

fernauld **Report**

Inside

- Waste shipping startup on track
- Safe Shutdown nears completion
- First Waste Pit dryer expected

December 1998

1905



message from
Jack Craig

A look back at 1998

During the past year we have taken some significant steps forward in cleaning up Fernald. While we continue to move ahead with all phases of the cleanup, I am most pleased with our ability to complete work safely. As you may have heard already, we accomplished the site goal—achieving over one year and 4 million hours without a lost time day away from work. Our construction subcontractors are now on their sixth year without a lost time accident. While the numbers are good, it's the change in culture and how we act that's worthy of attention. Safety goes into our planning, our field work and our follow-up. Once employees have

finished their work day, they are encouraged to take this attitude home. It's this commitment to safety that is most important even though it can't be tallied as easily as a day without an accident.

Not only are we working safer, but we also have a motivated work force. Earlier this year new collective bargaining agreements were negotiated with the Fernald Atomic Trades and Labor Council (FAT&LC) and International Guards Union of America (IGUA). Their skills are essential for completing our mission, as evidenced by the fact that we will be completing Safe Shutdown early next year - millions of dollars under earlier projections.

This past year has seen the implementation of our "balanced approach" to waste shipping and disposal. As I noted in my November message, on-site disposal has been our focus this year with 250,000 cubic-yards of soil and debris placed in Cell 1. Waste has also been placed in Cell 2 and construction is well underway on Cell 3.

While the On-Site Disposal Facility reflects one side of the "balanced approach," our waste pit material will soon be processed and shipped off site. To prepare for this major milestone, there has been a significant amount of activity designing and building structures and training our employees to process and package this waste, which will be transported by rail to Envirocare in Utah.

Building demolition has progressed ahead of schedule throughout the year. We have removed the Boiler Plant, Plant 9, Sewage Treatment, D&D facility and 23 other buildings from the Fernald landscape.

The Silos Project has taken a step closer to completion by awarding Proof-of-Principle contracts for Silos 1&2. Using information resulting from testing various technologies, we should be able to select the best avenue of treatment for this waste. We are currently reviewing responses from contractors interested in the remediation of Silo 3 the Accelerated Waste Retrieval Project for Silos 1&2.

Our work in the Soil and Water Project has been equally aggressive with removal and disposal of the Inactive Flyash Pile and transformation of a large portion of the Southern Waste Units. We are closely watching the results of water reinjection back into the aquifer to see if this technology will aid us in more effectively treating this body of water.

Notable change has taken place at Fernald during this past year. We will continue to build upon our successes as we safely accelerate cleanup activities. Next year offers many new challenges. I am quite confident that we have the people and the resources at Fernald to take the next major step toward final cleanup and site closure.




Jack Craig
Director, DOE-Fernald

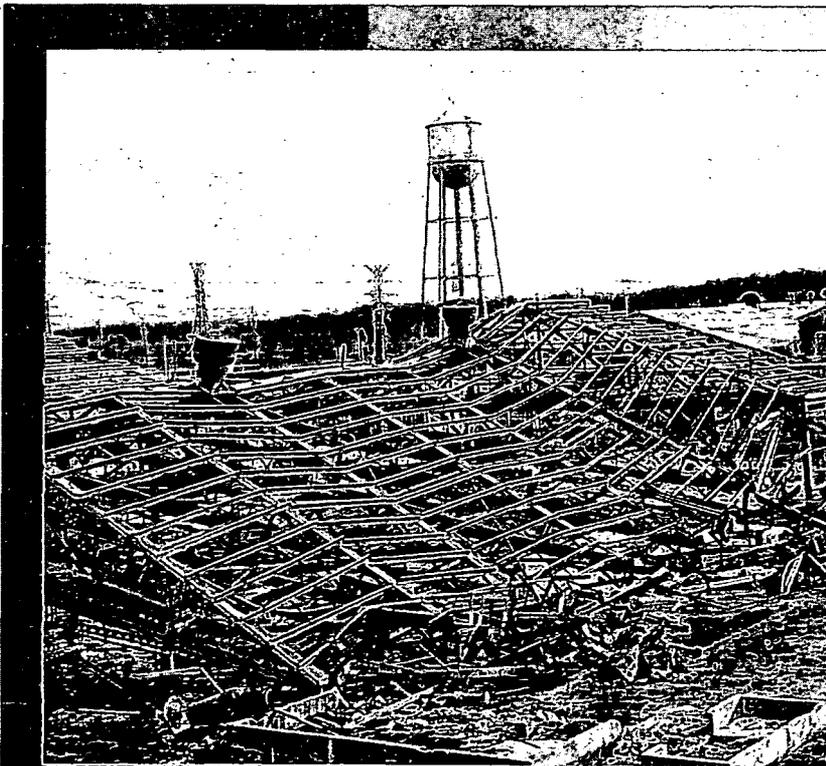
On the Cover: Fluor Daniel Fernald Hazardous Waste Technician, Moses Hawkins, prepares for work bulking liquid mixed waste from Plant 9 (6898D-0031).

