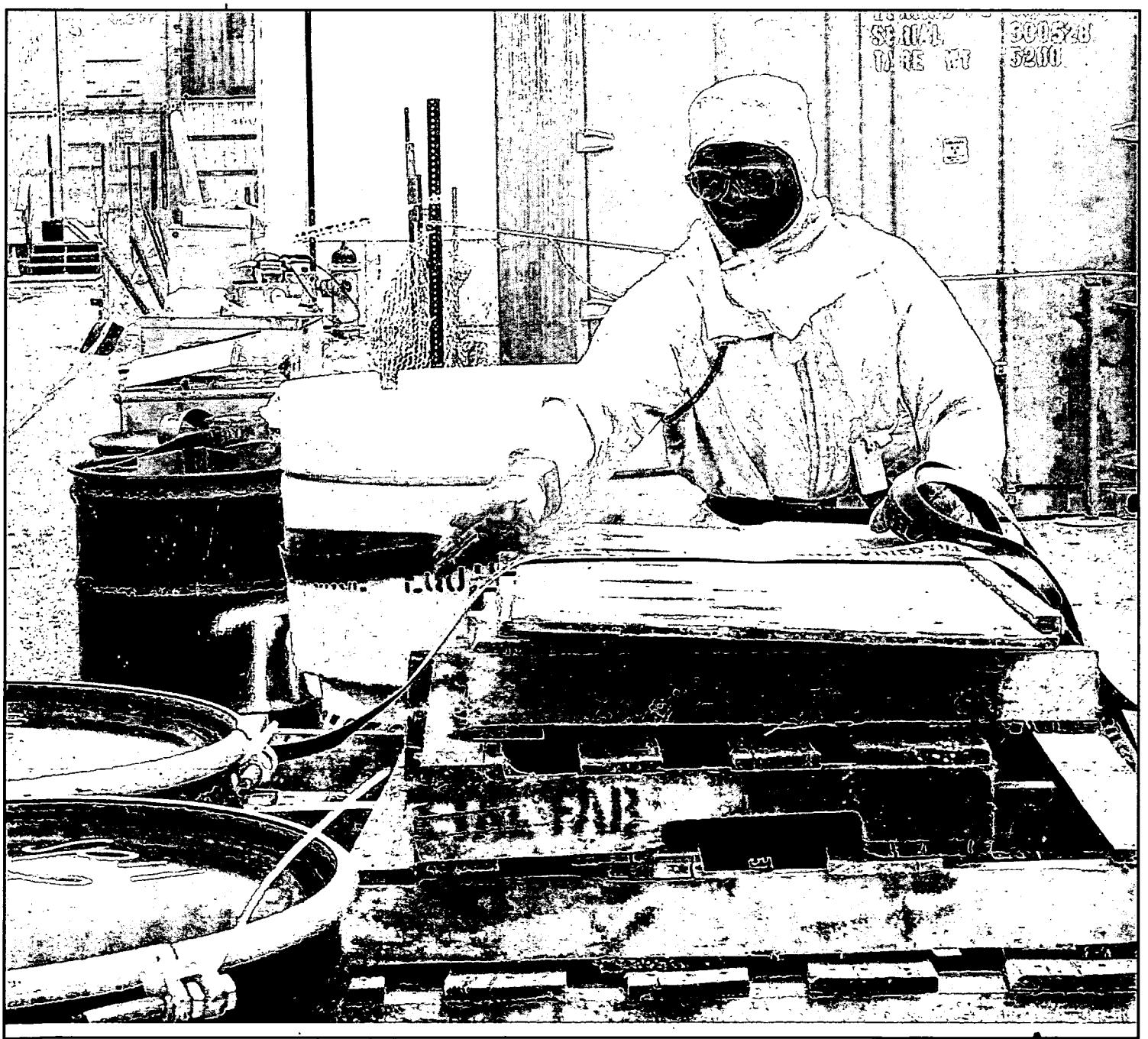
fernald 2427
Report
July 1999

Inside

- Truck shipments to NTS resume
- Pit excavation to begin
- Crew documents worker & neighbor accounts of plant



message from
Jack Craig

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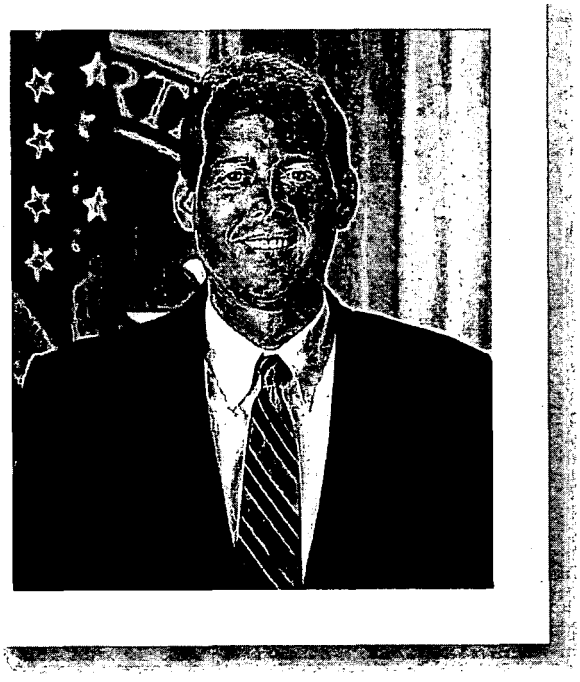
Fernald shipments resume to the Nevada Test Site



I am pleased to announce we are back on track with shipping low-level waste to the Nevada Test Site. After making improvements to our waste shipping program, DOE-Nevada and the Ohio Field Office gave approval to restart shipments to Nevada. Elected officials from Nevada and Ohio and citizen groups were consulted prior to resuming these shipments.

