



## FRIDAY MAILING

2/13/98

### INCLUDED IN THIS MAILING ARE:

- Quick Reference Packet: Operable Unit Two
- Quote from "Putting Customers First '97: Standards for Serving the American People" by President Bill Clinton and Vice President Al Gore
- Draft Agenda for the March 14, 1998, Fernald Citizens Advisory Board Meeting
- Newsclippings

### CAB MEETINGS:

- JOINT FERNALD CITIZENS ADVISORY BOARD/FRESH WORKSHOP ON GOVERNMENT PROCUREMENT PRACTICES:** This workshop will be held on February 25, 1998, from 7:00 to 9:00 p.m. The location is to be announced.
- FERNALD CITIZENS ADVISORY BOARD MEETING:** The next meeting of the Fernald Citizens Advisory Board will be held on Saturday, March 14, 1998, at 8:30 a.m. in the Alpha Building, 10967 Hamilton-Cleves Highway.

### OTHER MEETINGS:

- COMMUNITY REUSE ORGANIZATION MEETING:** The CRO will meet on Tuesday, March 3, 1998, at 6:30 p.m. in the Ross High School Media Center, 3425 Hamilton-Cleves Highway.
- FERNALD CLEANUP PROGRESS BRIEFING:** The March Fernald Monthly Cleanup Progress Briefing will be held on Tuesday, March 10, 1998, at 6:30 p.m. in the Alpha Building.

### QUESTIONS:

Please call John at [REDACTED] or Doug at [REDACTED] with questions or concerns. You may also fax or e-mail us at:

John      Fax: 281-3331  
Doug      Fax: 648-3629

E-Mail: [john.applegate@law.uc.edu](mailto:john.applegate@law.uc.edu)  
E-Mail: [REDACTED]



FERNALD  
CITIZENS  
ADVISORY  
BOARD

## MEMORANDUM

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**TO:** Citizens Advisory Board Members  
**FROM:** Doug Sarno  
**SUBJECT:** OU2 Quick Reference Packet

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**DATE:** February 6, 1998

In our continuing effort to keep the CAB up-to-date on operations at Fernald, we are providing quick reference sheets to outline activities in each operable unit since the ROD. This month's focus is Operable Unit Two.

Doug

# Quick Reference: Operable Unit 2 Activities

1286

As of January 1998



**June 1995** -- OU2 ROD signed

**August 1995** -- GeoSyntec awarded design contract for OSDF (On-Site Disposal Facility).

**June 1996** -- Pre-Final Design Package and Draft Final Remedial Action Work Plan for OSDF submitted to EPA and OEPA.

**September 1996** -- Testing and demolition associated with the test Pad Program completed.

**October 1996** -- Final OSDF design package was submitted to USEPA and OEPA.

-- Contract to construct the North Entrance Road and Haul Road awarded to Barrett Paving Materials, Inc.

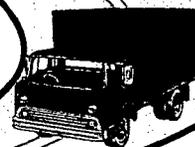
-- RFP for Phase 1 construction of the OSDF issued.

**April 1997** -- Contract for Phase 1 construction of the OSDF awarded to Petro Technologies, Inc.  
-- Villiage Building Services began construction of the Leachate Conveyance System (LCS).

**February 1997** -- Construction of Haul Road begun.

**June 1997** -- OSDF Phase 1 construction begun by clearing and grubbing of the pine stand in the northwest corner of the OSDF footprint.

**July 1997** -- Current North Access Road closed in support of Phase 1 construction.  
-- Construction of Relocated North Access Road begun.  
-- Cell 1 excavation begun in preparation for liner installation.  
-- Construction of the sediment basin for OSDF Phase 1 completed.

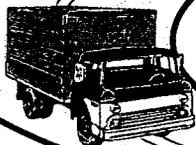


**August 1997** -- Excavation of Cell 1 liner completed.  
-- Installation of cell 1 horizontal perched groundwater monitoring well and Cell 1 compacted clay liner initiated.  
-- Excavation of Cell 2 begun.

**September 1997** -- Installation of Cell 1 horizontal perched groundwater monitoring well completed.  
-- Portion 2 cell excavation completed.

**October 1997** -- Installation of Cell 1 compacted clayliner completed.  
-- Installation of Cell 1 secondary composite liner initiated.  
-- Installation of southern and eastern portions of LCS completed.  
-- Relocated North Entrance Road Paving, shoulder work, and painting completed; road reopened.

**November 1997** -- Asphalt paving, shoulder work, and painting to finish Haul Road completed.



**December 1997** -- Installation of Cell 1 secondary and primary composite liners, leak detection system, leachate collection system, and protective cover completed.  
-- Standard Startup Review performed.  
-- First placement of impacted material.

## Next Steps:

- Complete remediation of Southern Waste Units (1998)
- Complete remediation of Lime Sludge Ponds and Solid Wastes Landfill (after 2000)



# Quick Reference: Operable Unit 2 Activities

*As of January 1998*

<u>DATE</u>	<u>ACTIVITIES</u>
June 1995	OU2 ROD signed.
August 1995	GeoSyntec awarded design contract for OSDF (On-Site Disposal Facility).
May 1996	<ul style="list-style-type: none"> <li>• Preliminary Design Package for Waste Unit Remediation, Pre-Final Design Package for Haul Road, and Draft Remedial Action Work Plan for Haul Road sent to Agencies.</li> <li>• Pre-Design Field Investigation completed.</li> <li>• OSDF Test Pad initiated.</li> </ul>
June 1996	Pre-Final Design Package and Draft Final Remedial Action Work Plan for OSDF submitted to EPA and OEPA.
September 1996	<ul style="list-style-type: none"> <li>• All testing and demolition associated with the Test Pad Program completed.</li> <li>• Maintenance of the Active Flyash Pile washout initiated.</li> </ul>
October 1996	<ul style="list-style-type: none"> <li>• Final OSDF design package was submitted to USEPA and OEPA.</li> <li>• Contract to construct the North Entrance Road and Haul Road awarded to Barrett Paving Materials, Inc.</li> <li>• RFP for Phase I construction of the OSDF issued.</li> <li>• Periodic maintenance of the Active Flyash Pile washout completed.</li> <li>• Construction of modifications to the seepage control system in the South Field completed.</li> </ul>
December 1996	<ul style="list-style-type: none"> <li>• Preparation of the East Field for installation of groundwater monitoring wells for Cells 1 and 2 of the OSDF completed.</li> <li>• 90% Design Package for the OU2 Southern Waste Units submitted to DOE.</li> </ul>
January 1997	<ul style="list-style-type: none"> <li>• Design of Haul Road and rerouted North Entrance Road was approved by OEPA.</li> <li>• Installation of four Type 2 groundwater monitoring wells for Cells 1 and 2 of the OSDF initiated; two eastern wells were completed.</li> <li>• Agencies' comments to the 90% Design Package for the OU2 Southern Waste Units addressed.</li> </ul>

