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**CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE  
AGREEMENT/FEDERAL FACILITY AGREEMENT AND REMEDIAL  
INVESTIGATION/FEASIBILITY STUDY MONTHLY PROGRESS REPORT  
FOR NOVEMBER 1995**

12/19/95

**DOE-0337-96  
DOE-FN        EPAS  
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REPORT**

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Department of Energy  
Fernald Environmental Management Project  
P. O. Box 898705  
Cincinnati, Ohio 45289-8705  
(513) 648-3155

DEC 19 1995

DOE-0337-96

Mr. James A. Saric, Remedial Project Director  
U.S. Environmental Protection Agency  
Region V - SRF-5J  
77 W. Jackson Boulevard  
Chicago, Illinois 60604-3590

Mr. Tom Schneider, Project Manager  
Ohio Environmental Protection Agency  
401 East 5th Street  
Dayton, Ohio 45402-2911

Dear Mr. Saric and Mr. Schneider:

**CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT AND REMEDIAL INVESTIGATION/FEASIBILITY STUDY MONTHLY PROGRESS REPORT FOR NOVEMBER 1995**

Enclosure 1 is the consolidated CA/FFCA and RI/FS Monthly Progress Report which describes the activities accomplished November 1 through 30, 1995, and planned actions for the period of December 1995. Also, enclosed are diskettes containing Lotus 1-2-3 (Version 2.2) data files of the K-65 hourly data (see Enclosure 2).

If you or your staff should have any questions, please contact me at (513) 648-3139.

Sincerely,

Johnny W. Reising  
Fernald Remedial Action  
Project Manager

Enclosures: As Stated

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## cc w/encs:

K. H. Chaney, EM-423/GTN  
B. Skokan, EM-423/GTN  
Manager, TSPP/DERR, OEPA-Columbus  
D. Pfister, DOE-FN  
D. Carr, FERMCO/52-5  
T. Hagen, FERMCO/65-2  
AR Coordinator, FERMCO

## cc w/o encs:

G. Jablonowski, USEPA-V, 5HRE-8J  
F. Bell, ATSDR  
D. S. Ward, GeoTrans  
S. McClellan, PRC  
R. D. George, FERMCO/52-2  
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S. Stahlheber, FERMCO/52-2  
M. Yates, FERMCO

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
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CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
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**Period Ending November 30, 1995**

**Introduction**

The Consent Agreement (CA) As Amended under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Sections 120 and 106(a), the Federal Facility Compliance Agreement (FFCA), and the Federal Facility Agreement for Control and Abatement of Radon-222 Emissions (FFA-CARE) between the U.S. Department of Energy (DOE) and the U.S. Environmental Protection Agency (U.S. EPA) signed September 20, 1991, July 18, 1986, and November 19, 1991, respectively, require that monthly reports be submitted to the U.S. EPA regarding progress made to meet the provisions of those agreements. This report fulfills those requirements by describing actions undertaken at the Fernald Environmental Management Project (FEMP) during the period November 1 through November 30, 1995, and planned actions for the period December 1 through December 31, 1995.

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**WORK ASSIGNMENTS AND PROGRESS**

Descriptions of work progress are presented in the following sections and/or enclosures to this report:

- CA Section IX - Removal Actions
- CA Section X - Remedial Investigation/Feasibility Study
- Enclosure A - Waste Water Flows and Radionuclide Concentrations under CA Section XXIII.B
- Enclosure B - FFCA: Initial Remedial Measures and Other Open Actions
- Enclosure C - FFA: Control and Abatement of Radon-222 Emissions
- Enclosure D - Effluent Radiation Discharges to the Great Miami River

**CA Section IX. Removal Actions**

This section provides an update of activities associated with the implementation of Removal Actions (RAs) at the FEMP during November 1995. Information is presented for each of the Removal Actions identified in the Consent Agreement As Amended.

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**REMOVAL ACTION SUMMARY**

NO.	TITLE	SCOPE	STATUS
Phase I			
1	Contaminated Water Under FEMP Buildings	Pump water from extraction wells underneath Plants 2/3, 6, 8, and 9. Treat extracted water for volatile organic chemicals and uranium removal before discharge.	Plant 2 hold tank now operable. All other Plants Temp. Inoperable due to groundwater sampling to comply with Removal Action 1
2	Waste Pit Area Run-off Control	Collect and treat contaminated storm water run-off from the waste pit area.	Operational: 7/30/92  Operation Ongoing
3	South Groundwater Contamination Plume	<p>Part 1 - Install new alternate water supply and transfer to industrial user.</p> <p>Part 2 - Pump and discharge groundwater from South Plume.</p> <p>Part 3 - Install and operate Interim Advanced Waste Water Treatment system to reduce uranium contaminant loading to the Great Miami River.</p> <p>Part 4 - Conduct groundwater monitoring and institutional controls by sampling private and existing RVFS wells in the South Plume area and installing homeowner treatment systems.</p> <p>Part 5 - Conduct groundwater modeling and geochemical investigation to define the extent of the groundwater plume contaminated with uranium.</p> <p>OU 2 Dispute Resolution Supplemental Project - Provide for partial treatment of the South Plume discharge to further reduce uranium flow to the Great Miami River.</p>	<p>Operational: 12/7/92  Operation Ongoing</p> <p>Operational: 8/27/93  Operation RW 5 offline indefinitely</p> <p>Operational: 7/30/92  Operation Ongoing</p> <p>Ongoing</p> <p>Completed: 2/25/94</p> <p>Operational: 3/31/94  Operation Ongoing</p>

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**REMOVAL ACTION SUMMARY**

NO.	TITLE	SCOPE	STATUS
4	Silos 1 & 2	Install bentonite cap to reduce and monitor radon emissions. Provide follow-on monitoring.	Cap Completed: 11/28/91
			Monitoring: Ongoing
5	Decant Sump Tank	Periodically remove liquid from K-65 decant sump tank.	Ongoing
6	Waste Pit 6 Residues	Eliminate potential airborne contamination by resubmerging exposed pit material.	Completed: 12/19/90
7	Plant 1 Pad Continuing Release	Stage I - Implement run-on/off control measures.	Completed: 1/17/92
		Stage II - Install new pad.	Completed: 12/4/92
		Stage III - Upgrade existing Plant 1 Storage Pad	Ongoing
Phase II			
8	Inactive Flyash Pile Control	Install plastic chain-link barrier and post warning signs.	Completed: 12/23/91
9	Removal of Waste Inventories	Disposition of low-level waste off-site.	Ongoing
10	Active Flyash Pile Controls	Phase I - Complete interim surface stabilization.	Completed: 6/29/92
		Phase II - Complete active flyash pile controls.	Maintenance: Ongoing
11	Pit 5 - Experimental Treatment Facility	Remove contents, structure, and filter material. Backfill and cap with clay cover.	Completed: 3/20/92
12	Safe Shutdown	Remove uranium and other material from former processing equipment and ship material and equipment off-site.	Ongoing
13	Plant 1 Ore Silos	Dismantle fourteen ore silos and their support structures.	Completed: 11/18/94
14	Contaminated Soil Adjacent to Sewage Treatment Plant Incinerator	Isolate or remove and dispose of contaminated soils from the vicinity of the sewage treatment plant.	Final Report Submitted 11/18/94
15	Scrap Metal Piles	Phase I - Disposition LLW ferrous/non-ferrous scrap metal	Ongoing
		Phase II - IIA - Containerization of scrap copper	Completed: 9/28/92
		IIB - Disposition of scrap copper	Ongoing
16	Collect Uncontrolled Production Area Run-off - Northeast	Collect storm water run-off from the northeast perimeter of the former production area in the Storm Water Retention Basin.	Completed: 8/20/93

