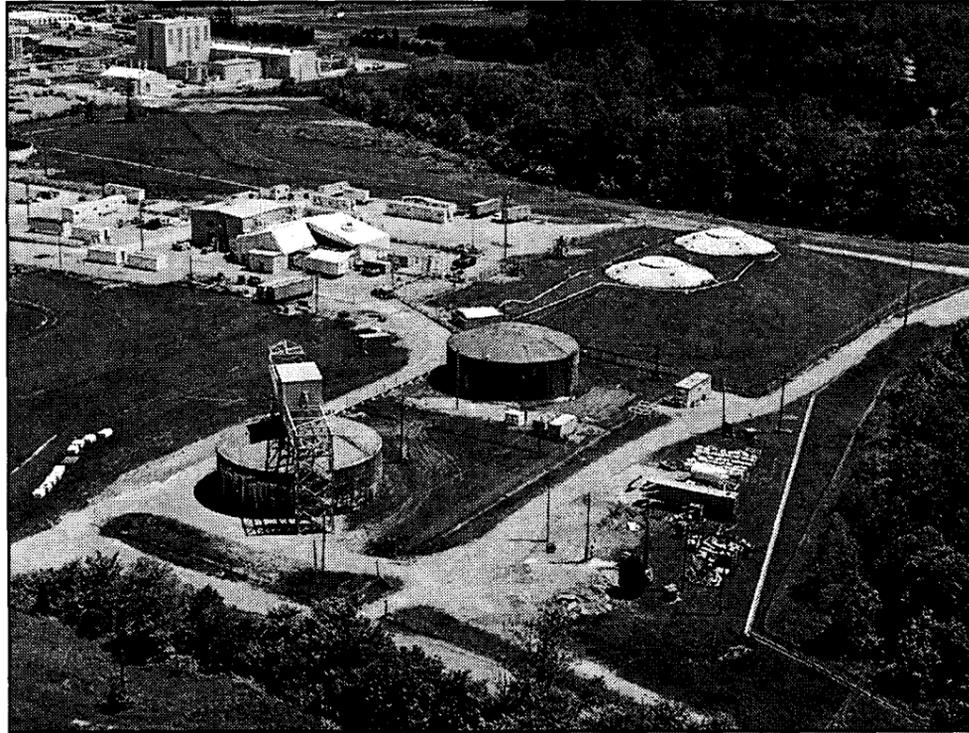


# Silos Project

## Fact Sheet



*Located on the western periphery of the Fernald site, Operable Unit 4 includes Silos 1 and 2 (K-65 Silos), Silo 3 (metal oxide silo), unused Silo 4, and ancillary structures, including the Vitrification Pilot Plant. (6385-114).*

### Description

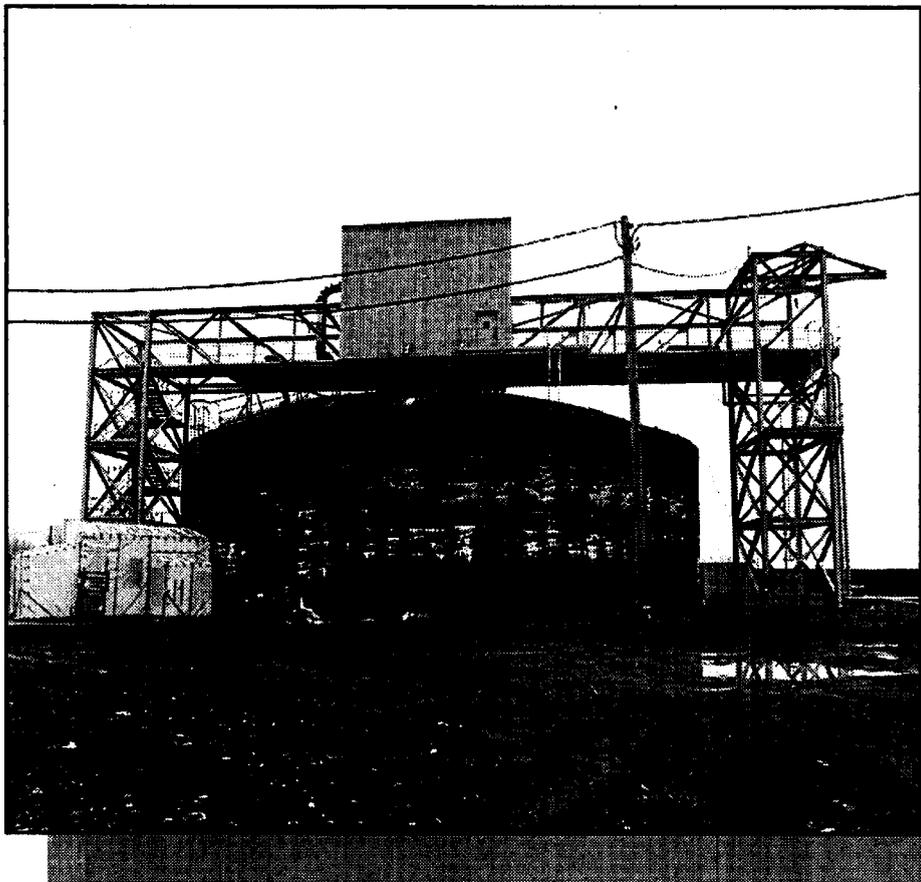
The Silos Project, (formerly known as Operable Unit 4), at the Department of Energy's (DOE) Fernald Environmental Management Project is one of five areas designated by the Environmental Protection Agency (EPA) as requiring remediation. The project is located on the western periphery of the site, and includes Silos 1 and 2 (known as the K-65 Silos), Silos 3 and 4, and nearby structures. Silos 1 and 2 contain low-level radioactive wastes dating back to the 1950s. In 1964, they were reinforced with an earthen berm, which was upgraded in 1983. Silo 3 contains cold metal oxide, and Silo 4 is unused.

### Cleanup Plan

Today, activity centers on the accelerated remediation of Silo 3, with the goal of safely removing, stabilizing (on site or off site), and transporting its waste to an off-site disposal facility in a timely, efficient, and cost-effective manner. DOE expects to award a contract to a qualified vendor by spring 1999, and complete final remediation of Silo 3 by 2003.

The path-forward for Silos 1 and 2 includes a formal re-evaluation of the selected remedy—vitrification—with stakeholders and regulators. This process, known as

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*Mock-up and operator training is being performed on Silo 4 at the Fernald site to prepare for Silo 3 waste retrieval. (6759-27).*

a Record of Decision amendment, began with a screening of stabilization technologies. These screened technologies will be tested and proven, and the results used in a detailed analysis of the alternatives and included in a revised feasibility study document. Once the amendment is complete and the remedy is chosen, a vendor will be selected to perform the full-scale remediation of Silos 1 and 2.

DOE and Fluor Daniel Fernald are now working with stakeholders to pursue accelerated waste retrieval, which involves physically removing waste from Silos 1 and 2 and placing it in transfer tanks. Accelerating this phase of the project should reduce the risk associated with

storage in the current silos, and allows the first step toward final remediation of the K-65 materials in Silos 1 and 2. Contractors will be requested to prepare proposals for retrieval and storage, with bids anticipated back during the summer of 1998. Once a vendor is selected, design and construction will begin.

Other Silos Project activities include supporting the closure of the Vitrification Pilot Plant. DOE and Fluor Daniel Fernald will remove, decontaminate and dispose of hazardous material that resulted during testing of this plant. Examples of this type of waste include lead, barium, and chromium, which are considered by-products of glass manufacturing. The overall goal is to maximize reuse of the plant's equipment.

## For More Information...

More information about this and other Fernald cleanup projects is available in the Public Environmental Information Center at 10995 Hamilton-Cleves Highway (Delta Building), or on Fernald's Web site address: [www.fernald.gov](http://www.fernald.gov). Stakeholders can also learn about cleanup plans and progress at Fernald's monthly briefings held on the second Tuesday of each month.

For specific questions about Silos Project activities, call Nina Akgunduz, DOE-Fernald Team Leader at (513) 648-3110. Her e-mail address is: [nina-akgunduz@fernald.gov](mailto:nina-akgunduz@fernald.gov).

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**FERNALD SILOS PROJECT PUBLIC WORKSHOP  
ACCELERATED WASTE RETRIEVAL  
REQUEST FOR PROPOSAL  
APRIL 1, 1998**

<b>6:30 p.m.</b>	<b>Welcome/Opening Remarks</b>	<b>Gary Stegner</b>
<b>6:35 p.m.</b>	<b>Introduction of Accelerated Waste Retrieval Project</b>	<b>Nina Akgunduz</b>
<b>6:45 p.m.</b>	<b>Overview of Accelerated Waste Retrieval Request for Proposal</b>	<b>Dave Yockman</b>
<b>7:30 p.m.</b>	<b>Question &amp; Answer Session/ Stakeholder Feedback</b>	<b>Gary Stegner</b>
<b>8:00 p.m.</b>	<b>Review of Action Items/ Closing Remarks</b>	<b>Gary Stegner</b>



# ACCELERATED WASTE RETRIEVAL

FERNALD

## Request for Proposal

- **Project Background**
- **Contents**
  - **Statement of Work**
  - **Technical Requirements Matrix**
  - **Evaluation Criteria**
- **Technical Expert Review**
- **Timeline/Stakeholder Involvement**
- **Questions/Comments**

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# ACCELERATED WASTE RETRIEVAL

FERNALD

## Project Background

- **What?**
  - **Safely Transfer Silos Contents to the New Transfer Tank Area for Staging Prior to Treatment and Disposal Off-Site**
  
- **Why?**
  - **Significantly Reduces the Risk of Radon Release as a Result of the Potential for a Catastrophic Silo Failure**
  - **Provides better Radon Control and Reduces Radon Emissions**
  - **Removes Waste Retrieval and Silos Demolition and Disposal from Critical Path**
  - **Demonstrates Ability to Retrieve Waste**
  - **Removes Discrete Objects**
  - **Provides Ability to Sample**



# ACCELERATED WASTE RETRIEVAL

FERNALD

## Project Background

- **How?**
  - **Contract with Experienced Vendor to Design, Build, Test, and Operate Commercially Proven Technologies:**
    - **Waste Retrieval System**
    - **Radon Control System**
    - **Transfer Tank Area**
    - **Decant Sump Waste Retrieval System**
    - **Transfer Tank Area Waste Retrieval System**

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# ACCELERATED WASTE RETRIEVAL

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## Statement of Work - RFP Part 6

- **Ten Sections:**

- **Section 1 - Project Scope**
- **Section 2-4 - Project Requirements**
- **Section 5 - FDF Responsibility Interfaces**
- **Section 6 - Temporary Facilities and Utilities**
- **Section 7 - Site Location/Construction Area**
- **Section 8 - Pay Item Descriptions**
- **Section 9 - Contractor's Project Schedule**
- **Section 10 - Submittals**



# DRAFT ACCELERATED WASTE RETRIEVAL Technical Requirements Matrix

FERNALD

March 27, 1998

Critical Project Elements	FDF Performance Requirements in RFP	Defined in Vendor Proposal	Defined in Detailed Design
<b>Waste Retrieval System</b>			
<b>Silo Integrity</b>	1) 700 lb limit on the domes 2) Berm excavation during waste retrieval	X	X
<b>Retrieval Method</b>	1) Protective of Silo Integrity 2) Capable of removing and handling discrete objects/ heel material and gross decontamination of the silo interior 3) Proven technology	X X X	
<b>Retrieval Rate</b>	Transfer the silo residue to the transfer tanks in 1 year	X	
<b>Radon Control</b>	1) Minimize leakage from silos during waste retrieval 2) ALARA principles in design/construction/operation		X X
<b>Radon and Radiological Monitoring</b>	Provide local radon and radiological monitoring in the work area		X
<b>Waste Management</b>	1) Minimize water accumulation in Silos 2) Maximize reuse of water 3) Treat waste water prior to disposal		X X X
<b>Worker and Public Exposure</b>	1) Radon headspace control 2) ALARA principles in design/construction/operation 3) Shielding requirements	X	X X

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# DRAFT ACCELERATED WASTE RETRIEVAL Technical Requirements Matrix

FERNALD

March 27, 1998

Critical Project Elements	FDF Performance Requirements in RFP	Defined in Vendor Proposal	Defined in Detailed Design
<b>Radon Control System</b>			
<b>Technology</b>	1) Proven technology 2) 0.5 pCi/L above background limit at the fence line	X	X
<b>Current Silo Radon Headspace Levels</b>	Address as the first construction and operation activity	X	
<b>Silo Integrity</b>	Prevent over/under pressurization		X
<b>Transfer Tank Area Radon Control</b>	Must have the capacity to handle the TTA headspace and the waste retrieval operation from the TTA to the full-scale stabilization facility	X	
<b>Full-scale stabilization facility Radon Control</b>	Must have the capacity to handle the Full-scale stabilization facility pre-conceptual design radon emissions	X	
<b>Radon and Radiological Monitoring</b>	Provide local radon and radiological monitoring in the work area		X
<b>Worker and Public Exposure</b>	1) Radon headspace control 2) ALARA principles in design/construction/operation 3) Shielding requirements	X	X X

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# DRAFT ACCELERATED WASTE RETRIEVAL Technical Requirements Matrix

FERNALD

March 27, 1998

Critical Project Elements	FDF Performance Requirements in RFP	Defined In Vendor Proposal	Defined in Detailed Design
Transfer Tank Area			
Tank Material	20 year design life in accordance with industry standards (e.g., considers probability of accidents including high wind scenario)	X	
Number of Tanks	1) Fit the site area limitation 2) Segregate Silo 1 & 2 material for treatment flexibility	X X	
Location of Tanks	South of the silos area defined on site layout drawing in the RFP	X	
Transfer Tank Retrieval Rate	Transfer from the transfer tanks to the full scale stabilization facility in 1 year	X	
Secondary Containment (Tank Area)	1) Contain 100% of the largest tank including collected storm water from a 24 hour period for the 25 year storm event 2) Provide for transfer of material from secondary containment to safe storage		X X
Secondary Containment (piping, etc.)	Provide secondary containment with leak detection on all lines outside the diked area that contains silo material		X
Water Management	1) Minimize secondary waste water 2) Maximize reuse of water 3) Treat waste water prior to disposal		X X X
Radon and Radiological Monitoring	Provide local radon and radiological monitoring in the work area including secondary containment		X
Worker and Public Exposure	1) Radon headspace control 2) ALARA principles in design/construction/operation 3) Shielding requirements	X	X X

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# ACCELERATED WASTE RETRIEVAL

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## Evaluation of Vendor Proposals

- **Pass/Fail - Experience Modification Rate (Safety Performance)**
  
- **Price - 40%**
  - Life Cycle
  - Price Realism
  
- **Technical/Management - 60%**
  - Experience
  - Technical Requirements
  - Qualifications of Key Personnel
  - Quality Assurance Program

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# ACCELERATED WASTE RETRIEVAL

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## Technical Expert Review

- **External Reviewers**
  - **Todd Martin**
  - **Bob Roal**
  - **Gail Bingham**
  - **David Nearing**
  - **EPAs**
  
- **Comments are being addressed as they are received**
  
- **Tech Expert feedback will be summarized at April Progress Briefing**

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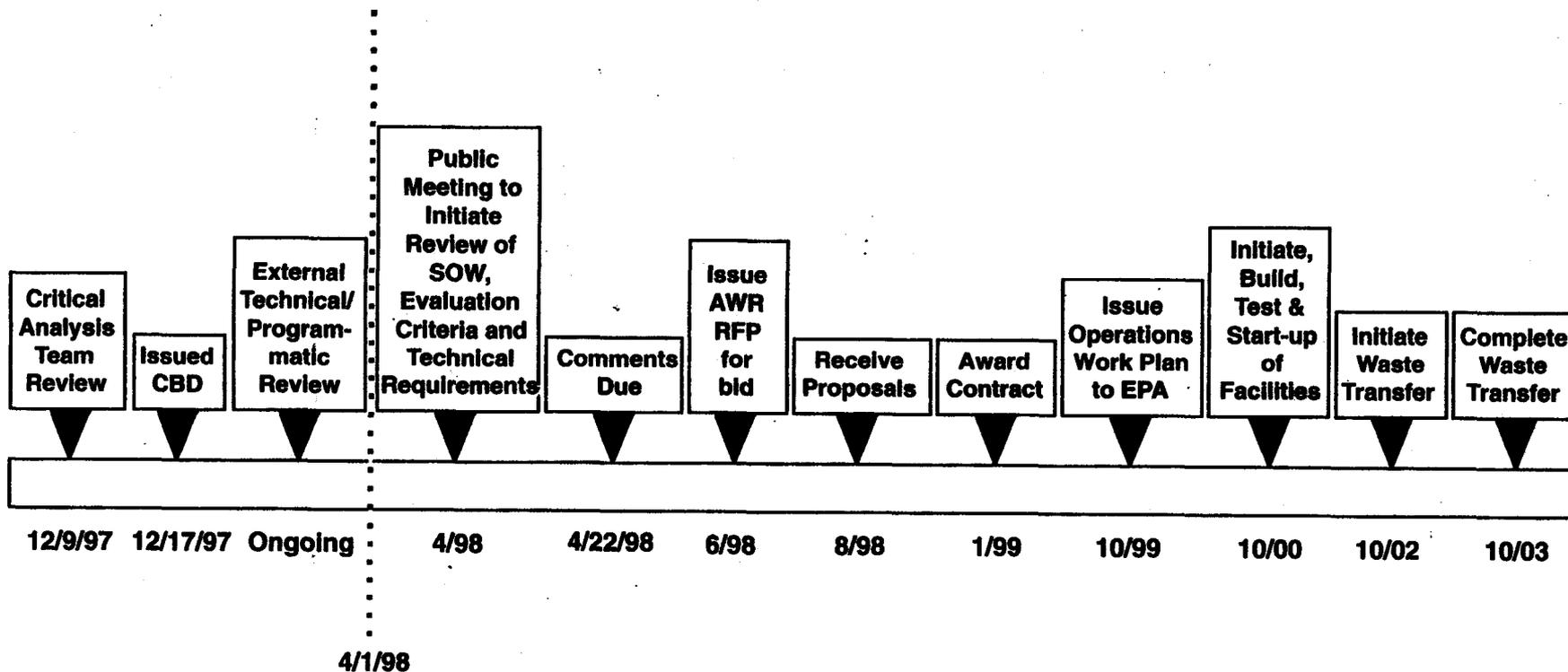
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# SILOS 1 & 2 ACCELERATED WASTE RETRIEVAL (AWR)

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Public Involvement

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# ACCELERATED WASTE RETRIEVAL

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## Summary

- **Stakeholder Comments**
  - To DOE by 4/22/98
  - Comments and Issues will be addressed prior to RFP Issuance
- **Management and Technical Expert Review in April/May prior to issuing RFP**
- **Plan to issue RFP to vendors in June 1998**

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# DRAFT ACCELERATED WASTE RETRIEVAL Technical Requirements Matrix

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March 27, 1998

Critical Project Elements	FDF Performance Requirements in RFP	Defined in Vendor Proposal	Defined in Detailed Design
<b>Waste Retrieval System</b>			
<b>Silo Integrity</b>	1) 700 lb limit on the domes 2) Berm excavation during waste retrieval	X	X
<b>Retrieval Method</b>	1) Protective of Silo Integrity 2) Capable of removing and handling discrete objects/heel material and gross decontamination of the silo interior 3) Proven technology	X X X	
<b>Retrieval Rate</b>	Transfer the silo residue to the transfer tanks in 1 year	X	
<b>Radon Control</b>	1) Minimize leakage from silos during waste retrieval 2) ALARA principles in design/construction/operation		X X
<b>Radon and Radiological Monitoring</b>	Provide local radon and radiological monitoring in the work area		X
<b>Waste Management</b>	1) Minimize water accumulation in Silos 2) Maximize reuse of water 3) Treat waste water prior to disposal		X X X
<b>Worker and Public Exposure</b>	1) Radon headspace control 2) ALARA principles in design/construction/operation 3) Shielding requirements	X	X X

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# DRAFT ACCELERATED WASTE RETRIEVAL Technical Requirements Matrix

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March 27, 1998

Critical Project Elements	FDF Performance Requirements in RFP	Defined in Vendor Proposal	Defined in Detailed Design
Radon Control System			
Technology	1) Proven technology 2) 0.5 pCi/L above background limit at the fenceline	X	X
Current Silo Radon Headspace Levels	Address as the first construction and operation activity	X	
Silo Integrity	Prevent over/under pressurization		X
Transfer Tank Area Radon Control	Must have the capacity to handle the TTA headspace and the waste retrieval operation from the TTA to the full-scale stabilization facility	X	
Full-scale stabilization facility Radon Control	Must have the capacity to handle the Full-scale stabilization facility pre-conceptual design radon emissions	X	
Radon and Radiological Monitoring	Provide local radon and radiological monitoring in the work area		X
Worker and Public Exposure	1) Radon headspace control 2) ALARA principles in design/construction/operation 3) Shielding requirements	X	X X

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# DRAFT ACCELERATED WASTE RETRIEVAL Technical Requirements Matrix

FERNALD

March 27, 1998

Critical Project Elements	FDF Performance Requirements in RFP	Defined in Vendor Proposal	Defined in Detailed Design
Transfer Tank Area			
Tank Material	20 year design life in accordance with industry standards (e.g., considers probability of accidents including high wind scenario)	X	
Number of Tanks	1) Fit the site area limitation 2) Segregate Silo 1 & 2 material for treatment flexibility	X X	
Location of Tanks	South of the silos area defined on site layout drawing in the RFP	X	
Transfer Tank Retrieval Rate	Transfer from the transfer tanks to the full scale stabilization facility in 1 year	X	
Secondary Containment (Tank Area)	1) Contain 100% of the largest tank including collected storm water from a 24 hour period for the 25 year storm event 2) Provide for transfer of material from secondary containment to safe storage		X X
Secondary Containment (piping, etc.)	Provide secondary containment with leak detection on all lines outside the diked area that contains silo material		X
Water Management	1) Minimize secondary waste water 2) Maximize reuse of water 3) Treat waste water prior to disposal		X X X
Radon and Radiological Monitoring	Provide local radon and radiological monitoring in the work area including secondary containment		X
Worker and Public Exposure	1) Radon headspace control 2) ALARA principles in design/construction/operation 3) Shielding requirements	X	X X

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RFP NO. F98P168407

CONTRACT NO. FSC 624

Silos 1 and 2 Accelerated Waste Retrieval (AWR) Project

PART 6  
STATEMENT OF WORK

MARCH 23, 1998  
DRAFT

PART 6  
 CONTRACT NO. FSC 624  
 STATEMENT OF WORK  
 SILOS 1 AND 2 AWR PROJECT

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PART 6  
CONTRACT NO. FSC 624  
STATEMENT OF WORK  
SILOS 1 AND 2 AWR PROJECT

**1.0 PROJECT SCOPE**

**1.1 Background**

During the period of 1951 to 1960 the United States Department of Energy (DOE) produced approximately 6,800 (m<sup>3</sup>) cubic meters of K-65 material. To support the storage of residue and other material four silos were erected at the Fernald Environmental Management Project (FEMP). Silo 1 and Silo 2 contain the residues generated from the processing of high grade uranium ores. This process was completed to extract the uranium compounds from the natural ores. The residues contain high activity concentrations of radionuclides, including radium (the contaminant of concern because it produces Radon) and thorium and are classified as by-product material. The FEMP site is included on the National Priorities List of the U.S. Environmental Protection Agency (U.S. EPA) to ensure the expedient cleanup of the FEMP. The Accelerated Waste Retrieval Project (AWR) is an interim step in the cleanup and disposition of the residue in Silos 1 and 2.

