

fernald Report

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- New face in town
- Hi-ho, hi-ho - off to the pits we go
- Admin - a glimpse of the past

March / April 2003



message from

Steve McCracken**Bob Warther selected to lead Ohio Field Office**

On February 24, 2003, Robert F. Warther, P.E. was appointed by Assistant Secretary for Environmental Management (EM) Jessie Roberson, as manager of the Ohio Field Office. Bob has extensive experience in nuclear and environmental engineering and the deactivation and decommissioning of nuclear facilities. His most recent assignment was with DOE headquarters where he implemented policy changes that resulted in significant cost savings, safety and efficiency across the DOE complex. Prior to working at headquarters, he spent five years at Rocky Flats as the Director of Training and Safety and Field Office Director of the Defense Nuclear Facility Safety Board.

Bob began his career as an officer in the Navy's nuclear program and has had a distinguished career in both public and private service. He holds a B.S. in Mechanical Engineering from Cornell University, a Masters of Business Administration from The Citadel, and a M.S. in Civil (Environmental) Engineering from Virginia Polytechnic Institute. Bob was born and raised in the Washington, D.C. area and is married with two children.

Bob is quickly acclimating himself to the projects and issues associated with the Fernald cleanup. It's clear his goal is to provide us with the support needed from DOE Headquarters to reach closure in 2006. His job will be to eliminate or at least minimize the obstacles that pose a drag to our cleanup schedule. He also intends to work loosely with Fluor Fernald management to ensure their closure contract provides adequate incentives for early completion.

Jack Craig will continue to bring his extensive knowledge of Fernald to his duties as Deputy Director of the Ohio Field Office.

Please join me in welcoming Bob Warther to our area and this new assignment.



Steve McCracken
Director, DOE-Fernald



Robert F. Warther
Manager, DOE-Ohio Field Office

On the cover: Unit Train 79 departed Fernald on March 12 for the 1,747-mile trip to Envirocare of Utah. The Waste Pits Remedial Action Project (WPRAP) has now removed more than 500,000 tons of waste from Fernald to Envirocare by rail. This amount is equivalent to 25,003 truckloads of waste (7577-d20).

Pad waste pit bound

More than eight years ago a team was assembled to compare the costs for disposing of Fernald's legacy wastes inventory after fiscal year 1996. It was determined at that time that approximately 16,000 containers would remain after completion of the FY96 shipping and disposal activities. The team compared the continued exclusive use of the Nevada Test Site (NTS) for waste disposal versus the possibility of using treatment/disposal at a permitted commercial disposal facility. It was determined to be a cost savings to stop unnecessary waste shipments to NTS that were acceptable for disposal at Envirocare of Utah.

A review was conducted of every container at Fernald to determine which was acceptable for disposal at Envirocare and those that were not would continue to go to the Nevada Test Site. Following recent discussions with regulators and stakeholders, Fernald was given approval to directly haul bulked containerized waste material to the Waste Pits Remedial Action Project (WPRAP), for off-site disposal to Envirocare of Utah via unit trains. The bulked containerized waste materials consist of low-level radioactive contaminated soil, soil-like and debris materials that exceed the Waste Acceptance Criteria (WAC) for the On-Site Disposal Facility (OSDF). The planned approach for bulked containerized waste material was similar to that previously used at Fernald to disposition 4,000 cubic yards of Area 3A soils, which were excavated and hauled directly to WPRAP.

All low-level legacy waste is scheduled to be off the Plant 1 Pad by May 29, and all remaining material must be removed from the pad by Sept. 30. Over the duration of the project, containers of material will be bulked and directly hauled to WPRAP. The waste contents of the containers will be emptied into Pit 2 where the containers will be crushed. The blended waste will then be hauled to the Material Handling Building and loaded into railcars with other pit material for shipment to Envirocare.

All Waste Management Project operation will be complete by Sept. 30, 2003.