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**REMOVAL ACTION SUMMARY**

NO.	TITLE	SCOPE	STATUS
17	Improved Storage of Soil and Debris	Improve storage of existing and future generated soils and debris.	Ongoing
18	Control Exposed Material in Pit 5	Eliminate potential airborne contamination by re-submerging exposed pit material.	Completed: 5/13/93
Phase III			
19	Plant 7 Dismantling	Dismantle and dispose of the Plant 7 structure.	Completed: 11/18/94
20	Stabilization of UNH Inventories	Neutralize, filter and package UNH inventory.	Ongoing
21	Expedited Silo 3	Mitigate the potential release of hazardous waste material by covering and sealing dust collector hopper, removing dust collector, and capping and covering obvious release pathways.	Completed: 2/24/93
22	Waste Pit Area Containment Improvement	Stabilize south berm of Pit 4; regrade drainage ditches along Pits 3, 4, 5, and 6; and resurface road between Pits 3, 4, 5, and 6.	Completed: 7/30/93
23	Inactive Flyash Pile	Conduct field investigation to identify locations requiring material removal.	Completed: 4/30/92
24	Pilot Plant Sump	Remove liquid and sludge from the sump.	Completed: 10/15/93
25	Nitric Acid Tank Car and Surrounding Area	Remove residual contents from tank car and decontaminate and dispose of tank car.	Completed: 10/11/93
26	Asbestos Removals (Asbestos Program)	Mitigate the potential for contaminant and migration of asbestos fibers.	Ongoing
27	Management of Contaminated Structures at the FEMP	Submit an Engineering Evaluation/Cost Analysis for managing contaminated structures. Identify alternatives for managing contaminated structures.	Final EE/CA Approved 6/16/93
28	Contamination at the Fire Training Facility	Remove, decontaminate, dispose, treat or store contaminated structures, equipment, and soil from the former Fire Training Facility.	Ongoing
29	Erosion Control at Inactive Flyash Pile	Mitigate the threat of erosion induced slope failure and discharge of flyash to Paddy's Run.	Final Report Submitted to DOE 2/94  Maintenance: Ongoing
30	Seepage Control at the South Field and Inactive Flyash Pile	Minimize future groundwater contamination by intercepting contaminated seeps that drain from the South Field and Inactive Flyash Pile and infiltrate to the GMA.	Ongoing

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*Removal Actions*

**RA No. 1, Contaminated Water Under FEMP Buildings**

**Current Month:**

DOE received U.S. EPA approval to cease pumping and sampling activities associated with this RA as outlined in a September 13, 1995 letter from DOE to U.S. EPA and Ohio EPA. Ohio EPA approval to stop this RA was received in September. All RA No. 1 pumping and sampling will be discontinued except for dewatering of the clarifier pit and floor sumps located in Plant 6.

**Planned Activities:**

- Continue dewatering of the clarifier pit and floor sumps located in Plant 6.
- Stop all other RA No. 1 pumping and sampling activities.

**RA No. 3, South Groundwater Contamination Plume**

**Part 1 - Alternate Water Supply**

**Current Month:**

The U.S. Army Corps of Engineers, through an Interagency Agreement, is proceeding with obtaining the necessary documents to transfer easement rights to Albright and Wilson Americas.

The analysis of cultural resources and final report for data recovery field work for Project B of the PWS is in progress. Field work has been completed. The final report which includes analysis of the findings will be completed in December 1995.

Construction of all work under Projects B and D is underway and is currently on schedule. This includes the tie-in to the FEMP.

Hamilton County Department of Public Works (HCDPW) is soliciting bid proposals for service connections with a bid opening date of December 14, 1995. Proposals are to include four separate lump sum contracts.

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RA No. 3. South Groundwater Contamination Plume

Part 1 - Alternate Water Supply (continued)

**Planned Activities:**

- Continue proceedings to transfer ownership of the pumping and piping equipment as well as the easement rights to Albright and Wilson in accordance with the agreement of 1990.
- Continue to support HCDPW on installation of the entire PWS, including service connections.
- Coordinate tie-in of PWS with the FEMP on Willey Road including scheduling chlorination of the FEMP water line by Cincinnati Water Works (CWW).
- Provide assistance with technical evaluation of HCDPW's submittal of costs applied to DOE grant as of October 31, 1995.

Part 2 - Pumping and Discharge System

**Current Month:**

The South Plume Removal Action Design Monitoring Evaluation Program Plan System Evaluation Report (DMEPP) for January 1, 1995 - June 30, 1995 was approved by the Ohio and U.S. EPAs on November 1 and 16, 1995, respectively.

Sampling activities were completed on October 11, 1995. Data analysis and interpretation are in progress for the July 1, 1995 - December 31, 1995 report due in April 1996.

**Planned Activities:**

- Continue data analysis.

Part 3 - Interim Advanced Waste Water Treatment (IAWWT)

IAWWT Storm Water Retention Basin (SWRB) Unit

**Current Month:**

Nothing to report.

**Planned Activities:**

02) Continue to operate.

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RA No. 3, South Groundwater Contamination Plume

Part 3 - Interim Advanced Waste Water Treatment (IAWWT) (continued)

IAWWT Biotenitrification Effluent Treatment System (BDN-ETS) Unit

**Current Month:**

System will be operational until current inventory of high NO<sub>3</sub> water has been processed.

**Planned Activities:**

- None.

Part 4 - Groundwater Monitoring and Institutional Controls

**Current Month:**

Nothing to report.

**Planned Activities:**

- Continue to monitor performance of the ion exchange units installed at private residences.

Operable Unit 2 Dispute Resolution Supplemental Project (Uranium Reduction in FEMP Discharge)

Step 1

Install 200 gallons per minute (gpm) system dedicated to the treatment of a portion of the extracted South Plume groundwater—commonly known as South Plume Interim Treatment (SPIT) System.

**Current Month:**

Operations continued.

**Planned Activities:**

- Continue to operate.

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RA No. 3, South Groundwater Contamination Plume

Operable Unit 2 Dispute Resolution Supplemental Project (Uranium Reduction in FEMP Discharge) (continued)

Step 2

Utilization of off-peak Advanced Waste Water Treatment (AWWT) capacity.