Over the years the silos have shown visible signs of deterioration and have undergone the following repairs:

- 1963 Silo walls were given a waterproof coating;
- 1964 A soil berm was built around the silos to the top of the walls at a slope of 1.5 to 1 ratio;
- 1983 The soil berm slope was increased to 3 to 1 ratio;  
30 foot diameter protective covers constructed of steel and plywood were added to the domes to spread the load distribution on the domes; and
- 1998 The silos structural integrity is continually monitored.

The silos residue contains radium and one of radium's daughter products, radon. Over time the radon concentration in the silos is increasing. To mitigate the uncontrolled release of radon gas, the following removal actions were taken:

- 1987 3 inches of polyurethane foam were placed on the domes;
- 1987-1991 A Radon Treatment System utilizing radon adsorption carbon beds was initiated; and
- 1991 Layer of BentoGrout Clay™ was added to the silos.

1998 The layer of BentoGrout™ is degrading, drying, cracking and separating therefore the efficiency of the BentoGrout™ barrier is becoming inefficient and the radon concentration in the silos is increasing.

## 1.2 Objective

The objective of the AWR Project is to transfer approximately 6,800 m<sup>3</sup> [8,900 cubic yards (yd<sup>3</sup>)] of material (to include residue, water, discrete objects and BentoGrout™ and heels) from Silos 1 and 2 to temporary transfer tanks. The composition of the contents in Silos 1 and 2 is primarily a wet, gray, silty claylike material (Reference the Technical Requirements Document (TRD) in Part 7, Section 2.5.1). The Contractor will be responsible for designing, constructing, testing, maintaining and operating the systems and subsystems associated with the AWR Project. The Contractor shall also be responsible for the completion and maintaining all supporting documentation of each project task and/or activity to support readiness assessments required prior to Operations. The AWR Project will consist of the following major systems:

### Silos Waste Retrieval System (SWRS)

The SWRS shall retrieve all materials from the silos. The SWRS shall transfer the residues, BentoGrout™, and heel material to temporary transfer tanks. Discrete objects shall be retrieved and packaged in accordance with the FDF Waste Management Program (Reference Part 7-TRD, Section 5.3). The SWRS shall perform gross decontamination of the silos.

### Decant Sump Waste Retrieval System (DWRS)

The DWRS shall retrieve all materials from the Decant Sump. The decant sump collects decant liquids from the silos. The DWRS shall segregate materials and transfer/package them as appropriate (Reference Part 7-TRD, Section 2.3.1.3). The DWRS shall perform gross decontamination of the Decant Sump.

### Transfer Tank Area (TTA)

The TTA consists of temporary transfer tanks. The TTA is a temporary staging area for the residue and BentoGrout™ which will be transferred to a Full-Scale Remediation Facility under a separate contract. (Reference Part 7-TRD, Section 2.3.1.4).

### Transfer Tank Waste Retrieval System (TWRS)

The TWRS shall retrieve the residue and BentoGrout™ from the TTA and transfer them to the Full-Scale Remediation Facility. (Reference Part 7-TRD, Section 2.3.1.5).

### **Radon Control System (RCS)**

RCS Phase 1 will treat the silo headspace radon concentration.

RCS Phase 2 will treat the radon associated with silo retrieval, storage in the TTA, and Full-Scale Remediation Facility.

### **Full-Scale Mock-Up System (FSMS)**

To validate the Contractor's design and residue retrieval method, a Full-Scale Mock-Up demonstration will be performed with the Silo 4 FSMS. This system will also be utilized for operator training and for troubleshooting during SWRS operations.

## **1.3 General Scope of Work**

The Contractor shall furnish labor, supervision, administration, material, tools and equipment to design, construct, test and direct the operation of the AWR Project. Fluor Daniel Fernald (FDF) shall provide operations labor and technical support. The work shall be performed in accordance with the requirements listed in Part 7-TRD; Part 8 -(ES&H/TRM), Part 9 - **Quality Assurance Requirements**, and provisions of this statement of work. This work is divided into base requirements and optional items to adhere to DOE's site funding strategy. The requirements are described in more detail in the following sections.

## **2.0 BASE REQUIREMENTS**

### **2.1 Project Management Program**

The Contractor shall develop and submit for FDF concurrence, a Project Management Plan (PMP), which defines the Contractor's management approach organizational structure, methodologies, practices, and plans for managing this project. The PMP shall include the document submittals defined in Part 7-TRD, Section 3.1.

### **2.2 Design**

The Contractor shall provide conceptual, preliminary and final design, and engineering reports for the AWR Project. The design shall be in accordance with the requirements and criteria set forth in Part 7-TRD, Section 3.2.

The Contractor may utilize any FDF design information referenced in Part 7, Table of Contents. Although this design is available, it is not the intent of FDF to influence the design process. (An exception to this is that the Contractor must use the pre-conceptual design for the Phase 1, RCS which is being provided by FDF in Part 7-TRD, Appendix F). When the Contractor uses any of the FDF design information (including the RCS Phase 1), the Contractor shall validate, certify, and assume all responsibilities for this design and any modifications. FDF will provide review and concurrence of the Contractor's design.

### 2.3 Safety Documentation

The Contractor shall provide the safety analysis documentation and Health and Safety Plans required for the AWR Project. The safety documentation shall be in accordance with the criteria set forth in Part 7-TRD, Section 3.2 and Part 8.

### 3.0 OPTIONAL REQUIREMENTS

#### 3.1 RCS Phase 1, Construction

The Contractor shall construct the RCS Phase 1 in accordance with the general construction and design requirements defined in Part 6, Section 4.1; Part 7-TRD, Section 2.3.1.2, and Part 8.

This option is considered complete with the successful completion of the RCS Phase 1 ICAT defined in Part 6, Section 4.1.5.

#### 3.2 RCS Phase 1 Readiness Prep and Systems Operability Testing

The Contractor shall provide Standard Operating Procedures (SOP) maintenance procedures, training, startup plan, and System Operability Testing (SOT) for RCS Phase 1 in accordance with the requirements defined in Part 6, Section 4.2; Part 7-TRD, Section 3.5 and Section 3.6, and Part 8.

This option is considered complete with the successful completion of the RCS Phase 1 readiness assessment defined in Part 6, Section 4.3.

#### 3.3 RCS Phase 1 Operation

The Contractor shall operate the RCS Phase 1 in accordance with the requirements defined in Part 6, Section 4.4; Part 7-TRD, Section 2.3.1.2, Section 3.6 and Section 4.0, Appendix F; and Part 8.

This option is considered complete when RCS Phase 2 becomes operational.

#### 3.4 RCS Phase 2 Construction

The Contractor shall construct the RCS Phase 2 in accordance with RCS Phase 2 general design and construction requirements defined in Part 6, Section 4.1; Part 7-TRD, Section 2.3.1.2; and Part 8.

This option is considered complete with the successful completion of the RCS Phase 2 ICAT defined in Part 6, Section 4.1.5.

#### 3.5 RCS Phase 2 Readiness Prep and System Operability Test

The Contractor shall provide SOPs, maintenance procedures, training, startup plan, and

SOTs for RCS Phase 2 in accordance with the requirements defined in Part 6, Section 4.2; Part 7-TRD, Section 3.5 and Section 3.6; and Part 8.

This option is considered complete with the successful completion of the RCS Phase 2 readiness assessment defined in Part 6, Section 4.3.

### 3.6 RCS Phase 2 Operation

The Contractor shall operate the RCS Phase 2 in accordance with the requirements defined in Part 6, Section 4.4; Part 7-TRD, Section 3.6 and Section 4.0; and Part 8.

This option is considered complete upon isolation of Silos 1 and 2 from the RCS after the successful transfer of all materials to the TTA.

### 3.7 FSMS Construction

The Contractor shall construct the FSMS in accordance with requirements defined in Part 6, Section 4.1; and Part 8.

This option is considered complete with the successful completion of the FSMS ICAT defined in Part 6, Section 4.1.5.

### 3.8 FSMS Readiness Prep and System Operability Test

The Contractor shall provide operating procedures, maintenance procedures, training, startup plan, and system operability testing for FSMS in accordance with the requirements defined in Part 6, Section 4.2; Part 7-TRD, Section 3.5 and Section 3.6; and Part 8.

This option is considered complete with the successful completion of the FSMS readiness assessment defined in Part 6, Section 4.3.

### 3.9 FSMS Demonstration

The Contractor shall conduct a FSMS demonstration utilizing Silo 4 and the AWR surrogate as defined in Part 7-TRD, Appendix G and Section 3.4.3, and the test requirements defined in Part 6, Section 4.1.6.

This option is considered complete with the following:

- Successful demonstration of proof of principle testing of the AWR systems; and
- Issuance of final FSMS demonstration report.

### 3.10 FSMS Operations

The Contractor shall operate the FSMS as required for training, problem solving, and test runs in accordance with the requirements defined in Part 6, Section 4.4; Part 7-TRD, Section 3.6 and Section 4.0; and Part 8.

This option is considered complete with the successful completion of AWR operation, Part 6, Section 3.15.

### 3.11 TTA and TWRS Construction

The Contractor shall construct the TTA and TWRS in accordance with the requirements defined in Part 6, Section 4.1; and Part 8.

This option is considered complete with the successful completion of the TTA and TWRS ICAT as defined in Part 6, Section 4.1.5.

### 3.12 TTA and TWRS Readiness Prep and System Operability Test

The Contractor shall provide SOP's maintenance procedures, training, startup plan, and system operability testing for TTA and TWRS in accordance with the requirements defined in Part 6, Section 4.2; Part 7-TRD, Section 3.5 and Section 3.6; and Part 8.

This option is considered complete with the successful completion of the AWR readiness assessment defined in Part 6, Section 4.3.

### 3.13 SWRS and DWRS Construction

The Contractor shall construct the SWRS and DWRS in accordance with requirements defined in Part 6, Section 4.1; and Part 8.

This option is considered complete with the successful completion of the SWRS, DWRS and ICAT as defined in Part 6, Section 4.1.5.

### 3.14 SWRS and DWRS Readiness Prep and System Operability Test

The Contractor shall provide maintenance procedures, training, startup plan, and system operability testing for SWRS and DWRS in accordance with the requirements defined in Part 6, Section 4.2; Part 7-TRD, Section 3.5 and Section 3.6; and Part 8.

This option is considered complete with the successful completion of the AWR readiness assessment.

### 3.15 AWR Operation

The Contractor is responsible for the operation and maintenance activities associated with the AWR Project. The Contractor shall provide technical oversight and direction for the operation and maintenance in accordance with the requirements defined in Part 6, Section 4.4; Part 7-TRD, Section 3.6 and Section 4.0; Part 8.

The Contractor is responsible for the direction of and technical guidance for silo berm removal during silo residue removal action using SWRS in accordance with Part 6, Section 4.4; Part 7-TRD, Sections 3.1.1.1, 3.6, and 5.0.

This option is considered complete with the successful gross decontamination of the silos after transfer of silo materials from the silos to the TTA, Reference Part 6, Exhibit 6.8.

### 3.16 System Closure

The following activities comprise the system closure phase of this project:

- Submittal of closure request and safe workplan for closure; and
- System closure.

The Contractor shall perform these activities as defined in Part 6, Exhibit 6.8 and Part 8.

#### 3.16.1 Pre-requisites to System Closure

This activity applies only to the FSMS, SWRS, RCS Phase 1, and the DWRS. The RCS Phase 2, TTA, and TWRS shall remain operational. Prior to requesting approval to begin system closure and dismantlement activities, the following requirements must be satisfied:

- Retrieval of all materials in Silos 1 and 2 and the Decant Sump;
- Gross decontamination of interior of Silos 1 and 2 and the Decant Sump;
- Removal of contaminated material from equipment;
- System closure of waste retrieval equipment;
- Silos 1 and 2 - as is after completion of retrieval process and removal of all materials; and
- Silo 4 - Removal of AWR surrogate used for demonstrating equipment from Silo 4.

##### 3.16.1.1 Concurrence to Begin System Closure

The Contractor shall submit written request and receive written concurrence from FDF prior to beginning system closure activities.

#### 3.16.2 System Closure Activities

System closure includes activities to place the system in a controlled state ready for dismantlement. Activities included within this task are removal of contaminated material, cleaning of interior surfaces, disconnection of utilities (e.g., water, electricity, and communications), and gross decontamination of exterior surfaces.

##### 3.16.2.1 Flush and Drain

The Contractor shall remove and treat all residual material contained within the process

equipment and support systems and transfer it to the TTA. The Contractor shall remove materials, debris, and contaminants on equipment using methods that minimize the generation of secondary waste.

The Contractor shall flush all process equipment and support systems to remove loose contaminants and process residues. Flush water that can not be treated at the Advanced Wastewater Treatment System (AWWT) shall be treated by the Contractor prior to discharge. Equipment and systems shall then be drained.

#### **3.16.2.2 Utility Disconnection**

Following system closure, the Contractor shall perform all utility disconnect activities associated with its facilities at the point provided by FDF. Utilities shall be isolated and visibly air gapped at the tie-in points and where the utilities enter the facility. The Contractor shall also ensure that tie point isolations are performed in such manner that system and personnel safety are not compromised.

#### **3.16.2.3 Decontamination**

Gross decontamination shall be performed on the exterior of equipment and process systems, and the interior of building surfaces, including floors.

#### **3.16.3 Demobilization Phase**

Demobilization shall consist of removal of the Contractor's temporary facilities and equipment and submittal of all required documentation to close out the project.

##### **3.16.3.1 Authorization to Demobilize**

The Contractor shall submit written request and receive written concurrence from FDF prior to beginning demobilization activities.

##### **3.16.3.2 Removal of Temporary Facilities**

The Contractor shall remove from the FEMP all temporary facilities and equipment installed under this contract. Items leaving the site must pass a radiological survey, and otherwise meet the criteria for release in this contract.

##### **3.16.3.3 Site Restoration**

The Contractor shall restore the physical conditions within the Silos 1 and 2 work zone area and any areas disturbed by the Contractor outside of the work zone area, prior to demobilization as directed by FDF.

#### **4.0 GENERAL REQUIREMENTS**

The following general requirements shall be applicable to all of the specific phases of the

project including construction, testing, readiness, startup and operations.

#### 4.1 General Construction Requirements

##### 4.1.1 Safe Work Plans

The Contractor shall develop and issue Safe Work Plans for each task associated with construction. The Safe Work Plan will provide instructions and provide documentation/records to document construction activities, including in-process testing, refer to Part 7-TRD, Section 3.4.1.2 and ACR-002-Silos safe work plan format.

Safe Work Plans are documentation packages assembled for each system or subsystem. These packages shall contain all related documentation/records, material receipt inspections, equipment repairs, drawings, specifications, manufacturer instructions, etc. as required to construct all parts of the system or subsystem.

Each Safe Work Plan not in use in the field shall be returned to the designated, secured, and controlled storage location. These documentation files shall be maintained current by the Contractor.

FDF shall review and concur with each Safe Work Plan prior to implementation. Prior to the issuance of the Safe Work Plan, FDF has the option to identify and note hold points on the documentation/records. The Contractor shall provide FDF with copies of the Safe Work Plans.

Submittal of the Safe Work Plan(s) shall be in accordance with the Contractor's Submittal Register EXHIBIT 6.2.

##### 4.1.2 Construction Waste Management

The Contractor shall be responsible for the proper disposal of all waste materials generated from construction activities. Material disposition shall be in accordance with Part 7-TRD, Section 5.0 and Part 7, ACR-007 "Waste Material Handling Criteria for Construction Projects".

##### 4.1.3 Site Preparation

The Site Preparation activities shall include relocation of any existing items (such as fencing or storm drains) required to provide space to construct the Contractor designed facilities. This includes grading and paving of all access roads extending from the existing site roads to the Contractor's temporary and permanent facilities; all site work such as storm water management, grading, soil characterization, seeding, etc. required in the work area; Construction and maintenance of gravel lay down and staging areas for materials and equipment; temporary warehousing; and extension of all utilities from the tie in points. (Refer to Part 6, Section 7.0 and Part 7-TRD, Sections 2.3.2.1.

##### 4.1.4 Construction Acceptance Testing (CAT)

The Contractor shall develop a Construction Acceptance Test (CAT) Plan in accordance with the requirements identified Part 7-TRD, Section 3.4.1 and submit the CAT Plan for FDF concurrence review. The Contractor shall utilize the Safe Work Plans as identified in Part 6, Section 4.1.1 to perform and document the CAT activities. All of the initial calibration verifications, and equipment check out and setup will be completed as part of CAT.

#### 4.1.5 Integrated Construction Acceptance Testing

ICAT shall be performed for each system, or sub-system, from control switch to component. ICAT activities shall ensure that each system is tested to verify that it performs within design specifications and operating parameters and shall provide the Contractor and FDF with a high degree of confidence that each system can be started in a manner that is safe to personnel, equipment and environment. Each system, or sub-system, shall be tested to the fullest extent possible using a compatible process medium. Water may be substituted for the AWR surrogate except as noted in Part 6, Section 3.9. Breaching of the silos will not be performed as part of the testing. Any waste generated during the ICAT shall be disposed of in accordance with Part 7-TRD, Section 5.0.

##### 4.1.5.1 ICAT Plan

The Contractor shall prepare and submit for FDF concurrence an ICAT Plan to identify the systems and sub-systems which shall be tested during construction. The ICAT Plan shall address completion of all ICAT activities. The Contractor shall prepare the plan in accordance with the FDF requirements defined in the Part 7-TRD, Section 3.4.2.1.

##### 4.1.5.2 ICAT Procedures

The Contractor shall develop and issue ICAT procedures in accordance with the FDF procedure format as identified in the Part 7-TRD, Section 3.4.2.3. The ICAT procedures shall be developed in such a manner that the Contractor may easily convert them into System Operability Test (SOT) procedure format, as applicable. FDF shall review and concur with the procedures.

##### 4.1.5.3 ICAT Prerequisites

The Contractor shall perform the activities required to satisfy all prerequisites as identified in the ICAT Plan.

##### 4.1.5.4 ICAT Performance

The Contractor shall conduct ICAT as a construction activity prior to turnover to Startup. The Contractor shall perform ICAT utilizing Contractor personnel. FDF will provide review and concurrence of test completion during the performance of the ICAT activities.

##### 4.1.5.5 Final ICAT Report

The Contractor shall prepare and receive FDF concurrence on a Final ICAT Report. The

report shall document lessons learned and satisfactory completion of the ICAT activities. The Final ICAT Report shall be developed as identified in the Part 7-TRD, Section 3.4.2.4.

#### 4.1.6 Full-Scale Mock-Up System (FSMS) Demonstration

##### 4.1.6.1 FSMS Demonstration Readiness Assessment

The Contractor shall complete a Readiness Assessment prior to the performance of the FSMS demonstration. The Readiness Assessment is required to determine that the FSMS equipment is ready to support the required FSMS demonstration. The Readiness Assessment shall meet all of the requirements of the readiness process as identified in Part 6, Section 4.3.

##### 4.1.6.2 FSMS Demonstration Program

As a final part of ICAT activities, the Contractor shall perform and document the FSMS demonstration to validate the design of the AWR. FSMS testing shall demonstrate the retrieving, transferring, settling, decanting, and storing of the AWR surrogate. Any design changes that may result from FSMS demonstration shall be incorporated and redemonstrated before completion of this process.

