

# fernal **Report**

**Inside**

- Capping a major milestone
- Six down - four to go
- Making wishes come true

**Jan / Feb 2002**

**4118**



## Making 2006 Closure a Reality

In December, Ohio Field Office, DOE-Fernald and Fluor management sat down with DOE Assistant Secretary Jessie Roberson to lay out Fernald's strategy for closing the Fernald site by 2006, consistent with DOE-HQ and Congressional priorities. Since Congress has closely scrutinized DOE regarding the cost and schedule of cleanup projects there is very good reason to accelerate closure. Funding certainly could be at risk if DOE sites fail to live up to their commitment of early, least cost cleanup. Current planning

shows that with funding of an additional \$34 million a year and re-planning of work we can meet the 2006 timeline. With assurances from DOE-HQ to pursue the funding necessary to meet the 2006 target, I can tell you that we left the meeting feeling very good about the future of the Fernald cleanup.

What are the next steps in making 2006 closure a reality? First, Fluor Fernald is working on a new baseline that incorporates the additional funding into the mix. They have committed to have this on my desk by early March. Second, Fluor will have to continue to carefully manage the skill mix of the workforce. The additional dollars committed by DOE-HQ will not be enough by itself to reduce the schedule by three years. There will need to be some belt tightening. We must also continue to introduce better and safer ways to efficiently complete the work. Third and most importantly, we along with our stakeholders must believe we can reach this challenging goal.

Not too long ago the Fernald cleanup was seen as a project that would stretch out to 2025 or beyond. Better planning, integration, safety, employee involvement and commitment from our stakeholders have helped to dramatically shorten the cleanup schedule. Now we have to draw in our focus a little tighter. Fernald is a mature project that is well on its way to completion. I am confident that we have the talent and resources to achieve this goal, and that we will do so safely.



Steve McCracken  
Director, DOE-Fernald

*On the cover: A view of Plant 6 as a shear takes down the remaining portions of structural steel. The steel will be size reduced and then placed in roll-off boxes for placement in the cell at a later date. Decontamination and dismantlement efforts have already begun on Plant 2/3, the tall building located behind Plant 6, near the west water tower (6639-d1198).*

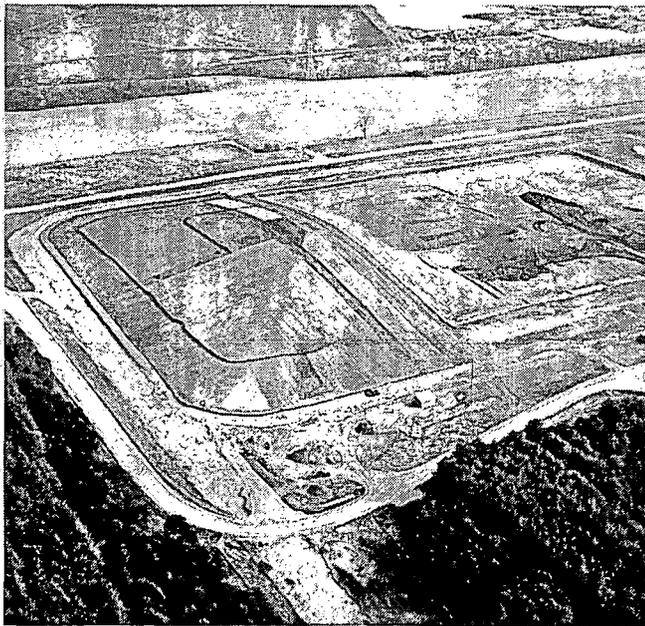
## Cell 1 of the On-Site Disposal Facility: filled, capped, closed

In December, the On-Site Disposal Facility (OSDF) crew reached a major milestone with the completion and closure of Cell 1.

In 1995, following years of study, DOE and Fluor Fernald signed the Operable Unit 2 Record of Decision (ROD). Several restrictions and conditions in the ROD ensured that the environment, including the Great Miami Aquifer, would be protected from contamination. In June 1995, construction of Cell 1 began and in December workers placed the first contaminated soil in the cell. They added the first debris from the former process buildings in July 1998.

