCRA/CERCLA groundwater monitoring activities such as the Proposed Amended Consent Decree.

Emergency Response for UNH Tanks

Finally, the site has discovered that it has Uranyl Nitrate Hexahydrate (UNH) tanks that are beginning to leak. To its credit, the FEMP has contacted both OEPA and EPA regarding this matter. FO has integrated CERCLA requirements by designating the activity as an emergency removal action. The State of Ohio is to issue a RCRA Emergency Treatment Permit for this action.

The FEMP is a CERCLA Site which contains RCRA regulated wastes. As such, both sets of regulations and legal documents must be met to achieve total compliance with regulatory obligations. The site is aware of the RCRA/CERCLA issue and WEMCO has designated staff responsible for the integration of the programs. The site has not developed a program plan for RCRA/CERCLA integration and has not yet received clear direction and guidance from Headquarters (EM) personnel.

The apparent causal factors contributing to this concern include the lack of policies and procedures to integrate the RCRA/CERCLA programs. The site does not have personnel and resources to implement a strong RCRA/CERCLA integration effort and has only recently appreciated the complexity and risk of such an integration effort.

Assessment Concern Number: E/C-2

Assessment Concern Title: Oversight of Environmental Programs

Performance Objective

Secretary of Energy Notice (SEN)-6D-91 requires that ES&H roles, responsibilities, and authorities of DOE organizations be clearly defined, formally documented, clearly communicated, and understood.

Further, SEN-6D-91 requires that DOE staff be actively and personally involved in the oversight of the ES&H activities of site contractors to ensure that such activities are conducted with formality and rigor and comply fully with ES&H requirements established by law, regulation, and DOE policy.

Concern

Roles and responsibilities for oversight of environmental programs at the FEMP are not well-defined, formally documented, or understood. Oversight of WEMCO by the Fernald Office (FO) is inadequate.

Findings of Fact/Discussion

On October 1, 1990, management responsibility for the FEMP was transferred from the Office of Defense Programs (DP) to the Office of Environmental Restoration and Waste Management (EM). On June 19, 1991, production permanently ceased with environmental restoration activities becoming the site's new mission. Due to the change in mission, the decision was made that FO report directly to EM rather than through the DOE Field Office, Oak Ridge (OR). In discussions with FO representatives, confusion has been expressed over the specific roles and responsibilities of EM and OR in the oversight of the FEMP (I-E-2). FO understands that EM-40 has the lead responsibility for environmental programs while FO moves towards the goal of becoming self-sufficient. EM-40 has taken steps to streamline management and financial responsibilities at the FEMP through a Transfer Agreement with EM-30 (D-M-101). However, FO expressed frustration at not knowing how all EM-40 organizations relate to the FEMP. A draft Memorandum of Agreement (MOA) dated September 18, 1991, and a Matrix Support Agreement (MSA) dated October 17, 1991, were developed to define the ES&H roles and responsibilities of OR and FO. However, the MOA and MSA do not clearly define the ES&H roles and responsibilities between EM and FO, or EM and OR. These relationships will be further complicated as both EM and FO staffing increases.

On September 19, 1991, DOE entered into an Amended Consent Agreement with the EPA. The Amended Consent Agreement establishes milestones for submission of deliverables. The time allotted for FO, DOE Headquarters (HQ), and WEMCO review is limited, and if not properly coordinated may cause milestones to be

missed. WEMCO, FO, and EM are aware of this concern and EM has made efforts to establish a HQ review process (D-E-41). Although EM has taken steps to resolve this issue, no formal agreement or procedure has been established for HQ review, and concurrence regarding documents required by the Amended Consent Agreement.

OR technical support in the oversight area of ES&H activities related to environmental restoration and waste management activities has been provided as requested by FO. On November 16, 1990, OR also conducted a Functional Appraisal of ESH&QA activities at the FEMP. According to FO, routine technical assistance in the oversight area by OR for environmental restoration has not been provided for over a year (I-E-2). According to OR, oversight support has been provided on several occasions; two RCRA personnel spent several weeks onsite, a groundwater surveillance was conducted in the spring of 1991, and groundwater support is currently being provided (D-M-102). The draft MOA requires OR to provide technical support as requested. OR has responded to requests from the FO to provide oversight support.

Due to limited resources, FO is not providing adequate oversight of Remedial Investigation/Feasibility Study (RI/FS) or waste management programs, and does not provide oversight of groundwater monitoring activities (I-E-5) conducted by the contractors at the FEMP. Oversight of waste management programs that is performed, is typically informal and not documented according to FO staff (I-E-5). DOE/FO staffing has increased since the time of the original Tiger Team Assessment but is still inadequate to provide quality oversight. Current Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) staffing is five full time equivalents (FTEs) with plans to increase to approximately 40 FTEs by FY93. DOE oversight efforts have increased in the CERCLA area, however, little day-to-day field oversight of the contractors is provided by FO operable unit managers (I-E-37). On March 15, 1991 (I-E-53), DOE designated WEMCO as the contract "integrator" of all environmental restoration activities in order to improve technical oversight of the subcontractors. OR administers the contracts, DOE maintains overall responsibility for the contract, and WEMCO provides day-to-day technical direction to Advanced Sciences Incorporated (ASI)/IT Corporation (IT). Although this has resulted in improved performance of the RI/FS, this reporting mechanism presents difficulty.

DOE is aware of inadequacies in its oversight programs for the FEMP. Probable causal factors include the lack of policy implementation since SEN-6D requires that DOE provide oversight for its operations, and lack of resources since FO does not have the resources to provide any type of quality oversight program.

Assessment Concern Number: E/C-3

Assessment Concern Title: Resource Conservation and Recovery Act (RCRA) Groundwater Monitoring System Design

Performance Objective

Ohio Administrative Code (OAC) 3745-65-93 through 3745-65-94 requires that a RCRA Groundwater Quality Assurance Program be implemented to determine the rate and extent of contamination from RCRA land disposal units for which groundwater detection monitoring has indicated a release of contaminants. A groundwater detection monitoring system is to be in place and functioning for all land disposal units as required by OAC 3745-65-90.

Concern

The FEMP does not have a groundwater monitoring system that can accurately determine the rate and extent of groundwater contamination emanating from RCRA Unit Waste Pit #4 and does not have a groundwater monitoring program for recently identified land disposal Hazardous Waste Management Units (HWMUs).

Findings of Fact/Discussion

A RCRA Groundwater Detection Monitoring Program for Waste Pit #4 began in August 1985. This 41 well detection monitoring system was sampled from 1985 to November 1987. On November 13, 1987, DOE notified the U.S. Environmental Protection Agency (EPA) and Ohio Environmental Protection Agency (OEPA) to inform them that the FEMP Waste Pit #4 could be affecting groundwater quality. The original Groundwater Quality Assurance Program Plan (GQAPP) was submitted to OEPA and EPA on November 25, 1987. The GQAPP has been revised twice since that time (most recently in April 1991).

The groundwater monitoring system for Waste Pit #4 is inadequately designed. The Waste Pit Area at the FEMP includes a number of RCRA and non-RCRA surface impoundments. The groundwater monitoring system cannot adequately assess the rate and extent of groundwater contamination from Waste Pit #4 because the waste pits in this area are too close together. For example, Well 1081 (RCRA well) is located approximately 30 feet due east of Waste Pit #5. This well has shown evidence of contamination, but it is virtually impossible to link the contamination to Waste Pit #4, because of its location and the "mounding" effect of groundwater flow in this area.

This past June 30, in accordance with its Proposed Amended Consent Decree, the FEMP notified the OEPA that it has identified 38 new HWMUs onsite. Of these 38 units, nine are land based and require groundwater detection monitoring systems.

The site has had ongoing discussions with the OEPA to properly address the issue of RCRA Groundwater for these additional existing RCRA units.

In September 1991, DOE and WEMCO representatives met with OEPA to discuss the issue of how to effectively address the need for a comprehensive groundwater monitoring system (I-E-4, I-E-5, I-E-41, and I-E-43). At that time, the Fernald Office (FO) proposed the installation of 50 additional groundwater monitoring wells to enhance its current RCRA Groundwater Monitoring Program. The proposal included an area groundwater monitoring approach for the waste pit area, eastern and southern border monitoring of the production area, and a similar approach at the site boundary. The strategy proposes that an area monitoring scheme at the waste pit is more realistic and effective than attempting to monitor each land disposal unit in this area, because of the location and proximity of the RCRA units. The waste pit area contains six waste pits, a berm pit, and clearwell which are individually separated by no more than 50 to 100 feet, making groundwater monitoring of individual pits virtually impossible. Monitoring of these pits, with the exception of #4, has not been required because they were non-RCRA units.

The Proposed Amended Consent Decree required the identification of all HWMUs onsite. As of June 1991, additional waste pits (clearwell, Waste Pit #5, and Bio-surge Lagoon) have been designated as RCRA units. The concept of area monitoring is now more justifiable in the waste pit area, since these additional pits require groundwater monitoring and the data for the area as a whole is more valuable than that for any single unit. This approach has been acceptable to regulatory agencies at other facilities. Secondly, since the groundwater flow is generally east-northeast from the pit area through the production area, a line of monitoring wells in the production area and at the site boundary should be able to identify any contaminated groundwater from pit area RCRA units, and those in the production area, before it escapes the FEMP. A formal submittal of this proposed groundwater monitoring system is planned for December 1991. The site does not currently have a formal agreement with OEPA relating to groundwater monitoring.

The FO and WEMCO are aware of the issues surrounding the inadequacies in the groundwater monitoring system. The apparent causal factors for this concern include barriers and controls (since the location and close proximity of RCRA units did not allow for a traditional groundwater monitoring design), and failure to yet achieve formal agreements with OEPA relating to Groundwater Assessment, which represents some risk.

Assessment Concern Number: E/C-4

Assessment Concern Item Title: Waste Characterization Program

Performance Objective

Ohio Administrative Code (OAC)-3745-52-11 requires generators of solid wastes to determine whether waste streams are hazardous or nonhazardous. The FEMP Waste Analysis Plan (WAP) requires that hazardous waste streams be recertified annually and the Proposed Amended Consent Decree states that "All Other Materials" will be characterized by September 30, 1992, and that process knowledge may be used to characterize wastes.

Concern

FEMP is not timely in its determination of whether some of its waste streams are hazardous or nonhazardous. Hazardous wastes are not annually recertified, and process knowledge used to characterize waste streams in 1989 and 1990 may be questionable.

Findings of Fact/Discussion

Concern was expressed (I-E-5, I-E-7, I-E-24, I-E-43, and I-E-45) over the fact that some classifications of wastes on the FEMP may not have been fully characterized. A task force has been developed and is assessing the regulatory status of backlogged characterizations as related to Proposed Amended Consent Decree requirements.

The current the Fernald Office (FO) WAP indicates that waste streams will be recertified annually. There is no discussion in the WAP as to what waste steams are to be recertified (Backlog vs. Newly Generated Wastes). The emphasis placed on the characterization of Backlog Wastes is compounded by confusion over which wastes must be characterized, and has resulted in the lack of waste recertification (I-E-5, I-E-24, I-E-45, and I-E-46). To clarify this issue, WEMCO has recently issued a memo (D-E-54) on the recertification issue which should initiate discussions on this WAP requirement.

Finally, in discussions with WEMCO Site Quality personnel (I-E-46), it was noted that some of the older data used for Process Knowledge determination of wastes may be suspect and quality control over older characterization work was not at its current level. The Proposed Amended Consent Decree allows the use of "Process Knowledge" for waste determinations, but that information must be defensible. The site has instituted four levels of quality control to review waste characterization activities, but is only now reviewing previously completed files.

The site is aware of each of these issues and has taken action to address each.

The apparent causal factors contributing to this concern include lack of resources to characterize and recertify waste streams and lack of policy implementation, since requirements for characterization and recertification are mandated by regulation and WAP, respectively. Lack of strong supervision and quality control in the past for waste characterization appears to have caused questions regarding the use of process knowledge for waste determinations.

Assessment Concern Number: E/C-5

Assessment Concern Title: Annual Environmental Report

Performance Objective

DOE 5400.1 requires sites to develop an Annual Environmental Report detailing the activities undertaken to evaluate a facility's impact on the environment. The report must be submitted to DOE Headquarters (HQ) by June 1 of each year.

Concern

The FEMP has not submitted its 1990 Annual Environmental Report to DOE HQ.

Findings of Fact/Discussion

The site has not submitted its 1990 Annual Environmental Report to DOE HQ in accordance with DOE Order 5400.1 and the Office of the Assistant Secretary for Environment, Safety, and Health (EH) Guidance dated January 31, 1991. The report was due on June 1 and the draft Compliance Self-Assessment summary due to EH by April 15, 1991. In discussing this issue with WEMCO site representatives, we understand that the report has not been submitted because environmental monitoring program data were not received from the offsite analytical laboratory according to schedules established by WEMCO. (The draft Environmental Compliance Self-Assessment portion of the report was provided to DOE/EH by the April 15 due date.) Specifically, the routine radiological environmental samples were submitted to an offsite laboratory for analysis, however, the laboratory had exceeded its capacity and was unable to provide the analytical services as required. Both WEMCO management and DOE/Fernald Office (FO) reacted to these slips in schedule in May 1990, and have been working together since then to expedite analyses and to explore alternative solutions to correct this issue.

WEMCO management continually provided the offsite laboratory with lists of outstanding sample analyses, taken from the WEMCO sample tracking system, along with prioritized lists for sample analysis. WEMCO received the last result for 1990 samples from the offsite laboratory on October 7, 1991. The issue of laboratory capacity will continue to impact the site because of the nature of its new mission, environmental remediation.

The apparent causal factor associated with this concern was WEMCO's contract with a single offsite laboratory to provide all radiological analyses. This three-year requirements contract expired in May 1991. This is not a problem with WEMCO and DOE/FO site policies and procedures, but rather a national problem with laboratory capacity. Because the number of environmental samples collected annually continues to escalate, WEMCO and DOE/FO are looking into alternative laboratories and writing new service contracts that will allow the site flexibility in

choosing among laboratories when demand outweighs capacity. WEMCO has established a technical support contract including laboratory services to expand FEMP access to alternate laboratories. The report is now complete and will be transmitted to HQ the week of November 11, 1991.

Assessment Concern Number: E/C-6

Assessment Concern Title: National Environmental Policy Act (NEPA) Review Procedures and Decision Making

Performance Objective

DOE 5440.1 calls for the establishment of procedures to ensure full and consistent compliance with NEPA. These procedures should be approved as appropriate by Operations Office Managers and Secretarial Officers in consultation with the Assistant Secretary for Environment, Safety, and Health (EH-1) to ensure consistency in the Department-wide application of NEPA.

Concern

WEMCO has extensive internal NEPA procedures, but they are not fully accurate or consistent with DOE Guidance. These procedures obscure the Fernald Office (FO) oversight role, and the early involvement of the Office of Environmental Restoration and Waste Management (EM) and the Office of the Assistant Secretary for Environment, Safety, and Health (EH) in the NEPA process. In the absence of adequate FO procedures, decisions on level of NEPA review and document scope are being made by Advanced Sciences Incorporated (ASI).

FO does not have its own systematic NEPA procedures.

Findings of Fact/Discussion

Five interrelated WEMCO documents constitute its NEPA guidance (D-E-21, D-E-22, D-E-23, D-E-32, and D-E-33). These were developed by WEMCO with the participation of FO (I-E-19, I-E-20, and I-E-21) in 1990 and revised in 1991. While these documents represent considerable progress in formalizing NEPA procedures, they are fragmented and do not clearly communicate the timing of WEMCO responsibilities and coordination with FO NEPA staff. Site-specific terminology introduced in these documents is inconsistent with DOE-wide usage; this unnecessarily burdens staff training, comprehension of headquarters guidance, and the coordination communications. Because WEMCO guidance necessarily is limited to WEMCO NEPA roles, and does not apply to FO, it does not document FO actions required to carry out their oversight role. WEMCO procedural guidance cannot substitute for FO procedures that "close the loop" between WEMCO and EM, and are consistent with DOE-wide guidance provided by EH.

The principal WEMCO document, *NEPA Compliance Program* (D-E-21), is unclear in the timing and assignment of responsibility for accomplishing specific tasks, primarily because requirements are specified in passive terms. WEMCO has recognized and will change a key misstatement, that "subcontractors shall take the

lead role in the preparation, review, and approval of Environmental Impact Safety (EIS) documents."

The NEPA Document Process (D-E-23) includes examples of content/format that do not conform completely to EM's current usage. Several parties expressed concern that site documents are not submitted in the desired format (I-E-28), or that EM frequently requests formatting revisions (I-E-31).

Several recent NEPA reviews have been initiated by ASI drafting the NEPA documents, without adequate FO or EM involvement in recommending the level or scope of review. This has resulted in delays that the site inappropriately attributes to NEPA rather than to procedural weakness. One Engineering Evaluation/Cost Analysis (EE/CA) to be adopted as an environmental assessment (EA), *Waste Pits Storm Water Run-off Control*, had delayed identification of wetland involvement; another, *South Plume Removal Action*, had delayed identification of floodplain involvement; another EA, *Wastewater Treatment Improvements*, was completely drafted without a decision by EH that an EA is the appropriate level of review. The probable causal factor for this concern is the absence of formalized FO NEPA procedures covering, for example, environmental checklists and action description memoranda. The FO is preparing its own procedures to emphasize the FO lead role. The procedures will be ready in late November.

An insufficient NEPA staffing level is a related probable causal factor for this concern. FO currently has one staff member with assigned responsibilities for NEPA, and a second one responsible for EM programmatic environmental impact statement activities, among other duties. Although DOE plans to increase staffing several fold, there are no plans to increase the NEPA staff. The ES&H Progress Assessment Team believes that additional NEPA staffing is warranted by 1) the number and complexity of document reviews to support five remedial actions and many removal actions, and 2) the importance of executing the oversight, documentation, and communication required for an effective NEPA program at the site.

Assessment Concern Number: E/C-7

Assessment Concern Title: National Environmental Policy Act (NEPA) Review That is Timely and Integrated With Other Required Environmental Reviews

Performance Objective

The Council on Environmental Quality (CEQ) regulations, Secretary of Energy Notice (SEN)-15-90, DOE NEPA Guidelines, and DOE Orders require the DOE to integrate the NEPA process with project planning early to: 1) ensure that planning and decisions reflect environmental values; 2) complete appropriate NEPA documentation before undertaking the action or detailed design; 3) integrate the procedural and documentation requirements of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and NEPA, wherever practical; and 4) avoid delays later in the process.

Concern

Three integrated CERCLA/NEPA documents have been developed, but so far, have been approved only as CERCLA documents. The three actions are underway without completion of NEPA review. In addition, several actions covered by categorical exclusions are shown in the NEPA Project Status System to have commenced before EM-1 categorical exclusion approval, or to have approval delayed far beyond the date required by the project engineer.

Findings of Fact/Discussion

As of this ES&H Progress Assessment review, three integrated CERCLA/NEPA documents have been prepared to support decision making on removal actions that are mandated by the Consent Agreement and that do not qualify for categorical exclusion from NEPA review: *Waste Pit Area Runoff Control*, *South Plume Groundwater Contamination*, and *The K-65 Silos*. Two removal actions have commenced after EPA approval of the Engineering Evaluation/Cost Analysis (EE/CA), but before DOE adoption of the EE/CAs as environmental assessments (EAs) and issuance of Findings of No Significant Impacts (FONSIs). The subordination of NEPA compliance to CERCLA compliance (that is, commencing an action before issuing the FONSI) reflects the incentives and penalties associated with the CERCLA Consent Agreement. Completion of these NEPA reviews has been delayed in part by late identification of issues tied to the NEPA review (compliance with DOE Floodplain/Wetlands regulations at 10 CFR 1022, see Concern E/C-6); in part by the time required to prepare FONSIs, which are not required by CERCLA; and in part by slow processing of the approval packages by the Office of Environmental Restoration and Waste Management (EM) and the Office of Assistant Secretary for Environment, Safety, and Health (EH). The root cause is the failure to plan proactive strategy and procedures to integrate the NEPA

and CERCLA approvals, a responsibility assigned by DOE Orders to the Program Office.

The Amended Consent Agreement of September 1991 (D-E-25), specifies a series of documents that constitute an integrated NEPA/CERCLA review for five operable units at the FEMP. Current plans for headquarters review and approval (I-E-27, I-E-30, and I-E-31) allow four months for headquarters (EM and EH) review and approval of each primary document before submittal to EPA. This will require close coordination between the FEMP and DOE HQ and emphasizes the need for EM to formalize review and concurrence procedures at DOE Headquarters (HQ). The site is aware of these concerns and is currently working with HQ to resolve these issues.

Assessment Improvement Item Number: E/II-1

Assessment Improvement Item Title: Establishing and Maintaining the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Administrative Record

Performance Objective

An Administrative Record must be established and maintained and community relations activities must be initiated and carried out in accordance with appropriate EPA guidance and CERCLA/National Oil and Hazardous Substances Pollution Contingency Plan (NCP) requirements.