- February 1997** Construction of Haul Road begun.
- March 1997**
- OSDF Groundwater/Leak Detection and Leachate Monitoring Plan submitted to Agencies.
  - Clearing and grubbing for construction of the Haul Road completed.
- April 1997**
- Contract for Phase I construction of the OSDF awarded to Petro Technologies, Inc.
  - OSDF construction begun.
  - Village Building Services began construction of the Leachate Conveyance System (LCS).
- June 1997**
- OSDF Phase I construction begun by clearing and grubbing of the pine stand in the northwest corner of the OSDF footprint.
  - Preparations made for the construction of the Relocated North Access Road.
  - Draft Site Preparation Plan for Area 2, Phase I and the Certified for Construction Drawings Area 2, Phase I submitted to Agencies.
  - Procurement process for awarding the site preparation contract for the Southern Waste Units initiated.
- July 1997**
- Current North Access Road closed in support of Phase I construction.
  - Construction of Relocated North Access Road begun.
  - Cell 1 excavation begun in preparation for liner installation.
  - Construction of the sediment basin for OSDF Phase I completed.
  - LCS lines installed in the areas of the Vitrification Pilot Plant Access Road, the Haul Road, and the trailers west of the main FEMP parking lot.
  - Technical report containing updated flood routing modeling for Paddy's Run and revised cross-sections showing flood elevations and groundwater elevations issued to Agencies.
  - Field sampling activities under the Project-Specific Plan for Area 2, Phase I Site Preparation Areas Sampling initiated.
- August 1997**
- OSDF Groundwater/Leak Detection and Leachate Monitoring Plan submitted to Agencies.
  - Excavation of Cell 1 liner completed.
  - Installation of Cell 1 horizontal perched groundwater monitoring well and Cell 1 compacted clay liner initiated.
  - Excavation of Cell 2 begun.
  - WAC Attainment Plan submitted to Agencies.
  - Response to comments on Remedial Action Work Plan submitted to Agencies.
  - Pressure testing on installed leachate lines performed.
  - Work on southern and eastern sections of the LCS begun.
  - Drainage culverts for Relocated North Entrance Road installed.

- September 1997**
- Design of Haul Road and Rerouted North Entrance Road was approved by USEPA.
  - Installation of Cell 1 horizontal perched groundwater monitoring well completed.
  - Portion of Cell 2 excavation completed.
  - Gravel base/geotextile for Relocated North Entrance Road and portions of Haul Road installed.
- October 1997**
- Installation of Cell 1 compacted clay liner completed.
  - Installation of Cell 1-secondary composite liner initiated.
  - Installation of southern and eastern portions of LCS completed.
  - Final testing of leachate lines initiated.
  - Relocated North Entrance Road paving, shoulder work, and painting completed; road reopened.
  - Asphalt paving on southern and northern portions of Haul Road begun.
- November 1997**
- Installation of Cell 1 secondary composite liner and leak detection system begun.
  - Installation of Cell 1 primary composite liner initiated.
  - Electrical instruments for Manholes 1, 2, 3, and Permanent Lift Station installed.
  - Preparation for Integrated Construction Acceptance Testing and Systems Operability Testing begun.
  - Asphalt paving, shoulder work, and painting to finish Haul Road completed.
- December 1997**
- Installation of Cell 1 secondary and primary composite liners, leak detection system, leachate collection system, and protective cover completed.
  - Standard Startup Review performed.
  - First placement of impacted material.
  - Closed out Relocated North Entrance Road and Haul Road projects:

**Next Steps:**

- Complete remediation of Southern Waste Units (1998).
- Complete remediation of Lime Sludge Ponds and Solid Waste Landfill (after 2000).

# Operable Unit 2

## *On-Site Disposal Facility Project and Soil Characterization Excavation Project*

March 1997

### **Operable Unit 2**

Operable Unit 2 -- the On-Site Disposal Facility Project and Soil Characterization and Excavation Project -- is one of five areas being remediated at DOE's Fernald Environmental Management Project (FEMP). Each operable unit was defined based on its location or the potential for similar technologies to be used in the ultimate cleanup.

Operable Unit 2 includes the Solid Waste Landfill, Lime Sludge Ponds, Inactive Fly Ash Pile, Active Fly Ash Pile, and the South Field Area. These areas were used to dispose fly ash from the boiler plant, spent lime from water treatment activities, sanitary waste, and construction rubble from past operations at the FEMP.

### **Remedial Design**

Design of the On-Site Disposal Facility (OSDF) is being performed under the Operable Unit 2 project. The OSDF will be located on the eastern side of the FEMP and will be designed to contain 2.5 million cubic yards of waste material from Operable Units 2, 3, and 5.

On Oct. 14, 1996, the final OSDF design package was submitted to the U.S. Environmental Protection Agency (EPA) and Ohio EPA. The design of the haul road and rerouted north entrance road was approved by U.S. EPA on Sept. 27, 1997, and by Ohio EPA on Jan. 22, 1997.

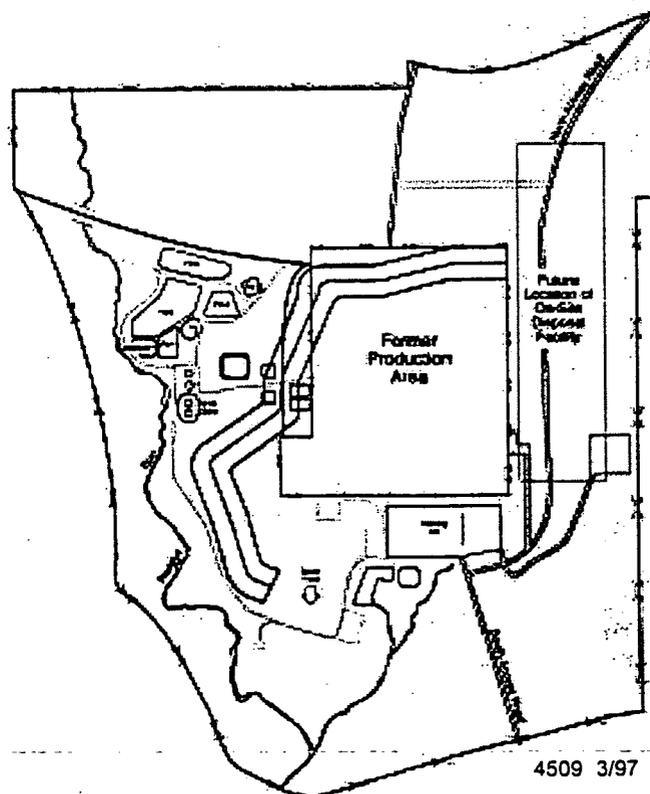
Due to the physical location of the Operable Unit 2 waste units to one another and to other remediation areas, the remedial action will be implemented in three separate pieces: Southern Waste Units (Inactive Fly Ash Pile, Active Fly Ash Pile, and South Field); Lime Sludge Pond; and Solid Waste Landfill.

The tentative excavation schedule for each of the separate remediation areas is:

- Southern Waste Units, 1998;
- Lime Sludge Ponds, after 2000;
- Solid Waste Landfill, after 2000.

The actual excavation schedules will be established when the prefinal design packages for each area are submitted to EPA.