In September 2000, Cell 1 reached full capacity of 314,000 cubic yards. The next summer construction of the final cover or cap began. The 8.75-foot thick cap contains layers of natural clay and man-made geosynthetic liners built over a 1-foot thick contouring layer, as well as 110,000 tons of stone and rock in the bio-intrusion barrier layer. The finishing touches included seeding, adding erosion-control matting and installing a monitoring system.

Johnny Reising, DOE-Fernald associate director, commented, "The OSDF was just a concept a few years ago, but through open communication and consensus building it became a reality."



Above: The OSDF is designed to hold 2.5 million cubic yards (cy). Currently Cell 2 and 3 are 66 and 27 percent respectively. The OSDF is scheduled to be complete by the end of 2006 (7718-34).



## WPRAP completes another successful year

The Waste Pits Remedial Action Project (WPRAP) completed its second full shipping year in 2001 by sending out 19 unit trains made up of 1,155 rail cars. Approximately 125,000 tons of pit material went to Envirocare of Utah, exceeding the goal of shipping 112,000 tons. Since April 1999, 51 unit trains have safely made the round trip to Utah.

In July 2001, the WPRAP team achieved another goal when they reached 2 million safe work hours. It took genuine dedication and a great team effort to keep the project running safely, especially considering the excavating, drying, loading and shipping work involved in remediating the waste pits.

"2001 was a good year for the waste pits project," said Dave Lojek, DOE-Fernald Waste Pits project manager. "You can see by the statistics that we made significant progress in 2001. That will help build a strong foothold in 2002 when we plan to increase our production by 40 percent."

Plans for 2002 include shipping 23 unit trains, purchasing more railcars, completing Pits 1 and 2, and initial excavation in Pit 5.

Above: Workers have made significant progress in Pits 1, 2, & 3. Pit 5 is covered with water, which will be drained off in 2002 before excavation begins (7646-106).

## Cleanup **Progress** Update



### Waste Pits Remedial Action Project (WPRAP)

- Two trains (#50 - #51) safely transported approximately 13,000 tons of material to Envirocare during November/December; a total of 19 trains were shipped during 2001
- Excavation continues in Pits 1, 2, and 3; from Pit 1: 85 percent complete; Pit 3: 50 percent complete; and, Pit 2: 25 percent complete
- WPRAP will purchase 20 more railcars bringing the total to 190
- Pugmill ventilation system construction continues with installation of ductwork and equipment; construction will be completed in February



### Silos Project

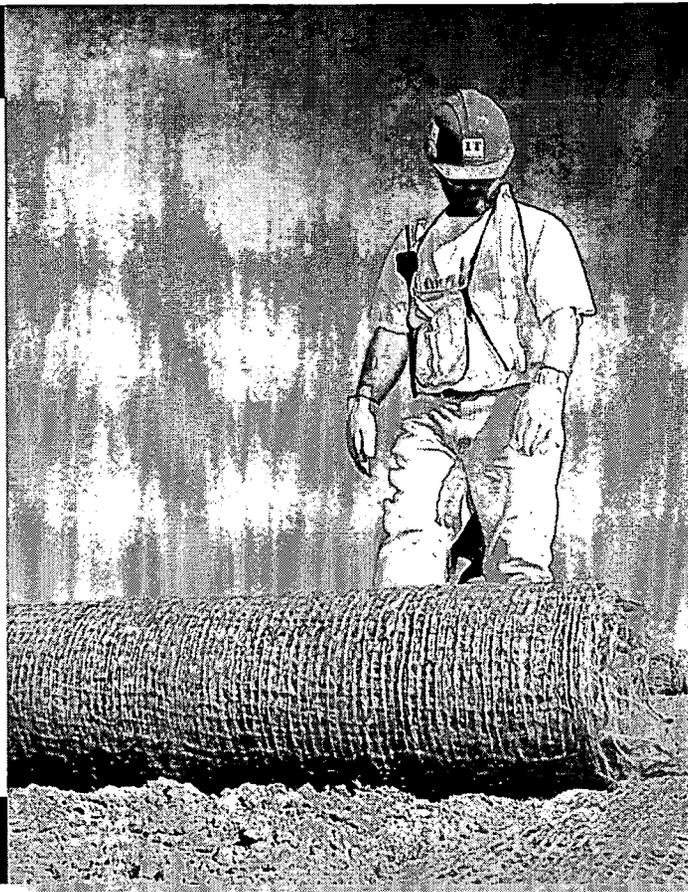
- Continued material deliveries and various reviews for the Accelerated Waste Retrieval transition activities
- Presented a Silos Project Status briefing to the U.S. Environmental Protection Agency (EPA) and the Ohio EPA
- Continued the conceptual design for Silo 3 Project
- Initiated an internal review and informal external review of the Conceptual Design Report for the Silos 1 and 2 Projects