Nevada Verifies Waste Shipping Improvements

A team of representatives from the Nevada Test Site visited Fernald earlier this month to conduct its final assessment of Fernald's Low-Level Waste Shipping Program. Specifically, the team reviewed and verified that corrective actions had been implemented as a result of previous concerns within the waste shipping program. Based upon the successful completion and closure of these corrective actions, approval to resume shipments has been requested by the DOE-Ohio Field Office manager and the DOE-Nevada manager.



Above: Shipments of low-level waste to Nevada will resume after the first of the year based upon approval from DOE (6943D-0019).



Above: Plant 9, the former Special Products Plant, was the latest structure to be demolished at Fernald (6494D-591).

Going, going, gone

For the Facilities Closure and Demolition Project (FC&DP), 1998 was a banner year. In the past 12 months, workers have demolished 27 site structures, significantly changing the landscape at Fernald. "We are very proud of the progress we've made this year," said Bob Nichols, acting vice president of FC&DP. "In addition to increased efficiency, we've also achieved an outstanding safety record, and that's the winning combination we strive for."

Some of the major facilities dismantled in 1998 include the Boiler Plant, Plant 9 and the Sewage Treatment Plant. "Our Safe Shutdown group has really done a good job preparing these buildings for demolition," said John Trygier, DOE-Fernald team leader. "Completing Safe Shutdown activities next year will be a major accomplishment for the entire site."

Plant 5, the former Metals Production Plant, will be the next major complex to be dismantled at Fernald. A Request for Proposal will be issued in February for subcontractors to bid on the dismantling of Plant 6. All D&D activities at the site are on schedule to be complete in 2005.

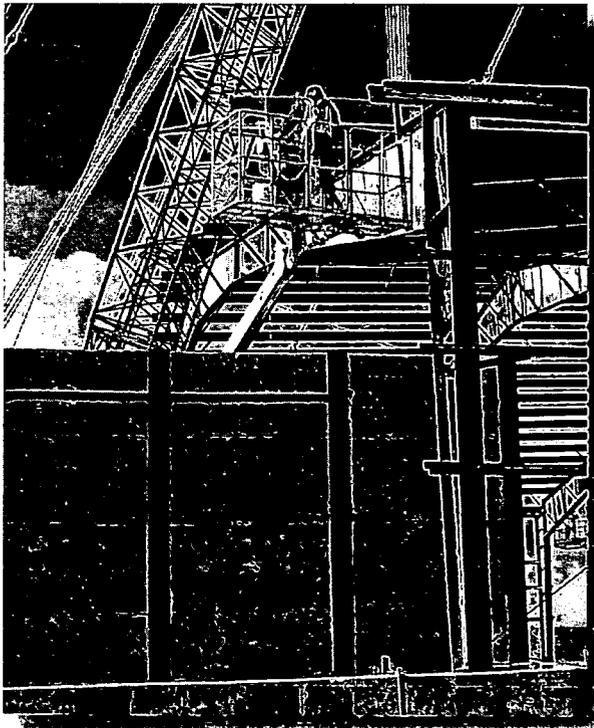
Cleanup **Progress** Update



Above: Construction crew uses a screen to level A concrete slab in the Gas Control System Facility. This system will treat off-gas resulting from waste pit drying operations (6944D-0329).

Right: The Material Handling Building is shaping up as the first roof section is added to the structure (6944D-0030).

Far right: The impacted material being added to Cell 2 comes from the Inactive Flyash Pile. About one foot of material will be placed over the liner materials to serve as a protective layer during the winter (6319D-1671).



Waste Pits Remedial Action Project (WPRAP)

- Completed rail operations training for employees
- Continued waste treatment facility construction
- Received draft tender for rail transportation of pit wastes to Envirocare in Utah.

