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WORK PLAN FOR THE OPERABLE UNIT 4 REMEDIAL ACTION, PHASE I

10/05/95

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EPAS

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REPORT



Department of Energy
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OCT 05 1995

DOE-0023-96

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Dear Mr. Saric and Mr. Schneider:

WORK PLAN FOR THE OPERABLE UNIT 4 REMEDIAL ACTION, PHASE I

Enclosed for your review and approval is the *Work Plan for The OU4 Remedial Action, Phase I, October 1995.*

If you have any comments or questions, please contact Randi Allen at (513) 648-3102.

Sincerely,

Randi Allen
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**WORK PLAN FOR THE
OPERABLE UNIT 4 REMEDIAL ACTION
PHASE I**

REVISION 0

18-WP-0013

**FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
FERNALD, OHIO**



OCTOBER 1995

**U.S. Department of Energy
Fernald Field Office**

000003

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OPERABLE UNIT 4 REMEDIAL ACTION
PHASE I**

REVISION 0

18-WP-0013

**FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
FERNALD, OHIO**



OCTOBER 1995

**U.S. Department of Energy
Fernald Field Office**

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LIST OF COMMON ACRONYMS AND ABBREVIATIONS

| | |
|--------|-----------------------------------------------------------------------|
| A/E | Architect/Engineer |
| ACA | Amended Consent Agreement (1991) |
| ARAR | Applicable or Relevant and Appropriate Requirement |
| AWWT | Advanced Waste Water Treatment System |
| CAT | Construction Acceptance Testing |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CFR | Code of Federal Regulations |
| CM | Configuration Management |
| CRP | Community Relations Plan |
| CRU4 | CERCLA/RCRA Unit 4 |
| D&D | Decontamination and Demolition |
| DCN | Design Change Notice |
| DOE | United States Department of Energy |
| DOE-FN | United States Department of Energy - Fernald Field Office |
| DOE-OH | United States Department of Energy - Ohio Office |
| EPA | United States Environmental Protection Agency |
| FEMP | Fernald Environmental Management Project |
| FERMCO | Fernald Environmental Restoration Management Company |
| FFCA | Federal Facility Compliance Agreement |
| FRVP | Fernald Residues Vitrification Plant |
| FS | Feasibility Study |
| H&S | Health & Safety |
| IFB | Invitation for Bids |
| NCP | National Oil and Hazardous Substances Pollution Contingency Plan |
| NEPA | National Environmental Policy Act |
| NRTS | New Radon Treatment System |
| NTS | Nevada Test Site |
| NWP | Nationwide Permit |

LIST OF COMMON ACRONYMS AND ABBREVIATIONS
(Continued)

| | |
|-------|----------------------------------------------|
| O&M | Operation and Maintenance |
| OEPA | Ohio Environmental Protection Agency |
| ORR | Operational Readiness Review |
| OSWER | Office of Solid Waste and Emergency Response |
| OU | Operable Unit |
| PEIC | Public Environmental Information Center |
| PGs | Performance Grades |
| PSHSP | Project Specific Health & Safety Plan |
| QA | Quality Assurance |
| QC | Quality Control |
| RA | Remedial Action |
| RAWP | Remedial Action Work Plan |
| RCI | Request for Clarification or Information |
| RCRA | Resource Conservation and Recovery Act |
| RD | Remedial Design |
| RDWP | Remedial Design Work Plan |
| RD/RA | Remedial Design/Remedial Action |
| RI | Remedial Investigation |
| RI/FS | Remedial Investigation/Feasibility Study |
| ROD | Record of Decision |
| S&A | Sampling and Analysis |
| SOP | Standard Operating Procedure |
| SOT | Systems Operability Testing |
| SOW | Statement of Work |
| SSCs | Systems, Structures, and Components |
| SSOP | Standard Site Operating Procedure |
| TBC | To Be Considered |
| VPP | Vitrification Pilot Plant |

1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

The purpose of the Remedial Action Work Plan (RAWP) is to identify the implementation strategy and schedule for completion of all remedial activities as set forth in the Record of Decision (ROD) for Operable Unit 4 (OU4) of the United States Department of Energy (DOE), Fernald Environmental Management Project (FEMP), Fernald, Ohio. The OU4 Remedial Action (RA), as outlined in the *Final Record of Decision for Remedial Action at Operable Unit 4, December 1994 (DOE 1994e)*, consists primarily of the removal and stabilization by vitrification of the contents of Silos 1, 2 and 3; followed by off-site disposal of the vitrified waste at the Nevada Test Site (NTS); and the demolition, removal, and final disposition of the contaminated concrete, debris and soils within OU4, consistent with the Record of Decisions for OU3 and OU5, respectively.

The overall goal of the OU4 RA is to safely remediate all the OU4 components in a timely, efficient and cost-effective manner that assures compliance with the OU4 ROD and all associated applicable or relevant and appropriate requirements (ARARs) and to be considered (TBC) criteria, and which is protective of human health and the environment. This RAWP is developed in accordance with the requirements of the Amended Consent Agreement (ACA), and based on Superfund Remedial Design (RD) and RA Guidance (Office of Solid Waste and Emergency Response Directive [OSWER] 9355.0-4A), and Guidance on United States Environmental Protection Agency (EPA) Oversight of RD and RA Performed by Potentially Responsible Parties (OSWER Directive 9355.5-01).

The OU4 RA will be implemented via a newly constructed Fernald Residues Vitrification Plant (FRVP). This will involve a series of construction tasks and treatment facility operations in accordance with the strategy set forth in this RAWP, the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986, (hereinafter jointly referred to as "CERCLA"), and the Resource Conservation and Recovery Act (RCRA). The OU4 RA is being implemented by the DOE, as the lead agency responsible for CERCLA activities at the FEMP.

Consistent with the *Final Work Plan for the Operable Unit 4 Remedial Design*, May 1995 (RDWP),
OU4 is utilizing a phased approach to accomplish the RA activities. The elements of the selected
remedy identified in the OU4 ROD will be implemented on an integrated site-wide basis as follows:

- Vitrification and final disposition of the Silos 1, 2, and 3 residues shall be implemented under the scope of OU4 in accordance with the OU4 ROD.
- Decontamination and demolition (D&D) and final disposition of the silos and miscellaneous structures within the OU4 area will be implemented under the scope of OU3 in accordance with the OU4 and OU3 RODs.
- Soil and perched water remediation and final disposition shall be implemented under the scope of OU5 in accordance with the OU4 and OU5 RODs.

This integrated approach will not adversely affect the overall OU4 RD/RA summary schedule shown in the RDWP. D&D and final OU4 site remediation activities will commence as soon as feasible following completion of silo residue retrieval and vitrification activities.

As such, this RAWP will only address the OU4 scope of the RA activities and shall be structured into two document submittals as described in the RDWP. This Phase I RAWP will focus on the implementation of the initial RA activities in support of the construction of the FRVP as follows:

- Underground Utilities/Site Preparation
- Silo Superstructure Construction
- New Radon Treatment System (NRTS) Construction (Silos 1 and 2)

The Phase II RAWP will be prepared and submitted separately following integration of sufficient test data from the OU4 Vitrification Pilot Plant (VPP) so as to adequately address the following technical work scope:

- FRVP Process Building Construction
- FRVP Operation

This two phased approach to the development and submittal of the OU4 RAWP is necessary to ensure "Substantial continuous physical on-site remedial action" begins within 15 months of approval of the OU4 ROD by USEPA [Section 120(e)(2) of CERCLA], while allowing technical issues associated with the VPP to be adequately addressed, without significant adverse affects on the overall OU4 RD/RA schedule.

1.2 PROJECT BACKGROUND

This section summarizes the background information concerning the FEMP and OU4 relevant to this RAWP. Included in this section is a brief summary of the OU4 description and its current status. Additional detail and information on OU4 and the nature and extent of its contamination are provided in the EPA approved RDWP, the ROD, and the Remedial Investigation/Feasibility Study (RI/FS) documents for OU4.