*Above left: A Fluor Fernald hazardous waste worker places a lid on a railcar in the Materials Handling Building at the Waste Pit Remedial Action Project. The 1,500-pound lid is secured to the 100-ton railcar filled with waste pit material destined for Envirocare of Utah (6944-d1902).*

*Left: A boilermaker welds two pieces of steel tank plates together on one of four 750,000 gallon Transfer Storage Tanks, which will hold Silo waste prior to treatment and off-site disposal (7385-d1089).*

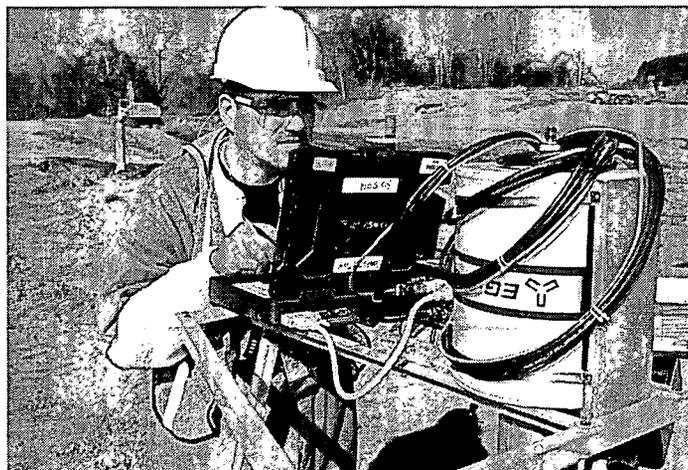
## Soil and Disposal Facility Project

- Completed Cell 1 cap construction
- Completed screening of clay for the liners of Cells 4 and 5; screening operation demobilized
- Initiated horizontal monitoring wells installation in Cells 4 and 5
- Continued operation of the bulk debris staging at the Material Transfer Area; over 1,072 roll-off boxes emptied
- Continued breaking concrete floor and foundation in the former production area
- Placed approximately 63,000 in-place cubic yards of soil and debris in Cells 2 and 3 this construction season; closed down On-Site Disposal Facility for the winter
- Incorporated Ohio EPA comments on the *Final Natural Resource Restoration Plan*; developing Environmental Assessment for Public Use of the FEMP
- Initiated certification sampling in Area 9, Phase 1 and the Southern Waste Units



## Aquifer Restoration/Wastewater Project

- Work continues on well houses and associated infrastructure required to address a uranium contamination plume under the Pilot Plant Drainage Ditch area
- Continued installation of an additional extraction well in the South Field area located just south of the Storm Water Retention Basin
- Implemented the approved EPA uranium maximum contaminant level standard of 30 parts-per-billion as the remediation level for uranium in the Great Miami Aquifer as well as the discharge standard for uranium to the Great Miami River
- October/November totals: extracted 324,185,000 gallons of groundwater; treated 178,956,000 gallons of groundwater; removed 128 net pounds of uranium from the aquifer



Top: Jeff Browning, rolls out jute erosion control matting on the final cover of Cell 1 of the On-Site Disposal Facility. The Cell 1 cap was completed in December (6319-d3354).

Above: Jerry Smith, a Fluor Fernald technician, performs radiological measurements using a High Purity Germanium Detector to ensure final remediation and certification objectives have been achieved in the Southern Waste Units. (6734-d1387).