Top: Drums and white metal boxes line the rows of the Plant 1 Pad. At one time, the pad was home to more than 60,000 containers. Many of those remaining will be moved to WPRAP for future processing (7547-d0106).

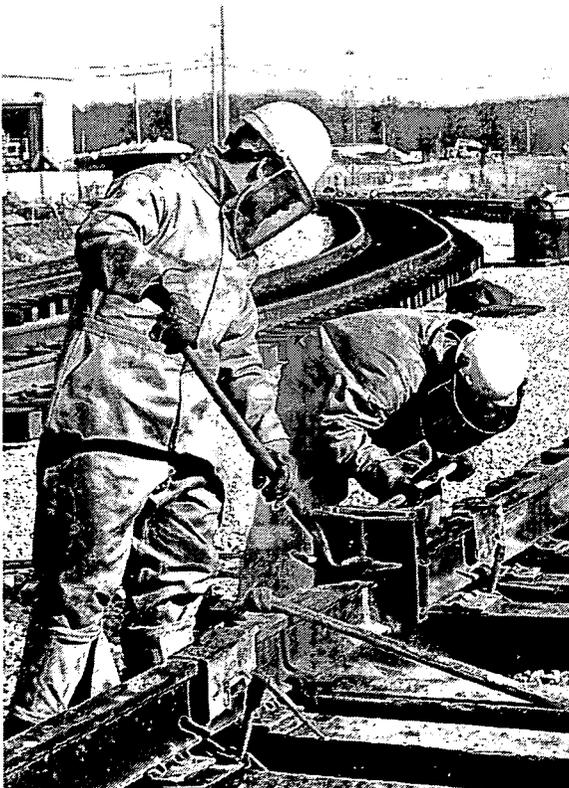
Above: Waste operators apply a liner over a waste shipment prior to the final lid being placed on the railcar (6944-d1420).

Cleanup **Progress** Update



Above: A supervisor inspects Pit 5 excavation work as trucks haul waste to the Material Handling Building for sorting and drying (6944-d2313).

Right: Welding crews make progress to complete the rail spur that leads into the Silos 1 and 2 waste treatment and load-out facility (7385-d2656).



Waste Pits Remedial Action Project (WPRAP)

- Safely transported trains (#75 - #78) to Envirocare of Utah during January/February timeframe bringing the total tonnage shipped to over 494,000 tons
- Excavations are ongoing in Pits, 3, 4, and 5
- Hauled and began processing soil and debris not meeting the waste acceptance criteria for the On-Site Disposal Facility to the waste pits for disposition
- Completed design for additional rail track to increase shipping capacity
- **Project 62 percent complete**

Silos Projects

- Completed the Silos 1 and 2 design
- Poured additional sections of the Silos 1 and 2 mat foundation
- Erected steel for the deck over the Temporary Transfer Tanks
- Began construction of the Silos 1 and 2 treatment facility
- Poured concrete foundation for the Silo 3 waste processing facility foundation
- Completed final steps in preparing for the Silo 4 reinforcement demonstration
- **Silo 1 and 2 Project 10 percent complete**
- **Silo 3 Project 16 percent complete**

Soil and Disposal Facility Project

- Continued excavation of soil in eastern half of the production area
- Removed top soil from the Cell 7 footprint
- Continued operation of the bulk debris staging at the On-Site Material transfer Area; over 1,760 roll-off boxes emptied to date
- Completed excavation of the second sediment basin
- Completed final survey of 2002 placement — 256,000 in-place cubic yards
- Submitted *Comprehensive Stewardship Plan* to DOE Headquarters
- **Project 40 percent complete**



Aquifer Restoration/Wastewater Project

- Continued analyzing geoprobing results in South Plume area to determine progress of cleanup and, if necessary, design parameters for future South Plume Optimization Phase II module
- Continued field construction of South Field Phase II infrastructure to support the addition of 4 new extraction wells, 1 new injection well, conversion of an existing extraction well to an injection well, and 1 new injection pond
- December/January totals: extracted 380,880,000 gallons of groundwater; treated 223,367,000 gallons of groundwater; removed 207 net pounds of uranium from the aquifer
- **Project 64 percent complete**



Top: The energy isolation trench cutter cuts a 3-foot wide, 12-foot deep trench in the former production area prior to excavation to ensure all utilities have been severed (7710-d0014).