Subpart I of the NCP describes requirements for establishing and maintaining the Administrative Record, including special requirements for such records for Federal facilities, location of the administrative record, the contents of the records, and its use after the Record of Decision (ROD) is signed.

Improvement Item

FEMP has developed an Administrative Record Implementation Plan and issued procedures for establishing and maintaining the record. Review of documents for inclusion in the Administrative Record should be more timely. Decisions whether or not to include documents should be made as soon as possible to avoid a backlog.

Findings of Fact/Discussion

Tiger Team Action Plan Items 20 and 22 require the FEMP to establish an Administrative Record Implementation Plan, and to develop policies and procedures for establishing and maintaining the record. In December 1989, WEMCO developed an Implementation Plan for Fernald Office (FO) approval (D-E-20). No information was provided to indicate that DOE approved the plan. On August 17, 1990, WEMCO issued procedures for establishment and use of the Administrative Record (D-E-36). In October 1991, prior to arrival of the ES&H Progress Assessment Team, the FO finalized sitewide procedures for establishing and maintaining the Administrative Record (D-E-36). Significant improvements have been made by the FEMP since the 1989 Tiger Team Assessment. Original copies of the record are maintained onsite, and a copy in the Public Environmental Information Center (PEIC) (see Strength E/S-1) which is located in close proximity to the site. A copy is also located at U.S. EPA Region V. Internal audits conducted by WEMCO of the site records and at U.S. EPA Region V have revealed minor deficiencies. These deficiencies have been corrected (D-E-37). WEMCO and FO representatives revealed that there is currently a backlog of documents requiring a decision as to whether or not they are to be included in the record (I-E-33 and I-E-34). This backlog is primarily a result of resource constraints and in

some cases, the difficult nature of the determination. FO and WEMCO also indicated that requests for legal assistance in review or determination of documents is not always timely (I-E-33 and I-E-34). The December 1989 Implementation Plan calls for training of FO, WEMCO, and subcontractors in establishing and maintaining the Administrative Record. Some training has been provided, however, it is not formalized or routinely scheduled. WEMCO is aware of the need to obtain timely legal assistance, and decrease the backlog of documents. The probable causal factors include lack of resources, supervision, lack of policy implementation, and training.

Assessment Improvement Item Number: E/II-2

Assessment Improvement Item Title: Verification of Selected Tiger Team Action Items for K-65 Silos

Performance Objective

FEMP developed an Action Plan in response to the ES&H Compliance Assessment Tiger Team Report for the FEMP dated September 1989. On June 11, 1990, S-1 approved the FEMP Action Plan and required the DOE Program Senior Official (PSO) to implement the Action Plan (through the PSO, the line organization and the Management of Operations (M&O) contractor).

Improvement Item

FO verification of DOE lead Tiger Team Action items regarding selected findings on K-65 Silos did not, until recently, provide for field verification and did not provide proper documentation for closure.

Findings of Fact/Discussion

The September 1989 Tiger Team Assessment of the FEMP identified particular concerns with the implementation of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) activities. The first area of concern was the uncertainty in the structural integrity of the K-65 silos and potential risk to public health and the environment. A review of selected Action Plan items indicates that the FEMP has made good progress in responding to the deficiencies identified by the 1989 Tiger Team Assessment. Sampling of the silos is complete and the CERCLA removal action is in progress and scheduled for completion by December 1, 1991. The objective of this review was not to verify the adequacy of the corrective action, but to evaluate the systems in place for tracking and verifying completion of Action Plan items. WEMCO tracks all Tiger Team Action items on the Central Commitment Tracking System (CTS) (D-E-9). WEMCO Operable Unit Managers are responsible for tracking their commitments through the CTS (I-E-16 and I-E-38). WEMCO's Reporting and Documentation Control organization is responsible for maintaining CTS and verifying that the proper documentation is provided for closure of the Action items. CTS Reports are also provided to the Fernald Office (FO) and the Office of Environmental Restoration and Waste Management (EM). Once WEMCO considers the item closed, quarterly requests are made for FO concurrence. FO verification of Tiger Team Action Plan items consists of a file review to ensure the proper documentation is present (I-E-40). The review of the files related to selected action items indicated that FO closure has not been timely. For example, Action Item #158 was closed by WEMCO on January 15, 1990 (based on FO provided information), yet the FO did not review the documentation and formally "close" this item until July 24, 1991. This is a DOE action item completed by DOE on January 15, 1990. The DOE site manager acknowledged the work performed on July 24, 1991. Prior to this date,

DOE FO did not acknowledge the completion of its own actions. PSO generated instructions for closure, dated November 21, 1990, required FO closure in accordance with a procedure developed by the Site Manager. This procedure was never developed and no field verifications were performed by the FO. The PSO instructions did not specify any verification requirements for closure. New instructions, issued by the PSO during the ES&H Progress Assessment, now requires FO field verification, including procedure walkthroughs, inspection of work, as well as a document review, and requires documentation of the basis of closure.

The FO is aware of the need to improve the timeliness of closure verifications for the Tiger Team Action Plan items. The new instructions require a review of previously clued items to ensure compliance with the new verification requirements. Implementation of the new instructions should provide proper verification and documentation of closure.

Assessment Strength Number: E/S-1

Assessment Strength Title: Public Outreach/Environmental Information Center

Discussion

The Community Relations Program has improved significantly since the 1989 Tiger Team. FEMP conducts Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) required community meetings with the public to provide information on clean up activities at the site. Round-table meetings are routinely held with the public on various topics of interest and monthly meetings are held with members of FRESH. FEMP develops Operable Unit facts sheets, newsletters, and CERCLA driven progress reports to keep the public informed.

The FEMP Public Environmental Information Center (PEIC), located offsite, contains information on the CERCLA Administrative Record, reference materials, fact sheets etc., and houses reading areas and meeting rooms for use by interested parties. The PEIC is an excellent facility that is very well organized. PEIC has the capability to perform document search and delivery to the public anywhere in the U.S. within 7 days. PEIC also maintains a current title index that is updated whenever new records are added. The PEIC is user-friendly and can be used as a model for other DOE facilities.

Appendix A-6

Assessment Details
Safety and Health Programs
Concerns, Improvement Items, and Strengths

Appendix A-6:

Assessment Details
Safety and Health Programs
Concerns, Improvement Items, and Strengths

Assessment Concern Number: S/C-1

Assessment Concern Title: Compliance with DOE/U.S. Occupational Safety and Health Administration (OSHA) Standards

Performance Objective

A program should be in place to achieve and maintain compliance with DOE-prescribed occupational safety standards including 29 CFR 1910 and 1926.

Concern

The FEMP does not fully comply with the mandatory 29 CFR 1910 and 1926 standards, and does not have a documented plan and program to achieve and maintain compliance.

Findings of Fact/Discussion

At 10:15 a.m. on October 16, 1991, an ES&H Progress Assessment Team member observed two workmen standing on a pallet elevated by a forklift approximately 5 feet in the air. The workers were completing the installation of a piece of heavy equipment (heating/air conditioning unit) on the side of trailer T-25. The men appeared to be at potential risk of falling off the pallet, and/or not being able to react effectively to a change in position of the equipment they were installing. The workers had just completed their task and proceeded to get off the pallet and move the forklift away. The Fernald Office (FO) and site contractor were notified of the Assessment Team member's concern, and immediately stopped the activity and investigated the situation.

The preliminary results of the contractor's investigation of the operation and follow-up actions by the site contractor were communicated to the team on October 16, 1991. The situation was defined as an unusual occurrence, work was stopped, equipment was placed in a safe condition, all operators were to be briefed by October 17, 1991 on requirements relating to standing, riding, and working from the tines of forklifts, and a memo was to have been prepared by October 18, 1991 for discussion at the next Monday morning safety briefings.

As a result of the above situation, the occupational safety program was examined further. The *FEMP Site Health and Safety Plan*, June 1990, was reviewed and it

was noted that OSHA standards were specified in limited subject areas, specifically some of the most recently issued standards. The Plan did not identify the comprehensive standards 29 CFR 1910 and 1926 in totality, nor were there any specific standards references in the Construction or Maintenance sections (3.6.3 and 3.6.5, respectively).

Subsequent interviews with WEMCO safety management personnel, and examination of other documentation, identified various documents where OSHA standards subparts are specified and/or implemented. Examination of a recent *CPAF Determination Plan and Performance Evaluation Committee Report* revealed an emphasis on the more recently issued subparts of the OSHA standards. The current Performance Evaluation Plan identifies compliance with OSHA standards as an ongoing generic requirement, but does not appear to give specific emphasis towards establishing a comprehensive program in this regard.

On the positive side, it was noted in interviews with line managers (a project manager and operable unit manager), that safety is the top priority and their knowledge of, and commitment to, occupational safety considerations is extensive.

The safety performance data from the DOE SSDC database for 1990 indicates that WEMCO safety performance is virtually at the midpoint in performance ranking for the 14 listed operating contractors, and there are some indications of favorable trends.

The occupational safety program would benefit from a comprehensive plan addressing: training of line and oversight personnel, establishment of an effective inspection program, increased management support/visibility, effective investigation and analysis, resource requirements and prioritization based upon risk, and employee involvement.

Assessment Concern Number: S/C-2

Assessment Concern Title: Fernald Office (FO) Oversight of Safety Analyses

Performance Objective

Perform multi-discipline independent ES&H reviews of WEMCO design documents and safety analyses in accordance with DOE 5481.1B and DOE 5480.5.

Concern

Comprehensive independent ES&H reviews of the safety analyses and design documents for WEMCO projects and facilities are not being performed by FO.

Findings of Fact/Discussion

Discussions with DOE FO personnel indicated that only two staff members are available to conduct oversight of the safety analyses and design documents for more than 50 WEMCO nuclear projects and facilities (I-S-13, I-S-14, and I-S-21). This level of staffing falls far short of what is needed to perform this oversight function from within the site office. In addition, it is probably insufficient to adequately manage contract resources, even if review of WEMCO's safety analysis activities were to be performed by an independent contractor. The option to request assistance in this area from the DOE Field Office, Oak Ridge (OR) has existed, but FO personnel have not requested assistance in disciplines other than fire protection. Failure to do so was based on the perception that OR would not review safety analyses for nuclear facilities and projects that were designated as low hazard. This perception was based on OR procedures that indicated that no OR review and authorization is needed for low hazard nuclear operations (see Concern S/C-5). With the exception of routine assistance in the area of fire protection, neither OR nor FO have taken a proactive stance with respect to offering/requesting assistance and training in this area for FO personnel to expedite transition of safety oversight responsibilities.

FO management is aware of resource constraints in the area of reviewing safety related activities and is currently endeavoring to hire additional staff to conduct safety oversight (I-S-13). Agreements with OR are also being developed that define the level of assistance that is to be provided by OR (D-S-36 and D-S-37). However, review of these draft agreements indicated that they were deficient in specifying what assistance will actually be available for reviewing safety analysis and design safety documents. Failure to obtain needed resources for these reviews will result in inadequate assurance that safety analysis and design safety issues are adequately resolved before DOE authorizes construction and operation of WEMCO nuclear projects and facilities.

Assessment Concern Number: S/C-3

Assessment Concern Title: Packaging and Transportation Corrective Actions

Performance Objective

DOE and contractor audits and appraisals of packaging and transportation activities, as specified in DOE 5480.3 and other applicable regulations, must meet accepted standards of quality and rigor.

Concern

Some packaging and transportation corrective actions developed in response to audits and appraisals were insufficient to correct the problem. Some corrective actions were incomplete when recommended for closure, or were closed without adequate verification.

Findings of Fact/Discussion

The 1989 Tiger Team Assessment recommended immediate implementation of the practice of tieing down loads to the transport vehicle during onsite shipments, even though multiple drums are strapped together and transport speeds are slow. WEMCO's compliance action to add this requirement to the Transportation Manual has never been implemented. WEMCO does have a tie down section in the Topical Manual on onsite transportation (D-S-33), but it does not require tie down to the vehicle. WEMCO should specifically require tie down to the vehicle or should state that such tie down is not required and present adequate technical justification. This compliance action cannot be closed until tie down to the vehicle is addressed.

In response to the 1989 Tiger Team Assessment, WEMCO staff committed to perform safety analyses on "nonstandard Type A packaging." This corrective action was apparently based on a finding related to potential inadequate steel banding of low specific activity (LSA) waste boxes. A variety of activities were performed in the process of completing this corrective action, but the original question of banding adequacy was never resolved. Furthermore, the corrective action to perform safety analyses was unnecessary. The approved Application to Ship Waste to the Nevada Test Site (NTS) (D-S-34) exempts WEMCO from having to perform specific safety analyses on Type A packaging. Technical review of planned corrective actions by both WEMCO and the Fernald Office (FO) should have identified this action as unnecessary.

WEMCO developed corrective actions to identify Department of Transportation (DOT) training inadequacies identified in the 1989 Tiger Team Assessment. WEMCO cited the establishment of department Training Coordinators as one of the actions taken in the request for closure of the training issue. These Training Coordinators were to review and evaluate adequacy of training requirements, and

were to maintain departmental training records. Though some staff were given these titles, job descriptions were not written and some of the individuals informally given these responsibilities were eventually tasked with higher priority assignments, precluding them from serving as Training Coordinators.

The WEMCO corrective action to provide additional manpower to the Manager of Transportation Regulatory Compliance and to enhance his authority over hazardous materials remains incomplete. No specific timetable or plan for this action was found. This may be due to the fact that this corrective action appears not to have been assigned a tracking number.

Neither WEMCO or FO adequately verify, through critical technical review of documents or field confirmation of actions taken, packaging and transportation related corrective actions (see Concerns AP/C-1, AP/C-2 and AP/C-3). The conclusion is that packaging and transportation compliance would be strengthened if the findings and concerns identified by audits were more thoroughly reviewed and analyzed by both WEMCO and FO to ensure that the recommended actions are technically responsive. Equal rigor is needed in the technical verification of corrective action completion.

WEMCO and FO management are very aware of the importance of oversight and corrective action, but are generally not aware of the problem of unresponsive actions. In some instances this lack of responsiveness arises from ambiguous appraisal findings. Where these exist, WEMCO and FO personnel must investigate and identify the actual concern, conferring with the appraisers as necessary. Generally, however, unresponsive corrective actions are rooted in insufficient technical review of appraisal findings due to inadequate resources for thorough evaluation and oversight, and in inadequate procedures for corrective action closeout.

Assessment Concern Number: S/C-4

Assessment Concern Title: The DOE Field Office, Oak Ridge (OR) and Fernald Office (FO) Process for Recommending Closure of Safety Analysis and Design Safety Findings

Performance Objective

Recommend closure of appraisal findings involving safety analysis and design safety, based on a review of the adequacy of documents that form the basis for closure, in accordance with DOE 5481.1B and DOE 5480.5.

Concern

Recommendations to close Action Plan findings related to safety analysis and design safety are being made by OR and FO without a review of the adequacy of documents that form the basis for closing such findings.

Findings of Fact/Discussion

Discussions with OR and FO personnel indicated that OR and FO recommendations to close findings related to safety analysis and design safety have been based solely on verifying the existence of the documents upon which WEMCO based its closure of such findings (I-S-20 and I-S-22). No review of the adequacy of the contents of these documents has been attempted.

FO personnel are aware that adequacy reviews are not being performed. These reviews are probably not being done because the resources to do them are lacking. Failure to review the adequacy of documents that form the basis for closure of findings results in little assurance that the safety problems associated with previous appraisal findings are actually being resolved.

Assessment Concern Number: S/C-5

Assessment Concern Title: Safety Analysis Directives

Performance Objective

In accordance with DOE 5481.1B and DOE 5480.5, Program Senior Officials (PSOs) are to assure that direction provided to field offices and contractors on safety analysis requirements reflects current DOE policies and procedures.

Concern

The DOE Order (DOE 5481.1B) that defines the review and authorization process for safety analyses associated with low hazard projects and facilities, is not current with respect to changes in requirements that have been brought about by subsequent Secretary of Energy Notices (SENs). The effect of these changes has not been effectively communicated by the Office of Environmental Restoration and Waste Management (EM) to the field. Hence, they have not been incorporated into DOE Field Office, Oak Ridge (OR) and WEMCO written procedures. In the absence of clear guidance from EM, such changes are not likely to be effectively incorporated.

Findings of Fact/Discussion

Review of WEMCO procedures governing its system for performing, reviewing, and approving safety analyses, and discussions with Fernald Office (FO) personnel concerning their review of WEMCO safety analyses indicated that both WEMCO and OR procedures exclude DOE from the review and authorization process for safety analyses involving low hazard nuclear projects and facilities (D-S-15; I-S-14). Exclusion of DOE from this process is based on a 1986 version of DOE 5481.1B which defines the requirements related to safety analysis and review.

Subsequent to the last revision of DOE 5481.1B, several SEN notices have been issued that require DOE line managers to be directly responsible and accountable for all activities under their jurisdiction. However, these changes have not been effectively communicated to the personnel in field office and contractor organizations that are responsible for assuring that these requirements are implemented. If DOE fails to effectively convey current policy and guidance to field offices and contractors concerning safety analyses, there is no assurance that DOE accountability for reviewing and approving safety analyses will be properly understood and implemented.

It should be noted that WEMCO's current practice is to submit all safety analysis documents that result in Occupational Safety Requirements (OSRs) to FO for review and approval regardless of hazard level. A draft Memorandum of Agreement has also been written which states that EM-40 will "review and

approve environmental and safety documents as required by DOE policies" (D-S-36).

Assessment Concern Number: S/C-6

Assessment Concern Title: Action Plan for Design Criteria

Performance Objective

In accordance with DOE 5480.1B, provide an implementation plan which assures that the design criteria backfit requirement in DOE 5481.1B will be adequately addressed.

Concern

WEMCO actions proposed for resolving the appraisal finding involving failure to apply current design criteria (i.e., DOE 6430.1A) to the FEMP facilities did not include the development of an implementation plan for the design criteria backfit requirement in DOE 5481.1B. Failure to include this action in the Action Plan provided inadequate assurance that this finding would indeed be adequately addressed.

Findings of Fact/Discussion

Review of Action Plan items related to the Tiger Team finding that the design criteria in DOE Order 6430.1A were not being implemented by WEMCO for the FEMP facilities (I-E-56), indicated that none of the proposed actions involved the development of an implementation plan for the design criteria backfit requirement in DOE 5481.1B. Although WEMCO did indeed issue such a plan on May 29, 1990, this action was not tracked as part of the resolution process for this Tiger Team finding (D-S-8). If WEMCO had not issued this implementation plan, the design criteria finding would have been closed without having such a plan in place.

Neither WEMCO, the Fernald Office (FO), the DOE Field Office, Oak Ridge (OR), the Office of Environmental Restoration and Waste Management (EM), or the previous Tiger Team identified and rectified this shortcoming in the Action Plan. This appears to indicate that the development and review process for the Action Plan was too superficial or poorly defined in this area. Failure to develop an action item for the aforementioned implementation plan indicates that the process for responding to findings provides less than adequate assurance that the problems associated with appraisal findings will be satisfactorily resolved.

Assessment Concern Number: S/C-7

Assessment Concern Title: Packaging and Transportation Documentation

Performance Objective

Store, handle, package, and ship radioactive and hazardous materials safely as directed in DOE 5480.3, DOE 1540.1, DOE 1540.2, and applicable state and Federal regulations. Per DOE guidance, conduct onsite transportation activities in compliance with Department of Transportation (DOT) regulations to the extent practical.

Concern

Procedures for onsite handling, packaging, and transportation are outdated and do not fully reflect the site's environmental remediation mission.

Findings of Fact/Discussion

Recent reorganizations have created an organizational structure focused on the environmental remediation mission. Management has recognized that this new organization has inherited a series of handling, storage, packaging, and transportation policy and procedure documents that are outdated (see Concern M/C-2). Some procedures reflect the prior site mission where many packaging and transportation responsibilities were unique to the work going on in each of the plant process buildings. New policy and procedure documents have been added to the existing ones. The result is a proliferation of documents addressing similar subjects, for example:

- The Onsite Transportation of Radioactive and Nonradioactive Hazardous Materials (D-S-33);
- Moving and Storing Nuclear Materials Onsite at the FMPC (D-S-38);
- Storage of Radioactive Material (D-S-39); and
- Packaging, Onsite Movement and Offsite Shipment of Material (D-S-35).

WEMCO is currently examining transportation responsibilities and is correcting procedures (D-S-40), and plans to complete this by the end of 1991.

The review of policy and procedure documents should identify a clear hierarchy, with the role of each document delineated. Packaging and transportation direction, for example, is provided in Site Policy and Procedure documents, Site Standard

Operating Procedures, Site Procedures, Topical Manuals, and the Transportation Manual.

The conclusion is that the FEMP radioactive and hazardous material packaging and transportation would benefit from management reviewing and defining organizational packaging and transportation responsibilities, eliminating out-of-date documents, and providing guidance on what documents are needed to adequately address both onsite and offsite handling, packaging, storage, and transport activities. WEMCO has begun this process and has committed significant FY 1991 and 1992 resources. Causal factors for inadequate documentation include budget and manpower limitations and untimely audit follow-up.