##### 4.1.6.3 FSMS Demonstration Procedures

The Contractor shall develop procedures that will be used to implement the FSMS demonstration activities. The FSMS procedures shall provide specific guidance to safely direct the performance of the FSMS demonstration activities. The FSMS demonstration procedures shall be developed in accordance with guidelines identified in Part 7-TRD, Section 3.4.3.4. FDF shall review and concur with the FSMS demonstration procedures.

##### 4.1.6.4 FSMS Demonstration Training

The Contractor shall ensure that all personnel involved in the performance of the FSMS demonstration are trained and qualified to perform the FSMS demonstration procedures. This training shall be coordinated as identified in Part 6, Section 4.4.3 and Part 7-TRD, Section 3.6.2.

##### 4.1.6.5 FSMS Demonstration

The Contractor's FSMS demonstration for retrieval of AWR surrogate from Silo 4 shall include as a minimum: 1) the use of AWR equipment as would be used during operations; 2) retrieval from various strategic areas within the silo; 3) removal from the heel area; 4) removal; and separation of discrete objects from the surrogate stream; 5) retrieval of settled surrogate from the TTA to simulate removal and transfer to the full-scale remediation facility; 6) BentoGrout™ and water separation and processing (reference Part 7-TRD, Section 5.0); 7) demonstration of sample collective method for obtaining archive samples of AWR surrogate from transfer line between FSMS and TTA; and 8) gross decontamination of the silos interior walls as required, Part 6, Exhibit 6.8. The Contractor shall transfer the

AWR surrogate from Silo 4 to the TTA and if hydraulic retrieval is used, decant the free liquids.

The Contractor shall verify the performance of the TWRS once the AWR surrogate has been stored in a steady-state condition for a minimum of one week. Following the FSMS demonstration activities, the Contractor shall transfer the AWR surrogate to a holding facility until final disposition of the AWR surrogate can be determined. The Contractor shall be responsible for final disposal of the AWR surrogate once it has been determined by the Contractor that it is not required or that it is no longer cost effective to maintain. The Contractor shall direct the disposal of the AWR surrogate in accordance with the FDF waste management program after verification that the AWR surrogate is not contaminated. Silo 4 FSMS equipment shall be maintained so that it may be used for future activities such as training, problem solving, and test runs. The Contractor shall be responsible for directing the operations of Silo 4 equipment if it is determined that training, problem solving, and test runs are required during AWR residue retrieval operations. The Contractor shall provide all materials (e.g. AWR surrogate if previously disposed of, tools, discrete objects, etc.) required to support the Silo 4 FSMS demonstration activities. The Contractor shall demonstrate the operation of SWRS for decanting of free liquids from the TTA (if the proposed SWRS uses hydraulic retrieval). This shall be completed before the start of the one week AWR surrogate steady-state period. The Contractor shall submit a FSMS Demonstration Plan to FDF for review and approval as stated in Part 7-TRF, Section 3.4.3.1.

The Contractor shall submit a FSMS Demonstration Plan to FDF for review and approval as stated in Part 7-TRD, Section 3.4.3.1.

#### 4.1.6.6 FSMS Demonstration Report

Upon successful completion of the FSMS demonstration activities, the Contractor shall prepare a Final FSMS Demonstration Report in accordance with the FDF requirements defined in the Part 7-TRD, Section 3.4.3.5. The final report shall detail the successful completion of the demonstration activities and the lessons learned. FDF will review and concur with the final report prior to issuance.

#### 4.1.7 Calibration, Grooming and Alignment (CG&A)

The Contractor shall identify the SOT prerequisite activities identified as CG&A in Part 7-TRD, Section 3.5.1. The Contractor shall direct the performance of these CG&A activities to ensure that all equipment is ready to support SOT activities as defined in Part 7-TRD, Section 3.5, prior to turnover from construction to start up.

### 4.2 General Readiness Prep and Startup Requirements

#### 4.2.1 Startup and Turnover Program

Startup and Turnover Program responsibilities shall begin at the turnover from construction to startup and shall end with the turnover to operations. The Contractor shall have the responsibility for the implementation and coordination of all startup and turnover activities.

Startup and turnover activities shall ensure that each system is tested to verify that it performs within design specifications and operating parameters and shall provide FDF with a high degree of confidence that each system can be started in a manner that is safe to personnel, equipment and environment.

#### 4.2.1.1 Startup and Turnover Plan

The Contractor shall prepare and submit for FDF concurrence a Startup and Turnover Plan in accordance with the FDF requirements defined in the Part 7-TRD, Section 3.5.1. The Startup and Turnover Plan shall document the formalized process by which the AWR will be turned over to Operations. The Startup and Turnover Plan shall address all of the activities beginning with construction turnover and ending with turnover to Operations. During startup/turnover activities, Fernald Atomic Trades and Labor Council (FAT&LC) shall be utilized to perform the equipment and system operation using the procedures as guidelines (Refer to EXHIBIT 6.6, Labor Utilization).

##### 4.2.1.1.1 System Operability Test Plan

As part of the overall Startup and Turnover Program, the Contractor shall prepare and submit for FDF concurrence a Plan as specified in the Part 7-TRD, Section 3.5.2. The SOT Plan shall define the testing organization, responsibilities, methodologies, acceptance criteria, documentation, reporting, and activities for each AWR system.

##### 4.2.1.1.2 SOT Specification

The Contractor shall develop and document the SOT specifications to identify the tests to be performed, the systems or components to be tested, the justification for performing the test, and the information to be generated by the test. The SOT specifications shall be developed in accordance with Part 7-TRD, Section 3.5.1. FDF shall review and concur with this document.

##### 4.2.1.1.3 System Operability Test Procedures

The Contractor shall develop SOT procedures as identified in the Part 7-TRD, Section 3.5.3. SOT procedures shall test each system or sub-system from the control switch to system components of the AWR systems. FDF shall review and concur with the procedures prior to issuance.

##### 4.2.1.1.4 System Operability Testing

The Contractor shall direct SOT activities with FDF oversight during the performance of the SOT activities. The Contractor shall ensure that all SOT activities are completed and thoroughly documented as defined in Part 7-TRD, Section 3.5.2. The SOT activities shall include utilization of all site interfaces as identified in Part 6, Section 5.0, FDF Responsibility Interfaces.

#### 4.2.1.1.5 System Operability Test Final Report

The Contractor shall prepare a SOT Final Report in accordance with the FDF requirements defined in the Part 7-TRD, Section 3.5.4. The report shall detail successful completion of the testing activities, satisfaction of the acceptance criteria, test exceptions, relative changes, and the lessons learned. FDF will review and concur with the final report prior to issuance.

#### 4.3 Readiness Assessment

FDF will perform Readiness Assessment of the AWR. Readiness Assessment is required by Part 7, DOE Order 425.1, "Startup and Restart of Nuclear Facilities", and Part 7, RM-0025 "Pre-Operational Assessment Program." Using the graded approach, the appropriate level of RA shall be performed for the RCS, TTA, SWRS, TWRS, and DWRS before operations may begin and for the FSMS prior to performance of the Full-Scale Mock-Up Demonstration. The readiness assessment process provides a systematic approach for independently verifying that required actions have been completed and recorded to confirm that a satisfactory state of readiness to proceed with operation (or FSMS demonstration) exists..

Based on the graded approach, FDF will generate a Readiness Plan of Action and Readiness Implementation Plan defining the detail readiness requirements. The Contractor shall provide all necessary technical support to meet the readiness requirements.

The Contractor shall be responsible for organizing and maintaining the readiness assessment support documentation on an ongoing basis throughout the AWR project. This includes readiness assessment related documentation for the AWR design, construction, testing, and operations support (e.g. training, qualifications, procedures, plans, etc.).

During the AWR Project a Contractor readiness coordinator shall interface with FDF for file development to support the readiness assessment requirements. FDF will have the responsibility for DOE compliance with the readiness assessment requirements. The DOE will provide oversight of the readiness assessment process. Authorization to operate is provided to the Contractor by FDF following successful completion of the required readiness assessment process. The DOE will provide FDF concurrence to operate the AWR Systems.

#### 4.4 Operations

Operations responsibilities shall begin at the turnover from startup to operations. The Contractor shall have the responsibility for the implementation and coordination of all operations activities involved with the AWR. FDF shall provide oversight during the operations activities. Operations activities will be performed using FDF FAT&LC in accordance with Part 5, "Project Labor Agreement" and Part 6, EXHIBIT 6.6, Labor Utilization.

##### 4.4.1 Operations Waste Management

The Contractor shall be responsible for all waste management issues during the performance

of operations activities. The Contractor shall coordinate with operations supervision and waste management personnel as necessary on waste management issues in accordance with the Waste Management Plan, Part 7-TRD, Section 5.0.

#### 4.4.2 Standard Operating Procedures

The Contractor shall develop Standard Operating Procedures (SOP) for each task associated with the normal operation of the AWR Systems. SOPs include procedures for normal operations functions, alarm response, and emergency response. The Contractor shall prepare the procedures in accordance with the FDF procedure format Part 7-TRD, Section 3.6.1. Prior to the issuance of the SOPs, FDF shall provide review and concurrence.

#### 4.4.3 Operations Training

The Contractor shall be responsible for the preparation and implementation of an operations training plan and associated lesson plans as identified in Part 7-TRD, Section 3.6.2. Training includes classroom instruction, on-the-job training and drills. The Contractor shall be responsible to provide the training subject matter expert(s) as instructors for the training classes. The Contractor shall provide a training coordinator and all training activities shall be coordinated through the FDF Training Department. FDF shall review and concur with the training plan and lesson plans prior to being issued. FDF shall provide oversight during the training activities.

#### 4.4.4 AWR Operations Activities

Operations activities are identified as the successful and safe transfer of silos residues to the TTA through the implementation of all related operations activities. The Contractor shall direct the AWR operations activities to be performed in accordance with SOPs. The Conduct of Operations (CONOPS) program elements as identified in DOE Order 425.1; and RM-0029, shall be implemented during operations activities. The Contractor shall provide an Operations Coordinator to interface with the FDF Operations supervision. FAT&LC shall be utilized to perform the equipment and system operations using the SOPs as a guideline. (Refer to Part 6, EXHIBIT 6.6, Labor Utilization)

#### 4.4.5 AWR Operations Progress Reporting

The Contractor shall conduct daily Operations meetings. Contractor and FDF Operations management personnel, as well as any FDF interface organization personnel, shall attend the meetings. Operations progress, issues, obstacles, maintenance items, short-term objectives, and conduct of operations issues shall be discussed and the status shall be documented. The Contractor shall document the meeting minutes to include issues discussed, resolution of issues and open items.

The Contractor shall complete a weekly report to document Operations progress, issues, path forward, and a summary of the daily meetings. The report shall be issued each Monday before 12:00 p.m. (or the next work day if operations activities are not being performed).

#### **4.4.6 Maintenance/Preventative Maintenance Program and Procedures**

The Contractor shall prepare and submit for FDF concurrence, Maintenance/Preventative Maintenance Plan, and related Procedures in accordance with the requirements stated in Part 7-TRD, Section 4.0.

##### **4.4.6.1 AWR Maintenance Activities**

The Contractor shall direct all of the Maintenance Activities involved with the AWR. The Contractor shall utilize the FDF FAT&LC for the maintenance activities of the facility in accordance with Part 6, EXHIBIT 6.6, Labor Utilization.

#### **4.4.7 AWR Sampling Plan and Procedures**

The Contractor shall prepare and submit for FDF concurrence, a sampling plan and sampling procedures in accordance with Part 7-TRD, Section 3.6.4

##### **4.4.7.1 AWR Sampling Activities**

The Contractor shall direct the sampling activities involved with the AWR. The Contractor shall utilize FDF FAT&LC personnel to perform all sampling activities in accordance with the sampling plan and sampling requirements defined in, Part 6, Section 4.5.3; Part 7-TRD, Section 3.1.2 and Section 3.6.4.

#### **4.5 Special Requirements**

##### **4.5.1 Off Site Fabrication**

The Contractor shall exercise to the fullest extent possible off site fabrication, modularization and testing. At the time of delivery to the site, the Contractor shall provide thorough and complete documentation for each module to verify compliance with the design requirements identified in the Part 7-TRD, Section 2.0.

##### **4.5.2 Waste Minimization**

The Contractor shall be responsible for minimizing waste from the retrieval, transferring, decanting, and storing process, in accordance with the Waste Management Plan (refer to Part 7-TRD, Section 5.0).

##### **4.5.3 Sampling**

The Contractor shall also be responsible for directing the collection, analyzing, storage and disposition of any samples required by the Contractor for process control of the AWR. The Contractor shall also be responsible for directing the collection and storage of archived samples required by FDF. The Contractor shall be responsible for providing sample storage facilities for interim and archive samples in accordance with Part 7-TRD, Section 2.3.1.1 and Section 2.3.1.4.

#### 4.5.4 System Responsibility

After completion of system operations and system closure activities identified in Part 6, Section 3.15 and Section 3.16; FDF will assume responsibility for operation and maintenance of all remaining systems that are required for future operations.

#### 4.5.5 Fugitive Dust Control

The Contractor shall submit a Fugitive Dust Control Plan and perform fugitive dust control and in accordance with Part 6, EXHIBIT 6.5.

#### 4.5.6 Consumables

The Contractor shall be responsible for the supply and disposal, as applicable, of consumables required to support construction, startup testing, and operations in accordance with Part 8, Section B.3.7. Examples of these consumables include paper, logbooks, duct tape, absorbent materials (rags) and other material not identified in Part 7-TRD and Part 8. Disposal of used materials shall be in accordance with waste management program, identified in Part 7-TRD, Section 5.0.

#### 4.5.7 Signs and Labels

The Contractor shall install all required signs, labels, equipment tags, etc. and shall paint color codes on PIV's, hydrants and valve boxes in accordance with Part 7-TRD, Section 2.3.3.6.

#### 4.5.8 Contractor Furnished FDF Office Space

Contractor shall provide office space for three FDF personnel, beginning with Notice to Proceed through completion of final design. Offices shall contain furniture, computers with network connections, and telephones. It is expected that FDF will station one resident engineer in the Contractor's office full time, with others visiting periodically for over-the-shoulder reviews.

#### 4.6 Work Not Included

##### 4.6.1 Maintenance

Maintenance of existing site roads, area lighting, existing utilities up to the tie in points, existing storm water control, etc. will be the responsibility of FDF.

##### 4.6.2 Air Sampling/Monitoring

Air sampling and monitoring at the site boundary will be the responsibility of FDF.

#### 4.7 Radiological Isotope of Concern

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A description of the composition of the contents in Silos 1 and 2 is provided in Part 7-TRD, Appendix A.

## **5.0 FDF RESPONSIBILITY INTERFACES**

As indicated throughout this contract, FDF has various responsibilities associated with planning and the implementation of this project, some of which may affect the time it takes the Contractor to perform activities. Table 6-1 provides a listing of various tasks to be performed by FDF, which may impact the Contractor's activities. For each interface task identified, the table also provides information relative to the frequency that the interface can be expected, the approximate duration of the interface activity, and the FDF organization specifically involved. These interfaces are being identified so that the Contractor can factor them into the planning/sequencing of activities.

During the expected time of the FSMS demonstration, the Silo 3 Remediation Contractor will be in operation; requiring advance coordination and possibly off normal shift work to minimize delays. The following table, 'Group Work Tasks', provides the responsible group for various work tasks along with the approximate duration and frequency of the task.

GROUP WORK TASKS TABLE

TASK	FREQUENCY	APPROX. DURATION	RESPONSIBLE GROUP
Respirator Issue	As Required	.25 hrs.	Rad Safety
Haul Road Crossings (Note 1)	As Required	.5 hrs	FDF Rad Safety
Tool & Equipment Entry Inspection	Per Delivery	1.5 hrs.	FDF Health and Safety
Delivery Truck Inspections	Per Delivery	.5 hrs.	FDF Health and Safety
Confined Space Monitoring	Daily	.5 hrs.	FDF Health and Safety
Exit Monitoring	As Required	1.5 hrs.	Rad Safety
Removal of Tool & Equipment from Site	As Required	Up to 5 Days	Rad Safety
Container Prep Material	As Required	2 Days	Waste Management
Delivery of Washable PPC	Daily	2 Days	FDF Construction Coordinator
Container Delivery	As Required	10 Days After Notification	Waste Management
Berm Soil Sampling and Characterization	As Required	10 Days	FDF Waste Management
Analytical determination of effluent for delivery to AWWT	As Required	2 Days	FDF AWWT Group/Waste Management
Employee Training	As Required	Note 2	FDF Training Dept.
Work Permits	As Required	5 Days	FDF Construction Coordinator
Other Permits (Note 3)	As Required	2 Days	FDF Construction Coordinator
Swipe Test for Equipment and Material Release	As Required	2 hrs.	Rad Safety/Waste Management

Note 1 - The OU2 Haul Road, shown on 94X-5500-G-5000X, space allocation site plan OU4, which is used for across site soil transport, and is forecast to be in use during AWR construction activities as follows (approximate periods subject to change): March 1999 to November 1999 and March 2000 to November 2000.

Note 2 - Refer to Part 8, EXHIBIT 8.2, for training requirements and durations.

Note 3 - Refer to Part 8, Section 8.2.7, for listing of additional permits.

### 5.1 Delivery of Contractor Waste Water to the AWWT

The AWWT is designed to only remove uranium from the waste stream. The Contractor is responsible for any pre-treatment of waste water prior to transfer to the AWWT. Flow rates into the AWWT are influenced by other feed streams and therefore will vary. The Contractor is responsible for proper waste water management per the Waste Management Plan (Part 7-TRD, Section 5.0) until it is transferred to the AWWT. Refer to the Part 7-TRD, Section 2.3.2.2 for wastewater system requirements.

### 5.2 Delivery of Contractor Furnished Material and Equipment

All shipments to the Contractor shall be marked with the Contractor's name and FDF contract number.

Upon arrival of common carrier or Contractor delivery shipments, FDF will notify the Contractor by radio or phone.

For all shipments, the Contractor shall provide a qualified escort (refer to note below) and escort the carrier to the Contractor's unloading point for unloading by the Contractor.

Deliveries by the Contractor's truck shall be made at the main gate. FDF will contact the Contractor who is required to send an escort within one-half hour. The Contractor shall escort the truck to the Contractor's unloading point for unloading by the Contractor.

Contractor shall provide trained personnel to serve as escorts and coordinate the dates and times that escorts will be required. Escorts are to be RAD I trained to enter Controlled Zones and RAD II trained to enter Contamination Zones.

NOTE: The Contractor is responsible for the following:

1. All drivers must be escorted unless they are trained in accordance with the site requirements.
2. The driver must be issued a TLD badge.

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## 6.0 TEMPORARY FACILITIES AND UTILITIES

### 6.1 Utilities

The Contractor will be given access, without charge, to limited electrical, and water services in the vicinity of his work site. The quantities and characteristics of these utilities will be limited to that which is available from existing outlets in the following locations:

**Power:** 6 MVA @ 13.2 kV is available at an overhead distribution line located near the project. The location of the distribution line is identified on project drawing 94X-5500-E-SK-4000. Refer to Part 7-TRD, Section 2.5.4.

**Non-Potable Water:** Water line available at a location identified on project drawing 94X-5500-M-SK-7033. The Contractor shall be responsible for maintaining this line during the project including cold weather protection during the winter. Refer to Part 7-TRD, Section 2.5.4.

### 6.2 Telephone Lines

FDf will provide 2 telephone lines and a facsimile line to the Contractor's office trailer. This service includes two telephones and telephone service. Only FDF telephone equipment shall be used at the site; upon request, additional telephone equipment will be made available to the Contractor if possible. FDF will also provide the Contractor with use of a computer connected to the site FDF computer system in the Contractor's office. Additional FDF computers may be made available to the Contractor upon request, if available. FDF will also provide all wiring required to connect the computer to the site computer system at no cost to the Contractor or liability to FDF. The Contractor must adhere to all rules concerning use of this computer. **THE CONTRACTOR WILL NOT BE ALLOWED TO INSTALL ANY SOFTWARE ON A FDF COMPUTER.**

### 6.3 Drinking Water

The Contractor shall furnish all drinking water. Locations for drinking water shall be submitted to FDF in accordance with Part 8, Section B.3.3.

### 6.4 Temporary Buildings

The Contractor shall provide temporary field offices, tool trailers, warehouse for spare parts or equipment, etc., on-site for use during performance of the Contract. A general location of these facilities is shown on Drawing No. 94X-5500-G-5000X. The Contractor shall submit the number, type, size and a sketch of the proposed location of each facility for approval by FDF prior to mobilization. These temporary facilities shall meet the requirements outlined in Part 7, ACR-006 "Contractor Portable Structures."

### 6.5 Protection of Utilities

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The Contractor shall install barricades, bollards, steel plates, signage, etc. as required to protect utilities from damage

## 7.0 SITE LOCATION, ACCESS, LAY DOWN AREAS AND LIMITS OF CONSTRUCTION AREA

### 7.1 Job-Site Location

The exact job-site location and access to the job-site is shown on Drawing 95X-5500-G-SK-7034.

### 7.2 FDF Address

The FDF address is:

<b>Mailing:</b> Fluor Daniel Fernald Attn.: William B. Hensley Mail Stop 52-3 P. O. Box 398704 Cincinnati, OH 45239-8704	<b>Shipping:</b> Fluor Daniel Fernald Attn.: _____ 7400 Willey Road Fernald, OH 45030
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### 7.3 Construction Boundaries

Contractor's activities and storage area shall be limited to the construction boundaries shown on Drawing 94X-5500-G-5000X. The Contractor shall install construction zone fencing (orange snow fence) around the work area as identified on the drawing.