**Current Month:**

An optimum flow of 660 gpm has been achieved at the AWWT using the current configuration. Operational goals have been established whereby the 400 gpm system uses available capacity to routinely process South Plume water daily and the 700 gpm system along with the IAWWT will change over to exclusively process South Plume water during those times when the SWRB is at a low level.

**Planned Activities:**

- Continue operational goals as described.

Step 3

Elimination of low uranium concentration streams.

**Current Month:**

Continue to operate at optimum flows using current configuration.

**Planned Activities:**

- Continue to operate.

Step 4

Extend operating life/increase capacity of the IAWWT (SWRB).

**Current Month:**

Operations continue.

**Planned Activities:**

- Treat storm water and South Plume water as required.

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**RA No. 7, Plant 1 Pad Continuing Release**

**Current Month:**

The subcontractor completed sawcutting/removing damaged concrete and installing patch compound in joints the week of November 6, 1995. Due to low air entrainment at the surface, approximately 400 square feet of the concrete pad surface was scabbled a depth of one inch. The scabbling was completed and the concrete refill began on November 1, 1995.

The concrete refill is approximately 30% complete. Due to cold weather, this work will not be resumed/completed until Spring 1996.

**Planned Activities:**

- None to report.

**RA No. 9, Removal of Waste Inventories**

**Current Month:**

The volume, in cubic feet (cf), of low-level waste staged for shipment to Nevada Test Site (NTS) in November 1995 was 69,662 (external) and 60,309 (internal). As of November 30, 1995, the FEMP has shipped 0 cf (external) and 0 cf (internal) to NTS for Fiscal Year (FY) 1996.

Low level waste volume reduction includes approximately 1,939 containers of legacy waste materials (generated prior to October 1, 1994) identified in "FY 1996 Inventory Reduction Plan for Legacy Wastes at the FEMP."

FY 1996 LLW disposal to NTS was temporarily discontinued in response to spending constraints associated with the FY 1996 budget continuing resolution. Waste Programs Management received written authorization from DOE-FN to continue shipment of LLW to NTS in late November 1995.

NTS conducted a surveillance of corrective actions to address findings identified during the annual re-certification audit conducted in June 1995. NTS provided conditional approval to continue waste shipments in FY 1996.

Shipment of uranium derbies to Manufacturing Sciences Corporation (MSC) in Oak Ridge, Tennessee has been delayed per request of the customer to allow for reconfiguration and addition of storage facilities. Derby shipment will be initiated upon approval from MSC.

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**RA No. 9, Removal of Waste Inventories**

**Current Month (continued):**

Shipment of normal Uranium fluoride to the Allied Signal facility in Metropolis, Illinois was completed in November 1995.

The volume of low level waste materials shipped to NTS in FY 1996 per waste stream is described in the following table:

<b>WASTE STREAM</b>	<b>INTERNAL VOL. (cf)</b>	<b>EXTERNAL VOL. (cf)</b>
Process Area Scrap	0	0
Thorium	0	0
Residues to NTS	0	0
Contaminated Trash	0	0
Construction (Legacy)	0	0
Construction (Newly Generated)	0	0

Note : 1 drum equivalent = 7.4 cubic feet

The General Work Plan for the Chemical Treatment Project was transmitted to DOE-FN in final form on November 21, 1995. The formal transmittal to OEPA and USEPA occurred on November 22, 1995.

The Mixed Waste Stabilization Project team has successfully completed activities as required to meet the State Issued Compliance Order/ Director Findings and Orders. The State issued order (DF&O) was to complete "System Testing" and "Start Treatment" by November 30, 1995. A POC Milestone for the Mixed Waste Stabilization Project has also been completed. The POC stipulated that, to receive an "Excellent" rating, Waste Treatment must be initiated by November 27, 1995. On November 21, 1995, at approximately 2:45 p.m., the first drum of Grit Blast Residue was successfully treated in Plant 6 by Perma-Fix with the support of the FERMCO labor force.

The FEMP Residue Management Plan was transmitted, by DOE-Oak Ridge, to the Tennessee Department of Environment and Conservation (TDEC) on November 24, 1995, for their approval. Approval by TDEC will allow Lockheed-Martin/ TSCA Operations to begin accepting waste from the FEMP once again.

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**RA No. 9, Removal of Waste Inventories**

**Current Month (continued):**

The Liquid Mixed Waste Project - Tank Decontamination Plan was approved by OEPA on October 25, 1995 and by USEPA on November 21, 1995. The approval letters granted final approval of the project Work Plan.

The Liquid Mixed Waste Project - Waste Blending Document was approved on November 17, 1995. This document will allow for the blending of Batch 1 to reduce the total activity. This blending will allow the material to be transported in DOE- Oak Ridge tankers and limit the DOT concerns associated with making a radioactive liquid shipment.

The Liquid Mixed Waste Project - Waste Water Treatment Option CERCLA Work Plan was placed on a Blue Sheet review and comments are being incorporated.

**Planned Activities:**

- Continue shipment of uranium derbies to Oak Ridge, Tennessee upon approval from MSC.
- Continue packaging operations to develop a surplus of LLW materials to be shipped to NTS upon easement of FY 1996 spending constraints.
- Incorporate comments into the Liquid Mixed Waste Project - Waste Water Treatment Option CERCLA Work Plan.

**RA No. 12, Safe Shutdown**

**Current Month:**

Plant 9 holdup material removal has been completed in the Zimlo/water treatment and Rockwell furnace areas. Holdup removal continues in the NPR furnace and machining areas. Several utility disconnections were completed and selected duct work and vacuum piping was removed. Work on the redistribution of electrical power that runs through the Plant 9 complex continues.

All restricted red drums in the Pilot Plant have been relocated to an interim on site storage location. Completed holdup removal from the RotoClone Dust Collector. Holdup removal is underway from the Heat Treatment area, the Plasma Spray/Grit Blaster, Dust Collector G2-7051 and Furnaces P-1 and P-2. Several utility disconnections were accomplished.

Continued utility disconnections and the removal and redistribution of salvageable equipment in Plant 5. Made preparations for draining oil from the Hilco Oil Reclaimer.

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RA No. 12, Safe Shutdown (continued)

**Planned Activities:**

- Complete utility disconnections and holdup material removal in Plant 9.
- Continue utility disconnections and holdup material removal in the Pilot Plant.
- Continue utility disconnections and holdup material removal plan development in Plant 5.
- Continue advanced planning to support Safe Shutdown of Plant 2/3.

RA No. 13, Plant 1 Ore Silos

**Current Month:**

In a letter dated November 8, 1995, the OEPA approved the Plant 1 Ore Silos Final Report.

**Planned Activities:**

- None to report.

RA No. 15, Scrap Metal Piles

**Current Month:**

Phase I: None to report.

Phase II: The Engineering Study contract was awarded to Manufacturing Sciences Corporation, Oak Ridge, TN, on September 20, 1995. The Phase II study is scheduled for completion by April 30, 1996.