In response to Nevada stakeholder concerns, Fernald restarted the waste shipments using a northern route that was selected by motor carriers working in conjunction with DOE. This route, while adding some extra mileage to the trip, avoids the Hoover Dam and the Las Vegas area. The first shipment to leave our site for Nevada contained one Sealand container on a flat-bed trailer. The large metal Sealand box contained contaminated trash and empty T-Hopper receptacles previously used to transport low-level radioactive materials to other DOE sites.

It is estimated that future clean-up activities at Fernald will generate about 110 million cubic feet of radioactive waste. Approximately 80 percent of this waste will be placed in our On-Site Disposal Facility. Of the remaining waste to be sent off-site, approximately 17 percent will be disposed of at the NTS in the coming years.

Jack Craig
Director, DOE-Fernald

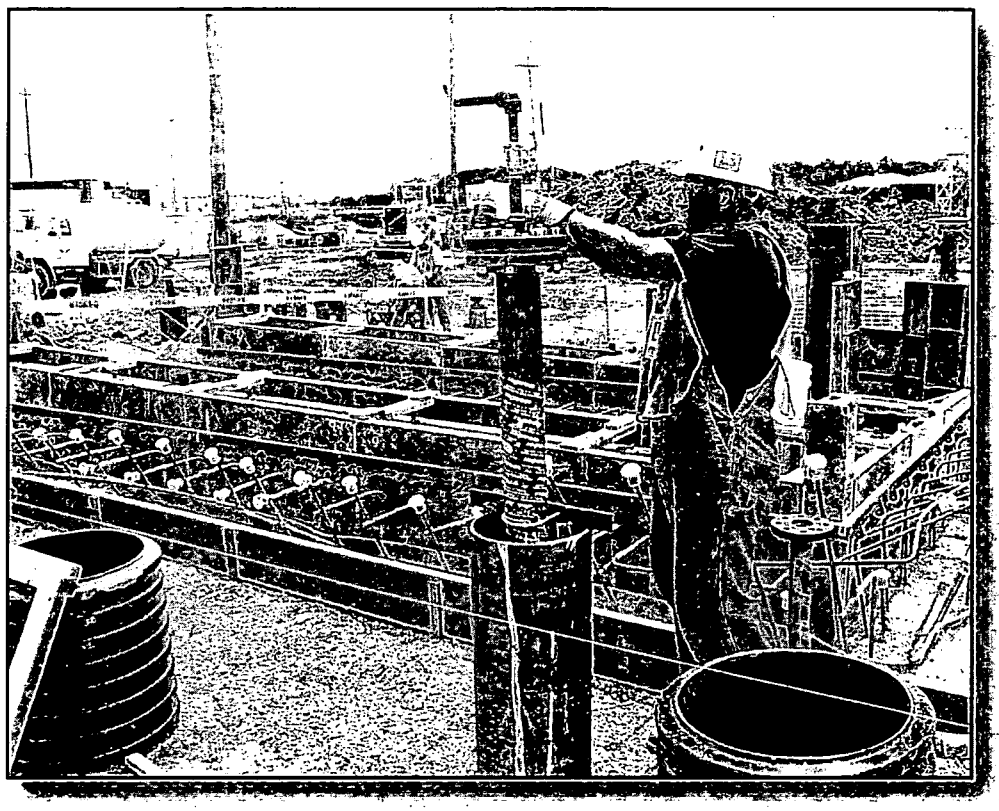
On the cover: *Jeff Neal, prepares material to be placed into a low-level waste ISO shipment container (7168-d10).*

Pit excavation nears

This summer, the Waste Pits Project will begin excavating the 37-acre waste pit area, which contains more than 1 million tons of soil and material contaminated with uranium, thorium, and radium.

According to Dave Lojek, DOE Waste Pits Project manager, the project has gained valuable field experience over the last few months to safely excavate the waste pits. "We've worked very hard with the regulators, contractors and stakeholders to make sure every piece of this project is in place to begin pit excavation, " Lojek said. "IT's treatment facilities are about complete, railcar loading operations are running smoothly and rail shipments to Envirocare are continuing at a steady pace."

The final step is to pass an internal standard startup review of the project. Once the review is complete, IT Corp. will begin excavating the material covering Pit 3 which does not require drying, and then proceed into the heart of Pits 3, 1 and 2 in that order. The sequence of excavation was selected to ensure a proper blend of moisture and radioactive constituents to meet Envirocare's waste acceptance requirements. About 3,000 to 5,000 tons will be excavated per week to meet IT's railcar loading rate of 25 railcars per week. Industrial hygiene and radiological technicians will continue to monitor and assess personal protective equipment requirements for workers, radiological particulate air sampling activities, and project-specific radon monitoring. Later this summer, IT Corp. will initiate full-scale operations of its treatment facilities.