Assessment Improvement Item Number: S/II-1

Assessment Improvement Item Title: WEMCO Operational Readiness Review Process

Performance Objective

Provide high assurance that Operational Readiness Reviews (ORRs) are performed in all cases where they are needed.

Improvement Item

Determinations by WEMCO staff managers that an ORR is not needed for their projects or facilities are not required to be reviewed and approved by the WEMCO Readiness Review Board.

Findings of Fact/Discussion

Discussions with the WEMCO Readiness Review Board (RRB) Chairman indicated that staff managers are responsible for determining if an ORR is needed for their projects and facilities (I-S-11). All determinations that require an ORR are sent to the RRB for further review and approval. However, if a staff manager determines that no ORR is required, he/she is not required to submit this determination to the RRB.

The RRB Chairman indicated that he was aware of this shortcoming and was considering procedural changes that would require negative determinations regarding the need for ORRs to be sent to him (I-S-11). Requiring review and approval by the RRB of all ORR determinations will provide greater assurance that ORRs will be performed when they are needed.

Assessment Improvement Item Number: S/II-2

Assessment Improvement Item Title: Clear Procedures for Transportation Emergencies

Performance Objective

FEMP planning for response to transportation emergencies must ensure that emergency response personnel understand transportation documents and notification procedures.

Improvement Item

The knowledge of radioactive and hazardous material shipment records of after-hours emergency personnel should be improved, though their response to a simulated transportation accident met regulatory requirements.

Findings of Fact/Discussion

A late-night call to the FEMP Assistant Emergency Duty Officer (AEDO) was made to inquire about the contents of a recently shipped radioactive waste container. The AEDO did not have the information at his location, but he did return the call shortly. He was not completely familiar with the bill of lading, but soon was able to provide the information requested. Further inquiries to the AEDO revealed that the practice of forwarding radioactive and hazardous shipment paperwork to the AEDO office had only recently resumed, though it is specified in existing procedures. In addition, the AEDO was somewhat uncertain over the recommended notification sequence. WEMCO recognizes that incident response procedures need revision, and plan to address this in their revision of the Transportation Manual. The conclusion is that transportation emergency response is acceptable, but can be improved by additional training and revised procedures.

Assessment Concern Number: H/C-1

Assessment Concern Title: Compliance with Radiation Protection Policies

Performance Objective

DOE 5480.11, *Radiation Protection for Occupational Workers*, which delineates monitoring requirements for surface contamination, definitions and posting requirements for radiation areas, and requirements for Entry/Exit Controls.

Concern

DOE 5480.11 establishes contamination limits of 5000 dpm/100 sq. cm. for Beta-Gamma emitters in controlled areas. DOE 5400.5 specifies the same limit for unrestricted release. At the FEMP Laundry facility the monitors are set at 15,000 dpm/100 sq. cm.

Radiation Areas with external radiation sources are to have the expected dose limits on, or in conjunction with, radiation warning signs. This requirement is not uniformly being followed at the FEMP.

The vehicle exit monitoring station at the FEMP is set up in a confusing way, leaving some potential for cross contamination.

Findings of Fact/Discussion

Laundry Monitoring:

While performing a review on the closure of previous Tiger Team findings on Laundry Monitoring, it was found that although other actions delineated as action items under this concern had been properly implemented, FEMP was continuing to use the setting of 15,000 dpm/sq. cm. for beta-gamma emitter monitoring rather than the 5,000 dpm/sq. cm. It was explained to the assessor that the FEMP was doing this because a footnote in DOE 5480.11 states that "the levels may be averaged over one square meter provided the maximum surface activity in any area of 100 sq. cm. is less than three times the guide values. For purposes of averaging, any square meter of surface shall be considered to be above the activity guide G if: 1) from measurements of a representative number n of sections it is determined that $1/n \sum Si > G$, where Si is the dis/min-100 sq. cm. determined from measurement of section i; or 2) it is determined that the sum of the activity of all isolated spots and particles in any 100 sq. cm. area exceeds 3G."

Although DOE 5480.11, through this footnote, allows the instrumentation to be set at 15,000 dpm/ 100 sq. cm., no validation has been made on first satisfying the conditions stated in the footnote before using the 15,000 dpm/100 sq. cm. limit at FEMP.

Also, the reason stated for not using the 5,000 dpm/100 sq. cm. limit is that the facility has been experiencing false alarms at that setting (without any clothing sample), but no effort has been made to determine the cause of the alarms at that setting (I-H-10 and I-H-16).

Radiation Area Posting:

DOE 5480.11 requires that signs posted in areas of External Radiation shall include the anticipated dose rate or range of dose rates, on or in conjunction with each sign. A site verification showed that not all External Radiation Areas are posted with the dose information, some signs have the dose information while some do not (in the same area), and the signs are not updated when the barrier rope is moved (I-H-1 and I-H-12).

In addition, radiological areas are still in the process of being defined, and boundaries and postings are not clear.

FEMP recognizes that they have not completed all the actions necessary for being in compliance with the posting requirements of DOE 5480.11. The present plan states that the FEMP will be in compliance by January 31, 1992 (I-H-16).

Entry/Exit Controls:

At the vehicle exit monitor point, the assessor observed that people that are exiting first enter a trailer, monitor themselves, and then, may backtrack out of the trailer and cross approximately ten yards of controlled area before they actually exit into the clean area. As explained to the assessor, the proper exit route is to continue through the trailer and exit the opposite side, however, the route is not defined by the use of a sign or other means of identification. The present system leaves open the chance for cross contamination between unmonitored and monitored individuals (I-H-16).

The causal factor in this concern is a lack of attention to following safe Radiation Protection practices at the FEMP.

Assessment Concern Number: H/C-2

Assessment Concern Title: Radiation Work Permits (RWPs), Control, Completion, Quality Review

Performance Objective

RWPs, which delineate maximum stay times and equipment and clothing required for any work where radiation safety is required.

Concern

RWPs are not correctly filled out, have deviations from procedure without proper documentation, have ambiguous entry headings, and are not checked for quality.

Findings of Fact/Discussion

A review of RWPs found many cases of incorrect data and missing data, including signatures, dates and equipment serial numbers (I-H-3; D-H-4).

The review also found that the RWPs were not being filled out as per procedure. The FEMP procedure for filling out RWPs states that an entry shall be made for the maximum stay time. On some forms, however, the entry stated a maximum dose limit. The assessor was told that in cases where the source of doses tended to be localized, making the expected dose rate very variable, the worker was given a direct reading dosimeter, was to read the dose every hour, and was to leave before reaching the dose limit. The procedure, however, was not revised to reflect this change. Another example of procedure noncompliance is that the procedure states that a copy should be returned to the Manager for Radiological Assessment and Instrumentation. It has been decided and implemented that copies need not be returned to this particular manager, although the procedure was never revised to reflect this change (I-H-3 and I-H-11; D-H-5).

Another problem found in the RWPs was at the place where an equipment calibration date was to be entered, the heading read "calibration date." Some technicians were interpreting this to mean "date of last calibration," while others were interpreting it to mean "calibration due date." A review of other forms used by Radiological Protection (such as survey forms, etc.) show the same problem in the "calibration date" area (I-H-3; D-H-4).

A discussion on the RWPs revealed that Radiation Technician signatures are the highest level signatures required and there is no procedure to review these forms by supervisors (on a full review or even a spot check basis) (I-H-12).

Discussions also revealed that RWPs are required only for work that is not covered by a Standard Operating Procedure (SOP). The procedure for writing a SOP requires the manager to assume the responsibility for deciding on review cycle

participants. This practice does not ensure that important safety element of Radiation Protection will necessarily be covered (I-H-12 and I-H-16).

Assessment Concern Number: H/C-3

Assessment Concern Title: DOE Fernald Office (FO) Oversight

Performance Objective

DOE FO Staff is not involved in assessment (e.g., appraisals, audits, and surveillances) of site contractor activities to ensure that such activities are conducted with a formality and rigor that they comply fully with ES&H requirements.

Concern

DOE Radiation Protection Oversight is inadequate to assure compliance with ES&H requirements in that it is undocumented and informal.

Findings of Fact/Discussion

In a discussion on DOE FO Oversight, it was found that although the DOE FO Health Physicist did conduct regular meetings with the head of the WEMCO Radiation Protection division, formal appraisals have not been conducted or documented.

This concern is true for all ES&H oversight, and not solely in the area of Radiation Protection (see Concern M/C-1).

FO currently has limited resources. Efforts are underway to increase the staffing in this area.

Assessment Concern Number: H/C-4

Assessment Concern Title: Radiation Protection Procedures and Overall Control of Radiation Protection Policies at FEMP

Performance Objective

Overall Radiation Protection Program.

Concern

The review of the Radiation Protection Program at the FEMP indicates a lack of management oversight, lack of procedural control, lack of proper documentation, and lack of proper implementation of the procedures and documentation available.

Findings of Fact/Discussion

In the limited review of the Radiation Protection Program conducted at the FEMP, the concerns indicate that there is an overall problem in this area (see Concerns H/C-1, H/C-2, and H/C-3). The nature of the individual concerns indicate a symptomatic lack of attention to procedure, a lack of proper documentation, and a lack of managerial oversight.

There is no systematic approach to the writing, revising, and implementation of procedures and a review of other forms used by the Radiation Protection Program shows that they have not had adequate management review and that anomalies have not been resolved in a planned and consistent fashion (see Concern H/C-2). Although there is an Industrial, Radiological Safety & Training (IRS&T) procedure, SP-A-01-001, *Preparation, Review and Approval of Industrial, Radiological Safety and Training Department Procedures*, it is obviously not effective. The ineffectiveness may be due to the procedure (SP-A-01-001) not being adequate in its direction, or not being followed or a combination of the above.

In many of the areas, WEMCO management is aware of some of the problems, and is taking steps to correct them. In some areas, the performance is exemplary, while in others, there is much room for improvement. This indicates that much is left to project managers in the shaping of the quality of their individual projects, and there is a lack of consistency in the overall program.

High level management attention is needed in order for the FEMP to pull together an effective and comprehensive Radiation Protection Program.

Assessment Improvemant Item Number: H/II-1

Assessment Improvement Item Title: Radiation Protection Group Input in Development of Criteria in the WEMCO Evaluation and Assessment System (EASY) Self-Assessment Program

Performance Objective

EASY Self-Assessment Program, WEMCO's in-house self-assessment program.

Improvement Item

Input from the Radiation Protection Department towards criteria in the Radiation Protection (RP) section of EASY would help ensure a more meaningful program.

Findings of Fact/Discussion

A discussion on the RP section of the EASY Self-Assessment program revealed that the RP Department has had no input into the development of criteria. Input from the RP Department would help to make for a more meaningful self-assessment program (I-H-16; D-H-3).

Assessment Strength Number: H/S-1

Assessment Strength Item Title: Asbestos Migration Study

Discussion

During the previous Tiger Team Assessment, one of the findings resulted in the FEMP starting a study on Asbestos Migration and Pathways. This study is proceeding in a well managed way at the FEMP, and the results could be very beneficial to other DOE sites that may be trying to perform similar studies.

Although the FEMP is at the beginning of the study at this stage, it is one of the first of its kind, and therefore may be of great value to others in the future (I-H-13 and I-H-14).

Assessment Strength Number: H/S-2

Assessment Strength Item Title: In-vivo Counting Facility at FEMP

Discussion

The in-vivo facility at the FEMP has state-of-the-art whole body counting instrumentation that already has been used in providing assistance to DOE sites that do not have such modern facilities. The continuation of this practice would greatly benefit DOE. The personnel are also very knowledgeable in in-vivo counting methods and could be used as a resource by other DOE sites (I-H-19; D-H-15 and D-H-21).

Appendix B

Biographical Sketches of ES&H Progress Assessment Team Members

Appendix B:

Biographical Sketches of ES&H Progress Assessment Team Members

NAME: Mark A. Gilbertson

AREA OF RESP: Team Leader

ASSOCIATION: DOE Headquarters, Office of Special Projects

EXPERIENCE: 10 years

U. S. Department of Energy, Washington, DC

- Deputy Director of the Office of Special Projects (OSP) within the Headquarters' Office of Environment, Safety, and Health. Responsible for assisting the Director in the management of the overall Tiger Team effort.

- Team Leader, Office of Environmental Audit. Detailed to Rocky Flats - Team Leader of the "Special Assignment Environmental Team." Participated in the Environmental Survey Program.

U. S. Environmental Protection Agency, Washington, DC

- Director of EPA's Hazardous Waste Groundwater Task Force Investigation Activities. Responsible for completing the investigations of the groundwater monitoring programs at 35 facilities.

- Participated in the development of RCRA regulations. Responsible for the development, guidance, and training in the areas of corrective action, waste management, and groundwater monitoring.

- Represented the Office of Waste Programs Enforcement and provided technical support in negotiations and litigation of nationally significant cases.

Pope-Reid Associates, Inc., St. Paul, MN

- Project Manager/Engineer on environment, safety, and health projects performed for the Federal Environmental Protection Agency, state regulatory agencies, local governments, and local industry.

EDUCATION: B.S., Chemical Engineering, University of Wisconsin, Madison, WI

NAME: Robert M. Compton

AREA OF RESP: Management Systems

ASSOCIATION: Nuclear Power Consultants, Inc.

EXPERIENCE: 22 years

Private Consultant

- DOE Tiger Team Assessments at Savannah River, Hanford, ETEC and METC, and INEL.
- Appraisals of construction programs, Safety System Functional Inspections (SSFIs), Motor Operated Valve problems, regulatory issues, etc. for nuclear utilities.
- Numerous individual and team assessments and problem resolution assignments at nuclear utilities for the USNRC related to Safety System Quality Inspections (SSQEs), SSFIs, Safety System Outage and Modification Inspections (SSOMIs), Construction Appraisal Team (CAT) inspections, instrumentation, in-service testing of pumps and valves, compensatory measures, restart readiness reviews, "problem plant" corrective actions, safety allegations, etc.

U.S. Nuclear Regulatory Commission, Atlanta, GA

- Senior Engineer and Reactor Inspector in the areas of civil and mechanical construction, testing and modification, inspection and enforcement.

Mare Island Naval Shipyard (DOD), Vallejo, CA

- Nuclear Fluid Systems Engineer and Supervisory Nuclear Engineer for construction, repair and refueling of Navy nuclear vessels.

EDUCATION: B.S., Civil Engineering, California State University at Chico

OTHER: Member, American Nuclear Society
Member, American Society for Quality Control
Member, American Society of Civil Engineers
Member, American Consulting Engineers Council

NAME: Lynne Day

AREA OF RESP: Administrative Support

ASSOCIATION: META

EXPERIENCE: 15 years

META, Inc., Arlington, VA

- Information Processing Specialist. Provides administrative support for the Environmental Subteam on DOE Tiger Team Assessments and Environmental Audits. Participated in the Tiger Team Assessment of the Solar Energy and Research Institute. Provided support for final report documentation for the environmental audit of Uranium Tailings Remedial Action Project sites and Information Management Support for the Component Development and Integration Facility environmental audit.

INNOVA Communications, Inc., Arlington, VA

- Office Administrator. Provided system and documentation support for a local and wide area network integration firm. Worked on office automation systems configuration analysis project providing technical writing and project management support. Responsible for the development of instruction materials, graphics support, technical drawings, manuals and vendor documentation. Compiled and prepared statistical data for price quotations and cost proposals as well as for use in analysis and reporting.

Sandler & Greenblum, Arlington, VA

- Word Processing Department Manager. Developed and coordinated activities related to the word processing department for law firm. Responsible for direct supervision and staffing of word processing department. Developed training programs and manuals and trained all computer operators. Managed local area network. Identified and resolved problems, and repaired and replaced malfunctioning hardware components. Performed database management functions.

EDUCATION: A.A., Computer Science, Strayer College, Arlington, VA

NAME: J. Thomas Fitch

AREA OF RESP: Waste Management

ASSOCIATION: Arthur D. Little, Inc.

EXPERIENCE: 14 years

Arthur D. Little, Inc., Arlington, VA

- Deputy Program Manager for the contractor support group of the DOE Tiger Team Assessment Program. Participated in the TTA of the ETEC facility in California and was a member of the Management Systems Audit Group which recently evaluated the Bonneville Power Administration.

- Full-time environmental auditing professional for the past nine (9) years. Conducted in excess of 250 environmental audits, acting as the team leader for over 200 audits. Mr. Fitch has managed every facet of the auditing process, including evaluation of action plans and conducting follow-up probes.

Waste Management, Inc., Oak Brook, IL

- Corporate Audit Program Supervisor. Supervised a group of environmental auditing professionals. The group conducted comprehensive environmental compliance and management audits at WMI facilities, including those owned by Chemical Waste Management.

Indiana Department of Environmental Management, Indianapolis, IN

- As a RCRA TSDF Enforcement Officer, Mr. Fitch's responsibilities included the evaluation of both commercial and private TSDF operations to determine the compliance status at each site. Mr. Fitch worked in support of environmental litigation resulting from enforcement activities.

EDUCATION: B.S., Environmental Health Sciences, Indiana University

NAME: Darrell A. Huff

AREA OF RESP: Safety Analysis/Design Review

ASSOCIATION: Risk Analysis and Technology Division, Office of Environment, Safety, and Health, U.S. Department of Energy

EXPERIENCE: 15 years

U. S. Department of Energy, Germantown, MD

- DOE Coordinator for the Interagency Nuclear Safety Review Panel evaluation of the Galileo and Ulysses Space Missions.
- General Design Criteria Planning Board member.
- Tritium Task Group member.
- Review of Safety Analysis and Environmental Reports.

U. S. Nuclear Regulatory Commission, Washington, DC

- Material Control Analyst performing licensing reviews of reactors, and uranium and plutonium fuel facilities.
- Process Licensing Engineer reviewing spent fuel storage cask technologies.
- Nuclear Process Engineer involved with implementation of Nuclear Waste Policy Act requirements.
- Safeguards Technical Analyst conducting inspection and enforcement of safety and safeguards requirements at reactors and fuel facilities.

EDUCATION: B.S., Applied Nuclear Physics, Brigham Young University

NAME: Yardena M. Mansoor

AREA OF RESP: National Environmental Policy Act Implementation

ASSOCIATION: DOE Headquarters, Office of NEPA Oversight

EXPERIENCE: 15 years

U. S. Department of Energy (DOE), Washington, DC

- Environmental Protection Specialist. Responsible for reviewing NEPA documents and providing assistance on NEPA implementation and compliance.

Decision Analysis Corporation, Vienna, VA

- Performed modeling studies and analyses for Energy Information Administration.

Planning Research Corporation, McLean, VA

- Provided support on implementation, administrative record requirements, cost recovery, response action contractors, and other CERCLA issues to U.S. EPA Office of Waste Programs Enforcement.

Sobotka & Company, Inc., Washington, DC

- Conducted regulatory impact analyses, regulatory reform studies for EPA and DOE.

Science Applications International Corporation, McLean, VA

- Participated in regulatory assessments of petroleum supply interruption contingency actions for DOE.

EDUCATION: M.A., Economics, Yale University
B.A., Economics, Cornell University

NAME: Dennis E. Owen

AREA OF RESP: Packaging and Transportation

ASSOCIATION: President, ENCORE Technical Resources, Inc., Middletown, PA

EXPERIENCE: 21 years

ENCORE Technical Resources, Inc., Middletown, PA

- Manager of the Electric Power Research Institute's research office at TMI-2.
- Research on nuclear power plant operations and maintenance.
- Packaging and transportation consultant to DOE Tiger Teams.

Nuclear Engineering Consultant, Hummelstown, PA

- Research at TMI-2 on high temperature fuel reactions, fission product release and transport, and radiation protection practices.

EG&G Idaho, Inc., Idaho Falls, ID

- Project manager for acquisition of first samples of damaged fuel from TMI-2.
- Research on TRU waste form development.
- Postirradiation examination of severe accident test reactor fuel assemblies.

General Electric Company, Vallecitos Nuclear Center, Pleasanton, CA

- Postirradiation examination of new design fuel to assess irradiation performance.
- Research on chemical additives to UO_2 fuel to improve properties.

EDUCATION: B.S., Chemistry, California State University

NAME: Timothy D. Pflaum

AREA OF RESP: Management Systems

ASSOCIATION: Assistant Secretary for Defense Programs

EXPERIENCE: 20 years

- Management Coordinator for Environment, Safety and Health Programs in the Office of Self-Assessment and Emergency Management for the Assistant Secretary for Defense Programs. He has over 20 years of experience in defense nuclear programs of the Department of Energy.

- Served as ES&H Coordinator for Defense Programs since April 1990 and has been involved in the Defense Programs Administration of the Tiger Team assessment process. Responsible for orchestrating the preparation, review and approval of the Tiger Team corrective action plans for all DP facilities.

- He began his career as a Management Intern with the Atomic Energy Commission. He has served in a variety of administrative and technical positions within the Defense Programs at Headquarters and at Albuquerque Field Office, including Safeguards and Security, Emergency Operations, and Environmental Safety and Health.