Above: Samples are being taken using a Geoprobe in the former production area to help determine the extent of contamination under the buildings (6469-d0014).

Cleanup **Progress** Update



Demolition Projects

Decontamination & Demolition (D&D)

- Ongoing activities in Plants 2, 3, 8 and Pilot Plant included: asbestos abatement; removal of equipment, piping, lead and interior transite; gross washdown and size reducing debris and placement in roll-off boxes for disposition
- Began building preparation and asbestos abatement in the Laboratory Complex
- Completed demolition of three additional support structures, bringing the remediated structure total to 122
- Project 55 percent complete

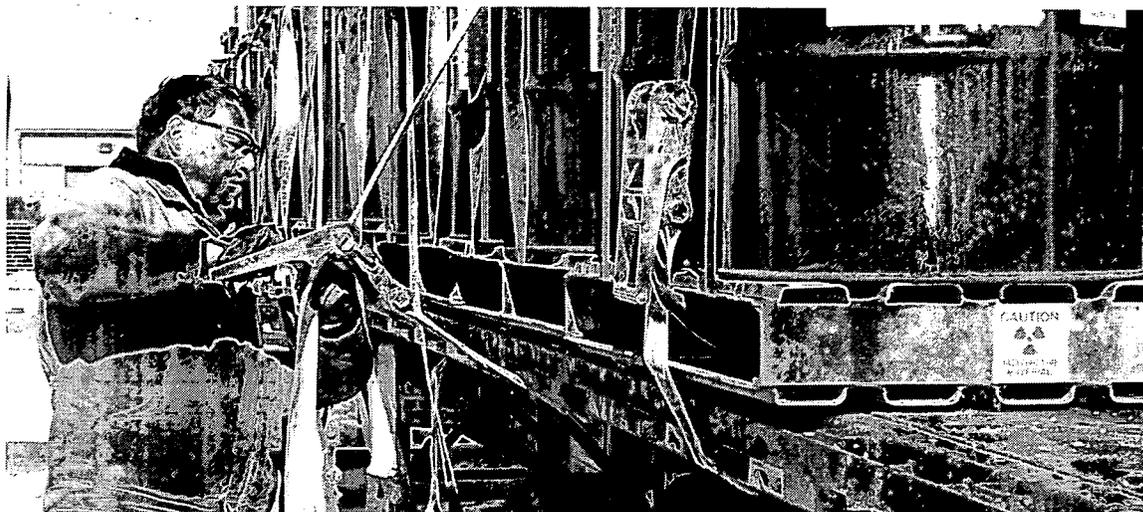
Waste Management Project

- Initiated direct haul of waste containers to the Waste Pits Remedial Action Project
- Completed construction of two Portable Processing Units and began packaging fissile compounds
- Continued packaging of materials for shipment to the Nevada Test Site
- Project 96 percent complete



Top left: A laborer uses a pry bar to free acid bricks from the floor of Plant 2. The bricks are removed prior to shearing and dismantlement activities (6383-d1150).

Left: A Waste Management operator adds vermiculite and sand to a Thorium metal container for stabilization, while a co-worker holds a hepa ductwork tube to minimize airborne contamination (7048-d0196).



Left: Chuck Faust, transportation driver, straps a pallet of drums to a trailer. Once secured, the drums will be transported to the waste pits for processing and future shipment to Envirocare (7913-d0032).

