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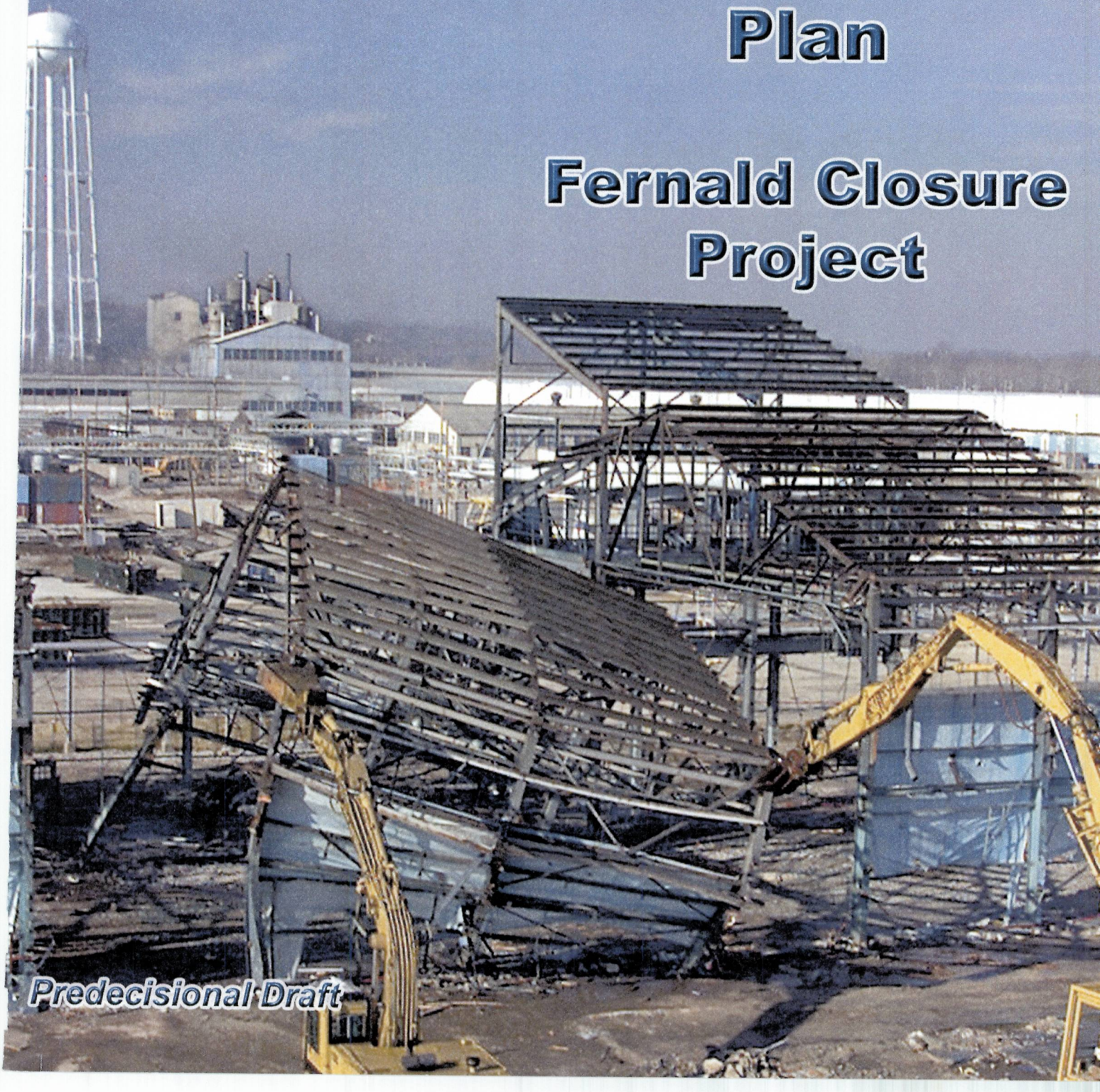
July 2002

Performance Management Plan

Fernald Closure Project



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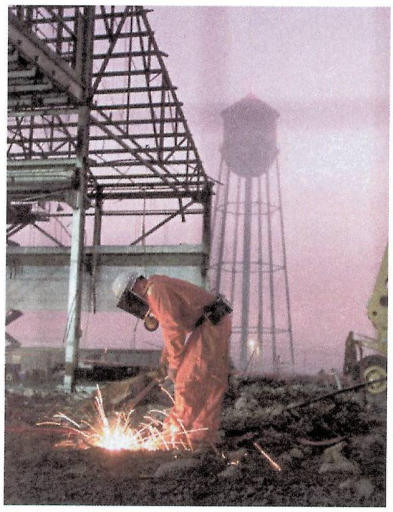
EXECUTIVE SUMMARY

This Performance Management Plan documents DOE's approach to achieving closure of the Fernald site by 2006 – safely, at the least cost to the taxpayer, and in compliance with regulatory requirements and stakeholder expectations.



Prior to the development of initiatives in response to the Assistant Secretary for Environmental Management's Top to Bottom Review, Fernald's Performance Measurement Baseline called for closure in 2009. Leveraging $24 million of additional funding from the Cleanup Reform Account will enable Fernald to implement reform initiatives that reduce project risk, achieve closure three years earlier in 2006, and save taxpayers in excess of $228 million. Acceleration of closure carries the obvious benefit of earlier reduction of risk associated with Fernald contamination. It also allows the earlier release of funding that can then be used to accelerate cleanup work at other sites within the DOE Complex.

Achievement of an accelerated 2006 closure of Fernald with only a modest investment from the Cleanup Reform Account is realistic. Contamination characterization and remedy selection is in place for the entire Fernald site with stakeholder and regulator acceptance and support. With the exception of the Silos 1&2 and Silo 3 subprojects, which are in the design phase, all subprojects are mature and being implemented successfully in the field. There are existing and proven disposition routes for all waste streams, and actual field cleanup is more than 37% complete.

Fernald's 2006 closure initiatives – developed in response to the Assistant Secretary's Top to Bottom Review – adopt a number of changes in managerial and cleanup implementation strategies that directly reduce project risk, accelerate work completion, and reduce the cost of required cleanup with the re-investment of savings into further fieldwork acceleration.

These initiatives, which are detailed in this Plan, can be summarized as:

- Accelerate critical path activities using a revised, component-based design, procurement, and construction strategy
- Utilize the most cost-effective waste disposition routes
- Eliminate and/or streamline unnecessary requirements while ensuring remedy protectiveness
- Reduce support labor costs not essential to safe and efficient execution of fieldwork

Consistent with the objectives of this Plan, DOE has put a performance-based contract structure in place in which the closure contractor is incentivized and motivated to achieve 2006 closure at least cost and schedule. The closure contractor has established a Performance Measurement Baseline with detailed metrics to allow aggressive project management of the 2006 objective. This baseline represents the blueprint to achieving the project-specific 2006 milestones contained in this Plan.

Achieving closure in 2006 was improbable only a few years ago. It is now firmly in the grasp of DOE and the closure contractor, due to the initiatives outlined in this document.

INTRODUCTION

This document presents the Performance Management Plan for the Fernald Closure Project near Cincinnati, Ohio. The Fernald Performance Management Plan outlines the strategic initiatives, execution strategies, and performance management approaches that form the backbone of the commitment of the Fernald team (DOE-OH and its closure contractor, Fluor Fernald) to achieve accelerated site closure by 2006. The plan is aimed at satisfying National Defense Authorization Act (HR 4546) requirements for a high-level plan that defines activities needed to accelerate environmental risk reduction and cleanup, and which are fully coordinated with Federal and State agencies with regulatory jurisdiction over the site.

Fernald's 2006 closure strategy is directly linked to the expectations and recommendations contained in DOE's February 4, 2002 Top-to-Bottom Review, which calls for a fundamental change in the way cleanup will be carried out at DOE sites nationwide. In essence, DOE is prioritizing and incentivizing those sites that can – in partnership with their regulators, contractors, and communities – change their way of doing business to achieve a common goal of accelerated cleanup and meaningful risk reduction. The incentives for accelerated cleanup include additional funding from the Cleanup Reform Account, direct technical assistance to qualifying closure sites from the Science and Technology Program, and programmatic support where needed to forge more effective cleanup agreements with state and federal regulators.

Unlike the larger, more complex DOE sites, Fernald offers a unique opportunity to achieve accelerated closure – consistent with the Top-to-Bottom Review – at a site where all critical remedial action decisions are in place, DOE and its stakeholders and regulators are in alignment, and field work is substantially underway for all subprojects. This Performance Management Plan explicitly recognizes the straightforward nature of Fernald's cleanup approach, the maturity of its remedial decisions, and the independently validated and clearly defined baseline path for achieving 2006 closure.

Plan Objectives and Organization

This Performance Management Plan builds upon the extensive planning already set in motion for Fernald. Considering the maturity of the project and the status of its remedial decisions, this site-specific plan is aimed at accomplishing the following two fundamental objectives:

- Identification of the strategic initiatives that will drive Fernald closure by 2006, in accordance with the remedial actions required by Fernald's five signed CERCLA Records of Decision and the detailed work sequence defined in Fernald's independently validated 2006 closure baseline.
- Definition of specific actions, due dates, and responsible entities that will carry the strategic initiatives for a 2006 closure into a measurable, disciplined project activity.

In order to achieve these two fundamental objectives, the Performance Management Plan is designed to answer five key questions:

1. What are the year-by-year funding requirements necessary to accomplish the remaining closure work scope by 2006?
2. What are the execution strategies and approaches to completing the remaining scope for each of the major remedial action subprojects that define the Fernald Closure Project?
3. What critical schedule or implementation risks remain in the execution of the work scope, and what resulting actions are necessary to address them?
4. What tailored project management tools and contract management strategies will be utilized to effectively track project progress, identify earned value, and support timely and effective project decision-making?
5. How will the Fernald team put additional funding to use, should such funds be made available?

The remainder of this plan provides answers to these questions, and explains how the Fernald team will safely and cost effectively implement the work through an aggressive, priority-based execution approach.

The Performance Management Plan is divided into four major sections. The remainder of this Introduction provides an overview of the Fernald Closure Project and highlights the Fernald team's March 2002 response to the Top-to-Bottom Review.

The second section describes Fernald's 2006 funding profile and the eight strategic initiatives that comprise the 2006 plan, including the project-specific execution strategy, progress to-date, and key actions and responsibilities remaining for each major subproject.

The second section also identifies the key optimization opportunities within the 2006 execution plan that address how additional funding would be put to work at Fernald, should it be made available. These key optimization opportunities promote ways to more quickly eliminate threats to human health and the environment, decrease schedule risk, and reduce life-cycle cost in exchange for additional near-term funding availability.

The third section identifies the tailored performance management tools the Fernald team is utilizing to track performance, assess trends, identify and mitigate implementation risk, manage performance-based contracts, and satisfy the reporting needs of Fernald's stakeholders and managing entities. The final section provides the plan's conclusion and path forward for realization of the 2006 site closure.

Three attachments accompany this plan. Attachment 1 summarizes Fernald's response for each of the 12 areas encompassed by the Top-to-Bottom Review. Attachment 2 provides a compilation of the project-wide actions and responsibilities for the Plan, in the form of an Action/Responsibility Matrix. Lastly, Attachment 3 provides Letters of Endorsement for the concept of acceleration of closure of the Fernald site by December 2006 from the site's regulatory agencies and key stakeholder groups.

The Performance Management Plan will remain in place throughout the duration of Fernald's remaining 2006 site closure scope. During ongoing field implementation, the Fernald team will continue to look for ways to further streamline and improve the acceleration initiatives captured in the Plan.

Fernald Closure Project Overview

In 1952 Fernald began its uranium production mission as the Feed Materials Production Center in support of the nation's weapons program. During 37 years of operation, 462 million pounds of pure uranium metal products were produced for use in the production reactors at DOE's Hanford and Savannah River facilities.

When operations ceased in 1989, there were 31 million pounds of uranium product present on site, 2.5 billion pounds of waste, and 2.5 million cubic yards of contaminated soil and debris. In addition, a 223-acre portion of the underlying Great Miami Aquifer was found to be affected by uranium at levels above drinking water standards.

In 1992, the site was renamed the Fernald Environmental Management Project and the mission was formally changed to environmental restoration under CERCLA. To facilitate restoration, the CERCLA work scope for the 1,050 acre facility was divided into five operable units: the waste pits (Operable Unit 1); other waste units (Operable Unit 2); the production-area facilities and legacy-waste inventories (Operable Unit 3); the waste silos (Operable Unit 4); and contaminated environmental media (Operable Unit 5). Since 1992, CERCLA remedial investigations and feasibility studies have been completed for each of the operable units, and final Records of Decision to establish cleanup levels and document the cleanup remedies have been signed for each by DOE, U.S. EPA, and Ohio EPA.

The final remedial actions include: facility decontamination and dismantlement (D&D); on-site disposal of the majority of contaminated soil and D&D debris; off-site disposal of the contents of the two K-65 Silos (Silos 1&2), Silo 3, waste pit material, nuclear product inventory, low-level waste, mixed waste, and limited quantities of soil and D&D debris not meeting on-site waste acceptance criteria; and treatment of contaminated groundwater to restore the Great Miami Aquifer.

Ultimately, approximately 975 acres of the 1,050-acre property will be restored to beneficial use as an undeveloped park, and approximately 75 acres will be dedicated to the footprint of the On-Site Disposal Facility. Contaminated portions of the aquifer will be restored to beneficial use as a drinking water supply, and long-term stewardship actions will be put in place consistent with the final land use.

Fernald produced 462 million pounds of high-purity uranium during its 37-year defense-program history.

The definition of site closure at Fernald is consistent with the general definition found in DOE-EM's *Accelerating Cleanup: Focus on 2006* (June 1997), otherwise known as the "Paths to Closure" document.

Site closure is achieved when all contaminant sources have been remediated and groundwater contamination is contained with long-term treatment and monitoring in place. In order to achieve site closure, the following activities must be completed by December 31, 2006:

- Complete removal, treatment, and off-site disposal of the Silos 1&2 material
- Complete removal and off-site disposal of Silo 3 material
- Excavation and disposal of material in the waste pits and other waste units
- Complete disposal of nuclear material, low-level waste, and mixed waste
- Excavation and disposal of soil and completion of the On-Site Disposal Facility
- Continue to treat uranium-contaminated waste-water at the Advanced Wastewater Treatment Facility
- Complete facility D&D (except for the Advanced Wastewater Treatment Facility and related infrastructure and rail yard) and disposal of D&D debris.

As shown in Figure 1, significant progress has already been made in remediating the Fernald site. To date, the Fernald team has dismantled 105 structures out of a total of 223, including Plant 1, Plant 4, Plant 5, Plant 6, Plant 7, Plant 9, the Maintenance Building, and the Boiler Plant, which were some of the largest and most complex buildings on site.

Fernald's seven-cell engineered On-Site Disposal Facility has received 620,000 cubic yards of soil and 107,400 cubic yards of debris to date. Liners have been constructed for Cells 1, 2, and 3 and the cap has been completed for Cell 1. Cells 2 and 3 are currently receiving waste, and liner construction is underway for Cells 4 and 5.