LOCATION OF NEW HAUL ROAD TO ON-SITE DISPOSAL FACILITY



4509 3/97

# Operable Unit 2

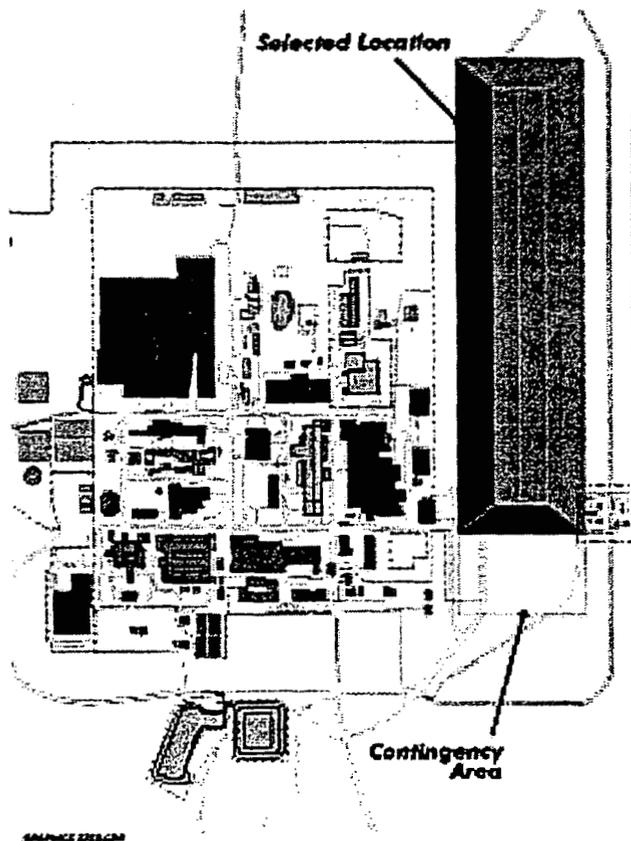
## Soil Remediation Project

### Remedial Action

On Oct. 14, 1996, the final remedial action work plan for the OSDF was submitted to U.S. EPA and Ohio EPA. On April 3, Fluor Daniel Fernald awarded Petro Environmental Technologies Inc. the contract for Phase I construction of the OSDF. Phase I includes constructing the liner in the OSDF's first cell. OSDF construction began in April 1997.

On April 7, Fluor Daniel Fernald authorized Village Building Services to begin mobilizing for construction of the OSDF's Leachate Conveyance System. Installation of telephone poles began April 8. Construction of the Leachate Conveyance System, which will carry leachate from the OSDF to the Bionitrification Surge Lagoon for eventual treatment at the Advanced Wastewater Treatment facility (AWWT), will be performed by Village Building Services Inc. and will begin in April 1997.

The contract to construct the haul road and the rerouted north entrance road was awarded to Barrett Paving Materials Inc. on Oct. 7, 1996, and construction of the haul road began in February 1997. Phase I construction of the rerouted north entrance road, which will run on the east side of the OSDF, is currently scheduled to begin in July 1997.



### For More Information

For specific questions regarding Operable Unit 1, contact Rod Warner, DOE-FEMP Operable Unit 2 branch chief, 513-648-3156; or send an e-mail message to [Rod\\_Warner@fernald.gov](mailto:Rod_Warner@fernald.gov).

For more information about the PEIC and its resources, call Rene Eichhold, 513-738-0164, or send an e-mail message to [Rene\\_Eichhold@fernald.gov](mailto:Rene_Eichhold@fernald.gov).



# BI-MONTHLY MEETING DRAFT AGENDA

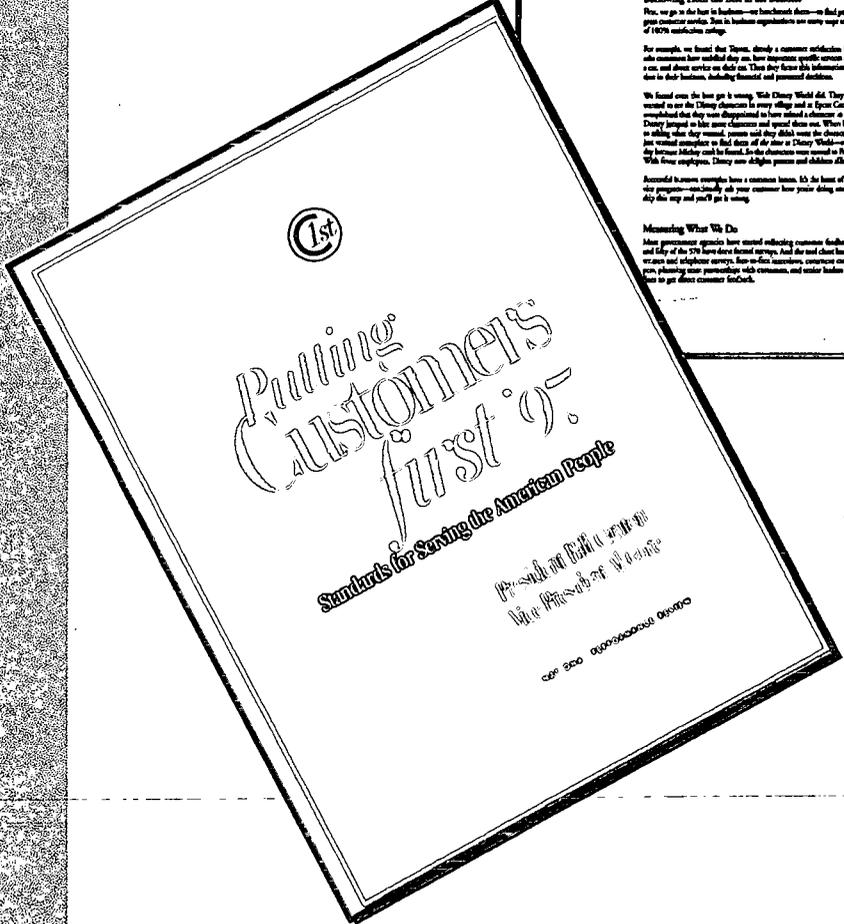
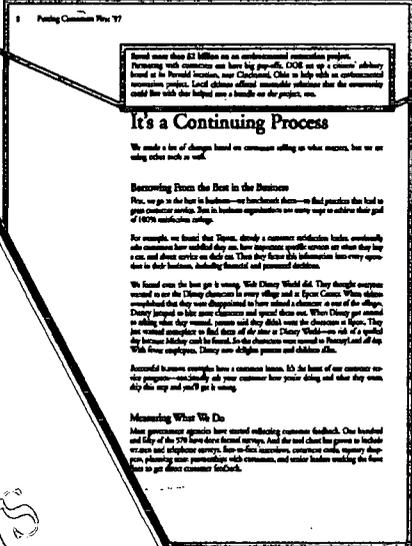
March 14, 1998

Alpha Building, 10967 Hamilton-Cleves Highway, Harrison, OH

8:30- 8:50 a.m.	Call to Order and Opening Remarks
8:50- 9:50	White Metal Box/Systems Discussion
9:50- 10:05	Copper Recycling
10:05- 10:15	Break
10:15- 11:00	Review of Past Recommendations
11:00- 11:15	Conflict of Interest Statement
11:15- 12:00	1998 Priorities and Schedule
12:00- 12:15	Committee Updates
12:15- 12:30	Public Comment
12:30 p.m.	Adjourn

# Fernald Citizens Advisory Board Cited in Presidential Report:

Saved more than \$2-billion on an environmental restoration project. Partnering with customers can have big pay-offs. DOE set up a citizens advisory board at its Fernald location, near Cincinnati, Ohio, to help with an environmental restoration project. Local citizens offered reasonable solutions that the community could live with, that helped save a bundle on the project, too.



January 26, 1998

Inside Energy

Page 1

"Stick With alm Plan, Board Tells DOE"

**STICK WITH ALM PLAN, BOARD TELLS DOE**

Assistant Secretary for Environmental Management Alvin Alm received a strong endorsement of his legacy at DOE last week, as an advisory board called upon the department to stick with his plan for accelerating the cleanup of contaminated nuclear-weapons facilities after he leaves office this week.

The Environmental Management Advisory Board unanimously approved a resolution supporting the plan, which calls for completion of cleanups at most of DOE's contaminated sites by the year 2006, as well as motions endorsing key components of the plan, such as privatization and technology deployment.

While the endorsement itself was not surprising, in light of the board's involvement in the plan's development, it was timely, with Alm scheduled to leave DOE Friday.