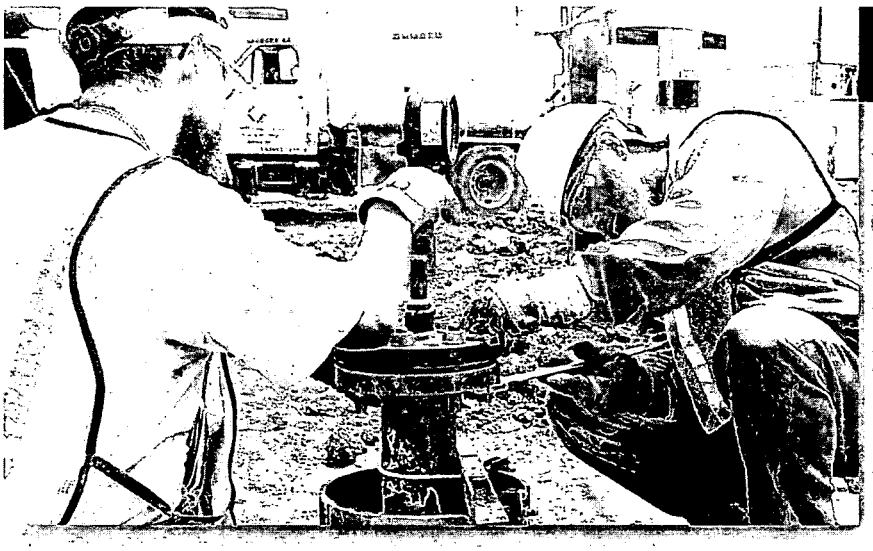


Above: Workers are constructing a truck washing facility adjacent to the pit area to minimize the spread of contamination during excavation. A collection sump will transfer the water to the Clearwell (6944-d838).

Silos project public involvement

The next 18 months will be an extremely important period for the Silos Project, with plenty of opportunities for public involvement. This period began with the recent release of the four *Proof-of- Principle Testing* Reports to regulators and stakeholders. It continued with the July 13th Cleanup Progress Briefing, which featured all three aspects of the Silos Project—Silo 3, Accelerated Waste Retrieval, and Silos 1 and 2. The public discussion of the *Proof-of-Principle* Reports was especially important. The technical information in these reports will be the foundation of the *Revised Feasibility Study/Proposed Plan (FS/PP) for Silos 1 and 2,* which is due in draft form to the regulatory agencies on February 1, 2000. Public briefings on the FS/PP will be held in September and November 1999 to gather stakeholder input as the draft is being prepared. After regulatory comments are incorporated and the draft final version of the FS/PP is submitted, a 45-day public comment period will ensue and a public hearing will be held, leading to the submittal of the *Draft Record of Decision Amendment* to the regulatory agencies by December 28, 2000. Stakeholders are strongly encouraged to review the *Proof-of-Principle Testing* Reports, attend all upcoming Silos Project public involvement meetings and to make use of every opportunity to provide input to project management.

Cleanup **Progress** Update



Waste Pits Remedial Action Project (WPRAP)

- Shipped fourth unit train to Envirocare of Utah on June 16 (see new "Fernald Shipments" section on page 7 for details)
- Completed excavation of Soil Pile 6 and began excavation of Soil Pile 7
- Continued loading waste into railcars in anticipation of fifth unit train shipment scheduled for early July
- IT Corp. continued construction of remaining waste processing facilities and training of site personnel for full operations

Above: Pipe fitters for IT hydro-test piping at the truck wheel washing area (6944-D835).

Right: Pipe fabrication in the Gas Control System building (6944-D847).

Far right: OSDF operator is busy shaping the stone stockpile (6319-D1999).

On-Site Disposal Facility (OSDF)

- Received Ohio EPA approval to resume waste placement in Cell 1 on June 29
- Continued clay screening in Borrow Area, stockpiling approximately 73,000 tons of the 80,000 tons required for Cell 3 construction
- Continued Cell 3 construction
- Continued designing Permanent Leachate Conveyance System

Demolition Projects (DP)

Facilities Shutdown

- Completed shutdown of Burn Pad
- Began shutdown of Building 63

Decontamination & Dismantlement (D&D)

- Plant 5 Complex —
  - D&D subcontractor, MACTEC, Inc., continued pre-mobilization activities
- Maintenance/Tank Farm Complex and Water Storage Tank Project —
  - Continued D&D of Building 12A, including exterior transite removal, structural dismantlement and building washdown/lockdown
  - Continued installation of underground water lines for the water storage tank

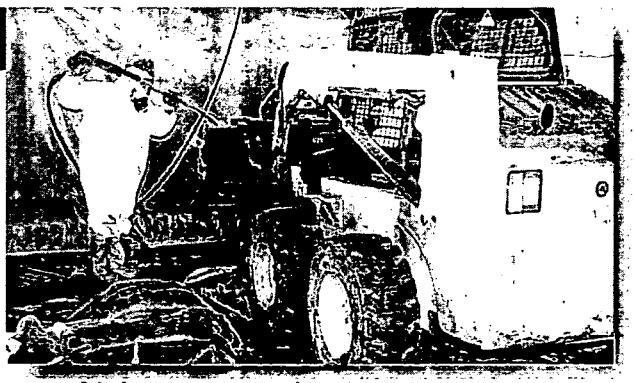
Left: NSC crews shear a locomotive that was once used to shuttle railcars around site (7118-D68).