EDUCATION: Master of Science degree in Systems Management from American University, and is proud to be the second generation in the nuclear programs. His father began his career in the Army Corps of Engineers with the Manhattan Project, and served with Atomic Energy Commission until his retirement in 1966.

NAME: Frank B. Russo

AREA OF RESP: Inactive Waste Sites

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

EXPERIENCE: 15 years

U. S. Department of Energy, Washington, DC

- Deputy Director of the Office of Environmental Audit. Responsible for assisting the Director in managing environmental audits and environmental components of Tiger Team Assessments.

- Participated in the environmental audit of the West Valley Demonstration Project, and the Bonneville Power Administration.

U. S. Department of Energy, Washington, DC

- Director of the Nuclear Materials Compliance Division, Office of Environmental Compliance. Responsible for managing environmental compliance oversight and technical assistance activities at DOE nuclear materials production facilities and research laboratories.

U. S. Environmental Protection Agency, Washington, DC

- Chief of the Compliance Branch, Office of Waste Programs Enforcement. Responsible for national implementation of enforcement program under CERCLA.

U. S. Environmental Protection Agency, Washington, DC

- Plant Pathologist. Responsible for compliance and enforcement activities under FIFRA and TSCA.

EDUCATION: M.S., Plant Pathology, Rutgers University
B.S., Forestry, Rutgers University

NAME: John Schinkle

AREA OF RESP: Facility Safety

ASSOCIATION: DOE Albuquerque Field Office

EXPERIENCE: 7 years: Test Engineering
18 years: Facility and Safety Engineering

U. S. Department of Energy, Albuquerque, NM

- Test/Facility Engineer - Space Nuclear Propulsion Office. Member of Test Review Board for several nuclear rocket proto-type test series. Reviewed and approved facility readiness and nuclear reactor test programs.

- Nuclear Engineer - Reactor and Criticality Safety overview of research reactors, critical facilities, and SNM handling of processing facilities.

- General Engineer - Facility Engineering Branch Chief. Directed facility engineering programs including utilities management, energy management, value engineering, design criteria development, design review.

- General Engineer - Safety Programs Division Director. Manage safety oversight program for industrial safety, fire protection, high explosives safety, nuclear facility safety, reactor safety, and safety analysis.

EDUCATION: B.S., Electrical Engineering, Ohio University

OTHER: Registered Professional Engineer

NAME: David Schweller

AREA OF RESP: Management Systems

ASSOCIATION: DBS Associates, Inc. - Private Consultant

EXPERIENCE: 36 years

DBS Associates, Inc. (private consultants in organization, management, safety and security)

- President - five years.
- Participated in 23 previous Tiger Team/TSA's, 11 as a member of the Management Subteam, including the first Tiger Team.
- Member of the Assistant Sect. Environment, Health and Safety Working Group to review the TSA program.
- Assisted EM in developing the Progress Assessment Team approach.
- Safety Advisor for DOE Security Inspection and Evaluation Teams.
- Evaluator for FEMA Nuclear Utility Emergency Drills.

U. S. Department of Energy, Brookhaven Area Office, Upton, NY

- Manager and Contracting Officer (10 years).
- Director, Safety Division (14 years).

U. S. AEC, Washington, DC

- Reactor Safety Specialist (1 year).

Martin Nuclear Division, Middle River, MD

- Chief, Experimental Physics (2 years). Designed, built, and operated three zero powered experimental reactor facilities.

Combustion Engineering Nuclear Division, Windsor, CT

- Reactor Physicist (5 years). Designed, built, and operated three zero powered experimental reactor facilities.

EDUCATION: B.S., Engineering Physics, N.Y.U. College of Engineering

NAME: Murari Sharma

AREA OF RESP: Radiation Protection, Industrial Hygiene

ASSOCIATION: DOE Headquarters, EH-40

EXPERIENCE: 9 years

DOE Headquarters, Office of Health

- Electronic Engineer. Responsible for radiation protection instrumentation testing and calibration programs.

Department of the Navy, Naval Sea Systems Command RADIAC Division

- Electronic Engineer. Responsible for procurement, testing programs, calibration programs, and research and development of various radiation detection instrumentation and dosimetry systems.

EDUCATION: B.S., Electrical Engineering, New Jersey Institute of Technology

Appendix C

Environment, Safety, and Health Progress Assessment Plan

Appendix C:

ENVIRONMENT, SAFETY, AND HEALTH (ES&H) PROGRESS ASSESSMENT PLAN

Environmental Assessment Plan

The objectives of the inactive waste site portion of the environmental assessment of the ES&H Progress Assessment are: 1) to select key findings previously identified by the Tiger Team Assessment for review; 2) to determine the progress being made by the Fernald Environmental Management Project (FEMP) site in the implementation of corrective actions and closeout of Tiger Team Action Plan items that address those key findings; and 3) to make a more detailed assessment of selected aspects of programs under review to ensure that management systems are in place and functioning to meet Federal, state and local environmental requirements.

Inactive Waste Sites (CERCLA/SARA)

Issue Identification

The September 1989 Tiger Team Assessment of the FEMP site (formerly Feed Materials Company of Ohio (FMPC)) identified areas of concern with regard to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Remedial Investigation/Feasibility Study (RI/FS) activities. The first area of concern was the uncertainty in structural integrity of the K-65 silos and potential risk to public health and environment (Finding E-11). This issue will be evaluated in terms of implementation of corrective actions and status of Action Plan items (39, 43, 57, 61, 69, 129, 150, 154, and 158). The second concern identified by the 1989 Tiger Team was inadequate implementation of the RI/FS Workplan (Finding E-09) and inadequate planning, management, and administration of CERCLA activities (Finding E-10). Failure to meet commitments and show progress has resulted in EPA Region V issuing notices of noncompliance and, most recently, assessing stipulated penalties in December 1990. As a result, EPA Region V and DOE entered into a revised Consent Agreement on September 19, 1991. This revised Consent Agreement establishes new milestones and schedules for cleanup activities at the FEMP site. The ES&H Progress Assessment will evaluate the status of Action Plan items 20, 22, 130, 138, 143, 575, and 576. Specifically, integration of new requirements into the Action Plan, modifications to and tracking of Action Plan items, Environmental Restoration Program staffing, oversight activities, interface with regulatory agencies, quality assurance program, compilation and maintenance of the administrative record, and the Environmental Restoration self-assessment program.

The integration of the National Environmental Policy Act (NEPA) process into the CERCLA activities will be addressed with the assistance of a NEPA specialist who is a member of the Environmental Subteam. The Inactive Waste Sites review will also be coordinated with the Waste Management and Management specialists on the Team.

Records Required

In addition to those documents reviewed prior to the ES&H Progress Assessment, the following records will be examined at the FEMP site: Administrative Record Implementation Plan and associated policies and procedures; Project Control Procedures; RI/FS Database Management System; Operable Unit 4 portion of the RI/FS Workplan; and Quality Assurance Program Plan.

Waste Management/Groundwater

The focus of the ES&H Progress Assessment of Waste Management and Groundwater Monitoring programs will focus on two key environmental management areas. The Waste Management Review will focus on Waste Characterization/Determination with Groundwater Monitoring evaluating the Resource Conservation and Recovery Act (RCRA) Groundwater Monitoring System to assure conformance with regulatory standards.

In reviewing the past 1989 Tiger Team Assessment (TTA) report, Key Finding E-6 focused on Waste Characterization and its importance to the continued viability of the Fernald Waste Management Program. This finding indicated the need to evaluate/characterize the wastes on site, with Action Plan Item #14 indicating that waste would continue to be characterized according to Consent Decree and Proposed Amended Consent Decree requirements.

The ES&H Progress Assessment will focus on the activities surrounding the characterization of Fernald Wastes (Action Plan #14).

We will evaluate the policies, plans and procedures developed under Action Plan #14 to meet the challenge of waste determination and will confirm that the programs are being implemented to meet regulatory and legal obligations.

The review of Groundwater Monitoring Activities will evaluate the actions taken to address deficiencies noted in Finding E-19, "Minor Deficiencies in the Environmental Monitoring Program." Specifically, we shall assess the adequacy of site efforts to "Consolidate Groundwater Monitoring Programs," Action Plan Item #5, with a focus towards the RCRA Groundwater Program.

In addition to these specific tasks, we will explore the Oversight and Self-Assessment programs in Waste Management and Groundwater Monitoring to determine if DOE is providing the environmental assurance mechanisms suggested

by Secretary Watkins, and will focus on the site's activities to fully integrate its RCRA and CERCLA programs.

We plan to gather information through a series of interviews with U.S. Department of Energy (DOE) and Westinghouse Environmental Management Company of Ohio (WEMCO) environmental personnel, reviews of selected site waste management and groundwater monitoring documents, and observing site operations.

Documents for Review

In conducting the ES&H Progress Assessment, selected documents will need to be available for review. These documents include waste determination records; project plans, including sampling prioritization; sampling records; lab records; chain-of-custody documents; and personnel training records.

Groundwater monitoring records required will include standard operating procedures (SOPs); technical document reviews criteria; sampling and analytical protocols and records; and groundwater quality assurance/quality control (QA/QC) documents.

Radiation Protection, Emergency Preparedness and Industrial Hygiene Assessment

Issue Identification

The objectives of the Radiological Protection, Emergency Preparedness and Industrial Hygiene portions of the progress assessment are: 1) to follow-up on the key findings identified by the TTA for review; and 2) to make an assessment of how the FEMP is practicing management controls over those and similar issues to implement revisions to orders, proper training, and oversight responsibilities.

The September 1989 Tiger Team Assessment of the FEMP site identified areas of concern in Radiation Protection with regard to contamination control, training, posting requirements and DOE oversight. All of these concerns tie into implementation of DOE Order 5480.11. During this assessment, emphasis will be placed on tracking the particular Tiger Team findings to ensure that procedures are in place, training is in place and oversight is adequate to prevent reoccurrence of similar issues. (Radiation zone posting & monitoring action items 99, 100, 112, 114, 173, 175, 185, 570.)

On Industrial Hygiene, the only Tiger Team finding was on identification and contamination control of asbestos.

In this assessment, the issue will be followed-up and a small review of the Industrial Hygiene program will be conducted.

Documents to be Reviewed

- FEMP Implementation plan for DOE Order 5480.11
- Review of Radiation Work Permits

National Environmental Policy Act (NEPA) Implementation

Issue Identification

The objectives of the NEPA implementation portion of the environmental assessment of the ES&H Progress Assessment are: 1) to select certain key findings previously identified by the Tiger Team Assessment for review; 2) to determine the progress being made by the FEMP site in the implementation of corrective actions and closeout of Tiger Team Action Plan items that address those key findings; and 3) to perform a more detailed assessment of selected issues to further verify progress, focussing on areas that have changed since the original assessment.

The September 1989 Tiger Team Assessment of the FEMP site (formerly FMPC) identified particular areas of concern with regard to NEPA implementation. The areas of concern were:

- NEPA process consistency with DOE requirements (Data Sheets 09-03 and 18-01);
- Coordination with the Program Office on NEPA matters (Data Sheet 09-05);
- NEPA/CERCLA integration (Data Sheet 08-01);
- Staff training in NEPA process and procedures (Data Sheet 09-04); and
- NEPA document compliance with Council on Environmental Quality (CEQ) regulations and DOE NEPA Guidelines requirements (Data Sheets 09-01, 09-02, 12-01, 12-02, 12-03, 12-04, 12-05, 12-06, 12-07, 12-08, 12-09, 12-10, 12-11, 16-01). (Not within the scope of this progress assessment).

These were summarized in two findings:

- Inadequate NEPA training and guidance (Finding E-01); and
- Insufficient integration of NEPA into programmatic decision making (Finding E-02).

The adequacy of NEPA training and guidance will be evaluated in terms of the status of Action Items 33, 65, 145, 557, and 586. Progress in integrating NEPA into programmatic decision making cannot be evaluated by Action Item 142, submittal of a draft Environmental Impact Statement (EIS) for site renovation, as proposed in the Action Plan of June 1990. Although that Action Item was completed, the intervening decision (February 1991) to permanently close the site and convert its mission from production to environmental restoration obviates that EIS. Instead, the adequacy of NEPA integration into program decision making will be evaluated through examination of: 1) the Consent Agreement of September 1991; and 2) plans to achieve NEPA compliance through an integrated NEPA/CERCLA process that complies with the Consent Agreement. Specifically, the assessment will include staff interviews and review of any existing NEPA planning documents to determine whether the activities required by NEPA to supplement the CERCLA decision making process have been identified, and whether plans have been established to accomplish these steps in a timely manner. The integration of the NEPA process into CERCLA activities will be addressed jointly with the CERCLA specialist who will lead the Environmental Team.

Additional Records Required

As identified during interviews on site. The scope of this assessment will not include reviewing completed or draft NEPA documents for completeness and compliance; but will include review of written procedures and plans for NEPA compliance activities.

Safety & Health

Packaging and Transportation

The packaging and transportation (PT) portion of the October 1991 ES&H Progress Assessment at the FEMP will focus on the progress made in correcting PT concerns identified during the June 1989, Technical Safety Appraisal and the September 1989, ES&H Compliance Assessment. Because the PT reviewer did not participate in the earlier evaluations of FEMP, his assessment will begin with orientation interviews with FEMP transportation staff. These interviews are to gain understanding of FEMP hazardous and radioactive material generation and movement, and supplement the brief overview material provided prior to starting the Assessment. The PT reviewer will also examine the FEMP organizational structure in detail in order to understand how PT responsibilities are partitioned among the organizations, and to determine if this partitioning is logical, consistent, and conducive to thorough management oversight. The interviews will be followed by site walkdown of selected buildings and facilities identified during the interviews.

The PT review will focus on the adequacy of corrective action taken by FEMP management and technical staff in three main areas. Specific items to be

evaluated are bullet listed under each of the three categories. The bullet items are only a partial list of findings to be evaluated.

1. Immediate hazards correction:

   - Severe deterioration of stored waste containers.
   - Bulk water in waste containers shipped offsite.
   - Inadequate waste container tie down practices.

2. Inadequate documentation and training:

   - Transportation manuals do not reflect actual FEMP practices.
   - Inadequate QA of PT containers.
   - Additional training required for some job categories.

3. Adherence to the letter and spirit of the June 1990 Action Plan.

   - Have transportation procedures undergone independent review?
   - Has Transportation Manual revision begun? Is it complete?
   - Has the major task of bringing waste container labels into compliance begun?
   - What progress has been made in sampling stored waste for identification?

While the PT evaluation will concentrate on FEMP corrective actions, the reviewer will also examine current PT activities for evidence of both exemplary and inadequate practices.

Analytical Process/Safety Envelope

- Status Review of Action Plan

SAR Process Review

- Hazard Identification Process
  - Projects
  - Operations

- Preliminary Screening Process

  - Safety Assessment
  - Preliminary Safety Analysis Report (PSAR)/Final Safety Analysis Report (FSAR) (new)
  - Safety Analysis Report (SAR) (existing facility/operation)

- Safety Assessments

  - Development
  - Review (internal)
  - Approval (internal)
  - Examples

- PSAR

  - Development
  - Review (internal)
  - Approval (internal)
  - Examples

- FSAR

  - Development
  - Review (internal)
  - Approval (internal)
  - Examples

- Existing Operation SAR

  - Development
  - Review (internal)
  - Approval (internal)
  - Examples

Design Process Review

- New facility

- Modify existing facility

- Review (internal)

- Approval (internal)

- Examples

  - New Decontamination and Decommissioning (D&D) Facility
  - Rotary Kiln Facility
  - Silo Modification

Startup Process Review

- Preoperational Readiness Review Process
- Operational Readiness Review (ORR) Process and Examples

SAR/OSR Interaction Review

- Operational Safety Requirement (OSR) Development
- Process including validation
- Examples
- Review (in detail) selected Safety Analysis (SAs), PSARs, FSARs (without contracts)
- Inspect Facilities/Operations for Selected SARs (above)

ES&H Oversight Review

- Fernald Office Overview
- DOE Field Office, Oak Ridge Overview
- Office of Environmental Restoration and Waste Management (EM) Overview

Management Review

- WEMCO Management Considerations

  - Resources
  - Training
  - Controls

Appraisal Area

Self-Assessment Programs.

Objective

To evaluate the adequacy and implementation of the DOE and contractor self-assessment program(s) at the FEMP using the guidance criteria provided in the Secretary's memorandum of July 31, 1990. This evaluation will focus on the system of self-assessment, the self-assessment of management activities, and the participation of contractor management, the Site Office and EM in this process.

A second objective is to determine the degree of implementation of Secretary of Energy Notice (SEN)-6D-91 regarding the establishment and operation of DOE Self-Assessment Offices in the field and headquarters (HQ).

Methodology

Review the policy, plans, procedures; and the organizational structures that WEMCO, the Site Office, and EM have established to execute the FEMP self-assessment program(s).

Review a sampling of the reports generated by the self-assessment program(s) and the corrective actions developed and implemented. Specific attention will be directed at the highest level assessment reports, root cause analyses and corrective actions, and at management self-assessments.

Interview selected contractor, Site Office, and EM managers and personnel responsible for implementing the self-assessment program(s) to determine their understanding of what is required and what is being achieved, and to compare that understanding to actual practice.

Team Interfacing

Input from the Environmental and Safety and Health appraisal specialists on self-assessment activities in those areas and specific examples of effective or ineffective implementation will be used to supplement this appraisal. Specific questions or issues may be identified during this appraisal that will be passed on for specialist review.

Appraisal Area

Management Systems for Deficiency Identification and Correction.

Objective

To evaluate the adequacy and implementation of DOE and contractor management systems for the identification and correction of deficiencies. This evaluation will address the adequacy of these systems in the following areas:

- Plans, policies, and procedures;
- Documentation of problems;
- Identification of trends and root causes; and
- Correction of root causes as well as individual deficiencies.

One of the Tiger Team management key findings identified a record at Fernald of recurring and lingering deficiencies at the site where known requirements were not being met, and that an attitude of acceptance of noncompliant conditions existed. The report also identified weaknesses in the tracking and trending of performance indicators and in the application of root cause analysis. The Tiger Team environmental key findings also documented that FEMP management was attempting to identify and correct noncompliances, but that the site was not always effectively ensuring that problems would not recur. The report also identified that the DOE and WEMCO oversight function was not frequent or comprehensive enough to accurately identify where requirements were not being met. This issue, the inadequate control provided by existing management systems was identified by the site as one of the root causes of the 1989 Tiger Team and Technical Safety Appraisal (TSA) findings and concerns. The appraisal of this area, combined with the appraisal of the site self-assessment program, will determine if FEMP management has effectively corrected this root cause.

Methodology

Review the plans and procedures that define and implement the identification and correction of deficiencies by line and oversight entities:

> Audits, surveillances, Corrective Action Reports (CARs), External Corrective Action Reports (XCARs), Unusual Occurrence Reports (UORs), Minor Event Reports (MERs), Nonconformance Reports (NCRs), Management Inspection of Facilities Program (MIFP) reports, external appraisals, root cause analyses, trend reports etc.

These documents will be reviewed to determine if they provide broad and deep environment, safety, health and quality assurance (ESH&QA) coverage of site facilities and activities; if they provide for timely and proper identification, documentation and correction of root causes; and, if they provide management with timely and appropriate notification of major or systemic deficiencies.

Review audit and surveillance schedules to determine the scope of ESH&QA coverage and the timeliness of performance.

Review a sampling of the reports or end products from the programs described in paragraph 1 above (including responses and closeout/validation documentation) for 1990 and 1991. This review will determine that actual performance achieves the

goals and objectives detailed in the stated policies, plans and procedures for deficiency identification and correction. This review will also determine if actual performance meets the appraisal criteria detailed in paragraph 1 above. Samples will be selected as much as possible from areas and subjects not being reviewed in detail by the Environmental and Safety and Health appraisal specialists, such as the Analytical Lab and Maintenance.

Interview selected DOE Site Office, DOE Field Office, Oak Ridge, and contractor managers and personnel responsible for implementing these programs to determine their understanding of what is required and what is being achieved, and to compare that understanding to actual practice.

Team Interfacing

Input from the Environmental and Safety and Health appraisal specialists on the overall deficiency identification and correction processes in those areas and specific examples of effective or ineffective implementation will be used to supplement this appraisal. Specific questions or issues may be identified during this appraisal that will be passed on for specialist review.

Human Resources

The review will concentrate on ES&H staffing (mix, numbers, quality, recruitment and retention) and the overall ES&H training program (documentation, records, requirements, certification and testing, subs and visitor, etc.). Activities of the other subteam members will be integrated into this evaluation which will address previous Tiger Team Findings M.01, 04, 05, and 06. Action Plan items 78, 80, 81, 92, 122, 126, 135, 137, 139, 141, 149, 151, 153, 155, 157, 160, and 572 will be evaluated as part of this process.

Directive System

This activity will consist of evaluation of the HQs to Field Office, to contractor system of providing ES&H direction and guidance and the assurance that a common understanding has been reached. Specific attention will be paid to recent directives on the Conduct of Operations and Self-Assessment and will be coordinated with other team members. This evaluation will address previous Findings M-09, 10, 11 and Action Plan items 38, 556 and 583.