Fernald Shipments – January / February 2003

Contents / Destination	Shipment Mode	Number of Shipments	Monthly Total	FY03 Total	Approximate Project Totals
Low-Level Waste (Nevada Test Site)		48	21,094 cu. ft.	41,118 cu. ft.	6.25 million cu. ft.
Mixed Waste - Materials & Energy Corporation at Oak Ridge		3	3,293 cu. ft.	5,931 cu. ft.	17,908 cu. ft.
Liquid Mixed Waste - Toxic Substance Control Act Incinerator at Oak Ridge		0	0 gal.	2,638 gal.	163,912 gal.
Nuclear product/materials (Portsmouth)		0	0 net lbs. or 0 metric tons uranium	0 net lbs. or 0 metric tons uranium	9,083,388 net lbs.-or 3,541.1 metric tons uranium
Soil and debris - On Site Disposal Facility		N/A	0 in-place cubic yards	45,339 in-place cubic yards	923,699 in-place cubic yards
Waste Pits Project (Envirocare of Utah, Inc.)		4 unit trains (242 railcars)	25,995 tons	70,487 tons	493,292 tons

COMPLETE

No time to "waste"



Waste Management had to consider alternate ways to get the material packaged and relocated. They quickly put a team together to discuss ideas for packaging and came up with the concept of Portable Processing Units (PPUs).

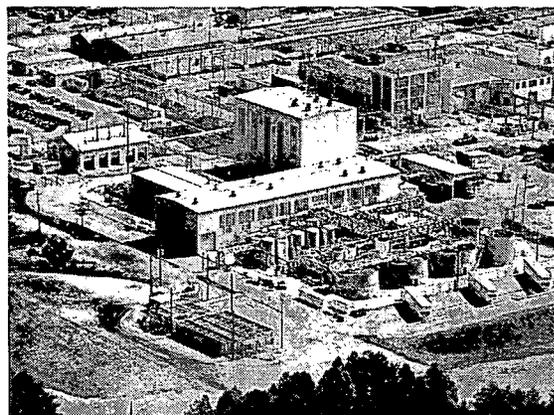
With Department of Energy (DOE) Environmental Management funding assistance from the Office of Science and Technology (EM-50), Fernald purchased two PPUs. Each unit is 70 by 50 feet and equipped with a unique electrical and HVAC system. The enclosure allows operators to work in comfort and reduces the chances of heat stress in summer and cold stress during the winter. "The ability to maintain a controlled temperature in the work area will certainly help the project to meet the September 30 deadline," said John Samples, Fluor Fernald technical services manager for low-level waste.

Once Waste Management crews complete the work, the PPUs can be relocated and used at different areas of the site. Since March, workers have repackaged 422 of 1,556 containers of fissile compounds and are awaiting approval for their future shipment off site.

Above: A Waste Management Hazardous Waste operator adds vermiculite to a Fissile Compounds drum in the PPU. The material is added to fill void space prior to final shipment off site (7933-d0033).

As we near the mid point of FY2003, Fernald's Waste Management Project (WMP) counts down the remaining days it has to clear waste off the Plant 1 Pad. All material must be removed by September 30, 2003. That's not long when you look at a remaining inventory of more than 9,200 containers. Also, finding a place to package the waste posed a problem because an increasing number of permanent facilities have recently fallen prey to demolition.

The 1,556 containers of uranium waste disposition fissile compounds housed on the pad posed one large concern when it came to the September 30 milestone.



Changes and challenges at the AWWT

Responding to the newly promulgated USEPA standards, Fernald amended the Operable Unit 5 Record of Decision in November 2001 to reflect a change in the final remediation level of uranium discharge to the Great Miami River from 20 parts per billion (ppb) to 30 ppb. Throughout 2002 the Aquifer Restoration Project (ARP) maintained the monthly average uranium discharge level below 30 ppb.

During January 2003, the Advanced Wastewater Treatment (AWWT) facility recorded several instances where concentration levels discharged to the river were over the 30 ppb limit, which required adjustments to the overall AWWT operating strategy to meet the January discharge limit. However while investigating the problem, engineers noted that the facility would require operating modifications to meet the discharge limit in order to handle additional contaminated water from the waste pits, the two new cells of the On-Site Disposal Facility, and the stormwater runoff from the former production area.