# Cleanup **Progress** Update



*Above: A welder cuts steel in order to meet OSDF size requirements for debris placement (6639-d1155).*

*Right: A Nuclear Materials Disposition employee continues to repackage uranium in Building 56 in preparation for shipment to Portsmouth (7536-d0267).*



## Demolition Projects

### Decontamination & Dismantlement (D&D)

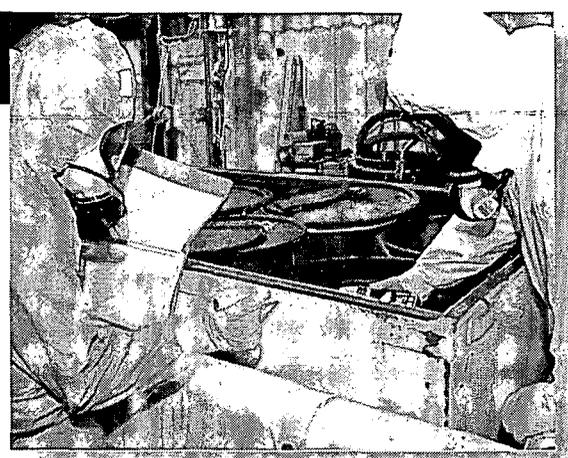
- Plant 6 Complex —
  - ◆ Completed structural demolition of Building 6A and 6G
  - ◆ Continued size reducing debris and placing in roll-off boxes for disposition
- Multi-Complex (Plants 2, 3, 8 and General Sump)
  - ◆ Completed structural demolition of Buildings 8D and 8E
  - ◆ Activities included: establishing building enclosures and vestibules; removal of equipment, piping, exterior transite, windows and miscellaneous debris; shearing tanks, equipment and structural steel; gross washdown and size reducing debris and placement in roll-off boxes for disposition
- Facilities Shutdown
  - ◆ Equipment removal in the Vitrification Plant
  - ◆ Began furniture/equipment breakdown and removal in the Health & Safety Building (53A)

## Nuclear Materials Disposition

- Product Shipments to DOE-Portsmouth
  - ◆ Total of 3,425 MTU or 95 percent of the total volume shipped since project inception in June 1999
- Other Product Disposition activities
  - ◆ Contract for private sector sale of 76 percent metric tons uranium to Euratom Supply Agency approved and signed by customer
- Uranium Waste Disposition
  - ◆ Continued characterization and visual inspection of containers
  - ◆ Continued packaging of depleted uranium metal and fissile expected uranium compounds, and shipment of these materials to the Nevada Test Site

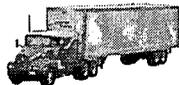
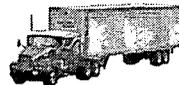
## Waste Generator Services

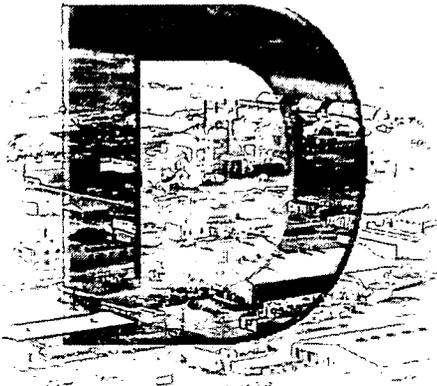
- Thorium Legacy Waste Project
  - ◆ Successfully completed Standard Startup Review for thorium container venting and decanting operations, and began work in the field
  - ◆ Continued movement of thorium to new storage location on the Plant 1 Pad
- Waste Treatment & Waste Storage
  - ◆ Bulked approximately 70,000 pounds of liquid mixed waste into Batch 12; Batch 11 application has been submitted to the Toxic Substance Control Act Incinerator and the State of Tennessee for approval
  - ◆ Completed initial organic mixed waste shipments to Materials & Energy Corporation at Oak Ridge; preparing for Group B shipment campaign
  - ◆ Contracted with Performance Development Corporation to support acceleration of the Sample Disposition and Inorganic Treatment Projects
  - ◆ Continued planning for construction of a Mixed Waste Processing Enclosure in Building 79 to process Inorganic Treatment Project waste