**Planned Activities:**

- Phase I: Final disposition of the waste streams continues to be determined.
- Phase II: The Engineering Study of the Phase II waste streams will be managed by Waste Programs Management.
- Continue preparation of RA No. 15 Final Report.

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RA No. 15, Scrap Metal Piles (continued)

KEY MILESTONES	STATUS	DUE DATE
Phase I - On-Site Processing Off-Site Processing	Completed Completed	Sept. 30, 1993 March 25, 1994
Phase I - Submit draft Final Report to U.S. EPA	Completed	October 4, 1994
Phase IIB: Submittal of Subcontractor's Removal Action Project Plan	Cannot proceed until treatability/engineering study is completed.	Sept. 30, 1993
Phase IIB: Submittal of Final Report	Cannot proceed until treatability/engineering study is completed.	March 30, 1995

RA No. 17, Improved Storage of Soil and Debris

**Current Month:**

No activities to report for November 1995. The draft final report/closeout documentation for the two completed field activities (Third St. Soil and Rubble Pile and the Removal/Containerization of the SMP residues) was submitted to the U.S. and Ohio EPAs within the new draft Revision No. 3 of the RA 17 Work Plan on October 10, 1995.

**Planned Activities:**

- Awaiting comments from the U.S. and Ohio EPA on the draft Rev. 3 of the RA 17 Work Plan.

RA No. 19, Plant 7 Dismantling

**Current Month:**

Processing of the Plant 7 steel was completed October 25, 1995 at ALARON's decontamination facility. A total of 889,270 pounds (58.41%) was released for unrestricted use. Demobilization of the ALARON facility was completed on November 14, 1995 and FERMCO Quality Control released the facility for use on other ALARON projects. Approved by OEPA as required by the Stipulated Amended Consent Decree, all remaining primary and secondary wastes and shipping containers were shipped to the FEMP by November 16, 1995.

Preparation of the ALARON draft Final Report continues.

The Final Report for the Plant 7 Lead was received from SEG on November 3, 1995.

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RA No. 19, Plant 7 Dismantling (continued)

**Planned Activities:**

- ALARON to submit draft final report by the end of December 1995.
- Continue consolidation of containers of primary waste at Plant 7 Pad.

RA No. 20, Stabilization of UNH Inventories

**Current Month:**

As of the end of November 1995, the following items remained to be completed:

- completion of Tank D1-7 processing,
- processing of the last batch of Nitric Acid,
- rinsing of dilution/neutralization Tank F1-25 and F1-26,
- rinsing of Tanks D1-7 and D1-11, and
- rinsing of piping pieces removed during isolation of the UNH storage tanks.

As discussed in the October 1995 report, the project was stopped prior to transferring any of the organic material in Tank D1-11 to F1-25 or F1-26 to evaluate methods to break the emulsion and minimize organics from being moved forward in the processing. Laboratory studies continue to be performed to determine the best path forward.

Rinsing of the piping pieces removed during isolation of the UNH storage tanks is underway. At the end of November 1995, 4 of the 7 boxes had been rinsed.

**Planned Activities:**

- Continue laboratory studies on Tank D1-7 and D1-11 material to determine best path forward and continue rinsing of removed piping pieces.

RA No. 26, Asbestos Removals (Asbestos Program)

**Current Month:**

The asbestos abatement work continues in Plant 6.

The asbestos floor tile removal in the cafeteria continues.

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**RA No. 26, Asbestos Removals (Asbestos Program) (continued)**

**Planned Activities:**

- Continue to remove asbestos floor tile from the cafeteria.
- Complete friable asbestos removal in of Plant 4 by the end of December 1995.
- Begin friable asbestos removal in Plant 1 by end of December 1995.
- Complete the asbestos abatement work in Plant 6 by December 28, 1995.

**RA No. 28, Contamination at the Fire Training Facility**

**Current Month:**

In a letter dated October 25, 1995, OEPA approved the Contamination at the Fire Training Facility Final Report.

**Planned Activities:**

- None to report.

**RA No. 30, Seepage Control and Removal of Sediment at the South Field and Inactive Flyash Pile**

**Current Month:**

Construction of the seepage control was completed on August 16, 1995, corresponding with the construction schedule, operation and maintenance will continue. As-built drawings were completed September 29, 1995. The final report was issued to DOE and EPA for approval on November 30, 1995.

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***Removal Actions***

**RA No. 30, Seepage Control and Removal of Sediment at the South Field and Inactive Flyash Pile  
(continued)**

**Planned Activities:**

- RSO will monitor and sample in accordance with Operation and Maintenance Manual.

<b>KEY MILESTONES</b>	<b>STATUS</b>	<b>DUE DATE</b>
Submit RSE	Completed	October 11, 1994
Submit work plan to DOE	Completed	December 22, 1994
Submit work plan to EPAs	Completed	January 20, 1995
Complete Removal Action	Began Construction April 25, 1995	August 16, 1995
Submit Final Report to EPA	Completed Sent to EPA on November 30, 1995	December 8, 1995

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**1.0 Waste Pits Remedial Action Project**

The Waste Pits Remedial Action Project, as defined in the Amended Consent Agreement, includes Waste Pits 1 - 6, Clearwell, Burn Pit, berms, liners, and soil within the operable unit boundary.

**1.1 RI/FS Work Plan**

**Status:**

Complete.

**1.2 Remedial Investigation**

**Status:**

Complete.

**1.3 Feasibility Study/Proposed Plan**

**Status:**

Complete.

**1.4 Treatability Studies**

**Status:**

Dewatering Excavation Evaluation Program (DEEP) Phase IV, Dry Excavations, began October 17, 1995 with the construction of the ramp and 30-foot diameter pad in Waste Pit 1. The material excavated was found to be dry (<17% moisture), containing little debris, and strong enough to support excavation equipment. The Waste Pit 3 ramp and pad excavation was initiated October 25, 1995. The waste was found to be wet and of such a low strength, excavation equipment couldn't be supported on it. The excavation was completed on November 1, 1995. Decontamination and Decommission of equipment for the project is currently proceeding for the remaining equipment and facilities utilized during DEEP field activities. Laboratory analysis of DEEP samples is progressing for incorporation into the final report. The DEEP final report will be issued in late December 1995 or early January 1996.

**Issues/Corrective Actions:**

None to report.

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**1.5 Record of Decision**

**Status:**

Complete.

**Issues/Corrective Actions:**

None to report.

**1.6 RD Work Plan**

The Remedial Design (RD) Work Plan identifies the design deliverables, and presents the schedule for their submittal to U.S. EPA (in coordination with OEPA) for the implementation of the selected remedy described in the Operable Unit 1 (OU) Record of Decision.

**Status:**

A Final RD Work Plan was submitted to the U.S. and Ohio EPAs on July 7, 1995.