1.2.1 Operable Unit 4 Description

OU4 consists of two earthen-bermed concrete silos containing K-65 residues (Silos 1 and 2); a decant sump tank; one silo containing cold metal oxides (Silo 3); the unused Silo 4; and various quantities of contaminated soils and debris. The OU4 site history dates back to the early 1950s, when the silos were constructed and received residues for storage. These residues were generated by the process of extracting uranium from high grade uranium ores and concentrates in support of the United States defense programs. These residues are classified as by-product materials, consistent with Section 11(e)(2) of the Atomic Energy Act. Facilities and equipment associated with this placement, storage, and continued maintenance of these materials include: a decant sump tank, radon treatment system, various concrete pads, and miscellaneous piping and appurtenances.

In 1991, a layer of bentonite clay was added over the residues in Silos 1 and 2 to reduce chronic radon emanation from both silos. In addition, an Expedited Removal Action was completed in January 1992, when an out-of-service dust collector and hopper assembly were removed from the dome of Silo 3. Minor facility modifications (*i.e.*, equipment upgrades) have also been made in recent years to enhance radon monitoring capabilities, storm water runoff controls, and decant sump tank maintenance activities.

1.2.2 Current Site Status

In July 1986, the DOE and EPA signed a Federal Facilities Compliance Agreement (FFCA), addressing impacts to the environment associated with federally operated sites (including the FEMP). The DOE agreed to conduct the FFCA investigation as a RI/FS in accordance with guidelines of CERCLA. In November 1989, the FEMP site was included on the National Priorities List of the EPA. The FFCA was later amended by the June 1990 Consent Agreement between DOE and EPA which was further modified by amendment in September 1991.

In accordance with the ACA (September 1991), the DOE submitted to EPA a Draft Remedial Investigation (RI) Report for OU4 in April 1993, which was later submitted as a Draft Final and Final Report in August 1993, and November 1993, respectively. Final approval of the Final RI Report for OU4 was received in August 1994. Likewise, a Draft Feasibility Study (FS) Report and Proposed Plan for OU4 were submitted to the EPA in September 1993. Subsequent Draft Final and Final documents were submitted to the agency in December 1993, and February 1994, respectively. Final EPA approval of the Final FS Report and Proposed Plan for OU4 was received in August 1994.

The Final ROD for OU4 was submitted to the EPA in November 1994. The EPA approved and signed the Final ROD for OU4 on December 7, 1994. The Final RDWP for OU4 was submitted to the EPA in May 1995 and was subsequently approved in June 1995.

Currently, a VPP treatability study program is being conducted. The primary goals of this program are to support detailed RD in areas of the vitrification process, optimal vitrification formulation design parameters, off-gas treatment (specifically radon mitigation), and vitrified product handling. Additional details regarding the treatability study program are provided in Section 4.0 of the RDWP for OU4.

1.3 SUMMARY OF WORK PLAN APPROACH

This RAWP provides the overall framework for performing the RA authorized under the approved OU4 ROD. Presented in this work plan is the overall OU4 RA strategy, including a discussion of the

specific tasks in support of the RA Phase I implementation. The general approach of this work plan is as follows:

- Summarize the purpose and scope of the OU4 RA;
- Describe programmatic strategies and requirements for implementation the OU4 RA;
- Identify the permit requirements necessary for performing the remedial activities; and
- Develop a framework from which support plans and documents will be initiated and completed.

In accordance with the ACA, this RAWP identifies RA specific milestones subject to enforceable deadlines by the EPA.

1.4 ORGANIZATION AND RESPONSIBILITIES

This RAWP supports the remediation of OU4 at the FEMP. The governing document is the ACA between the DOE and the EPA Region V, signed in September 1991. As such, ultimate project management responsibility lies with these two agencies as defined by this agreement. In addition, the Ohio Environmental Protection Agency (OEPA) has been granted regulatory authority over certain RCRA activities. Each agency has engaged contractors to perform identified scopes of work related to their prime areas of responsibility for site remediation. Figure 1-1 shows this administrative relationship matrix, and Figure 1-2 identifies the lead project personnel for the OU4 RA.

Within each agency, various organizations and offices have been delegated specific program responsibilities. The DOE OU4 Team Leader will provide the overall programmatic direction for this project. The Fernald Environmental Restoration Management Company (FERMCO) CERCLA/RCRA Unit 4 (CRU4) Project Manager will provide the overall project management and technical guidance to the FERMCO team consisting of Engineering, Construction, Start-up/Operations, and Regulatory Compliance personnel with support from Procurement, Health and Safety (H&S), and Quality Assurance (QA) representatives. Service organizations (such as Nuclear Safety and Sampling and Analysis) will provide resources and support on a request-for-service basis.