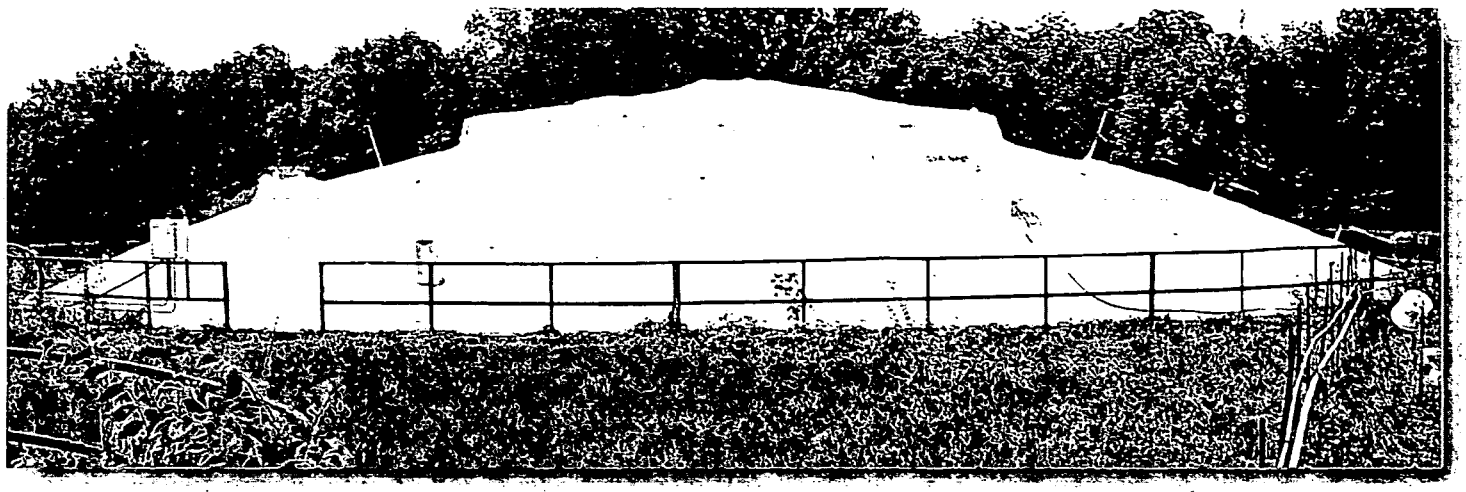
Below left: An operator washes residue off of shop equipment that was used in Building 12A (7118-D52).

Below: A view of the Silo following the dome seal repairs (7098-D156).

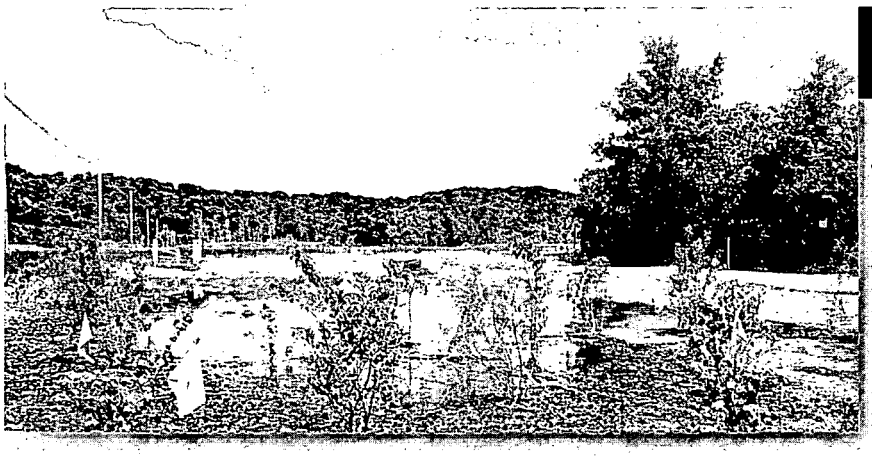
Silos Project

- Completed dome seal repair on Silos 1 and 2
- Finalized vendor test reports for *Silos 1 and 2 Proof-of-Principle Testing*, and made reports available to regulators and stakeholders
- Conducted briefing for regulatory agencies on conceptual designs for both Silo 3 Project and Accelerated Waste Retrieval Project





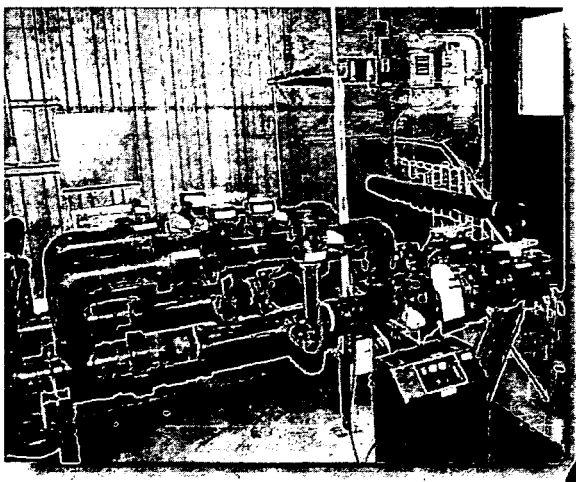
Cleanup **Progress** Update



Top:Native vegetation planted to provide food and habitat to wildlife species (7081-D73).