In a letter to the U.S. and Ohio EPAs dated August 18, 1995, providing a proposal for integration of site-wide remedial planning, DOE requested that the OU 1 Site Restoration Plan be deleted as an OU 1 remedial design deliverable. The letter also stated that the scope of this deliverable would be addressed in a site-wide plan as discussed in the proposal enclosed therein. In letters of September 8, and September 15, 1995, OEPA and U.S. EPA, respectively, expressed support of this proposal for site-wide integration, although both agencies stated that additional detail is needed and should be reflected in the respective RD/RA planning documents. In a letter dated October 12, 1995, DOE responded by stating that change pages would be issued for the OU 1 RD Work Plan upon approval of the OU 5 RD Work Plan, explicitly clarifying the scope of activity required by the OU 1 ROD that will be provided for in the OU 5 Remedial Design process. Change pages will also be issued at that time to describe the integrated Decontamination and Decommission concept with OU 3, providing a schedule for submittal of associated Implementation Plans.

**Issues/Corrective Actions:**

None to report.

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1.7 Remedial Design

Remedial design is the process wherein the broad concepts presented in the Record of Decision (ROD), relative to the selected remedy (e.g., drying, excavation, etc.), are developed into the technical requirements and direction needed to ensure that the remedial action is implemented in a manner that meets the requirements of the ROD. Remedial design consists of technical analyses and procedures which result in the development of various design documents. The RD Work Plan identifies the following deliverables: Plant Facilities Design Criteria Package, Plant Facilities Engineering, Equipment Specifications, Site Improvement Plan, Construction Schedule, Excavation Plan, Site Restoration Plan, and Transportation and Disposal Plan. The RD Work Plan also provides for submittal dates of October 24, 1995, for the preliminary design deliverables, and March 21, 1996, for the pre-final design deliverables.

**Status:**

The preliminary design package was submitted to U.S. EPA and Ohio EPA for review on October 23, 1995. Comments on these deliverables are due from the EPAs by December 26, 1995.

As indicated in the RD Work Plan, a key aspect of the strategy and schedule for the OU 1 remedial design is the provision for continuing the completion of design while the design documents are being reviewed by the EPAs. In this regard, efforts continued through November 1995 to provide further detail to the design, and otherwise keep the process moving, including various design meetings. In addition, a request for proposals was issued November 3, 1995, on the performance specification for the indirect dryer. Also, a subcontract was awarded to CSX Transportation on November 17, 1995, for the design of upgrades to three railroad trestles on the Branch Line between the Fernald site and Cottage Grove, IN. in order that this line is able to support off-site shipments of OU 1 materials.

A public workshop was held November 14, 1995, to update the public on the OU 1 remedial design process. Discussions focused on the status of the project, updates on the DEEP project, a walkthrough of the October 23, 1995 preliminary design package, a walkthrough of the remediation process reflected in the package, and a discussion of the path forward. A Fact Sheet on the preliminary design, a listing of the contents of the design deliverable packages, and copies of overheads were distributed.

**Issues/Corrective Actions:**

None to report.

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**1.8 RA Work Plan**

The Remedial Action (RA) Work Plan provides the basis for implementation of the Remedial Design Work Plan and includes, but is not limited to, the following: Sampling and Analysis Plan, Quality Assurance Project Plan, Health & Safety/Contingency Plan, Operations and Maintenance Plan, and a plan for meeting permitting requirements.

**Status:**

The Remedial Action Work Plan is scheduled for submittal to the U.S. and Ohio EPAs by October 22, 1996, as stated in the Remedial Design Deliverable Schedule submitted as part of the RD Work Plan.

**Issues/Corrective Actions:**

None to report.

**1.9 Planned Activities for December 1995:**

- Complete the Decontamination and Decommission of all equipment and facilities utilized during DEEP field activities within the OU 1 facility.
- Complete the DEEP final report in late December or early January.
- Activities on the design will continue, including activities associated with responding to comments due from the EPAs on December 26, 1995, on the preliminary design package.

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**2.0 Soil Remediation Project**

Operable Unit 2 (OU 2), as defined in the Amended Consent Agreement, includes the Flyash Piles, other South Field disposal areas, Lime Sludge Ponds, Solid Waste Landfill, berms, liners, and soil within the operable unit boundary.

**2.1 RI/FS Work Plan Addendum**

**Status:**

Complete.

**2.1.1 RI Field Investigation**

**Status:**

Complete.

**2.2 Remedial Investigation**

**Status:**

Complete.

**Issues/Corrective Actions:**

None to report.

**OPERABLE UNIT 2 REMEDIAL INVESTIGATION REPORT**

**PRIMARY MILESTONES**

SCOPE	SUBMIT TO EPA <sub>s</sub>	RECEIVE FROM EPA <sub>s</sub>	FINAL DUE DATE TO EPA <sub>s</sub>	ACTUAL DATE SUBMITTED
Details the nature and extent of contaminants within the OU 2 study area. Estimates the volume of contaminated media and materials. Provides a baseline risk assessment and establishes remedial action objectives.	2/18/94 C	4/22/94	1/21/95	1/20/95

C = Consent Agreement Date

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**2.3 Feasibility Study/Proposed Plan**

**Status:**

Complete.

**Issues/Corrective Actions:**

None to report.

**OPERABLE UNIT 2 FEASIBILITY STUDY/PP REPORT**

**PRIMARY MILESTONES**

SCOPE	SUBMIT DRAFT TO EPA <sub>s</sub>	RECEIVE FROM EPA <sub>s</sub>	SUBMIT FINAL DRAFT TO EPA <sub>s</sub>	ACTUAL FINAL SUBMITTAL TO EPA <sub>s</sub>
Describes and analyzes potential remedial alternatives. A comparative analysis will be performed for all alternatives. The Proposed Plan identifies potential remedial alternatives as listed in the FS and presents the preferred alternative to the U.S. EPA and the public.	4/29/94 C	7/5/94 C	8/24/94 C	3/1/95

C = Consent Agreement Date

**2.4 Treatability Studies**

**Status:**

None to report.

**Issues/Corrective Actions:**

None to report.

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**2.5 RD/RA Work Plan**

**Status:**

The Operable Unit 2 Draft Remedial Design Work Plan report was submitted to the U.S. EPA for review and approval and the OEPA for review on August 4, 1995. The document was transmitted three days ahead of schedule. Conditional Approval was received from U.S. EPA on September 18, 1995. Responses and change pages were sent to the EPA on October 17, 1995, approval was received November 16, 1995.

**Issues/Corrective Actions:**

None to report.

**2.6 Record of Decision**

**Status:**

The Record of Decision (ROD) was signed by DOE and submitted to the EPAs on May 12, 1995. Formal approval was received June 8, 1995 and the Final Operable Unit 2 ROD was submitted to the EPAs and general distribution was completed.

**2.7 Pre-Design Field Investigation**

**Status:**

A draft Predesign Investigation Report was submitted to DOE for review on June 12, 1995. DOE comments were incorporated into the report and the document was transmitted to the U.S. and Ohio EPAs ahead of schedule on July 28, 1995. The OEPA comments to the document were received September 11, 1995 and U.S. EPA approved the report on September 14, 1995. Responses to Ohio EPA comments were incorporated and resubmitted on October 10, 1995. Approval was received on November 2, 1995.