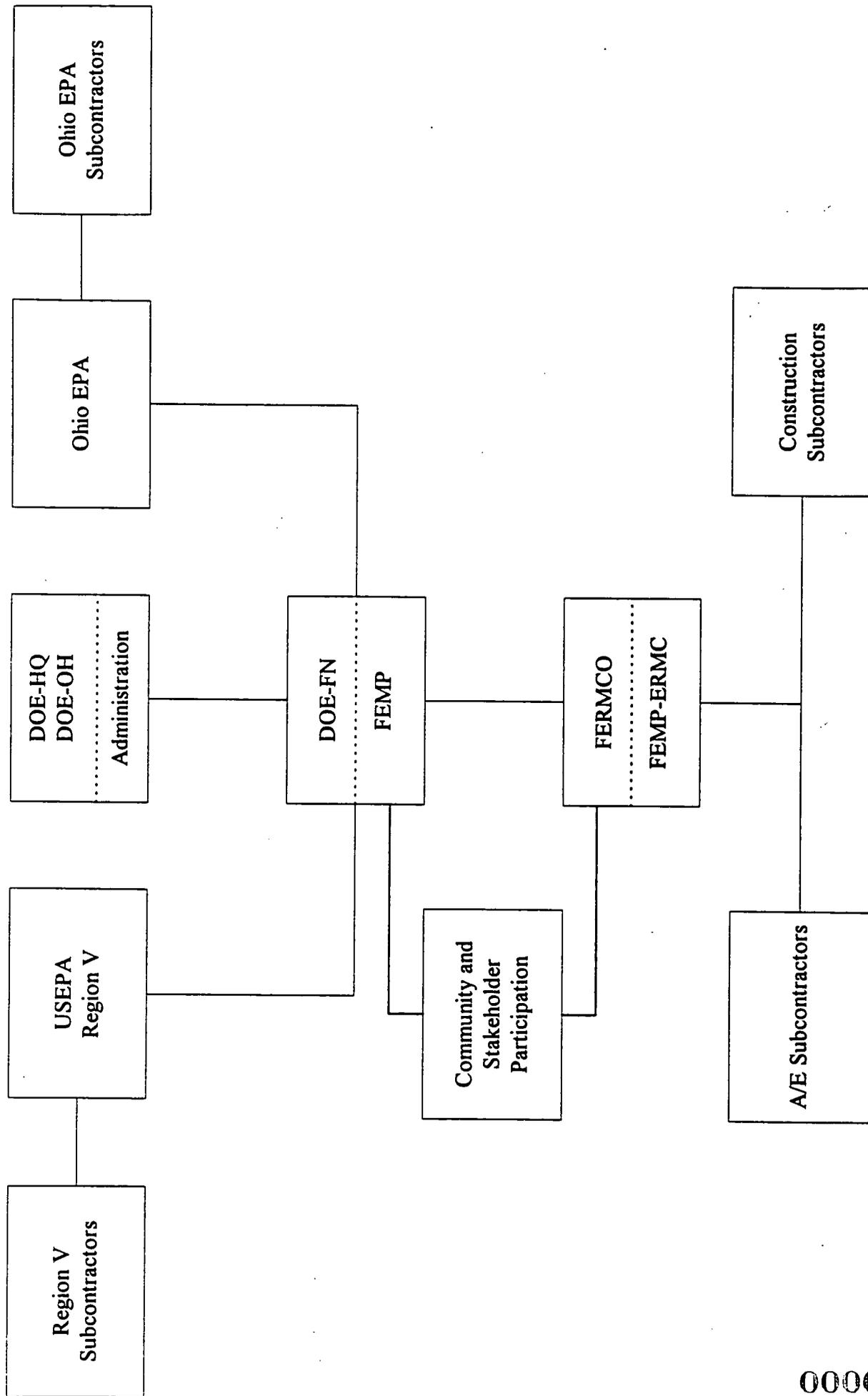


FIGURE 1-1 FEMP ADMINISTRATIVE RELATIONSHIP

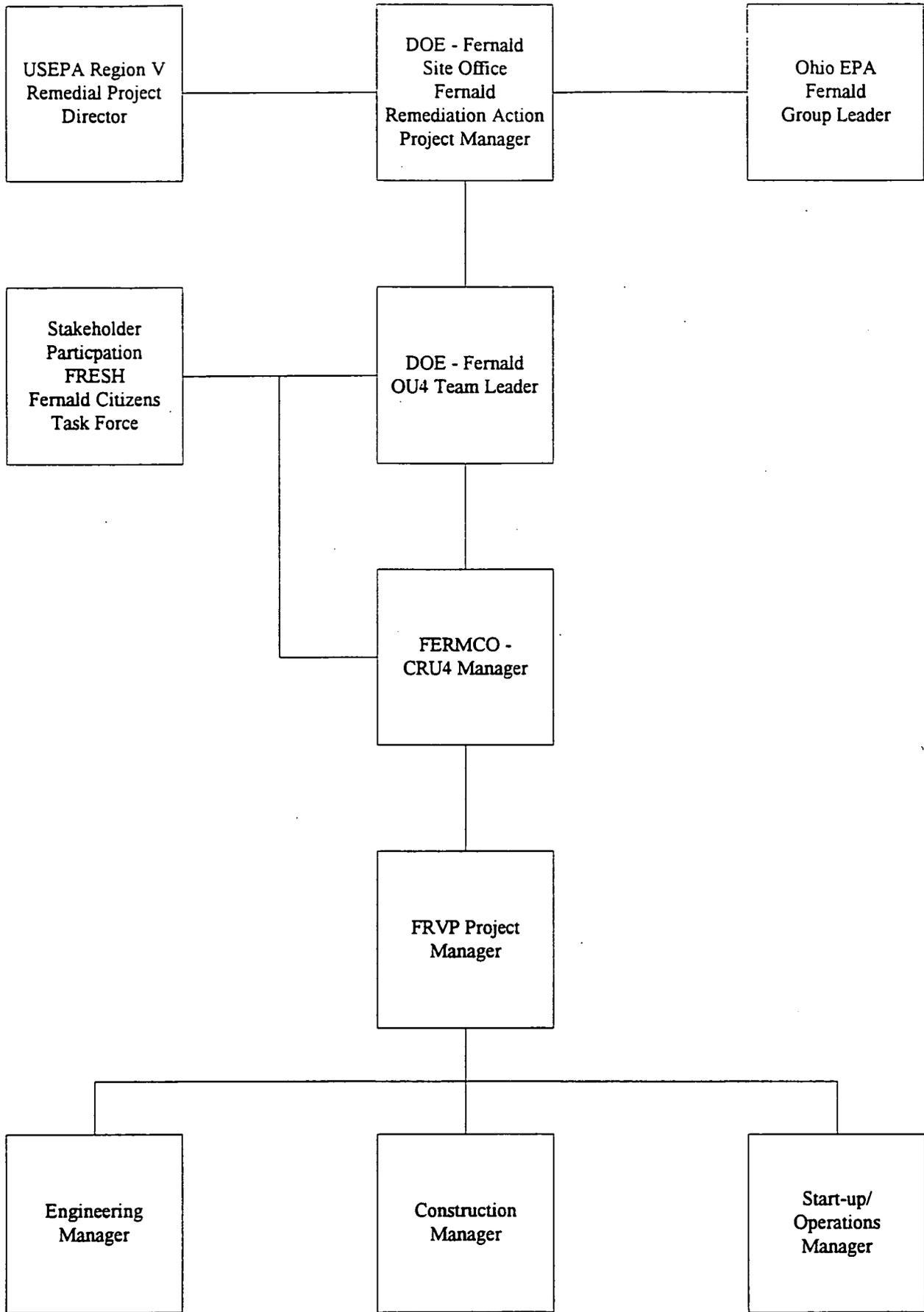


FIGURE 1-2 OU4 REMEDIAL ACTION LEAD PROJECT PERSONNEL

FERMCO will directly oversee the Architect/Engineer (A/E) responsible for the RD as well as the subcontractors performing the RA construction. FRVP operations will be conducted by FERMCO personnel.

Stakeholder participation in the RA process will be coordinated through both the DOE and OU4 Public Affairs Specialists in accordance with the Community Relations Plan for the FEMP (Refer to Section 8.0 of this RAWP for details).

2.0 REMEDIAL ACTION IMPLEMENTATION STRATEGY

This section will discuss the RA Phase I implementation strategy relative to DOE project requirements and CERCLA guidance. During Phase I of the RA, three independent construction packages, Underground Utilities/Site Preparation, Silo Superstructures, and New Radon Treatment System (Silos 1 and 2) will be implemented. Details on the implementation strategy for construction and operation of the vitrification facility will be provided in the Phase II RAWP.

As the FEMP is a DOE facility being remediated under CERCLA, both DOE and EPA requirements must be met throughout the project. This section serves to merge the DOE requirements and CERCLA guidance to create a practical project implementation strategy which meets the intent of both sets of requirements. Refer to Figure 2-1, Responsible Party Lead RA Process (extracted from OSWER Directive 9355.0-4A and modified), which represents the overall OU4 RA approach. This section will expand on the elements of this approach as follows:

- Sections 2.1 and 2.2 define project management controls with regards to specific design and construction;
- Section 2.3 will identify the construction subcontract and equipment/material procurement strategy;
- Section 2.4 will discuss construction acceptance, systems operability testing (shakedown), and operations readiness reviews strategy and requirements; and
- Section 2.5 and 2.6 will define the project milestones and discuss the RA Phase I construction sequencing as well as integration with other OUs at the FEMP.

2.1 CONFIGURATION MANAGEMENT

Configuration Management (CM) will be implemented by OU4 throughout this RD/RA project. CM is the management process by which the technical baseline for projects are identified, graded, documented, tracked, and controlled. CM establishes consistency among the design requirements, physical configuration, and technical documentation, and will ensure this consistency is maintained throughout OU4 design, construction, operation, and D&D. CM also ensures the systematic