On-Site Disposal Facility (OSDF)

- Continued placing waste into Cell 1
- Completed construction of 1-foot protective cover for Cell 2 clay liner
- Completed installation of leachate collection system drainage layer in Cell 2



Facilities Closure & Demolition Project (FC&DP)

Safe Shutdown

- Continued removing process piping in selected areas of Plant 6 and Tank Farm
- Completed isolation of electrical utilities in Plant 2
- Completed isolation and draining of Plant 6 condensate systems

Decontamination & Dismantlement

- Thorium/Plant 9 Complex —
 - ◆ Completed removal of all wall and roof transite
 - ◆ Demolished East and West Bays of Plant 9
 - ◆ Dismantled Buildings 3G, 22A, 39C and 45B, bringing total number of dismantled structures to 52
 - ◆ Maintenance/Tank Farm Complex and Water Storage Tank Project; mobilized subcontractor and began field activities
- Plant 5 Complex —
 - ◆ Issued *Request for Proposal* to pre-qualified bidders; conducted pre-bid meeting and project tour
- Facility Demolition/Supplemental Environmental Projects —
 - ◆ Finalized plans with DOE in Ashtabula, Ohio, to ship approximately 436 tons of track rail and associated tie plates, spike plates and spikes for decontamination and free release
 - ◆ Finalized plans to ship 1,350 tons of copper windings to DOE in Oak Ridge, Tennessee.



Left: Safe Shutdown personnel remove material left in process lines in an effort to prepare building for demolition and ultimately reduce health risks (6383D-0510).

Below left: Plant 9, the Special Products Plant, isn't so special any more (6494D-0587).



Below: The habitat area off of Paddys Run Road will be an ideal place to view wildlife this spring (6967D-0055).

Silos Project

- Scheduled 72-hour demonstration tests of all four Silos 1 and 2 Proof-of-Principle Testing technologies; demonstration runs will occur in December 1998 and January 1999
- Briefed Silos Project Critical Analysis Team on final technical and price proposals for Silo 3 cleanup
- Completed closeout of Silo 3 Small Scale Waste Retrieval Project



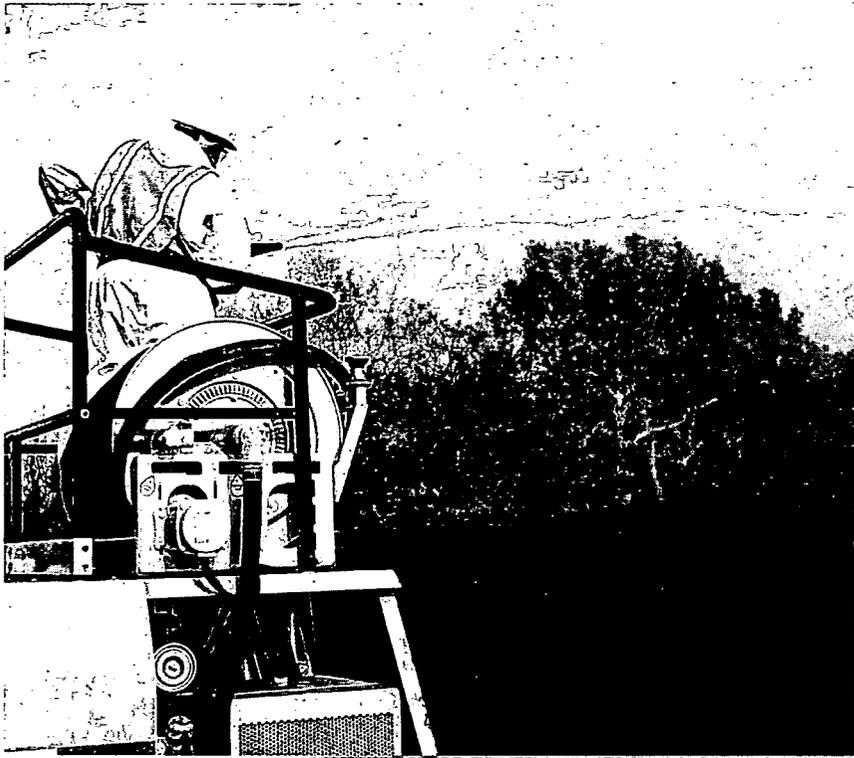
Cleanup **Progress** Update

Aquifer Restoration/ Wastewater Project

- Submitted *Injection Demonstration Operations Report* to DOE for further submittal to regulatory agencies
- Held initial design review for Advanced Wastewater Treatment Facility Laboratory Expansion Project with design subcontractor, Lockwood Greene Technologies
- Mobilized site construction subcontractor for General Sump Phaseout Project