"The one thing the program needs now is stability and execution," EMAB Co-Chair David Bodde said after the board's meeting in Washington Wednesday. "We know what to do. We've got a reasonable plan."

"The underlying message at that meeting was concern over continuity," the board's other co-chair, Douglas Costle, said later. "There's been a lot of frustration over getting this

*(Continued on page 11)*

**STICK WITH ALM PLAN, BOARD TELLS DOE . . . . . begins on page 1**

program on a schedule, with milestones and accomplishments, so that work is actually getting done, instead of just policymaking."

"There's always concern in an agency when a new team arrives," Costle, chairman of the Institute for Sustainable Communities and former administrator of the Environmental Protection Agency, added. "The question is how to educate them so that they can interact intelligently."

Alm called the board's endorsements "very positive," and added that they "will be very helpful" in persuading his successor to stick with the so-called National 2006 Plan.

The board's votes followed several reports on a draft version of the plan, including one specifically warning DOE not to allow the new assistant secretary for environmental management to abandon Alm's strategy. As of last week, the White House had not decided on a replacement for Alm, who joined the department in 1996.

"[The year] 1998 will inevitably bring about substantial change for the EM program, not the least of which will be a transition to a new assistant secretary and key staff," a report from EMAB 2006 Strategic Planning Committee said. "Through this year, though, we foresee a need for continuity, to allow several components of the program time to mature — to be tried and improved upon rather than changed substantially."

Brian Costner, of the Energy Research Foundation in South Carolina, who chaired the 2006 Strategic Planning Committee, urged Alm to "get this message to your replacement as soon as possible, and ... in a

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way that gets his or her attention."

Alm proposed the 2006 Plan last year out of concern that Congress and the public eventually would lose interest in the cleanup program and cut funding for it. He reiterated last week that the program is more likely to receive continued support if it establishes clear and realistic goals for accelerating its work and completing as many of its projects as possible by 2006.

DOE plans to release a revised draft of the plan to Congress and the public in February or March, Alm said.

The report by Costner's committee applauded the plan's emphasis on specific projects, rather than the program's traditional focus on broad activities, and suggested that any changes should be kept to a minimum. "Although refinements may well be needed to improve the performance of the management system, for example, in [the] definition of projects and in DOE oversight, changes this year should be small, to provide time to adequately evaluate the system," the report said.

The plan's reliance on project management also was praised in another EMAB report examining that specific issue. "Pushing responsibilities and focus down to the project level is not only possible, but it is the right way to go," said the Integrated Planning, Accountability and Budgeting System Committee, which investigated activities at Fernald Environmental Management Project in Ohio and the Rocky Flats Environmental Technology Center in Colorado.

"As DOE picks the best contractors available to implement Plan 2006, the contractors (rather than the government employees) should in most cases provide 'project managers' at the site level," the report said. "... As we were hoping for, we did see clear indications that, at Fernald and Rocky Flats, this approach is in fact in place or clearly developing."

The committee, which was chaired by Joel Bennett, of Parsons Brinckerhoff Inc., offered advice on ways of improving project management, including making sure DOE allows contractors to hire enough qualified personnel to complete the cleanup activities and alleviate "severe restrictions" on security clearances, which the panel said are interfering with work at Fernald and Rocky Flats, and possibly at other sites.

EMAB also approved a resolution supporting efforts by the Environmental Management division to promote the deployment of new technologies needed for its projects, as well as a motion urging EM to hire personnel specialized in privatization.

Edgar Berkey, of Concurrent Technologies Corp., who chaired an EMAB committee which reviewed the technology-deployment initiative, said it had not received sufficient support among individuals managing DOE's cleanup projects. Berkey cited several reasons for the tepid response, including the belief among some managers that "the technologies being developed are not addressing their specific needs."

"It takes time," Berkey said of DOE's attempts to build support for the technology-deployment program, adding his committee found some progress. For example, officials working on high-level-waste technologies have done "an excellent job," he said. "Other focus areas have been successful to a lesser extent," he added.

Alm, however, stressed the urgency of implementing new technologies, especially in light of congressional criticism that the program has been a failure. "If we don't show some progress in deployment, first, we're not going to achieve the goals of the 2006 program, and we also risk losing the technology program. There are enough critics of the program and of the lack of deployment ...," he said.

An EMAB committee studying privatization criticized EM for beginning complex initiatives, such as the Tank Waste Remediation System project at the Hanford Site, without adequate foresight or expertise. The panel's report said it found "no DOE-wide (much less DOE/EM) policy to encourage or reward privatization," adding "procedural and cultural barriers exist."

The resolution on privatization approved by EMAB calls on EM to hire personnel familiar with contract, financial, insurance, labor, legal and other topics associated with such activities. Such personnel, committee members said, would work in conjunction with an existing department-wide Contract Reform and Privatization Office. — *Bill Loveless*

**February 3, 1998**  
**Journal-Press**  
**Page 12A**  
**"Fernald Cleanup Meeting"**

**1286**

### **Fernald cleanup meeting**

A Fernald cleanup progress meeting will be at 6:30 p.m. Tuesday, Feb. 10, in the Alpha Building, 10967 Hamilton-Cleves Highway, near Harrison.

The meeting will be a review of major cleanup projects, and Department of Energy representatives will discuss the results of their investigation into the leaking white metal box waste containers.

February 1998

Acquisition

Page 4

"Fluor Daniel Fernald Receives "Corporation of the Year""

## Fluor Daniel Fernald Receives "Corporation of the Year"

The Cincinnati Minority Supplier Development Council has named Fluor Daniel Fernald as "Corporation of the Year" for its innovative approach in working with small, small-disadvantaged and woman-owned businesses. Fluor Daniel Fernald has distinguished itself in the area of socioeconomic development, and many of the programs implemented at Fernald are considered to be a model within the Department of Energy Complex.

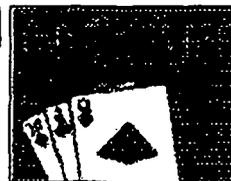
"I was honored to accept this award on behalf of Fluor Daniel Fernald", said John Bradburne, Fluor Daniel Fernald president. "Strong support from Fluor Corporation, the Department of Energy, and Fluor Daniel Fernald senior management have helped us achieve tremendous success in our outreach efforts at the local and national level."

Fluor Daniel Fernald established an office of Small and Disadvantaged Business Utilization in 1994. The company is actively involved in and supports the Cincinnati Minority Supplier Development Council. Fluor Daniel Fernald has been pleased with the exceptional quality performance of our local Small Business Contractors," Bradburne added. "They have helped us make significant progress at the Fernald site, and have contributed to our subcontractor's outstanding safety record - no lost time accidents since Fluor Daniel began operations at the site (its date is total more than 2.3 million safe work hours). We will continue to work with these and other qualified small businesses in the future to maximize their safety and efficiency."



STORIES: ARCHIVE [Back to SEARCH RESULTS](#)

[Printable text version of this story](#)



February 06, 1998

## Test Site refuses low-level radioactive waste

By **Mary Manning**  
LAS VEGAS SUN

The Nevada Test Site is still refusing to accept low-level radioactive waste from Fernald, Ohio, until four major issues under investigation have been resolved, the U.S. Department of Energy said today.

"The Nevada Test Site is still not accepting low-level nuclear shipments from Fernald," DOE spokeswoman Nancy Harkess said today. The Test Site's low-level radioactive burial sites do not accept any liquids in the waste, she said.

Four white metal boxes among seven shipments of dirt and chalk-like silica contaminated with uranium that came from Fernald leaked liquid both at the Test Site and in Kingman, Ariz., in December. Fernald was a uranium processing plant for nuclear weapons.