**Planned Activities for December 1995:**

- The Addendum to the Predesign Investigation Project Specific Plan will be submitted for DOE review by the end of December.

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**2.8 Geotechnical Field Investigation**

**Status:**

U.S. EPA unconditionally approved Revision 1 of the Geotechnical Sampling and Testing Plan (GSTP) for On-Site Clay Borrow Areas, Off-Site Material Sources, and Operable Unit 2 Waste Units on August 31, 1995. OEPA conditionally approved Response to Comments on the Draft Geotechnical sampling and Testing Plan for On-Site Borrow Areas, Off-Site Material Source, and Operable Unit 2 Waste Units on October 30, 1995.

The field work governed by the GSTP was performed during September and October 1995, and the corresponding laboratory activities began in October 1995 and are scheduled to be completed in February of 1996.

**Planned Activities for December 1995:**

- Issue the Final Geotechnical Sampling and Testing Plan for On-Site Clay Borrow Areas, Off-site Material Sources and OU 2 Waste Units.
- The Final Geotechnical Results, Report for the Phase III (Site-wide Disposal Facility Geotechnical Investigation) is scheduled to be received from PARSONS during December 1995.

**2.9 Disposal Facility**

**Status:**

On-Site Disposal Facility (OSDF) Design - The preliminary design package is scheduled to be submitted to U.S. EPA and Ohio EPA by December 22, 1995. Response to DOE comments on the preliminary design package is being prepared. This preliminary design package includes: Design Criteria Package, Design Calculations, Design Drawings, and Technical Specifications.

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**3.0 Facilities D&D Project**

The Facilities D&D Project, as defined in the Amended Consent Agreement, includes the Production Area and production-associated facilities and equipment (including all above-and below-grade improvements) including all structures, equipment, utilities, drums, tanks, solid waste, waste, product, thorium, effluent lines, K-65 transfer lines, waste water treatment facilities, fire training facilities, scrap metal piles, feed stocks, and coal pile.

**3.1 Remedial Investigation/Feasibility Study Report**

**Status:**

A streamlined and combined Draft RI/FS Report and the Proposed Plan was submitted to the U.S. and Ohio EPAs and DOE on September 11, 1995. DOE received comments from U.S. EPA on November 14, 1995, and from Ohio EPA on November 15, 1995. A Comment Response document is under development and will be submitted to both agencies on December 14, 1995.

**Issues/Corrective Actions:**

Resolution of regulator comments on the OU 3 RI/FS Report with submittal of a comment response document on December 14, 1995.

**OPERABLE UNIT 3 REMEDIAL INVESTIGATION/FEASIBILITY STUDY**

**PRIMARY MILESTONES**

SCOPE	SUBMIT TO EPAs	RECEIVE FROM EPAs	SUBMIT TO EPAs FINAL
Details the nature and extent of contaminants within the OU 3 study area. Estimates the volume of contaminated media and materials. Characterizes contamination in the former production area. Develops remedial action objectives and describes and analyzes potential remedial alternatives. A comparative analysis will be performed for all alternatives. The Proposed Plan identifies potential remedial alternatives as listed in the FS and presents the preferred alternative to the U.S. EPA and the public.	09/11/95 C	12/05/95 C	01/24/96 C

C = Consent Agreement Date  
 F = Forecast Date

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**3.2 Engineering Studies**

**Status:**

Technical comments from the internal review of the Transite Characterization Engineering Study draft final report were forwarded for resolution and incorporation into the report. The final report is expected to be issued by the first week of December 1995.

A decision has been made to complete Phase I and discontinue phases planned for the future on the Ultrasonic Decontamination of Strategic Metals project. A summary report on work finished to date is being prepared.

The FEMP is supporting DOE Morgantown Energy Technology Center (DOE-METC) on a Program Research and Development Announcement (PRDA). This project is an EM-50 funded project in which KAI Tech. Inc. is developing a process that will destroy asbestos and use ion exchange to remove radiological and heavy metal contaminants. Current efforts are directed to locating contaminated asbestos pipe insulation for testing of the technology. Safe Shutdown is exploring the possibility of removing contaminated pipe insulation in the Pilot Plant or Plant 9 for this project.

**Issues/Corrective Actions:**

None to report.

**3.3 Interim Remedial Action**

**Status:**

**Prioritization and Sequencing Report** - On October 23, 1995 a response was submitted to USEPA to update the OU 3 Remedial Design Prioritization and Sequencing Report (PSR) schedule for structural Decontamination and Dismantlement to reflect the accelerated planning schedule (i.e., the \$276 Million Case). The submittal committed to provide USEPA with FY-96 enforceable milestones once the annual budget has been determined. Comments are expected from the USEPA by December 22, 1995.

**Dismantlement of MAWS Equipment** - The FEMP is awaiting the results of the DCAA audit on the Duratek contract before issuing a Notice to Proceed for Safe Shutdown to remove the Duratek equipment (i.e., 300 kg/day vitrifier and water treatment system) as salvageable equipment under Safe Shutdown. According to Argonne National Lab (the MAWS contractor), the DCAA audit is almost complete.

A change proposal for supporting the removal of the Lockheed-owned soil washing system was approved by the Level II Review Board for \$105,000. This figure includes costs for site-specific training of Lockheed personnel, FERMCO labor to support Lockheed (e.g., radiation technicians, crane operator, riggers, etc.), PPE, and minimal waste disposition.

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**3.3 Interim Remedial Action**

**Dismantlement of MAWS Equipment (continued) -**

Cost and duration estimates for Safe Shutdown to remove the different systems of MAWS are being prepared. As is currently intended, this information will form the basis of a letter to the contracting officer of Argonne National Lab, requesting that value of the cost estimate from Lockheed be withheld until the soil washing equipment is removed.

**Issues/Corrective Actions:**

None to report.

**3.4 Planned Activities for December 1995:**

- Issue the Final report for the Transite Characterization Engineering Study.
- Review and incorporate technical comments into a summary report for the Ultrasonic Cleaning of Strategic Metals Engineering Study.
- Review comments on the revised PSR dismantlement schedule which are expected from USEPA by December 22, 1995.
- Respond to comments received on the OU 3 RI/FS Report through development of a comment response document that includes change pages.
- Incorporation of internal FERMCO review comments on the Draft OU 3 Record of Decision.

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**4.0 Fernald Residues Vitrification Plant Project**

The Fernald Residues Vitrification Plant Project, as defined in the Amended Consent Agreement, consists of Silos 1, 2, 3, and 4, the silo berms, the Decant Sump Tank System, and soil within the operable unit boundary.

**4.1 RI/FS Work Plan**

**Status:**

Complete.

**4.2 Remedial Investigation**

**Status:**

Complete.

**4.3 Feasibility Study/Proposed Plan**

**Status:**

Complete.