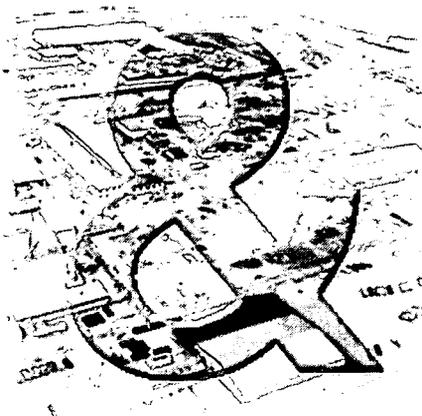
Above: Hazardous waste operators monitor hydrogen levels in a vented thorium container located in Building 64/65. The containers need to be relocated due to planned demolition of the building (7048-d0114).

## Fernald Shipments – December 2001

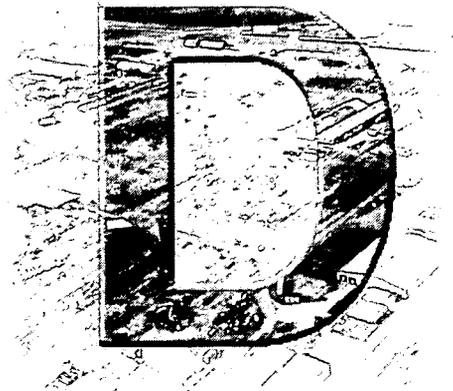
Contents / Destination	Shipment Mode	Number of Shipments	Monthly Total	FY02 Total	Approximate Project Totals
Low-Level Waste (Nevada Test Site)		16	19,671 cu. ft.	60,295 cu. ft.	5.92 million cu. ft.
Mixed Waste - Materials & Energy Corporation at Oak Ridge		0	0 cu. ft.	1,039 cu. ft.	1,039 cu. ft.
Liquid Mixed Waste - Toxic Substance Control Act Incinerator at Oak Ridge		0	0 gal.	0 gal.	214,460 gal.
Nuclear product/materials (Portsmouth)		3	4,880 net lbs. or 2.2 metric tons uranium	157,001 net lbs. or 66.2 metric tons uranium	8.8 million net lbs. or 3,425 metric tons uranium
Soil and debris - On Site Disposal Facility		N/A	2,312 in-place cubic yards	30,560 in-place cubic yards	663,554 in-place cubic yards
Waste Pits Project (Envirocare of Utah, Inc.)		2 unit trains (120 railcars)	12,919 tons	32,298 tons	318,220 tons



2/1994



4/1999



12/2001

## Six down Four to go

As 2001 came to a close, another part of Fernald's history was also coming to an end. Two years after mobilization notification, workers entirely demolished Plant 6, the former Metals Fabrication Plant. Only twisted piles of structural steel brought down by hydraulic shears shows there was once a 223,000 sq. ft. former processing facility on the eastern side of the site. Workers will complete the project more than two months ahead of schedule, within budget and with a great safety record. The project received a Tri-Star Award for achieving 100,000 safe work hours.

Plant 6 once housed the rolling mill, the only one of its kind throughout the DOE Complex, which was used until 1971 to shape cylinder ingots into rod stock. The former Metals Fabrication Plant was the sixth major structure out of 10 to be demolished.

Although decontamination and demolition (D&D) is wrapping up at Plant 6, Mactec, Inc. is mobilizing cleanup efforts on the general sump and Plants 2, 3, and 8. Fluor Fernald awarded Mactec a Demolition Closure Contract in August 2001, so they will complete all remaining major D&D work on site.

*The project will be completed more than two months ahead of schedule, within budget and also finishes with a great safety record.*

The use of a single contractor is a new concept, but it allows for smoother transitions between projects and increases productivity, which keeps work progressing.

As Fernald approaches final closure, its skyline will continue to change dramatically. Workers have demolished 100 of the more than 250 structures. Of those 100 structures, only two were in the site's administrative area. That will change in the near future with the demolition of the Safety and Health Building (S&H) which will

be complete in June.