Fifty-two percent of the site area has been certified as meeting radiological and chemical cleanup levels. Three of eleven natural resource restoration subprojects have been completed, including construction of a 12-acre wetland mitigation subproject and an 18-acre forest restoration subproject.

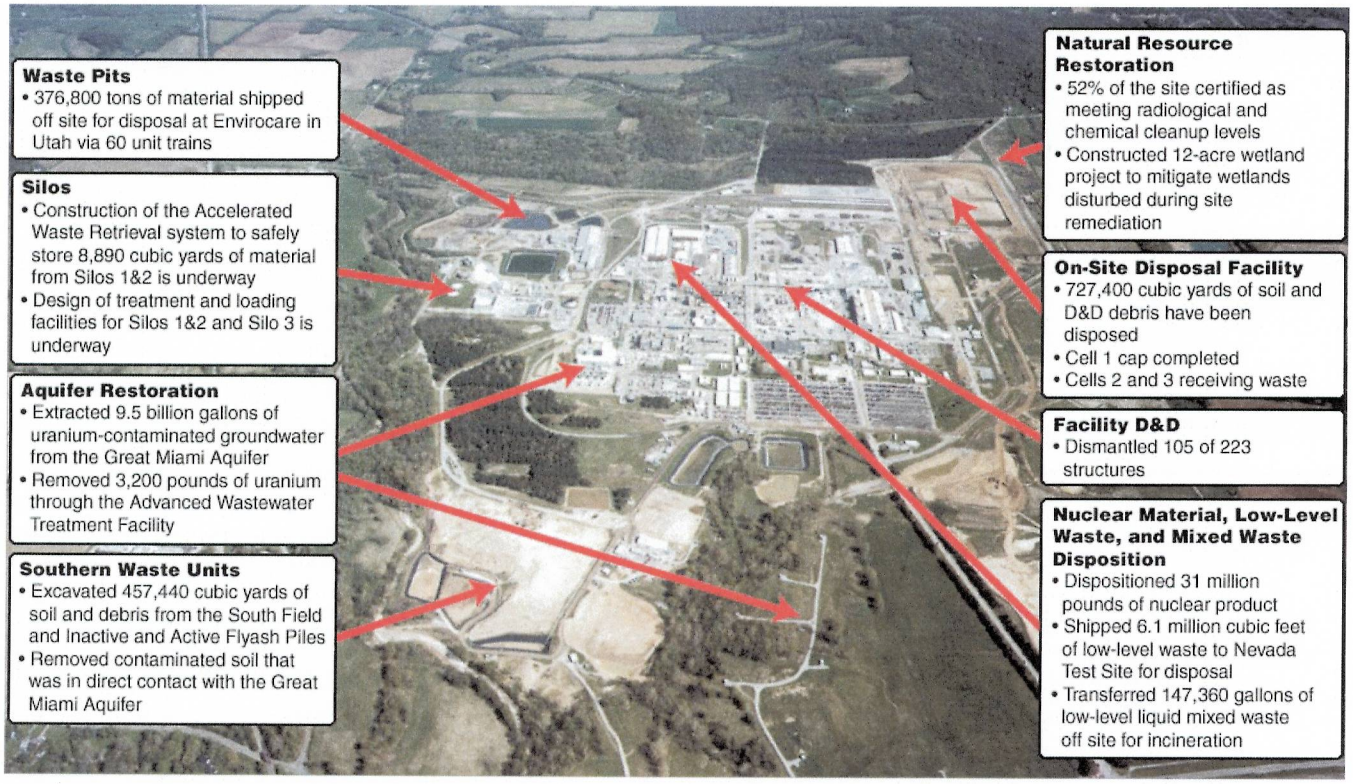


Figure 1: *To date, the Fernald team has completed more than 37% of the Fernald cleanup while maintaining an outstanding safety record that is consistently at the top of the DOE Complex.*

Waste pit remediation is 48% complete and 376,800 tons of material have been shipped off-site via rail to Envirocare in Utah. Disposition of Fernald's inventory of nuclear material product is 100% complete. Construction of the Accelerated Waste Retrieval Facility to safely store 8,890 cubic yards of material from Silos 1&2 prior to treatment and disposal is currently underway. Over 9.5 billion gallons of uranium-contaminated groundwater have been extracted from the Great Miami Aquifer. Based on the quantities of remediation wastes that have been permanently dispositioned to date, the Fernald team has completed more than 37% of the Fernald site cleanup – including, most notably, the removal of all legacy nuclear materials from the site.

Fernald's Response to the Top-to-Bottom Review

In its March 2002 response to the Top-to-Bottom Review, the Fernald team outlined an aggressive approach to satisfying each of the four major recommendations carried forward from the review. Fernald's response reaffirmed the team's strategy and execution approach to achieve accelerated site closure in 2006, and outlined the needed support from DOE-HQ and Congress to achieve the 2006 objective.

The aggressive acceleration actions contained in the Fernald team's response have been carried forward to this Performance Management Plan. Figure 2 identifies the four major recommendations originating from the Top-to-Bottom Review, highlights the Fernald team's response, and provides a cross reference as to where in this Performance Management Plan the responses are addressed. Attachment 1 then summarizes Fernald's response for all 12 items covered by the review.

In partnership with our regulators and stakeholders, the Fernald team will achieve site closure in 2006 by implementing the aggressive initiatives and proactive approaches set in motion by the expectations and recommendations of the Top-to-Bottom Review.

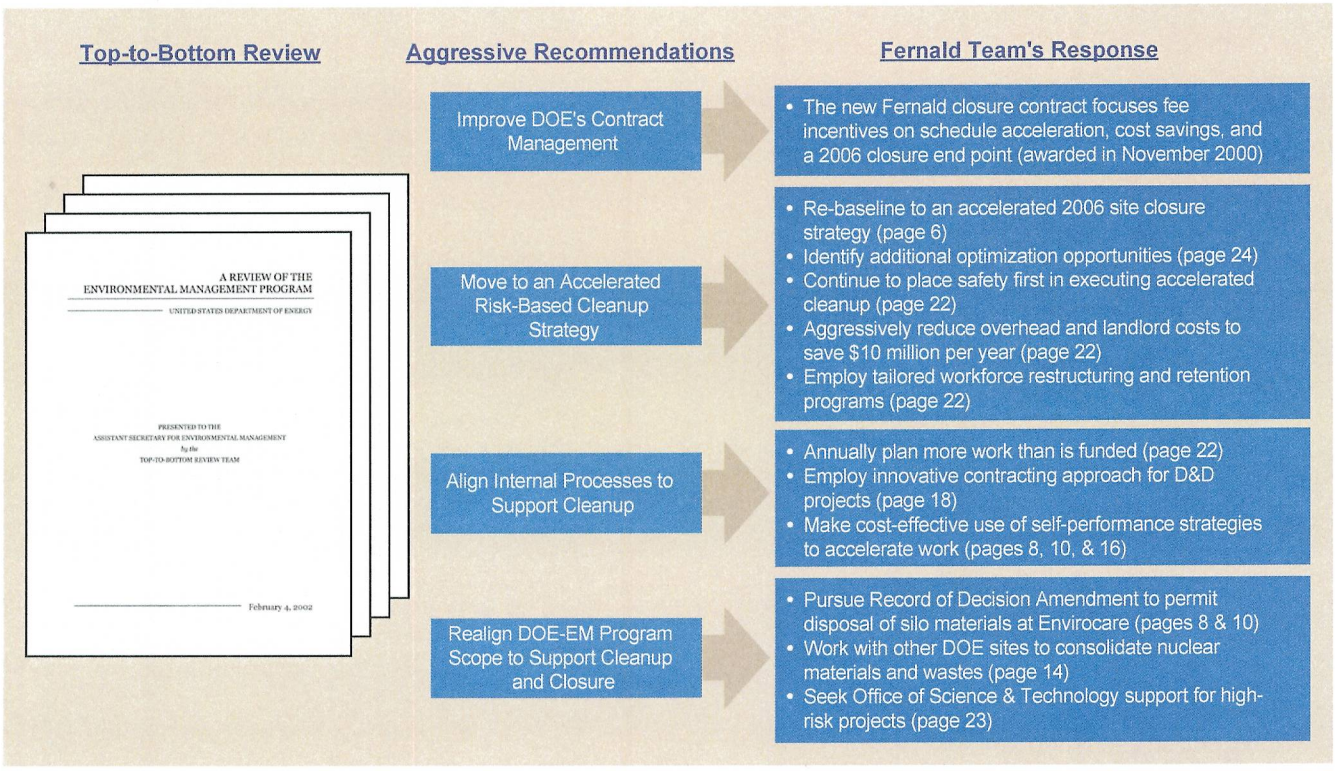


Figure 2: *The Top-to-Bottom Review offers four aggressive recommendations, all of which are recognized in this Plan and incorporated into Fernald's 2006 closure strategy.*

FERNALD'S STRATEGIC INITIATIVES

This section presents the eight strategic initiatives that define the 2006 closure strategy for Fernald. The initiatives encompass the seven top-level Fernald remediation subprojects, coupled with a group of sitewide initiatives for Fernald as a whole. For each initiative, a description of the scope, execution strategy, current status, and key actions/responsibilities to achieve 2006 closure is provided.

The initiatives are presented in the order of the risk they pose to human health and the environment. The Silos 1&2 and Silo 3 subprojects present the greatest risk and are Fernald's highest priority efforts. The Silos 1&2 subproject also defines the critical-path schedule constraint for a 2006 closure, and therefore receives top-priority site funding allocations each year. The Aquifer Restoration subproject, while a top priority environmental concern that has driven earlier funding allocations to install needed infrastructure, requires continuation of restoration activities until deemed complete by DOE and the site's regulatory agencies. Completion of this subproject therefore falls outside the definition of site closure.

All other subprojects will reach closure in 2006, consistent with Fernald's site-closure definition presented in the Introduction.

The section begins with an overview of Fernald's 2006 execution plan and funding profile, and ends with a discussion of the 2006 optimization opportunities that can be used to put additional funds to work at Fernald above the 2006 funding profile, should they be made available as a result of increased efficiency or additional appropriations.

Summary of the 2006 Execution Plan

Consistent with Fernald's closure contract, which established an annual $290 million flat-funding profile and a target completion date of 2010, Fluor Fernald submitted a site closure baseline to DOE in September 2001. This baseline established a completion date of December 2009, resulting in a one-year schedule acceleration over contract requirements. In response to the original baseline submittal, Assistant Secretary Jessie Roberson challenged the Fernald team to determine the annual funding necessary to accelerate site closure to December 2006 and to develop an accelerated plan to achieve this goal. Fernald's independently validated current baseline now incorporates the 2006 closure objective and the aggressive results-oriented activities needed to reach this accelerated closure date.

Figure 3 lists the activities in Fernald's seven subprojects that were rescheduled in order to accelerate site closure from December 2009 to December 2006.

PROJECT ACCELERATION TO ATTAIN SITE CLOSURE BY 2006

Subproject	Items Accelerated	Benefits
Silos 1&2	• Accelerate completion of Silos 1&2 design • Accelerate construction of the Accelerated Waste Retrieval Facility • Accelerate transfer of 8,890 cubic yards of Silos 1&2 material into the Accelerated Waste Retrieval Facility • Accelerate off-site disposition of Silos 1&2 material	• Transfer of silo material into safe storage significantly reduces radon emissions and risk to the public • Accelerated off-site disposition of silo material eliminates source term and allows site closure by 2006
Silo 3	• Accelerate off-site disposition of the Silo 3 materials	• Acceleration strategy reduces remediation costs by eliminating treatment and utilizing bulk rail transport off site
Waste Pits	• Increase production quantities to 150,000 tons per year	• Maintains project schedule and ensures rail cars are available for Silos 1&2 material
Low-Level Waste and Mixed Waste Disposition	• Accelerate dispositioning of low-level waste and mixed waste containers from Plant 1 Pad	• Allows for the accelerated start of the Plant 1 Phase II Complex D&D
Soil Excavation and On-Site Disposal Facility	• Accelerate construction of Cell 4&5 liners • Accelerate soil excavation, on-site waste placement, and cell closure	• Acceleration of excavation and placement results in early source term removal
Facility D&D	Accelerate the following: • Multi-Complex D&D • Plant 1 Phase II D&D • Pilot Plant and Administration Complex D&D • Laboratory D&D	• Accelerated removal of the structures allows soil excavation access beneath Areas 3B and 4B and resultant early placement of D&D debris and excavated soil in the On-Site Disposal Facility
Aquifer Restoration	• No acceleration opportunities required	• Not applicable

Figure 3: *Fernald's 2006 execution plan accelerates key Fernald subprojects to attain site closure three years earlier.*

The acceleration of these key activities completes the subprojects ahead of the previously baselined schedule, reduces overhead and landlord costs, reduces life-cycle project costs, and reduces risks to human health and the environment by earlier elimination of source term.

2006 Schedule and Funding

The Fernald Team has developed a detailed execution plan (baseline) to achieve closure by 2006. Figure 4 shows the closure schedule and annual funding levels for the 2006 execution plan. The Fernald project critical path – depicted in red – runs through the design, construction, and operations of the Silos 1&2 treatment facility, and the off-site disposition of Silos 1&2 waste. Following waste disposition, the Silos 1&2 treatment facility will be safely shut-down and dismantled and the debris disposed of, thereby completing the critical path and finalizing Fernald closure in 2006.

The annual Fernald funding levels needed through December 2006 to execute the 2006 closure plan are depicted in Figure 4 as vertical white bars. This funding profile includes $300 million in FY02, $324 million per year for FY03, FY04, and FY05, and $300 million for FY06. The funding profile also includes $80 million for first quarter FY07 to complete site closure activities by December 2006. The 2006 execution plan results in life-cycle cost savings of $228 million over the original $290 million flat-funding baseline submitted by Fluor Fernald in September 2001.

Following site closure in December 2006, limited follow-on activities will be performed, defined as Site Completion in the Fernald closure contract. These activities include contract closeout, demobilization, and some limited natural resource restoration. In addition, Post-Site Completion (which is outside of the Fernald closure contract) includes long-term stewardship and continued operations of the Advanced Wastewater Treatment Facility to treat contaminated groundwater until risk-based remedial goals are met. The rail infrastructure will also remain to support eventual D&D of the Advanced Wastewater Treatment Facility.

With the acceleration of Fernald site closure from December 2009 to December 2006, the execution schedule for several subprojects (e.g., Waste Pits subproject and the Low-Level Waste and Mixed Waste Disposition subproject) has very little float, resulting in those subprojects being close to critical path themselves. Therefore, these subprojects are treated as having secondary critical path schedules and managed accordingly.