DOE investigators were surprised that liquid could collect and leak out of the containers and that contractor Fluor Daniel Fernald failed to deliver a strong, tight container required by the contract, including failure to test the boxes.

The investigators concluded that vibrations on the road caused the leaks.

No radioactive contamination was discovered in the almost two gallons that leaked out of the truck in Kingman. The truck's load was repacked and returned to Ohio from Arizona.

Although the leaking liquid was not a threat to public health, safety or the environment, DOE investigators blamed the releases on:

- \* containers with known design flaws;
- \* failure to understand excess liquid would form during shipping;
- \* failure of formal and rigorous oversight between the DOE in Ohio and Nevada;
- \* failure to provide proper attention and oversight to the shipments because of a "relatively low potential threat to public health and safety."

DOE Ohio Field Office Manager Leah Dever directed an analysis of technical and operations issues.

Dever has required an action plan to correct the failures within 45 days.

Acting Assistant Secretary for Environmental Management Jim Owendoff has directed DOE Ohio and DOE's other sites to review the investigation report, evaluate waste containers and assess contracts and how waste is packaged.

In addition, Owendoff established a working group to develop specific technical guidelines to ensure that such leaks do not happen again.

"We are troubled by lapses in contractor management and DOE oversight, especially because problems with the containers had been identified on previous occasions," Owendoff said.

"The environmental management program can be successful only with a commitment to doing it right the first time and to a disciplined approach to quality control," he said.

Both the state of Arizona and the DOE responded to the leaking truck in Arizona. Three other trucks were discovered at the Test Site, 65 miles northwest of Las Vegas.

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February 7, 1998  
 The Cincinnati Post  
 Local News, 5A  
 "U.S. blames contractor for leaking radioactivity"  
 Reporter: Associated Press

1286

# U.S. blames contractor for leaking radioactivity

Associated Press

The U.S. Department of Energy on Friday blamed faulty containers and inadequate supervision for a leak from a radioactive waste shipment Dec. 15 in Arizona.

The department said Fluor Daniel Fernald, the contractor it hired to clean up radioactive wastes at the Fernald site near Cincinnati, failed to provide strong, tight containers.

The report said the contractor also gave inadequate attention and supervision to the waste transport program.

The department said in a report about the leak that it also must improve its own supervision and internal communications.

"The root cause . . . was that the Fluor Daniel Fernald contracting process did not deliver a strong, tight container as required by contract specifications," the report concluded.

The shipment was near Kingman, Ariz., when water was discovered leaking from two of seven metal containers being transported in a tractor-trailer from the 1,050-acre Fernald site to the department's Nevada Test Site.

The white metal boxes used for the shipments measure 4 feet by 4 feet by 7 feet, larger than a kitchen refrigerator.

The leaking boxes carried solid waste — earth and chalk-like silica with trace amounts of uranium — but were found to be leaking water that formed in the wastes.

Investigators concluded that the water seeped through container cracks that developed during handling at Fernald.

Road vibrations during transit then opened the cracks further, it said.

Arizona authorities sent to the scene found no evidence of radiological contamination or a public health threat.

But the shipment was brought back to Fernald for the investigation that led to Friday's report.

The department halted all waste shipments from Fernald to the Nevada site after the leak was found.

The shipments won't be resumed for at least two months while the department and Fluor Daniel Fernald investigate the designs of all containers now in use to determine whether the wastes can be safely shipped, officials said Friday.

Fluor Daniel Fernald said it accepts responsibility and will make the corrections the department wants.

It also will appoint waste transportation specialists to serve as an independent review board, company spokeswoman Tricia Thompson said.

"Hopefully, they'll fix it," said Vicky Dastillung, vice president of Fernald Residents for Environmental Safety and Health.

"We need those shipments to get going."

FRESH represents people who live near the former Fernald plant.

February 3, 1998

Weapons Complex Monitor

Page 6

"Strong Case for Supporting Technology Development"

### Strong Case for Supporting Technology Development

Despite the dramatic cuts to the OTD program, department budget support documents make a strong case that the 2006 cleanup plan depends on aggressive technology development and deployment. The briefing handouts respond directly to the attacks from the House Commerce and Appropriations Committee that the funds provided for technology development have wasted taxpayers dollars because of lack of deployment and utilization of new technologies in actual cleanup. Briefing documents cite the deployment of 40-OST supported technologies in FY97 with plans for achieving 109 deployments over FY98 and FY99. Among the recent accomplishments, EM highlights are:

- 20 innovative technologies demonstrated to stabilize the first of eight nuclear reactors at Hanford;
- 23 new technologies demonstrated at Argonne National Laboratory-East, including a robotic arm for dismantling nuclear reactors in highly radioactive conditions;
- Nine new technologies demonstrated at Fernald, including a hand-held cutting torch that uses liquid oxygen and gasoline to dismantle thick metal structures despite rust and dirt; and
- Radwaste mixer pumps developed at Oak Ridge National Laboratory to allow waste to be removed without adding water. ◀

February 7, 1998  
The Cincinnati Enquirer  
Metro, Page B1  
"DOE blames leak on design"  
Reporter: Tim Bonfield

# DOE blames leak on design

## Fernald shipping criticized

BY TIM BONFIELD  
The Cincinnati Enquirer

Metal boxes filled with low-level radioactive waste from Fernald began leaking on

their way to burial in Nevada because a contractor changed the container design after winning the contract, the U.S. Department of Energy (DOE) said Friday.

The design change and with an agreement to drop annual stress testing of the boxes were among several problems Friday's DOE report noted with the shipping program at Fernald.

"We are troubled by lapses in contractor management and DOE oversight, especially be-

cause problems with the containers had been identified on previous occasions," said Jim Owendoff, DOE acting assistant secretary for environmental management.

The leaky box incident began Dec. 15, when a trucker hauling Fernald waste noticed liquid dripping from his rig while he was stopped in Kingman, Ariz. Within days, officials learned that seven containers — two in the truck and another five discovered at the Nevada Test Site — had

sprung leaks. The waste will be permanently buried at the site.

The leaks were the second problem within a year involving the metal boxes. In May, a box awaiting shipment at Fernald burst at the seams because the wrong kinds of waste were mixed, building up intense pressure.

All waste shipments from Fernald have been suspended since the December incident, and they will remain suspended until corrections recom-

mended in Friday's report are complete, DOE officials said.

Investigators determined that the December leaks posed no significant health or environmental threats. Even so, the oversights noted in the DOE report angered Nevada politicians.

"This is unconscionable action from any contractor and they should be held fully accountable for a serious breach of safety standards," said U.S. Sen. Richard Bryan, D-Nev.

The overall cleanup at the

former Fernald uranium processing plant is managed by a contractor, Fluor Daniel Fernald, a unit of the giant engineering company Fluor Daniel.

The "white metal boxes" in question were made by CGR Compacting Inc. of North Adams, Mass. The rectangular carbon steel boxes measure 4-by-4-by-7 feet and were supposed to be strong enough to handle up to 9,000 pounds of waste.

(Please see FERNALD, Page B9)

February 7, 1998  
 The Cincinnati Enquirer  
 Metro, Page B1  
 "DOE blames leak on design"  
 Reporter: Tim Bonfield  
 continued

## Fernald: Design change led to radioactive leak

CONTINUED FROM PAGE B1

CGR has been the sole supplier of the boxes since August 1995. To date, the company has provided 2,856 boxes to Fernald, at a cost of about \$600 each. Of those, 1,085 have been filled and shipped to the Nevada Test Site; 13 have been shipped elsewhere; 1,152 have been filled but remain at Fernald; 56 have been overpacked into other containers at Fernald; the remaining 550 boxes are empty.