All services that were in the S&H Building have been relocated to other areas of the site. The Medical Department, one of the last to move, is now in a trailer complex near the parking lot. The Communications Center now resides in a trailer next to the Security badging office. "Demolition of the building will certainly be very visible and show that we're continuing to make progress in the overall scope of the site's remediation," said Johnny Reising, DOE-Fernald associate director. "When this building comes down there will be a clear path to the perimeter of the former production area."

## Science and Technology Investments in Fernald

**W**hat do the Waste Materials Processing System, Vacuum-Assisted Thermal Desorption Treatment Technology and the Portable Waste Repackaging Unit have in common? The Fernald Environmental Management Project will deploy them all as part of an accelerated site technology program funded by DOE's Office of Science and Technology. The program supports the high priority needs of closure sites by evaluating and deploying affordable workable alternatives to high-cost technologies.



Above: Tony Roberts inspects a portion of the thousand or more drums of low-level waste to be processed and repackaged through the Portable Waste Repackaging Unit (7573-d15).

The Waste Materials Processing System, sponsored through the Nuclear Materials Focus Area, will blend Fernald pit waste and enriched restricted nuclear material waste to meet offsite disposal criteria. It will reduce cost by reducing volume and eliminating the need for separate waste containers.

Supported through the Transuranic and Mixed Waste Focus Areas are the Portable Waste Repackaging Unit and the Vacuum-Assisted Thermal Desorption Treatment System. The Portable Waste Repackaging Unit will provide needed processing space and capability for the handling and repackaging of mixed and low-level waste and nuclear materials, increase worker productivity and reduce secondary waste generation. It will serve as a deployment platform for various technologies that decrease schedule, increase worker safety, reduce programmatic risk and support accelerated site closure. The Vacuum-Assisted Thermal Desorption Treatment System will be used to treat low-level mixed waste and organically-contaminated soil and accelerates the waste stream's schedule more than two years. It eliminates risk and uncertainty associated with scheduling and use of off-site disposal facilities, enables significant cost savings from use of proven commercial technology and expertise, and minimizes the volume of waste requiring disposal.

## Fernald releases document for public comment

**I**n early February, Fernald released a document that is vitally important to long term stewardship and future use of the site. The *Environmental Assessment for Public Use of the Fernald Site (Public Use EA)* builds on final land use decisions made in 1999 by giving members of the public an opportunity to comment on future public access to and use of Fernald land after cleanup is complete. The formal comment period will extend from early February to approximately March 15. The DOE and Fluor Fernald invite the public to ask questions and comment on this document at a hearing on Thursday, February 28, at 6:30 p.m. at the Alpha Building, Classroom "D," 10967 Hamilton-Cleves Highway, in Harrison, Ohio. For more information, contact Gary Stegner, DOE-Fernald Public Affairs officer, 513-648-3153, email: [gary.stegner@ferald.gov](mailto:gary.stegner@ferald.gov).

## Preservation and access to public records...

### Where to begin?

**Did you know that there are over 40,000 boxes of records, 100,000 photo negatives, 50,000 electronic photos, 26,000 videos, and countless artifacts currently stored at Fernald?** The National Archives and Records Administration defines the length of time records are retained prior to destruction. Some records, however, by law can never be destroyed and site officials must decide what to do with them. Fernald stakeholders have expressed a strong desire to retain locally-available copies of selected documents after cleanup, so DOE and Fluor Fernald will take public recommendations under

advisement before making any records decisions.

What copies of documents should be kept for future public access, where, and for how long? How should artifacts be preserved? What sort of public access best serves the needs of the community? These are just some of the questions the Fernald Citizens Advisory Board (FCAB) will evaluate throughout 2002. Working under a grant from DOE's Office of Long Term Stewardship, the FCAB will take stock of the universe of records at Fernald and identify public interest in creating access to appropriate records after site closure.

