

**Transition of the U.S. Department of Energy Fernald
Closure Project (FCP) from Cleanup to Legacy Management**

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ABSTRACT

The Fernald Closure Project encompasses a 1,050-acre tract of land northwest of Cincinnati, Ohio. Dedicated to the production of uranium feed materials from 1952 until 1989, the site was subsequently included on the U.S. Environmental Protection Agency's National Priorities List and slated for cleanup. Except for contaminated ground water, cleanup of the site will be completed in 2006; remediation of the aquifer will continue for 20 years.

Transition of the project from the U.S. Department of Energy Office of Environmental Management to the Office of Legacy Management will be effected when site cleanup is completed, surface restoration is complete, and aquifer remediation is on-going. Office of Legacy Management activities will focus on the monitoring and maintenance of the on-site disposal facility, enforcement of restrictions on site access and use, and the protection of natural and cultural resources. The Site Transition Plan, developed in accordance with Site Transition Framework guidance, identifies organizational and financial responsibilities for attaining closeout. A Transition Matrix details more than 1,000 activities necessary for site transition and allows each task to be tracked. Responsibility Transition Plans address major areas of scope to be transferred, such as records and information management, infrastructure, and environmental monitoring. Much effort has been placed on the retention of staff to perform the identified Office of Legacy Management scope.

INTRODUCTION

The Fernald Closure Project (FCP) encompasses a 1,050-acre tract of a former uranium-processing facility located approximately 18 miles northwest of Cincinnati, Ohio. Production

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of uranium feed materials began at the site near Miamisburg, Ohio, in 1952 and continued until 1989 (Figure 1), when production ceased because of a decrease in the demand for the feed materials and an increase in environmental restoration efforts. The site was subsequently included on the U.S. Environmental Protection Agency's (EPA's) National Priorities List.



Fig. 1. Fernald site prior to remediation (1987)

Cleanup of the site will be completed in 2006 except for contaminated ground water (Figure 2). Remediation of the aquifer will continue for approximately another 20 years.

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) will assume custody of the site in 2006 when site cleanup is completed, surface restoration is complete, and the aquifer restoration project is operating and on-going. Because remediation of the site to levels acceptable for unrestricted use was not practicable, an on-site disposal facility for contaminated materials is being constructed. LM's mission will be to maintain human and environmental well-being through the mitigation of residual risks and the protection of natural and cultural resources.

BACKGROUND

The Fernald site produced "feed material" in the form of purified uranium compounds and metal for use by other government facilities involved in the production of nuclear weapons for the nation's defense. In 1991, the mission of the site officially changed from uranium production to environmental cleanup under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended. Fluor Fernald, Inc. (Fluor) is managing the remediation and restoration of the site under the terms of a prime contract with DOE. Region V of the

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U.S. Environmental Protection Agency (EPA) and the Southwest District Office for the Ohio Environmental Protection Agency (OEPA) provide regulatory oversight.

Cleanup has occurred under five operable units (OUs). The OU1 Record of Decision (ROD) requires the removal of all material from the waste pits, stabilization of the material by drying, and shipment off site of the material for disposal. The OU2 ROD requires the removal of contaminated material from the various units, disposal of material that meets the on-site waste



Fig. 2. Artist's concept of Fernald site after remediation

acceptance criteria in the on-site disposal facility (OSDF), and shipment off site of all other OU2 material for disposal. The OU3 ROD requires the decontamination and decommissioning of all contaminated structures and buildings, recycling of waste materials if possible, disposal of material that meets the on-site waste acceptance criteria in the OSDF, and shipment off site of all other OU3 material for disposal. The OU4 ROD requires the removal and treatment of all material from the silos and subsequent shipment off site for disposal.

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OU5 consists of environmental media, including soil, surface water, ground water, and vegetation. The OU5 ROD describes the approved remediation method of pump-and-treat for ground water and commits to continual evaluation of remediation technologies to allow for the remedy improvement.

Table I. Timeline for the Fernald Site from Construction of the Site to Transition to LM

Activity	Date
Construction initiated	1952
Production halted	1989
Records of Decision	1992 - 1994
LM begins transition activities	January 2004
Site Transition Plan finalized	March 2005
Transition Matrix issued	May 2005
LM Resource Acquisition Plan issued	August 2005
Letters of intent issued by Stoller to key personnel	November 2005
Operations and monitoring tasks subcontracted to S.M. Stoller Corporation (LM contractor)	February 2006
Surface cleanup completion (anticipated)	May 2006
Site restoration completion (anticipated)	June 2006
Transition to LM (anticipated)	July 2006

IDENTIFICATION OF TASKS

The DOE Office of Environmental Management (EM) is performing all tasks required by the RODs for OUs 1-4. OU5 tasks have been initiated by EM and will continue under LM. In addition to aquifer restoration, OU5 requires natural and cultural resources protection in accordance with appropriate laws and regulations. Wetlands and threatened and endangered species are examples of natural resources that will be monitored. Known cultural resource areas will be inspected periodically to ensure that the integrity of these areas is not threatened.