The DOE report states: "None of the white metal boxes delivered and accepted were of the same design as the metal box supplied by CGR for testing prior to contract award."

Among the key differences: The central one of three I-beams running across the bottom of the boxes was changed. Instead of running to the edge of the box, the beam stops about 1 inch short. When filled with heavy waste, the beam pushes into the bottom of the box, creating a leak, said David Kozlowski, associate director for safety and assessment for DOE-Fernald.

The change was significant, because the boxes that leaked contained only about 5,500 pounds of waste — far less than the expected maximum weight capacity.

Not only was the design change made without DOE's awareness, Mr. Kozlowski said DOE didn't know that Fluor Daniel Fernald agreed to drop an annual battery of tests required by

the original contract with CGR. The drop tests, vibration tests and compression tests probably would have revealed the flawed box design.

"Clearly, in hindsight, waiving of the testing requirements was a poor idea," Mr. Kozlowski said.

Larry Glass, operations manager for CGR, said his company is working with investigators to study the cause of the leaks. He referred other questions about changes in the box design and test requirements to Fluor Daniel Fernald.

Tricia Thompson, spokeswoman for Fluor Daniel Fernald, said her company agrees with the DOE report and plans to spend the next few months correcting problems cited.

Fluor Daniel plans no action against CGR. "We accept responsibility for that," Ms. Thompson said.

The DOE report noted several other problems:

- ▶ DOE officials at Fernald "need to improve their contractor oversight," including conducting formal audits and monitoring corrective actions once problems are detected.

- ▶ Fernald cleanup workers need to use better materials to absorb liquid in the white metal boxes.

- ▶ DOE officials at Fernald were not required to immediately notify Nevada officials about the leaking truck in Kingman because the incident happened in Arizona. So they didn't. Now, communication and notification issues will be clarified.

February 9, 1998  
The Cincinnati Post  
Local News, 6A  
"Future scientists"  
Reporter:



BILL LIEBSCHUTZ/for The Post

### Future scientists

Sycamore High School Science Team members cheered another right answer at the Greater Cincinnati Regional Science Bowl Saturday. Kevin Lacher, Jonah Knobler, Blake Scholl and David

Bender defeated Lakota West to win a trip to Washington, D.C., for the National Science Bowl. Twenty-four teams participated Saturday at Cincinnati State Technical and Community College.

February 9, 1998  
Journal News  
Local, A5  
"Uranium unwanted at site"  
Reporter: John Nolan, Associated Press

# Uranium unwanted at site

## Getting rid of scrap material at Fernald is difficult process

By John Nolan  
The Associated Press  
CINCINNATI

It is the scrap of the Fernald cleanup: about 15 million pounds of various forms of uranium and related material.

The U.S. Department of Energy has spent years trying to sell the material culled from the cleanup of the former uranium processing site. It has sold a bit, but in a world market suddenly glutted with uranium from Russia and other sources, sales have stalled.

The material is only a small portion of the hundreds of thousands of tons of radioactive leftovers from nearly 40 years of processing for the government's nuclear weapons. That work ended in 1989, but it makes neighbors of the 1,050-acre site nervous.

"They have been asking U.S. Department of Energy officials about it for more than a year," said Lisa Crawford, president of Fernald Residents for Environmental Safety and Health.

"It's in the way. This is a cleanup site now. We don't need it here," she said. "It costs a lot of money to baby-sit that stuff. Our whole bottom line here is, you need to make a determination. Is it usable or is it not usable?"

It could escalate the cleanup cost for taxpayers. If the government cannot get rid of the material, taxpayers will pay millions of dollars to dispose of it off site.

Some of the material is stored in old buildings scheduled to be decontaminated and dismantled. One of them is Plant 6, scheduled for cleanup and shutdown later this year. Delaying that schedule increases costs, Fernald officials said.

"We've already pushed it back from '97 to around 2000, so that's kind of the max," said Glenn Griffiths, deputy director at the plant.

Finding a site to accept, the scrap is a chore, Griffiths said.

"Every governor is saying, 'Don't send that stuff here,'" he said. "It's not going to be easy. I don't think we can have it all sold. We've already started the waste-declaration process."

The radioactive material includes granulated and powdered residue and metals in the forms of chips, ingots and "derbies," which are shaped like hockey pucks. Much of the mate-

rial needs processing before it can be used for reactor fuel or other purposes, making it less marketable, Griffiths said.

The backlog has been reduced somewhat. In the late 1980s and early 1990s, the Army took 8 million pounds of depleted uranium for use in tank armor. AlliedSignal Inc. bought 1.1 million pounds of uranium metal and other compounds in 1995 and 1996, including material the company had sent to Fernald for processing in the 1960s that still remains in its original packaging.

Manufacturing Sciences Corp. bought 973,000 pounds of depleted uranium metal in 1993, and the U.S. Enrichment Corp. bought an additional 88,000 pounds of it in November. The total of all those contracts was less than \$3 million but helped reduce the backlog, Energy Department officials said.

February 9, 1998

Journal News

Local, A5

"Group eyes marketing options for land"

Reporter: Nicholas G. Jonson

# Group eyes marketing options for land

By Nicholas G. Jonson  
Journal News

ROSS TOWNSHIP

LOCAL

The citizens committee overseeing the salvage of equipment and land at the former Fernald uranium processing plant is examining the possibility of developing a small portion of the site for commercial use.

The Fernald Community Reuse Organization has directed its economic development consultant, Curt Paddock, to begin discussions with commercial real-estate firms about the possibility of developing 23 acres for commercial or industrial purposes.

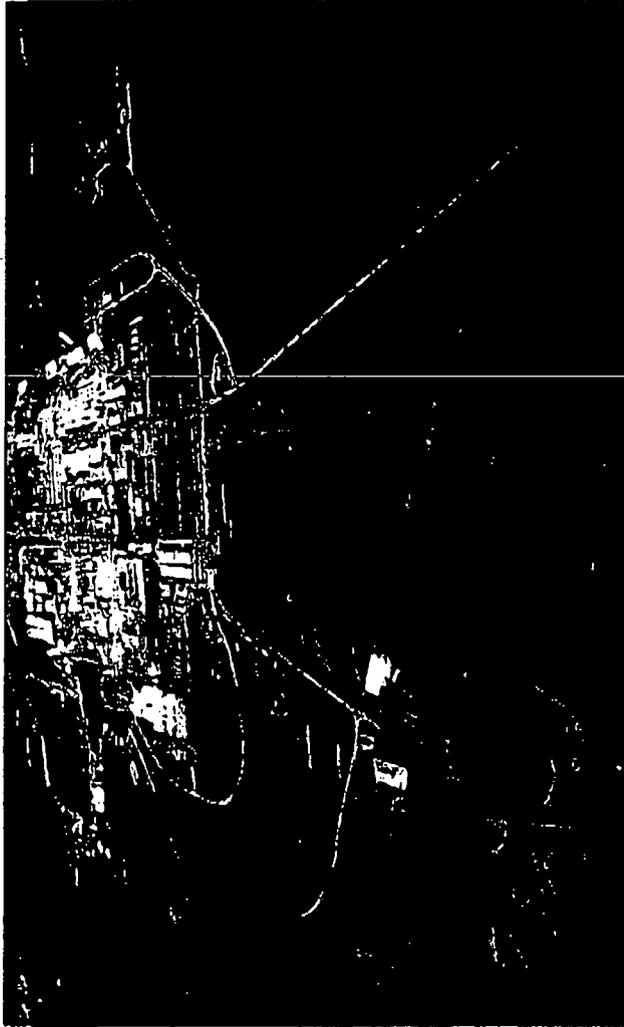
The area lies in the southwest corner of the site near the main entryway.