Work on the project began in December 2001 with a tour of Fernald's Public Environmental Information Center and Records Center. FCAB members were astounded at the volume of materials and the overwhelming job of maintaining them. The

In April 1985, Congress held a hearing on the operations of the Fernald Environmental Management Project. During the hearing, Senator John Glenn (D-Ohio) expressed concern about possible inadvertent records destruction during the transition period to the new operating contractor. On April 29, 1985, in response to Glenn's concerns on behalf of area residents who were involved in the Fernald class action suit, the DOE Oak Ridge Operations office issued a letter to National Lead (NLO), the contractor at that time, instructing them to implement a records preservation program. As a result, NLO issued a comprehensive moratorium on records destruction.

In January 1986, DOE turned over site operations, which included control of all government records in the custody of NLO, to Westinghouse. Throughout Westinghouse's tenure, January 1986 through November 1992, and the tenure of the current contractor, Fluor Fernald, the general destruction moratorium has remained in effect.

In January 2000, the DOE Ohio Field Office issued a directive lifting the Ohio complex-wide moratorium on records destruction, which specifically excluded epidemiological, weapons and Ohio litigation-related records. As a result, the Ohio Field Office directed Fluor Fernald to identify which DOE records in its possession are now eligible for destruction and create an orderly destruction process.

FCAB hopes to see construction of an on-site public education facility to house photographs, artifacts, copies of essential documents, and other resources for future generations. This study will help the planning and design phases of such a project. The FCAB stewardship committee along with its technical consultant The Perspectives Group, will direct it, and they plan to extensively involve the community. The FCAB plans to prepare a document briefly summarizing federal, state and local requirements and laws concerning maintenance of and access to public records. They will also identify case studies and examples of successful and innovative community records management approaches. The FCAB will conduct a public workshop on March 13, 2002, at the Crosby Township Senior Center to elicit public input about long-term management of records and ongoing access to important data. In particular, participants will discuss the integration of public records needs with a community vision for the long-term management and stewardship of the Fernald site. The FCAB will develop a needs assessment report from this input.

Later in the year, the FCAB will hold a second public workshop to talk about space requirements and conceptual facility design. Participants will have the opportunity to discuss the project with design professionals.

The FCAB anticipates producing a final report on the entire project in September 2002.

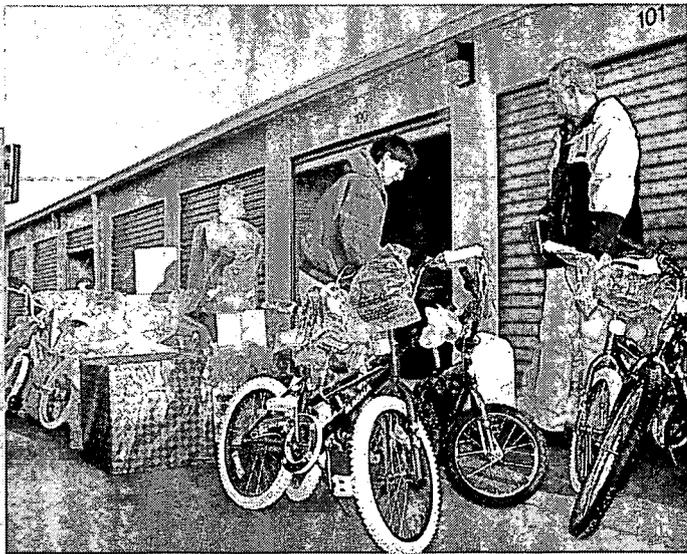
## Safe work and time add up

What can you do in 1,000 days? You can earn a degree, start your own business, travel the world... or rack up 10 million safe work hours while cleaning up the site of a former uranium processing plant. In November 2001, Fernald employees attained this new milestone: 10 million safe work hours in 1,000 days. Also, Greater Cincinnati Building and Construction Trades Council (GCBCTC) workers on site reached 9 years without a lost time accident. According to the Bureau of Labor Statistics, construction is the fourth most dangerous occupation in the United States, so these two records are significant accomplishments.