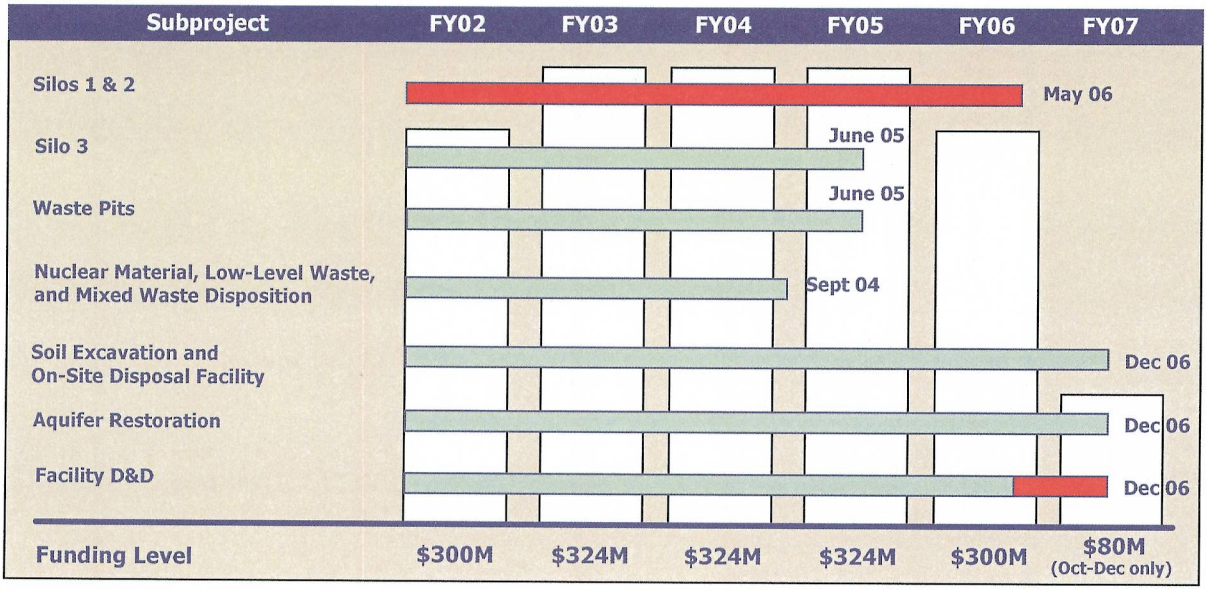


Figure 4: *Fernald's 2006 baseline cuts 3 years off the closure schedule and saves taxpayers $228 million in life-cycle costs.*

Strategic Initiative 1 – Accelerate Silos 1&2

Subproject Description

Silos 1&2, two concrete silos located on the western periphery of the site, contain 8,890 cubic yards of low-level wastes that remained after extraction of uranium from pitchblende ores received from the Belgian Congo. Over half of these radium-bearing residues, which date back to the 1950s, were originally generated at the Mallinckrodt Chemical Works in Saint Louis and then shipped to Fernald for storage. The remaining residues were generated at Fernald during the processing of these same ores. In 1964, an earthen berm was placed around Silos 1&2 to reinforce the structural integrity of each silo.

Based on the approved Record of Decision for Operable Unit 4, the cleanup remedy for Silos 1&2 requires removal of the wastes from the concrete silos followed by chemical stabilization and off-site disposal at the Nevada Test Site.

Execution Strategy

The execution strategy in the revised 2006 baseline for the remediation of the Silos 1&2 contents includes transferring the waste to tanks for staging, treating the waste by chemical stabilization, and shipping the stabilized material off site for disposal. The material in Silos 1&2 will be transferred to the new Transfer Tank Area for safe interim storage pending final treatment and disposal. The work also includes construction of a radon control system to mitigate radon emissions from the silos, the Transfer Tank Area, and the future Silos 1&2 full-scale remediation facility.

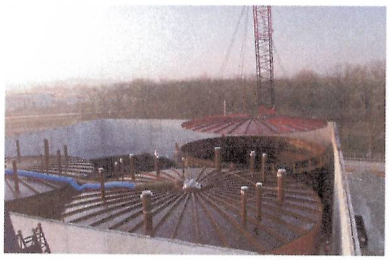
The treatment facility will consist of a slurry receipt system to receive the transferred material from the Transfer Tank Area, a chemical stabilization facility to treat Silos 1&2 material, and a system to containerize the treated material. Chemical stabilization is defined as a non-thermal treatment process that mixes the Silos 1&2 material with chemical additives to accomplish chemical and physical binding of the constituents of concern. These processes provide reduction in contaminant mobility by chemically stabilizing contaminants into a leach-resistant form. The treatment facility will also have an interim storage area for curing and staging the treated material while awaiting approval for disposal and an air emissions control system for control of radionuclide particulate emissions from the treatment process. Both the Transfer Tank Area and the treatment facility are connected to the radon control system for control of radon emissions from the remediation process.

The design is being performed by Jacobs Engineering (a Fluor Fernald teaming partner) and will utilize "off-the-shelf" hydraulic retrieval systems and stabilization equipment to handle the waste. A parallel review cycle for key stakeholders is planned to reduce the overall duration of the final design. In addition, early procurement of long-lead components is planned to ensure that construction will begin on schedule. This allows Jacobs Engineering to engage key treatment component vendors in the design process, which will ensure compatibility of key components with the balance of plant design. Early design packages will be issued for procurement of non-treatment related components (e.g., warehouses) concurrent with final design to accelerate the overall construction schedule. Fluor Fernald will provide construction management and direct the operations, transportation, and shipment activities.

New Strategies to Achieve 2006 Closure

In order to accelerate site closure from 2009 to 2006, the following initiatives were developed for the Silos 1&2 subproject:

- Dispose of the treated Silos 1&2 material at a permitted off-site commercial disposal facility, which potentially allows for cost savings associated with waste transport and disposal and schedule risk mitigation
- Adopt a safer, more cost-effective disposal pathway with bulk transport by rail of the chemically-stabilized Silos 1&2 material, which will improve waste handling logistics over the former plan to truck the stabilized material to the Nevada Test Site
- Accelerate the design, procurement, and construction of the treatment facility by earlier vendor involvement and early release of design packages for procurement of non-treatment-related facilities and components



In order to accelerate the off-site disposition of the Silos 1&2 waste, DOE will pursue a Record of Decision Amendment to permit disposal of Silos 1&2 materials as 11e.(2) waste at Envirocare in Utah. This action reduces the complexity of the silos shipping program and permits the bulk shipping of silos wastes by rail. Rail transport reduces cost and schedule risk associated with activities on the critical path. Efforts are underway to work with local stakeholders, Ohio EPA, and U.S. EPA to gain concurrence for this initiative.

The Record of Decision Amendment will be pursued in conjunction with an NRC license modification that permits disposal of Silos 1&2 wastes in Envirocare's 11e.(2) disposal cell. Envirocare is in the process of preparing a waste-specific license modification for submittal to the NRC, requesting approval to raise the facility's radium-226 waste acceptance criteria limit from 4,000 pCi/g to 100,000 pCi/g to accommodate Fernald's wastes. This approval is contingent upon Envirocare's ability to demonstrate the protectiveness of the cell design at the higher radium concentrations. NRC approval of the modification is a key precursor to the Record of Decision Amendment.

Treatment of Silos 1&2 material will result in the production of about 7,500 containers weighing 21,000 pounds each. Under the revised plan, seven containers will be placed into each gondola car resulting in the need for 1,072 gondola car shipments. A unit train will consist of 60 gondola cars, so 18 dedicated unit train shipments to Envirocare are envisioned. Contaminated soil underlying the Silos 1&2 treatment facility will be removed prior to construction to streamline post-remediation certification of the area.

In addition to the remediation of Silos 1&2 contents, the subproject will consist of the safe shutdown and demolition of the concrete Silos 1&2 structures. The scope also includes facility shutdown of associated waste removal and treatment facilities prior to turnover of the treatment facilities to the Facility D&D subproject.

Current Subproject Status

Subproject Status:

- Design is 21% complete
- Overall subproject is 7% complete
- Accelerated Waste Retrieval Facility is being constructed
- Startup of stabilization facility is scheduled for May 2003
- Waste disposal at Envirocare is scheduled for April 2005
- Cost to Complete: $281 million
- Subproject will be complete in May 2006

The remedial design is 21% complete and the overall sub-project is 7% complete. Construction is currently underway on the Transfer Tank Area and Radon Control System. Construction of four 750,000-gallon transfer tanks is complete and coating of the interior and exterior of the tanks is underway. The Transfer Tank Area will be complete in late summer 2002. Construction is progressing in all areas of the Radon Control System. Specifically, four carbon beds have been installed and are ready to be filled, the primary electrical system will be turned over to start-up in early July 2002, and piping and ductwork systems are being installed. Following completion of the remedial design, the waste treatment facilities and associated warehouses, rail spur, and loadout facilities will be constructed and operated. The subproject will be complete in May 2006.

Key Actions and Responsibilities

The following table lists the key actions needed to accelerate the Silos 1&2 subproject to meet 2006 site closure. Also included are the responsible organizations, the status of the key action, and the date that the key action is needed. The key actions for all eight strategic initiatives are compiled in Attachment 2.

KEY ACTIONS AND RESPONSIBILITIES FOR SILOS 1&2

Action	Responsibility	Status	Date Needed
Reduce overall duration of final design through parallel review cycle for key stakeholders	Fluor Fernald	Complete	--
Engage key treatment component vendors in Silos 1&2 design process	Fluor Fernald	In progress	12/31/02
Early procurement of long-lead components	Fluor Fernald	In progress	12/3102
Issue early design packages to construction during Silos 1&2 process design for non-treatment-related components	Fluor Fernald	In progress	12/31/02
Amend the Record of Decision to permit disposal of Silos 1&2 materials as 11e.(2) waste at Envirocare in Utah	DOE-OH and Fluor Fernald	In progress	9/01/03
Gain NRC approval of a license modification to permit disposal of Silos 1&2 waste in Envirocare's 11e.(2) disposal cell	DOE-HQ, DOE-OH, and Fluor Fernald	In progress	2/01/04

Strategic Initiative 2 – Accelerate Silo 3

Subproject Description

Silo 3, located adjacent to Silos 1&2 on the western periphery of the site, is an unbermed concrete silo that contains 5,088 cubic yards of cold metal oxides, a by-product material generated during Fernald's uranium processing operations. The predominant radionuclide of concern identified within the material is thorium-230, which is produced from the natural decay of uranium-238.

The overall objective of the Silo 3 subproject is to safely retrieve the metal oxides from the concrete silo and package and transport the oxides for off-site disposal.

Execution Strategy

The subproject will use a combination of vacuum and mechanical retrieval systems to retrieve the metal oxides from Silo 3. This material contains several RCRA metals and the Operable Unit 4 Record of Decision established that some RCRA requirements are relevant and appropriate for managing and remediating the waste. However, Silo 3 material is classified as "by-product material," as defined under Section 11e.(2) of the Atomic Energy Act of 1954, which means that it is specifically exempt from regulation as solid waste under RCRA 40 CFR Part 261.4(a)(4).

The final remedial action will require that the Record of Decision be amended to modify the current remedy to eliminate the requirement for treatment (immobilization of RCRA metals) of the Silo 3 material. A key requirement for gaining acceptance of this amendment will be to demonstrate the ability to safely handle and transport the fine-grained Silo 3 material.

The waste will be packaged in approximately 1,700 IP-2 soft-sided containers, each having a capacity of up to 3 cubic yards. The soft-sided containers will be loaded in approximately 189 cargo containers (nine soft-sided containers per cargo container), placed on rail flatcars, and shipped concurrently with waste from the Waste Pits subproject on 48 unit trains to Envirocare for disposal as oversized debris in the Envirocare 11e.(2) cell. Although Envirocare is currently prohibited from disposing of oversized debris in this cell, the facility is pursuing a modification to their NRC license to allow for disposal of oversized debris in the 11e.(2) cell. In the event the NRC decides that waste cannot be received as 11e.(2) material, Silo 3 material can currently be disposed at Envirocare at a higher cost in the Class A cell without treatment as low-level radioactive waste exempt from RCRA treatment.

Following retrieval of the metal oxides from Silo 3, the structure will undergo gross decontamination (i.e., interior wash and fixative application) and will then be turned over to the Facility D&D subproject for demolition and on-site disposal. Jacobs Engineering will perform the design for the Silos 3 subproject, and Fluor Fernald will provide construction management and direct the operations, transportation, and shipment activities.

New Strategies to Achieve 2006 Closure

In order to accelerate site closure from 2009 to 2006, the following initiatives were developed for the Silo 3 subproject:

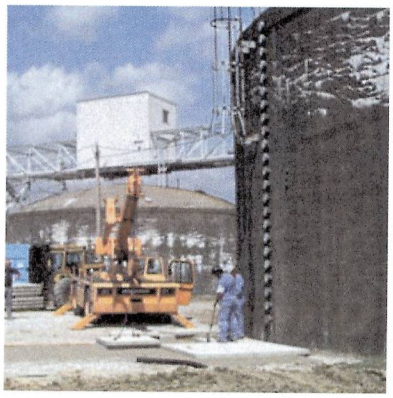
- Eliminate requirement for treatment to immobilize metals because the material is 11e.(2) "by-product" material and treatment is not needed for protective waste disposal
- Dispose of the Silo 3 material at a permitted off-site commercial disposal facility, which allows for significant cost savings associated with waste transport and disposal and schedule risk mitigation
- Adopt a safer, more cost-effective disposal pathway with bulk transport by rail of the Silo 3 material, which will significantly improve waste handling logistics over the former plan to truck the material to the Nevada Test Site

Current Subproject Status

Subproject Status:

- Subproject is 10% complete
- Final design is being completed
- Silo 4 demonstration is being implemented in the field
- Cost to Complete: $29 million
- Subproject will be complete in June 2005

The Silo 3 subproject is currently 10% complete. The final design is being developed and the results and documentation of design data studies are being compiled. A Silo 4 demonstration is currently being implemented in the field. Silo 4 is an empty, unused silo located adjacent to Silo 3 and is the same size, shape, and construction as Silo 3. The Silo 4 demonstration includes reinforcing the silo and then cutting an opening in the wall of the silo to simulate the activities that will be performed on Silo 3 during waste retrieval. Following completion of design, the waste retrieval and loadout systems will be constructed and operated. The subproject is currently on schedule to complete cleanup in June 2005.



Key Actions and Responsibilities

The following table lists the key actions needed to accelerate the Silo 3 subproject to meet 2006 site closure. Also included are the responsible organizations, the status of the key action, and the date that the key action is needed. The key actions for all eight strategic initiatives (subprojects) are compiled in Attachment 2.

KEY ACTIONS AND RESPONSIBILITIES FOR SILO 3

Action	Responsibility	Status	Date Needed
Modify Envirocare NRC license to allow disposal of oversized debris	DOE-HQ, DOE-OH, and Fluor Fernald	In progress	4/01/03
Amend Record of Decision to eliminate treatment of Silo 3 waste	DOE-OH and Fluor Fernald	In progress	4/01/03

Strategic Initiative 3 – Accelerate Waste Pits

Subproject Description

The Waste Pits subproject area is located in the northwest portion of the Fernald site on a 37-acre tract containing six waste pits, a burn pit, the clearwell, miscellaneous structures, facilities, and soil. The waste pits contain 1 million *in situ* tons of low-level radioactive wastes derived from the refining and metallurgical processing of uranium ore concentrates and thorium over a 37-year period. The Operable Unit 1 Record of Decision specifies off-site disposal of the waste pit material at a permitted commercial disposal facility.