ES&H Oversight

The principal review activity will BE the Cost Plus Award Fee (CPAF) process. However, it is likely that this area will integrate the team's concerns in the entire oversight (appraisal, document reviews, etc.) area. This review will address previous Findings M-02, 07, 08 and Action Plan items 10, 11, 95, 123, and 162.

ES&H Action Planning and Tracking

This will be coordinated with other Management subteam members and will concentrate on how ES&H improvements and corrective actions are planned and budgeted for. It will look into strategic as well as tactical planning and the tracking process employed to assure validated completion. This will address previous Findings M-01, and 03 and Action Plan items 9, 12, 13, 95, 123 and 162.

Interviews

In support of the data collection for these areas the following interviews are needed:

1. FSO person responsible for the Directive system (1 hr.).
2. FSO personnel official regarding staffing (1 hr.).
3. FSO person responsible for training (1 hr.).
4. FSO personnel involved in the CPAF process (2 hrs.) in addition to telephone interviews with OR personnel involved in CPAF process.
5. FSO personnel responsible for ES&H oversight (2 hrs.) plus telephone interviews of OR ES&H personnel.
6. FSO person responsible for ES&H tracking system (1 hr.).
7. WEMCO person responsible for ES&H staffing (1-2 hrs.).
8. WEMCO person responsible for the ES&H training program (1-2 hrs.).
9. WEMCO person responsible for the CPAF self-assessment process (1-2 hrs.).
10. WEMCO personnel responsible for the ES&H oversight program (2 hrs.).
11. WEMCO person responsible for implementing the Conduct of Operations program (1 hr.).
12. WEMCO person responsible for implementing the ES&H Self-Assessment program (1 hr.).
13. WEMCO person responsible for incorporation of ES&H into the planning and budgeting process (1 hr.).
14. WEMCO person responsible for ES&H Action Planning and tracking (1 hr.).

Appendix D

Environment, Safety, and Health Progress Assessment Schedule of Onsite Activities

Appendix D:

Environment, Safety, and Health (ES&H) Progress Assessment
Schedule of Onsite Activities

	Tue. 10/15/91	Wed. 10/16/91	Thurs. 10/17/91	Fri. 10/18/91	Sat. 10/19/91	Sun. 10/20/91
Bob Compton	• Interviews - H. Clawson Self-Assessment Process - W. Beckman Procedures Process	• Interviews - J. Neyer Self-Assessment - H. Clawson Root Cause Analysis - L. Russell Lab QA Issues - J. Curry QA, Audits, DRs - M. Boback Trending and Tracking - J. Weissenberg Auditing Process - J. Leist MIFP Process	• Interviews - M. Malone QA Procedures - J. Trujillo QA Issues - S. Dechter S/A, C/A, Cond. of Ops. Implementation Internal Audits - M. Townsend Self-Assessment - L. Tilney Document Control	• Interviews - J. Jalovec Surveillance Issues Admin. J. Simak - Surveillance Issues Admin. H. Daugherty SA Information - Uses Admin. J. Volpe SA Procedures, - Deficiency Identification	• Write Concerns	• Write Concerns
Tom Fitch	• Interviews - S. Coyle Waste Mgmt. Programs, Onsite Admin. - W. Quiader DOE Waste Characterization (WC) Programs and Groundwater Monitoring (GWM) - D. Burns Waste Minimization Programs Onsite - D. Rast WC and GWM	• Interviews - D. Rast WC and GWM - W. Quaider WC and GWM - W. Quaider, S. Coyle RCRA/CERCLA - L. Farmer GWM - B. Perkins WC, Sampling - P. Hopper Integration	• Interviews - J. Harmon WC and GWM - M. Cherry GWM of Well 1081 - D. Rast Drum Storage Practices - B. Perkins Drum Storage Practices • Site Tours - Site Tour, GWM Program - Tour Waste Areas	• Interviews - E. Skintik GWM Program Issues - S. Schneider WC and GWM - C. Waugh MEF Program Admin. - K. Nickel GWM Program Issues - J. Craig RCRA/CERCLA Integration - J. Curry SA Program	• Review Documents • Write Concerns	• Write Concerns

Schedule of Onsite Activities (continued)

	Tue. 10/15/91	Wed. 10/16/91	Thurs. 10/17/91	Fri. 10/18/91	Sat. 10/19/91	Sun. 10/20/91
Yardena Mansoor	Offsite	• Interviews - B. Shroff NEPA Staffing and Training, Site Interaction with Program Office B. Shroff (FO) and - Ed Skintik (FO) Site NEPA guidance Ed Schonegg - Oversight of WEMCO and NEPA Contractor, ASI J. Shinkle - Maint. CX Problem EM Delay	• Interviews - E. Schonegg and B. Shroff NEPA/CERCLA Integration - J. Wood RI/FS Teams, Consent Agmt. Schedules K. Hayes - EM Review Procedures, NEPA Document Tracking L. Rathgens and - E. Schonegg J. Martin - RI/FS Implementa- tion Plan, Consent Agmt. Schedules, NEPA/CERCLA Integration E. Schonegg - NEPA T-aining and Document Tracking System Demo. Conference call with • Program Office rep. re: Program Office/Site Interaction, Adequacy of Draft Documents from Site, Compliance with DOE Procedural Requirements	• Follow-Up As Needed • Report Writing		

Schedule of Onsite Activities (continued)

	Tue. 10/15/91	Wed. 10/16/91	Thurs. 10/17/91	Fri. 10/18/91	Sat. 10/19/91	Sun. 10/20/91
Dennis Owen	• Interviews - H. Bruce Site Inspection - C. Block P&T Responsibilities B. Ko - DOT Regulations	• Interviews - B. Perkins Handling, Packaging Procedures - L. Moody Areas of Responsibility - Oak Ridge Field Office Conference Call Oversight at FEMP	• Interviews - A. Elam Waste Minimization, Decon Facility - AEDO Simulated Transportation Incident - S. Dechter Transportation Documentation, Org. Responsibilities • Tour Facilities - Pad 1 - Plant 1 - Decon Shop - RCRA Warehouse - Receiving - Plant 6 - Plant 8 • Observe Waste Shipment Loading • Training Rept. QA	• Interviews - R. Mansou - H. Frederick Packaging and Shipping Training Requirements • Document Review	• Write Concerns	• Write Concerns

Schedule of Onsite Activities (continued)

	Tue. 10/15/91	Wed. 10/16/91	Thurs. 10/17/91	Fri. 10/18/91	Sat. 10/19/91	Sun. 10/20/91
Tim Pflaum	• Interviews - G. Westerbeck DOE Mgmt. Personnel - K. Solomon Project and Long-Range Planning - H. Clawson SA Performance Evaluation	• Interviews - J. Curry QA for Env. Monitoring - S. Schneider Compliance Mgmt./ Negotiations - H. Daugherty - Wayne Pasko Project Mgmt. and Planning - L. Farmer Radiological Monitoring - J. Byrne Radiological Monitoring - J. Chew Project Mgmt. and Planning - D. Duda Project Mgmt and A&E Services	• Interviews - W. Beckman Tracking Database Relations with Site Office - D. Hamilton Staffing Issues/ New Mission - L. Farmer - K. Hayes Staffing at Office and Hds. Training	• Interviews - S. Coyle Conduct/Mgmt. Interaction - P. Mohr Public Affairs - R. Johnson Project Mgmt., Tracking - T. Kwiatkowski Site Mgmt. Public Affairs - S. Dechter Maint. Site Infrastructure - P. Hopper Planning and Resource Mgmt. - J. Jalovec Interaction WEMCO/SO/EM - H. Daugherty Planning and Resource Mgmt.	• Write Concerns	• Write Concerns

Schedule of Onsite Activities (continued)

	Tue. 10/15/91	Wed. 10/16/91	Thurs. 10/17/91	Fri. 10/18/91	Sat. 10/19/91	Sun. 10/20/91
Frank Russo	• Interviews - R. Kasparek Orientation/ Scheduling - J. Craig DOE HQ & ORO Oversight - N. Glassey Tour of K-65 Silo Area	• Interviews - D. Nixon K-65 Finding No. 11 - P. Hopper CERCLA Program Organization Overview - S. Coyle CERCLA/RCRA Integration Admin. - Oak Ridge Oversight at FEMP	• Interviews - S. Peterman Administrative Record Review - J. Wood ASI Interface - E. Schonegg NEPA/CERCLA Integration - O. Vincent Mgmt. Admin. Records - L. Rathgens - E. Schonegg - J. Martin - B. Shroff - E. Skintik RI/FS Implementa- tion Plan, Consent Agmt. Schedules, NEPA/CERCLA Integration	• Interviews - J. Craig Environ. Restoration Program - Pat Hopper TT Findings E-09 & E-10 - J. Sattler CERCLA Oversight J. Jalovec - Closeout and Verification	• Write Concerns	• Write Concerns

Schedule of Onsite Activities (continued)

	Tue. 10/15/91	Wed. 10/16/91	Thurs. 10/17/91	Fri. 10/18/91	Sat. 10/19/91	Sun. 10/20/91
John Schinkle Darrell Huff	• Interviews - R. Helmes PSAR/FSAR/ULE/ Rotary Kiln Facility - J. Witzeman PSAR/FSAR/New D&D Facility - G. Hale Silo Modification, Plant 1 - J. Click D. Ames C. Beckett H. Fairman Status of Action Plans for Analytical Process/Design Criteria - H. Bruce Site Inspection - R. Farr Safety Analyses	• Interviews - J. Click Hazard Identification Process/Preliminary Screening Process/ Existing Operation SAR/OSR Dvlpmnt./ inspect Facilities/Ops for selected SARs/Westinghouse Safety Analysis Committee Corp. H&S Bldg. #229 - C. Beckett Safety Assessments/ OSR Dvlpmnt./ Westinghouse Safety Analysis Committee - E. Fairman ULE Considerations - D. Nixon Silo Modification/ K-65 or Plant 1 - R. Johnson WEMCO Mgmt. Considerations - B. Den Herder Preoperational Readiness Review Process	• Interviews - S. Wentzle Industrial Safety - G. Voyles w/Darrell Hull, Cynthia, Safety Analysis Validation, Rotary Kiln Facility - J. Click SAR Guidance and Review Process - R. Hansen DOE Oversight - J. Simak SAR Review Process - H. Fairman Power Distribution Project	• Interviews - J. Click Nuclear Facility Safety Committee J. Volpe - OSHA S. Wentzel - OSHA J. Jalovec - Closeout of TT Findings Env. Branch - Sampling Personnel	• Write Concerns	• Write Concerns

Schedule of Onsite Activities (continued)

	Tue. 10/15/91	Wed. 10/16/91	Thurs. 10/17/91	Fri. 10/18/91	Sat. 10/19/91	Sun. 10/20/91
David Schweller	• Interviews - R. Hansen Directives/ Staffing/CPAF Process on the Contractor - S. Dechter J. Cullen Implementation of Conduct of Operations - W. Winn Admin.	• Interviews - J. Jalovee DOE Role of ES&H Oversight/DOE Tracking of WEMCO/DOE Commitments J. Volpe - D. Hamilton Staffing of ES&H Personnel, Skill Mix J. Volpe - W. Beckman W. Brown Tracking of Corrective Action for ES&H Items H&S Building OR Conference Call - Oversight	• Interviews - E. Savage D. Hamilton Compliance, Safety & Health Issues - W. Beckman N. Alhadeff Process for the CPAF Program - H. Clawson Admiral's Self-Assessment Program J. Volpe - J. Click Health & Safety	• Interviews - P. Polis Training Systems and Records - B. Den Herder Planning and Budgeting, ES&H - T. Friel Planning and Budgeting, ES&H J. Patel - ES&H Planning	• Write Concerns	• Write Concerns

Schedule of Onsite Activities (continued)

	Tue. 10/15/91	Wed. 10/16/91	Thurs. 10/17/91	Fri. 10/18/91	Sat. 10/19/91	Sun. 10/20/91
Murari Sharma	• Interviews - S. Hinnefeld J. Jalovec M. Crotzer Self Evaluation, DOE Oversight, Appraisals, Surveillances - A. Rogers Training - Technician Interviews L. Rutherford A. Hobbs H. Fuller W. Johns OJT Training RWPs Containments Posting Verification	• Interviews - G. Calhoun Source Control - S. Ferguson S. Danielson Laundry - A. Rogers Containment RWP Procedure - A. Colquhoun D. Spahr S. Hinnefeld Posting Verification Containments - D. Wells J. Neton In Vivo	• Interviews - D. Fleming Asbestos Control - S. Hinnefeld J. Jalovec Closing Loop on TT Action Items - M. McCullough P. Beirne M. Galper Asbestos Control G. Voiles - Rotary Kiln Tour - Site Tour with ES&H Team	• Interviews D. Wells Dosimetry - J. Stokes External Dosimetry J. Neton - Internal Dosimetry E. Hopstetter C. Fletcher - Calibration Lab. Follow-Up Radiation - Protection Issues Verification of Radiation Protection - Issues/Review of Calibration Lab	• Write Concerns	• Write Concerns
Lynne Day Admin.	• Orientation Meeting • Safety Meeting • Meeting w/Admin. Staff	• Training (onsite IPS) • Document Prod. - Acronyms - Bios - Contacts/Interviews - Site Docs. - Causal Factors	• Training (onsite IPS) • Document Prod. - Acronyms - Bios - Contacts/Interviews - Site Docs.	• Training (IPS) • Document Prod. - Draft Concerns - Acronyms - Bios - Contacts/Int. - Site Docs.	• Draft Concerns • Editing	• Draft Concerns • Editing

Schedule of Onsite Activities (continued)

	Mon. 10/21/91	Tues. 10/22/91	Wed. 10/23/91	Thurs. 10/24/91	Fri. 10/25/91
Team Members	Write concerns. Document and Interview Logs. Follow-Up interviews. Document review. Subteam review. Redraft findings. Adt'l review. Preparation of Overview Sections.	Submitted concerns to site. Prepared materials for section 2. References, documents, interviews. Discussion and Strawman review of key findings and root causes.	Inc. of auditee comments. Follow-up interviews as Needed. Root Cause and Key finding finalization. Exec. Summary prep. Team Review. QA bios, doc. list, interview lists, assessment plan. Completion of Section 2 and 3. Receipt of comments. Incorporation into report. Final, Section 2.	QA of authors materials. Final changes to report. Discussion and preparation of briefing material. Received comments on Section 2. Incorporated comments into report, as appropriate. Provide Exec Summary to site. Receipt of Comments. Incorporate comments into reports, as appropriate.	Closeout with auditees. Critique from team and auditees. Departure.
Admin.	Draft Concerns. Draft Overviews.	Prepared Concers for submittal to site for technical accuracy review. QA and final report production on appendix.	Prepared Overviews, Section 2 and 3 of report. Incorporated WEMCO and DOE Comments. Met w/W. Beckman, re: report production requirements.	Incorporation of comments into report. Final Report Preparation.	Closeout.

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Appendix E

List of Contacts and Interviews Conducted by the ES&H Progress Assessment Team

Appendix E:

List of Contacts and Interviews
Conducted by the ES&H Progress Assessment Team

Ref. No.	Date	Auditor	Organization	Position	Topic
Environment					
I-E-1	10/15/91	F. Russo	WEMCO	EM-Env. Restoration, RMI Site Manager	Gen. Site Orientation/Scheduling
I-E-2	10/15/91	F. Russo	DOE	Branch Chief	HQ and OR Oversight
I-E-3	10/15/91	F. Russo	WEMCO	OU4 Staff Specialist	Tour of K-65 Silos
I-E-4	10/15/91	T. Fitch	WEMCO	OP-Adm., Mgr., Environmental Management	Waste Characterization
I-E-5	10/15/91	T. Fitch	DOE	Manager, Waste Management Programs	Waste Characterization and Groundwater Monitoring (GWM)
I-E-6	10/15/91	T. Fitch	DOE	RCRA Program Manager	Waste Characterization and GWM
I-E-7	10/15/91	T. Fitch	WEMCO	EM-Waste Management, Mgr., Radioactive Waste & Minimization Programs.	Waste Characterization
I-E-8	10/16/91	T. Fitch	DOE	Mgr., RCRA Programs	Waste Characterization & GWM
I-E-9	10/16/91	T. Fitch	DOE	Branch Chief, Env. Compliance & Waste Mgmt.	Waste Characterization & GWM
I-E-10	10/16/91	T. Fitch	WEMCO	SS-Fac./Waste Mgmt., Area Supervisor-Prod.	Waste Characterization, Sampling
I-E-11	10/16/91	T. Fitch	WEMCO	OP-Adm., Mgr., Environmental Mgmt.	RCRA/CERCLA

List of Contacts and Interviews (continued)

Ref. No.	Date	Auditor	Organization	Position	Topic
Environment (continued)					
I-E-12	10/16/91	T. Fitch	WEMCO	EM-Adm., Technical Program Manager	Integration
I-E-13	10/16/91	T. Fitch	DOE	Mgr., RCRA Programs	Integration
I-E-14	10/16/91	T. Fitch	WEMCO	EM-Adm., Mgr., Environmental Monitoring	Groundwater Monitoring
I-E-15	10/16/91	F. Russo	Oak Ridge Field Office	N/A	Oak Ridge Oversight at FEMP
I-E-16	10/16/91	F. Russo	WEMCO	EM-Env. Restoration, Operable Unit 4 Manager	Closure of TT Actions for K-65 Silos
I-E-17	10/16/91	F. Russo	WEMCO	EM-Adm., Technical Program Manager	Environmental Restoration Organization/Project Mgmt.
I-E-18	10/16/91	F. Russo	WEMCO	OP-Adm., Mgr., Environmental Management	RCRA/CERCLA Integration
I-E-19	10/16/91	Y. Mansoor	DOE	Environmental Engineer	NEPA Staffing & Training, EM Review, Guidance, Schedules for RI/FS-EIS
I-E-20	10/16/91	Y. Mansoor	DOE	Environmental Engineer	EM Coordination, Guidance, Schedules for RI/FS-EIS
I-E-21	10/16/91	Y. Mansoor	WEMCO	EC&QA-Sitewide Compl., Mgr., NEPA/Emission Reporting	NEPA Contractor Oversight, WEMCO Staffing, Site NEPA Guidance
I-E-22	10/16/91	Y. Mansoor	DOE	Director of Safety Programs, Div., Tiger Team Member	Maintenance CX Problem for Replacement of Electrical System - EM Delay

List of Contacts and Interviews (continued)

Ref. No.	Date	Auditor	Organization	Position	Topic
Environment (continued)					
I-E-23	10/17/91	T. Fitch	WEMCO	EM-Environmental Monitoring, Technologist III	Observed GWM of Well 1081
I-E-24	10/17/91	T. Fitch	WEMCO	EM-Waste Mgmt., Hazardous Waste Program Manager	Waste Characterization & GWM
I-E-25	10/17/91	T. Fitch	DOE	RCRA Program Manager	Review of Drum Storage Practices
I-E-26	10/17/91	T. Fitch	WEMCO	SS-Fac./Waste Mgmt., Area Supervisor-Production	Review of Drum Storage Practices
I-E-27	10/17/91	Y. Mansoor	ASI	Project Director	RI/FS Teams, Document Review, Consent Agreement Schedules, Future Problems Anticipated
I-E-28	10/17/91	Y. Mansoor	EM-424	FEMP Branch Chief	EM Review Procedures, NEPA Document Tracking
I-E-29	10/17/91	Y. Mansoor F. Russo	WEMCO	EC&QA-Sitewide Comp., Sr. Engineer EC&QA-Sitewide Comp., Mgr., NEPA/Emission Reporting	Status of RI/FS Implementation Plan, Consent Agreement Schedules, NEPA/CERCLA Integration, Document Review
I-E-30	10/17/91	Y. Mansoor F. Russo	ASI	RI/FS Manager	Status of RI/FS Implementation Plan, Consent Agreement Schedules, NEPA/CERCLA Integration, Document Review
I-E-31	10/17/91	Y. Mansoor F. Russo	DOE	Environmental Engineers	Status of RI/FS Implementation Plan, Consent Agreement Schedules, NEPA/CERCLA Integration, Document Review

List of Contacts and Interviews (continued)

Ref. No.	Date	Auditor	Organization	Position	Topic
Environment (continued)					
I-E-32	10/17/91	Y. Mansoor	WEMCO	EC&QA-Sitewide Comp., Mgr., NEPA/Emission Reporting	Demonstrated PC based Interactive NEPA Training and NEPA Document Tracking System
I-E-33	10/17/91	F. Russo	DOE/FO	OU1 Mgr., DOE Administrative Record Contact	Management of Administrative Records
I-E-34	10/17/91	F. Russo	WEMCO	EM-Env. Restoration, Mgr., Env. Rest. Program Control	Management of Administrative Records
I-E-35	10/17/91	F. Russo	ASI	RIFS Project Manager	ASI Interface with WEMCO and DOE
I-E-36	10/17/91	F. Russo	WEMCO	EC&QA-Sitewide Compl., Mgr. NEPA/Emission Reporting	NEPA/CERCLA Integration
I-E-37	10/18/91	F. Russo	DOE/FO	Branch Chief, Environmental Restoration	RIFS Project Management
I-E-38	10/18/91	F. Russo	WEMCO	EM-Adm., Technical Program Manager	RIFS Project Management
I-E-39	10/18/91	F. Russo	WEMCO	EC&QA-OU3 Compl., Mgr., Regulatory Integration	CERCLA Oversight
I-E-40	10/18/91	F. Russo	DOE/FO	Health Physicist	Closeout and Verification of TT Actions
I-E-41	10/18/91	T. Fitch	WEMCO	EC&QA-OU3 Compliance, Technologist III	Groundwater Monitoring Program Issues
I-E-42	10/18/91	T. Fitch	DOE	Fernald Office	Groundwater Monitoring Program Issues