### 7.4 Work Area Boundaries

The Contractor shall establish, within the work area boundaries, the proposed radiological boundaries for review by FDF.

The Contractor is to install and maintain yellow snow fencing to outline the radiological work areas if physical boundaries do not exist.

The snow fencing shall be four feet high and orange for construction fencing or yellow for radiological boundaries. Fencing material shall be secured and made of high density polyethylene.

Snow fence posts shall be No. 5 rebar with orange plastic protective end caps spaced no more than eight feet apart with electric tie-wraps to secure fencing.

The fence line must surround all contamination area and areas with the potential to be contamination areas. In situations where chain-link fence and yellow snow fence requirements overlap, the chain-link fence is required and will be posted by FDF RCTs.

Yellow snow fencing shall not be used to define the boundary between controlled areas and uncontrolled areas.

At the time when any physical boundary which served as a boundary to a contamination area is removed, it must be replaced with a yellow snow fence.

All areas encompassed within the yellow fenced boundary will be considered a radiological contamination area and will be posted (yellow-and-magenta or yellow-and-black signs indicating such things as the isotope of concern, whether an RWP is required to enter, etc.) by FDF Radiological Control. The radiological access control point will be supplied by FDF and will be located at the boundary of the area and will serve as the normal access/egress point to the contamination area and will be shared with other contractors.

For outdoor work, high contamination areas within contamination areas must also be defined by yellow snow fencing. FDF RCTs will be responsible for the signs which label the areas. The Contractor shall be responsible for the fencing itself. The Contractor may elect to have areas defined above the necessary level (e.g., as a High Contamination Area when only a contamination area is required) in order to improve logistics on the project.

Any boundary that separates contamination areas of differing isotopes (e.g., a uranium contamination area and a radium contamination area) must also be separated by yellow fencing. Survey requirements and anti-contamination clothing changes (e.g., removal of an outer set of anti-Cs when going from the radium area to the uranium area) will be required.

#### 7.5 Internal Project Control Points

The Contractor shall submit anticipated locations where internal control points will be required with the preliminary design. FDF will provide all materials required for surveying of equipment and material. The Contractor will provide Personnel Contamination Monitors (PCMs) in accordance with Part 8, Section C.2.1.1.

All control points/radiological areas boundaries (with step-off pads) that are within the work area, beyond the control point trailers, shall be enclosed and of sufficient size (shed, containment, etc.) to contain and cover those necessary materials and equipment for monitoring of personnel, personal items, or equipment (when necessary), collection of any PPE that may be donned or doffed at this point, etc. Any temporary structure required for an internal control point must be provided by the Contractor in accordance with Part 7, ACR-006. A control point shall be established for all radiological area boundaries.

### 8.0 PAY ITEM DESCRIPTIONS

#### 8.1 Descriptions

The Pay Item Descriptions as defined in Part 6, EXHIBIT 6.1 lists the activities for which the Contractor shall report progress and use for invoicing.

#### 8.2 Values

The Contractor shall submit a proposed value for each pay item with his proposal. The value shall correspond to the descriptions of the activities in the Pay Item Description. The Pay Item Description including profit, overhead, insurance, HEPA vacuums, air filtration devices, training and submittal documents not specifically listed as a pay item, and shall be allocated to each pay item proportional to its value. FDF will review each pay item value to ensure that the value is consistent with the work to be performed. FDF will consider the majority of the value of construction as payable upon successful completion of the Contractor's Integrated Construction Acceptance Testing. FDF will consider the majority of the value of Operations as payable upon successful completion of material transfer into the TTA. Pay item values not found acceptable shall be revised and resubmitted. Payments cannot be made until FDF approves the pay item values.

### 8.3 Facility Ownership

FDF will assume facility ownership for facilities and systems as final payments are made to the Contractor based on pay item descriptions identified in Part 6, EXHIBIT 6.1 and Part 6, Section 3.16.1. The Contractor shall be responsible for procurement and control of spare parts for all the facilities and systems.

## 9.0 CONTRACTOR'S PROJECT SCHEDULE

The Subcontractor's Project Schedule shall be a Critical Path Method (CPM) Schedule with two levels that clearly identify all logic ties, and project critical path from Notice to Proceed through project completion. The first level being at the pay item level (Pay Item Layout) and the second level at the activity level (Detailed Layout). Activities will roll up to support the pay items.

The schedule shall be submitted with the proposal. Items not found acceptable shall be revised and resubmitted. The initial Subcontractor's Project Schedule, once approved by FDF, will be known as the Baseline Schedule. This schedule will be used for comparison with the updated monthly project schedule and shall not be revised without concurrence from FDF.

### 9.1 Schedule Layouts

- Pay Item Layout

The Pay Item Layout is a roll up of the Subcontractor's Detailed Layout by pay item. This layout will only contain pay item activities sorted by early start dates. The percent complete of these pay items will be the basis for determining percent complete and dollar value earned on the monthly invoice.

- Detailed Layout

This schedule layout will show activities and provide the ability to: analyze schedule performance, analyze trends, identify recovery/corrective action plans, identify opportunities for improvement and forecast future achievements. Activities are defined as schedule

elements of sufficient detail to adequately evaluate percent of activity completion on a weekly basis. Activities shall, at a minimum, be grouped by pay items and sorted by early start dates. The activity may be a pay item when it is of sufficient detail to meet the definition of the activity. The schedule activities shall also be coded with their corresponding pay item ID code.

The Detailed Layout shall be resource loaded by activity to show man-hours by craft (carpenters, laborers, operators, etc.) expected to be utilized for each activity. Activities will also be resource loaded with a breakdown of pay item values.

## 9.2 Monthly Updates

The Project Schedule shall be updated monthly with the baseline schedule shown as target in each layout.

Approximately 5 working days prior to the monthly invoice cut-off dates (refer to Part 4 EXHIBIT 5), the Contractor shall schedule a "progress review meeting" with FDF. The percent complete for each activity will be summarized by pay item in the Contractor's Project Schedule, and shall be the basis for the amount invoiced for that pay item. A final copy of the updated Project Schedule shall be submitted to FDF by the month end cut-off date.

Monthly Project Schedule Update shall include:

- Actual or projected start and finish dates;
- Activity complete percentage and remaining duration;
- Bar chart schedule comparing the current schedule to the baseline schedule; and
- Revisions to the craft resource requirements, actual to date and estimate to complete in; man-hours.

## 9.3 Four Week Schedule

The Contractor shall develop a rolling schedule which windows four (4) weeks of the Contractor Detailed Layout. This schedule shall consist of the past week, present week and the next two weeks to come. The Contractor shall meet with the FDF construction scheduler to review/prepare the weekly Four Week Schedule prior to the weekly or biweekly Contractor coordination meeting throughout the duration of the project. The format is shown in Part 6, EXHIBIT 6.4.

## 9.4 Contractor's Schedule Software

The Contractor is required to use the preferred Primavera's P3 software or software with compatibility (Version 1.1 for Windows) or (Suretrack for Windows Version 1.5) to prepare the required project schedules. A computer disk containing the updated project schedule

shall be submitted along with the schedule update.

#### 10.0 SUBMITTALS

- **Contractor Submittal Register:** The Contractor shall make all submittals as listed on **Part 6, EXHIBIT 6.2** or as otherwise specified by this document.
- The Contractor shall provide submittals in accordance with **Part 3 General Provisions article A.59, "Specifications and Drawings,"** and **Part 7, ACR-001.**
- The Contractor is responsible for making all submittals required to perform the work as specified in this Contract.

EXHIBIT 6.1  
PAY ITEM DESCRIPTION

PAY ITEM NO.	PAY ITEM DESCRIPTION	DETAILED PAY ITEM DESCRIPTION
<b>BASE REQUIREMENTS</b>		
1.0	Pre-notice to Proceed	(Milestone payment) This Pay Item covers submittals of Performance Bond, Payment Bond, Insurance Certificate as required by the contract.
2.0	Project Management Program	(Milestone payment) This Pay Item covers the completion and submittal of the documents that make up the Contractor's Project Management Program.
2.1		Project Management Plan
2.2		Engineering Management Plan
2.3		Configuration Management Plan
2.4		Record Management Plan
2.5		System Engineering Management Plan
2.6		Independent Safety Review Plan
2.7		Procurement Plan
2.8		Contingency Plan & Emergency Response
2.9		Environmental Control Plan
2.10		Berm Excavation Plan
2.11		Sampling Plan
3.0	Design	(Milestone payment) This Pay Item covers the completion of the Contractor's Design Bases Documents and Design Packages from conceptual through final design.
3.1		Functional Requirements Document
3.2		Conceptual Design Report
3.3		Design Criteria Package

EXHIBIT 6.1  
PAY ITEM DESCRIPTION  
(Continued)

PAY ITEM NO.	PAY ITEM DESCRIPTION	DETAILED PAY ITEM DESCRIPTION
<b>BASE REQUIREMENTS</b>		
3.4		Structures Systems and Components (SSC) Performance Grading
3.5		Failure Modes and Effects
3.6		RAM Analyses
3.7		Preliminary Design
3.8		Final Design
3.8.1		RCS Phase 1
3.8.2		RCS Phase 2
3.8.3		TTA and TWRS
3.8.4		DSWR and SWRS
3.8.5		FSMS
4.0	Safety Documentation	(Milestone Payments)
4.1		ALARA Analysis
4.2		Environmental ALARA Report
4.3		Integrated Hazard Analysis
4.4		Preliminary Safety Analysis Report
4.5		Final Safety Analysis Report
5.0	Standby Base Requirements	This Pay Item covers the Contractor's daily overhead charges not to exceed 45 days, between completion of base requirements and FDF exercising the Options
6.0	Demob/Remob	(Milestone payment) This Pay Item is for the demob and remob cost between completion of the base requirements and FDF exercising the Options.

EXHIBIT 6.1  
PAY ITEM DESCRIPTION  
(Continued)

PAY ITEM NO.	PAY ITEM DESCRIPTION	DETAILED PAY ITEM DESCRIPTION
<b>CONTRACT OPTIONS</b>		
7.0	Construction	(Progress payments) This Pay Item covers all construction activities as defined below including the required documentation. Prior to authorization to mobilize, the Contractor must complete all of the pre-requisites as identified on the submittal register.
7.1	Pre-mobilization	Sample Plan Data Quality Objective
7.2	Mobilization	Receipt of equipment, material, placement of Contractor's office and storage facility, installation of temporary utilities.
7.3	Site Preparation	Relocation of existing items, grading and paving, storm water management, seeding, installation of lay down and staging areas, extension of utilities.
8.0	Radon Control System Phase 1 Construction	(Process Payments)
8.1		Phase 1 RCS CAT Plan
8.2		Phase 1 RCS ICAT Plan
8.3		Phase 1 RCS Safe Work Plan
8.4		Phase 1 RCS ICAT Final Report
8.5		Phase 1 Installation
9.0	Radon Control System Phase 1 Readiness Prep/Startup	(Milestone Payments)
9.1		Phase 1 RCS Operating Procedures
9.2		Phase 1 RCS Maintenance Procedures
9.3		Phase 1 RCS System Operability Test Procedures
9.4		Phase 1 RCS Training
9.5		Phase 1 RCS System Operability Test

EXHIBIT 6.1  
PAY ITEM DESCRIPTION  
(Continued)

PAY ITEM NO.	PAY ITEM DESCRIPTION	DETAILED PAY ITEM DESCRIPTION
10.0	Phase 1 Radon Control System Readiness Review	(Milestone Payments)
11.0	Phase 1 Radon Control System Operation	(Milestone Payments)
12.0	Radon Control System Phase 2 Construction	(Progress Payments)
12.1		Phase 2 RCS CAT Plan
12.2		Phase 2 RCS ICAT Plan
12.3		Phase 2 RCS Safe Work Plan
12.4		Phase 2 RCS ICAT Final Report
12.5		Phase 2 RCS Installation
13.0	Phase 2 Radon Control System Readiness Prep/Startup	(Milestone Payment)
13.1		Phase 2 RCS Operating Procedures
13.2		Phase 2 RCS Maintenance Procedures
13.3		Phase 2 RCS System Operability Test Procedures
13.4		Phase 2 RCS Training
13.5		Phase 2 RCS System Operability Test
14.0	Full-Scale Mock-Up System Construction	(Progress Payment)
14.1		FSMS CAT Plan
14.2		FSMS ICAT Plan
14.3		FSMS Safe Work Plan
14.4		FSMS ICAT Final Report
14.5		FSMS Installation
15.0	Full-Scale Mock-Up System Readiness Prep	Milestone Payments

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EXHIBIT 6.1  
PAY ITEM DESCRIPTION  
(Continued)

PAY ITEM NO.	PAY ITEM DESCRIPTION	DETAILED PAY ITEM DESCRIPTION
15.1		FSMS Test Plan
15.2		FSMS Training
15.3		FSMS Test Procedures
16.0	Full-Scale Mock-Up System Readiness Prep/Startup	(Milestone Payment)
16.1		FSMS Test Readiness Assessment
16.2		FSMS Test
16.3		FSMS Test Final Report
17.0	TTA and TWRS Construction	(Progress Payment)
17.1		TTA and TWRS CAT Plan
17.2		TTA and TWRS ICAT Plan
17.3		TTA and TWRS Safe Work Plan
17.4		TTA and TWRS ICAT Final Report
17.5		TTA and TWRS Installation
18.0	Transfer Tank Area and Transfer Tank Waste Retrieval System Readiness Prep/SOT	(Milestone Payment)
18.1		TTA and TWRS Operating Procedures
18.2		TTA and TWRS Maintenance Procedures
18.3		TTA and TWRS System Operability Test Procedures
18.4		TTA and TWRS Training
18.5		TTA and TWRS System Operability Test
19.0	Accelerated Waste Retrieval Operations	(Milestone Payment) The AWR operation consists of a combined payment for construction, readiness, and operation of the SWRS & DWRS based on percent of the contents removed from the silos.

EXHIBIT 6.1  
PAY ITEM DESCRIPTION  
(Continued)

PAY ITEM NO.	PAY ITEM DESCRIPTION	DETAILED PAY ITEM DESCRIPTION
19.1		25%
19.2		50%
19.3		75%
19.4		100%
20.0	Standby	This pay item addresses the potential daily rate for standby time between release of the Options, not to exceed 45 days.
21.0	Demobilization / Remobilization	(Milestone Payment) This pay item addresses the potential demob/remob costs between the release of the Options.
22.0	Demobilization	(Milestone Payment) This pay item includes clean-up of job site, removal from the FEMP of Contractor owned equipment, materials, trailers, return of GFE, approval of required closeout.

EXHIBIT 6.2  
CONTRACTOR SUBMITTAL REGISTER

Submittal Due Dates

<p>CONTRACT No. _____</p> <p>CONTRACT Title _____</p> <p>CONTRACTOR _____</p>	<p>A= 10 days after award</p> <p>B= 60 days from notice to proceed</p> <p>C= 90 days from notice to proceed</p> <p>D= 30 days prior to start of the activity</p> <p>E= Prior to start of activity</p> <p>F= 120 days after conceptual design</p> <p>G= 30 days after preliminary design</p> <p>H= 60 days prior to start of construction</p> <p>I= 30 days prior to start of construction</p> <p>J= 5 days prior to site access</p>	<p>L= 10 days prior to bringing on site</p> <p>M= 10 days after completion of activity</p> <p>N= 20 days after completion of activity</p> <p>O= 60 days prior to turnover to start up</p> <p>P= 30 days prior to turnover to start up</p> <p>Q= 10 days prior to readiness review</p> <p>R= Upon completion of project</p> <p>S= 2 days prior to site access</p> <p>T= 10 days after Notice to Proceed</p> <p>U= 60 days prior to scheduled use</p>
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\*Submitted directly to the FDF Project Manager or Contract Administrator

Submittal No. (1)	Submittal Type (2)	Document Family (3)	Document Description (4)	Submittal Due Date (5)	FDF Review (6)
40710-624-P21-01	INF	Procurement	Performance Bond	A	N/A
40710-624-P22-01	INF	Procurement	Payment Bond	A	N/A
40710-624-P23-01	INF	Procurement	PLA Letter of Assent	A	N/A
40710-624-P24-01	INF	Procurement	Statement of Acknowledgment	A	N/A
40710-624-P25-01	INF	Procurement	Subcontracting Plan	A	N/A
40710-624-P4SC5-01	INF	Construction	* Entry Check List	J	N/A
40710-624-P4SC8-01	INF	Engineering	Red Line Drawings	N	N/A
40710-624-P4SC10-01	INF	Construction	List of Contractor Tools and Equipment	L	N/A
40710-624-P4SC13-01	INF	Procurement	* Invoices	Monthly	N/A

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EXHIBIT 6.2  
CONTRACTOR SUBMITTAL REGISTER  
(Continued)

Submittal Due Dates

CONTRACT No. _____  CONTRACT Title _____  CONTRACTOR _____	A = 10 days after award B = 60 days from notice to proceed C = 90 days from notice to proceed D = 30 days prior to start of the activity E = Prior to start of activity F = 120 days after conceptual design G = 30 days after preliminary design H = 60 days prior to start of construction I = 30 days prior to start of construction J = 5 days prior to site access	L = 10 days prior to bringing on site M = 10 days after completion of activity N = 20 days after completion of activity O = 60 days prior to turnover to start up P = 30 days prior to turnover to start up Q = 10 days prior to readiness review R = Upon completion of project S = 2 days prior to site access
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Submittal No. (1)	Submittal Type (2)	Document Family (3)	Document Description (4)	Submittal Due Date (5)	FDF Review (6)
40710-624-P4SC14-01	INF	Construction	* Daily Reports	Daily	N/A
40710-624-P4SC22-01	INF	Construction	* Exit Check list	K	N/A
40710-624-P4SC28-01	INF	Construction	Fuel storage tank	K	N/A
40710-624-P4SC30-01	INF	Construction	Fastener Quality Act	R	N/A
40710-624-P621-01	CFC	Engineering	Project Management Plan	B	30 days
40710-624-P621-02	CFC	Engineering	Engineering Management Plan	B	30 days
40710-624-P621-03	CFC	Engineering	Configuration Management Plan	B	30 days
40710-624-P621-04	CFC	Engineering	Record Management Plan	B	30 days
40710-624-P621-05	CFC	Engineering	System Engineering Management Plan	B	30 days
40710-624-P621-06	CFC	Engineering	Independent Safety Review Plan	B	30 days
40710-624-P621-07	CFC	Engineering	Procurement Plan	B	30 days
40710-624-P621-08	CFC	Engineering	Human Factors Program Plan	B	30 days
40710-624-P621-09	CFC	Engineering	Contingency Plan and Emergency Response	I	30 days

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EXHIBIT 6.2  
CONTRACTOR SUBMITTAL REGISTER  
(Continued)

Submittal Due Dates

CONTRACT No. _____  CONTRACT Title _____  CONTRACTOR _____	A = 10 days after award B = 60 days from notice to proceed C = 90 days from notice to proceed D = 30 days prior to start of the activity E = Prior to start of activity F = 120 days after conceptual design G = 30 days after preliminary design H = 60 days prior to start of construction I = 30 days prior to start of construction J = 5 days prior to site access	L = 10 days prior to bringing on site M = 10 days after completion of activity N = 20 days after completion of activity O = 60 days prior to turnover to start up P = 30 days prior to turnover to start up Q = 10 days prior to readiness review R = Upon completion of project S = 2 days prior to site access
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Submittal No. (1)	Submittal Type (2)	Document Family (3)	Document Description (4)	Submittal Due Date (5)	FDF Review (6)
40710-624-P621-10	CFC	Engineering	Environmental Control Plan	B	30 days
40710-624-P621-11	CFC	Engineering	Berm Excavation Plan	B	30 days
40710-624-P621-12	CFC	Engineering	Sampling Plan	B	30 days
40710-624-P622-01	CFC	Engineering	Conceptual Design Package	C	30 days
40710-624-P622-02	CFC	Engineering	Functional Requirements Document	C	30 days
40710-624-P622-03	CFC	Engineering	Design Criteria Package	C	30 days
40710-624-P622-04	CFC	Engineering	Functional Analysis	C	30 days
40710-624-P622-05	CFC	Engineering	Process Flow Diagrams	C	30 days
40710-624-P622-06	CFC	Engineering	Heat and Material Balance	C	30 days
40710-624-P622-07	CFC	Engineering	Piping and Instrumentation Diagrams	C	30 days
40710-624-P622-08	CFC	Engineering	Performance Grading	C	30 days
40710-624-P622-09	CFC	Engineering	Control System Block Diagram	C	30 days
40710-624-P622-10	CFC	Engineering	ALARA Plan (Environmental & Radiological)	C	30 days

EXHIBIT 6.2  
CONTRACTOR SUBMITTAL REGISTER  
(Continued)

Submittal Due Dates

CONTRACT No. _____ CONTRACT Title _____ CONTRACTOR _____	A = 10 days after award B = 60 days from notice to proceed C = 90 days from notice to proceed D = 30 days prior to start of the activity E = Prior to start of activity F = 120 days after conceptual design G = 30 days after preliminary design H = 60 days prior to start of construction I = 30 days prior to start of construction J = 5 days prior to site access	L = 10 days prior to bringing on site M = 10 days after completion of activity N = 20 days after completion of activity O = 60 days prior to turnover to start up P = 30 days prior to turnover to start up Q = 10 days prior to readiness review R = Upon completion of project S = 2 days prior to site access
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\*Submitted directly to the FDF Project Manager or Contract Administrator