Execution Strategy

Fernald's cleanup plan involves excavating the pits and surrounding contaminated soils, preparing and treating the waste using thermal drying to remove excess moisture, and transporting the waste by rail to Envirocare. In 1997, Fluor Fernald awarded a subcontract to the IT Group (now known as Shaw Environmental) to execute the pit excavation, waste treatment, and railcar loading for off-site shipment, while using on-site labor forces. A performance-based contracting model was used to award a fixed unit price subcontract.

Excavation was initiated in 1999 and is focusing on Pits 1, 2, and 3 first, representing two-thirds of the total volume in the pits. Excavation will then conclude with the remediation of Pits 4, 5, and 6, the burn pit, and the clearwell. Excavation of the pits is being performed with bulldozers and long-reach excavators that dig out the material and load it into dump trucks that haul the material to the Material Handling Building. There, the material is evaluated for moisture content and radiological levels. Based upon this evaluation, the material is then blended and/or treated by thermal drying to meet Envirocare's waste acceptance criteria.

If the material needs to be dried, it is fed into one of two indirect fired rotary dryers, which use heat to remove the moisture. Off-gas from the drying process is treated prior to release into the atmosphere to ensure that air emission criteria are met; similarly, water generated through this process or from excavation activities is managed through the subproject's wastewater treatment system prior to being discharged to the site's Advanced Wastewater Treatment Facility. The removal of excess moisture through the rotary dryers is expected to reduce the volume of the waste pit material from one million tons (*in situ*) to 790,000 tons (processed and shipped).

After processing, the waste material is sampled to ensure that it meets Envirocare waste acceptance criteria, then loaded into 110-ton gondola railcars. In addition to a permanent lining installed in each railcar, a disposable liner designed to contain the material is also used. Once loading of a railcar is complete, the disposable liner is folded over the waste and a lid is secured on the railcar.

Commercial rail carrier CSX Transportation ships the trains from Fernald to East Saint Louis, IL, where transport responsibility transfers to Union Pacific Railroad. Union Pacific then transports the unit trains to Envirocare. The railcars are emptied and the exterior of each railcar cleaned before the return trip back to Fernald. The subproject plans to ship 60 railcars per unit train every two weeks through May 2005, for an estimated total of 124 unit trains.

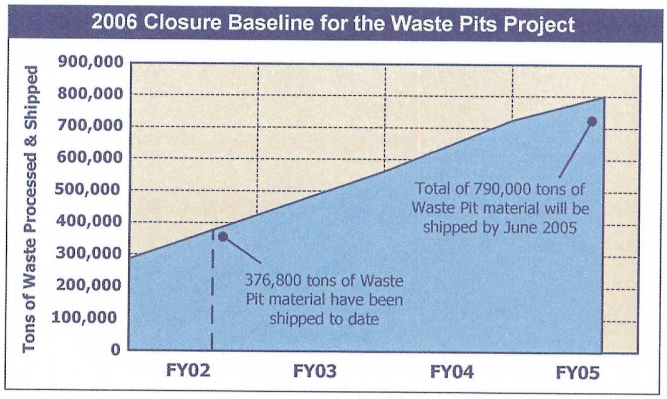
New Strategies to Achieve 2006 Closure

In order to accelerate site closure from 2009 to 2006, the following initiatives were developed for the Waste Pits subproject:

- Adopt a 24-hour-per-day, 7-days-a-week schedule for dryer operation
- Utilize the On-Site Disposal Facility for selected subsurface and waste pits cover material disposition instead of disposal off site, contingent upon U.S. EPA and Ohio EPA evaluations

In accordance with the Operable Unit 1 Record of Decision, the Pit 4 cap was planned to be shipped off site with the waste pit material. However, because the cap was constructed using soil with low levels of contamination from several areas around the site, sampling of the Pit 4 cap was performed in October 2001 to demonstrate that 11,000 cubic yards of the material meets the on-site waste acceptance criteria. The subproject is currently awaiting U.S. and Ohio EPA evaluation of the excavation and disposal plan for this material, which may include on-site disposal.

Physical sampling will be performed in phases as the bottoms of the waste pits are exposed, to determine the maximum amount of soil that meets the on-site waste acceptance criteria. The current assumption is that the first 6 inches of pit liner material will be disposed of off site, and the remaining contaminated underlying soil will meet on-site waste acceptance criteria and be disposed of in the On-Site Disposal Facility. Following the first phase of data collection beneath Pits 1 and 3, U.S. and Ohio EPA concurrence with the data findings will be sought.



The Waste Pits subproject increased dryer operations to a 24/7 schedule and increased annual production to 150,000 tons to complete processing by June 2005.

Current Subproject Status

Subproject Status:

- Subproject is 48% complete
- 376,800 tons of waste pit material have been shipped
- 60 unit trains have safely traveled from Fernald to Envirocare in Utah
- Cost to Complete: $171 million
- Subproject will be complete in June 2005

The subproject is 48% complete with 376,800 tons of waste from Pits 1, 2, and 3 (and a small quantity from Pit 5) shipped to Envirocare on 60 unit trains. To support the acceleration of site closure from 2009 to 2006, the Waste Pits subproject recently increased dryer operations to a 24/7 schedule and increased the annual production rate to 150,000 tons. In order to increase transportation capacities, 20 additional gondola railcars were purchased, which increased Fernald's fleet to 190 gondola cars. The subproject also installed a pugmill ventilation system to control air emissions and allow higher-activity material to be excavated, dried, and loaded. The remaining 420,000 tons of waste will be shipped to meet subproject completion in June 2005.

Key Actions and Responsibilities

The following table lists the key actions needed to accelerate the Waste Pits subproject to meet 2006 site closure. Also included are the responsible organizations, the status of the key action, and the date that the key action is needed. The key actions for all eight strategic initiatives (subprojects) are compiled in Attachment 2.

KEY ACTIONS AND RESPONSIBILITIES FOR WASTE PITS

Action	Responsibility	Status	Date Needed
Install pugmill ventilation system to control air emissions and allow higher-activity material to be excavated, dried, and loaded	Fluor Fernald	Complete	—
Procure 20 additional gondola railcars to increase transportation capacity	Fluor Fernald	Complete	—
Initiate 24/7 schedule for dryer operations to increase process capacity	Fluor Fernald	Complete	—
Increase annual production rate to 150,000 tons/year	Fluor Fernald	Complete	—
Pursue U.S. EPA and Ohio EPA concurrence to excavate the soil cap over Waste Pit 4 and dispose of the material in the On-Site Disposal Facility	DOE-OH and Fluor Fernald	In progress	12/31/02
Demonstrate to U.S. EPA and Ohio EPA that the soil underlying the waste pits meets the on-site waste acceptance criteria	DOE-OH and Fluor Fernald	In progress	12/31/02 (for first phase of sampling)

Strategic Initiative 4 – Accelerate Low-Level Waste and Mixed Waste Disposition

Subproject Description

After several decades of uranium metals production supporting the U.S. Defense Program, millions of pounds of waste materials remained when the mission of Fernald changed in 1989 from uranium production to environmental restoration. Specifically, 6.56 million cubic feet of low-level waste and 186,583 gallons of low-level liquid mixed waste required treatment and/or off-site disposal, and 31 million net pounds of nuclear product inventory remained for processing or disposition.

The Nuclear Material, Low-Level Waste, and Mixed Waste Disposition subproject consists of characterizing, sampling, treating (as necessary), packaging, shipping, and disposing of nuclear materials, low-level radioactive waste, and mixed waste inventories.

Execution Strategy

Several options were pursued to dispose of nuclear product and materials including transferring them to other DOE facilities for programmatic use, sale of product with market value to the private sector, and reclassification (and disposal) of some of the materials as waste. Efforts to sell or transfer product were initially successful in reducing inventory to 15.2 million pounds by August 1998. At that time, the DOE Oak Ridge Operations Office agreed to assume the stewardship and marketing role for Fernald's nuclear product inventory to facilitate site remediation. The Portsmouth Gaseous Diffusion Plant was chosen as the storage site and the transfer of 8.4 million net pounds of product to Portsmouth ended in May 2002, thereby concluding Fernald's nuclear material disposition.

The subproject continues to characterize and package low-level wastes for disposal. The subproject inspects the different waste streams to determine which of the three available disposal options is best: disposal on site in the On-Site Disposal Facility; transfer to the Waste Pits subproject for bulk off-site shipment via rail; or packaged for truck transport for disposal at the Nevada Test Site. The subproject has been successful in diverting inventory to the less costly On-Site Disposal Facility (trash, scrap metals, asbestos contaminated material) and to the Waste Pits subproject (soils, sludges, some residues). Since Fernald initiated waste shipments to the Nevada Test Site in 1985, 6.1 million cubic feet of waste have been transported to the Nevada Test Site in over 4,700 truckloads. Fernald will continue to ship to the Nevada Test Site those low-level wastes that do not meet the On-Site Disposal Facility waste acceptance criteria.

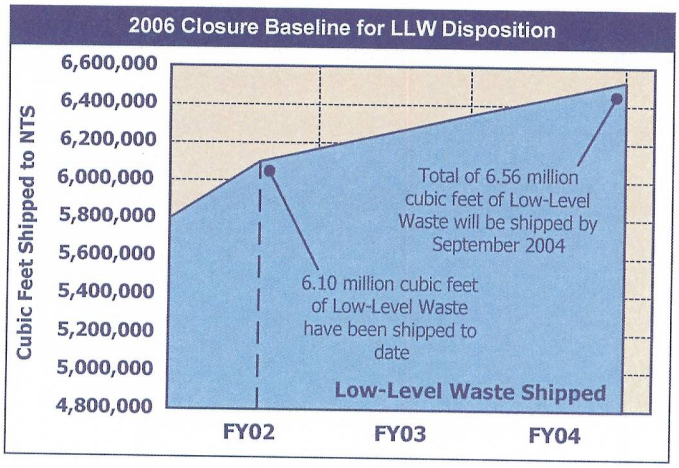
The subproject will continue to ship organic mixed waste streams for treatment at the M&EC facility in Oak Ridge, Tennessee under DOE's Broad Spectrum Contract. Additionally, Fernald is seeking proposals to deploy vacuum thermal desorption technology in FY03 to treat specific organic mixed waste streams. Inorganic mixed waste streams will be shipped to and treated by the consortium represented under the Broad Spectrum Agreement. Fernald's Toxic Substance Control Act (TSCA) wastes will continue to be shipped to the Oak Ridge TSCA Incinerator. Tennessee approves each batch inventory for shipment.

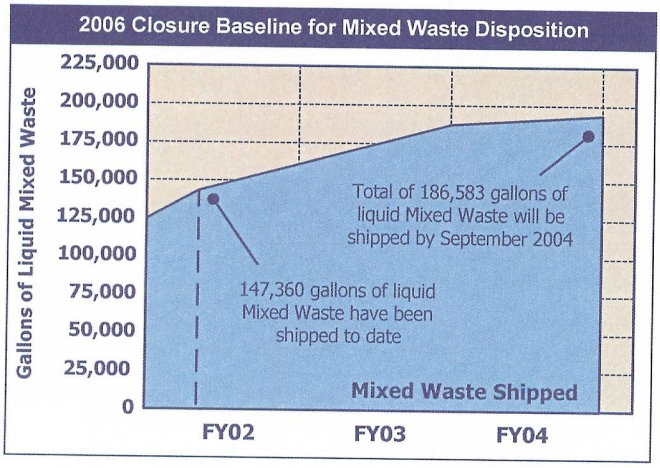
Similar to Fernald's strategy to consolidate nuclear materials at Portsmouth, Fernald will continue to explore options for consolidating relatively small inventories of organic and inorganic mixed wastes and miscellaneous analytical samples/analytical source materials at other DOE facilities. While the 2006 plan currently assumes these materials will be dispositioned or treated directly by Fernald, significant cost and schedule advantages could be realized if these waste streams can be consolidated elsewhere in conjunction with materials from other sites.

New Strategies to Achieve 2006 Closure

In order to accelerate site closure from 2009 to 2006, the following initiatives were developed for the Low-Level Waste and Mixed Waste Disposition subproject:

- Utilize more cost- and schedule-effective waste disposition pathways, including greater use of the On-Site Disposal Facility and Waste Pits subprojects for off-site disposal
- Maximize usage of DOE facilities (e.g., TSCA), Hanford, Nevada Test Site, and existing DOE contracts for use of commercial disposal facilities





Low-level waste and mixed waste disposition will be complete in September 2004.

Fernald's low-level and mixed waste streams must be removed from the Plant 1 Pad by September 2003 to permit remediation of the pad and underlying soil. Following these activities, there will continue to be additional waste requiring off-site disposal, including various quantities of organic mixed wastes and sample disposition wastes, as well as newly-generated TSCA wastes and demolition debris.

The subproject also administers Fernald's Waste Minimization and Pollution Prevention program, which helps to meet the goals and expectations of the EPA and stakeholders by reducing the volume of waste generated and recycling as much material as practical to minimize the amount requiring disposal. Fernald employees have recycled 10,500 LaserJet and fax cartridges, 110,000 pounds of aluminum cans, and over 1 million pounds of paper to date.

Current Subproject Status

The Low-Level Waste and Mixed Waste Disposition subproject is wrapping up packaging of three waste streams for Nevada Test Site disposal: NPDS uranium, fissile excepted and depleted metal, and thorium contaminated trash. To date, 6.1 million cubic feet of material have been shipped to the Nevada Test Site and 147,360 gallons of liquid mixed waste were transferred to TSCA incinerator. Additional activities that are currently being implemented include:

- Sorting and packaging asbestos material for disposition in the On-Site Disposal Facility or at the Nevada Test Site
- Installing a portable processing unit for packaging fissile compounds for Nevada Test Site disposition
- Releasing fissile compounds for off-site disposition through the Waste Pits subproject.

The disposition of nuclear material is 100% complete, low-level waste is 93% complete, and mixed waste is 79% complete. To complete the clearing of the Plant 1 Pad by September 2003, 460,000 cubic feet of low-level waste remain to be shipped to the Nevada Test Site and 282,810 cubic feet will go to the On-Site Disposal Facility. Remaining legacy and newly generated waste streams will be disposed by September 2004.

Subproject Status:

- Nuclear material disposition has been completed
- Low-level waste disposition is 93% complete
- Mixed waste disposition is 79% complete
- 6.1 million cubic feet of low-level waste have been shipped to Nevada Test Site
- 147,360 gallons of mixed waste were transferred off-site for incineration
- Cost to Complete: $87 million
- Subproject will be complete in September 2004

Key Actions and Responsibilities

The following table lists the key actions needed to accelerate this subproject to meet 2006 site closure. Also included are the responsible organizations, the status of the key action, and the date that the key action is needed. The key actions for all eight strategic initiatives (subprojects) are compiled in Attachment 2.