Paddock said he did not know the market value of the property.

"What we're trying to ascertain before going down the road to develop that property is whether there is any significant market demand for land in that location with a variety of issues associated with it," Paddock said.

The committee probably will choose a firm to conduct a marketing feasibility study by its next meeting in April, Paddock said. Once the firm is chosen, the study should take 30 to 45 days, he said.

David McWilliams, the chairman of the committee, said that depending on the outcome of the feasibility study, the group might consider the same process for other

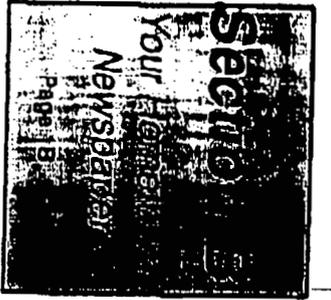


Submitted photograph

The Fernald Community Reuse Organization is examining the possibility of marketing a 23-acre parcel near the main entryway of the Fernald site, bottom right corner in photograph, for commercial or industrial use.

sections of the Fernald site when they become available.

"If we determine that it wouldn't be feasible to develop these sections, we'll direct our attention to worker transition and economic development issues," McWilliams said.



# The Harrison Press

## Second Front Page

February 11, 1998

February 11, 1998  
The Harrison Press  
Second Front Page/Entire Page  
"Building a Foundation"  
Reporter: Tina O'Connell

# Building a foundation

### Crosby kids use familiar toys to learn

Sixth-graders at Crosby Elementary School are using specialized Lego building kits to learn basic physics.

Students and their parents are also invited to tour Fernald's facilities each spring.

balancing, a field trip, teacher workshops and a sixth grade classroom discretionary fund.



Photo: Daniel Fernald public affairs administrator. See "Walden helps Crosby sixth graders" for details. The students learn basic physics by using the popular building toys.

Floor Daniel Fernald, in an effort to support science education in the neighboring Southwest and River school districts donated the kits as part of its Successful Learning for Educational Partnerships in Science (STEPS) program.

The company is Crosby's Partner in Education, a Southwest program in which local businesses work with schools to enhance their curricula. Employees from Floor Daniel Fernald come into the classroom once each month to teach a science lesson. The company provided a portion of the money for several fifth-graders who attended NASA's Space Camp in Huntsville. At last year

In 1997, the company's public affairs administrator, Sue Walpole, approached Southwest Local School District sixth grade teachers to ask for a wish-list of science materials they would like to have in their classrooms. Walpole was able to get a grant approved by the company, giving Southwest about \$9,900 this year. Crosby's portion was \$1,782.

"Our intention is to provide \$10,000 every year for math, science and technology education," she said. "Next year we intend to contribute to the seventh grade and work our way up to the high school level."

The teachers compiled a list that included equipment to teach simple machines, devices for measuring and

Crosby sixth-grade teachers Ron Mangus and Jill Overton used some of the money to purchase Lego construction kits, called Dacta, which are small, brightly-colored blocks used to construct simple machines. They also bought a triple-beam balance, primer balances, stacking mass sets, two physical science videos and resource materials on simple machines.

The children learn about levers, pulleys, fulcrums and centrifugal force as they put the toys together and play with them.

"This is an incredible opportunity for the kids to have fun while learning simple mechanics," said Mangus.



Crosby Elementary School sixth grade teacher Ron Mangus discusses a point with Jacob Bickard.



Christen Orebaugh pauses while constructing her latest Lego masterpiece. Floor Daniel Fernald donated Lego kits as part of its Successful Learning for Educational Partnerships in Science program. The company donated \$9,900 to the Southwest Local School District this year to be used for science programs.



Crosby sixth graders Stephanie Harris, left, and Brandi Hubbard make decorations for their latest Lego project. The Legos were donated by Floor Daniel Fernald and are used by students to make levers, fulcrums, pulleys and other mechanisms.

By Tina O'Connell

February 12, 1998  
Journal News  
Local, A3  
"DOE finds design, oversight errors"  
Reporter: Nicholas G. Jonson

# DOE finds design, oversight errors

By Nicholas G. Jonson  
Journal-News  
COOSBY TOWNSHIP

U.S. Department of Energy officials say a series of administrative oversights and unapproved design changes led to the leakage Dec. 15 of radioactive liquid from five metal containers en route to Nevada.

The white boxes — measuring 4 feet high, 4 feet wide and 7 feet long — were being shipped via tractor trailer when the truck's driver noticed liquid dripping from the cargo bed near Kingman, Ariz.

Though 1 to 2 pounds of liquid spilled onto the highway, Arizona Environmental Protection Agency officials determined the material did not pose an environmental or public health threat.

David Kozlowski, head of the DOE's investigative team sent to Arizona, said at a monthly cleanup-progress briefing Tuesday night that several factors contributed to the leakage, including the design of the boxes.

Kozlowski said the boxes' manufacturer, CGR Compacting Inc., submitted designs in June 1995 specifying that each box would have three metal beams supporting its base. The middle beam was supposed to extend all the way to the sides of the box.

After engineers with Fluor Daniel Fernald, the DOE's primary cleanup contractor at the former Fernald uranium processing plant, approved the contract in August 1995, CGR began submitting boxes of a slightly different design, Kozlowski said.

The "new" boxes did not have a

middle beam that extended all the way to the sides. The middle beam came within a half-inch of each side.

Kozlowski said the contract that resulted from June 1995 testing of the original-design boxes didn't include specifications that would ensure that boxes delivered thereafter were the same as those tested.

Engineers later discovered that vehicle vibrations caused fully loaded boxes to develop stress fractures on the sides where the middle beam did not extend all the way.

Nevada Test Site officials later documented two instances of stress fractures and leakage, in May and October, Kozlowski said.

As a result of the leaks, Fluor Daniel officials suggested several

design modifications, including extending the middle beams to the sides of the boxes.

But on Nov. 20, CGR officials said "the change might not solve the problem and that making the (middle beam) longer may not help or may even be detrimental."

Making matters worse was that Fluor Daniel technical representatives assigned to monitor the contract changed constantly, Kozlowski said.

Kozlowski also said Fluor Daniel officials were mistaken in their belief that material placed inside the boxes to absorb liquid was sufficient for the kind of material being shipped.

Though all shipments from the Fernald site have been suspended, more than 500 of the boxes remain, Kozlowski said.

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**"Native American Remains Re-Interred at Fernald Site"**

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## Native American Remains Re-Interred at Fernald Site

On May 25, 1997, Native American remains and associated artifacts dating back 950 years were interred on Fernald property—protected Federal land—during a sacred ceremony performed by representatives from several Tribes. The discovery of these historical remains and artifacts during a 1994 construction project, and the series of events that followed the discovery, have resulted in a true success story for the Fernald Environmental Management Project and several Native American Tribes.

"Today is a day for celebration. Today our ancestors can begin their journey home," said Chief White Bear during the ceremony that culminated a three-year collaborative effort on the part of the Department, several Native American Tribes, and Joe Schomaker, the FEMP's Manager of Cultural Resources and coordinator of the event. "Our goal was to honor the wishes of the Native Americans," Schomaker said. "It was challenging because we couldn't link these remains to a specific Tribe so we

had to coordinate our efforts with several Tribes. One thing they all agreed upon was that they wanted the remains reburied—not put on display in a museum."