Soil Characterization & Excavation Project

- Began excavation of Active Flyash Pile and continued hauling impacted material to OSDF
- Issued *Request for Proposal for Trap Range Stabilization Package* and held pre-proposal meeting for potential bidders
- Began Area 1 Phase II Site Preparation activities with removal of trees at South Access Road and construction of outfall sediment trap and ditch
- Natural Resource Restoration
 - ◆ Completed planting trees as part of the Aesthetic Barrier Project
 - ◆ Completed On-Property Public Access Habitat Area construction



Top:
A fine water spray is used to control dust during dry conditions in the Southern Waste Unit (6734D-0938).

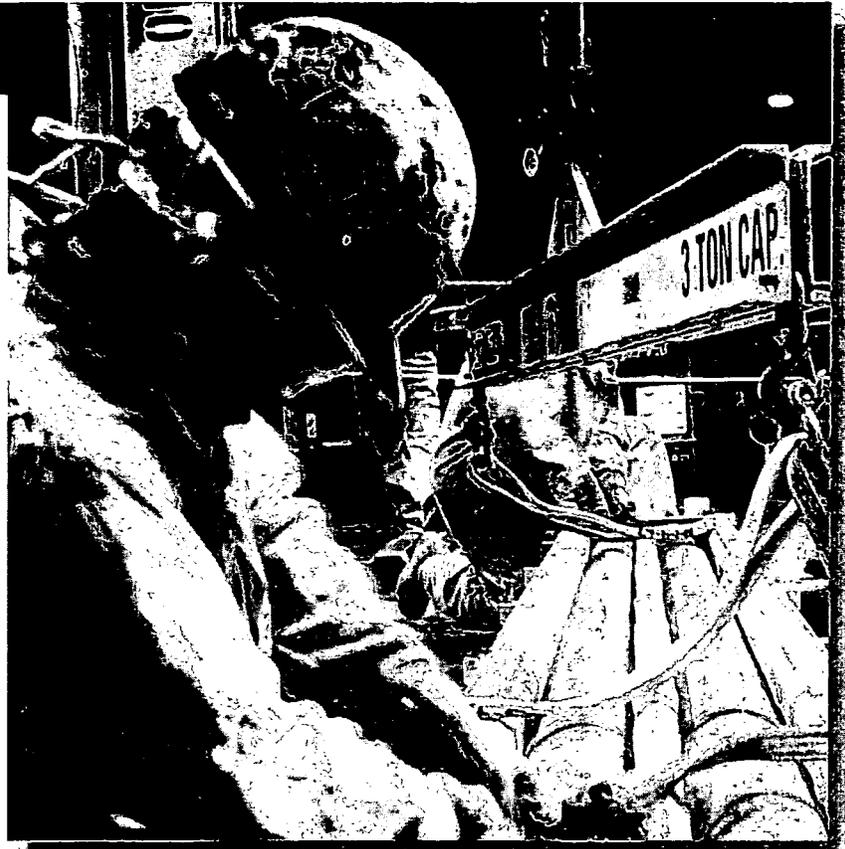
Center:
Mike Hunsche installs the logic control panel for the automatic wheel wash facility at the Southern Waste Units (6734D-0916).

Bottom:
A manifest is included with each load of waste hauled from the Inactive Flyash Pile to the On-Site Disposal Facility (OSDF). Waste Acceptance Organization personnel at the OSDF then verify documents and the load before waste placement (6734D-0929).



Waste Management Project

- Liquid Mixed Waste Project — Completed bulking of liquid wastes from former Solvent Extraction Project into Batch #9; also bulked 500 gallons of oil from Plant 6 Safe Shutdown activities
- Thorium Legacy Waste Project — Successfully completed Standard Startup Review
- Nuclear Materials Disposition — Shipped 14 International Shipping Organization (ISO) containers of uranium trioxide in support of contract for sale of low enriched materials; total of 46 shipments representing 1,364,229 pounds of uranium trioxide has been transported since shipping began in October 1998
- Concluded shipments of Loss of Fluid Test Fuel Rod boxes



Above:
Rigger Bob Doherty prepares for a lift in an effort to repackage and ship Loss of Fluid Test (LOFT) fuel rods off-site (6855D-0036).