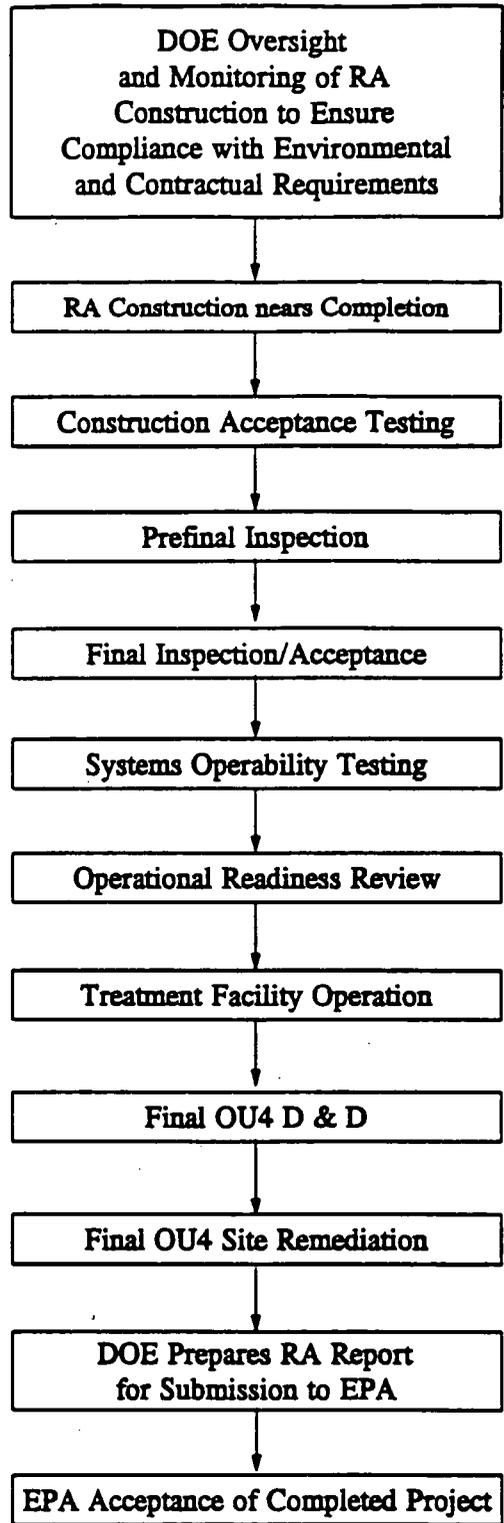


FIGURE 2-1 RESPONSIBLE PARTY LEAD REMEDIAL ACTION PROCESS

evaluation, coordination, disposition, documentation, implementation, and verification of all changes, and their impact on cost, schedule, and technical baseline. The FEMP *Configuration Management Procedure (CM-0001)* along with the FEMP *Configuration Management Plan (PL-3035)* will be used as the CM guideline for CRU4 throughout the project. In addition, a CM Implementation Plan will be developed at the beginning of the project to guide the CM process on a project specific level. Performance Grades (PGs) will be established during Title I design for all systems, structures, and components (SSCs) to ensure that these items receive the proper management and control. QA levels will then be established based on the assigned PGs for all SSCs and incorporated into the design specifications. An independent FEMP Technical Review Board will govern the CM process throughout the project.

CM directly interfaces with QA as stated above. QA for the remedial action will be in accordance with quality program elements identified in the FEMP QA Program (RM-0012).

2.2 CONSTRUCTION MANAGEMENT

FERMCO, as contracted by DOE at the FEMP, will directly oversee the subcontractors performing the RA construction and will be responsible for Construction Management during the RA.

Construction Management will include, but is not limited to, conducting construction status meetings, daily work surveillance and inspections, H&S oversight, and Radiological and Industrial Hygiene monitoring/oversight. The remediation subcontractor will be responsible for implementing the remedial activities. The following sections expand on these activities.

2.2.1 Construction Status Meetings

Upon the award of each subcontract, regularly scheduled weekly or bi-weekly construction status meetings will be conducted. These meetings are for the purpose of ensuring orderly and expeditious completion of the work and to provide coordination and communication between all parties involved. Attendees will include the DOE-FN project lead and technical support, Subcontractor, Construction, Engineering, and A/E personnel and other field oversight, management, and support personnel as warranted. These progress meetings will address action item status, project progress, deviations, Request for Clarification or Information (RCIs), Document Change Notices (DCNs), planning,

schedule and budget status, safety items, and any concerns or potential problems. Meeting minutes identifying action items, project direction, and problem resolutions are produced, distributed, and filed for project record.

In addition to the status meetings, the subcontractors will be required to submit a Daily Report. The Daily Report covers the previous day's work status and identifies any safety problems encountered, description of work performed, associated problems and subsequent resolutions. Reports are maintained in the project file.

2.2.2 Surveillance and Inspections

In addition to review of Daily Reports throughout the remedial action construction, inspection and surveillance of the subcontractor work will be conducted by Construction Engineers with support from A/E representatives. The surveillances and inspections will verify that the RD and associated specifications are being properly implemented and contract requirements are being satisfied. If deficiencies are noted, the subcontractor shall be notified immediately so that the necessary corrective actions can be taken as soon as possible. Failure of the subcontractor to satisfactorily correct deficiencies will constitute cause to stop work. Situations where there is an immediate danger to life, health, or the environment will be cause for immediate work stoppage until corrective action is completed.

Independent QA inspection and testing by QA personnel assigned to the project will also occur in accordance with the applicable QA plan.

2.2.3 Health and Safety Oversight

Full time FEMP H&S representatives will be assigned to the project. While all contract and subcontract personnel are responsible for following all safety requirements of the Project Specific Health and Safety Plans (PSHSPs), the H&S personnel will perform periodic audits of the H&S program to ensure compliance. The H&S personnel assigned to the project will be the single point of contact for all safety, industrial hygiene, fire protection, and radiological issues or concerns. The H&S personnel will also be responsible for ensuring that all H&S programs and issues are

implemented and addressed in the field and will be responsible for performing periodic audits of the work in progress as well as having stop-work authority until the proper corrective action is taken.

In addition to FEMP H&S personnel assigned to the project, each subcontractor will provide a H&S field representative who shall be responsible for ensuring the subcontractor's compliance with all H&S requirements. The subcontractor H&S representative shall report all safety concerns and incidents to the Construction Manager or Project Manager.

Prior to the start of each subcontractor work scope, a pre-work/kick-off safety meeting will be conducted by the FEMP H&S personnel. All personnel involved in the construction field activities will be given a safety briefing prior to receiving authorization to begin work. Safety meetings with field personnel will then be conducted on a weekly basis throughout a given contract by the H&S personnel.

2.2.4 Radiological and Industrial Hygiene Monitoring/Oversight

Full-time Radiological Technicians will be assigned to the project. In conjunction with the H&S personnel assigned to the project, the Radiological Technicians will help to ensure radiological and industrial hygiene compliance throughout the project. Radiological compliance includes the radiological monitoring of equipment and materials entering and leaving the job site, radiological monitoring of soil during excavations to help ensure proper segregation, storage, or disposition; Radiation Work Permit compliance, routine inspection, monitoring, and recording of area radon monitors and/or other radiation detection monitors, and radiological monitoring of personnel. The PSHSP will be the basis for the required personnel and industrial hygiene monitoring and will identify the action levels that trigger a stop-work occurrence.

2.2.5 Other Construction Oversight Responsibilities

In addition to the oversight activities detailed above, Construction Management functions will include, but are not limited to, processing subcontractor RCI, issuing DCNs, controlling and distributing subcontractor submittals for review (i.e., shop drawings, vendor data, etc.), maintaining red-line construction drawings, collecting construction turnover documentation (including equipment manuals,

test reports, etc.), maintaining project files, review of subcontractor progress reports, coordination and completion of Construction Acceptance Testing (CAT) prior to final construction turnover.

2.2.6 A/E Services During Construction

Title III Services, as defined by *DOE Order 4700.1, Project Control System*, are those activities required to assure that the project is constructed in accordance with the plans and specifications. Title III activities for the RA will be generally performed under the responsibility of Construction. However, there will be occasion to utilize the A/E responsible for detailed RD Title I and II to support and perform specific Title III tasks. A/E office and field personnel will be assigned to the project and will be responsible for performing the work as described below.

Engineering Support

The A/E will be responsible for the review and approval of all shop drawings, calculations, and vendor data submitted by the subcontractors for compliance with design and specification requirements. The A/E will be responsible for reviewing and responding to RCIs and DCNs as requested by Construction. In addition, as-built design drawings will be produced by the A/E based on the red-line drawings from the field.

Field Support

The A/E will provide field representatives during construction activities to act as an interface between the field and the A/E office. The field representatives will help ensure correct design requirement interpretation by the subcontractors, expedite RCI and DCN responses and identify potential design impacts due to proposed changes, and assist with documenting field design changes and maintaining red-line drawings. In addition, the field representatives will support Construction Engineers during surveillance and inspection activities of subcontractor work.

2.3 SUBCONTRACT BID/AWARD AND PROCUREMENT STRATEGY

Procurement and subcontract awards for all activities to support and implement the RA will generally be performed through fixed-price contracts. The acquisition system utilized at the FEMP is designed

to ensure full and free competition among prospective proposers/bidders. In addition, the DOE procurement system requires a designation of a percentage of annual awards as small, minority, or women-owned business set-asides. The following sections describe the construction subcontract bid/award and equipment/material procurement strategy for the OU4 RA.

2.3.1 Construction Subcontractor Bid

Construction subcontractors for the OU4 RA will be solicited competitively via Invitation for Bids (IFB). Sealed bids will be required to be submitted by potential subcontractors at a specified place, date, and time and will be opened publicly. The IFBs will be prepared during the RD process by the FEMP Construction Engineers Planning and Bidding group with input from Engineering, H&S, QA, and Procurement personnel. The IFBs are made up of several parts including technical specifications and drawings, the PSHSP and training requirements, QA requirements, and statement of work (SOW). Development of a clear and complete IFB package will be the primary strategy to avoiding bid protests, minimizing change orders, and establishing the framework for compliance with construction quality acceptance requirements and H&S requirements, as well as ARAR and TBC compliance throughout the RA. As such, much attention will be given to the IFB package development, and more specifically the SOW.