The Aquifer team has put together several potential solutions that will address treatment of contaminated water in the future as the site moves towards closure. "The AWWT has been operational since 1995 and has had great success at treating both groundwater and the site's wastewater," said Rob Janke, DOE's Aquifer Restoration Project manager. "The same people who turned on the switch in 1995 are still working at the facility and can adequately deal with unforeseen challenges when they arise."

Top: Since 1993, almost 7 billion gallons of groundwater and wastewater have been treated at the Advanced Wastewater Treatment facility and other Fernald treatment systems (6901-90).

Safety pays dividends

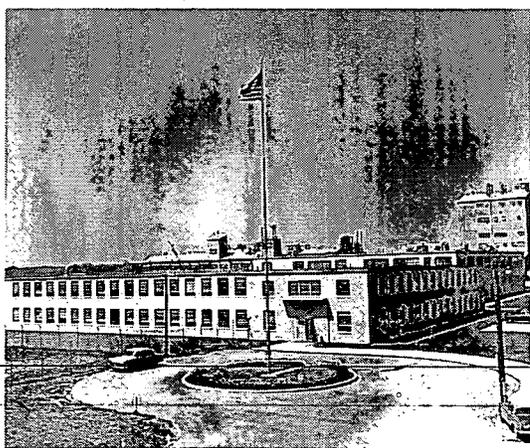
January was the start of a new year, as well as the start of the pilot "Wage Employee Safety Incentive Program." The program seeks to reward Fluor Fernald wage employees who have achieved excellence in safety performance and evokes sitewide performance improvement by creating ownership, accountability and increased participant involvement. The program focuses on wage employees because much of their work has the greatest potential for serious accidents or injuries.

Work group awards are based on performing duties for one entire month without a lost-time injury, Occupational Safety & Health Administration (OSHA) recordable injury or a near miss. The wage population is segmented into 14 different safety work groupings. Each month a group is injury-free, safety advocates within the group award each employee a ten-dollar gift certificate. If one employee within the group is injured, the entire group is out of the running for that month. "Ten dollars may not seem like much, but it's ten dollars I didn't have before. I'm looking forward to handing the certificates out each month to my safety work group," said Brenda Watson, Waste Management Project (WMP) safety advocate. "The goal is zero accidents and injuries and we want all employees to go home injury free each and every day."

The program has had good results. During the month of January, there were no wage injuries, so safety advocates distributed 677 gift certificates. February brought one OSHA recordable injury, entitling 644 employees to receive certificates. The program will run for a six-month pilot period, at which point the Safety First Team will then re-evaluate it to see if it should continue.



Left: (Left) Bob Giroir, director of Waste Management Project (WMP) thanks Dave Balsley, transportation driver, for his safe work efforts during the month (7928-d0012).



Above: This circa 1955 photo shows the Administration Building (foreground) with Plant 7 standing tall in the background. Fernald replaced the circular drive with sidewalks and concrete flowerpots in the late '80s when our nation's security posture increased because of terrorist attacks overseas (89-550-1)

Adios Administration Building

Fernald's Administration Building has served as home to the site's management and administrative services for the past 50 years. Now occupants of the Administration Building are leaving in order to make way for the proverbial wrecking ball. Since 1952, the Admin Building, as it's known, housed DOE and contractor managers, Finance, Purchasing, Accounting and Drafting departments, the Print Shop, mail room, credit union and dozens of other functions. Over 140 employees worked out of the Admin Building in its prime. Today there are 89 tenants, all of whom will be relocated by August when the building is turned over to the D&D Project. The first relocations began in late February when some Fluor Fernald management moved directly into project trailers. Others, including DOE and Fluor Fernald senior management, will move into trailers in a parking lot just south of the old Pilot Plant.