KEY ACTIONS AND RESPONSIBILITIES FOR LOW-LEVEL WASTE AND MIXED WASTE DISPOSITION

Action	Responsibility	Status	Date Needed
Accelerate clearing of the Plant 1 Pad to allow for D&D and soil remediation	Fluor Fernald	In progress	9/30/03

Strategic Initiative No. 5 – Accelerate Soil Excavation and On-Site Disposal Facility (OSDF)

Subproject Description

Following 37 years of operations, air deposition, and waste disposal activities, Fernald soil and debris became contaminated with radionuclides and chemicals at levels that necessitated remediation.

As required by the Operable Unit 2 and Operable Unit 5 Records of Decision, contaminated soil above negotiated cleanup levels is being excavated. The site areas requiring excavation cover 400 acres and include the former Production Area, Solid Waste Landfill, Lime Sludge Ponds, Southern Waste Units, and soil under the Waste Pits and Silos. Additionally, building foundations, concrete storage pads, parking lots, roads, and below-grade piping will be removed as part of soil excavation.

Through Fernald's five Records of Decision, it was decided that the site's smaller volume of more highly contaminated material will be disposed off site and the larger volume of material with low levels of contamination that can be safely contained will be disposed on site. The OSDF is a result of this "balanced approach" to waste management at Fernald. Excavated soil and debris will be disposed in the OSDF, or if it does not meet the on-site waste acceptance criteria, at an off-site disposal facility. Combined with waste streams from other site remediation activities, a total of 2.5 million cubic yards of soil and debris will be placed in the OSDF. Approximately 85% of the material destined for the OSDF will be soil and soil-like material and the remaining 15% will be debris from the demolition of site buildings. In accordance with Fernald's Records of Decision, the OSDF will only accept wastes from the Fernald site.

Execution Strategy

Soil cleanup activities include soil sampling, analysis, design, excavation, segregation, treatment (if necessary), transportation, disposal, certification, and restoration of contaminated areas. Excavated soil and debris will be transported to the OSDF, or if it does not meet the on-site waste acceptance criteria, to an off-site disposal facility.

Prior to initiating soil excavation, predesign sampling is performed to fill data gaps and to more precisely determine the extent of contamination requiring excavation. The predesign data is used in combination with as-built drawings of the site's building and underground utilities to determine the excavation depths such that soil above the cleanup levels and at- or below-grade debris and utilities are removed. Areas that do not meet the on-site waste acceptance criteria and must be shipped off site for disposal are excavated first, followed by removal of the soil and debris that will be transported to the OSDF. Real-time scanning instruments are used in place of time-consuming physical sampling to determine the levels of radionuclide contamination in the soil as excavation proceeds. When the specified excavation depths are reached, sampling is conducted to certify that the remaining soil meets established cleanup levels.

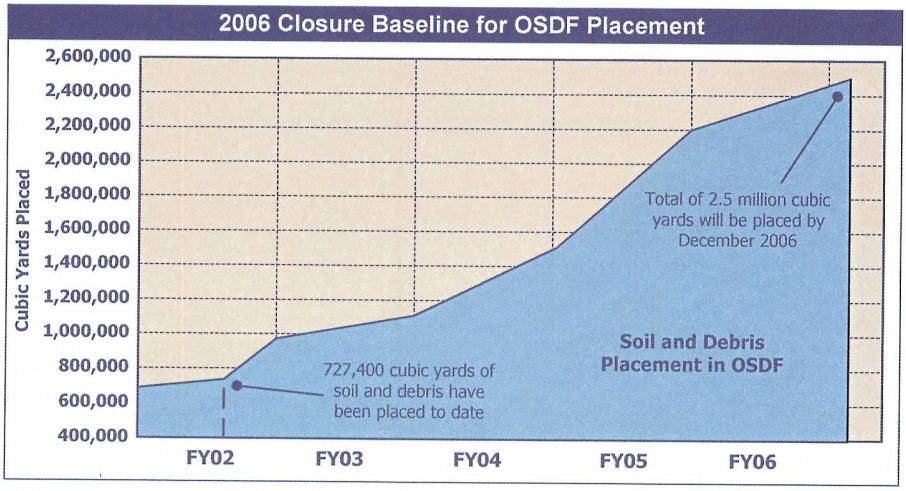
In the 2009 baseline, soil excavation in the Silos area was planned to be conducted after Silos remediation was complete. In order to accelerate soil excavation in the Silos area, contaminated soil is now being removed prior to constructing the Silos treatment infrastructure. This work is scheduled for completion in September 2002. It is anticipated that little or no follow-up excavation will be necessary to certify that the area meets established soil cleanup levels, following the D&D of the Silo 1&2 treatment facility in 2006.

When completed, the OSDF will be constructed of up to 2.5 million cubic yards of soil and debris and be approximately 800 feet wide, 3,700 feet long, and 65 feet high. Construction of the OSDF will proceed in phases from north to south and it is anticipated that seven cells will be needed to accommodate the site's waste.

New Strategies to Achieve 2006 Closure

In order to accelerate site closure from 2009 to 2006, the following initiatives were developed for the Soil Excavation and On-Site Disposal Facility subproject:

- Adopt a self-performance work execution approach
- Complete removal of impacted soil in the footprint of the Silos 1&2 treatment facility prior to the facility's construction



Under the new contract, the OSDF subproject will place 1.8 million cubic yards of soil and debris in addition to the 727,400 cubic yards already placed.

To increase the efficiency of waste placement activities and further improve the long-term stability of the OSDF, approval was received from U.S. EPA and Ohio EPA to modify the thickness of soil between individual debris layers from four feet to two feet, resulting in a thicker soil cushioning layer beneath the cap. The 8.75-foot thick caps and the 5-foot thick liners are constructed of both natural materials (such as clay and gravel) and man-made materials (such as geosynthetic liners) and the liners have leak detection and leachate collection systems. Leachate is treated at the Advanced Wastewater Treatment Facility.

The subproject has adopted a self-performance execution approach for excavation and OSDF construction. This approach removes the need for redundant oversight of field activities and provides greater flexibility for accelerating the work. The money saved from this approach is being used to accelerate other site activities to meet 2006 closure.

Current Subproject Status

The subproject is 30% complete with 727,400 cubic yards of soil and debris placed into the OSDF. Cell 1 is complete with Cells 2 and 3 receiving waste. Cell 4 and Cell 5 liner construction is underway and will be complete in the 2002 construction season.

Fifty-two percent of the site has been certified as meeting the site cleanup levels. By December 2006, the remaining 1.8 million cubic yards of soil and debris will have been placed, OSDF construction will be complete, and the remaining portion of the site that is included in the closure definition will be certified.

Subproject Status:

- 52% of site certified as clean
- Subproject is 30% complete
- 727,400 cubic yards of soil and debris placed into the OSDF
- Cell 1 cap is complete
- Cells 2 and 3 are receiving waste
- Cost to Complete: $232 million
- Site closure activities will be complete in December 2006

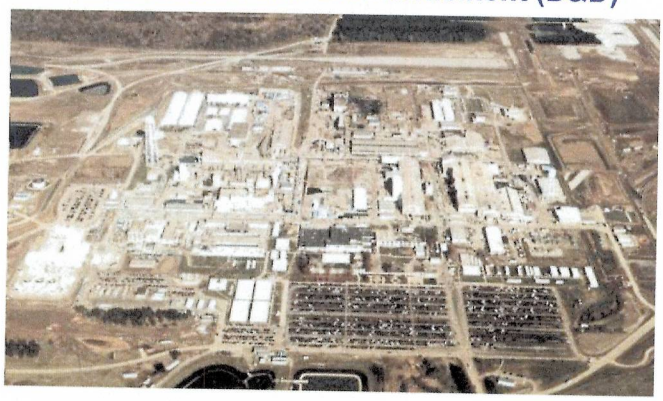
Key Actions and Responsibilities

The following table lists the key actions needed to accelerate this subproject to meet 2006 site closure. Also included are the responsible organizations, the status of the key action, and the date that the key action is needed. The key actions for all eight strategic initiatives (subprojects) are compiled in Attachment 2.

KEY ACTIONS AND RESPONSIBILITIES FOR THE SOIL EXCAVATION AND ON-SITE DISPOSAL FACILITY SUBPROJECT

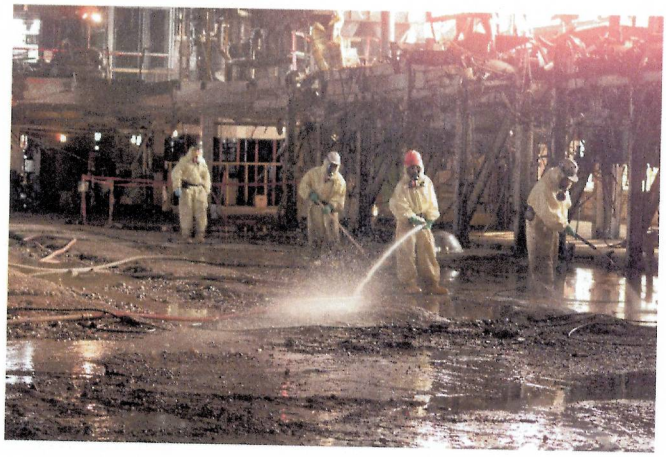
Action	Responsibility	Status	Date Needed
Gain regulatory agency approval to maintain three cells open simultaneously and to reduce the intervening layer thickness	DOE-OH	Complete	—
Accelerate start of Cell 4 and Cell 5 liner construction in FY02	Fluor Fernald	Complete	—
Adopt a self-performance work execution approach	Fluor Fernald	Complete	—
Complete removal of impacted soil in the footprint of the Silos 1&2 treatment facility prior to the facility's construction	Fluor Fernald	In progress	9/30/02
Significantly increase annual OSDF placement rates	Fluor Fernald	In progress	Ongoing

Strategic Initiative 6 – Accelerate Facility Decontamination and Dismantlement (D&D)



Subproject Description

When Fernald completed its mission of producing uranium in 1989, many uranium- and thorium-contaminated production facilities, including process lines and equipment, still contained quantities of raw, intermediate, and finished uranium products. As part of site remediation, the scope of work for the Facility D&D subproject consists of "safe shutdown" (removal of materials remaining in process lines, piping, and equipment), facility shutdown (primarily the disconnection of utilities from the structure), and above-grade D&D of Fernald's 223 structures. The scope also includes the size reduction, segregation, and disposition of the resultant D&D debris. Below-grade portions of structures (e.g., foundations) and other at- and below-grade appurtenances (e.g., below-grade piping, concrete pads, roads, etc.) will be removed as part of soil excavation.



Execution Strategy

The execution strategy for the D&D of Fernald's structures was determined and documented in the Operable Unit 3 Record of Decision for Interim Remedial Action, which was signed by the U.S. EPA and DOE in July 1994.

Prior to the start of D&D on each former production building, safe shutdown was performed to remove uranium or thorium hold-up material from process lines and piping, and to isolate all utilities to the buildings so that D&D will be performed safely. The D&D of a typical former production structure involves the following steps (if applicable to the particular structure):

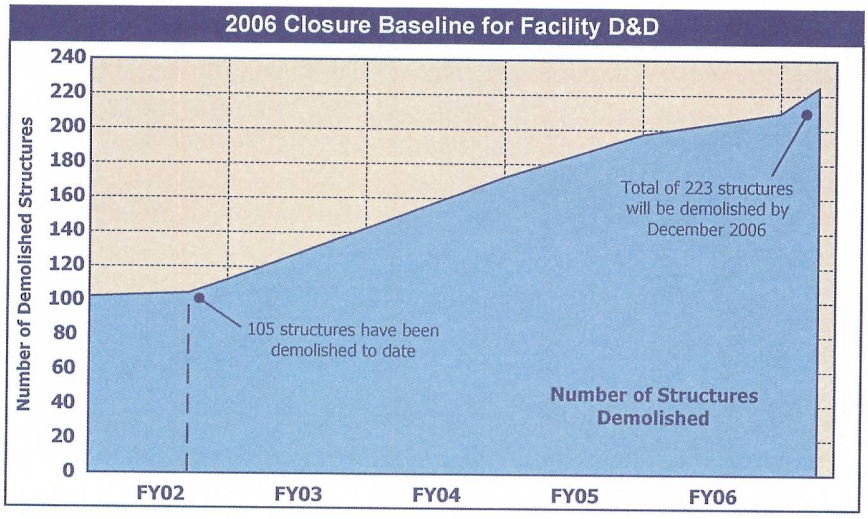
- Pre-mobilization and mobilization of the D&D subcontractor
- Building preparation
- Asbestos abatement
- System, piping, and equipment removal
- Acid brick removal
- Release cleaning
- Transite roofing and siding removal
- Structural steel dismantlement (including removal of any above-grade concrete)
- Debris size reduction, segregation, and containerization
- Decontamination of D&D equipment
- Subcontractor demobilization.

The execution strategy for the segregation, size reduction, and disposition of the resultant D&D debris was determined and documented in the Operable Unit 3 Record of Decision for Final Remedial Action, which was signed by the U.S. EPA and DOE in September 1996. The strategy for disposition of D&D debris is in step with the site-wide remedial strategy of shipping higher-contaminated materials off site (i.e., to Envirocare or the Nevada Test Site), while disposing of less-contaminated waste in the On-Site Disposal Facility. Therefore, following demolition of each structure, the resultant D&D debris (approximately 300,000 cubic yards in total) will be segregated and size reduced based on waste acceptance criteria for placement in the OSDF or for off-site shipment.

New Strategies to Achieve 2006 Closure

In order to accelerate site closure from 2009 to 2006, the following initiatives were developed for the Facility D&D subproject:

- Realign the existing D&D subcontract to significantly accelerate the completion of Facility D&D
- Mobilize additional work crews and equipment to safely support acceleration



At the end of closure in December 2006, all process and administration buildings will have been demolished, leaving only trailers supporting post closure activities.

Current Subproject Status

The Facility D&D subproject is currently 47% complete. Safe Shut-down was completed in March 1999, two years ahead of schedule and $7 million under budget. In August 2001, Fluor awarded a fixed-price subcontract to MACTEC for the D&D of the majority of the remaining contaminated structures based on a 2009 site closure schedule. In May 2002, that subcontract was renegotiated to incorporate the 2006 closure baseline schedule for the D&D of 62 structures. This accelerated schedule will require MACTEC to provide additional work crews, equipment, and materials. To date, 105 of Fernald's 223 structures have been demolished. Current D&D activities are focused on Plant 2/3, Plant 8, General Sump, Pilot Plant, and the Safety & Health Building. The remaining Facility D&D scope will be completed by December 2006.

Subproject Status:

- Safe shutdown has been completed
- Facility D&D is 47% complete
- 105 of 223 structures have been removed
- Cost to Complete: $114 million
- Subproject will be complete in December 2006

Key Actions and Responsibilities

The following table lists the key actions needed to accelerate the Facility D&D subproject to meet 2006 site closure. Also included are the responsible organizations, the status of the key action, and the date that the key action is needed. The key actions for all eight strategic initiatives (subprojects) are compiled in Attachment 2.