Submittal No. (1)	Submittal Type (2)	Document Family (3)	Document Description (4)	Submittal Due Date (5)	FDF Review (6)
40710-624-P622-11	CFC	Engineering	Tie in Drawings	C	30 days
40710-624-P622-12	CFC	Engineering	General Arrangement Drawings	C	30 days
40710-624-P622-13	CFC	Engineering	Electrical Load Summary	C	30 days
40710-624-P622-14	CFC	Engineering	Electrical One line diagrams	C	30 days
40710-624-P622-15	CFC	Engineering	Retrieval Design	C	30 days
40710-624-P622-16	CFC	Engineering	Site Plot Plan	C	30 days
40710-624-P622-17	CFC	Engineering	Storm water Drainage Plans	C	30 days
40710-624-P622-18	CFC	Engineering	Data Sheets & Specifications for Key Equipment & Long Lead Items	C	30 days
40710-624-P622-19	CFC	Engineering	Equipment List	C	30 days
40710-624-P622-20	CFC	Engineering	Instrument List	F	30 days
40710-624-P622-21	CFC	Engineering	Full-Scale Mock-Up Test Plan	C	30 days
40710-624-P622-22	CFC	Engineering	Timed Estimate of Secondary Waste	C	30 days

EXHIBIT 6.2  
CONTRACTOR SUBMITTAL REGISTER  
(Continued)

Submittal Due Dates

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Submittal No. (1)	Submittal Type (2)	Document Family (3)	Document Description (4)	Submittal Due Date (5)	FDF Review (6)
40710-624-P622-23	CFC	Engineering	Control Room Arrangement	F	30 days
40710-624-P622-24	CFC	Engineering	List of Required Drawings, Specs & Documents	C	30 days
40710-624-P622-25	CFC	Engineering	Line List	F	30 days
40710-624-P622-26	CFC	Engineering	Metallurgical Diagrams	F	30 days
40710-624-P622-27	CFC	Engineering	Radiation Zone Drawings	F	30 days
40710-624-P622-28	CFC	Engineering	Shielding Calculations	F	30 days
40710-624-P622-29	CFC	Engineering	Underground Piping Drawings	F	30 days
40710-624-P622-30	CFC	Engineering	System Design Descriptions	F	30 days
40710-624-P622-31	CFC	Engineering	Cathodic Protection Design	F	30 days
40710-624-P622-32	CFC	Engineering	Lightening Protection Design	F	30 days
40710-624-P622-33	CFC	Engineering	Grounding Design	F	30 days
40710-624-P622-34	CFC	Engineering	Paving and Grading Plans	F	30 days
40710-624-P622-35	CFC	Engineering	Final Design Report RCS Phase 1	H	30 days

EXHIBIT 6.2  
CONTRACTOR SUBMITTAL REGISTER  
(Continued)

Submittal Due Dates

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40710-624-P622-36	I	Engineering	Final Design Report All Systems	H	30 days
40710-624-P622-37	CFC	Engineering	Design Closeout Report	Q	10 days
40710-624-P622-38	INF	Engineering	Failure Modes & Effects Analysis	G	N/A
40710-624-P622-39	INF	Engineering	Reliability Availability & Maintainability Analysis	G	N/A
40710-624-P622-40	INF	Engineering	Value Engineering Review	G	N/A
40710-624-P622-41	INF	Engineering	Energy Conservation Report	G	N/A
40710-624-P622-42	CFC	Engineering	Fire Hazard Analysis	G	30 days
40710-624-P622-43	INF	Engineering	Constructability/Operability Review	G	N/A
40710-624-P622-44	CFC	Engineering	Safety Basis Documentation Implementation Plan	B	30 days
40710-624-P622-45	CFC	Engineering	Preliminary Hazard Assessment	G	30 days
40710-624-P622-46	CFC	Engineering	Hazard Category Calculations	G	30 days
40710-624-P622-47	CFC	Engineering	Safety Assessment	G	30 days
40710-624-P622-48	CFC	Engineering	Safety Basis Document	G	30 days

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EXHIBIT 6.2  
CONTRACTOR SUBMITTAL REGISTER  
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Submittal No. (1)	Submittal Type (2)	Document Family (3)	Document Description (4)	Submittal Due Date (5)	FDF Review (6)
40710-624-P631-01	CFC	Construction	RCS Phase 1 Safe Work Plans	D	30 days
40710-624-P631-02	CFC	Construction	RCS Phase 1 Construction Acceptance Test (CAT) Plan	D	30 days
40710-624-P631-03	CFC	Construction	RCS Phase 1 Integrated Construction Acceptance Test Plans (ICAT)	D	30 days
40710-624-P631-04	CFC	Construction	RCS Phase 1 ICAT Procedures	D	30 days
40710-624-P631-05	INF	Construction	RCS Phase 1 Final ICAT Report	M	N/A
40710-624-P632-01	CFC	Operations	RCS Phase 1 Startup and Turnover Plan	I	30 days
40710-624-P632-02	CFC	Operations	System Operability Test (SOT) Plan	O	30 days
40710-624-P632-03	INF	Operations	RCS Phase 1 System Operability Test (SOT) Specifications	P	N/A
40710-624-P632-04	CFC	Operations	SOT Procedures	O	30 days
40710-624-P632-05	INF	Operations	RCS Phase 1 SOT Final Report	M	N/A
40710-624-P633-01	CFC	Operations	RCS Phase 1 Operating Procedures (SOP)	O	30 days

EXHIBIT 6.2  
CONTRACTOR SUBMITTAL REGISTER  
(Continued)

Submittal Due Dates

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40710-624-P631-02	CFC	Construction	RCS Phase 1 Construction Acceptance Test (CAT) Plan	D	30 days
40710-624-P631-03	CFC	Construction	RCS Phase 1 Integrated Construction Acceptance Test Plans (ICAT)	D	30 days
40710-624-P631-04	CFC	Construction	RCS Phase 1 ICAT Procedures	D	30 days
40710-624-P631-05	INF	Construction	RCS Phase 1 Final ICAT Report	M	N/A
40710-624-P632-01	CFC	Operations	RCS Phase 1 Startup and Turnover Plan	I	30 days
40710-624-P632-02	CFC	Operations	System Operability Test (SOT) Plan	O	30 days
40710-624-P632-03	INF	Operations	RCS Phase 1 System Operability Test (SOT) Specifications	P	N/A
40710-624-P632-04	CFC	Operations	SOT Procedures	O	30 days
40710-624-P632-05	INF	Operations	RCS Phase 1 SOT Final Report	M	N/A
40710-624-P633-01	CFC	Operations	RCS Phase 1 Operating Procedures (SOP)	O	30 days

EXHIBIT 6.2  
CONTRACTOR SUBMITTAL REGISTER  
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40710-624-P633-02	CFC	Operations	RCS Phase 1 Operations Training Plan	O	30 days
40710-624-P633-03	CFC	Operations	RCS Phase 1 Operations Training Lesson Plans	O	30 days
40710-624-P633-04	INF	Operations	RCS Phase 1 Operations Weekly Report	Weekly	NA
40710-624-P633-05	CFC	Operations	RCS Phase 1 Maintenance Plan	O	30 days
40710-624-P633-06	CFC	Operations	RCS Phase 1 Maintenance Procedures	O	30 days
40710-624-P634-01	CFC	Construction	RCS Phase 2 Safe Work Plans	D	30 days
40710-624-P634-02	CFC	Construction	RCS Phase 2 Construction Acceptance Test (CAT) Plan	D	30 days
40710-624-P634-03	CFC	Construction	RCS Phase 2 Integrate Construction Acceptance Test Plans	D	30 days
40710-624-P634-04	CFC	Construction	RCS Phase 2 ICAT Procedures	D	30 days
40710-624-P634-05	INF	Construction	RCS Phase 2 Final ICAT Report	M	N/A
40710-624-P635-01	CFC	Operations	RCS Phase 2 Startup & Turnover Plan	I	30 days
40710-624-P635-02	CFC	Operations	System Operability Test (SOT) Plan	O	30 days

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EXHIBIT 6.2  
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40710-624-P635-03	INF	Operations	RCS Phase 2 System Operability Test (SOT) Specifications	P	N/A
40710-624-P635-04	CFC	Operations	SOT Procedures	O	30 days
40710-624-P635-05	INF	Operations	RCS Phase 2 SOT Final Report	M	N/A
40710-624-P636-01	CFC	Operations	RCS Phase 2 Operating Procedures	O	30 days
40710-624-P636-02	CFC	Operations	RCS Phase 2 Operations Training Plan	O	30 days
40710-624-P636-03	CFC	Operations	RCS Phase 2 Operations Training Lesson Plans	O	30 days
40710-624-P636-04	INF	Operations	RCS Phase 2 Operations Weekly Report	Weekly	N/A
40710-624-P636-05	CFC	Operations	RCS Phase 2 Maintenance Plan	O	30 days
40710-624-P636-06	CFC	Operations	RCS Phase 2 Maintenance Procedures	O	30 days
40710-624-P637-01	CFC	Construction	Full Scale Mock-Up System (FSMS) Safe Work Plan	D	30 days
40710-624-P637-02	CFC	Construction	FSMS Construction Acceptance Test (CAT) Plan	D	30 days
40710-624-P637-03	CFC	Construction	FSMS Integrated Construction Acceptance Test (ICAT) Plans	D	30 days

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EXHIBIT 6.2  
CONTRACTOR SUBMITTAL REGISTER  
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Submittal No. (1)	Submittal Type (2)	Document Family (3)	Document Description (4)	Submittal Due Date (5)	FDF Review (6)
40710-624-P637-04	CFC	Construction	FSMS ICAT Procedures	D	30 days
40710-624-P637-05	INF	Construction	FSMS Final ICAT Report	M	N/A
40710-624-P310-01	CFC	Operation	FSMS Operating Procedures	O	30 days
40710-624-P310-06	CFC	Operation	FSMS Maintenance Procedures	O	30 days
40710-624-P638-03	INF	Operation	FSMS System Operability Test (SOT) Specifications	P	N/A
40710-624-P638-01	CFC	Operation	FSMS Startup & Turnover Plan	I	30 days
40710-624-P638-05	INF	Operation	FSMS SOT Final Report	M	N/A
40710-624-P637-06	CFC	Construction	FSMS Demonstration Procedures	O	30 days
40710-624-P637-07	CFC	Construction	FSMS Demonstration Training Plan	O	30 days
40710-624-P637-08	CFC	Construction	FSMS Demonstration Training Lesson Plans	O	30 days
40710-624-P637-09	INF	Construction	FSMS Demonstration Final Report	M	N/A
40710-624-P6102-01	CFC	Construction	Project Schedule	B	10 days
40710-624-P6103-01	INF	Construction	Rolling Four Week Schedule	Weekly	N/A

EXHIBIT 6.2  
CONTRACTOR SUBMITTAL REGISTER  
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40710-624-P6310-02	CFC	Operations	FSMS Operations Training Plan	O	30 days
40710-624-P6310-03	CFC	Operations	FSMS Operations Training Lesson Plans	O	30 days
40710-624-P6310-04	INF	Operations	FSMS Operations Weekly Report	Weekly	N/A
40710-624-P6310-05	CFC	Operations	FSMS Maintenance Plan	O	30 days
40710-624-P6311-01	CFC	Construction	TTA Safe Work Plans	D	30 days
40710-624-P6311-02	CFC	Construction	TTA Construction Acceptance Test (CAT) Plan	D	30 days
40710-624-P6311-03	CFC	Construction	TTA Integrated Construction Acceptance Test (ICAT) Plans	D	30 days
40710-624-P6311-04	CFC	Construction	TTA ICAT Procedures	D	30 days
40710-624-P6311-05	INF	Construction	TTA Final ICAT Report	M	N/A
40710-624-P6311-06	CFC	Construction	TWRS Safe Work Plans	D	30 days
40710-624-P6311-07	CFC	Construction	TWRS Construction Acceptance Test (CAT) Plan	D	30 days
40710-624-P6311-08	CFC	Construction	TWRS Integrated Construction Acceptance Test (ICAT) Plans	D	30 days

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Submittal Due Dates

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40710-624-P6311-09	CFC	Construction	TWRS ICAT Procedures	D	30 days
40710-624-P6311-10	INF	Construction	TWRS Final ICAT Report	M	N/A
40710-624-P6312-04	CFC	Operations	TTA SOT Procedures	O	30 days
40710-624-P6312-02	CFC	Operations	TTA SOT Plan	O	30 days
40710-624-P6312-03	CFC	Operations	TTA System Operability Test (SOT) Specification	P	30 days
40710-624-P6312-01	CFC	Operations	TTA Startup & Turnover Plan	I	30 days
40710-624-P6312-05	INF	Operations	TTA SOT Final Report	M	N/A
40710-624-P6312-09	CFC	Operations	TWRS SOT Procedures	O	30 days
40710-624-P6312-07	CFC	Operations	TWRS SOT Plan	O	30 days
40710-624-P6312-08	CFC	Operations	TWRS System Operability Test (SOT) Specification	P	30 days
40710-624-P6312-06	CFC	Operations	TWRS Startup & Turnover Plan	I	30 days
40710-624-P6312-10	INF	Operations	TWRS SOT Final Report	M	N/A
40710-624-P6313-01	CFC	Construction	SWRS Safe Work Plans	D	30 days

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40710-624-P6313-02	CFC	Construction	SWRS Construction Acceptance Test (CAT) Plan	D	30 days
40710-624-P6313-03	CFC	Construction	SWRS Integrated Construction Acceptance Test (ICAT) Plans	D	30 days
40710-624-P6313-04	CFC	Construction	SWRS ICAT Procedures	D	30 days
40710-624-P6313-05	INF	Construction	SWRS Final ICAT Report	M	N/A
40710-624-P6313-06	CFC	Construction	DWRS Safe Work Plans	D	30 days
40710-624-P6313-07	CFC	Construction	DWRS Construction Acceptance Test (CAT) Plan	D	30 days
40710-624-P6313-08	CFC	Construction	DWRS Integrated Construction Acceptance Test (ICAT) Plans	D	30 days
40710-624-P6313-09	CFC	Construction	DWRS ICAT Procedures	D	30 days
40710-624-P6313-10	INF	Construction	DWRS Final ICAT Report	M	N/A
40710-624-P6314-04	CFC	Operations	SWRS SOT Procedures	O	30 days
40710-624-P6314-02	CFC	Operations	SWRS SOT Plan	O	30 days
40710-624-P6314-03	CFC	Operations	SWRS System Operability Test (SOT) Specification	P	30 days

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Submittal Due Dates

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40710-624-P6314-01	CFC	Operations	SWRS Startup & Turnover Plan	I	30 days
40710-624-P6314-05	INF	Operations	SWRS SOT Final Report	M	N/A
40710-624-P6314-09	CFC	Operations	DWRS SOT Procedures	O	30 days
40710-624-P6314-07	CFC	Operations	DWRS SOT Plan	O	30 days
40710-624-P6314-08	CFC	Operations	DWRS System Operability Test (SOT) Specification	P	30 days
40710-624-P6314-06	CFC	Operations	DWRS Startup & Turnover Plan	I	30 days
40710-624-P6314-10	INF	Operations	DWRS SOT Final Report	M	N/A
40710-624-P6315-01	CFC	Operations	AWR Standard Operating Procedures (SOP)	O	30 days
40710-624-P6315-02	CFC	Operations	AWR Operations Training Plan	O	30 days
40710-624-P6315-03	CFC	Operations	TTA Operations Training Lesson Plans	O	30 days
40710-624-P6315-04	INF	Operations	TTA Weekly Report	Weekly	N/A
40710-624-P6315-05	CFC	Operations	TTA Maintenance Plan	O	30 days
40710-624-P6315-06	CFC	Operations	Maintenance Procedures	O	30 days

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EXHIBIT 6.2  
CONTRACTOR SUBMITTAL REGISTER  
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Submittal Due Dates

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40710-624-P6315-07	CFC	Operations	Sample Plan	B	30 days
40710-624-P6315-08	CFC	Operations	Sample Procedures	B	30 days
40710-624-P6316-01	CFC	Construction	Request to Begin System Closure	F	10 days
40710-624-P6316-02	CFC	Construction	Request to Begin Demobilization	F	10 days
40710-624-P6465-01	CFC	Construction	Fugitive Dust Control Plan	H	30 days
40710-624-P6821-01	CFC	Health and Safety	Project Specific Health and Safety Plan	I	30 days
40710-624-P68371-01	CFC	Health and Safety	Hazardous Chemical List	I	N/A
40710-624-P6861-01	CFC	Health and Safety	Lifting Plan	E	10 days
40710-624-P68621-01	INF	Health and Safety	Level 1 Rigger Verification	S	N/A
40710-624-P68622-01	INF	Health and Safety	Level 2 Rigger Verification	S	N/A
40710-624-P68623-01	INF	Health and Safety	Level 3 Rigger Verification	S	N/A
40710-624-P6863-01	INF	Health and Safety	Annual Crane Inspection	E	N/A
40710-624-P6818-01	INF	Health and Safety	Substance Abuse Program	E	N/A

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CONTRACTOR SUBMITTAL REGISTER  
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CONTRACT No. _____		CONTRACT Title _____		CONTRACTOR _____		A = 10 days after award B = 60 days from notice to proceed C = 90 days from notice to proceed D = 30 days prior to start of the activity E = Prior to start of activity F = 120 days after conceptual design G = 30 days after preliminary design H = 60 days prior to start of construction I = 30 days prior to start of construction J = 5 days prior to site access		L = 10 days prior to bringing on site M = 10 days after completion of activity N = 20 days after completion of activity O = 60 days prior to turnover to start up P = 30 days prior to turnover to start up Q = 10 days prior to readiness review R = Upon completion of project S = 2 days prior to site access	
*Submitted directly to the FDF Project Manager or Contract Administrator									
Submittal No. (1)	Submittal Type (2)	Document Family (3)	Document Description (4)	Submittal Due Date (5)	FDF Review (6)				
40710-624-P8B34-01	CFC	Health & Safety	Hearing & Conservation Program Plan	I	30 days				
40710-624-P8C212-01	INF	Health and Safety	Daily Activity List	Daily	N/A				
40710-624-P8D-01	CFC	Health and Safety	Contractor's Health and Safety Program	A	30 days				
40710-624-P8E1-01	INF	Health and Safety	Certification of Training	E	N/A				
40710-624-P8E21-01	INF	Health and Safety	Request for Site Access	J	N/A				
40710-624-P9	CFC	Quality	Quality Assurance Program	B	60 days				
40710-624-ACR001-01	INF	Construction	Submittal Register	T	N/A				
40710-624-ACR001-02	INF	Construction	Samples	U	N/A				
40710-624-ACR001-03	INF	Construction	Material Certifications	U	N/A				
40710-624-ACR001-04	INF	Construction	Laboratory Test Reports	U	N/A				
40710-624-ACR004-01	INF	Construction	Ladder Competent Person Training Documentation	E	N/A				
40710-624-ACR005-01	CFC	Construction	PPE	D	30 days				
40710-624-ACR006-01	CFC	Construction	Portable Structures Sketch	K	30 days				

Date: March 23, 1998

EXHIBIT 6.2  
CONTRACTOR SUBMITTAL REGISTER  
(Continued)

Submittal Due Dates

<p>CONTRACT No. _____</p> <p>CONTRACT Title _____</p> <p>CONTRACTOR _____</p>	<p>A = 10 days after award</p> <p>B = 60 days from notice to proceed</p> <p>C = 90 days from notice to proceed</p> <p>D = 30 days prior to start of the activity</p> <p>E = Prior to start of activity</p> <p>F = 120 days after conceptual design</p> <p>G = 30 days after preliminary design</p> <p>H = 60 days prior to start of construction</p> <p>I = 30 days prior to start of construction</p> <p>J = 5 days prior to site access</p>	<p>L = 10 days prior to bringing on site</p> <p>M = 10 days after completion of activity</p> <p>N = 20 days after completion of activity</p> <p>O = 60 days prior to turnover to start up</p> <p>P = 30 days prior to turnover to start up</p> <p>Q = 10 days prior to readiness review</p> <p>R = Upon completion of project</p> <p>S = 2 days prior to site access</p>
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\*Submitted directly to the FDF Project Manager or Contract Administrator

Submittal No. (1)	Submittal Type (2)	Document Family (3)	Document Description (4)	Submittal Due Date (5)	FDF Review (6)
40710-624-ACR006-02	CFC	Construction	Portable Structure Anchoring System	K	30 days
40710-624-ACR007-01	CFC	Construction	Waste Handling Work Plan	B	30 days

EXHIBIT 6.2 (continued)

Instructions For Completing the Submittal Register

1. FDF insert the submittal number as follows:

- Project number (a number assigned to the project by FDF)
- Contract number ( a number assigned by FDF)
- Submittal number (specification number, contract part number and from which the submittal is derived from will be assigned by FDF). The contract part number PSC23 is shown as "P" of part, (part number like 4), section from the part "SC23."
- Sequential number will start with the number one with each submittal group.

Project#      Contract#Spec. #Sequence#  
1642-          605-01011-01

Project#      Contract#Contract Part#Sequence#  
1642-          605-P4SC2301

Note:      When additional submittals are required, the Contractor shall enter the next sequential number in that submittal group (i.e. if the last submittal number in was 1642-605-01011-025, the next submittal number would be 1642-605-01011-026).

2. FDF will insert the submittal type.

CFC (Certified for Construction)  
INF (Information)

3. FDF will insert the document family as follows:

Procurement	Construction
Health & Safety	Engineering
Medical	Quality
Training	

4. FDF will insert the document description (Health and Safety Plan, Safe Work Plan, Training Certification, Certificates of Conformance, Catalog Cuts, etc.)