**4.4 Treatability Studies**

**4.4.1 Bench Scale Treatability Studies**

**Status:**

Complete.

**4.4.2 Pilot Plant Treatability Studies**

**Status:**

Comments on the Phase I Work Plan are being addressed for submittal to DOE-FN on December 15, 1995. Comments on the Phase II Work Plan are being addressed for submittal to DOE-FN on December 29, 1995.

**Issues/Corrective Actions:**

None to report.

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**4.5 Record of Decision**

**Status:**

Complete.

**4.6 RD Work Plan**

**Status:**

Complete.

**4.7 Planned Activities for December 1995:**

- Continue construction of the Phase I Pilot Plant facility.
- Address comments on the Phase I Work Plan.
- Address comments on the Phase II Work Plan.

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**5.0 Aquifer Restoration Project**

The Aquifer Restoration Project, as defined in the Amended Consent Agreement, includes: groundwater, surface water, and soil not included in the definitions of Operable Units 1 through 4, sediment, flora and fauna.

**5.1 Remedial Investigation**

**Status:**

Complete.

**Issues/Corrective Actions:**

None to report.

**OPERABLE UNIT 5 REMEDIAL INVESTIGATION REPORT**

**PRIMARY MILESTONES**

SCOPE	SUBMIT TO EPA <sub>s</sub>	RECEIVE FROM EPA <sub>s</sub>	SUBMIT TO EPA <sub>s</sub> FINAL
Details the nature and extent of contaminants within the OU 5 study area. Estimates the volume of contaminated media and materials. Provides a baseline risk assessment and establishes remedial action objectives.	06/24/94 C	09/12/94 C	11/01/94 C 11/01/94 A

C = Consent Agreement Date  
A = Actual Date

**5.2 Feasibility Study/Proposed Plan (FS/PP)**

**Status:**

The Feasibility Study Report was completed on July 21, 1995.

**Issues/Corrective Actions:**

None to report.

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OPERABLE UNIT 5 FEASIBILITY STUDY/PROPOSED PLAN

PRIMARY MILESTONES

Table with 4 columns: SCOPE, SUBMIT TO EPA's, RECEIVE FROM EPA's, SUBMIT TO EPA's FINAL. Row 1: Describes and analyzes potential remedial alternatives... 11/15/94 C, 11/15/94 A, 01/16/95 C, 02/14/95 C

C = Consent Agreement Date
A = Actual Date

5.3 RCRA Monitoring

Status:

Data from the RCRA groundwater program is currently being reviewed. The annual report is being prepared and is due to the EPA's on March 1, 1995.

Issues/Corrective Actions:

None to report.

5.4 Treatability Studies

Complete.

5.5 Record of Decision (ROD)

Status:

The draft final ROD was submitted to the U.S. and Ohio EPA's for review on November 13, 1995. When U.S. EPA indicates that the ROD is approvable, the document will be stripped of all reader aids (redlined and struck-out text, comment numbers, and line numbering) and the final version will be jointly issued by EPA and DOE. This is expected to take place during December 1995.

Issues/Corrective Actions:

None to report.

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**5.6 Other Studies/Reports**

**Status:**

**K<sub>1</sub> Sampling and Analysis Report:** The Ohio and U.S. EPA has received change pages and subsequently approved the report— U.S. EPA previously approved the report pending transmittal of these change pages.

**Leak Detection Monitoring Points (LDMPs):** On November 6, DOE submitted a letter to U.S. EPA and Ohio EPA regarding LDMPs along the South Plume recovery well field discharge piping. The letter discusses the viability of continuing to use the current LDMPs as a means of detecting leaks from the piping. DOE requested U.S. EPA and Ohio EPA concurrence with discontinuing LDMP sampling based on information provided in the letter and associated attachments.

**Issues/Corrective Actions:**

None to report.

**5.7 RD/RA Activities**

**Status:**

A draft RD Work Plan has been in preparation for some time. After the ROD is signed, the Work Plan will undergo preliminary internal review.

**Issues/Corrective Actions:**

None to report.

**5.8 Planned Activities for December 1995:**

- Finalize the ROD in preparation for joint signature by EPA and DOE.
- Continue preparation of the draft Remedial Design Work Plan.
- Continue work on the draft Integrated Environmental Monitoring Plan.

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**6.0 Community Relations**

**Status:**

During the November 1, 1995 Fernald Envoy meeting, envoys were provided an overview on the *Fernald Environmental Management Project Economic Impact Assessment 1991-1998*, recently prepared by UC representatives to measure the total economic effect of Fernald on the region. The economic assessment was conducted by two UC research arms; the Center for Economic Education and the Institute for Policy Research. Employees, local residents, and business owners participated in surveys and focus groups conducted by U.C. In addition, Fernald supplied the researchers financial data for use in the study. A Regional Input-Output Modeling System (RIMS II) was used to measure the economic effects. Assessment findings included:

- For every dollar spent by Fernald, over \$3.20 is generated throughout the region.
- More than 12,000 jobs are needed in the region to fulfill Fernald demands.
- Fernald outlays accounted for 0.2 percent of Ohio's gross state product in 1993.
- Nearly \$4.5 billion will be generated in the Cincinnati economy due to Fernald in the next 4 years.
- Fernald's economic impact is not noticeable to many local residents and business owners.

Two new roles are being considered for Fernald Envoys. The first is as an internal advisory committee; the second role is facilitating internal communication. A communications plan for the facilitating internal communications roles is being prepared and will be distributed to Envoys when complete. In addition, a pilot project is being considered to test the internal communications role. During this pilot project, three or four Envoys will serve as liaisons to selected work groups, working with supervisors to ensure employees are informed about Fernald activities.

On November 6, 1995 DOE Fernald Area Office Director Jack Craig, FERMCO President Don Ofte, and FERMCO Vice President Mike Yates traveled to Washington, D.C., to brief House of Representative and Senate staff members concerning the status of Fernald's cleanup. Craig presented an overview of the 10-year accelerated cleanup plan, the Fernald Citizens Task Force recommendations, and safety and cost reduction initiatives. Ofte discussed FERMCO's safety performance, remediation progress and the accelerated cleanup path forward. Yates explained the 10-year accelerated cleanup plan and remediation.

A public workshop was held November 14, 1995 to discuss remedial design activities in support of the waste pits remedial action project. Results of the recently completed Dewatering Excavation Evaluation Program (DEEP) were presented, and that information has been incorporated in the preliminary design package. Also discussed were the remedial design/remedial action schedule and opportunities for public involvement during the project.

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**6.0 Community Relations**

**Status:** (continued)

Airborne uranium emissions from the Fernald site continued to decline in 1994, as highlighted in the annual Fernald Site Environmental Report (SER), issued November 13, 1995. 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. The SER is available at the Public Environmental Information Center.

On November 17, 1995 FERMCO logged 3 million consecutive safe work hours with no lost workday accidents. During this period, which began in March, several complex cleanup projects were in progress, including the uranyl nitrate hexahydrate (UNH) transfer and neutralization project and Plant 4 decontamination and dismantling activities.