Center: A pressure test is conducted on a piping manifold in the AWWT Lab Expansion project (7120-D39).

Below: A view of the ozone injection system, piping and controls at the Storm Water Retention Basin (7143-D01).



Aquifer Restoration/ Wastewater Project

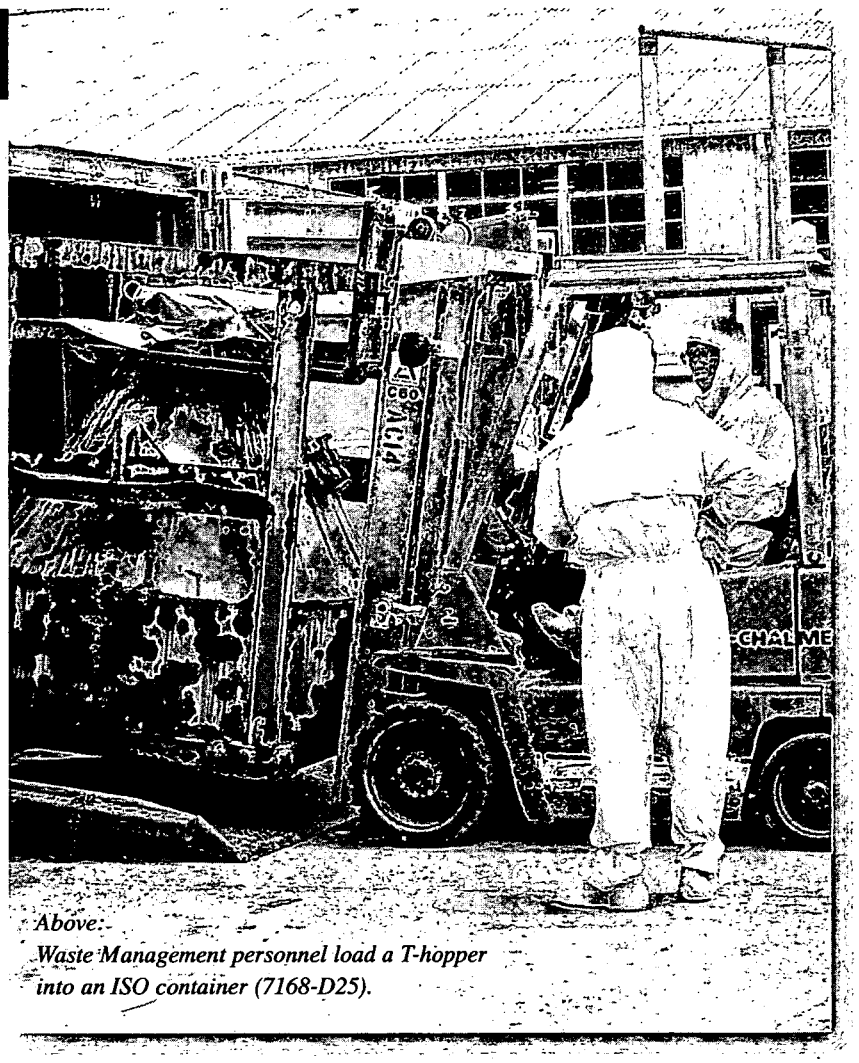
- Continued construction of Sludge Removal System at Stormwater Retention Basin and Biosurge Lagoon; activity 97 percent complete as of June 30
- Continued Advanced Wastewater Treatment Laboratory Expansion construction
- Continued preliminary design of additional extraction wells for South Field Extraction System

Soil Characterization & Excavation Project

- Area 2 Phase I — Southern Waste Units
  - ◆ Mobilized subcontractor on June 21 and began site preparation work for stabilization of lead-contaminated firing range
- Area 1 Phase II — Southern portion of East Field
  - ◆ Mobilized subcontractor for stabilization of Trap Range area
  - ◆ Completed initial construction activities associated with old Sewage Treatment Plant, and began excavation of soil and structures
- Area 2 Phase III — south central portion of Fernald site
  - ◆ Began certification sampling June 28
- Natural Resource Restoration
  - ◆ Completed planting in Area 8 Phase I vegetation plots
  - ◆ Completed Wetland Mitigation Project spring planting; fall planting will begin in September
  - ◆ Issued *DOE Responses to Public Comments on the Environmental Assessment for Final Land Use at the FEMP*

Waste Management Projects

- Low-Level Waste Shipping —
  - Resumed truck shipments to Nevada Test Site June 28; shipment consisted of one Sealand container filled with empty T-Hopper containers and contaminated trash (see new "Fernald Shipments" section for details)
- Thorium Legacy Waste Project —
  - Repackaged 24 boxes of low-level waste for shipment to Nevada Test Site
  - Segregated three boxes of mixed waste for storage and treatment
  - Total of 342 boxes repackaged and 59 boxes segregated
- Nuclear Materials Disposition —
  - Continued repackaging of 14,500 10-gallon cans of depleted uranium tetrafluoride (UF_4) for shipment to DOE-Oak Ridge; total of 287 of an estimated 540 boxes repackaged as of July 1
  - Initiated movement of Fernald's uranium to DOE-Oak Ridge's Portsmouth, Ohio site on June 2; 34 shipments made as of June 30