List of Contacts and Interviews (continued)

Ref. No.	Date	Auditor	Organization	Position	Topic
Environment (continued)					
I-E-43	10/18/91	T. Fitch	DOE/FO	Branch Chief, Environmental Restoration	RCRA/CERCLA Integration
I-E-44	10/18/91	T. Fitch	WEMCO	EC&QA-EC Adm., Regulatory Affairs Mgr.	Waste Characterization and Groundwater Management
I-E-45	10/18/91	T. Fitch	WEMCO	EC&QA-OU3 Compl., Mgr., Facilities & Materials Evaluation	MEF Program Administration
I-E-46	10/18/91	T. Fitch	WEMCO	EC&QA- Mgr., Environmental QA	Self-Assessment Program
Safety					
I-S-1	10/15/91	J. Schinkle	WEMCO	PM&A-Project Mgt., Mgr., PRI & PRP	PSAR/FSAR/Design Criteria ULE & Rotary Kiln Facility
I-S-2	10/15/91	D. Huff/ J. Schinkle	WEMCO	PM&A-Project Mgt., Engineer II	PSAR/FSAR/Design Criteria New D&D Facility
I-S-3	10/15/91	D. Huff/ J. Schinkle	WEMCO	IRS&T-Adm., Mgr., Nuclear, Fire & System Safety IRS&T-Adm., Mgr., Safety & Training Support PM&A-A&RA, Principal Engineer PM&A-Project Mgt., Sr. Staff Engineer	Status of Action Plans for Analytical Process/Design Criteria
I-S-4	10/15/91	D. Huff	WEMCO	PA&C-Public Affairs, Sr. Community Relations. Coord.	Site Inspection
I-S-5	10/15/91	D. Owen	WEMCO		Site Orientation
I-S-6	10/15/91	D. Owen	WEMCO	SS-Mfg./Adm., Mgr., Transp. Reg. Compliance	P&T Responsibilities

List of Contacts and Interviews (continued)

Ref. No.	Date	Auditor	Organization	Position	Topic
Safety (continued)					
I-S-7	10/15/91	D. Owen	WEMCO	EC&QA-OU3 Compliance, Mgr. Toxic & Solid Waste Programs.	DOT Regulations
I-S-8	10/16/91	D. Huff J. Schinkle	WEMCO	IRS&T-Adm., Mgr., Nuclear, Fire & System Safety	SAR Process; Independent Safety Review Process
I-S-9	10/16/91	D. Huff J. Schinkle	WEMCO	EM-Env. Restoration, Operable Unit Manager	K-65 Silos
I-S-10	10/16/91	D. Huff J. Schinkle	WEMCO	PM&A-Adm., Mgr., Site Planning & Integration	Project Management
I-S-11	10/16/91	D. Huff	WEMCO	SS-Adm., Program Manager	Operational Readiness Reviews
I-S-12	10/17/91	J. Schinkle	WEMCO	IRS&T-Adm., Mgr. Nuclear, Fire & System Safety	SAR Guidance and Review Process
I-S-13	10/17/91	D. Huff J. Schinkle	DOE	Fernald Office	DOE Oversight
I-S-14	10/17/91	D. Huff J. Schinkle	DOE	Fernald Office	SAR Review Process
I-S-15	10/17/91	D. Huff M. Sharma J. Schinkle	Subcontractor	Startup Engineer - Rotary Kiln Facility	Inspection and Review of Startup Process for New Facility
I-S-16	10/17/91	J. Schinkle	WEMCO	PM&A-Proj. Mgt., Sr. Staff Engineer	Power Distribution Project
I-S-17	10/18/91	J. Schinkle D. Huff	WEMCO	IRS&T-Adm., Mgr., Nuclear, Fire and System Safety	W GOCO Nuclear Facility Safety Committee
I-S-18	10/18/91	J. Schinkle D. Huff	WEMCO	OP-Adm., Vice President, Industrial, Radiological Safety and Training	OSHA

List of Contacts and Interviews (continued)

Ref. No.	Date	Auditor	Organization	Position	Topic
Safety (continued)					
I-S-19	10/18/91	J. Schinkle D. Huff	WEMCO	IRS&T-Adm., Mgr., Safety Eng. and Fire Services	OSHA
I-S-20	10/18/91	D. Huff	DOE/FO	Health Physicist	Closeout of Tiger Team Findings
I-S-21	10/15/91	J. Schinkle D. Huff	DOE	Fernald Office	Site Office Review of Safety Analyses
I-S-22	10/16/91	D. Huff	Oak Ridge Field Office	N/A	Conference Call on OR Oversight at FEMP
I-S-23	10/16/91	D. Owen	WEMCO	Area Supervisor, Shipping Coordination	Areas of Responsibility
I-S-24	10/16/91	D. Owen	Waste Shipping and Storage	Area Supervisor	Handling, Packaging Procedures
I-S-25	10/17/91	D. Owen	LLW Handling	Area Supervisor	Waste Minimization, Decon Facility
I-S-26	10/17/91	D. Owen	WEMCO	Assist Emergency Duty Officer, Site Services	Simulated Transportation Incident
I-S-27	10/17/91	D. Owen	WEMCO	Manager, Site Services	Transportation Documentation, Org. Responsibilities
I-S-28	10/17/91	D. Owen	WEMCO	Field Coordinator, Shipping and Support Services	Observe Waste Shipment Loading
I-S-29	10/17/91	D. Owen	WEMCO	Area Supervisor, Shipping and Support Services	Weekly Transportation Meeting
I-S-30	10/18/91	D. Owen	WEMCO	Compliance Training Coordinator	Packaging & Shipping Training Requirements

List of Contacts and Interviews (continued)

Ref. No.	Date	Auditor	Organization	Position	Topic
Health					
I-H-1	10/15/91	M. Sharma	WEMCO	IRS&T-Adm., Mgr. Radiological Safety	Self Evaluation, DOE Oversight, Appraisals
I-H-2	10/15/91	M. Sharma	DOE	Health Physicist	DOE Oversight
I-H-3	10/15/91	M. Sharma	WEMCO	IRS&T-Rad. Safety, Technologist I	Training, RWPs
I-H-4	10/15/91	M. Sharma	WEMCO	IRS&T-Rad. Safety, Sr. EM Technician	Training, RWPs
I-H-5	10/15/91	M. Sharma	WEMCO	IRS&T-Rad. Safety, EM Technician IV	Training, RWPs
I-H-6	10/15/91	M. Sharma	WEMCO	IRS&T-Rad. Safety, Sr. EM Technician	Training, RWPs
I-H-7	10/15/91	M. Sharma	WEMCO	IRS&T-Rad. Safety, Sr. EM Technician	Training, RWPs
I-H-8	10/15/91	M. Sharma	WEMCO	IRS&T-Rad. Safety/Adm., Mgr., Radiological Engineering	Self Evaluation, Appraisals
I-H-9	10/16/91	M. Sharma	WEMCO	IRS&T-Rad. Safety/Adm., Technologist II	Source Control
I-H-10	10/16/91	M. Sharma	WEMCO	IRS&T-Rad. Safety/Tech. Supervisor IRS&T-Rad. Engineering Tech. II	Laundry
I-H-11	10/16/91	M. Sharma	WEMCO	IRS&T-Rad. Safety, Technologist I	RWP Procedures
I-H-12	10/16/91	M. Sharma	WEMCO	IRS&T-Rad. Safety/Tech., Supervisor, Radiological Safety IRS&T-Rad. Safety/Tech., Supervisor, Radiological Safety	Posting/Contaminants

List of Contacts and Interviews (continued)

Ref. No.	Date	Auditor	Organization	Position	Topic
Health (continued)					
I-H-13	10/17/91	M. Sharma	WEMCO	IRS&T-IH&S, Manager, Industrial Hygiene	Asbestos Control
I-H-14	10/17/91	M. Sharma	WEMCO	Asbestos Program Coordinator EM-CLN Air/Water, Mgr., Clean Air Programs EM-ADM, Mgr., Clean Air/Water Programs	Asbestos Control
I-H-15	10/17/91	M. Sharma	WEMCO	Engineer	Rotary Kiln Tour
I-H-16	10/18/91	M. Sharma	WEMCO	IRS&T-Adm., Mgr. Radiological Safety	Follow-Up Radiation Protection Issues
I-H-17	10/18/91	M. Sharma	WEMCO	IRS&T-Dosimetry, Mgr., Dosimetry	Dosimetry
I-H-18	10/18/91	M. Sharma	WEMCO	IRS&T-Dosimetry, Technologist I	External Dosimetry
I-H-19	10/18/91	M. Sharma	WEMCO	IRS&T-Dosimetry, Senior Staff Scientist	Internal Dosimetry
I-H-20	10/18/91	M. Sharma	WEMCO	IRS&T-Instrument., Technologist II IRS&T-Instrument., Technologist II	Calibration Laboratory
Management					
I-M-1	10/15/91	T. Pflaum	DOE	Deputy Manager	Management Organization Chain of Command
I-M-2	10/15/91	T. Pflaum	WEMCO	PM&A. Mgr., Construction Project Engr. Acquisition	Project Planning, Long Range Planning
I-M-3	10/15/91	T. Pflaum	WEMCO	PA&C-Performance Assessment, Mgr., Performance Assessment	Self-Assessment, Performance Evaluation

List of Contacts and Interviews (continued)

Ref. No.	Date	Auditor	Organization	Position	Topic
Management (continued)					
I-M-4	10/15/91	D. Schweller	DOE	Asst. Mgr. Construction Engineering & Site Support	Directive System, CPAF, Staffing, Training
I-M-5	10/15/91	D. Schweller	WEMCO	OP-Adm., Mgr. Site Services SS-Maint. Adm., Mgr. Maintenance Information Systems	Guidance and Communications re: Conduct of Operations
I-M-6	10/15/91	D. Schweller	DOE	Adm. Officer	Staffing, Directives, Training, CPAF, Planning/Budgeting
I-M-7	10/16/91	D. Schweller	OR	Various	CPAF, ES&H Oversight, Staffing, Self-Assessment, OR/FO MOA, Closure/Validation, Directive System, ES&H Issues
I-M-8	10/16/91	D. Schweller	DOE	Health Physicist Industrial Hygienist	Appraisal/Oversight Activities, Safety Doc. Review, Tracking, Trending, Root Cause
I-M-9	10/16/91	D. Schweller	WEMCO	OP-Adm., Vice President, Industrial, Radiological Safety & Training HR-Adm., Mgr., Staffing & Employee Developement.	S&H Staffing, Recruitment, Retention, Training, Development, Needs Analysis
I-M-10	10/16/91	D. Schweller	WEMCO	OP-Adm., Vice President, Industrial, Radiological Safety & Training PA&C-Rpt. & Doc. Cont., Mgr., Reporting & Document Control IRS&T-Adm., Technologist III	Commitment Control System, Mgmt. Reporting, Trending, Tracking, Prioritization
I-M-11	10/16/91	T. Pflaum	WEMCO	EC&QA-EC Adm., Mgr., Env. QA	QA for Environmental Monitoring
I-M-12	10/16/91	T. Pflaum	WEMCO	EM-Adm., Mgr., Env. Monitoring	Radiological Monitoring, FEMP

List of Contacts and Interviews (continued)

Ref. No.	Date	Auditor	Organization	Position	Topic
Management (continued)					
I-M-13	10/16/91	T. Pflaum	WEMCO	EM-Env. Monitoring, Sr. Engineer	Radiological Monitoring, FEMP
I-M-14	10/16/91	T. Pflaum	WEMCO	EC&QA-Adm., Regulatory Affairs Mgr.	Compliance Management/Negotiations
I-M-15	10/16/91	T. Pflaum	WEMCO	OP-Adm., Executive Vice President	
I-M-16	10/16/91	T. Pflaum	DOE	Project Officer, DOE FEMP Site	Project Management & Planning
I-M-17	10/16/91	T. Pflaum	Theta	Project Management	Project Management & Interrelation to A&E
I-M-18	10/16/91	T. Pflaum	Parsons A&E	Site Contracts Officer	Project Management & A&E Services at FEMP
I-M-19	10/17/91	D. Schweller	WEMCO	OP-Adm., Mgr. Env. Comp. & QA HR-Adm., Mgr. Staffing & Employee Developement	Environmental Staffing, Recruitment, Retention, Training, Development, Needs Analysis, Oversight
I-M-20	10/17/91	D. Schweller	WEMCO	PA&C-Rptg. & Doc. Cont., Mgr., Reporting & Doc. Control PA&C-Rptg. & Doc. Contl, Administrative Analyst	CPAF Process
I-M-21	10/17/91	D. Schweller	WEMCO	PA&C-Perf. Assessment, Mgr., Performance Assessment	Self-assessment, Trending, Reporting
I-M-22	10/17/91	D. Schweller	WEMCO	OP-Adm., Vice President, Industrial, Radiological Safety & Tra'ning IRS&T-Adm., Mgr. Nuclear, Fire & System Safety	Safety and Health Oversight Activities

List of Contacts and Interviews (continued)

Ref. No.	Date	Auditor	Organization	Position	Topic
Management (continued)					
I-M-23	10/17/91	T. Pflaum	WEMCO	PA&C-Reporting & Doc. Control, Manager, Reporting & Doc. Control	Tracking Data Base Relations with Site Office
I-M-24	10/17/91	T. Pflaum	WEMCO	EM-Administration, Manager, Environmental Monitoring	
I-M-25	10/17/91	T. Pflaum	EM-424	Chief FEMP Branch in EM-40	Staffing at Office and Hds. Training
I-M-26	10/17/91	T. Pflaum	WEMCO	HR-Adm, Manager, Staffing & Employee Development	Staffing Issues Relative to New Mission
I-M-27	10/15/91	R. Compton	WEMCO	PA&C-Perf. Assessment, Mgr., Performance Assessment	Self-Assessment Program, Corrective Action Systems, Root Cause Analysis, Performance Indicators/Tracking/Trending
I-M-28	10/15/91	R. Compton	WEMCO	PA&C-Rptg. & Doc. Control, Mgr., Reporting and Document Control	Site Procedure System
I-M-29	10/16/91	R. Compton	WEMCO	PA&C-Perf. Assessment, Mgr., Performance Assessment	Root Cause Analysis
I-M-30	10/16/91	R. Compton	WEMCO	SS-Analytical, Mgr., Analytical Lab	Self-Assessment, Procedures, Lab QA/QC
I-M-31	10/16/91	R. Compton	WEMCO	EC&QA-Site QE/Adm., Research Technologist	Lab QA
I-M-32	10/16/91	R. Compton	WEMCO	EC&QA-EC Adm., Manager, Environmental QA	QA, DCARs, Audits, Surveillances

List of Contacts and Interviews (continued)

Ref. No.	Date	Auditor	Organization	Position	Topic
Management (continued)					
I-M-33	10/16/91	R. Compton	WEMCO	PA&C-Perf. Assessment, Principal Engineer	Performance Indicators, Tracking, Trending
I-M-34	10/16/91	R. Compton	WEMCO	PA&C-Perf. Assessment, Engineer II	Audits
I-M-35	10/16/91	R. Compton	WEMCO	PA&C-Perf. Assessment, Sr. Staff Engineer	Management Inspection of Facilities Program
I-M-36	10/17/91	R. Compton	WEMCO	PA&C, Technical Writer	Document Control
I-M-37	10/17/91	R. Compton	WEMCO	EC&QA-System/Support, Sr. Engineer	QA Surveillances
I-M-38	10/17/91	R. Compton	WEMCO	EC&QA-EC Adm., Mgr., Quality Operations	Audits, DCARs
I-M-39	10/17/91	R. Compton	WEMCO	OP-Adm., Mgr., Site Services	Self-Assessment, Procedures, Conduct of Operations
I-M-40	10/18/91	R. Compton	WEMCO	OP-Adm., Vice President, Industrial, Radiological Safety and Training	Self-Assessment, Procedures, Deficiency Identification
I-M-41	10/18/91	R. Compton	DOE/FO	Health Physicist	FO Oversight Activities
I-M-42	10/18/91	R. Compton	DOE/FO	Industrial Hygienist	FO Oversight Activities
I-M-43	10/18/91	R. Compton	WEMCO	OP-Adm., Executive Vice President	Self-Assessment, Root Cause/Corrective Actions
I-M-44	10/18/91	D. Schweller	WEMCO	IRS&T-Adm., Mgr., Centralized Training	WEMCO Training Program

List of Contacts and Interviews (continued)

Ref. No.	Date	Auditor	Organization	Position	Topic
Management (continued)					
I-M-45	10/18/91	D. Schweller	WEMCO	PM&A-Site Intgr., Sr. Staff Engineer	ES&H Planning (Short and Long Range)
I-M-46	10/18/91	D. Schweller	WEMCO	CONTR-Adm., Mgr., Financial Planning & Operations	ES&H Planning and Budgeting
I-M-47	10/18/91	T. Pflaum	WEMCO	OP-Adm., Mgr., Environmental Management	Conduct of Management Interaction
I-M-48	10/18/91	T. Pflaum	WEMCO	OP-Adm., Mgr., Performance Assessment & Communications	Site Office Involvement with Public Affaris
I-M-49	10/18/91	T. Pflaum	DOE	Public Affairs	Site Management of Public Affairs
I-M-50	10/18/91	T. Pflaum	WEMCO	OP-AM, Mgr., Site Services	Maintenance of Site Infrastructure
I-M-51	10/18/91	T. Pflaum	DOE/FO	Health Physicist	Interaction between WEMCO/Site Office/EM
I-M-52	10/18/91	T. Pflaum	WEMCO	PM&A-ADM, Mgr., Site Planning & Integration	Project Management, Tracking, Accountability
I-M-53	10/18/91	T. Pflaum	WEMCO	EM-Adm., Technical Program Manager	Planning and Resource Management
I-M-54	10/18/91	T. Pflaum	WEMCO	OP-Adm., Executive Vice President	Planning and Resource Management

Appendix F

List of Site Documents Reviewed by the ES&H Progress Assessment Team

Appendix F:

List of Site Documents Reviewed by the ES&H Progress Assessment Team

Doc. No.	Title/Description	Author	Organization	Reviewer	Doc. Date
Environment					
D-E-1	Plan of the Day (9/31)	Waste Management	WEMCO	T. Fitch	9/30/91
D-E-2	Groundwater Quality Assessment Program Plan (Rev. 2)	EM	WEMCO	T. Fitch	4/91
D-E-3	Groundwater Protection Management Program Plan	Waste Management	WEMCO	T. Fitch	5/90
D-E-4	Original Consent Decree	Southern District of Western Ohio	US District Court	T. Fitch	12/2/88
D-E-5	Proposed Amended Consent Decree	Southern District of Western Ohio	US District Court	T. Fitch	12/4/90
D-E-6	Environmental Restoration and Waste Management Plan	Waste Management	WEMCO	T. Fitch	9/11/91
D-E-7	Drum Management Plan	Waste Management	WEMCO	T. Fitch	8/90
D-E-8	Completing the Material Evaluation Form Document No. 5502-0002	Waste Management	WEMCO	T. Fitch	6/20/91
D-E-9	Environmental Support Automated Commitment Tracking System	Performance Assessment	WEMCO	F. Russo	10/1/91
D-E-10	Request for Approval of Extending and Closing DOE Commitments (Revised Methods)	W. Britton	WEMCO	F. Russo	8/16/91

List of Site Documents Reviewed (continued)