The Native American remains—which included an adolescent boy and his dog—were discovered on private property during installation of pipelines for a public water supply project. Partial remains of approximately 20 more people and numerous artifacts were also found. The interment of these remains on Federal land was advantageous for the Tribes because stricter guidelines apply for the protection of historical remains on Federal property.

National Park Service spokesperson Tim McKeown said he believes the May 25 ceremony marked the first in-ground curation in the State of Ohio. Because the specific Tribe of origin could not be determined, the customs of several Tribes were incorporated into the ceremony, which included singing, drumming, white sage burning, and gift offerings."

"This is a great day. Our people can rest now," said Bill Satori, one of the spiritual leaders who presided over the curation. Jack Craig, Director of the DOE-FEMP Office, commented, "This event is a shining example of Native American Tribes and the U.S. Government working collaboratively to determine the best possible solution for protecting the remains while not impeding the cleanup in progress at Fernald."

For more information contact Gary Stegner at 513-648-3153. ☐



Joe Schomaker (left), Cultural Resources Manager for Fluor Daniel Fernald, talks about the reburial of Native American remains and associated artifacts with Robert and Helen Griffin of the Shawnee Tribe.

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*"Mixed Waste Focus Area's Quick Win Program Helps Sites with Unique Mixed Waste Problems"*

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## Mixed Waste Focus Area's Quick Win Program Helps Sites with Unique Mixed Waste Problems

The Quick Win program, a facet of the Department of Energy's Mixed Waste Focus Area, has been markedly successful in achieving the goals of its organizers. They envisioned not only a successful technology demonstration, but also the quick cleanup of small unique quantities of mixed waste.

Managed at the Department's Idaho National Engineering and Environmental Laboratory, the Mixed Waste Focus Area's Quick Win program is an innovative effort to demonstrate and deploy mature technologies to treat mixed waste at Department sites nationwide. By the end of FY 1997, the annual \$2.4 million Quick Win program will have helped 14 sites reduce their mixed waste inventories by treating a total of 653 cubic meters of mixed waste. In addition, 10 of the 27 projects funded over the last two years are expected to continue treating mixed waste at various sites.

### *Pantex Quick Win*

Among the "quick wins" is a project to treat high explosives at the Pantex Plant in Amarillo, Texas. The technology was funded because customers were looking for an alternative to open burning of the disman-

ded materials. "Certainly, it [the Quick Win program] has been extremely beneficial to us," said Vincent Zebrowski, a focus area customer in the DOE Amarillo Area Office. Zebrowski calls the project the "most promising of alternatives" that otherwise would have lacked funding for testing this year had it not been pegged as a "quick win." The funding enabled researchers to study the technology's capabilities as well as its pitfalls while the technology neutralized 500 pounds of contaminated high explosives. Zebrowski remains confident that the technology can be modified and fully implemented at Pantex.

### *Los Alamos Quick Win*

At Los Alamos, a "quick win" technology is being credited with saving more than \$1 million in storage, transportation, and offsite treatment costs. The process uses electrochemical methods to remove the hazardous component of mixed waste. Ninety drums were treated with this technology under a "quick win" demonstration, and the project proved so successful the lab applied for a permit to build a mobile treatment facility to treat even more mixed waste. Researchers estimate as much as 30 percent of the mixed waste generated by Los Alamos and Sandia labs

annually could be treated with this technology.

"It [the technology] is often viewed as too expensive, but by the same token, this gives us an opportunity to save money," said Juan Corpion, who managed the storage area for this waste at Los Alamos. "It's marketable, too. The technology could be used at any site generating heavy metals."

### *Fernald Quick Win*

At the Department's Fernald plant, the Quick Win program funded a technology to treat some 2,500 55-gallon drums of radioactive and hazardous sludges, soils, and debris left over from the site's work processing uranium for nuclear reactors during the Cold War. The technology, developed by Terra-Klean Response Group, Inc., Del Mar, California, cleaned up 15 percent of Fernald's tri-mixed waste. Eventually, the technology will be used to treat the entire inventory.

"It was a new way of doing business," said Jay Roach, who manages the program for the focus area. Roach said the idea was to seek solutions for the lower priority customer-identified mixed waste problems, or "low-hanging fruit," that could be addressed in a relatively quick timeframe. Other criteria mandate that the technology must be low cost and demonstrated within a given fiscal year.

For more information contact Ron Fontana at 208-526-5015. ☞

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*EM Progress*

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*"Fernald Conducts Successful Emergency Response Exercise"*

## **Fernald Conducts Successful Emergency Response Exercise**

On May 20, 1997, the Department of Energy's Fernald Environmental Management Project (FEMP) conducted a successful joint emergency response exercise. The exercise tested the FEMP's emergency preparedness and emergency response capabilities working in conjunction with state and local agencies.

Emergency response teams from the FEMP and local communities took part in field activities in response to an emergency scenario reflecting an event that could occur at or near the Fernald site. The scenario involved a FEMP truck hauling thorium waste colliding with a local company's tanker truck carrying hazardous chemicals, spilling the contents of both vehicles and injuring both drivers.

This exercise differed from those in years past in two respects. It was held offsite to simulate a transportation incident in which the FEMP was not in command, and it involved private companies. "Combining

resources with our neighbors helped reduce the individual costs of the exercise while satisfying all of our individual requirements," said Jack Craig, Director of the DOE-FEMP Office.

"The potential for an actual event having off-site impact has been significantly reduced at the FEMP since chemical inventories used during the former uranium production mission have been removed from the site," Craig added.

For more information contact Gary Stegner at 513-648-3153. ☐

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**"Fernald Completes Thorium Overpacking Project Ahead of Schedule"**

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**SITE SUCCESS STORIES...SITE SUCCESS STORIES...SITE****Fernald Completes Thorium Overpacking Project Ahead of Schedule**

Working in an almost completely empty Thorium Warehouse, the last few remnants of radioactive materials were repackaged on May 20, 1997. A dedicated team of workers safely repackaged the last of approximately 5,600 deteriorated drums of radioactive thorium waste materials at the Department of Energy's Fernald Environmental Management Project (FEMP). Due to the deteriorated condition of these drums and the potential health threat associated with the waste, this project had been identified as one of the site's highest cleanup priorities by regulators, stakeholders, and the Department of Energy.

The two-year operation, targeted for completion in April 1998, was completed ten months ahead of schedule and under budget. The early completion translates into approximately \$400,000 in direct cost savings.

"Most importantly, the DOE and Fluor Daniel Fernald achieved a worker exposure rate of less than half the original estimate by implementing numerous productivity improvements suggested by the actual workers in the field," said Jack Craig, DOE-FEMP Office Director. "As a result, what we realized overall was a safer project, a shortened schedule, and a significant cost savings to taxpayers."

William Muno, Regional Superfund Director for the U.S. Environmental Protection Agency (EPA), said, "This kind of work is consistent with Fernald's accelerated cleanup plan which combines cost-effective and aggressive remediation without compromising safety or regulatory guidelines. It is a significant step toward completing the overall project."

Tom Schneider, Fernald Project Manager for Ohio EPA, said Ohio EPA is pleased with



*A lone worker in the now empty Thorium Warehouse removes the last of 5,600 deteriorated drums of radioactive thorium that were successfully repackaged for safe shipment and disposal off the Fernald site.*

the success of the project. "Thorium residues at Fernald have been a major concern for Ohio EPA since our initial involvement with the site. We are pleased with the success of this project has achieved in addressing one of the most significant waste streams at the site in a safe, timely, and cost-effective manner."

For more information contact Gary Stegner at 513-648-3153.