"The Admin and Services Buildings have been the hub of the Fernald campus for 50 years.

It will be strange for a lot of folks, including myself, not to have them as a home base for daily work and services," said Bob Nichols, Fluor Fernald director of projects.

Once safe shutdown workers complete energy isolation to the building, they'll turn the facility over to D&D subcontractor MACTEC, in preparation for asbestos abatement. Crews will use shears to knock down the two-story cinderblock structure. The facility, along with the Services Building, is expected to be on the ground by September 2004.



Gene Branham marks 50 years of service at Fernald

On Monday, March 10, Fernald Atomic Trades and Labor Council President Gene Branham celebrated the anniversary of his 50th year working at Fernald. A group of about 60 employees and retirees gathered to surprise Gene.

Originally from eastern Kentucky, Branham and about 40 other men moved north in 1952 when their coal mine shut down and a new government plant offered good pay and steady employment. Once he received his Q Clearance, one of Branham's first jobs was as a "stamper" in Plant 6, the Metals Fabrication Plant. "It was my job to take a stamp and strike the lot number on the end of each uranium core using a mallet," said Branham. "It was the last step in the process

before Quality Assurance and Shipping sent them out to Savannah River or Hanford. You didn't want to screw up."

Eventually Branham moved on to become a forklift operator, truck driver and heavy equipment operator. "A patriotic atmosphere prevailed at the plant. We all knew we played a part in fighting the Cold War and we were proud to do it."

Branham has held leadership positions within the Atomic Trades Council since the 1970s. During his tenure he's met with presidential hopefuls, vice-presidents, senators, congressmen and nearly every Secretary of Energy. In 1985, the Christic Institute presented Branham with the Karen Silkwood Award for his endurance of personal hardship in the defense of public health and safety. He received the award the only time it will ever be presented, on the tenth anniversary of Silkwood's death. Today he's most proud of how Fernald's production-oriented workforce transitioned into environmental cleanup. He's also seen vast improvements in worker health and safety.

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New faces at Fernald

Puerto Rico, Malaysia, Venezuela, Thailand, South Africa, Indonesia, Japan, Saudi Arabia: Fluor Fernald's two new project management executives have really been around.

Dan Powell, named deputy director of projects for the Soil and Disposal Facility Project and the Aquifer Restoration Project in February, most recently worked for KBR on the Joint Venture LNG Tangguh Proposal in Jaya, Indonesia, where he was responsible for the management, development and planning of a comprehensive construction execution program. Dan has over 28 years of experience in all phases of construction and engineering, including assignments in the energy, petrochemical, infrastructure, government and minerals industries.

Billy Don Edmondson, named deputy director of projects for the Maintenance and Infrastructure Project and Decontamination and Demolition Project, most recently worked for KBR at Petronas' LNG Plant in Bintulu, Malaysia, where he was a senior resident construction manager. He has over 30 years of experience in construction and engineering and has had assignments at many overseas sites. Billy Don has spent a lot of time on jobs in extreme climates ranging from the sub-zero temperatures of Alaska to the sweltering desert heat of Saudi Arabia.



Above: Billy Don Edmondson (left) and Dan Powell (right) will help manage the complex activities of the major cleanup projects (7950-d0004).

These organizational assignments will allow the flexibility to respond to a fast-paced environment while keeping safety first and making accelerated closure a reality.

SPECIAL REPORT**Silo 3 Proposed Plan in the works**

In 1994, the Operable Unit 4 Record of Decision included a waste treatment performance standard for the silos, based upon the RCRA toxicity characteristic leaching procedure (TCLP) laboratory test. This test indicated metals in the Silo 3 waste could exceed Resource Conservation and Recovery Act (RCRA) leachability limits. The Atomic Energy Act designates the Silo 3 waste as Section 11e.(2) byproduct material, a regulatory classification which identifies it as material produced during extraction and concentration of uranium from ore. Because of this designation, the Silo 3 residues, although they contain regulated leachable metals such as arsenic, cadmium, chromium and selenium, are exempt from RCRA regulations.