Doc. No.	Title/Description	Author	Organization	Reviewer	Doc. Date
Environment (continued)					
D-E-11	Monthly Sampling Results of K-65 Decant Sump Tank	R. Vogel	WEMCO	F. Russo	2/7/90
D-E-12	TTA 43 - Initiate CFR for K-65 Silos	S. Shirley	WEMCO	F. Russo	3/22/90
D-E-13	K-65 Probablistic Risk Assessment	W. Britton	WEMCO	F. Russo	9/28/90
D-E-14	Transmittal of K-65 EE/GA to EPA	R. Davis	DOE/FO	F. Russo	7/31/90
D-E-15	Request for Closure of TTA 158	P. Mohr	WEMCO	F. Russo	5/15/91
D-E-16	File Verification Checklist Action #150	D. Nixon	WEMCO	F. Russo	Unknown
D-E-17	File Verification Checklist Action #154	D. Nixon	WEMCO	F. Russo	Unknown
D-E-18	File Verification Checklist Action #611	D. Nixon	WEMCO	F. Russo	Unknown
D-E-19	Environmental Restoration Schedule Report OU-1	K. Russo	WEMCO	F. Russo	10/7/91
D-E-20	FMPC Administrative Record Management Plan	WEMCO	WEMCO	F. Russo	12/89
D-E-21	National Environmental Policy Act (NEPA) Compliance Plan	WEMCO	WEMCO	Y. Mansoor	10/4/91
D-E-22	National Environmental Policy Act (NEPA) Program	WEMCO	WEMCO	Y. Mansoor	10/1/91
D-E-23	National Environmental Policy Act (NEPA) Document Process	WEMCO	WEMCO	Y. Mansoor	10/1/91
D-E-24	Position Description (DOE F 3511.1) Remediation Project Engineer/Remediation Scientist	K. Hayes	DOE/EM-424	Y. Mansoor	9/3/91
D-E-25	Consent Agreement for FFMP	DOE/EPA	DOE/EPA	Y. Mansoor	10/20/91
D-E-26	September NEPA Summary Report	WEMCO/DOE	WEMCO/DOE	Y. Mansoor	10/02/91

List of Site Documents Reviewed (continued)

Doc. No.	Title/Description	Author	Organization	Reviewer	Doc. Date
Environment (continued)					
D-E-27	NEPA Project Status System by Title, by Number, and Current Status	WEMCO	WEMCO	Y. Mansoor	10/14/91
D-E-28	Review Time for NEPA Documents (based on D-E-30)	WEMCO	WEMCO	Y. Mansoor	Undated - implicitly 10/01/91
D-E-29	Document Review & Comment Distribution Process	ASI	ASI	Y. Mansoor	Undated
D-E-30	EQP-1.01 Environmental Quality Procedure Index	WEMCO	WEMCO	Y. Mansoor	8/30/91
D-E-31	Abbreviations, Acronyms & Definitions EQP-1.05	WEMCO	WEMCO	Y. Mansoor	5/30/91
D-E-32	EQP-16.04 EC/QASP - NEPA Monitoring System	WEMCO	WEMCO	Y. Mansoor	8/31/91
D-E-33	EQP-16.03 EC/QASP - NEPA Document Tracking System	WEMCO	WEMCO	Y. Mansoor	8/31/91
D-E-34	CX for 1991 Maintenance (CATEX #333)	E. Schonegg	WEMCO	Y. Mansoor	2/22/91
D-E-35	Procedure for Establishment & Maintenance of Administrative Records at the FEMP	DOE	DOE	F. Russo	10/9/91
D-E-36	Establishment and use of Administrative Record - TT Action No. 20	P. Hopper	WEMCO	F. Russo	8/15/90
D-E-37	AR-FEMP - Transmittal of Audit Findings at EPA - Region V	J. Craig	DOE	F. Russo	2/6/91
D-E-38	Document Change Request No. 51, Rev. B	Wood	ASI	F. Russo	7/1/91
D-E-39	Volume V QAPP, Revision 3	DOE	DOE	F. Russo	3/1/88
D-E-40	Commitment Status Report	WEMCO	WEMCO	F. Russo	10/15/91

List of Site Documents Reviewed (continued)

Doc. No.	Title/Description	Author	Organization	Reviewer	Doc. Date
Environment (continued)					
D-E-41	Headquarters Document Review Protocol	Whitfield	EM-40	F. Russo	7/31/91
D-E-42	FY92 Workplan - Funded & Unfunded Scope	W. Britton	WEMCO	F. Russo	8/30/91
D-E-43	Consent Agreement Commitment	Unknown	WEMCO	F. Russo	10/16/91
D-E-44	Status Summary - Sitewide Removal Site Evaluation Status Report	Unknown	WEMCO	F. Russo	5/15/91
D-E-45	Project Manager's Project Report	P. Hopper	Environmental Restoration	F. Russo	10/2/91
D-E-46	Consent Agreement Commitment Status	Unknown	WEMCO	F. Russo	10/9/91
D-E-47	Project Order Status	Unknown	WEMCO	F. Russo	10/16/91
D-E-48	Waste Stream Flow Diagrams	P. Hopper	DOE & WEMCO	Y. Mansoor	Undated
D-E-49	Fernald Project Update	Unknown	WEMCO	Y. Mansoor	10/91
D-E-50	Initiate Screening of Alternatives for OU-4	U.S. DOE, OR	DOE	F. Russo	10/90
D-E-51	K-65 Removal Action	Unknown	BechTel National	F. Russo	7/90
D-E-52	Draft - Fernald Environmental Management Project Plan	S. Peterman	WEMCO/DOE	F. Russo	9/91
D-E-53	WEMCO Integrating Responsibilities	Westerbeck	DOE	F. Russo	3/15/91
D-E-54	Periodic Re-Evaluation of Newly Generated Wastes	R. Gardner	WEMCO	T. Fitch	10/8/91
D-E 55	Revised FMPC Part A Permit Application Revision 10	E. Savage	WEMCO	T. Fitch	9/21/90

List of Site Documents Reviewed (continued)

Doc. No.	Title/Description	Author	Organization	Reviewer	Doc. Date
Environment (continued)					
D-E-56	Action Plan in Response to the Environmental Safety and Health Compliance Assessment Team Findings (Vol. 1 of 2)	Unknown	FEMP	T. Fitch	June 1990
D-E-57	Revised Waste Determination Plan	E. Savage	WEMCO	T. Fitch	9/20/90
D-E-58	HWMU List-Closure Justification (Part B Application)	E. Savage	WEMCO	T. Fitch	Undated
D-E-59	FME Waste Stream Determination Log (Part B Application)	E. Savage	WEMCO	T. Fitch	Undated
D-E-60	Comprehensive Groundwater Monitoring Evaluation	PRC	(For USEPA)	T. Fitch	9/29/89
D-E-61	Comprehensive Groundwater Monitoring Evaluation	Unknown	OEPA	T. Fitch	8/28/90
D-E-62	Field Operations Review Schedule	M. Cherry	WEMCO	T. Fitch	9/24/91
D-E-63	Groundwater Technician Training Records	Training Dept.	WEMCO	T. Fitch	10/18/91
D-E-64	Environmental Protection Division Surveillance Procedure	P. J. Gross	ORO	T. Fitch	3/18/91
D-E-65	Sampling of Groundwater Wells Procedure EM-GW-002	M. Cherry	WEMCO	T. Fitch	6/28/91
D-E-66	RCRA Annual Groundwater Report	Environmental Monitoring	WEMCO	T. Fitch	2/25/91
D-E-67	Environmental Compliance Quality Assurance Organization Charts	E. Savage	WEMCO	T. Fitch	9/3/91
D-E-68	Self-Assessment of Fernald	W. Wisenbaker	DOE-ER	T. Fitch	10/10/91

List of Site Documents Reviewed (continued)

Doc. No.	Title/Description	Author	Organization	Reviewer	Doc. Date
Safety					
D-S-1	Request for Safety Assessment - 2706	FMPC	ES&H	J. Schinkle	3/05/87
D-S-2	Functional Appraisal of the FMPC	Unknown	DOE-ORO	D. Owen	11/16/90
D-S-3	Action Plan in Response to ES&H/QA	Unknown	FEMP	D. Owen	11/5-20/90
D-S-4	Completing the Mtl. Evaluation Form SSOP-0002	Unknown	WEMCO	D. Owen	4/16/91
D-S-5	CH-FMPC-209 Independent Safety Review Committee Charter	Unknown	FEMP	J. Schinkle	1/31/91
D-S-6	DOE 6430.1A Hypertext Search Program	Unknown	DOE	J. Schinkle	None
D-S-7	Utilities Life Extension Project	J. Click	WEMCO	J. Schinkle	2/12/91
D-S-8	DOE Order 6430.1A Implementation Plan	D. Nixon	WEMCO	J. Schinkle	5/29/90
D-S-9	Top Level & PMA Organization Charts	Unknown	WEMCO	J. Schinkle	3/8/91
D-S-10	Strategy for Development of SARs	W. Britton	WEMCO	D. Huff	9/9/90
D-S-11	Hazard Level Screening Criteria	Unknown	H&R Tech. Assoc.	D. Huff	4/90
D-S-12	D&D Facility Draft FSAR	Unknown	Theta Tech.	D. Huff	5/24/91
D-S-13	K-65 Plan of the Day Meeting Minutes	D. Nixon	WEMCO	J. Schinkle	10/14-17/91
D-S-14	D&D Facility Safety Assessment/Dispersed	J. Click	WEMCO	D. Huff	5/5/90
D-S-15	SOP Guidelines for Preparation of Safety Assessment	Unknown	WEMCO	J. Schinkle	5/5/90
D-S-16	ES&H Improvement Projects List	PM&A	WEMCO	J. Schinkle	10/16/91

List of Site Documents Reviewed (continued)

Doc. No.	Title/Description	Author	Organization	Reviewer	Doc. Date
Safety (continued)					
D-S-17	Letter WEMCO/A. M. Kinney Inc., 6430 Compliance	R. Holbrook	WEMCO	J. Schinkle	11/20/90
D-S-18	FSAR Plant 8 Rotary Kiln, 3 Volumes	Unknown	WEMCO	J. Schinkle	7/91
D-S-19	FSAR Silos H2	Unknown	WEMCO	J. Schinkle	9/91
D-S-20	Criticality Safety Program - File	Unknown	WEMCO	J. Schinkle	Unknown
D-S-21	Safety Analysis Program - File	Unknown	Unknown	J. Schinkle	Unknown
D-S-22	Onsite Transportation of Radioactive & Non-Radioactive Hazardous Materials	C. Block	Traffic	D. Owen	8/23/90 - Rev.
D-S-23	Occurrence Report ORO-WEMCO-FMPC-1991-004	Unknown	Unknown	D. Owen	1/3/91
D-S-24	DOE/OR-901 Guidance for Preparation of SARs	DOE/OR	DOE/OR	J. Schinkle	12/90
D-S-25	Industrial Safety Review Committee Minutes FSAR	C. Beckett	WEMCO	J. Schinkle	8/91
D-S-26	Internal FSAR Review Comments Rotary Kiln	J. Simak	DOE/FO	J. Schinkle	8/91
D-S-27	Summary of Activities Which Reduce Facility Hazard Class	T. Clark	EM	D. Huff	7/9/90
D-S-28	Status Update - Hazard Level Classification for Plant 8 Restart	J. Click	IRS&T	D. Huff	5/21/90
D-S-29	SOP 1-C-918	J. Grumski	WEMCO	Schinkle	12/5/89
D-S-30	Drawing 64A-5500-F-00039 - Rev. 0	M. Locke	WEMCO	Schinkle	7/3/89
D-S-31	Equipment Tag (Safety System Component)	Unknown	WEMCO	Schinkle	Unknown

List of Site Documents Reviewed (continued)

Doc. No.	Title/Description	Author	Organization	Reviewer	Doc. Date
Safety (continued)					
D-S-32	Transportation Department Manual	C. Block	Site Services	D. Owen	1978 + Revisions
D-S-33	Onsite Transportation of Radioactive Materials	C. Block	Site Services	D. Owen	8/23/90
D-S-34	FMPC Application to Ship Waste to NTS	Unknown	WEMCO	D. Owen	5/89
D-S-35	Package, Onsite Movement, and Offsite Shipments	Unknown	WEMCO	D. Owen	12/31/90
D-S-36	Draft Memorandum of Agreement-EM/NE/DP/OR/FO	Unknown	DOE	D. Huff	9/16/91
D-S-37	Matrix Support Agreement between OR & FO	Unknown	DOE	D. Huff	6/28/91
D-S-38	Moving and Storing Nuclear Material Onsite at the FMPC	Unknown	WEMCO	D. Owen	10/15/82
D-S-39	Storage of Radioactive Material	Unknown	WEMCO	D. Owen	8/13/90
D-S-40	Letter to G. Westerbeck, WMCO:PM&A:91-206, "Technical Support from Analysas Corporation"	P. Weddle	WEMCO	D. Owen	4/24/91
Health					
D-H-1	Training on Completion of an RWP (Draft)	Unknown	Unknown	M. Sharma	Unknown
D-H-2	Guide to CPAF Performance Measure Charts	Performance Assessment	WEMCO	M. Sharma	5/8/91
D-H-3	Monthly Performance Trend Report (August 1991)	P. Mohr	Unknown	M. Sharma	9/26/91
D-H-4	Radiation Work Permits	Rad. Techs.	WEMCO	M. Sharma	Various

List of Site Documents Reviewed (continued)

Doc. No.	Title/Description	Author	Organization	Reviewer	Doc. Date
Health (continued)					
D-H-5	SOP - Completion of a Radiation Work Permit Form	Radiological Assessment	WEMCO	M. Sharma	Unknown
D-H-6	Radiological Posting	Radiological Safety Division	WEMCO	M. Sharma	4/26/91
D-H-7	Radiological Contamination Survey	Radiological Safety Division	WEMCO	M. Sharma	6/21/91
D-H-8	Source Inventories	Inventory Managers	WEMCO	M. Sharma	Unknown
D-H-9	Asbestos Bulk Sample Results	IH Section	WEMCO	M. Sharma	2/01/91
D-H-10	Asbestos Management Plan	IH Section	WEMCO	M. Sharma	9/28/90
D-H-11	Issuing Permits for Asbestos Work	IH Section	WEMCO	M. Sharma	5/30/91
D-H-12	Control of Permits for Accomplishing Hazardous Work	IRS&T	WEMCO	M. Sharma	4/13/89
D-H-13	Asbestos Work Permits	IRS&T - 2940	WEMCO	M. Sharma	Various
D-H-14	Implementation Plan for 5480.11	Radiological Safety Division	WEMCO	M. Sharma	9/04/90
D-H-15	Standard Operating Procedure (SOP) - Internal Dosimetry Investigations	Dosimetry	IRS&T	M. Sharma	2/25/91
D-H-16	Operation of Panasonic UD-710A, Automatic TLD Reader	Dosimetry	IRS&T	M. Sharma	9/20/91
D-H-17	Calibration of the Panasonic UD-710A Automatic TLD Readers	Dosimetry	IRS&T	M. Sharma	6/27/91

List of Site Documents Reviewed (continued)

Doc. No.	Title/Description	Author	Organization	Reviewer	Doc. Date
Health (continued)					
D-H-18	SOP - TLD Accountability, Selection & Screening	Dosimetry	IRS&T	M. Sharma	3/30/91
D-H-19	Cleaning & Maintenance of the Panasonic UD-710A	Dosimetry	IRS&T	M. Sharma	4/15/91
D-H-20	Calibration Records for TLD Readers	Dosimetry	IRS&T	M. Sharma	Unknown
D-H-21	Calibration Record for In-Vivo Facility	Dosimetry	IRS&T	M. Sharma	10/4/91
D-H-22	Calibration Records	Calibration Laboratory	IRS&T	M. Sharma	Various
Management					
D-M-1	Transfer of FMPC	Unknown	DOE EM-40	T. Pflaum	10/15/90
D-M-2	Position Description - Remediation Engineer	K. Hayes	EM-424	T. Pflaum	9/3/91
D-M-3	Consent Agreement FFCA	J. Craig	FEMP Remedial Action Manager	T. Pflaum	9/19/91
D-M-4	FFCA Quarterly Report	S. Coyle	EM	T. Pflaum	10/8/91
D-M-5	EM 5-Year Plan FY 93-97	L. Duffy	EM	T. Pflaum	9/1/91
D-M-6	Organization Chart	P. Whitfield	EM-40	T. Pflaum	10/9/91
D-M-7	Mission Statement EM-424	K. Hayes	EM-424	T. Pflaum	10/15/91
D-M-8	Commitments through 12/31/91 and Overdue Commitments as of October 14, 1991	Unknown	PA&C: Measuring & Reporting	R. Compton	10/14/91
D-M-9	Letter - Environment, Safety and Health (ES&H) Self-Assessment	G. Westerbeck	FO	R. Compton	2/13/91

List of Site Documents Reviewed (continued)

Doc. No.	Title/Description	Author	Organization	Reviewer	Doc. Date
Management (continued)					
D-M-10	Letter - Performance Indicator Data for the Second Quarter of CY-1991	W. Britton	WEMCO	R. Compton	8/27/91
D-M-11	Letter - Performance Indicator (PI) Reporting	G. Westerbeck	FO	R. Compton	3/19/91
D-M-12	CAR 91-003	M. Boback	PA&C	R. Compton	7/31/91
D-M-13	Site Document Review Status Report	Unknown	PA&C: Measuring & Reporting	R. Compton	10/01/91
D-M-14	FMPC-101, WEMCO Management Philosophy	Unknown	WEMCO	R. Compton	1/12/90
D-M-15	Document Review Comment Sheet	Unknown	WEMCO	R. Compton	7/30/91
D-M-16	Documentation Control Document Request, Rev. 5.1	Unknown	WEMCO	R. Compton	8/09/91
D-M-17	FY91 MIFP Findings	Unknown	PA&C	R. Compton	10/5/91
D-M-18	DCAR 90-0140	J. Weissenberg	PA&C	R. Compton	7/18/90
D-M-19	DCAR 90-246	Unknown	Unknown	R. Compton	10/11/90
D-M-20	Memorandum-Verification/Validation Procedures for Fernald Environmental Mgmt. Project Tiger Team Action Closure	J. Fiore	OER/EM	R. Compton	10/11/91
D-M-21	Environment, Safety & Health Self-Assessment Program Plan (DRAFT)	Site Office Staff	FO	R. Compton	9/91
D-M-22	WEMCO:EQA: 91-375, Surveillance No. 91-737	F. Ford	WEMCO/EA	R. Compton	8/14/91
D-M-23	EQP-7.01, Administration & Conduct of Surveillance, Rev. 1	Unknown	WEMCO Env. Quality	R. Compton	6/28/91

List of Site Documents Reviewed (continued)

Doc. No.	Title/Description	Author	Organization	Reviewer	Doc. Date
Management (continued)					
D-M-24	EQP-10.01, Root Cause Analysis	Unknown	WEMCO Env. Quality	R. Compton	6/28/91
D-M-25	IN-6013, WEMCO Quality Assurance Program Plan	Unknown	WEMCO	R. Compton	9/27/91
D-M-26	Analytical Laboratory's Asbestos Analysis Monthly QC Report	Unknown	WEMCO Site Services, Analytical Lab	R. Compton	9/91
D-M-27	Priorities for Open Analytical CIO Requests	Unknown	WEMCO Site Services, Analytical Lab	R. Compton	10/14/91
D-M-28	Cessation of Production/Memo to S. Nunn	Walkins S-1	DOE/FO	T. Pflaum	2/19/91
D-M-29	Training & Job Placement Plan	DOE EM-1	DOE/FO	T. Pflaum	2/19/91
D-M-30	Closure Plan for the FMPC	DOE EM-1	DOE/FO	T. Pflaum	2/91
D-M-31	FMPC Environmental Monitoring Report, 1989	FEMP-2200	WEMCO	T. Pflaum	10/90
D-M-32	Approval Flow Chart for A&E	WEMCO	WEMCO	T. Pflaum	10/91
D-M-33	Blank Environmental Restoration A&E Order Form	WEMCO	WEMCO	T. Pflaum	10/91
D-M-34	Fernald Agreements/Memo	J. LaGrone	OR	M. Gilbertson	5/10/91
D-M-35	Acceptance of Formal Management for FO	J. LaGrone	OR	M. Gilbertson	6/20/91
D-M-36	Acceptance of Formal Management for FEMP	L. Duffy	EM	M. Gilbertson	6/17/91
D-M-37	Head of the Contracting Activity - FO	J. LaGrone	OR	M. Gilbertson	7/29/91
D-M-38	Verification/Validation Procedures Tiger Team Action Plan Closure	J. Fiore	EM-42	M. Gilbertson	10/11/91

List of Site Documents Reviewed (continued)

Doc. No.	Title/Description	Author	Organization	Reviewer	Doc. Date
Management (continued)					
D-M-39	Draft Fernald Office Reorganization	Unknown	DOE/FO	D. Schweller	Undated
D-M-40	Att. 1 Matrix Support Agreement FO and OR	Unknown	DOE/FO and OR	D. Schweller	6/28/91
D-M-41	PEC Monthly Summary Reports - 4/91 - 8/91	R. Hansen	DOE/FO	D. Schweller	Monthly
D-M-42	WEMCO Staffing Activities	W. Britton	WEMCO	D. Schweller	4/05/91
D-M-43	Review of Manpower Subcontracting Scope and Management	W. Britton	WEMCO	D. Schweller	6/07/91
D-M-44	Wage Staffing Increase	W. Britton	WEMCO	D. Schweller	8/28/91
D-M-45	Crisler and D. Schweller with Attached Staffing Material	T. Crisler	WEMCO	D. Schweller	10/04/91
D-M-46	Staffing Data EC & QA	E. Savage	WEMCO	D. Schweller	10/17/91
D-M-47	Staffing Data IRS&T	J. Volpe	WEMCO	D. Schweller	10/17/91
D-M-48	FO Health Physicist Job Description	J. Jalovec	DOE/FO	D. Schweller	2/90
D-M-49	Staff Responsibilities for EM-424	K. Hayes	EM-424	M. Gilbertson/ T. Pflaum	10/17/91
D-M-50	Second Issue of ESH & QA Quarterly Status Report	P. Mohr	WEMCO	D. Schweller	10/10/91
D-M-51	FY-91 4th Quarter Combined Tiger Team/TSA Status	P. Mohr	WEMCO	D. Schweller	10/10/91
D-M-52	Occurrence Report ORO-WEMCO-FMPC-1991-0019	P. Weddle	WEMCO	D. Schweller	9/09/91
D-M-53	Occurrence Report ORO-WEMCO-FMPC-1991-1017	P. Mohr	WEMCO	D. Schweller	7/23/91