Left:
Removing liquid waste from former production tanks is a critical part of the cleanup (6898D-0013).

Funding for new technologies approved

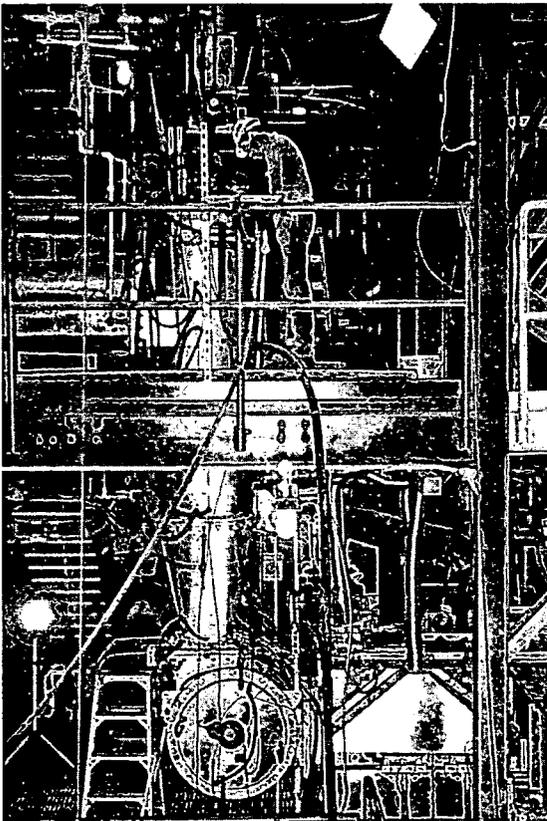
DOE and Technology Programs personnel will continue to meet the technology needs at Fernald and other DOE sites as a result of renewed funding from the Accelerated Site Technology Deployment Program.

The technologies approved for funding include the Mobile Work Platform and Personal Ice Cooling System (PICS). The PICS, or cool suit, is a self-contained core body temperature control system that circulates cool water through tubing. It has proven effective in mitigating heat stress, a serious health and safety problem across the DOE complex. The PICS were used by contractors at Fernald in Plant 9 and Building 65, and interest in this technology continues to grow.

The Mobile Work Platform is a remote-controlled machine that holds, crimps, cuts and places piping directly into waste containers. By eliminating the need for ladders, scaffolding and rigging, the Mobile Work Platform significantly improves personal safety and reduces costs during pipe removal activities. At Fernald, the Mobile Work Platform has been used in the Tank Farm Area and Building 6G.



Above: The mobile work platform is demonstrated in the Maintenance Tank Farm (6810D-162).



Above: Representatives from Fernald witnessed the first of four Silos Project Proof-of-Principle demonstration runs in early December (6979-VC1).

Silos Project demonstration runs in progress

The first of four demonstration tests as part of the Silos Project Proof-of-Principle was initiated on Dec. 1, 1998 at the Vortec Vitrification Pilot facility near Pittsburgh, Pa. Representatives from DOE, Fluor Daniel Fernald, and the Silos Project Critical Analysis Team as well as regulators were on hand to observe this 72-hour pilot scale demonstration test. The other three demonstration tests are scheduled to be completed by mid-January.

Proof-of-Principle testing involves the award of four separate contracts for vitrification and chemical stabilization with proven and commercially available processes. The results of this testing will lead to the development and finalization of a revised Feasibility Study, which will support an amendment to the original *Silos Project Record of Decision* document. Each vendor is responsible for demonstrating the ability of their pilot scale process to continuously operate and process surrogate material. After all the demonstrations have been completed, each contractor will submit a draft report with results from the testing. The draft reports are expected to be submitted by May 1999. The tentative schedule for the Proof-of-Principle testing demonstrations follows:

- Vortec (Pittsburgh, Pa.) – Vitrification; completed Dec. 1-5, 1998
- Chem-Nuclear Systems Inc. (Columbia, SC) – Chemical Stabilization; to be conducted during the week of Jan. 4, 1999
- International Technology (Knoxville, Tenn.) – Chemical Stabilization (cement-based); to be conducted during the week of Jan. 11, 1999
- EnVitco (Greenville-Spartanburg, SC) – Vitrification (Joule-heated); to be conducted during the week of Jan. 18, 1999

Rotary dryers will aid waste pit excavation



Before any material from Fernald's six waste pits, burn pit and clearwell can be shipped to Envirocare for burial, excess moisture must first be removed. "This is an essential step in preparing the waste to meet Envirocare's waste acceptance criteria," said DOE Waste Pits Project Manager, Dave Lojek.