6. FDF will insert the submittal due date from the list below.

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PART 6  
 C. NO FSC 624  
 SOW

EXHIBIT 6.3

CONTRACTOR FURNISHED EQUIPMENT TURNOVER CHECKLIST

Equipment	Model No.	Serial No.	Manufacturer	Cost	Usable Yes/No
<b>Radio's</b> _____ _____ _____ _____ _____					
<b>ADF's</b> _____ _____ _____ _____ _____ _____					
<b>Wash Equip.</b> _____ _____ _____ _____ _____ _____					
<b>Other Equip.</b> _____ _____ _____ _____ _____ _____					

EXHIBIT 6.4  
FOUR WEEK SCHEDULE

SLOS 1 & 2 AWR PROJECT  
CONTRACTOR \_\_\_\_\_

MONTH \_\_\_\_\_ YEAR 19 \_\_\_\_\_

ACTIVITY NUMBER	ACTIVITY DESCRIPTION	FOREMAN	WEEK	LAST WEEK					THIS WEEK					NEXT WEEK					SECOND WEEK					REMARKS				
			DATE																									
			DAY	M	T	W	T	F	M	T	W	T	F	M	T	W	T	F	M	T	W	T	F					
			SCH.																									
			BAR																									
			CRAFT																									
			QTY.																									
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EXHIBIT 6.5  
FUGITIVE DUST CONTROL REQUIREMENTS

## 1.0 FUGITIVE DUST CONTROL PLAN

1.1 The Contractor shall develop a Dust Control plan based on the requirements stated in this document for controlling fugitive dust emissions and ensuring compliance with standards and site-specific limits defined in this document.

1.2 The Contractor shall submit the Dust Control Plan to FDF for compliance review. This plan shall be part of the "Safe Work Plan" (See Part 7, ACR-002 for the outline of the "Safe Work Plan"). The Dust Control Plan shall demonstrate the Contractor's understanding of the importance of dust suppression on this project. It shall be adequate for all work areas. FDF compliance review of this plan does not relieve the Contractor of any responsibilities regarding the suppression of dust under the terms of this subcontract. This plan shall include but not be limited to the following:

- A listing of specific types and quantities of equipment to be used to suppress dust;
- A listing of proposed methods and materials that will be used to proactively suppress dust and the frequency that routine dust suppression is to take place;
- A narrative description of how the Contractor field personnel will implement the Dust Control Plan and how they will monitor for excessive or visible dust including how records will be kept and where they will be maintained; and

A description of the notification process that the Contractor intends for FDF to utilize during non-work periods to inform the Contractor of a dust alert.

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**EXHIBIT 6.5**  
**(Continued)**

**2.0 FUGITIVE DUST CONTROL REQUIREMENTS**

**2.1 The Contractor shall proactively suppress dust releases from each field activity by applying Best Available Technology (BAT) dust control, such as the application of water, dust suppression agents, or other appropriate methods approved by appropriate FDF personnel and/or implementing BAT work practices at the beginning and during each field activity.**

- **Project field activities shall be continuously monitored by the Contractor for visible emissions;**
- **FDF will provide Opacity monitoring for each project and forward the information to the Contractor; and**
- **All dust-generating field activities in an observed area shall cease immediately if a fugitive dust limit is exceeded. An increase in BAT dust controls and/or work practices shall be implemented to bring the fugitive dust emissions below the limit during dust-generating activities (including wind erosion). Work shall not be restarted until FDF is completely satisfied that the method to suppress the fugitive dust has been executed by the Contractor.**

**2.2 The Contractor shall have personnel on-call as defined in the plan during non-work periods seven (7) days per week (including holidays) to respond to an off hours dust alert. The Contractor shall provide a list of his personnel that will be on-call during non-work periods. Dust suppression is to begin no more than two (2) hours after notification by FDF during non-work periods.**

- **The Contractor shall apply enough BAT dust control material to bring the fugitive dust emissions below the standard or site specific limit during dust-generating activities (e.g. wind erosion); and**
- **The Contractor shall not leave the site without FDF concurrence that sufficient controls are in place.**

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**EXHIBIT 6.5**  
(Continued)**2.3 Activities May Include**

Some of the activities which may require dust suppression are as follows:

- Hauling material and equipment;
- Vehicle and equipment traffic;
- Excavation;
- Trenching;
- Loading/Unloading;
- Transportation to Defined Roadway (paved or unpaved);
- Load-in/Load-out on Storage Piles;
- Materials Placement in Onsite Disposal Cell;
- Vehicle Traffic on Storage Piles; and
- Wind Erosion from Working Faces.

**2.4 Definitions**

**Paved Roadway or Paved Parking Area:** a predetermined area designed and improved specifically for vehicle traffic. Improvements to the predetermined area are the application of materials such as asphalt or concrete that forms a firm level surface for travel.

**Unpaved Roadway or Unpaved Parking Area:** a predetermined area designed and improved specifically for vehicle traffic. Improvements to the predetermined area include the application of gravel, shredded shingles, cinders, compaction, etc. to the delineated area.

**Wind Erosion of Storage Piles:** fugitive emissions from storage piles strictly created by the wind (and not by material handling equipment or vehicle traffic).

**Visible Particulate (Fugitive) Emissions:** visible airborne particulate that are generated from the operation of heavy equipment, equipment wheels or tracks, any tools, or vehicle wheels. Visible particulate emissions are also those generated by wind erosion. [Regulatory methods that will be used for visual determination of fugitive emissions are 40 CFR 60 Appendix A, Method 9 (used by FDF) "Visual Determination of Opacity of Emissions from Stationary Sources" and Method 22 (used by the Contractor) "Visual Determination of Fugitive Emissions from Materials Sources and Smoke Emission from Flares".]

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**EXHIBIT 6.5**  
(Continued)

**Material Handling/Vehicle Traffic on Storage Piles:** includes activities such as loading in and loading out of materials, excavation, and vehicle traffic on storage piles. Fugitive emissions created by the above activities on storage piles shall be subjected to the standard defined in this section. Fugitive emissions that can not be distinguished between material handling activities and wind erosion will also be subjected to the standards defined in this section.

**2.5 Site-Specific Limit**

The Contractor shall apply the following Site-Specific Limits:

- Visible particulate emissions from any paved roadway or paved parking area shall not exceed one minute during any sixty-minute observation period.
- Visible particulate emissions from any unpaved roadway, unpaved parking area, project field activities, or wind erosion from storage piles shall not exceed three minutes during any sixty-minute observation period.
- Compliance with this limit shall be verified using 40CFR Part 60 Appendix A, Method 22 "Visual Determination of Fugitive Emissions from Materials Sources and Smoke Emissions from Flares".

**2.6 Actions:**

The Contractor shall apply the following.

- At the start of each day and periodically during the day, project personnel (FDF & Contractor) shall tour paved & unpaved roads, paved & unpaved parking areas, storage piles, and project field activities taking place and proactively apply BAT fugitive dust controls and/or work practices to minimize dust generation.
- Before fugitive emissions are visible, BAT dust controls and/or work practices must be implemented or increased.
- If the limit is exceeded, all mechanical dust-generating activities such as traffic on roadway in the observed area must cease immediately. An increase of BAT dust controls and/or work practices shall be implemented to bring the fugitive emissions to, at a minimum, below the limit during dust-generating activities (including wind erosion).

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**EXHIBIT 6.5**  
(Continued)**2.7 BAT Dust Controls/Work Practices**

The Contractor shall implement the following BAT Dust Control/Work Practices as applicable:

- Seal off work areas, stock piles, working piles, etc. before the end of each shift.
- In dry conditions, initiate dust control before each work shift and during lunch breaks.
- Wet sweep or otherwise remove any clods, clumps, tracks, or visible deposits of soil or mud from paved roadways or paved parking areas; applying appropriate dust control measures to suppress the generation of visible dust that may result from the sweeping or removal process.
- Remove, as practical, any clods, clumps, or visible deposits of soil or mud from unpaved roadways or unpaved parking areas, applying appropriate dust control measures to suppress the generation of visible dust that may result from the removal process.
- Repair or resurface roadways/parking areas as needed or use an alternative road surface as a last resort for unpaved roadways and parking areas.
- Maintain roadway shoulders.
- Minimize the amount of unnecessary traffic on roadways, parking areas and areas around field activities.
- Limit vehicular and equipment operating speed to 15 miles per hour.
- Reduce the speed limit as required to minimize dust generation.
- Apply appropriate dust suppression agents such as water or surfactant to the materials being transported by truck load beds to ensure the transported materials will not become airborne. Soil and soil like material shall not be visible above the vehicle body.

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**EXHIBIT 6.5**  
(Continued)

- Cover truck load beds when transported materials are still likely to become airborne.
- Change configuration of material being transported (e.g. place less in truck).
- Minimize the height of drop during loading and unloading.
- Application of dust suppression materials approved by FDF such as: water, resin, or equivalent combination of surfactant or crusting agents.
- Storage piles may be covered with a tarpaulin, plastic, etc., if practical.
- Soils in work areas and placed in stockpiles shall be rolled at the end of each work day.
- For extended periods of planned inactivity, vegetate as a last resort if protective cover or periodic application of surfactant or crusting agents proves ineffective.
- Change method of excavation/transport (e.g., from a front-end loader dumping into a truck to a self-propelled pan) when feasible.
- Wheel washing.

**3.0 TRAINING**

- 3.1 Contractor personnel shall review and understand the information contained in this document and shall be trained in the plan pertaining to an individual's responsibilities.
- 3.2 The Contractor shall designate individuals that will require the appropriate training.
- 3.3 Personnel involved in performing compliance surveillance to ensure that fugitive dust emissions from project field activities are meeting fugitive dust standards or limits, must have the following FDF provided training:
  - 40CFR60 Appendix A, Method 22 - "Visual Determination of Fugitive Emissions from Material Sources and Smoke Emission from Flares."

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**EXHIBIT 6.5**  
(Continued)**4.0 RECORDS**

- 4.1 The Contractor shall complete a "Control of Fugitive Dust Emissions- Daily Record" form Attachment "1" each time an application of dust suppression material is performed and submit the completed forms to FDF weekly.**

**Enter on form:**

- Identification of area that was treated and/or cleaned. Record using sketch on back of the form, or by attaching similar diagram at appropriate scale.
  - The date the designated area was treated and/or cleaned.
  - The manner the designated area was treated and/or cleaned.
  - The application rate of dust suppression material (at a minimum, the tank truck load capacity and number of truckloads applied per unit of time per area, or segment, to which applied); and
  - The equipment operator (at a minimum, the name of the Contractor or subcontractor firm).
- 4.2 The Contractor shall document the visual determination of fugitive emission on the "Control of Fugitive Emissions Daily Record" (EXHIBIT 6.5, ATTACHMENT 1) when performing visible emission monitoring for paved and unpaved roadways, paved and unpaved parking areas, and wind erosion from storage piles and submit the completed forms to FDF daily.**

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EXHIBIT 6.6  
LABOR UTILIZATION

- 1.1 Introduction
- 1.1.1 Fernald Atomic Trades and Labor Council (FAT&LC) and Greater Cincinnati Building Construction Trades Council (GCBCTC) will supply all labor for the Silos 1 and 2 AWR Project as described below. The Contractor will supply all management and technical support.
- 1.1.2 The FDF contract with DOE gives FDF responsibility for managing labor relations at the FEMP. FDF Industrial Relations (IR) negotiated a Project Labor Agreement (PLA) with the GCBCTC, including all addendums, and a Collective Bargaining Agreement (CBA) with the FAT&LC. The PLA and the CBA are provided in Part 5. Craft assignments for the GCBCTC crafts shall be made by the Contractor in accordance with provisions of the PLA. IR will meet with the Contractor in order to promote a better understanding of these agreements.
- 1.1.3 FDF IR retains primary responsibility for administering and interpreting both the PLA and CBA.
- 1.1.4 The FAT&LC represents FDF wage employees and affiliated Metal Trade Unions. The GCBCTC represents Building Trades employees and the twenty affiliated unions. Refer to Part 5 for a list of affiliated unions with both Councils.
- 1.1.5 To promote cooperative labor relations, FDF IR has increased communication, team work, trust, and productivity between FDF management and the represented workforce and shared information in a timely manner with the respective signatory labor unions.
- 1.1.6 To continue cooperative labor relations for the Silos 1 and 2 AWR Project, the Contractor shall develop a Labor Relations/Work Force Utilization Plan. This plan will be reviewed by FDF prior to mobilization and shall address, at least, the following information:
- The Contractor's person who shall be responsible for labor relations, promoting cooperative labor relations and compliance with the terms and conditions of the PLA and CBA;

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**EXHIBIT 6.6  
(Continued)**

- **The handling of communications to promote teamwork, partnering, and coordination within the represented workforces;**
- **Discussion of how the represented workforces be integrated into the project as a whole;**
- **Discussion of the Contractor's support of dispute resolution to minimize grievances; and**
- **Discussion of Contractor coordination of its labor relations efforts with FDF IR.**

**1.1.7 Safety and health of all FDF and Contractor personnel is the first priority of FDF. Implementation of health and safety relative to this project involves a concerted effort among DOE, FDF, the represented workforce, and the Contractor. The Contractor shall conform to FDF's commitment to safety in the workplace, which extends to all employees and contract personnel. The Contractor shall conform to FDF's guarantees to its employees, with respect to health and safety which include:**

- **The right to know hazards;**
- **The right to refuse work;**
- **The right to have input regarding health and safety issues;**
- **The right to personal protective equipment without charge to the employee; and**
- **The right to participate in the safety excellence program.**

**1.1.8 These employee and Contractor personnel rights are defined in Section 4 of the CBA.**

**2.1 Labor Relations/Work Force Utilization Plan**

**2.1.1 "Remediation Work Allocation" (EXHIBIT 6.6, ATTACHMENT 1), shows the division of work between the FAT&LC and GCBCTC and represents the work activities which FDF anticipates to be performed by FAT&LC and/or GCBCTC. Although FDF is responsible for the management and supervision of the FDF work force, the Contractor shall provide technical oversight and direction for all activities performed by the FDF work force. Exhibit 6.6, Attachment 2, Workforce Allocation Table, shall be used to designate the number of FAT&LC and/or GCBCTC needed for each operation.**

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**EXHIBIT 6.6**  
(Continued)

- 2.1.2 The Labor Relations/Work Force Utilization Plan shall show how the Contractor plans to incorporate the FAT&LC and/or GCBCTC into the work process.
- 2.1.3 FAT&LC Wage Position Descriptions are included in Part 5.
- 3.1 FAT&LC Workforce Provisions
- 3.1.1 Management of the FAT&LC workforce shall be a cooperative effort between the Contractor's supervisor(s) and the FDF Team Leader(s). The Contractor supervisor shall oversee the technical direction of the FAT&LC workforce, while the FDF Operations Team Leader will serve as a subject matter expert to the Contractor supervisor. The FDF Operations Team Leader will assist the Contractor's supervisor in scheduling training and procedure implementation with respect to the FAT&LC workforce. The Operations Team Leader will coordinate, with the Contractor's supervisor, activities such as disciplinary action, the employee replacement process, absenteeism, sick time, holidays, vacations, attrition, overtime scheduling, work schedules, and other project logistic issues.
- 3.2 FAT&LC Workforce Staffing
- 3.2.1 FAT&LC personnel shall be used to perform residue retrieval, maintenance, operations support, packaging, staging, loading and shipping activities. Contractor technicians shall operate and control the AWR equipment. IR will make the final decisions on workforce staffing after contract award.
- 3.2.2 The Contractor shall establish required process system training for the allocated work positions that will constitute the Contractor's labor force.
- 3.2.3 The Contractor shall develop a work allocation table as outlined in Exhibit 6.6, Attachment 2, and develop a block flow diagram showing how it plans to incorporate the wage employees into its process. The Labor Relations/Work Force Utilization Plan shall reflect the entire project schedule from the time of identification of FAT&LC wage employees (i.e., prior to startup) through project completion, and outline the FAT&LC work force requirements. This Work Force Utilization Plan shall identify the number and duration of shifts, the number of wage positions required for each shift, the number of Team Leaders required by shift (or day, as appropriate), and the number of days of processing before shutdown for planned maintenance downtime. The Work Force Utilization Plan shall include allowances in the contract for absenteeism, training, vacations, holidays, and attrition using the guidance described in Paragraph 3.6.1.

**EXHIBIT 6.6**  
**(Continued)**

**3.2.4** The Contractor shall notify FDF of the need and number of personnel required at least 120 calendar days in advance of the need. FDF will post the positions and selection shall be made in accordance with provisions of the CBA. During the Qualifying Period (CBA, Section 17-8), the Contractor and the FDF Team Leader shall assess the capability of the employees to perform the job. If the Contractor finds an employee is incapable of performing the new job, the Contractor shall document its findings and provide them to the FDF Contract Administrator. Final determination shall be made by FDF IR based upon conformity to the CBA.

**3.2.5** The Contractor shall inform the FDF Maintenance Organization of maintenance personnel needed to support the Silos 1 and 2 AWR Project, not later than six months prior to start-up of operations including:

- Number of personnel in each maintenance craft needed;
- Maintenance supervisory support needed; and
- Shift coverage needed.

**3.3** Dispute Resolution

**3.3.1** All disputes shall be handled in accordance with the CBA, Grievance Procedure and Arbitration, Article VIII. The Contractor shall support FDF with information, documentation and testimony as required during the process. FDF retains the sole right of dispute resolution with the FAT&LC.

**3.4** Disciplinary Action

**3.4.1** The Contractor shall address concerns involving violation of the rules of conduct through the FDF Team Leader in accordance with the CBA. Any concerns, not addressed by the FDF Team Leader, shall be brought to the attention of the FDF Contract Administrator.

**3.5** Team Leader/Employee Replacement Process

**3.5.1** FDF will maintain qualified site trained personnel for replacement of Team Leaders. FDF will establish a pool of personnel to be available to cover work of employees who terminate, are promoted, transfer, or take an assignment vacancy. Site trained personnel will be made available within 30 calendar days of occurrence of the termination.

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**EXHIBIT 6.6**

(Continued)

**3.6 Absenteeism, Sick Time, Holidays, Vacation, Attrition, and Training**

**3.6.1** The Contractor shall include a factor for absenteeism due to sick time, personal leave, vacation and holidays in workforce planning. Currently, FDF uses a factor of 25 percent for additional personnel due to sickness, training, holidays, vacation, attrition, and absenteeism.

**3.7 Work Hours**

**3.7.1** Normal shifts and work hours shall be in accordance with the CBA. Changes in the normal shift and work hours shall only occur after mutual consent of FAT&LC and FDF and must be in accordance with the provisions of the CBA. Overtime shall be assigned in accordance with CBA Section 15-6. The FDF Team Leader will assure administration of these provisions.

**4.1 Contractor Responsibilities**

**4.1.1** The Contractor shall submit, and implement, a Labor Relations/Work Force Utilization Plan for review and concurrence by FDF, including a block flow diagram and work allocation table G-1, G-2, G-3. This plan shall identify required FDF Team Leader and FDF wage positions by description and number of each required by shift.

**4.2 Operational and Maintenance Procedure Training**

**4.2.1** The Contractor shall coordinate all project-specific operational and maintenance training required for personnel, to include FAT&LC, FDF Team Leaders, and all replacements through the duration of the contract. All training will be coordinated through FDF.

**4.3 Payment of Overtime and Labor Hours in Excess of Authorized Hours**

**4.3.1** Overtime or other additional hours including those of additional personnel, not included in the approved Labor Relations/Workforce Utilization Plan, or in accordance with Part 4, SC-4 & SC-27 shall be at the Contractor's cost.

**5.1 Labor Issues Roadmap**

**5.1.1** FDF has supplied Attachment 3 Labor Issues Roadmap, to assist the Contractor in identifying CBA and PLA articles addressing various labor issues. This roadmap does not relieve the Contractor of its responsibility to read and understand the CBA between FDF and the FAT&LC and the PLA between FDF and the GCBCTC.