List of Site Documents Reviewed (continued)

Doc. No.	Title/Description	Author	Organization	Reviewer	Doc. Date
Management (continued)					
D-M-54	Occurrence Report ORO-WEMCO-FMPC-1991-1016	P. Weddle	WEMCO	D. Schweller	7/16/91
D-M-55	Occurrence Report ORO-WEMCO-FMPC-1991-1025	S. Coyle	WEMCO	D. Schweller	9/27/91
D-M-56	FEMP FY-91 Combined Tiger Team/TSA Status Report	G. Westerbeck	DOE/FO	D. Schweller	2/11/91
D-M-57	Verification/Validation Procedure	J. Fiori	DOE/EM-HQs	D. Schweller	10/11/91
D-M-58	Job Description - J. Simak	J. Simak	DOE/FO	D. Schweller	Unknown
D-M-59	Draft WEMCO FMPC-605	W. Beckman	WEMCO	D. Schweller	8/08/91
D-M-60	OR Directive Transmittal Forms	OR-AD41	OR	D. Schweller	Various
D-M-61	WEMCO Minutes of CPAF/PEC Meetings	W. Beckman	WEMCO	D. Schweller	Various
E-M-62	Performance Evaluation Plan - 1st Half FY-92	R. Walfield	DOE/EM HQ	D. Schweller	9/06/91
E-M-63	CPAF - Self Assessment - 2nd Half FY-91	W. Britton	WEMCO	D. Schweller	10/04/91
E-M-64	PEC Report - 2nd Half FY-91	P. Taylor	DOE/FO	D. Schweller	10/11/91
E-M-65	Award Fee Determination Plan - 2nd Half FY-91	R. Whitfield	DOE/EM HQ	D. Schweller	3/01/91
E-M-66	Award Fee Determination Plan - 1st Half FY-91	J. LaGrone	DOE/OR	D. Schweller	8/31/90
E-M-67	CPAF - Self-Assessment - 1st Half FY-91	W. Britton	WEMCO	D. Schweller	Undated
E-M-68	Award Fee Determination Letter - 1st Half FY-91	J. LaGrone	DOE/OR	D. Schweller	6/03/91
E-M-69	PEC Reports - 1st Half FY-91	Unknown	DOE/OR	D. Schweller	Undated
E-M-70	ES&H Self-Assessment	G. Westerbeck	DOE/FO	D. Schweller	2/12/91

List of Site Documents Reviewed (continued)

Doc. No.	Title/Description	Author	Organization	Reviewer	Doc. Date
Management (continued)					
E-M-71	Self-Assessment of ES&H Activities	W. Britton	WEMCO	D. Schweller	3/13/91
D-M-72	Update on Self-Assessment Development Action Plan	W. Britton	WEMCO	D. Schweller	9/11/91
D-M-73	SEN 7A-90 Report 4th Quarter FY91	R. Tiller	DOE/FO	D. Schweller	10/9/91
D-M-74	Implementation of DOE 5480.11	M. Boswell	WEMCO	D. Schweller	2/6/90
D-M-75	FEMP Major Annual Planning Documents	J. Patel	WEMCO	D. Schweller	Undated
D-M-76	Conducted Operations Guideline Implementation	P. Howard	DOE/OR	D. Schweller	6/25/90
D-M-77	DOE Order 5480.19 - Conduct of Operations	R. Nelson	DOE/OR	D. Schweller	8/27/90
D-M-78	Draft Guidelines for Conduct of Operations Guidelines at DOE Facility	M. Boswell	WEMCO	D. Schweller	4/10/90
D-M-79	Guidelines for the Conduct of Operations at DOE Facility	F. Haywood	Lee Wan & Assoc.	D. Schweller	4/17/90
D-M-80	CH-FMPC-209	Unknown	WEMCO	D. Schweller	1/31/91
D-M-81	FMPC-2116	Unknown	WEMCO	D. Schweller	Undated
D-M-82	Environmental Assurance Group Staff Charts	J. Curry	WEMCO	T. Pflaum	10/91
D-M-83	Regulatory Assurance Group Staff Charts	J. Curry	WEMCO	T. Pflaum	10/91
D-M-84	Public Press Inauguration Day Releases	F. Lash, FEMP/FO	EM	T. Pflaum	8/23/91
D-M-85	Press Release	F. Lash, FEMP/FO	EM	T. Pflaum	9/20/91
D-M-86	S-3 Remarks - Inauguration	J. Tuck	S-3, DOE	T. Pflaum	8/23/91
D-M-87	Britton Remarks - Inauguration	B. Britton	WEMCO	T. Pflaum	8/23/91

List of Site Documents Reviewed (continued)

Doc. No.	Title/Description	Author	Organization	Reviewer	Doc. Date
Management (continued)					
D-M-88	Westinghouse Employee Update	R. Walker	WEMCO	T. Pflaum	8/20/91
D-M-89	Westerbeck Inauguration	G. Westerbeck	DOE	T. Pflaum	8/23/91
D-M-90	How FEMP Communicates to Public	FEMP	DOE	T. Pflaum	10/16/91
D-M-91	Fernald Clean-Up Report - RI/FS	FEMP	DOE	T. Pflaum	10/91
D-M-92	Fernald Clean-up Report - RI/FS	FEMP	DOE	T. Pflaum	7/91
D-M-93	Fernald Project Update - FEMP Dedication	FEMP	DOE	T. Pflaum	10/91
D-M-94	FMPC Update	FEMP	DOE	T. Pflaum	5/91
D-M-95	Inauguration Ceremony	FEMP	DOE	T. Pflaum	8/23/91
D-M-96	CERCLA Remediation Investigation Process	FEMP	WEMCO	T. Pflaum	10/18/91
D-M-97	Matrix Support Agreement - OR	OR/FEMP	DOE	T. Pflaum	6/28/91
D-M-98	Fernald Office Reorganization Draft Plan	FEMP	FO	T. Pflaum	10/91
D-M-99	Community Relations Orientation	Parsons	Parsons	T. Pflaum	11/90
D-M-100	WEMCO Organization Charts	WEMCO	WEMCO	T. Pflaum	9/91
D-M-101	Transfer of Responsibility for Waste Operations at FEMP	R. Whitfield J. Lytle	DOE	F. Russo	4/19/91
D-M-102	Comments on Preliminary Draft ES&H Progress Assessment	R. Nelson	OR	F. Russo	10/23/91
D-M-103	Electrical Safety Report - FMPC	T. Kovack	TMK and Company	R. Compton	1991
D-M-104	Inspection Report - Cranes & Hoists	Unknown	No Am Crane Bureau	R. Compton	1991

List of Site Documents Reviewed (continued)

Doc. No.	Title/Description	Author	Organization	Reviewer	Doc. Date
Management (continued)					
D-M-105	Topical Manual for Nuclear Criticality Safety - FMPC-2117	Unknown	WEMCO Nuclear & Systems Safety	R. Compton	1/89
D-M-106	Radiological Safety Discrepancy Reports: 7/1/91, 7/10/91, 6/27/91, 6/27/91, 6/28/91, 9/17/91, 9/15/91, 9/6/91, 9/7/91, 8/5/91, 7/5/91, 7/7/91, 6/24/91, 7/1/91, 7/2/91	Various	IRS&T	R. Compton	Various
D-M-107	WEMCO:VP:IRS&T:91-287, "MORT Based Root Cause Analysis Report"	J. Volpe	IRS&T	R. Compton	9/30/91
D-M-108	WEMCO:PA&C:91-239 "Update of 1989 Root Cause Action Plans"	P. Mohr	PA&C	R. Compton	10/11/91
D-M-109	WEMCO:PA:90-122 "Process Followed for the Root Cause Analysis of 1989 TSA Concerns"	H. Clawson	PA&C	R. Compton	4/4/90
D-M-110	WEMCO:PA-90-177 "Root Cause Analysis - RCRA Surveillances, March 1990"	H. Clawson	PA&C	R. Compton	5/1/90
D-M-111	WEMCO:PA:90-200 "Root Cause Analysis - 1989 Tiger Team Findings"	H. Clawson	PA&C	R. Compton	5/29/91
D-M-112	WEMCO:P:91-320 "Root Cause Analysis of November 1990 ES&H and QA Functional Appraisal	W. Britton	WEMCO	R. Compton	5/17/91
D-M-113	WEMCO:PA&C(P):91-210 "Common Cause Analysis of First Half FY1991 PEC Reported Weaknesses"	H. Clawson	PA&C	R. Compton	6/24/91
D-M-114	Letter - Review of WEMCO Safety Programs	D. Whittier	Westinghouse Corporate	R. Compton	5/29/91

List of Site Documents Reviewed (continued)

Doc. No.	Title/Description	Author	Organization	Reviewer	Doc. Date
Management (continued)					
D-M-115	FMPC-704 "Minor Event Reporting"	Unknown	WEMCO	R. Compton	8/24/89
D-M-116	Minor Event Reports (MER) 91-001 through 91-010	Various	WEMCO	R. Compton	Various 1991
D-M-117	PP-FMPC-5007 "Type A, B and C Investigations"	Unknown	WEMCO	R. Compton	4/16/91
D-M-118	PP-FMPC-5014 "Management Inspection of Facilities Program (MIFP)"	Unknown	WEMCO	R. Compton	3/26/91
D-M-119	WEMCO:EVP:91-012 "Staff Level MIFP Tours"	H. Daugherty	WEMCO	R. Compton	2/25/91
D-M-120	WEMCO:PA:305 "Administration of the Management of Inspection Facilities Program (MIFP)"	Unknown	WEMCO	R. Compton	4/12/91
D-M-121	WEMCO:PA&C:91-142 "MIFP Status Report for Third Quarter of FY-1991"	P. Mohr	PA&C	R. Compton	7/5/91
D-M-122	ANL-QAP Analytical Laboratory QA Plan	Unknown	Analytical Laboratory	R. Compton	10/1/87
D-M-123	WEMCO:SSP:91-081 "MIFP Report"	Unknown	Unknown	R. Compton	8/19/91
D-M-124	Deviation Reports: 91-001, 91-002, 91-003, 91-008, 91-009, 91-025, 91-035, 91-053, 91-064, 91-098	Various	WEMCO	R. Compton	Various 1991
D-M-125	Corrective Action Report (CARs): 91-003, 91-011, 91-049, 91-050, 91-051, 91-082, 91-083, 91-084, 91-085, 91-087, 91-196, 91-197, 91-198, 91-199, 90-140	Various	WEMCO	R. Compton	Various 1990/1991
D-M-126	SSOP-0023 "Deviation and Corrective Action Reporting"	Unknown	WEMCO	R. Compton	6/27/91

List of Site Documents Reviewed (continued)

Doc. No.	Title/Description	Author	Organization	Reviewer	Doc. Date
Management (continued)					
D-M-127	WEMCO:PA&C(P):91-232 "Audit I91-02 Responses"	H. Clawson	PA&C	R. Compton	6/14/91
D-M-128	PP-FMPC-706 "Deviation and Corrective Action Reporting Program"	Unknown	WEMCO	R. Compton	6/27/91
D-M-129	WEMCO:SS:(F&W):91-478 "Status of Facilities & Warehousing Operating Procedures"	R. Gardner	SS	R. Compton	10/15/91
D-M-130	PP-0103, Site Document System	Unknown	WEMCO	R. Compton	8/28/91
D-M-131	PO-S-01-002, Internal Audit Program	Unknown	WEMCO-Operations	R. Compton	9/29/87
D-M-132	PO-S-01-003, Internal Inspections	Unknown	WEMCO-Operations	R. Compton	9/29/87
D-M-133	PO-S-07-001, Process, Issue and Control of Procedures and Specifications	Unknown	WEMCO-Operations	R. Compton	7/13/90
D-M-134	PO-D-005, Initiation, Process, and Issue of Department/Section Procedures and Manuals	Unknown	WEMCO-Operations	R. Compton	7/13/90
D-M-135	PO-D-009, Operator Acknowledgement of Procedure Changes	Unknown	WEMCO-Operations	R. Compton	7/13/90
D-M-136	PO-D-002, Initiation, Process, and Issue of a Procedure	Unknown	WEMCO-Operations	R. Compton	7/13/90
D-M-137	PO-D-003, Initiation, Process and Issue of a Change in Operation (CIO)	Unknown	WEMCO-Operations	R. Compton	7/13/90
D-M-138	QA Program Audits: I91-13, I91-04, I91-03, I90-12, I90-11, I90-04	Various	WEMCO:PA&C	Compton	Various 1990-1991
D-M-139	WMCO-PA-3.01 - Administration of Quality Assurance Program Audits	Unknown	PA&C	R. Compton	3/23/90

List of Site Documents Reviewed (continued)

Doc. No.	Title/Description	Author	Organization	Reviewer	Doc. Date
Management (continued)					
D-M-140	WMCO-PA-3.02 - Conduct of Quality Assurance Program Audits	Unknown	PA&C	R. Compton	3/23/90
D-M-141	FMPC-709 - Conduct of Quality Assurance Surveillance Activity	Unknown	WEMCO	R. Compton	12/2/88
D-M-142	FMPC-717 - Inspection	Unknown	WEMCO	R. Compton	12/15/89
D-M-143	FMPC-707 - Audit Progam	Unknown	WEMCO	R. Compton	10/27/89
D-M-144	Electrical Safety Survey Detail Survey Sheets - Sampling	Various	WEMCO	R. Compton	Early 1991
D-M-145	SP-A-01-017 - Root Cause Analysis	Unknown	IRS&T	R. Compton	8/27/91
D-M-146	SP-P-42-042 - SOP - Fire, Housekeeping and Safety Inspections	Unknown	IRS&T	R. Compton	3/2/90
D-M-147	WEMCO:IRS&T(IH):90-648	R. Grant D. Fleming	IRS&T	R. Compton	9/26/90

Appendix G

List of Potential Causal Factors

Appendix G:

List of Potential Causal Factors

Causal Factor	Definition
Policy	Evaluate if ineffective, outdated, or nonexistent policies contributed to the finding.
Policy Implementation	Ascertain if written policies, reflecting Federal, state, and local laws and regulations, codes, and standards were appropriately disseminated, implemented, and updated. If not, is this a contributing factor to the finding.
Procedures	Identify if written procedures have been prepared to effectively implement site policy, DOE Orders, and Federal, state and local laws and regulations were a contributing factor to the finding. Determine if a lack of familiarity or availability of those procedures contributed to the finding.
Personnel	Identify if the lack of educational and work experience for personnel holding responsible positions contributed to the finding. Determine if the level of personnel knowledge about the technical aspects of their jobs contributed to the finding.
Resources	Ascertain if the number of personnel assigned to a job contributed to the finding. Evaluate if inadequacies in facilities and equipment were a contributing factor to the finding.
Training	Identify if inadequate personnel training on implementing site policy, DOE orders, and applicable Federal, state, and local laws and regulations was a contributing factor to the finding.
Change	Evaluate if changes in site mission, function, operation and established requirements, which rendered existing policies or procedures inadequate or inappropriate, were contributing factors to the finding. Evaluate if the timeliness and effectiveness of changes to site and DOE policy, and the implementing procedures, were a contributing factor to the finding.
Risk	Evaluate if the site personnel responsible for a situation contributing to a finding have assessed and were aware of the relative degree of risk involved in the action.
Safety	Determine if inadequacies in the site's safety program, or lack thereof, contributed to the finding. Evaluate if appropriate level of importance has been given to the safety aspects of the operation(s) being evaluated, and, if not, is it a contributing factor to the finding.

Causal Factor	Definition
Appraisals, Audits/Reviews	Determine if ineffective or insufficient appraisals, audits and reviews, and/or inadequate follow-up, were contributing factors to the finding.
Design	Evaluate if inadequate design of a system was a contributing factor to the finding.
Human Factors	Ascertain if human factors, such as fatigue or deliberate circumvention of a safety system, were contributing factors to the findings.
Quality Assurance/ Control	Identify if inadequacies in the quality assurance/control program were causal factors in the identified finding.
Barriers & Controls	Determine if inadequacies in established barriers and controls, both administrative and physical, including operational readiness, routine inspections and preventive maintenance, and/or a lack of these controls, contributed to the finding.
Supervision	Identify if ineffective supervisory controls for implementing policies, directives, procedures, standards, laws, etc. were a contributing factor to the finding.

Appendix H

List of Acronyms and Abbreviations

Appendix H:

List of Acronyms and Abbreviations

Acronym/ Abbreviation	Definition
ABS	Asbestos Migration Study
AEDO	Assistant Emergency Duty Officer
ASI	Advanced Sciences Incorporated
ASTS	Assistant Manager for Technical Support
CAR	Corrective Action Report
CCB	Change Control Board
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CIO	Change In Operation
CONT	Controller
CPAF	Cost Plus Award Fee
CTS	Central Commitment Tracking System
D&D	Decontamination and Decommissioning
DC	Documentation Control
DE	Drum Equivalents
DOE*	U.S. Department of Energy
DOT	Department of Transportation
DP	Office of Defense Programs
DR	Deviation Report
EA	Environmental Assessment
EASY	Evaluation and Assessment System
EC&QA	Environmental Compliance and Quality Assurance
EE/CA	Engineering Evaluation/Cost Analysis

Acronym/ Abbreviation	Definition
EH	Office of the Assistant Secretary for Environment, Safety, and Health
EIS	Environmental Impact Safety
EM	Office of Environmental Restoration and Waste Management
EPA*	Environmental Protection Agency
ERMC	Environmental Restoration Management Contractor
ES	Office of the Assistant Secretary for Environment, Safety and Health
ES&H*	Environment, Safety and Health
ESH&QA	Environment, Safety, Health and Quality Assurance
FEMP*	Fernald Environmental Management Project
FMPC	Feed Materials Company of Ohio
FO	Fernald Office
FONSI	Findings of No Significant Impact
FSAR	Final Safety Analysis Report
FTE	Full Time Equivalent
GQAPP	Groundwater Quality Assurance Program Plan
HQ	Headquarters
HR	Human Resources
HWMU	Hazardous Waste Management Unit
IRS&T	Industrial, Radiological Safety and Training
IT	IT Corportion
LLW	Low Level Waste
LSA	Low Specific Activity
M&O	Management and Operations (Contractor)
MER	Minor Event Report
MIFP	Management Inspection of Facilities Program
MOA	Memorandum of Agreement

List of Acronyms and Abbreviations (continued)

Acronym/ Abbreviation	Definition
MSA	Matrix Support Agreement
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NCR	Nonconformance Report
NCS	Nuclear Criticality Safety
NEPA	National Environmental Policy Act
NPL	National Priority List
NTS	Nevada Test Site
OAC	Ohio Administrative Code
OC	Office of Counsel
OP	Office of President
OPEA	Ohio Environmental Protection Agency
OR	DOE Field Office, Oak Ridge
ORR	Operational Readiness Review
OSHA	U.S. Occupational Safety and Health Administration
OSR	Operational Safety Requirement
PA&C	Performance Assessment and Communications
PEIC	Public Environmental Information Center
PM&A	Project Management and Acquisitions
PP	Site Policy and Procedure
PSAR	Preliminary Safety Analysis Report
PSO	Program Senior Official
QA	Quality Assurance
QA/QC	Quality Assurance/Quality Control
R&DC	Reporting and Documentation Control
RCRA	Resource Conservation and Recovery Act

List of Acronyms and Abbreviations (continued)

Acronym/ Abbreviation	Definition
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RP	Radiation Protection
RRB	Readiness Review Board
RSDR	Radiological Safety Discrepancy Reports
RWP	Radiation Work Permits
SA	Safety Analysis
SAR	Safety Analysis Report
SARA	Superfund Amendment and Reauthorization Act
SEN	Secretary of Energy Notice
SOP	Standard Operating Procedure
SS	Site Services
SSP	Safe Shutdown Program
TSA	Technical Safety Appraisal
TSR	Technical Safety Requirements
TTA	Tiger Team Assessment
UNH	Uranyl Nitrate Hexahydrate
UOR	Unusual Occurrence Report
WAP	Waste Analysis Plan
WEMCO*	Westinghouse Environmental Management Company of Ohio
WMCO	Westinghouse Materials Company of Ohio
XCAR	External Corrective Action Report

* Indicates acronym is not defined or spelled out after the first usage in the body of the report.

END

DATE FILMED

6/9/92