IT Corp., the company hired to excavate the pits, treat the wastes and load the materials into railcars, will use two 155,000 pound rotary dryers to remove the excess moisture.

"Waste materials that require drying will be fed into a rotating cylinder inside the dryers. Heat will circulate around the cylinders, removing the excess moisture. At no time will the heat source be in direct contact with the materials," Lojek added.

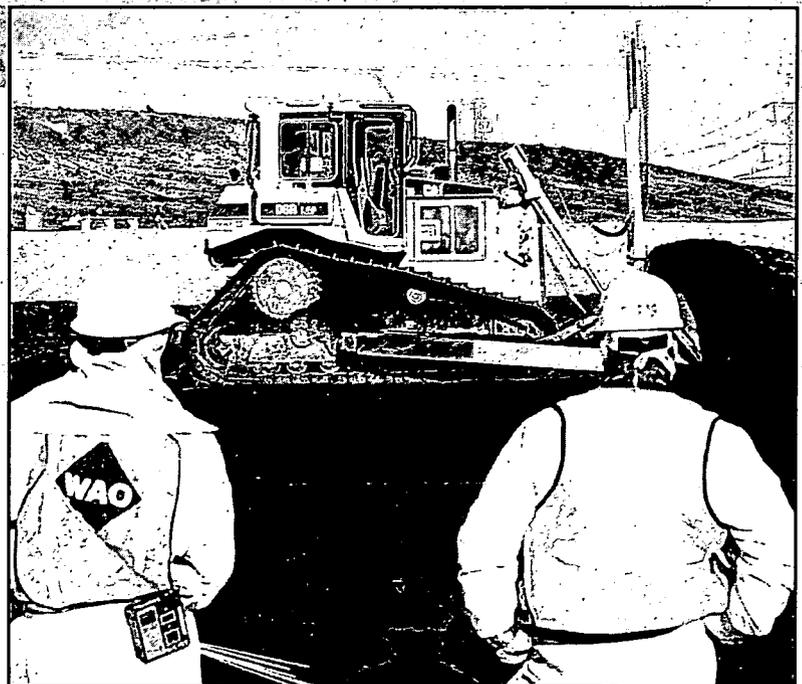
The dryers are 75 feet long and 14 feet in diameter and will be located between the Gas Control System Facility and Material Handling Building. IT Corp. expects to receive the first dryer from the Kansas manufacturer, Asea Brown Boveri, in December. The second dryer should arrive in January.

Disposal facility expands

Just one year ago, the construction of Cell 1 of the On-Site Disposal Facility was completed and prepared to receive its first waste. This year, approximately 250,000 loose cubic yards of contaminated soil, debris and building scrap have been placed in Cell 1. This amounts to about 11,650 truckloads of soil and 560 rolloff containers (one rolloff holds about 30 cubic yards of debris.)

In November, impacted material was placed in Cell 2 and a one-foot protective cover was added. The liner of Cell 3 is scheduled to be completed next year.

Right: Waste Acceptance Organization personnel closely monitor impacted material being placed in Cell 2 (6319-1652).



1999 Cleanup Progress Briefings



Above: DOE and Fluor Daniel Fernald host an annual site tour so the public can observe cleanup activities in the field (6810D-066).

Beginning in January, DOE will change the format of its monthly public meetings to allow more time for focused discussions on specific topics. Under the new format, DOE project managers will continue to provide updates about Fernald's major cleanup projects, but the frequency of the updates will change to every other month. During the remaining months, DOE will hold a public workshop on one timely feature topic, such as transportation or Silos cleanup.

"Since we introduced the Cleanup Progress Briefings in September 1997, we've received positive feedback from the public," explained DOE Public Affairs Director Gary Stegner. "However, due to the complexity of some of our cleanup projects, we did find some topics need more time to work through issues and address questions."

The Cleanup Progress Briefings/public workshops will continue to be held on the second Tuesday of the month, beginning at 6:30 p.m., at the Fernald site. The first public workshop in 1999 will be held Jan. 12 and will focus on waste transportation plans and alternatives. These alternatives include shipments by rail, truck and a combined approach using rail and truck.