Ohio Governor Bob Taft apparently agrees. Safety in the workplace is one of his top priorities, and in February 2001, at an Ohio Bureau of Workers' Compensation public employer summit, his administration unveiled a Workplace Accident Reduction program. In December, he sent Fluor Fernald Chairman and CEO John Bradburne a letter congratulating site workers on their exemplary safety record. In it, he writes: "It is clear that working nearly three years without a major accident shows that Fluor Fernald employees truly believe in the benefits of safety. You care about how you perform work and look out for the well being of your coworkers." Later, he writes that the Fernald cleanup is "making the State of Ohio an even better place to live and raise a family."

"I'm proud of the work our employees have accomplished under very difficult conditions," John Bradburne said after receiving the letter. "Even the most routine tasks can be challenging when you are wearing anti-contamination clothing and a full-face respirator. Add earth moving equipment, steel crushing shears and elevated work platforms and you've increased the difficulty of the job by an order of magnitude. What's most satisfying is seeing our folks take this safety culture home to use and share with their families. That's what we mean by 24-hour commitment to safety."

*Below: Susan Brechbill, DOE Ohio Field Office Manager distributes a roadside emergency kit to Fluor Fernald employee Jeff Middaugh in recognition of his support in achieving 10 million safe work hours (7707-d0034).*



## Grinch foiled as Fernald employees deliver gifts to area kids

Every year Fernald workers donate gifts to needy children from Hamilton, Ross, Southwest Local and Cincinnati schools through a Wish Tree program. This past December, employees helped make Christmas special for 216 children, however the quick action of a Fernald employee and a Hamilton County Sheriff's Deputy helped rescue some of the gifts from the hands of would-be thieves. Wish Tree Coordinator Katie Payne was sorting the donated packages at 1st Security Storage across from the Fernald site when she noticed two teenage boys near a bay that was temporarily housing gifts. When Payne turned her attention to some large bags of gifts near the door she noticed four of the bags were missing. When confronted, the boys denied taking them and left. The Hamilton County Sheriff's Department determined the boys lived nearby and Deputy Dave Hill monitored activity at the storage complex and residence. That evening one of the suspects confessed to the theft and was arrested and charged with felony theft. Police recovered more than \$700 in stolen gifts. "It's hard to believe that anyone would take packages clearly marked for children," Payne said. "I'm just thankful Deputy Hill and the Sheriff's Department were able to recover the gifts. One in particular would have been irreplaceable. It was a Bearcats jersey signed by the entire University of Cincinnati football team for a child who's a big fan."

*Above: Katie Payne (center) and Lance Hall (right), Wish Tree volunteers, sort gifts outside a 1st Security Storage bin (7714-d01).*

## New documents added to the Public Environmental Information Center

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

- Waste Pits Remedial Action Project
  - ◇ DOE Letter: Sampling of Waste Pit 4 Cover Material
- Soil Characterization and Excavation Project
  - ◇ OSDF (On-Site Disposal Facility) Phase IV Construction Documentation - Approval
  - ◇ Organically Contaminated Soil Excavation Control - Approval
  - ◇ USEPA Comments – Area 3A/4A Excavation Project Specific Plan
- Decontamination and Demolition Project
  - ◇ DOE Letter – Draft Implementation Plan for Above-Grade Decontamination and Dismantlement of the Administration Complex Project
- Silos Project
  - ◇ Revised Draft Remedial Action Work Plan for Radon Control System Phase I Operation
- Aquifer Restoration Project
  - ◇ Ohio Environmental Protection Agency Discharge Monitoring Reports - Fernald Environmental Management Project
  - ◇ USEPA Approval – Monitoring Wells in the Pilot Plant Plume
  - ◇ DOE Letter – Notification of Plans to Shutdown Extraction Wells
- Miscellaneous
  - ◇ DOE Letter – Consolidated Consent Agreement /Federal Compliance Agreement/Federal Facility Agreement/Remedial Investigation/Feasibility Study/Consent Decree Monthly Report for the Period November 1, 2001 Through November 30, 2001 Including Anticipated Work for the Period December 1, 2001 Through December 31, 2001

*Note: This does not represent the complete list of new documents added to the PEIC.  
Contact the PEIC, 513-648-7480 for a complete list of new documents.*



### Fernald Report

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