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FERNALD PROJECT CLEANUP REPORT - SEPTEMBER 1994

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Cleanup
REPORT

September 1994

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CERCLA Public Meeting
7 p.m. Tuesday, October 18
The Plantation
9660 Dry Fork Road
Harrison, Ohio

The DOE will provide a status report on sitewide cleanup activities and other current issues, followed by statements by Fernald Residents for Environment, Safety and Health, U.S. EPA, Ohio EPA and the Fernald Citizens Task Force. A question-and-answer session will follow. Topics of two break-out group discussions are Fernald's Draft Site Treatment Plan and potential future uses for the Fernald site after final cleanup.

Plant 7 takedown changes Fernald skyline

Demolition of Fernald's tallest building was successfully completed Saturday, September 17.

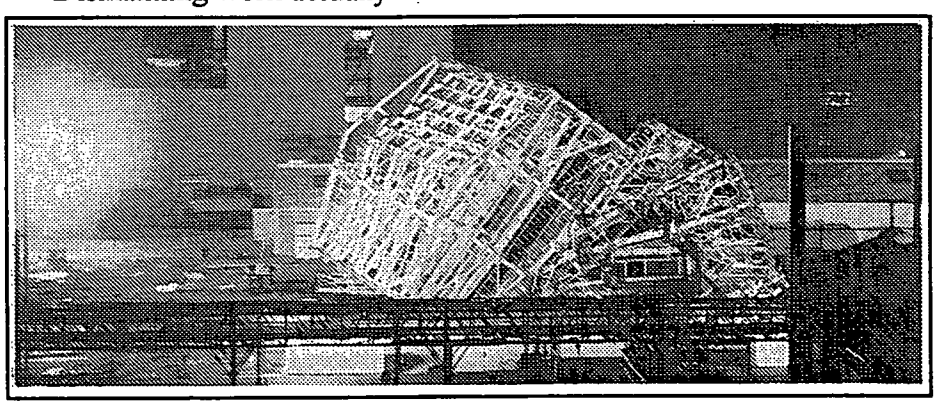
The final takedown completed an effort which began September 10, when linear-shaped explosive charges were detonated to take the building down. The first and third floors of the building collapsed as planned. However, splice plates that had been pre-cut on the fifth and sixth floors did not separate as anticipated. The building dropped approximately 30-35 feet instead of the planned 60 feet.

The final takedown involved strategic placement and detonation of additional explosive charges on the second, fourth, fifth and sixth floors. The procedure was successful and the Plant 7 structure was dropped to the ground. The building is now being cut by mechanical shears into smaller pieces to be shipped offsite for recycling.

A comparison of the controlled detonation method against the previous floor-by-floor dismantling plan led DOE and FERMCO to conclude initially that controlled detonation cutting would be safer, faster, environmentally sound and cost efficient. These conclusions remain valid even with the two-step takedown of Plant 7.

Dismantling work actually began in 1993 with Fernald workers moving materials and debris stored in Plant 7 to alternate on-site storage facilities. Asbestos insulation was removed from piping and other equipment and the interior of the building was then thoroughly washed down using a high-pressure power washer to remove loose contamination. Workers then applied a coating of encapsulant on all interior surfaces to "lock down" any remaining contamination. Actual dismantling began with the removal of duct work, piping, electrical and other equipment, followed by removal of the interior transite siding, which also contained asbestos. Workers then removed the exterior transite panels to expose the structural steel frame of the building.

Plant 7, the most visible structure at the Fernald site, is the first former production building to be dismantled. Some 125 structures in the former uranium production area of the site are planned for removal as part of the Fernald environmental restoration mission.



The Plant 7 structure was successfully dropped to the ground on September 17.

Airborne uranium emissions continue to decline

Airborne uranium emissions from the Fernald Environmental Management Project continued to decline in 1993 according to the annual Fernald Site Environmental Report issued in August 1994.

Uranium emissions at Fernald have continued to decrease annually since production activity at the site ended in 1989. During 1993 the site released an estimated 0.21 kilogram (0.46 pound) of uranium as compared to the 0.23 kilogram (0.51 pound) released during 1992.

As environmental restoration and waste management efforts proceed at Fernald, environmental monitoring programs remain in place to track progress in reducing potential contamination of the environment and to calculate the potential radiation dose to the public resulting from Fernald operations. The report presents sampling data for air, water, soil, sediment, vegetation, fish and other media which are collected throughout the year as part of the Fernald environmental monitoring program.

In 1993, the dose to maximally exposed individual was calculated at approximately 1.0 millirem or about 1 percent of the limit established by the International Commission on Radiological Protection. The maximally exposed individual is a hypothetical person assumed to live next to the Fernald site, eat only locally-produced fruits and vegetables, and drink water from a local well.