Community Relations activities will include preparing news releases, information updates, and fact sheets; coordinating public and other site meetings; creating and interacting with the local stakeholders, media, and the public; maintaining the Fernald web page; coordinating site tours; and designing, constructing, managing and staffing the Multiple Use Education Facility. A website will be maintained to provide data to the regulators, primarily U.S. EPA and OEPA. Public involvement will be encouraged through routine meetings to discuss inspection and environmental monitoring results.

The Comprehensive Legacy Management and Institutional Controls Plan (LMICP) outlines DOE's approach, and documents the planning process and the requirements for long-term care of the site. The LMICP will be updated periodically to ensure that LM activities continue to meet regulatory and stakeholder requirements. CERCLA requirements for an operating and maintenance plan are met by the LMICP.

LM activities at Fernald are divided into two categories: (1) operation and maintenance of the remedy and (2) surveillance and maintenance in restored areas (areas outside the OSDF). LM activities related to the remedy will include monitoring and maintaining the disposal facility and ensuring that remedy-driven restrictions on access and use of the Fernald site are enforced. Surveillance and maintenance in restored areas will focus on protecting natural and cultural resources. The restored site will be open space with public access to all areas except the water treatment plant, disposal facility, and aquifer restoration buildings.

Maintenance tasks include mowing and/or burning the restored prairie, noxious weed inspections and control, parking lot and trail maintenance, disposal facility fence maintenance, sign maintenance, and erosion identification and repair. Tasks required for protection of natural and cultural resources include providing security, enforcing institutional controls, monitoring natural resource areas, preserving threatened and endangered species, and protecting cultural resource areas.

Ecological restoration follows remediation and is the final step in cleanup of the site. Ecological restoration is under way to facilitate potential settlement of a 1986 State of Ohio Claim against DOE for injuries to natural resources at Fernald under CERCLA. Settlement of the claim is in negotiation. Restoration activities at the site are also being implemented to address wetland mitigation requirements under the Clean Water Act and to stabilize and revegetate areas affected during remediation.

Commitments to continue community outreach have been made to stakeholder groups such as the Fernald Citizens Action Board (FCAB). The FCAB will be disbanded at the end of fiscal year 2006 however outreach will continue through the on-site Multiple Use Educational Facility. The stakeholder groups have actively engaged DOE and regulators in the planning of the remedies.

The Site Transition Plan (STP) serves as the transition and closeout planning document that integrates activities from each project closeout phase by identifying organizational and financial responsibilities necessary for attaining closeout and obtaining Critical Decision-4 (CD-4) project closeout approval. The STP is an internal DOE management tool, not an enforceable regulatory document. It was developed in accordance with the Site Transition Framework (STF) guidance that identifies transition requirements in 10 functional areas. The STF is used to verify that all appropriate steps have been or will be taken to close out the site and to identify the actions required by both the EM and LM organizations to transfer the site to LM.

The Transition Matrix is a detailed list of activities necessary for transition of the site. Activities are arranged in a work breakdown structure that mimics the organization of the STP. A monthly update of the matrix is performed in which LM managers evaluate each activity. The matrix contains more than 1,000 activities, more than half of which have been completed. A responsible person from each of the involved organizations (LM, EM, and LM and EM contractors) is designated for each activity. The lead organization and lead person are required to complete the activity by the agreed-upon date or provide a revised date. Activities that may cause the

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transition to be delayed are tracked closely, and plans to eliminate schedule concerns are prepared.

Major areas of scope to be transferred, such as records management, information management, infrastructure, and environmental monitoring, are tracked with Responsibility Transition Plans (RTPs). The RTPs list tasks to be performed, assumptions, deliverables, and risks. Subject-matter experts for LM and EM organizations must sign off to document that the scope of the RTP is complete and ready for transfer.

Extensive effort has been placed on retaining specific staff to perform the identified LM scope. Fluor managers and subject-matter experts have participated in the transition activities and are being given priority for positions with the LM contractor. Key personnel were provided letters of interest stating that they will be offered positions when their remediation work for the incumbent contractor is complete. Title 48 *Code of Federal Regulations* Subpart 926.71, "Implementation of Section 3161 of the National Denver Authorization Act for Fiscal Year 1993," is being followed to give Cold War "warriors" preference in hiring.

The LM contractor (S.M. Stoller Corporation) will hire a small portion of the current prime contractor staff prior to transition. These personnel will be subcontracted to Fluor to continue remediation work until the site is transitioned to LM. The early hiring allows staff members to know that they have jobs and reduces the risk of losing needed expertise.

Some of the LM scope will be performed by subcontracted personnel rather than by S.M. Stoller Corporation employees. Subcontracted tasks will be those that do not require full-time employees or those that require the unique knowledge and background of existing subcontractors.

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