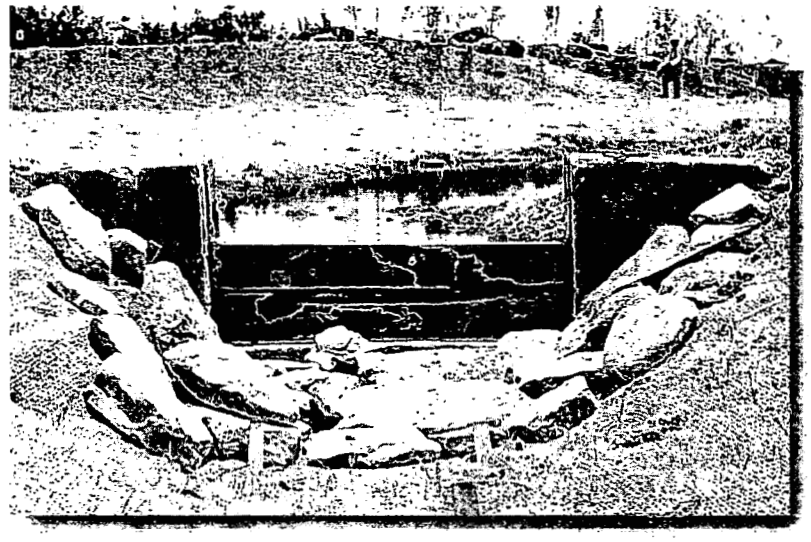


Above:
Waste Management personnel load a T-hopper into an ISO container (7168-D25).

Fernald Shipments — June 1999

Contents - Destination	Shipment Mode	No. of Shipments	Monthly Total	FY99 Total
Low-Level Waste - Nevada Test Site	Truck	1	1,349 cu. ft.	1,349 cu. ft.
Liquid Mixed Waste - Toxic Substance Control Act (TSCA) Incinerator at Oak Ridge	Tanker	1	3,710 gal.	21,419 gal.
Nuclear product/materials - Portsmouth	Truck	34	947,012 net lbs. or 325.6 metric tons uranium	947,012 net lbs. or 325.6 metric tons uranium
Waste Pits Projects - Envirocare of Utah, Inc.	Rail	1 Train (47 railcars)	5,069 tons	21,872 tons (203 railcars)

Historic Wetland Re-construction at Fernald



Above: A look at one of the water control devices that is being used to adjust water levels to allow hydrology within the wetlands.

During remediation activities at Fernald, approximately 10 acres of wetlands were damaged or destroyed. Over the course of site restoration, the DOE is required to replace 15 acres (1.5 acres of wetland replacement for every 1 acre of wetland destroyed).

The Wetland Mitigation Project located in the northeast corner of the site began in April. The first phase was completed in July. What was once a pasture has now been converted to a 12-acre ecosystem containing eight basins connected by gravity flow streams with a variety of vegetative cover (forest, shrubland, prairie, marsh) to support dry and wet conditions. The wetland portion of the ecosystem includes approximately seven acres and is designed to utilize native vegetation which will provide food and habitat to various wildlife species (fox, muskrat, frogs, dragonflies). Aquatic life has already been observed in the stream channels and deep water areas. Fall planting will begin in September and the project is expected to be completed in early November.

"We are in the process of re-constructing natural history at Fernald. The goal of this ecological restoration project is to re-establish a functional ecosystem that contains sufficient species richness and community structure to continue its maturation by natural processes," said Craig Straub, Fluor Daniel Fernald restoration ecologist. The intent of the project is to mimic a wetland that was historically present on the landscape. Prior to deforestation for agriculture, wetlands were situated within gently rolling high flatlands. These wetlands were forest covered and contained various pocketed configurations of shrub, prairie and marsh. The high flat wetlands were drained with field tiles as agriculture expanded.

Native plant species and communities adapt to living in environments they originally inhabit. For this reason only woody and herbaceous plant species known to be native to Hamilton and Butler Counties and with recorded ranges immediately adjacent to these two counties were selected.

The system was designed to appear natural within two to four years of completion. Full cover of woody communities is not expected for ten years and maturity of forest canopy is not expected for over thirty years. Some wildlife species which are expected in the first two years include fox, muskrat, songbirds, ducks, frogs, turtles, snakes and dragonflies.

Above: Direct-push sampling provides a cost effective means of documenting the changes as the plume size decreases. (7131-D09).

Technology helps define contaminated plume

In July 1998, ten extraction wells which make up the South Field Extraction System began pumping contaminated groundwater to the Advanced Wastewater Treatment facility before discharging to the river. The Aquifer Restoration Project routinely collects groundwater samples to track the progress of the restoration. A method of collecting groundwater samples called direct-push sampling has been found to be efficient and cost effective.

The benefit of using a direct-push sampling tool rather than a conventional monitoring well is that groundwater samples can be collected at several depths throughout the aquifer as the tool is being pushed deeper -- a conventional monitoring well only samples one depth. A small diameter rod is pushed into the ground to provide temporary sampling points. The concentration of contamination measured at several different depths is used to identify the concentration profile for the contaminant plume. Data recently collected using a direct-push sampling tool were used to refine the definition of the eastern edge of the total uranium plume in the South Field Area. The revised plume definition indicated the need to install two additional extraction wells to help maintain the accelerated aquifer restoration schedule. Drilling is expected to begin this calendar year.