The Department of Energy seeks to limit radon concentrations at its facilities to below 3.0 picocuries per liter (pCi/L). At the Fernald fence line, measurements in 1993 were approximately 0.63 pCi/L, slightly higher than the 0.57 pCi/L measured in 1992 but still well below the DOE limit. For comparison, some average background concentrations of radon (concentrations at areas offsite but in the Cincinnati area) range from 0.2 to 0.4 pCi/L. At low environmental concentrations, radon data can fluctuate significantly from location to location as well as from year to year.

In 1993, Fernald used a more conservative methodology consistent with that used by the National Council on Radiation Protection for estimating radon dose to the public. The radon dose for 1993 was calculated at 454 millirem, or slightly higher than the 410 millirem dose (using the more conservative methodology) for 1992. These dose estimates include the approximately 200 millirem attributable to background levels of radon. By using a more conservative methodology, scientists can ensure that the reported dose is the highest possible dose anyone may have received as a result of the Fernald site. Fernald's uranium discharges to the Great Miami River in 1993 increased slightly over the previous year. However, the amount of uranium contained in all liquid effluent discharged from the site decreased from an estimated 595 kilograms (1,309 pounds) in 1992 to an estimated 583 kilograms (1,283 pounds) in 1993. Contaminated groundwater pumped from the aquifer that underlies the site and surrounding area contributed to this total. Extraction wells installed south of the site to prevent further migration of uranium contamination began operating in August 1993. The contaminated water is returned to the site for monitoring and then discharged to the river. Of the 474 kilograms (1,044 pounds) of uranium discharged to the river in 1993, 22 kilograms (48 pounds) were from the South Plume groundwater pumping.

Environmental reports are published annually and copies may be obtained at the Public Environmental Information Center, 10485 Hamilton-Cleves Road, or by contacting the Department of Energy Fernald Area Office at (513) 648-3153.

Furnace pots decontaminated for use as scrap metal

A program has been initiated to decontaminate and remove about 200 tons of furnace pots from the former production area. The 400-pound iron pots will be sold through competitive bidding to a local scrap metal dealer for recycling. The pots are estimated to be worth approximately $110 per ton.

These pots were never used, but were checked for contamination because they were stored in the production area for five years. Slight contamination found on some of the pots was removed through a decontamination process. So far, 160 tons have been decontaminated and placed in a staging area.

Releasing the decontaminated furnace pots for scrap metal recycling provides a cost

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saving because the pots don't have to be shipped to Nevada and disposed as low-level radioactive waste.

Furnace pots that were actually used in the production process have been shipped to Scientific Ecology Group (SEG) in Tennessee for melting and fabrication into low-level radioactive waste containers. Plans call for these containers to be returned to Fernald, filled with low-level radioactive waste and shipped to the Nevada Test Site for disposal.

Furnace pots used at Fernald were filled with uranium tetrafluoride (UF4 or green salt) and magnesium metal and heated in a reduction furnace in Plant 5 to make uranium metal derbies.

Construction to begin on public water lines

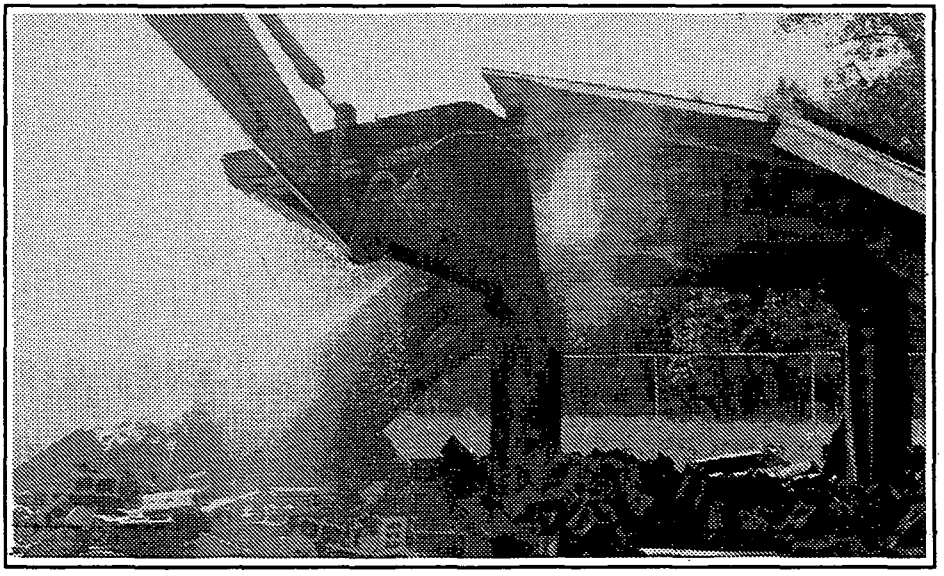
Construction of the public water supply serving Crosby Township is tentatively scheduled to begin in October 1994, with completion of the entire system, including a 500,000-gallon reservoir, anticipated by the fall of 1995.