KEY ACTIONS AND RESPONSIBILITIES FOR FACILITY D&D

Action	Responsibility	Status	Date Needed
Renegotiate the MACTEC subcontract to incorporate the 2006 closure baseline	Fluor Fernald	Complete	—
Mobilize additional work crews and equipment to accelerate work	Fluor Fernald and MACTEC	In progress	12/01/02

Strategic Initiative 7 – Aquifer Restoration

Subproject Description

Fernald is located over the Great Miami Aquifer, one of the largest sources of drinking water in the nation. Following years of uranium metal production, a small portion of the aquifer became contaminated with uranium. The levels of uranium in the groundwater are above the drinking water standard of 30 parts per billion set by U.S. EPA. Therefore, the Aquifer Restoration subproject will restore the contaminated portion of the aquifer, reducing the uranium concentration level to achieve the drinking water standard.

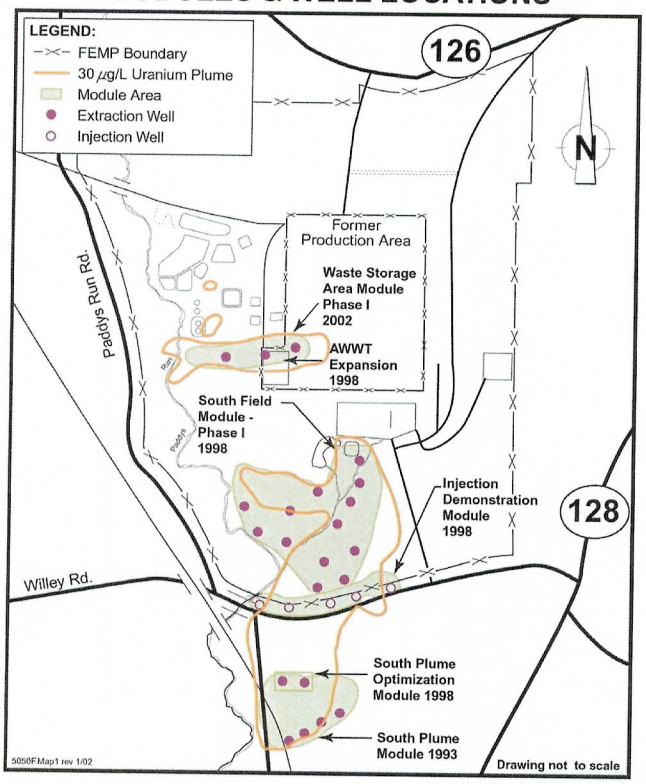
The Operable Unit 5 Record of Decision documents DOE's commitment to restore the Great Miami Aquifer within 27 years. This will be accomplished by pumping the contaminated groundwater from beneath 223 acres and treating it at the Advanced Wastewater Treatment Facility to meet a discharge limit to the Great Miami River of no greater than 30 parts per billion total uranium concentration.

Execution Strategy

In 1993, the first extraction wells were installed at the leading edge of the off-property South Plume as part of a removal action. The primary intent of this well system was to prevent further migration of the off-property portion of the groundwater plume. The groundwater uranium concentration in the area of these wells has already been reduced from more than 300 parts per billion to less than 150 parts per billion.

Fernald is undertaking a program that will shorten the 27-year aquifer remediation to 10 years. The effort to reduce the length of the remediation includes the use of re-injection technology, wherein some of the treated groundwater is injected back into the aquifer to help flush uranium contamination to the pumping wells. Although simple in concept, in order to work, the chemistry of the injected water must be in balance with that of the aquifer. Evaluation of this technology was being sponsored by DOE's Office of Science and Technology Subsurface Contaminants Focus Area. Five re-injection wells were installed in 1998 and after a successful yearlong demonstration, it appears that re-injection will be a viable enhancement for remediation of the Great Miami Aquifer.

CURRENT AQUIFER RESTORATION MODULES & WELL LOCATIONS



New Strategies to Achieve 2006 Closure

Completion of groundwater cleanup is part of the long-term stewardship of the Fernald site and is outside the definition of site closure. Consistent with the 2006 Execution Plan, the following activities are necessary for the Aquifer Restoration subproject:

- The groundwater restoration infrastructure to achieve final cleanup is to be in place by 2006
- Monitoring activities will be continued throughout the restoration process to confirm the effectiveness and progress of the remedy

The Advanced Wastewater Treatment Facility began operations in 1995 with a design capacity of 1,100 gallons per minute. Treatment at the facility involves the addition of polymers prior to flocculation and clarification steps, followed by multi-media filtration, carbon filtration of selected source streams, and finally ion exchange to remove the uranium. In 1998, the facility was expanded to raise the design capacity to 2,900 gallons per minute. Also in 1998, a 10-well extraction system began operating in the South Field area and two more wells were added to the South Plume system.

Since then, three additional extraction wells have been added to the South Field, and three were installed under the Pilot Plant Drainage Ditch, bringing the total to 22. In support of 2006 closure, the Aquifer Restoration subproject is monitoring groundwater cleanup progress and installing restoration infrastructure, as necessary, prior to site closure.

Approximately 50% of the treated groundwater processed through the Advanced Wastewater Treatment Facility expansion is being re-injected back into the aquifer, with the remainder discharged to the Great Miami River. The combined well extraction systems pump over a billion gallons of contaminated groundwater from the aquifer each year.

Current Subproject Status

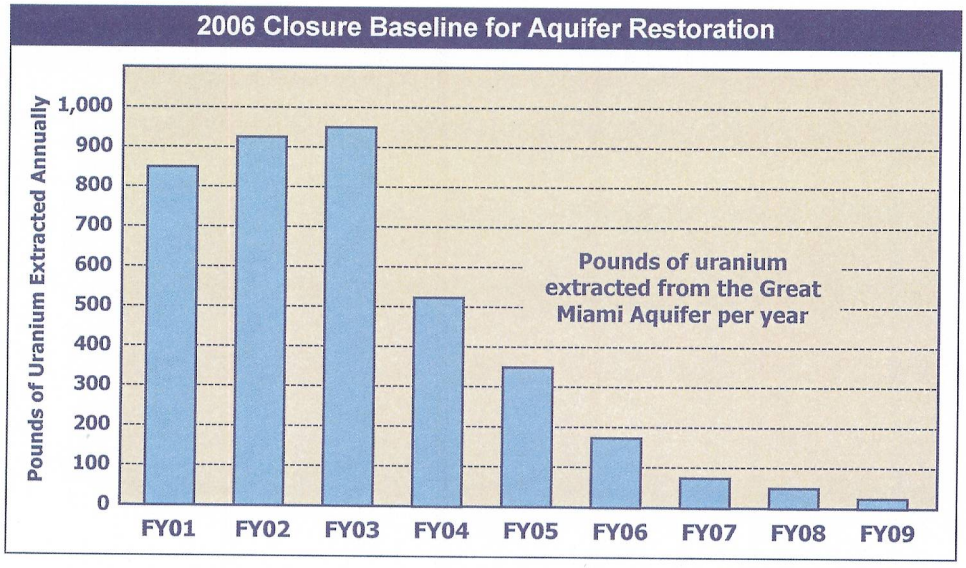
Subproject Status:

- Subproject is 62% complete (based on actual pounds of uranium removed from aquifer versus the estimated total amount)
- 3,200 pounds of uranium have been removed from the Great Miami Aquifer
- Cost to Complete: $93 million

The Aquifer Restoration subproject is 62% complete and has extracted more than 9.5 billion gallons of water from the aquifer since 1993. Five billion gallons of that water have been treated at the Advanced Wastewater Treatment Facility, resulting in 3,200 pounds of uranium being removed from the aquifer. Although final certification of aquifer restoration is not within the definition of closure, it is expected that 84% of the uranium contamination plume will have been remediated at the end of 2006.

Key Actions and Responsibilities

The Aquifer Restoration subproject does not have any key actions or responsibilities necessary for acceleration. The ongoing actions to install needed infrastructure in accordance with the Fernald 2006 baseline will fulfill obligations for this subproject. Monitoring to assess the progress and effectiveness of the restoration program will continue.



Aquifer restoration extends beyond site closure. To date, 3,200 pounds of uranium have been removed from the Great Miami Aquifer.

Strategic Initiative 8 – Sitewide Strategic Initiatives

Description

In addition to the initiatives that are being undertaken as part of the seven major subprojects at Fernald, several sitewide schedule enhancing and cost saving opportunities are being pursued. These include initiatives on safety, workforce restructuring and retention, landlord costs, work planning, U.S. and Ohio EPA agreements, and additional funding.

Execution Strategy

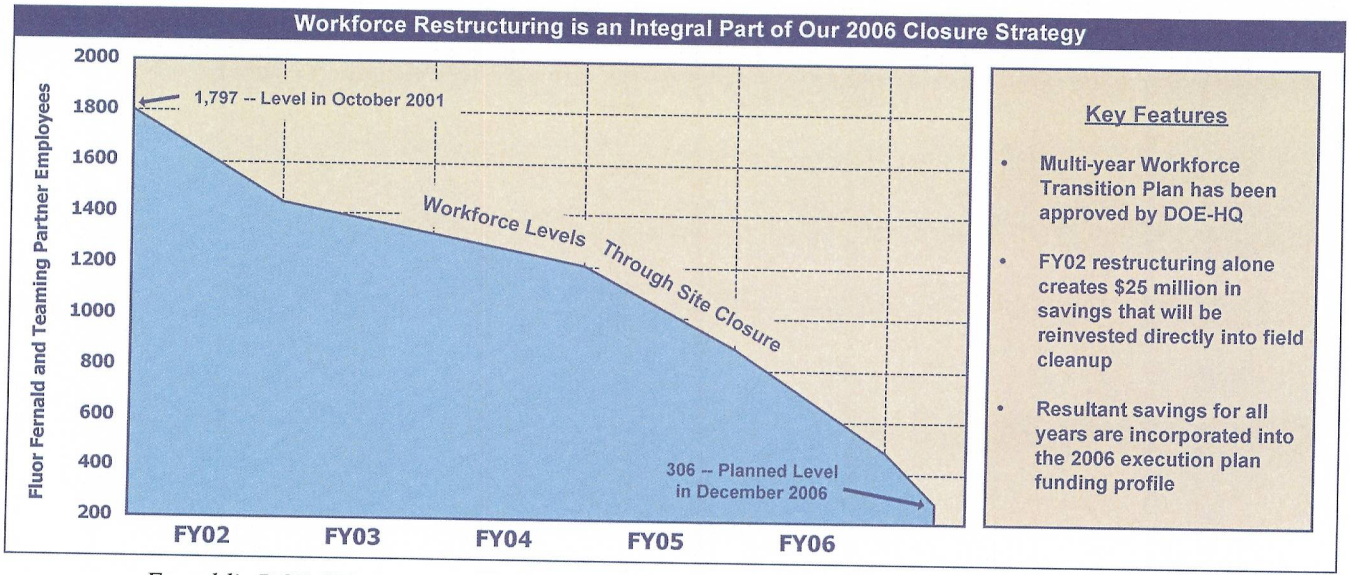
Fernald's safety performance consistently leads or is near the top of the DOE Complex. In the past year the Fernald OSHA Recordable Rate went down to 0.52, VPP Star Status was achieved, and 10 million safe work hours were achieved all while accelerating field cleanup. This intensive safety focus will not change as the 2006 plan is executed and Fernald will continue to place safety first in the execution of all planned acceleration activities and initiatives.

As part of rebaselining to achieve 2006 closure, a "commercial" level of subproject administrative support is being implemented. This approach reduces landlord and overhead costs by reducing service levels in non-cleanup areas such as public affairs, legal, records management, accounting, and information systems. These actions are estimated to save $10 million per year in overhead costs. Part of this initiative will be realized by implementing the workforce restructuring actions necessary to achieve 2006 closure, using the Workforce Transition Plan. In FY02 alone, workforce restructuring actions will generate savings in excess of $25 million, which will be reinvested directly into field cleanup.

While workforce restructuring actions will reduce the size of the workforce, skill-mix planning tools have revealed the key skills needed to complete the job. The objective is to minimize loss of these critical skills and to incentivize personnel to both accelerate closure and achieve additional cost savings. Skill retention will be ensured through the use of contractually permitted incentive pools coupled with fee shared with employees by Fluor Fernald. This program is now in place.

To allow continuous analysis of funds requirements in order to take maximum advantage of cost underruns or additional funding that may become available from other sources, more work will be planned for a given year than is funded.

Fernald has worked cooperatively with the U.S. and Ohio EPA and local stakeholders to set sensible cleanup objectives, define a clear future use, and increase focus on post-cleanup stewardship obligations. This partnership has been instrumental in proactively examining the Records of Decision and supporting design documents in light of field experience to ensure the remedies are appropriately protective, sensible, and cost effective. This partnership has led to changes in the cleanup strategies, which have resulted in more efficient field execution without compromises to the remedies' protectiveness to human health and the environment. Recently these changes have included reduction of the intervening layer thickness in the disposal facility from four feet to two feet, with a corresponding increase in the cap clay layer thickness. This change has resulted in much-improved waste placement efficiency with no compromise to the protection of the underlying aquifer.



Fernald's DOE-HQ approved Workforce Transition Plan is tailored to the 2006 closure objective.

The Fernald team, in cooperation with the regulators and stakeholders, recently worked together to evaluate and ultimately adopt a revised U.S. EPA groundwater cleanup standard that raises the level from 20 to 30 parts per billion total uranium. This cleanup level aligns with contemporary science on the health implication of these drinking water concentrations and permits a more expeditious cleanup schedule for affected groundwater. The Fernald team will continue the partnership with its regulators and stakeholders to take on tough issues and arrive at sensible solutions, which ensure protectiveness and demonstrate cost effectiveness.

Fernald needs continued support, in the form of both funding and technical assistance, for high-risk subprojects from the DOE-EM Office of Science & Technology. The key subproject areas for which continued support is needed are the Silos 1&2, Silo 3, and Low-Level Waste and Mixed Waste Disposition subprojects. The 2006 closure baseline captures the subprojects that require technical support; this support will reduce both schedule and subproject execution risk.

Key Actions and Responsibilities

The following table lists the key actions needed to implement sitewide initiatives to meet 2006 site closure. Also included are the responsible organizations, the status of the key action, and the date that the key action is needed. The key actions for all eight strategic initiatives (subprojects) are compiled in Attachment 2.

KEY ACTIONS AND RESPONSIBILITIES FOR SITEWIDE STRATEGIC INITIATIVES

Action	Responsibility	Status	Date Needed
Continue to place safety first in the execution of all planned acceleration activities and initiatives	DOE-OH and Fluor Fernald	In progress	Ongoing
Continue to focus on aggressive reduction of landlord and overhead costs	Fluor Fernald	In progress	Ongoing
Implement workforce restructuring actions necessary to achieve the 2006 execution plan, using the DOE-HQ-approved Workforce Transition Plan	Fluor Fernald	In progress	Ongoing
Use retention incentives to ensure key skills remain available	Fluor Fernald	In progress	Ongoing
Plan more work in a given year than is funded	Fluor Fernald	In progress	Ongoing
Continue working closely with regulators and stakeholders to streamline process requirements and operations	DOE-OH and Fluor Fernald	In progress	Ongoing
Assist Fernald in obtaining continued DOE-EM Office of Science & Technology funding and technical support for high-risk subprojects	DOE-OH	In progress	Ongoing

Optimization Priorities to Address Additional Funding

The nature of environmental remediation work contains considerable risk from a cost and schedule perspective. Therefore, an important management requirement is understanding where additional acceleration could be achieved to minimize this risk. These acceleration opportunities are discussed in this plan to demonstrate the Fernald team's commitment to putting additional funds to work in a productive, prioritized way, due to efficiency-based underruns or additional appropriations in any given year.