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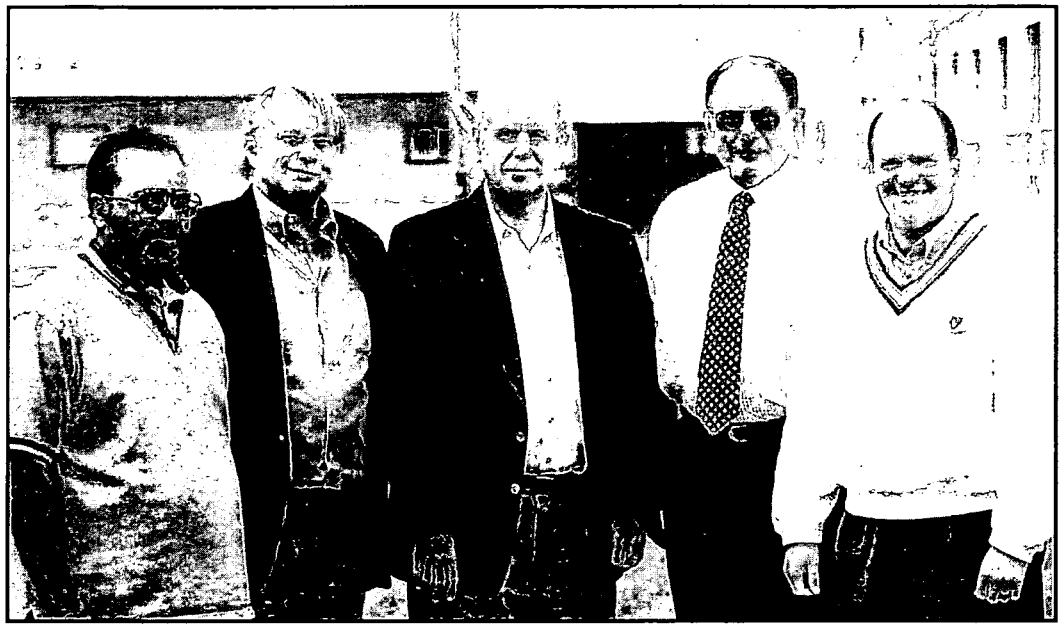
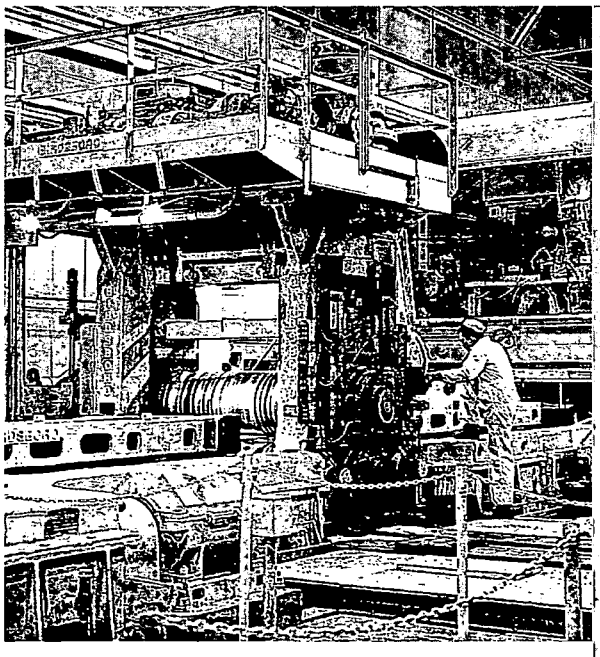
Fernald welcomes Zimmer

As June began, a chapter in the Greater Cincinnati Building Trades Council came to a close. Jerry (Moose) Monahan, former President and Executive Secretary, decided it was time to retire. During his 14 years as Executive Secretary he was instrumental in establishing a project labor agreement at Fernald and also won a medal of commendation from former president George Bush for coordinating a large union volunteer event. "Jerry has provided a career of selfless dedication, possessing a unique combination of strength, compassion, and statesmanship," said Joe Zimmer, Monahan's replacement.

Prior to assuming the position of Executive Secretary, Zimmer served as the business agent/organizer for the Sheet Metal Workers and treasurer for the Building Trades for the last eight years. Joe's other responsibilities include serving as a trustee for both the Joint Apprenticeship & Training Committee and the Health & Welfare Committee.



Above: From left to right: Harry Richardson, business agent, Building Trades; Joe Zimmer, executive secretary, Building Trades; Jerry Monahan; John Bradburne, president and CEO, Fluor Daniel Fernald; Glenn Griffiths, DOE deputy director (7138-D01).



Above: Former Plant 6 Rolling Mill in production (89-156)

Health study results are released

At a recent Fernald Health Effects Subcommittee meeting, two reports were released pertaining to potential health effects of the Fernald Feed Materials Production Center on residents in the surrounding community.

The *Draft Phase II Fernald Risk Assessment* study conducted by the Centers for Disease Control contains screening level estimates of the lifetime risk of four different types of cancer that may have occurred or may occur as a result of radiation-related exposures.

In addition, The University of Cincinnati College of Medicine discussed their findings in the *Cancer Incidence Findings of the Fernald Residents Medical Monitoring Program* report. Using data from the medical monitoring program from the last four years, the "actual" number of new cancer cases was compared to a calculated "expected" number of cases.