In 1998, after the site encountered difficulties with the vitrification process, Fernald engineers, regulators and stakeholders developed an Explanation of Significant Differences (ESD) that replaced vitrification with a chemical stabilization and solidification or polymer encapsulation alternative. The ESD also contained a policy decision that separated the Silo 3 cleanup remedy implementation from that of Silos 1 and 2.

Since 1998, DOE and USEPA have received new information concerning changes to the Nevada Test Site's (NTS's) waste acceptance criteria. As part of its February 2002 revision, NTS and its regulators clarified acceptance requirements for RCRA-regulated materials. Since Fernald's Silo 3 waste is classified as 11e.(2) material, it isn't regulated by RCRA standards, so the NTS can dispose of it "in a manner that is protective of human health and the environment." In June 2002, NTS formally issued a letter to Fernald stating that untreated Silo 3 material is eligible for disposal at NTS. The Department of Energy and USEPA have also made provisions within the proposed plan to ship the waste, if necessary, to an alternate commercial disposal facility that can accept 11e.(2) material.

In light of these new developments, Fernald's Silo 3 team has been working diligently on revisions of the Silo 3 Proposed Plan. This plan, most often called the proposed Silo 3 Record of Decision (ROD) Amendment, explains DOE's and EPA's recommended change to the Silo 3 cleanup plan as it was described in the 1994 ROD and the 1998 ESD. The Department of Energy and EPA are proposing to remove the TCLP performance standard from the cleanup plan, as it is no longer necessary to maintain long-term protectiveness and regulatory compliance with disposal facility waste acceptance criteria. Potential cost savings will be significant if the ROD amendment is approved. Total estimated cost for the existing cleanup plan is \$55 million while the proposed revised cleanup plan would cost an estimated \$42 million.

Members of the public have expressed concerns about DOE and EPA removing the primary requirement for treatment because it helped reduce dispersability. The Department of Energy and EPA have taken these concerns into account while developing the Silo 3 ROD Amendment. In response to the public's concerns the draft Proposed Plan states that Fernald will condition the waste by adding binders for dispersability plus a beneficial stabilization reagent. This is a best management approach. As a contingency, if the addition of liquid during packaging proves to be difficult, the amendment outlines an alternative plan to double package the waste.

The Department of Energy and EPA will adopt a final plan for Silo 3 after they review and consider all information submitted during the public comment period, which will take place after the Silo 3 team makes necessary revisions.

New documents added to the Public Environmental Information Center

The following information was added to the Public Reading Room, Administrative Record files and Post Record of Decision files at DOE's Public Environmental Information Center (PEIC):

- Waste Pits Remedial Action Project
 - ◆ DOE-Fernald Letter - Quarterly Report on Dryer Stack
 - ◆ OEPA Approval - Direct Haul of Bulk Waste Materials to WPRAP
- Soil and Disposal Facility Project
 - ◆ DOE-Fernald - Transmittal of the On-Site Disposal Facility Phase V Support Plans
 - ◆ DOE-Fernald - Construction Quality Assurance Plan for the On-Site Disposal Facility
 - ◆ OEPA Approval - Certification Report for Area 2, Phase I
 - ◆ USEPA Approval - On-Site Disposal Facility Restoration Borrow Area
 - ◆ USEPA Approval - U.S. DOE Request for Extension of Area 3B, 4B, 5 Integrated Remedial Design Package
- Silos Project
 - ◆ USEPA Comments - Draft Remedial Design Package for the Silos 1 and 2 Remediation Facility
 - ◆ OEPA Comments - Radon Control System
- Aquifer Project
 - ◆ USEPA Approval - Third Quarter 2002 Re-injection Report

Note: This does not represent the complete list of new documents added to the PEIC. Contact the PEIC, 513-648-5051 for a complete list of new documents.



Fernald Report

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