2.3.2 Statement of Work

The SOW for each IFB package will define the activities that the subcontractors will be required to perform. Initiation of SOW development will be at the later stages of Title II for each remedial design package and will be finalized following design approval.

Each SOW will identify project specific information and requirements and will detail the following:

- General Scope of Work
- Specific Description of Work
- Personnel and Environmental Safety
- Material, Equipment or Services Furnished by the FEMP

- Interfaces and Restraints 1
- Temporary Facilities and Utilities 2
- Site Location, Access, Laydown Areas, and Limits of Construction Area 3
- Work Hours 4
- Performance Schedule and Sequence of Work 5
- Pay Item Schedule 6
- Requirements for Subcontractor's Schedule 7
- Subcontract Progress Report 8
- Submittals 9
- Alignment and Kickoff Meeting. 10

2.3.3 Pre-Bid Meeting/Tour 11

Pre-Bid meetings will be conducted as necessary to mitigate schedule delaying bid protests and potential clarification requests during field activities. Prospective bidders for each IFB package will be provided the opportunity to attend a Pre-Bid meeting and work site tour. The Pre-Bid meeting is intended to allow an opportunity for all bidders to resolve questions about the IFB package, site policy, and existing site conditions. Typical topics covered at the meeting include the following: 12
introductions, bid and award process, SOW and design, terms and conditions, project labor 13
agreement, substance abuse program, PSHSP, QA/QC requirements, training, regulatory compliance, 14
site security, temporary utilities and facilities, schedule and milestones, reporting, and submittals. 15
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2.3.4 Construction Subcontractor Award 20

The bids are reviewed by Construction Engineers to ensure that the apparent low bidder is both responsive and responsible relative to the terms and conditions of the IFB. Determination of 21
responsiveness is based on proper completion of bid forms, acknowledgement of amendments, 22
submission of the bid bond, and any other submittal requirements specifically identified in the IFB 23
package. The bidders would be deemed responsible if they possess the capability and experience as 24
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required in the solicitation to perform the work in a safe and timely manner at the bid price. If the apparent low bidder is determined to be either non-responsive or non-responsible, the next lowest bidder will be evaluated.

Following the determination that the apparent low bidder is responsive, the contracts administrator recommends and makes the final award. The IFB dictates how many days after award or Notice to Proceed that contractor performance begins and ends.

2.3.5 Pre-Construction Alignment Meeting

Following each subcontract award and prior to the Notice to Proceed, a Pre-Construction Alignment Meeting will be held between subcontractor(s), DOE, A/E, and FERMCO representatives and other appropriate site personnel. The objectives of this meeting is to establish relationships among all parties directly involved in the construction and to establish common goals and a joint execution plan to accomplish the contracted SOW. The meeting will emphasize the focus on safety, quality, regulatory compliance, and schedule throughout the project. The following is the framework from which Pre-Construction Alignment meetings evolve:

- Project Mission
- Stakeholder Expectations
- Identification of Key Result Areas
- Critical Issues or Barriers from Achieving Key Results
- Action Plan(s) to Overcome Barriers
- Resulting Roles and Responsibilities

These meetings are professionally facilitated by trained FEMP personnel.

2.3.6 Equipment and Material Procurement

The majority of the standard support equipment and materials (*i.e.*, heating ventilation and air conditioning, lights, doors, *etc.*) for the RA will be procured by the subcontractors performing the

construction. Procurement of equipment and material will be in accordance with design specifications requirements as well as QA and other requirements included in each IFB package. Vendor data will be submitted by the subcontractor for A/E review to ensure design and specification requirements are achieved. Responsibility of procured equipment and material will lie with the construction subcontractors until final construction acceptance and turnover to DOE.

Major non-standard process equipment for the FRVP will be procured by DOE. This approach will allow for increased control over the design and fabrication of this more critical equipment. A Procurement Plan will be developed to define and guide this activity.

As the lead agency responsible for CERCLA activities at the FEMP, DOE retains final approval authority for any procurement action which exceeds established dollar thresholds for each type of procurement action. Any actions over the established limits are required to be approved by the DOE Contracting Officer prior to award.

2.4 CONSTRUCTION ACCEPTANCE, SYSTEM SHAKEDOWN, AND START-UP

As each subcontracted construction package nears completion, the Construction Acceptance process begins. Construction Acceptance of each construction package, Systems Operability Testing (SOT)/Shakedown, and Facility Start-up will be in accordance with DOE Order 4700.1 and applicable FEMP site procedures. The procedures are intended to allow for an orderly transfer of the constructed facilities from construction management to the start-up and operating responsibility. The following sections describe each step in more detail.

2.4.1 Construction Acceptance Testing

Construction Acceptance Testing (CAT) is the performance of all necessary testing to demonstrate that subcontractor supplied or installed equipment and systems will operate satisfactorily and safely in accordance with the RD and specifications. Testing encompasses hydrostatic, pneumatic, electrical, ventilation, and mechanical functioning of individual pieces of equipment, portions of systems, or systems as a whole.

CAT criteria will be developed specified in the contract SOW for the subcontractors and will serve as the basis for CAT acceptance. Each subcontractor is responsible for conducting CAT for their scope of work, in accordance with the acceptance criteria set forth, making corrective actions where necessary. CAT will be witnessed, recorded, and approved by Construction Engineers, QA personnel, Start-up/Operations personnel, and A/E personnel as warranted.

2.4.2 Pre-Final Inspection/Conditional Acceptance

At or near completion of CAT for each construction package, pre-final inspection will occur. Pre-final inspection is the survey of a facility or area of work to determine the status of its acceptability relative to the RD and contract documents. The pre-final inspection will consist of a walk-through inspection by the responsible construction, start-up/operations, A/E, and project personnel. Pre-final inspection will usually result in the Conditional Acceptance of a facility or work area from the subcontractor with a documented list (punchlist) of specific work remaining, including subcontractor submittals, and a schedule for completion of the remaining items. Status of punchlist items are provided by the subcontractor as completed or at the weekly construction status meetings.

2.4.3 Final Inspection/Acceptance

Upon completion of punchlist items, a final inspection walk-through will be performed. Participants will usually be the same as those during the pre-final inspection. The punchlist will be used as the inspection checklist whereby the acceptance of all listed items will be verified and documented. The signed-off checklist by subcontractor, construction, start-up/operations, and appropriate project personnel will serve as final construction acceptance and certification document.

2.4.4 Construction Turnover

Construction acceptance and subcontractor turnover of each construction package will occur throughout construction. As the project progresses and construction subcontracts are completed, a construction turnover package for the project as a whole will be compiled. Included will be such items as CAT results, construction completion certifications, equipment and system manuals, approved subcontractor submittals, red-line design drawings and all documented field changes. Construction turnover will signify the transfer of responsibility from construction to start-up.

2.4.5 Systems Operability Testing/Shakedown

A facility Start-up Plan will be developed for the FRVP under the start-up function in accordance with the latest version *FEMP Start-up and Systems Operability Testing Guidance Manual*. The Start-up Plan will identify all required start-up activities including the following:

- Preparation and approval of plans, specifications, and procedures for SOT of the facility;
- Preparation of Standard Operating and Preventative Maintenance Procedures;
- Preparation and approval of the instructional (training) materials for operational and maintenance needs;
- Supporting classroom and On-the-Job training of operators; and
- Ensuring the Operational Readiness of the facility and supporting the Operational Readiness Review (ORR) process.

As identified above, SOT of the facility will be a function of start-up as identified in the Start-up Plan. SOT will provide the following information:

- Verification that performance of the system(s) meets design requirements;
- Determination of optimum operating parameters;
- Identification of problems that may adversely affect operational reliability; and
- Resolution of deficiencies encountered.