For more information on these specific reports or on the committee in general, contact Dr. David Pedersen, National Institute for Occupational Safety and Health at 513-841-4400.

School's out - already?

It's not just the teachers and parents who reflect on the school year gone by, so do all those team members involved in Fernald's Education Outreach Programs. Since the beginning of the 1998-99 school year, these programs have reached 10,000 educators and their students.

This year the Department of Energy sponsored the eighth annual Regional Science Bowl and published *A Resource Guide for the Science Classroom.* Weekly requests were also made for a variety of speakers in the classrooms and through programs like National Engineers Week and Junior Achievement.

Teachers enhanced their skills by attending workshops sponsored by Fernald. Excess equipment got a new home in classrooms throughout the area thanks to the Fernald Gift Program. There's more! Team members also volunteered for the Partnership In Education Program, served as judges for Science Fairs and represented Fernald at events such as Earth Day, Waterfest and Career Days. No wonder the school year flew by! As we take a short break over the summer, it will soon be time to gear up for more exciting programs come September.

Above: Cathy Glassmeyer, process engineer for Wastewater Treatment Operations demonstrates a groundwater model to students from Fillmore Elementary during a Career Day presentation. (7124.d032).

Above: Here Gene Branham, vice-president, Fernald Atomic Trades & Labor Council reflects on his experiences from over 40 years of service (7176-d05).

The Fernald Living History Project hits halfway point

This past April, a crew from Fernald began videotaping interviews for the Fernald Living History Project (FLHP), a community effort to record the human history of the site and surrounding communities and help preserve the history of the Cold War for future generations. The goal for this first phase of the project is to collect 100 interviews with current workers, retirees, former workers and neighbors who wish to share their personal stories and experiences. "Our volunteer advisory group has dedicated much time and careful planning to this project," said FLHP chair Jim Innis. "We hope that people will use this opportunity to freely speak on their feelings about living near, or working at the Fernald site. Personal experiences are a valuable part of this history." The week of July 5th, the crew hit the halfway point when they conducted the 50th interview. So far, 18 community members, 20 retired workers, 5 former workers, and 7 current workers have volunteered to share their stories.

Direction for the project is provided by a volunteer advisory group, which includes community members, representatives from area universities, the Ohio Environmental Protection Agency, the U.S. Department of Energy, and Fluor Daniel Fernald. For more information on the Fernald Living History Project, visit Fernald's web site at www.fernald.gov or contact the FLHP chair, Jim Innis, at (513)738-8764. The FHLP has a new address: P.O. Box 235, Harrison, Ohio 45030-0235.

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Recent Tours

The Hamilton County Environmental Action Commission toured the Fernald site on June 3, 1999. After the tour, Terry Harris, chairman, said, "The tour was very informative for everyone in our group. It allowed me to observe first-hand that DOE has a really good handle on site operations and that the actual risk from the site is quite minimal. DOE's success in securing community involvement in the site's decision-making process, serves to make the Fernald cleanup an excellent role model for other contaminated sites across the country to follow."

Right: Glenn Griffiths (far right), DOE deputy director, welcomed the group and gave them a brief history of the site before the tour (6810-D219).

Students from Professor Greenberg's Environmental Science class from Miami University toured the Fernald site in June.

Left: Professor Greenberg's (far right) summer class is an introductory environmental science course that includes field trips which helps students gain a better perspective on environmental problems and the cleanup solutions. (6810-D220).

The Miami Valley Society of Hazardous Materials Managers held their June meeting at Fernald which included a tour of the site.

Right: Through the Academy of Hazardous Materials Managers members have the opportunity to learn other aspects of the environmental business, keep up with the industry news and network with other environmental professionals. (6810-D222).

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BULK RATE

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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 Project
  - Draft Final Waste Pits Remedial Action Project (WPRAP) Remedial Action Package
- Soil Characterization & Excavation Project
  - Project Specific Plan for Area 2, Phase I South Field Excavation Characterization
  - Project Specific Plan for Area 2, Phase III Part One Certification Sampling
- Project Support Services
  - Operable Unit 3 Completion Report Decontamination of HWMU No. 50 – UNH Tanks, Hot Raffinate Building and HWMU No. 28 – Trane Incinerator
  - Advanced Conceptual Design for the At- and Below-Grade Remediation of the Former Plant Area
- Silos Project
  - Chem-Nuclear Systems Proof of Principle Testing Final Report (Silos 1 and 2)
  - Fluor Daniel Fernald Proof-of-Principle Test of Joule-Heated Vitrification Final Report; Envitco, Inc.
  - Fernald Operable Unit 4, Silos 1 and 2 Proof of Principle Demonstration Final Report from IT Corp.
  - Silo 1 and 2 Proof of Principle Project Final Report from Vortec Corp.
- Miscellaneous
  - National Emissions Standards for Hazardous Air Pollutants (NESHAP) Annual Report
  - 1998 Integrated Site Environmental Report
  - Identification and Control of Invasive Plant Species – 1998 Annual Report – Ohio University
  - Annual Report to the Public on the Fernald Environmental Management Project Prepared by the Ohio Environmental Protection Agency Office of Federal Facilities Oversight
  - Project Completion Report for Recycling Supplemental Environmental Projects

Fernald Report
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