Figure 5 lists the priorities on which the Fernald team would focus to further accelerate work. The actions outlined in Figure 5 focus on critical path or near critical path work items.

The team considers it a top priority to focus additional funding on accelerating Silos 1&2 and Silo 3 implementation, since these are the highest health risk sources, and also contribute to the primary and secondary critical paths to the schedule. First and foremost, additional available funding would be focused on accelerating Silos 1&2 treatment facility design, to allow earlier facility construction and accelerated completion of treatment.

Next, earlier waste processing and off-site disposition of Silo 3 materials would promote Silo 3 completion ahead of Silos 1&2 operations, minimizing logistical constraints (and accompanying schedule risk) for two projects conducted simultaneously in a small working area.

After the silos subprojects, the next sequence of priorities for acceleration are: 1) further acceleration of waste pit material excavation, processing, and off-site shipment; 2) further acceleration of off-site shipment of low-level and mixed waste containers from the Plant 1 Pad, and D&D of remaining waste storage facilities – to permit earlier access to underlying contaminated soils; and 3) increased soil excavation and on-site waste placement rates. The current 2006 plan requires soil excavation and placement quantities in FY05 and FY06 that are significantly higher than have been experienced in the field to date. While these higher production rates are considered implementable, additional acceleration of soil excavation activities would more evenly distribute soil excavation and disposal quantities over the life of the production schedule.

OPPORTUNITIES TO OPTIMIZE THE 2006 CLOSURE PLAN			
Priority	**Subproject**	**Items Accelerated**	**Benefits**
1	Silos 1&2	• Accelerate treatment and off-site disposition of Silos 1&2 material	• Significantly reduces risk of critical path schedule growth associated with the highest risk project at Fernald
2	Silo 3	• Accelerate off-site disposition of Silo 3 material	• Allows acceleration of Silo 3 treatment prior to initiation of Silos 1&2 operations, minimizing potential logistical interferences and risk to Silos 1&2 execution
3	Waste Pits	• Accelerate excavation, processing, and shipment of waste pit material off-site to Envirocare	• Reduces risk of schedule growth that would impact the critical path
4	Low-Level and Mixed Waste Disposition	• Accelerate off-site disposition of low-level waste and mixed waste containers from the Plant 1 Pad	• Allows for acceleration of Area 3B D&D and soil excavation
5	Soil Excavation and On-Site Disposal Facility	• Accelerate soil excavation in Area 3B (Plant 1 Pad) and Area 4B (western production area) • Accelerate construction of the Cell 6 liner, Cell 7 liner, and Cell 3 cap	• More evenly distributes annual soil excavation and disposal quantities to avoid FY05 and FY06 peak quantities that are significantly greater than any annual quantity placed to date

Figure 5: *As additional funds become available, Fernald is poised to optimize several subprojects to reduce schedule risk and remove source terms early.*

RFORMANCE MANAGEMENT TOOLS

order to deliver on the 2006 site closure nmitments and actions described in this plan, sound formance management systems are essential. ject oversight and contract management must be amlined and efficient; funds management must be used on the primary and secondary critical paths t drive the cleanup schedule; and key resource cations and assignments must be project focused. ective and aggressive overhead management losophies must remain in place throughout the ation of the closure scope, in order to direct the ximum amount of funds towards safe and aningful field cleanup.

s section of the Performance Management Plan lines the performance management systems, cesses, and tools that will permit the Fernald team continue to track, trend, and react to project formance issues and needs from now until site npletion. The section also identifies the risk nagement system that has been put in place to ntify and mitigate technical and schedule risks ciated with Fernald's closure baseline.

formance Management Philosophy

performance management tools that the Fernald n has put in place are all tailored to the site's iled resource-loaded baseline, which is composed 2,207 discrete work activities. Each of these vities is integrated within the site's master closure edule.

work activities have been planned and estimated in ordance with DOE Order 413.3 requirements and ls of detail. The new baseline is a site completion eline, with detailed planning through 2007 and ond (including post-site completion and long term stewardship activities); it provides the site with the l of planning detail that is necessary for this plex project.

site's suite of performance management tools has been customized to meet the specific needs of E's new performance-based closure contract, rded to Fluor Fernald in November 2000.

The new closure contract incentivizes Fluor Fernald to deliver a safe, accelerated site closure with performance fees tied directly to specific cost and schedule milestones. As a result of this new closure contract, the site has assembled all of the needed systems to track earned value, report on specific cost and schedule variances, and allocate funds consistent with DOE's new performance-based contracting objectives and strategy.

The Fernald team's performance management philosophy within the new closure contract structure is straightforward – negotiate closure-specific performance criteria in the areas of safety, cost, and schedule as part of the closure contract (completed for Fernald in November 2000), and incentivize the closure contractor to meet the agreed to performance criteria through an innovative fee structure that contains provisional and end-of-job fee payments.

Under this structure, the contractor has the flexibility to develop the systems necessary to track performance against the agreed-to milestones and make the necessary resource adjustments as required by each subproject.

The philosophy also permits the team to select among several execution approaches (e.g., self-performance, construction management, fixed-price subcontracting, outsourcing) to achieve the intended results for each subproject area. The performance management systems are then tailored to match the needs of the selected execution approach as required.

In this way, the Fernald team has developed – over the past two years – all of the necessary systems to track and respond to performance indices, metrics, and trends in a near "real time" mode, meeting the demands of a performance-based contracting environment. All of Fernald's performance indices and metrics are linked to the longer term goals established by the 2006 closure baseline schedule, rather than short-term artificial goals that may or may not have direct relevance to accelerated closure.

anagement Systems Description

rnald's Project Controls System (PCS) is the nterpiece of the performance management tool kit. e PCS is an interactive system that allows the rnald team to perform needs assessments, manage ources, and evaluate the impact of proposed changes a real time basis. It also promotes work efficiency providing the means to manage project inter-ationships, resource demands, and complex day-to-y project logistics. The PCS interfaces directly with site's accounting system, and serves as the engine nind the variety of internal and external reports quired by the project.

e objectives behind the PCS are to assure that all ject work is identified, planned, monitored, and naged. These objectives are focused towards the ablishment of a "good business practice" approach setting forth those management processes required manage project work. These processes include:

Defining and organizing the technical work scope
Identifying and estimating resource requirements
Establishing budgets
Authorizing work
Accumulating cost and schedule performance data
Managing funds
Reporting progress and forecasts to management.

e effectiveness of the Fernald PCS has been nonstrated over the past ten years, and the system is npliant with all applicable DOE Orders and ectives.

rk Breakdown Structure

nald's major remedial subprojects are organized hin a work breakdown structure (WBS) that vides a hierarchical framework of subproject ectives and elements. Development of the WBS is first major step in the work definition process.

summary of the cost elements, technical content, rk statement, as well as any notable exclusions for h WBS element are documented in the WBS tionary maintained in PCS Forms. Detailed work pe descriptions at the control account and work kage levels can be found in the closure plan basis of mate (narratives). These are living documents, ject to change through the change control process, are used throughout the life of the project.

As a hierarchical framework that logically subdivides the entire project, the WBS accomplishes the following:

- Describes the work to be accomplished and the manner in which it is planned
- Provides a logical summarization of similar work
- Facilitates the planning process by subdividing the work into logical elements that can then be scheduled
- Facilitates the planning process by subdividing the work into increments that can be readily estimated
- Facilitates the planning process by subdividing the work into logical elements that can be budgeted
- Facilitates the planning process by subdividing the work into logical elements such that earned value or performance can be measured
- Provides the framework for cost collection during the period of work performance
- Provides the framework for the assignment of responsibility at the organization level at which the work will be accomplished
- Provides summary levels of cost, schedule, and performance information for management review and reporting
- Provides for the integration of work scope, resource requirements, cost, schedule, performing organization, and responsibility assignment
- Provides the basis for future change control activity.

Project Performance Measurement

The objective of generating performance measurement data is to provide information for the project/program managers to use in determining subproject status. The process includes accumulating and recording actual costs and commitments, determining and accumulating schedule status and forecast data, and determining and accumulating progress (earned value) data. The data is compiled in the performance measurement and reporting system to generate statistical and forecast reports comparing actual performance to planned performance and actual performance to actual costs. This data supplements the project/program managers' "hands-on" awareness of status with cost, schedule, and technical performance indicators contained in performance measurement reports.

Analysis of technical, schedule, and cost performance data is required on a monthly basis to interpret the current condition, verify expected completion dates, and forecast costs. The purpose and intent of performance analysis encompasses the three objectives below:

- Determining the current condition and status of the subproject, comparing current scope, schedule, and cost performance with planned performance
- Finding the root cause of problems and developing corrective action plans before problems escalate
- Forecasting expected completion costs and dates.

Earned value is the objective assessment of how much planned work was accomplished. It is the periodic, consistent, and objective measured quantity of completed work in terms of the quantity planned for that work.

Performance data is accumulated in an automated system, the performance measurement and reporting system. The data accumulation process integrates cost and schedule planning to produce earned value, estimate to complete, schedule status, and forecast. The performance measurement and reporting system database contains all schedules, budgets, estimate to complete, actual costs, and earned value data within the PCS.

Schedule status information consists of data which track progress of completing activities and/or milestones contained in the site master schedule.

Contractual Reporting

Project data is compiled monthly for use in the following contractual reports:

- Cost Performance Report
- Schedules/Milestones
- Estimate to Complete
- Integrated Planning, Accountability, and Budgeting System Report
- Quarterly Critical Analysis Report.

Cost Performance Report – This report summarizes the current period, cumulative, and at completion status at the project baseline summary (PBS) levels and totaled at the site level as well as at the major WBS element. This report is supported by a variance analysis report containing a problem analysis, task/project impact, and corrective action sections to address variances exceeding agreed upon thresholds.

Schedules/Milestones – Monthly schedules submitted are the level 2 site critical activities, level 3B bar per charge number, and level 6 statused critical path activities. Milestone information is sorted by PBS and date, sorted by date, and sorted by milestone levels.

Estimate to Complete – Information pertaining to funds management is supplied in the following formats and submitted on a monthly basis: funds requirement spreadsheets; funds utilization spreadsheets; and estimate at completion spreadsheets summarized at the PBS level.

Integrated Planning, Accountability, and Budgeting System Report – The project data developed for the cost performance report is also incorporated into DOE's Integrated Planning, Accountability, and Budgeting System for reporting on the following project status items:

- Financial status
- Milestone status
- Cost status and variance explanations
- Schedule status and variance explanations.

Quarterly Critical Analysis Report – A quarterly critical analysis is also held every quarter of the contract term to support determination of the quarterly provisional fee by the DOE Contracting Officer. The analysis touches on the following subjects: safety performance; compliance performance; cost performance; schedule performance; funding; risk-based contingency utilization; and key metrics. The results of the analysis are compiled into the Quarterly Critical Analysis Report.

Change Control

Significant changes in plans create the flowdown change implementation requirement to revise the documents and files defining Fernald's baseline. These include scope of work, narratives, schedules, estimates, budgets, work authorization documents, and files. The PCS change control process is intended to assure the timely, disciplined, and controlled incorporation of changes approved by Fernald's change control board into the baseline.

The work scope contained in the baseline database is the life cycle plan by fiscal year. Changes that will impact the baseline due to work scope, schedule, budget, and funding changes will be documented through a formal change proposal that will be implemented upon approval.

Risk Management

The Fernald team is committed to the most aggressive cost case achievable. Accordingly, the funding requests contained in this document do not include contingency. This, along with the contract's incentive-based structure, motivates the Fernald team to minimize cost and schedule growth due to risk.

While this results in a very aggressive cost management approach, it does introduce schedule risk. The Fernald team's optimization opportunities reduce this schedule risk by focusing on accelerating those project activities that have higher risks of schedule delays. This is the thrust of the opportunities the team has identified, to put additional available funding to work in the most productive ways possible. The Fernald team is poised to implement these optimization activities in the event funding is made available through further efficiency or additional appropriations.

A detailed implementation risk management approach has been developed and approved for the Fernald site, to address and manage the cost or schedule risk of a 2006 execution plan. The risk management approach is a disciplined means to identify, analyze, and quantify the various internal and external risks to achieving the project baseline, and assists in determining if the risks identified are avoidable and/or manageable.

As an integral part of the closure baseline development process, the project/program managers, in conjunction with support organization representatives and subject matter experts, conducted evaluation of all discrete and "level-of-effort" work activities. The teams identified, quantified, and established the probability of occurrence of all potential risks to their respective control accounts and recorded the results on risk/opportunity identification and analysis forms.

Next, a risk estimate is developed using the data from the risk/opportunity identification and analysis forms and Crystal Ball simulation software. The following data from the risk/opportunity identification and analysis form is used as input parameters for the Crystal Ball simulation model:

- Minimum $: total baseline dollars
- Likeliest $: total baseline dollars + probable cost
- Maximum $: total baseline dollars + impact cost

A schedule risk simulation was then conducted using Primavera's Monte Carlo routine to forecast schedule risk which can then be incorporated into the cost risk analysis. The statistical analysis is performed at various confidence levels; for risk planning purposes, a risk estimate at the 50% statistical confidence level is utilized by the Fernald team. The risk estimate is then used to establish the risk-based contingency for the Fernald site.

Risk-based contingency is controlled at the program level and made available for transfer to the subprojects/programs to cover incurred risks that are internally driven. The risk-based contingency at the 50% confidence level is coupled with Fernald's baseline to establish the contract budget base to be allocated and managed as described in the risk management approach. In addition, the data has been provided at the 80% confidence level for the DOE contingency above the contract budget base to establish the total project cost.

Consistent with the risk management approach, following finalization of the contract budget base, Fernald has developed a list of those residual risk elements that are critical to the successful closure of the site. Detailed contingency plans are currently being developed for each critical risk based on the criteria outlined in the risk management approach. The critical risk contingency plans are scheduled for completion in August 2002. This will provide the project/program teams with a defined course of action that can be rapidly implemented in the event a known risk is incurred. Finally, the combined risk management plan (risk analysis, risk estimate, and contingency plans) will be reviewed and updated quarterly.

Contract Management

DOE-OH has a mission of accelerated completion of the Fernald Environmental Management Project. The Fernald closure contract is intended to support that mission and achieve accelerated site goals. The intent is to accelerate "site completion" which includes building demolition, waste disposal, soil cleanup, disposal facility operations, final dismantlement and disposal of the Silo treatment facilities, residual soil removal and final site restoration. In order to obtain these results, fee tied to cost and schedule performance is utilized to provide Fluor Fernald significant monetary incentives.

Flour Fernald can potentially earn up to $288 million in incentive fee or 12% of the minimum target cost on the contract. Contract fee is earned in two distinct ways, through cost incentive (maximum $235 million) and schedule incentive (maximum $53 million). Figure 6 illustrates the cost and schedule curves that have been negotiated as part of the November 2000 Fernald Closure Contract. Fluor Fernald has overall contractual responsibility for the remediation, restoration, and closure of the site.