SOT will be defined in detail by an SOT Plan and SOT specifications and performed in accordance with SOT Procedures. These SOT documents will be developed based on those developed for the VPP that identified testing activities as follows:

- Instrument and control component calibration and checkout;
- Area and process monitoring equipment calibration and checkout;
- Electrical and Mechanical equipment operational performance testing;
- System operational performance testing;

- Safety interlock testing; and
- Alarm systems performance testing.

Upon successful completion of SOT, the operational systems will be shutdown according to the SOT Safe Shutdown Procedure until operations can begin. Post SOT activities include the completion of SOT documentation such as the SOT Report. SOT completion, along with the completion of all other identified start-up activities necessary to achieve the point of operational readiness, is a prerequisite for the ORR process that follows.

2.4.6 Operational Readiness Review

Following construction completion and SOT, but prior to turnover to operations, the ORR process commences. The start-up of RA facility is expected to require a formal ORR and approval by DOE in accordance with DOE Order 5480.31, *Start-up and Restart of Nuclear Facilities*. The ORR process provides a systematic approach for verifying that planned actions are complete and are documented to demonstrate that a state of readiness has been achieved. The purpose of the ORR process is to obtain assurance that a facility:

- Is prepared for start-up and is properly and adequately documented;
- Will be operated, maintained, and supported by trained, qualified, and authorized personnel;
- Will be operated in conformance with applicable DOE Orders and regulatory requirements;
- Has adequate plant equipment, structures, and other hardware;
- Includes adequate, approved operating procedures;
- Has the sitewide support systems identified, in place, and functional;
- Is in compliance with ARARs and commitments made in the applicable safety analysis and any technical safety requirements outlined in the safety analysis; and
- Will be operated so that no undue risk to employees, the public, or the environment results.

Prior to the DOE ORR, an internal ORR will be performed in accordance with the *FERMCO Operational Readiness Manual (RM-0025)* to determine and recommend the project's readiness to operate. A multi-discipline ORR Team comprised of FEMP personnel not directly involved with the project will be selected by the ORR Team Leader. The ORR Team will determine the project's readiness relative to the items listed above and to document its findings. Identified deficiencies will then be scheduled for correction or completion prior to actual start-up operations.

Following the internal FERMCO ORR, the DOE ORR will be conducted. Upon DOE ORR completion and closure of all open pre-start items, the DOE authority will grant operations start-up and operations will begin.

2.5 PROJECT MILESTONES

This section will simply serve to define and highlight the major Phase I RA milestones as well as to identify various plans, called for by the ACA, that supplement this work plan. Construction sequencing for Phase I is discussed in Section 2.6 of this work plan.

A RAWP covering the RA Phase II elements will be submitted under separate cover. Any schedule revisions from the RDWP that arise as a result of the OU4 VPP testing will be indicated in a revised schedule as part of the Phase II RAWP subject to EPA approval.

2.5.1 Initiation of Remedial Activities

In accordance with the RDWP, the RA construction subcontract will be awarded on or before March 3, 1996, with the award of the Underground Utilities/Site Preparation package subcontract. The award of this subcontract shall constitute meeting the 15-month CERCLA requirement for initiation of the RA. This date is recognized by the DOE to be an enforceable EPA milestone in accordance with the ACA.

2.5.2 Completion of RA Activities

Subsection 300.435 (f)(1) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) describes completion of an RA as the remedy achieving (in the determination of the EPA) the

RA objectives and goals stated in the ROD. In accordance with the approved OU4 ROD, the integrated site-wide OU4 RA approach and CERCLA guidance, RA completion for OU4 is defined as having achieved the following:

- Removal and vitrification of the contents of Silos 1, 2, and 3 and the K-65 Decant Sump Sludges;
- Off-site disposal of the vitrified product at NTS.

D&D and final disposition of the silos and miscellaneous structures within the OU4 area will be implemented under the scope of OU3 in accordance with the OU4 and OU3 RODs. Soil and perched water remediation and final disposition shall be implemented under the scope of OU5 in accordance with the OU4 and OU5 RODs.

Due to its discrete scope and relatively short RA schedule, the OU4 RA is being considered as a "complete" RA rather than a Long-Term RA. RA completion including the RA Closeout report will be further discussed and defined in the Phase II RAWP.

2.5.3 Milestones Table

Table 2-1 identifies the RA Phase I milestones. A discussion of the strategy to address the supplemental plans to the RAWP, as called for by the ACA, is included in this work plan. A discussion of the Sampling and Analysis Plan development strategy is located in Section 4.0 of this work plan; H&S/Contingency Plan strategy in Section 5.0; Operation and Maintenance Plan strategy in Section 6.0; and Groundwater Monitoring strategy in Section 7.0.

| TABLE 2-1 PHASE I REMEDIAL ACTION MILESTONES | |
|-----------------------------------------------------------|-------------------|
| MILESTONE | DUE |
| Underground Utilities/Site Preparation Award/Construction | March 3, 1996 |
| Silo Superstructures Award/Construction | November 13, 1996 |
| New Radon Treatment System Award/Construction | July 21, 1997 |

2.6 CONSTRUCTION SEQUENCING AND OPERABLE UNIT INTEGRATION

Underground Utilities/Site Preparation

As stated in Section 2.5, Underground Utilities/Site Preparation will be the first construction activity in the RA sequence. This activity will include, but not be limited to, site clearing and rough grading, establishment of construction laydown area and access roadways, installation of stormwater runoff controls, and the extension of underground electrical power feeders, fire protection, sanitary sewer lines, and process and potable water from the FEMP process area. Stub-ups will be located at logical, convenient termination points for future connection to the vitrification facility. The sanitary sewer line for the vitrification facility will tie into the FEMP sanitary sewer system.

As a point of OU integration associated with this construction activity, the FRVP access road construction will be integrated with the FEMP Traffic Flow Master Plan which is in support of RA for all OUs.

Silo Superstructure Construction

As a result of the *Silo 4 Superstructure Study, Revision 0* (March 1995) and several follow-up remedial design meetings with the A/E, it is planned to construct two new superstructures for use over Silos 1 and 2 while potentially modifying the existing Silo 4 superstructure (installed under the VPP project) for use over Silo 3 (TBD during silo superstructure Title I design). The Silos 1 and 2 superstructure fabrication can begin following design approval and subcontract award. Berm soil that

is excavated during superstructure installation/construction will be stockpiled at the construction area in accordance with FEMP site procedures.

The potential modification and moving of the Silo 4 superstructure for use over Silo 3 will be dependent on the completion of two other planned activities in support of RA. As was originally planned under the VPP project, the Silo 4 superstructure will be used as a test bed for RA planned activities. In line with this, two demonstration activities are being planned in support of the RA. First, a robotic device being developed in coordination with DOE Morgantown Energy Technology Center in support of the OU4 RA for the removal of "heel" material and unpumpable objects expected to be found at the interior base of each silo, will be demonstrated in Silo 4 prior to "hot" utilization. Secondly, the current silo residue retrieval concept requires a section of the K-65 Silo domes to be removed to allow waste retrieval equipment deployment. This construction activity will be demonstrated on Silo 4 prior to its execution on the K-65 Silos. Both of these activities must be completed prior to moving the Silo 4 superstructure for installation over Silo 3.

New Radon Treatment System

The only direct tie to the start of construction of this system is the completion and approval of its design package which is dependent on the OU4 VPP testing. The efficiency of the radon treatment concept utilized in the VPP program will be determined during the VPP testing. If this concept proves to be an effective method to reduce the concentration of radon in the silo headspace, it will be carried forward in the FRVP NRTS design. Otherwise, alternative methods for radon mitigation will be implemented. Interface with the existing RTS will be determined during the design of the NRTS. D&D of the RTS and NRTS will fall under the scope of OU3.

3.0 PROJECT PERMIT REQUIREMENTS

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Under CERCLA, RAs must achieve standards or levels of control that are consistent with environmental laws or regulations, which are termed ARARs. A discussion of the ARARs and TBC criteria identified for OU4 was provided in the OU4 ROD. All activities undertaken as a result of the ROD must comply with the ARARs and TBCs that pertain to the activity.

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Implementation of the OU4 RA will be in compliance with the identified ARARs and TBCs as identified in the OU4 ROD and RDWP. The detailed strategy for compliance with each regulatory requirement will be presented in the Title I and II design documents to be submitted for EPA review.