**EXHIBIT 6.6  
ATTACHMENT 1**

**Silos 1 and 2 AWR Project  
Remediation Work Allocation**

To ensure compliance with the PLA with the GCBCTC and the CBA with the FAT&LC, the proposed work allocation for the remedial waste treatment and disposal of the Silo 1&2 Waste Retrieval System Project will be as follows:

**GCBCTC**

- **Construction of the Radon Control and Retrieval facility;**
- **Installation of process equipment and any other temporary facilities;**
- **Construction of a Full-Scale Mock-Up;**
- **Construction of the Transfer Tank Area and Retrieval System;**
- **Utility connections;**
- **Performance of Construction Acceptance Testing;**
- **Performance of Integrated Construction Acceptance Testing; and**
- **Performance of Full-Scale Mock-Up Demonstration.**

**FAT&LC**

- **Support for system operability testing activities;**
- **Operations of waste retrieval system (including collection of samples);**
- **Retrieving the waste from Silos 1 & 2;**
- **Container and equipment handling and movement (FDF will provide hand stackers, forktrucks, and attachments required);**
- **General housekeeping;**
- **Decontamination of equipment during facility shutdown;**
- **Maintenance; and**
- **Process operations support.**

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EXHIBIT 6.6  
ATTACHMENT 2

Work Force Allocation Table

Construction of Waste System					
Contractor	Wage Description	Shifts			
		1	2	3	4
		No. Employees	No. Employees	No. Employees	No. Employees
Operators					
Teamsters					
Laborers					
Team Leader(s)					
Waste Retrieval/Transfer					
Contractor Job Description	Wage Description Position	Shifts			
		1	2	3	4
		No. Employees	No. Employees	No. Employees	No. Employees
Operators					
Teamsters					
Laborers					
Team Leader(s)					
Maintenance					
Contractor Job Description	Wage Description Position	Shifts			
		1	2	3	4
		No. Employees	No. Employees	No. Employees	No. Employees
Operators					
Teamsters					
Laborers					
Team Leaders(s)					

EXHIBIT 6.6  
ATTACHMENT 3

Labor Issues Roadmap

ISSUES	FAT&LC-CBA	GCBCTC-PLA
Health & Safety Oversight	Article IV, Safety & Health	Article XIV, Safety & Health
Role in Staffing	Article III - Stability of Employment Section 3-2 - Assignment of Work Section 3-3 - Training	Article VI Management Rights
Employee Replacement	Article XVII - Promotions, Transfers, and Temporary Assignments Section 17-4 - Assignment Vacancies Section 17-5 - Classification Vacancies Section 17-6 - Eligibility Section 17-7 - Procedure Section 17-8 - Qualifying Period	Article III - Employment
Dispute Resolution Article IV, Safety & Health, Section 4-3, Disagreement, etc.	Article VIII - Grievance Procedure and Arbitration Article VII - Work Stoppages, Lockouts and Related Actions Section 7-1 - Dispute Resolution Procedure	Article IX - Grievance Procedure and Arbitration
Work Hours	Article XV - Hours of Work, Overtime, Shifts and Premium Pay	Article XI - Hours of Work, Overtime and Shifts
Worker's Group	FDF's Responsibility	Employer's Responsibility
Holidays/Vacation	Article XI - Paid and Unpaid Time Off	Article XII and Appendix A
Wages	Appendix A	Appendix A
Discipline	Article V - "Management Rights"	Article XIII - Working Conditions, Section 13-2, HR 145

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**EXHIBIT 6.7  
AWR PROGRAMMATIC INTERFACES**

The Contractor will be subject to several programmatic interfaces involving functional areas and projects at Fluor Daniel Fernald. This exhibit will define the current programmatic interfaces. These interfaces are subject to change due to the continuous process improvement program at FDF.

**1.0 Engineering Interface**

The Contractor's primary engineering interface is the FDF Project Engineering.

**1.1 Engineering Status/Issues**

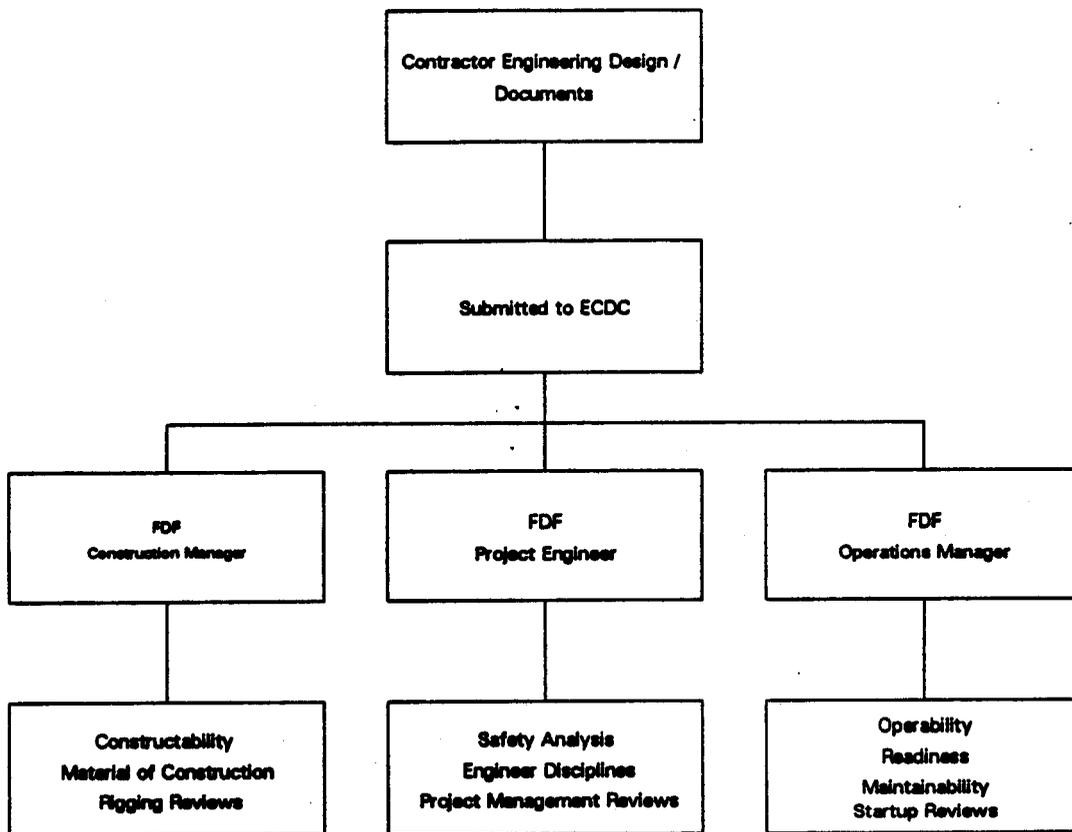
The Contractor shall provide daily status and communication with FDF Project Engineering via the FDF Project Engineer located at the Contractor's engineering office.

**1.2 Engineering Design and Document Review**

Engineering Design and documents will be submitted in accordance with ACR-001 "Contract Submittal Requirements" and reviewed in accordance with following flow diagram. The FDF Project Engineer is responsible for coordination of FDF review comments and submitting these comments in writing to the Contractor. The Contractor is responsible for comment resolution.

000090

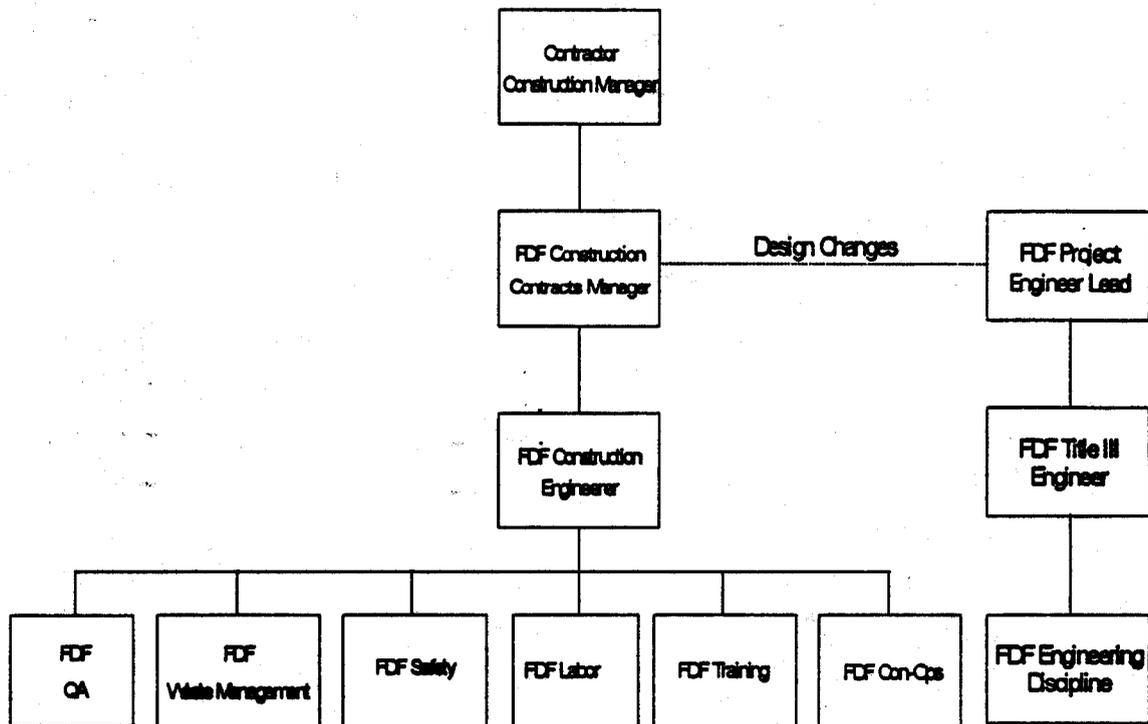
1.2 Engineering Design and Document Review (cont.)



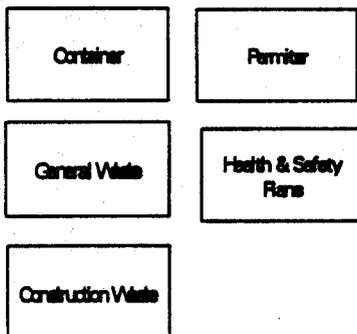
000091

2. Construction and Field Design Issue Interface

The Contractor's primary construction interface is the Contract Construction Manager, in accordance with the following flow diagram.



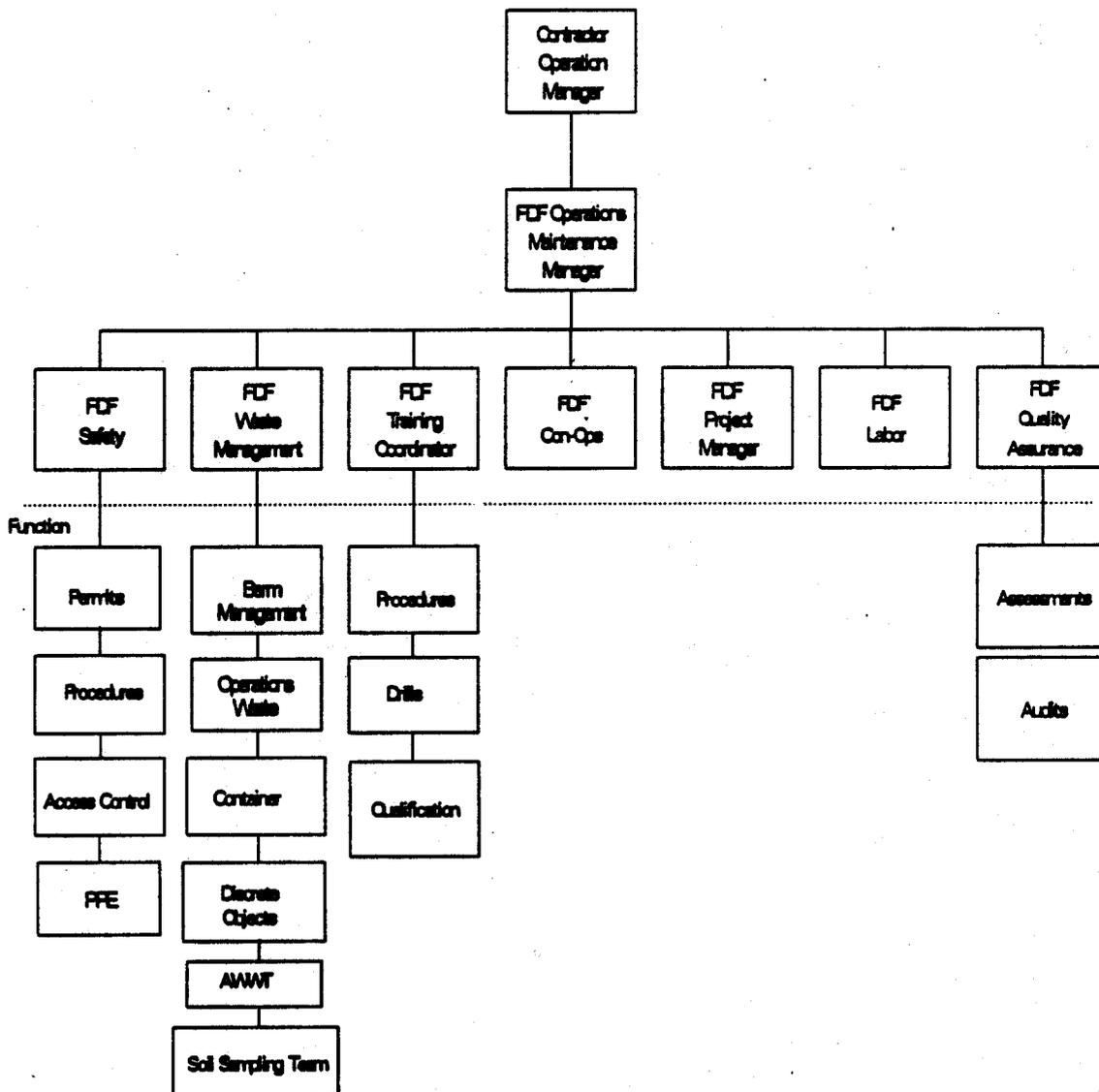
Function



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3. Operation Interface

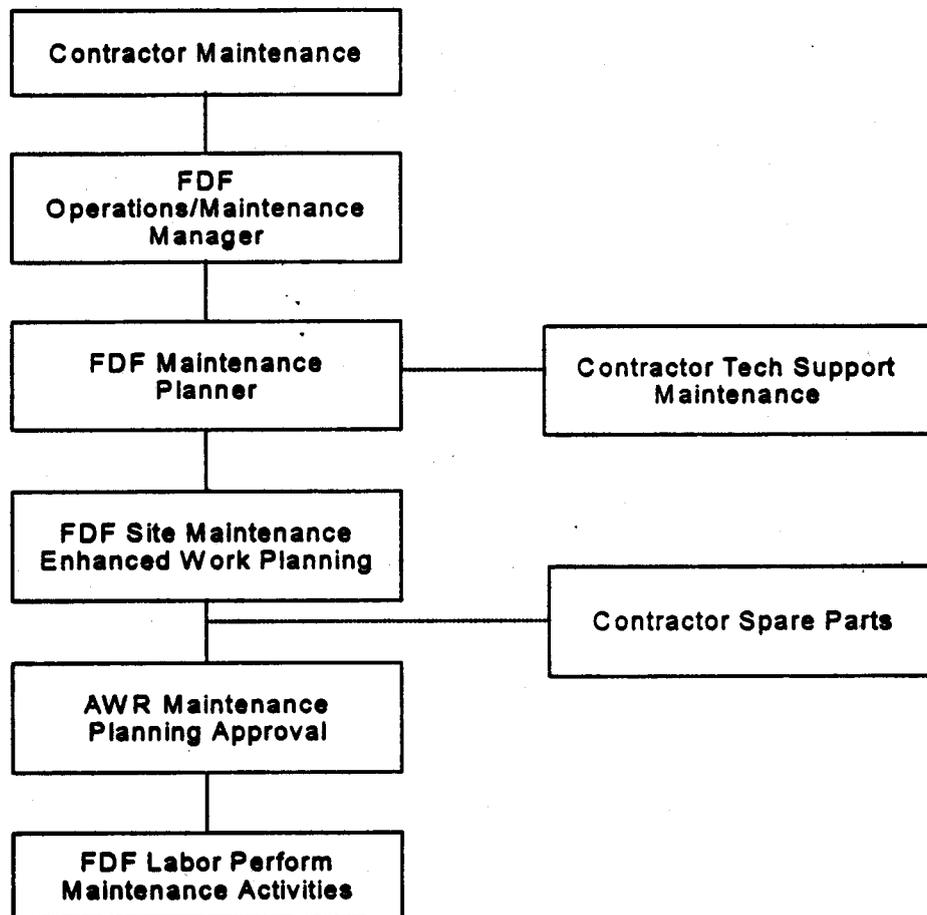
The Contractor's primary operation interface is the FDF Operation Manager or his designee.



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4. Maintenance Interface

The Contractor's primary maintenance interface is the FDF Operations/Maintenance Manager or the appointed maintenance supervisor. Maintenance activities need to be accomplished utilizing FDF labor and the FDF maintenance program. The maintenance interface is as follows:



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**EXHIBIT 6.8**

**Facility Shutdown and Dismantlement**

This section states the requirements for facility shutdown and dismantlement, including the decontamination of Contractor provided tools, equipment and material, waste and debris generated from the AWR Project.

**1.0 Facility Shutdown**

The primary purpose of facility shutdown is to isolate utilities to the designated facilities, remove gross quantities of hold-up from existing equipment, ductwork, pipes, sumps, and perform gross decontamination. Decontamination of temporary facilities and construction equipment to the unrestricted release criteria has been established in Table 6.8-1. The Contractor shall submit a Safe Work Plan as described in Part 6, Section 4.1.1. The Contractor shall be responsible for all temporary utility connections required during shutdown and dismantlement.

**1.1 Isolation of Utilities**

The Contractor shall isolate utilities including, but not limited to, electric power, water, and compressed air from the designated facilities. The Contractor shall include an Energy Isolation Plan within the Safe Work Plan for FDF approval which describes where, and how, the utilities shall be isolated.

Utilities shall be disconnected outside the facility early in the facility shutdown process, by physically cutting, air gapping, and tagging the lines. The Contractor shall remove all grounding conductors to grade level. The Contractor shall conduct a survey to verify that all utilities are capped and/or controlled and notify FDF in writing of the completion of the utilities isolation.

**1.2 Removal of Hold-up Material**

The interior of Silos 1 and 2, Decant Sump and all equipment, piping, ductwork, and sumps shall be assessed to determine whether they contain loose and/or visible hold-up material. Loose is defined as material that is considered releasable through a credible accident. If the item contains loose or visible material, the material shall be removed in accordance with FDF-approved Safe Work Plans and packaged in accordance with the Material Segregation and Containerization Criteria (MSCC).

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**EXHIBIT 6.8**  
(Continued)

If by visual inspection, hold-up material is found (solid or liquid), FDF shall be notified immediately. If the volume is estimated to be less than one quart, the Contractor shall remove and containerize the hold-up material in accordance with the MSCC. If the material found is estimated to be greater than one quart by volume, activities shall cease on that piece of demolition debris. In consultation with FDF, the Contractor shall remove, manage, and treat hold-up material greater than one quart by volume in accordance with the Part 7-TRD, Section 5.0.

**1.3 Gross Decontamination**

The Contractor shall perform gross decontamination of Silos 1 and 2, the Decant Sump interior, the remaining equipment and the interior of the retrieval facility. Gross decontamination is defined as general housekeeping to remove contaminated debris, vacuum loose dust, wet wipe equipment, ductwork, piping, and the interior of the structure walls, and remove loose, visible residues.

**1.3.1 Materials**

If stabilizer coatings are employed, they shall be Carboline D3358 or approved equal. Manufacturers may include, but are not limited to: Tnemec Series 6 - Tnemec-Cryl, Sherwin-Williams, or International Protective Coatings.

If non-strippable coatings are employed, they may include, but are not limited to: Polymeric Barrier System (Bartlett), or an approved equal.

**1.4 Debris/Waste Handling Criteria**

Refer to the Waste Management Plan in Part 7-TRD, Section 5.0 for Debris/Waste Handling Criteria.

**1.5 Decontamination of Contractor-Provided Tools, Equipment, and Material**

This section provides preventative measures for and decontamination of Contractor-provided tools, equipment (including vehicles), and material to a level that permits removal from an enclosure/work zone, restricted reuse, or unrestricted release. This section includes, but is not limited to:

- Preventative measures/waste minimization;
- Decontamination area requirements;
- Methods of decontamination activities;
- Control of effluent and waste management activities; and
- Relocation, reuse, and release activities for tools, equipment, and material.

**EXHIBIT 6.8**  
(Continued)

**1.5.1 Project Conditions and Requirements**

The Contractor shall establish a holding area to allow FDF to perform tool and equipment radiological surveying. The holding area shall be arranged such that routine access is prevented by means of fencing and/or barrier tape with appropriate posting to identify that the items contained are being held for survey and the area is off limits to individuals other than FDF/Contractor radiological survey personnel. Only those items which meet the requirements for leaving the work zone shall enter the inspection area.

**1.5.2 Contractor-Provided Tools and Equipment**

The Contractor shall deliver approved decontamination and contamination-controlling agent materials in original, new, and unopened containers bearing the manufacturer's label, and the following information:

- Name or title of material;
- Manufacturer's stock number and date of manufacture;
- Manufacturer's name; and
- MSDS sheets.

To meet the ALARA goal for tools, equipment, and materials, the Contractor shall control residual contamination to the extent that there is no detectable contamination on items that were free of contamination prior to use. When previously-contaminated items are no longer required for use, there shall be no increase in the level of contamination. This includes, but is not limited to, the following:

- Protective measures prior to use of items;
- Preventative measures while items are being used; and
- Decontamination upon completion of work activities.

All Contractor-furnished tools, vehicles, equipment, and material shall be inspected for radioactive contamination by FDF personnel prior to initial entry and upon removal from the radiological control area. FDF will supply all survey instrumentation used to inspect for radioactive contamination.

The Contractor shall supply all equipment required to remove and/or control contamination.

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**EXHIBIT 6.8**  
(Continued)

The Contractor shall supply all equipment required to control, filter, and move effluent produced during removal of contaminants.

**1.5.3 Preventing or Minimizing Contamination**

The Contractor shall plan and coordinate all work to minimize exposure of equipment, tools, and vehicles to potential radioactive contamination. Equipment shall be located in the area with the least potential for contamination. For example, locate equipment outside the facility with leads, hose lines, etc. wrapped and run to the interior of the facility (e.g., air compressors, high pressure washers, welders, generators, oxy-acetylene cylinders, and battery chargers).