Plans call for the Fernald site to be tied into the public water supply. The DOE is sharing in the cost of providing public water to a portion of Crosby Township including those residents whose private wells have been affected by the South Groundwater Contamination Plume.

Construction activities in support of this project will begin at Cincinnati Water Works' Bolton Plant on River Road, and progress southwest toward Crosby Township. Throughout the next year or so, construction activities will be taking place along portions of Cincinnati-Brookville Road (Ohio 126), Hamilton-Cleves Highway (Ohio 128), Crosby Road, New Haven Road, Paddy's Run Road, Willey Road and East Miami River Road.

DOE-Fernald and Cincinnati Water Works have prepared a modified contract spelling out the responsibilities of both parties for a 10-year term, including the amount of water Fernald will agree to use on a monthly basis to help offset the costs of bringing a public water supply to a largely rural area with limited customers.

Fire training building demolished



The old Fire Training Facility being demolished.

A two-story concrete building formerly used as a training facility by Fernald firefighters was demolished September 7. All loose materials and radiological contamination was removed from the building beforehand.

Demolition debris will be packaged and shipped off site for disposal. Remaining work to complete this CERCLA removal action involves excavation of contaminated soils and soil sampling activities to determine the extent of any remaining contamination in the area.

The fire training facility, used between 1966 and 1990 to simulate fire and emergency response conditions, is located just north of the former production area on the old North Access Road.

Environmental studies paving way for final remedial actions

The sitewide Remedial Investigation/Feasibility Study is nearing completion in four of the five areas known as "operable units" targeted for cleanup at Fernald.

Remedial Investigation (RI) reports define the nature and extent of contamination in each of the five operable units. Feasibility Study (FS) reports evaluate remedial alternatives available in each operable unit, and assemble that information into preferred cleanup alternatives and proposed plans for remedial action.

The U.S. EPA will issue separate Records of Decision (ROD) for each operable unit, describing how final remediation is to be carried out based on results of the RI/FS and DOE's proposed plans for remedial action.

DOE is scheduled to issue proposed draft RODs to EPA in 1994 and 1995 for Operable Units 1, 2, 4, and 5.

A Record of Decision for Interim Remedial Action in **Operable Unit 3 (Production Area)** already has been approved by EPA. This allows for early decontamination and dismantling of buildings and support facilities in advance of the Record of Decision to be issued by EPA in 1997 for final cleanup of the former production area.

DOE and FERMCO are preparing the draft ROD for **Operable Unit 1 (the waste pit area)**, which is due to EPA by November 6, 1994. The EPA has approved the RI and FS reports for Operable Unit 1 and DOE's Proposed Plan for Remedial Action.

DOE and FERMCO are presently addressing EPA comments on the RI report for **Operable Unit 2 (other waste units)**. DOE submitted the FS report and DOE's Proposed Plan for Remedial Action for Operable Unit 2 to EPA on August 24, 1994, for review. DOE is scheduled to submit its draft ROD for Operable Unit 2 to EPA by January 5, 1995.

DOE received conditional approval of the draft ROD for **Operable Unit 4 (Silos 1-4)** on September 6, 1994. The revised draft ROD addressing EPA comments will be submitted to the EPA in November 1994. The EPA has approved the RI and FS reports and DOE's Proposed Plan for Remedial Action for Operable Unit 4. The plan calls for vitrification (transforming silo wastes into glass), followed by off-site shipment to the Nevada Test Site.

DOE and FERMCO are presently addressing EPA comments on the RI report for **Operable Unit 5 (Environmental Media)**. The FS report for Operable Unit 5 is being developed and will be submitted to EPA in November 1994, for review. The DOE is scheduled to submit its draft ROD for Operable Unit 5 to EPA in July 1995.

All RI/FS documents are available for public inspection in Fernald's Public Environmental Information Center.

The status of Fernald's RI/FS program and site cleanup activities will be discussed at a public meeting beginning at 7 p.m. Tuesday, October 18, 1994, at the Plantation restaurant and banquet rooms in Harrison, Ohio.

FERNALD PROJECT CLEANUP REPORT
U.S. Department of Energy
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The Fernald Project Cleanup Report is prepared by Fernald Environmental Restoration Management Corporation monthly for the U.S. Department of Energy, to inform the community about cleanup progress at the Fernald Environmental Management Project.
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