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A discussion of the permitting requirements that will impact the RA activities is included in the following sections.

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All wastes will be properly characterized and managed in accordance with project ARARs/TBCs and approved procedures. Construction soil, debris, and waste resulting from Phase I activities will be characterized and managed in accordance with Removal Action Work Plan # 17 and site Standard Operating Procedure EW-0006, "Management of Excess Soil, Debris, and Waste From a Project".

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3.1 PERMITTING REQUIREMENTS

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CERCLA Section 121(e)(1) states that no Federal, State, or local permit shall be required for the portion of any removal or remedial action conducted entirely on site, where such action is selected and carried out in compliance with Section 121.

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As a CERCLA RA, this project is not required to obtain any Federal, State, or Local permits. However, the project must be conducted in accordance with the terms and conditions of those permits that otherwise would have been required. As a consequence, only the substantive portions of those ARARs governing environmental regulatory requirements have been identified in the ARAR table presented in the OU4 ROD and RDWP.

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Section XIII.B of the ACA requires DOE to identify those permits that would otherwise be required, along with the standards, requirements, criteria, or limitations that would have to have been met to obtain each permit. The DOE must report these findings to the EPA, along with an explanation of how the response action will meet these standards, requirements, criteria, or limitations.

3.1.1 Air Permits

Compliance with the substantive regulatory requirements for air releases will be effected through implementation of the ARARs and TBCs identified in the ROD and RDWP for OU4.

A Radon-222 monitoring program will be conducted in support of this project and will include selected monitoring locations currently utilized by the existing FEMP Site Wide Environmental Air Monitoring Program. Monitoring Radon-222 will also be conducted at various points in and around the NRTS and the silos to evaluate effectiveness of air pollution control equipment, and for occupational exposure monitoring. Existing fenceline radon monitors, both continuous and passive, will also be utilized to determine fenceline concentrations of Radon-222.

A complete description of the air pollution control and monitoring program, including a detailed technical description of the strategy for compliance with identified requirements will be presented in the Vitrification Plan Title I and II design documents.

3.1.2 Wastewater Permits

Under the Clean Water Act, permits are required for activities which discharge material into U.S. waters (including wetlands). The FRVP will not be constructed in a wetland area; however, some wetland areas may be impacted by the installation of utility lines which will serve the FRVP. Impacts to wetlands will be mitigated pursuant to the Clean Water Act. A site-wide mitigation plan for wetlands is currently being developed by DOE in consultation with the U.S. EPA and OEPA. In addition, the temporary sidestepping (up to three months) of excavated material into wetlands during construction of utility lines will be conducted in accordance with Nationwide Permit (NWP) 12 as codified in Appendix B to 33 CFR Part 330. OEPA was granted Section 401 State Water Quality Certification for NWP 12 on January 17, 1992.

Stormwater discharges associated with construction during Phase I activities will be covered by the existing site National Pollutant Discharge Elimination System permit. Construction associated with Phase I activities will utilize appropriate controls to contain runoff and to prevent run-on to ensure contamination of stormwater is minimized. Collected stormwater will be discharged through the existing site wastewater treatment system.

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Miscellaneous wastewater, including wastewater from construction activities and decontamination of sampling and construction equipment, will be managed in accordance with EW-0006 and the site's Investigation Derived Waste Policy.

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3.2 NATIONAL ENVIRONMENTAL POLICY ACT

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The National Environmental Policy Act (NEPA) is pertinent to all FEMP activities that may impact environmental resources, including biota, wetlands, cultural, historical, anthropological or socio-economic factors. NEPA requires assessment of environmental impacts associated with all proposed DOE projects. The DOE has developed the appropriate documentation required to support the OU4 RA in accordance with regulations implemented under 10 CFR Part 1021, DOE Orders 5440.1D and 5400.4, and FEMP Procedure EP-0001, NEPA Document Process. The documentation was included with the OU4 Feasibility Study/Proposed Plan - Final Environmental Impact Statement that was approved by the EPA in August 1994 and the OU4 Record of Decision in December 1994. This NEPA documentation identifies the potential environmental impacts anticipated during the RA, and the strategy to minimize impacts to the natural resources associated with remediation of OU4. This strategy to comply with the requirements of NEPA will be followed during the OU4 RA.

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4.0 SAMPLING AND ANALYSIS REQUIREMENTS

Waste characterization of the proposed FRVP area was performed resulting in a determination that Sampling and Analysis (S&A) activities are not required for Phase I activities. Therefore a project specific S&A Plan as envisioned in the ACA, is not required for RA Phase I activities.

5.0 HEALTH AND SAFETY/CONTINGENCY PLAN REQUIREMENTS

All activities conducted within the confines of Operable Unit 4 are governed by the requirements of the Safety Performance Requirements Manual (RM-0021) which addresses environmental, occupational, industrial, and construction health and safety for the FEMP site as a whole. In addition to these general requirements, task specific H&S requirements are included in PSHSPs, which will be prepared for each distinct construction activity.

All DOE and FERMCO employees, visitors, vendors, contractors, and subcontractors are required to abide by the provisions of applicable H&S plans. Management and supervisors have the responsibility for assuring that the requirements of the applicable H&S plans are met. Occupational Safety and Health field personnel (Technicians, Specialists and Engineers) have the authority to enforce the requirements of the applicable H&S plans. All personnel have stop-work authority for imminent safety hazards and noncompliance with the applicable H&S plans.

5.1 PROJECT SPECIFIC HEALTH AND SAFETY PLANS

PSHSPs will be developed as required by FEMP SSOP-1093, "Developing Project Specific H&S Plans" for all construction activities, including those under Phase I. A H&S Requirements Matrix is developed and used in conjunction with the PSHSP. Each PSHSP will focus on a specific scope of work and will cover specifically identified tasks identified in a H&S Requirements Matrix. An example matrix, which was developed for a PSHSP during the OU4 VPP project, is included as Figure 5-1.

As each Title II RD package nears completion, one or more H&S Requirement Matrix and PSHSP may be developed covering each distinct or related construction activity. The applicable PSHSPs will be included in each subcontract IFB package and will be the governing plan that the subcontractor is required to follow. This strategy results in the development of multiple PSHSPs, which is dependent on the number of subcontracts awarded. Due to this strategy, DOE proposes to submit PSHSPs to EPA for informational purposes only as specifically requested by the agency. All PSHSPs will be maintained at the project site, with controlled copies in the project document control files.

**HEALTH AND SAFETY REQUIREMENTS MATRIX
PROJECT: CRU VERIFICATION PILOT PLANT CONSTRUCTION PACKAGE 4**

Attachment A

The requirements listed in Section 1.0 of this matrix apply to all activities addressed on this matrix.

| ACTIVITY (TASKS) | HAZARD IDENTIFICATION | FREQUENCY & TYPE OF AIR AND PERSONNEL MONITORING REQUIRED | PERSONAL PROTECTIVE EQUIPMENT | TRAINING REQUIREMENTS | MEDICAL MONITORING & SURVEILLANCE REQUIREMENTS | ADMINISTRATIVE & ENGINEERING CONTROL MEASURES | PERMIT(S) | DECONTAMINATION & DISPOSAL PROCEDURES |
|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.0 Pre-mobilization, minimum requirements to access project area | Uranium contamination, fixed on surface/potential underground Radon General construction hazards Not all hazards are specified on this matrix. | Thermoluminescent Dosimeter (TLD) | FERMCO issued steel toed safety shoes. Subcontractor supplied hard hat, safety glasses w/rigid side shields. | <ul style="list-style-type: none"> Construction Rules/Regulations Site GET Training Site Worker Training Rad Worker I Training 8 Hr. Supervised Field Experience 8 Hr. Supervisor's Training for supervisory personnel Orientation of Project Specific Health & Safety Plan (PSHSP) Orientation on Project H&S Requirements Matrix Subcontractor orientation on Project Specific MSDSs | <ul style="list-style-type: none"> FERMCO must have proof of physical examination signed by a physician. Initial, annual and termination in-vivo exam (whole body count) Initial, every 60 days, and termination urinalysis. | Provide warning signs and safety fencing to establish construction area. Visitors require escort | FERMCO Work Permit Radiological Work Permit (RWP) any ground penetration or work in contamination areas | Personnel and material monitoring required to exit contamination area. Dispose of all contaminated waste per subcontract section 6 of Statement of Work (SOW) |