New DOE Web Site

The Department of Energy Ohio Field Office launched its newly revised World Wide Web site. At www.ohio.doe.gov, you will find:

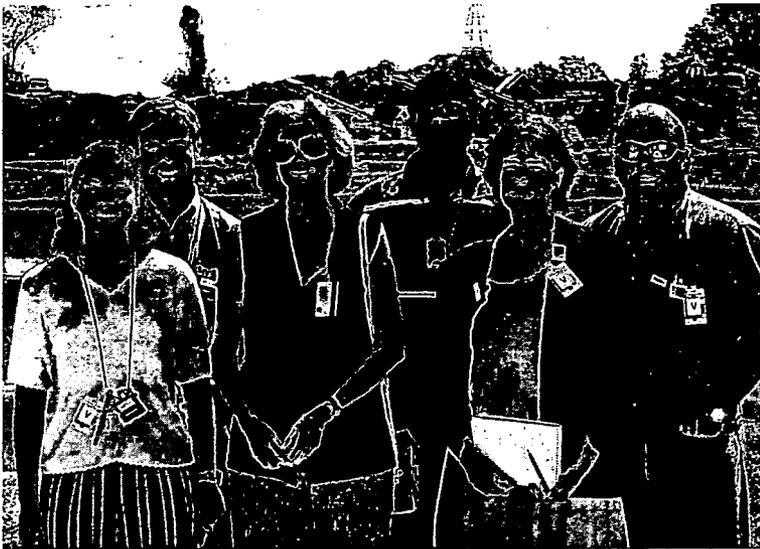
- a general overview of the Ohio Field Office has and its mission
- a history of DOE and the Ohio Field Office
- an organization chart of the Ohio Field Office
- education information
- job vacancies
- a "doing business" section featuring procurement/acquisitions information.

Recent Tours

1998 — A good year for tours

During 1998, over 1200 people toured the Fernald site. Visitors came from 19 states plus Spain and Canada and included students from 14 colleges/universities, local residents, the media, Fernald retirees and elected officials. Larger groups included representatives from the American Society of Civil Engineers, Weapons Complex Monitor Conference attendees, DOE Analytical Lab Managers, DOE Ohio Field Office Summit Conference attendees, Society of Manufacturing Engineers and the National Academy of Science.

If your group is interested in touring Fernald, please call Jeanie Foster, 513-648-5883.



Members from the National Institute for Occupational Safety and Health (NIOSH) are conducting a feasibility survey at Fernald designed to review records including personnel, medical, health physics, and industrial hygiene data.

Left: Raj Sundram (center) is the DOE contact for NIOSH at Fernald (6810-D0127).

The Riley Township Trustees take their first tour of Fernald. Steve Wentzel, Health & Safety manager for the Soil & Water Division, is the liaison to the trustees.

Right: (from left to right) Len Endress, City of Oxford fire chief; Nick Schwab, trustee; Dave Hysell, trustee; Dennis Conrad, trustee; Steve Wentzel, Fluor Daniel Fernald (6810-D0149).



New documents added to the Public Environmental Information Center

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

- On-Site Disposal Facility and Soil Characterization & Excavation Project
 - ◆ Southern Waste Units Site Preparation Package
 - ◆ Technical Specifications for Remediation of Trap Range Stabilization Package
 - ◆ Characterization Summary of the Trap Range
 - ◆ Leachate Management Contingency Plan for the On-Site Disposal Facility
- Facilities Closure and Demolition Project
 - ◆ Operable Unit 3 Project Completion Report, Sewage Treatment Plant Complex Decontamination and Dismantlement Project
 - ◆ Operable Unit 3 Miscellaneous Small Structures Decontamination & Dismantlement Project Report
- Silos Project
 - ◆ Rheology Testing of Fernald K-65 Waste Residue Slurry Final Report; Florida International University
 - ◆ Substantive Wetland Permitting Cross-Walk for the Silos Infrastructure Project
- Aquifer Restoration Project
 - ◆ Draft Certification Report for Area 1, Phase I Sediment Traps 2 and 3
- Miscellaneous
 - ◆ Ohio Environmental Protection Agency Comments on the National Environmental Policy Act Environmental Assessment for Final Land Use at Fernald
 - ◆ Integrated Environmental Monitoring Plan 1998
 - ◆ Transcript from the Sept. 23 Natural Resource Trustee Public Workshop
 - ◆ Transcript from the Oct. 13 Cleanup Progress Briefing/Final Land Use Public Hearing



Fernald Report

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