The contract is a cost-plus-incentive fee completion contract (excluding transition), that also includes schedule driven performance incentives.

In order to receive incentive fees, Fluor Fernald must also meet minimum requirements. If minimum requirements are not met, the Contracting Officer may unilaterally deduct fee in the following four areas: environment, safety, and health; catastrophic event; specified level of performance; and cost performance.

The target cost and fee are:

- Minimum target cost: $2.4 billion
- Maximum target cost: $2.6 billion
- Target fee: $120 million

To earn the maximum cost fee of $235 million, total cost cannot exceed $1.825 billion. To earn the minimum cost fee of $63 million, total cost would equate to $2.885 billion. To earn the maximum schedule fee of $53 million, the project must be completed by December 31, 2006.

The minimum and maximum target costs were negotiated pre-award between the contracting parties. The minimum target cost is used as the fee base and the maximum target cost is used in the contract value calculation.

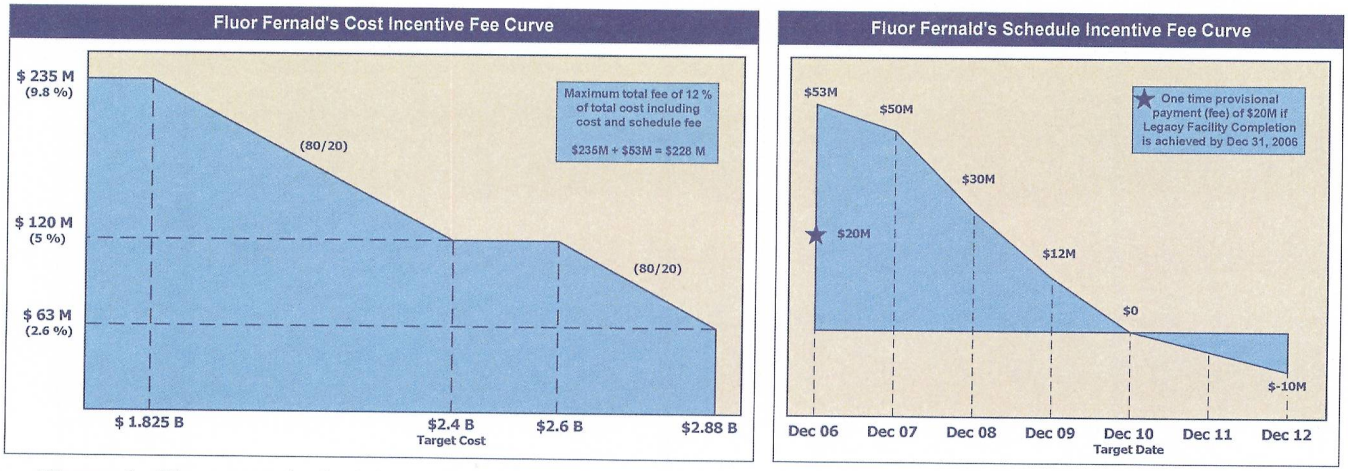


Figure 6: *The cost and schedule incentives in the Fernald Closure Contract are clearly linked to project acceleration.*

CONCLUSION

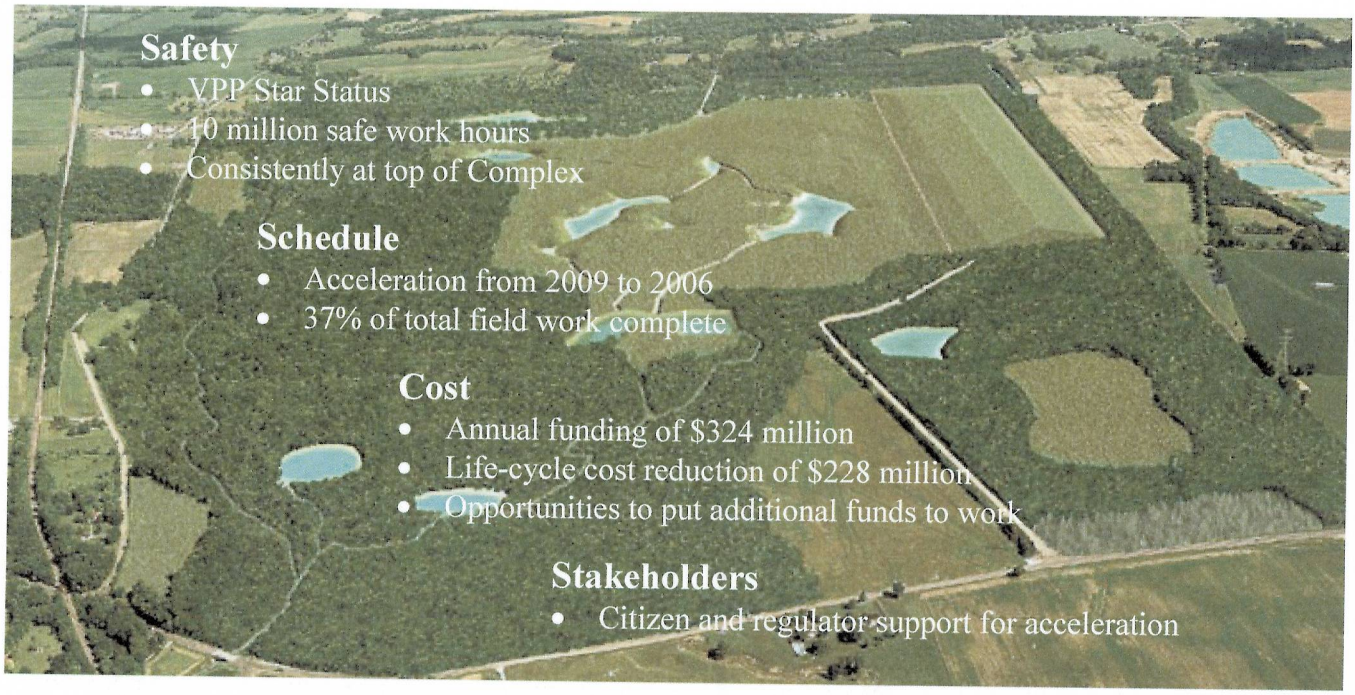
During its first full year under the new closure contract, Fernald made steady field progress and set new records in safety performance. Of the 6,560,000 cubic feet of Fernald low-level waste to be disposed of at the Nevada Test Site, 6,100,000 cubic feet have been shipped. Of the original 223 structures at the site, 105 have been dismantled. 727,400 cubic yards of soil and debris have been placed into the Onsite Disposal Facility. Fifty-two percent of the site has been certified as meeting radiological and chemical cleanup levels. Sixty unit trains, carrying 376,800 tons of waste pit material, have successfully made the 1,900-mile trip to the Envirocare facility in Utah. Groundwater cleanup is underway, and the Great Miami Aquifer is showing measurable improvement.

The construction subcontractor population has worked 9½ years without a lost workday case, and the Fernald population reached 10 million safe work hours under the new contract. In total, the Fernald team has safely completed more than 37% of the site closure workscope.

Fernald's new baseline shows the funding and actions needed to achieve closure in 2006. The baseline identifies the key steps to complete all subprojects, including staffing and resource requirements, and integrates specific tasks through each department to maximize resources.

By meeting the challenge of accelerating site closure from 2009 to 2006, the Fernald team will save taxpayers $228 million in life-cycle costs.

Fernald's 2006 closure strategy and additional risk reduction initiatives respond directly to the challenges posed by the Top-to-Bottom Review, and offer a meaningful way to further reduce risk to workers, the public, and the environment.



ATTACHMENT 1

This attachment provides a summary of the Fernald team's response to the Top-to-Bottom Review, for each of the 12 items encompassed by the review. As demonstrated in the Performance Management Plan, the major elements of the Top-to-to Bottom review are principal features of Fernald's 2006 execution strategy.

RESPONSE TO TOP-TO-BOTTOM ISSUES	
Issue	**Fernald Response**
Getting More Performance from Performance-Based Contracting	The new Fernald Closure Contract focuses all fee incentives on schedule acceleration, cost savings, and a 2006 closure. In recognition of DOE's commitment to safety, quality, and regulatory compliance, there are penalty provisions in the contract for poor performance in these areas.
Managing Waste to Reduce Risk	Fernald's 2006 Closure Baseline uses established and proven waste disposition routes (inclusive of packaging and transportation) to accelerate risk mitigation for all waste streams
Developing a Programmatic Strategy for Accelerating Site Closure	Fernald's revised 2006 Closure Baseline is in place and being implemented. This represents a three-year acceleration of closure
Improving Agreements to Allow Program Success	Fernald has made, or is pursuing, a number of revisions to existing agreements with stakeholders and regulators to achieve a more cost-effective accelerated closure that is fully protective. These include but are not limited to: • Elimination of treatment for Silo 3 • Use of commercial disposal for Silos 1&2 waste • Adopting a higher, yet fully protective, cleanup standard for groundwater • Elimination of unnecessary regulatory requirements while ensuring remedy protection • Use of the Waste Pits infrastructure for more cost-effective disposal of inventoried legacy wastes • Increased use of the On-Site Disposal Facility
Safeguards and Security: Reducing the Threat at DOE-EM Sites	All of Fernald's nuclear product material has been transferred to the Portsmouth facility for safe consolidation with other product material
Long-Term Stewardship for Protection of Public Health and the Environment	Fernald is working with its stakeholders and regulators to develop a comprehensive Long-Term Stewardship Plan
Using Breakthrough Business Processes to Accelerate Risk Reduction	In addition to the incentive-based contract structure discussed for Issue #1 above, the contractor is making cost-effective use of self-performance strategies to accelerate work on the Silos 1&2, Silo 3, Low-Level Waste and Mixed Waste Disposition, and the Soil Excavation and On-Site Disposal Facility subprojects
Implementing the NEPA Process to Better Support DOE-EM Decision-Making	Not applicable at Fernald as all major decisions are in place under the CERCLA process
Integrated Program for Accelerating Cleanup of Small Sites	Fernald supports such an integrated program by achieving 2006 closure through implementation of cleanup reform
Packaging and Transportation to Support Accelerated Risk Reduction	Fernald's 2006 Closure Plan utilizes established and proven waste packaging, transportation, and disposal configurations for all site waste streams
Focusing DOE-EM Program Resources on Cleanup	Fernald's program places an emphasis on use of Office of Science & Technology resources to address high schedule and cost risk activities in the cleanup program (see next item)
Refocusing the DOE-EM Science & Technology Program	To minimize technical risk on key critical path subprojects: Silos 1&2 and Low-Level Waste and Mixed Waste Disposition

ATTACHMENT 2

This attachment provides a roll-up summary of the key actions and responsibilities that were presented in each of Fernald's eight strategic initiatives.

KEY ACTIONS AND RESPONSIBILITIES

Action	Responsible Organization	Status	Date Needed
Continue to place safety first in the execution of all planned acceleration activities and initiatives	DOE-OH and Fluor Fernald	In progress	Ongoing
Reduce overall duration of final design through parallel review cycle for key stakeholders	Fluor Fernald	Complete	—
Install pugmill ventilation system at Waste Pits subproject to control air emissions and allow higher-activity material to be excavated, dried, and loaded	Fluor Fernald	Complete	—
Procure 20 additional gondola railcars to increase transportation capacity for Waste Pit material to Envirocare	Fluor Fernald	Complete	—
Gain regulatory agency approval to maintain three OSDF cells open simultaneously and to reduce the intervening layer thickness	DOE-OH	Complete	—
Accelerate start of OSDF Cell 4 and Cell 5 liner construction in FY02	Fluor Fernald	Complete	—
Renegotiate the MACTEC D&D contract to incorporate the 2006 closure baseline	Fluor Fernald	Complete	—
Initiate 24/7 schedule for Waste Pit dryer operations to increase process capacity	Fluor Fernald	Complete	—
Increase annual production rate for Waste Pits subproject to 150,000 tons/year	Fluor Fernald	Complete	—
Adopt a self-performance work execution approach for Soil Excavation and On-Site Disposal Facility subproject	Fluor Fernald	Complete	—
Complete removal of impacted soil in the footprint of the Silos 1&2 treatment facility prior to the facility's construction	Fluor Fernald	In progress	9/30/02
Mobilize additional D&D work crews and equipment to accelerate work	Fluor Fernald and MACTEC	In progress	12/01/02
Engage key treatment component vendors in Silos 1&2 design process	Fluor Fernald	In progress	12/31/02
Early procurement of long-lead components for Silos 1&2	Fluor Fernald	In progress	12/31/02
Issue early design packages for procurement during Silos 1&2 process design for non-treatment-related components	Fluor Fernald	In progress	12/31/02
Pursue U.S. EPA and Ohio EPA approval to excavate the soil cap over Waste Pit 4 and dispose of the material in the On-Site Disposal Facility	DOE-OH and Fluor Fernald	In progress	12/31/02
Demonstrate to U.S. EPA and Ohio EPA that the soil underlying the waste pits meets the on-site waste acceptance criteria	DOE-OH and Fluor Fernald	In progress	12/31/02 (for first phase of sampling)
Amend Operable Unit 4 Record of Decision to eliminate treatment of Silo 3 waste	DOE-OH and Fluor Fernald	In progress	4/01/03
Modify Envirocare NRC license to allow disposal of Silo 3 oversized debris	DOE-HQ, DOE-OH, and Fluor Fernald	In progress	4/01/03
Amend the Operable Unit 4 Record of Decision to permit disposal of Silos 1&2 materials as 11e.(2) waste at Envirocare in Utah	DOE-OH and Fluor Fernald	In progress	9/01/03
Accelerate clearing of the Plant 1 Pad to allow for D&D and soils remediation	Fluor Fernald	In progress	9/30/03

Attachment 2 (continued)

KEY ACTIONS AND RESPONSIBILITIES (CONTINUED)			
Action	**Responsible Organization**	**Status**	**Date Needed**
Gain NRC approval of a license modification to permit disposal of Silos 1&2 wastes in Envirocare's 11e.(2) disposal cell	DOE-HQ, DOE-OH, and Fluor Fernald	In progress	2/01/04
Significantly increase annual On-Site Disposal Facility placement rates	Fluor Fernald	In progress	Ongoing
Continue to focus on aggressive reduction of landlord and overhead costs	Fluor Fernald	In progress	Ongoing
Implement workforce restructuring actions necessary to achieve the 2006 execution plan, using the DOE-HQ-approved Workforce Transition Plan	Fluor Fernald	In progress	Ongoing
Use retention incentives to ensure key skills remain available	Fluor Fernald	In progress	Ongoing
Plan more work in a given year than is funded	Fluor Fernald	In progress	Ongoing
Continue working closely with regulators and stakeholders to streamline process requirements and operations	DOE-OH and Fluor Fernald	In progress	Ongoing
Assist Fernald in obtaining continued DOE-EM Office of Science & Technology funding and technical support for high-risk subprojects	DOE-OH	In progress	Ongoing

ATTACHMENT 3

his attachment will provide copies of the Letters of Endorsement from regulatory agencies and key stakeholders.