The requirements of this document are based upon current conditions and/or operations in areas near the planned construction zone. This document is to be used as an aid in conjunction with the Project Specific Health and Safety Plan and used to understand the requirements of the project. The PSHSP will provide more detail for certain aspects of this document. This document does not relieve the contractor of planning for or providing a safe work site. This document does not relieve the contractor from complying with other appropriate state, federal and FEMA regulations.
August 8, 1994

FIGURE 5-1 EXAMPLE OF THE HEALTH AND SAFETY REQUIREMENTS MATRIX

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5.2 CONTINGENCY PLAN

The contingency plan for the Phase I RA activities is covered by the current FEMP emergency plan. The FEMP has produced the Emergency Plan (PL-3020) that addresses the emergency management program, provides guidance for all emergency responders (including employees), ensure adequate performance for critical systems, and meets regulatory requirements. In addition, procedure "K-65 Silo Numbers 1 and 2 Area Emergencies" (SOP 65-C-201) is in place to provide specific procedures for responding to emergency situations and abnormal occurrences that may occur at Silos 1 and 2.

The FEMP also has an established emergency organization available 24 hours a day to respond to all emergencies and abnormal events. The emergency organization includes FEMP personnel and resources as well as those of the local community. This group of trained personnel can be quickly expanded and reinforced as necessary to respond to any potential emergency. Members of the emergency organization undergo a formal training program including participation in site-wide drills and exercises.

The Emergency Preparedness and Public Affairs group at the FEMP maintain several ways to inform state and local groups about emergency preparedness and response. Meetings between the state, county, and local government agencies, emergency response personnel and FEMP are held on a regular basis at Cooperative Planning and Training Committee meetings hosted by the FEMP Emergency Preparedness organization. These meetings provide a forum for these agencies to discuss issues related to response, communications, information sharing, available training, drills and exercises. An emergency planning brochure is distributed annually to the Emergency Planning Zone population on what to expect and what to do in the event of an emergency at the site. A speakers' bureau managed by Public Affairs group also includes emergency preparedness and response subjects in presentations given to various area group.

Drills and exercises are conducted at the FEMP to provide emergency response personnel the opportunity to practice and test the effectiveness of emergency plans, procedures, and training. A program of drills and exercises, integrated with the training program, are implemented to develop,

maintain and test emergency response capability; identify areas for improvement; and to serve as a
planning basis by indicating areas of improvement.

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The FEMP also maintains mutual aid agreements with local fire, ambulance, law enforcement, and
medical services. These offsite agencies and groups provide reinforcement to FEMP emergency
responders and extended medical facilities. Communications, site assessment, fire, medical,
monitoring equipment, and all necessary emergency phone numbers are also provided in the FEMP
emergency plan.

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6.0 OPERATIONS AND MAINTENANCE PLANNING REQUIREMENTS

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Operations & Maintenance (O&M), relative to CERCLA and the NCP, is the term generally used to refer to the required post-RA activities following RA completion or as part of a long term RA, (i.e. air monitoring, disposal cell preventative maintenance, long term groundwater pump and treat operations, etc.). As stated in section 2.5.2, the OU4 RA is considered a "complete" RA such that no post-RA O&M activities are expected. Therefore, the preparation of an O&M Plan, as called for by the ACA, is not applicable to the OU4 RA.

7.0 GROUNDWATER MONITORING

Groundwater monitoring, particularly during Phase I activities, is not specifically required during the OU4 RA unless unexpected circumstances necessitate the need to determine the impact of an activity or accidental release to the environment on the groundwater quality.

The K-65 Decant Sump Tank underneath the silos is fully functional and liquid level continues to be remotely monitored. Accumulated liquids in the sump tank will continue to be managed on an ongoing basis throughout the OU4 RA in accordance with the existing K-65 Decant Sump Tank Maintenance Action Work Plan (18-WP-0011). The decant sump tank system consists of a silo underdrain system which extends out beyond the perimeter of the silo walls. This underdrain system collects liquids that may be leaking from the bottom of the silos, as well as seepage from the walls of the silos that would migrate down to the underdrain. The decant sump tank collects liquids from the underdrain system.

In the event of a spill or release, or suspected release of a hazardous substance which could impact groundwater, OU5 would be notified to assist in any corrective measures required to mitigate any potential impacts to groundwater resources. In addition to spill response, a Removal Site Evaluation may be conducted to determine whether a Removal Action is warranted. A removal action could include sampling of existing groundwater monitoring wells in proximity to OU4 to determine impacts on groundwater, or placement of additional wells. Any groundwater monitoring activities involving OU4 will be coordinated by OU5 through appropriate documentation subject to EPA approval.

8.0 COMMUNITY RELATIONS

As a Superfund site, Fernald must comply with certain requirements for informing and involving the public. The *Community Relations Plan* (CRP) for the FEMP, Revision 4, provides details about how management will involve the public in decisions related to the site during the RD, RA and O&M phases. Under the RD and RA phases, requirements are limited to revising the CRP, if determined necessary by the lead agency (DOE), and notifying the public at the beginning of the RD stage -- prior to implementation of the RA phase. The CRP is designed to comply with the public participation requirements in the NCP and its empowering legislation, CERCLA. It also reflects EPA guidance in *Community Relations in Superfund: A Handbook* (January 1992). The CRP sets forth activities under the ACA between DOE and EPA. The CRP also complies with the requirements of all applicable laws and regulations, including NEPA and the FFCA.

The CRP was revised in September/October 1994. The Ohio EPA approved the revised CRP in December 1994, and the EPA approved the CRP in January 1995. Throughout the duration of Fernald remediation activities, the CRP may be revised to reflect changing community concerns, as well as changes in the law, regulations or regulatory agreements.

- Required Public Involvement Activities During Remedial Design and Remedial Action**
- Upon completion of the final engineering design for each design package, prepare a fact sheet describing the remedial design [NCP 300.435].
 - Provide a public briefing upon completion of the final engineering design and prior to the beginning of the remedial action [NCP 300.435].
 - Publish in a local newspaper of general distribution a *Notice of Availability* of documents submitted to the EPA under the RD and RA [DOE commitment/directive].

Throughout the Operable Unit 4 RD and RA phases, the public will be informed of the status of RD and RA activity schedules and progress, as well as any new findings or significant developments. Upon submittal of the draft and final RA work plans to EPA, key stakeholders, such as community leaders and, members of the Fernald Citizens Task Force and F.R.E.S.H. Inc., will be informally notified of the documents' availability at the Public Environmental Information Center (PEIC). The PEIC is located in the JAMTEK Building, 10845 Hamilton-Cleves Highway, Harrison, Ohio (513-738-0165). The PEIC is open: Monday and Thursday, 9 a.m. to 7 p.m.; Tuesday, Wednesday, Friday, 9 a.m. to 4:30 p.m.; and Saturday, 9 a.m. to 1 p.m.

When practicable, Operable Unit 4 management has and will continue to offer public involvement opportunities -- surpassing regulatory requirements -- throughout the RD and RA phases of Fernald site cleanup. For example, as identified in the CRP, following completion of the final engineering design for the first construction package under RD, a fact sheet describing general engineering design for all components will be distributed to the general public. As warranted by DOE, a public briefing will also be held to discuss the Operable Unit 4 actions to be undertaken. At a minimum, these opportunities will reflect regulatory requirements, as well as DOE's commitments for public involvement at Fernald.

Supplemental Public Involvement Activities

Following are examples of some supplemental public involvement activities which may be conducted during the Operable Unit 4 RD and RA:

| | |
|--------------------------------------------------------------------|----------------------------------------------------|
| Public Meetings | Media relations |
| Public Information and notification | Written materials and video stories |
| Fernald Visitors Bureau (tours and speakers) | Fernald Precollege Education Outreach programs |
| Presentations to interested community groups and elected officials | When appropriate, environmental education programs |

REFERENCES

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