Prior to use on-site, the Contractor shall evaluate materials, tools and equipment "for ease of decontamination" and disassembly that may be required for decontamination. Use of unrestricted release items shall incorporate appropriate precautions, prior to and during use, to prevent contamination. Examples of precautionary measures may include the following:

- Internal combustion equipment subject to contamination should have prefilters or a separate source of outside air on the intake;
- High volume air handling equipment such as blowers, compressors, etc. shall have a filtered inlet to minimize the potential for internal contamination due to build up of low-level radioactivity. Vents for air cooling shall be covered in a similar manner;
- The Contractor shall be prohibited from bringing electrically-driven mobile equipment to the FEMP (e.g., fork lifts) except where only electrically-driven equipment is available;
- Protective sheathing/covers, strippable coatings, or protective caps shall be used to minimize the potential for contamination (e.g., coating the buckets of man lifts or other walking/standing surfaces). In addition, all openings on equipment, tools, or vehicles that may permit contamination of inaccessible or difficult to clean areas shall be covered and protected; and
- If sealants and/or coatings are used during the project, the Contractor shall protect tools and equipment from overspray. In addition, the Contractor shall ensure that the sealant and/or coating can be readily removed during facility shutdown activities, if necessary.

**EXHIBIT 6.8**  
**(Continued)**

**1.5.4 Decontamination Area Requirements**

Tools and equipment used inside an enclosure/building shall be decontaminated at an existing indoor debris washing location.

Options for establishing outdoor decontamination areas include:

- Using an existing pad.
- Constructing a temporary containment area where;
  - Containment must have a bermed perimeter to ensure run-off control;
  - An example of acceptable containment is Herculite with sandbag underlayment perimeters on a nonpenetrating grade; and
  - Containment used must maintain its integrity.

**1.5.5 Methods of Decontamination Activities**

If decontamination becomes necessary, the Contractor shall, at a minimum, use the following, if applicable:

- Dry cleaning;
- Steam cleaning;
- High pressure hot water washing (may be used in conjunction with abrasive techniques and approved decontamination agents) with a minimum of 1,000 psi and High Efficiency Particulate Air (HEPA) vacuuming; and
- When selecting a decontamination technique other than those identified above, consideration shall be given to those technologies that minimize radiological airborne emissions, secondary wastes, and tool or equipment damage.

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**EXHIBIT 6.8**  
(Continued)**1.5.6 Relocation, Reuse, and Release of Tools, Equipment, and Material**

The Contractor shall perform all decontamination activities required to verify that the surface contamination limits identified in Table 6.8 are not exceeded. FDF will perform final verification surveying.

The Contractor shall provide a minimum of 24 hours prior notice to FDF of intent to remove tools and equipment from the work area.

**1.5.7 Release of Tools, Equipment, and Material from Contamination Areas to the Controlled Area**

If removable contamination in excess of the limits of Table 6.8 is present on the tools, equipment, or material then the items shall remain in the contamination area for decontamination or the items shall be contained such that no contaminated surfaces of the item are accessible without disassembling the equipment or breaching the containment.

Examples of acceptable containment include plastic wrapping, yellow Herculite wrapping, or a sealable hard container. However, the containment used must be adequate to maintain its integrity considering the weather, conditions of storage, and the methods or conditions of transport.

If the removable contamination limits are met, but the total (fixed plus removable) limit is exceeded, the item may be labeled or identified as radioactive material by FDF and released to the controlled area.

**1.5.8 Unrestricted Release Criteria**

All items are considered potentially contaminated if they have been used or stored in controlled areas that could contain unconfined radioactive material.

Prior to being released from the controlled area, all items will be surveyed by FDF to determine whether both removable and total surface contamination (including contamination on and under any coating) are in compliance with the levels given in Table 6.8-1 and that the item has been subjected to ALARA.

Upon approval from FDF, the Contractor shall remove the tools, equipment, and/or materials off-site within eight hours.

**EXHIBIT 6.8**  
**(Continued)**

**1.5.9 Tools and Equipment With Detectable Radioactivity**

Tools and equipment with detectable radioactivity may be released with the concurrence of a FDF Material Release Evaluator (MRE). The following criteria shall be met:

- Residual radioactivity shall be at or below the unrestricted release limits identified in Table 6.8-1.
- All areas shall be readily accessible for residual radioactivity survey, including proper surface counting geometry to allow for accurate quantification. Items with inaccessible areas that are likely to be contaminated, but are of such size, construction, or location as to make them inaccessible for survey, shall be assumed to exceed the limits for release. The item shall either be disassembled to permit an adequate survey to certify that internal contamination is at or below the limits of Table 6.8-1 or a well-documented process can be applied to provide confidence that contamination in inaccessible areas is not probable. In evaluating the potential for contamination in inaccessible areas, consideration shall be given to where the item was used on-site and preventative measures taken prior to use (such as coverings, wrappings, air intake filters, etc.).
- The decontamination effort performed is such that the residual levels of radioactivity are ALARA and further significant reduction in radioactivity would require unreasonable efforts.

**1.5.10 Release to an Off-site Licensed Facility**

If the Contractor possesses the appropriate license to receive, possess, use, and transfer the equipment, tools, material, or vehicles with radioactive contamination, the Contractor may elect to remove such items from the site in lieu of decontamination. The Contractor shall comply with all Federal, State, and local regulations during the packaging, shipping, and receipt of the equipment. The Contractor shall submit a copy of the license and applicable procedures to FDF for compliance review prior to removal of the contaminated equipment. A copy of all Bills of Lading shall be submitted to FDF prior to shipment.

The Contractor shall provide 24 hours notice to FDF prior to shipping radioactive tools, equipment, and/or material.

EXHIBIT 6.8  
(Continued)

1.5.11 Unsuccessful/Impractical Contractor Decontamination

If FDF determines that the Contractor has implemented the requirements of EXHIBIT 6.8-1 and the Safe Work Plan and the Contractor's decontamination efforts are unsuccessful or decontamination is not practical, then refer to Part 4, SC-10.

SURFACE CONTAMINATION LIMITS\* TABLE 6.8-1

Radioisotopes	Data Plus Removals		Removals
	Average <sup>b</sup>	Maximum <sup>c</sup>	
U-nat, U-235, U-238, and associated decay products, alpha emitters.	5,000 dpm/100 cm <sup>2</sup>	15,000 dpm /100 cm <sup>2</sup>	1,000 dpm/100 cm <sup>2</sup>
Transuranics, Ra-226, Ra-228, Th-230, Th-228, Pa-231, Ac-227, I-125, I-129.	100 dpm/100 cm <sup>2</sup>	300 dpm/100 cm <sup>2</sup>	20 dpm/100 cm <sup>2</sup>
Th-nat, Th-232, Sr-90, Ra-223, Ra-224, U-232, I-126, I-131, I-133.	1,000 dpm/100 cm <sup>2</sup>	3,000 dpm/100 cm <sup>2</sup>	200 dpm/100 cm <sup>2</sup>
Beta-gamma emitters (nuclides with decay modes other than alpha emission or spontaneous fission) except Sr-90 and others noted above.	5,000 dpm /100 cm <sup>2</sup>	15,000 dpm /100 cm <sup>2</sup>	1,000 dpm /100 cm <sup>2</sup>

\* Where surface contamination by both alpha and beta-gamma emitting nuclides exists, the limits established for alpha and beta-gamma emitting nuclides should apply independently.

<sup>b</sup> As used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

<sup>c</sup> Measurements of average contaminant should not be averaged over more than one square meter. For objects of less surface area, the average should be derived for each object.

<sup>d</sup> The maximum contamination level applies to an area of not more than 100 cm<sup>2</sup>.

<sup>e</sup> The amount of removable radioactive material per 100 cm<sup>2</sup> of surface area should be determined by wiping that area with dry filter or soft absorbent paper, applying moderate pressure, and assessing the amount of radioactive material on the wipe with an appropriate instrument of known efficiency. When removable contamination on objects of less surface area is determined, the pertinent levels should be reduced proportionally and the entire surface should be wiped.

<sup>f</sup> The limits presented for transuranics, Ra-226, Ra-228, Th-230, Th-228, Pa-231, and Ac-227 may be adjusted on a case-by-case basis. Consult with FDF Radiological Control when required to apply these limits for unrestricted release.

**EXHIBIT 6.8**  
**(Continued)**

**1.5.12 Facility Shutdown and Secondary Waste**

The Contractor shall be responsible for the proper management of all secondary waste generated during safe shutdown activities. Proper management includes any necessary treatment, characterization sampling, documentation, proper packaging, and interim staging prior to FDF acceptance for disposal.

Waste water should be treated to meet the AWWT acceptance criteria in Part 7-TRD, Section 5.0.

FDF will accept the pretreated, if required, waste water for final treatment at the FEMP AWWT.

**2.0 Submittals**

This section identifies and describes the required submittals for facility shutdown and dismantlement tasks. (Reference Part 6, EXHIBIT 6.2 and Part 7, ACR-001, for additional submittal information.)

**2.1 Facility Shutdown Submittals**

The Contractor shall submit a Safe Work Plan for FDF concurrence. The work plan shall include the following information:

- **Energy Isolation Plan**
  - Identifies energy source of a specific process, equipment or system;
  - Identifies the methods for shutting down, isolating, blocking, and securing the specific process, equipment or system;
  - Identifies the methods of verifying isolation;
  - Shall be prepared consistent with the latest revision of RM-0021, Safety Performance Requirement No. SPR2-15;
  - Initiated, written, approved, distributed, and maintained in accordance with latest revision of FDF Lockout/Tagout procedure Part 7, OP-0004.

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**EXHIBIT 6.8**  
(Continued)

- **Establishment of Temporary Utilities**
  - Identify the type of utilities that the Contractor shall provide;
  - Identify the methods the Contractor shall tie-in to portable utilities; and
  - Identify where the utilities shall be located.
  
- **Removal of Hold-up Material**
  - Identify, characterize, locate, and quantify hold-up material;
  - Define the system to be worked;
  - Identify specific point(s) of entry;
  - Identify use of secondary containments at each point where the system is opened;
  - Identify final storage locations for containerized waste; and
  - Identify removal, management, and treatment procedures for hold-up material estimated to have a volume greater than one quart.
  
- **Gross Decontamination Plan**
  - Methods and equipment for gross decontamination;
  - Methods to control, handle, and minimize waste; and
  - Product Data - Manufacturer's technical information, including the material to be used, its intended use, and its application instructions.

**Accelerated Waste Retrieval  
Initial Pass/Fail Criterion**

**Safe Construction Performance:**

This criterion will be defined by the current worker compensation insurance Experience Modification Rate (EMR).

Acceptal EMR criterion is defined as  $EMR \leq 1.05$  or the EMR downward trend over the past three years with  $EMR \leq 1.25$  in the past three years.

**Draft**  
**Accelerated Waste Retrieval**  
**Evaluation Criterion #1**  
**Relevant Experience**  
**March 24, 1998**

Criteria	Discussion
1.0 Project Management	
1.1 Complexity	This criteria is defined by the Offeror's Project Management experience with projects of comparable complexity of implementation. (Design/Construction/Startup/Operations)
1.2 Similar Scope	This criteria is defined by the Offeror's Project Management experience with Waste Retrieval projects
1.3 Government	This criteria is defined by the Offeror's government experience, with particular attention to DOE experience
1.4 Design	This criteria is defined by the Offeror's design experience with mixed waste/ waste retrieval applications on projects with similar scope.
2.0 Construction Management	
2.1 Complexity	This criteria is defined by the Offeror's Construction experience with projects of comparable complexity with multiple systems and various testing requirements.
2.2 Similar Scope	This criteria is defined by the Offeror's Construction experience with Waste Retrieval systems, tanks, and Construction acceptance testing.
2.3 Demonstrations/Testing	This criteria is defined by the Offeror's experience with construction testing and Full-scale Mockup Demonstration
2.4 Labor Management	This criteria is defined by the Offeror's experience with utilizing union labor for construction

**Draft**  
**Accelerated Waste Retrieval**  
**Evaluation Criterion #1**  
**Relevant Experience**  
**March 24, 1998**

Criteria	Discussion
3.0 Operations	
3.1 Startup	This Criteria is defined by the Offeror's experience with Startup testing and turnover from Construction to Operation.
3.2 Readiness	This Criteria is defined by the Offeror's experience with DOE Order 425 or equivalent operational readiness review. This criteria includes experience with documentation, record management, procedures, and training .
3.3 Government	This Criteria is defined by the Offeror's operation experience with DOE Order 5480.19 Conduct of Operation and DOE Order 4330.4B Maintenance Management Program.
3.4 Similar Scope	This Criteria is defined by the Offeror's commercial operation experience with retrieval equipment, radon control and tank areas of similar size and design as proposed .
3.5 Labor Management	This Criteria is defined by the Offeror's experience with seconded labor force.
3.6 Radiological Management	This criteria is defined by the Offeror's proposed plan to address ALARA issues and the Offeror's radiological experience.

**Draft**  
**Accelerated Waste Retrieval**  
**Evaluation Criterion #2**  
**Technical Requirements**  
**March 24, 1998**

Criteria	Discussion
1.0 RETRIEVAL	
1.1 Silo Integrity	This criteria is defined by the physical loads that the Contractor's retrieval system will impart to the silos, or alternatively, the structural degradation that will result from physical modifications.
1.2 Complexity	This criteria is defined by the quantity of retrieval equipment being provided and its expected availability.
1.3 BentoGrout Removal	This criteria is defined by the technology being provided to retrieve and the BentoGrout from the silos and transport it to the TTA.
1.4 Discrete Object Removal	This criteria is defined by the technology being provided to retrieve discrete objects.
1.5 Water Management	This criteria is defined by the quantity of water that will be added to the silos during retrieval.
1.6 Contamination Control	This criteria is defined by the number of penetrations into the silos and the expected ability of the system to maintain proper air flow directions and velocities.
1.7 Maintainability	This criteria is defined by expected frequency of maintenance activities and the relative ease, considering contamination and radiation issues, of performing such maintenance.
1.8 Meets Requirements	This criteria is defined by the expected ability of the Contractor's Retrieval System to meet the retrieval criteria.
2.0 RADON CONTROL	
2.1 Maintainability	This criteria is defined by expected frequency of maintenance activities and the relative ease, considering radiation shielding, of performing such maintenance.
2.2 Technology	This criteria is defined by the means that the Contractor will remove radon from the system.

**Draft**  
**Accelerated Waste Retrieval**  
**Evaluation Criterion #2**  
**Technical Requirements**  
**March 24, 1998**

Criteria	Discussion
2.3 Space Utilization	This criteria is defined by the physical size of the RCS facility and any interferences it may have on other site operations.
2.4 Automation	This criteria is defined by the amount of operator intervention required to operate the RCS.
2.5 Meets Requirements	This criteria is defined by the expected ability of the Contractor's RCS to meet the radon release criteria.
3.0 TTA	
3.1 Retrievability	This criteria is defined by the expected ease of retrieving residues from the TTA after 5 years of storage.
3.2 BentoGrout Handling	This criteria is defined by the Contractor's design for removing bentoGrout from the slurry water prior to discharge to the AWWT.
3.3 Water Management	This criteria is defined by the total quantity of wastewater that will be discharged to the AWWT over the life of the project, and the maximum rate of discharge.
3.4 Space Utilization	This criteria is defined by the physical size of the TTA facility and any interferences it may have on other site operations.
3.5 Meets Requirements	This criteria is defined by the expected ability of the Contractor's TTA to meet the segregation, wastewater minimization, and intertank transfer requirements.
4.0 OVERALL	

**Draft**  
**Accelerated Waste Retrieval**  
**Evaluation Criterion #2**  
**Technical Requirements**  
**March 24, 1998**

Criteria	Discussion
4.1 Utility Consumption	This criteria is defined by the quantity of electricity, domestic water, and other utilities that will be routinely consumed by the Contractor's facilities.
4.2 Control System Architecture	This criteria is defined by degree of automation, sophistication, and ease of use of the Contractor's proposed control system.
4.3 Wastewater Management	This criteria is defined by the ability of the Contractor's wastewater system to meet the requirements of AWWT.
4.4 Transfer System Design	This criteria is defined by the physical design of the transfer system between the silos and the TTA, with respect to leak prevention and detection, ability to free drain, and reliability.
4.5 Modularization	This criteria is defined by the degree to which the Contractor prefabricates modules offsite, thus resulting in a smaller onsite labor force.

**Draft**  
**Accelerated Waste Retrieval**  
**Evaluation Criterion #3**  
**Key Personnel**  
**March 24, 1998**

Criteria	Discussion
<b>1.0 Project Manager</b>	
1.1 Relevant experience	This criteria is defined by the Offeror's Project Manager's individual experience. Minimum relevant experience of 10 years on projects of similar scope is requested
1.2 Government Experience	This criteria is defined by the Offeror's experience. DOE experience is preferred.
1.3 Complexity	This criteria is defined by the Offeror's experience. Experience on projects of similar complexity is desired.
<b>2.0 Engineering Manager</b>	
2.1 Relevant experience	This criteria is defined by the Offeror's Engineering Manager's individual experience. Minimum relevant experience of 10 years on projects of similar scope is requested
2.2 Government Experience	This criteria is defined by the Offeror's experience. DOE experience is preferred.
2.3 Complexity	This criteria is defined by the Offeror's experience. Experience on projects of similar complexity is desired.
2.4 Professional experience	Professional Engineering License is preferred.
2.5 Field/Design Experience	This criteria is defined by the Offeror's field and design engineering experience.

**Draft**  
**Accelerated Waste Retrieval**  
**Evaluation Criterion #3**  
**Key Personnel**  
**March 24, 1998**

Criteria	Discussion
3.0 Construction Manager	
3.1 Relevant experience	This criteria is defined by the Offeror's Construction Manager's individual experience. Minimum relevant experience of 10 years on projects of similar scope is requested
3.2 Government Experience	This criteria is defined by the Offeror's experience. DOE experience is preferred.
3.3 Complexity	This criteria is defined by the Offeror's experience. Experience on projects of similar complexity is desired.
4.0 Operations/Maintenance Manager	
4.1 Relevant experience	This criteria is defined by the Offeror's Operations/Maintenance Manager's individual experience. Minimum relevant startup, Conduct of Operation, Operation and Maintenance experience of 10 years on projects of similar scope is requested
4.2 Government Experience	This criteria is defined by the Offeror's experience. DOE experience is preferred.
4.3 Complexity	This criteria is defined by the Offeror's experience. Experience on projects of similar complexity is desired.

**Draft**  
**Accelerated Waste Retrieval**  
**Evaluation Criterion #3**  
**Key Personnel**  
**March 24, 1998**

Criteria	Discussion
5.0 Project Field Engineer	
5.1 Relevant experience	This criteria is defined by the Offeror's Project Field Engineer's individual experience. Minimum relevant experience of 5 years on projects of similar scope is requested
5.2 Government Experience	This criteria is defined by the Offeror's experience. DOE experience is preferred.
5.3 Complexity	This criteria is defined by the Offeror's experience. Experience on projects of similar complexity is desired.

**Draft**  
**Accelerated Waste Retrieval**  
**Evaluation Criterion #3**  
**Key Personnel**  
**March 24, 1998**

Criteria	Discussion
6.0 Safety and Health Representative	
6.1 Relevant experience	This criteria is defined by the Offeror's Safety and Health Representative's individual experience. Minimum relevant experience of 5 years on projects of similar scope is requested.
6.2 Government Experience	This criteria is defined by the Offeror's experience. DOE experience is preferred.
6.3 Complexity	This criteria is defined by the Offeror's experience. Experience on projects of similar complexity is desired.
6.4 Construction	This criteria is defined by the Offeror's experience. A minimum of 3 years of construction experience is required
6.5 OSHA	This criteria is defined by the Offeror's experience. An adequate knowledge of OHSA 1926 and OHSA 1910 is required.
7.0 Radiological Safety Officer	
7.1 Relevant experience	This criteria is defined by the Offeror's Radiological Safety Officer's experience. Minimum nuclear safety experience of 2 years is required.
7.2 Government Experience	This criteria is defined by the Offeror's experience. DOE experience is preferred.
7.4 Knowledge	An adequate knowledge of 10CFR835 and DOE Order 5400.5 is required

**Draft**  
**Accelerated Waste Retrieval**  
**Evaluation Criterion #3**  
**Key Personnel**  
**March 24, 1998**

Criteria	Discussion
<b>8.0 Quality Manager Engineer</b>	
8.1 Relevant experience	This criteria is defined by the Offeror's Quality Manager's individual experience. Minimum relevant experience of 10 years on projects of similar scope is desired.
8.2 Government Experience	This criteria is defined by the Offeror's experience. DOE experience is preferred.
8.3 Complexity	This criteria is defined by the Offeror's experience. Experience on projects of similar complexity is desired.
<b>9.0 Project Controls/Scheduler</b>	
9.1 Relevant experience	This criteria is defined by the Offeror's Project Controls/Scheduler's individual experience. Minimum relevant experience of 5 years on projects of similar scope.
9.2 Government Experience	This criteria is defined by the Offeror's experience. DOE experience is preferred.
9.3 Complexity	This criteria is defined by the Offeror's experience. Experience on projects of similar complexity is desired.

**Draft**  
**Accelerated Waste Retrieval:**  
**Evaluation Criterion #4**  
**Quality Assurance**  
**March 24, 1998**

Criteria	Discussion
1.0 Quality Program	
1.1 Quality Oversight	Program elements as defined by the Offeror's plan. The program must meet the requirements defined by DOE and ISO programs. The eight DOE program areas for quality control are defined in Part 9 of the RFP
1.2 Program Implementability	Evidence of demonstrated program implementability
1.3 Vendor Quality Assurance	Evidence of vendor quality program