DOE has awarded a contract to the International Association of Fire Fighters (IAFF) to provide hazardous materials response training for fire departments along DOE's truck transportation routes. All fire departments in Fernald's vicinity will be included. The purpose is to reduce potential risks associated with radioactive and hazardous wastes in the event of a transportation-related accident, leak or spill. Emergency response trainers will receive special instruction and materials to assist them in responding to potential transportation-related emergencies involving radioactive or hazardous waste from selected DOE sites. IAFF is an experienced authority in developing training for emergency response personnel, who have unique responsibilities with these types of emergencies. IAFF has trained over 400,000 fire fighters in the United States.

To permit more efficient performance of remedial design/remedial action at Fernald, FERMCO has changed how the operable units are divided among technical teams, which had previously been referred to as CERCLA/RCRA Units (CRUs) 1 through 5. The Fernald site is divided into five sections known as operable units. Each operable unit is defined by its location or the potential for similar technologies to be used in the ultimate cleanup. The CRU management approach has been replaced with five fully integrated "project organizations" to focus on successful planning and execution of remedial activities for discrete segments of Fernald's total project scope. All agreements and project documentation expectations with the regulatory agencies remain in effect. Following are the new operable unit project descriptions:

Operable Unit 1	Waste Pits Remedial Action Project
Operable Unit 2	Soil Remediation Project
Operable Unit 3	Facilities D&D (Decontamination & Dismantlement Project)
Operable Unit 4	Fernald Residues Vitrification Plant Project
Operable Unit 5	Aquifer Restoration Project

Two new reports are available for interested stakeholders. The first, titled *Introduction to Fernald*, provides an overview of the site. The second is the *1995 Strategic Plan*, which outlines DOE's goals for Fernald. Both documents are available at the PEIC.

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*Remedial Investigations/Feasibility Studies*

**6.0 Community Relations**

**Status: (continued)**

Leases enabling cattle to graze on the eastern portion of the Fernald site will be terminated in February 1996. Currently, there is no reason to discontinue leases which permit the cattle to graze on the western portion of the site. Historically, DOE has renewed grazing leases every five years. However, from now on, lease agreements will be negotiated on a year-to-year basis to provide more flexibility should construction schedules change and access to parts of the site may be required. Fernald personnel will continue to access to these areas, as needed.

**6.1 Planned Activities for December 1995:**

- On December 6, 1995 the *Fernald Report* will be mailed to approximately 1,135 stakeholders, including those in the immediate community.
- The Fernald Citizens Task Force will meet December 7, 1995 at the Joint Information Center, Fairfield. The task force will be adding another member; a recommendation will be made in December 1995.
- The next DOE community meeting is scheduled for December 12, 1995 from 6:30 p.m. to 9 p.m., at the Plantation, in Harrison. A project update and breakout sessions on Fernald's accelerated cleanup plan and public involvement in the remedial design process are included on the meeting agenda.
- By December 15, 1995 DOE expects to receive the UC's final investigation report on alternative radium sources which could be used as feedstocks for the production of medical isotopes. Scientists are currently evaluating the potential for using Fernald's K-65 silo residues. In addition, the scope of work has been finalized for UC to study potential processes for extracting the radium from vitrified K-65 waste.
- Public comments on the environmental assessment (EA) regarding disposition of prehistoric remains associated with the public water supply project are due December 18, 1995. The EA was prepared pursuant to the National Environmental Policy Act, which requires DOE to consider impacts to humans and the environment as a result of the project. Reburial of the remains on Fernald property is the preferred alternative being considered. Comments are to be submitted to the Fernald Area Office.

**Issues/Corrective Action:**

None to report.

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**ENCLOSURE A**

**WASTE WATER FLOWS AND RADIONUCLIDE  
CONCENTRATIONS UNDER CA SECTION XXIII.B**

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
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**Period Ending November 30, 1995**

**ENCLOSURE A**

**Introduction**

The accompanying Effluent Radiation Reports provide, in accordance with the requirements of Section XXIII.B of the Consent Agreement As Amended under CERCLA Sections 120 and 106 (a), data on the daily waste water flows, radionuclide concentrations, and loadings released to the Great Miami River and an estimate of runoff and radionuclide concentrations to Paddy's Run during November 1995. Effective November 1, 1995, The new NPDES permit 11o00004\*ED, identified the Parshall Flume as the monitoring location for all discharges to the Great Miami River.

**Summary - November 1995**

The total quantity of uranium discharged from the FEMP to the Great Miami River via the Parshall Flume(Outfall 11o00004001) was 7.69 kilograms. The average uranium concentration for the month was 29 ug/L. This is 3.26% of the Derived Concentration Guide (DOE Order 5400.5) for ingested water.

There were no discharges from the Storm Water Retention Basin Spillway (Outfall 11o00004002) to Paddy's Run via the Storm Sewer Outfall Ditch in November 1995.

Based on 2.09 inches of rainfall in November 1995, the total quantity of uranium discharged to Paddy's Run from uncontrolled areas of the FEMP is estimated to be 5.94 kilograms.

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
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**ENCLOSURE A**

**EFFLUENT RADIATION REPORT**

**FACILITY:** Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O.Box 398704  
Cincinnati, Ohio 45239-8704  
9002 M 9501 900212

**LOCATION:** 11O00004001  
4001 Total Discharge  
Parshall Flume (Effluent to Great Miami River)

**DATE:** NOVEMBER 1995

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (ug/l)	Total U (kgs)	Calculated Total U-238 (pCi/l) (1)
1	2.593	10	32	15	0.14	5
2	2.847	10	96	15	0.16	5
3	2.633	8	130	15	0.15	5
4	2.646	7	130	16	0.16	6
5	1.892	8	170	23	0.16	8
6	1.995	20	220	31	0.23	10
7	2.011	18	260	24	0.18	8
8	2.031	12	250	22	0.17	7
9	1.909	14	310	21	0.15	7
10	1.859	14	310	19	0.13	6
11	2.267	9	290	19	0.16	6
12	2.433	14	290	21	0.19	7
13	2.471	18	320	29	0.27	10
14	2.671	12	290	21	0.21	7
15	2.598	12	320	19	0.18	6
16	2.755	11	300	21	0.22	7
17	2.581	14	350	22	0.21	7
18	2.560	12	410	26	0.25	9
19	2.515	19	450	26	0.24	9
20	2.700	18	390	31	0.32	11
21	2.615	21	440	32	0.32	11
22	2.607	20	490	32	0.32	11
23	2.479	25	440	38	0.36	13
24	2.261	24	490	40	0.34	13
25	2.522	**	**	56	0.53	19
26	1.751	**	**	106	0.70	36
27	1.723	**	**	84	0.55	28
28	1.807	**	**	35	0.24	12
29	1.800	**	**	26	0.18	9
30	1.801	**	**	35	0.24	12
<b>Total</b>	<b>69.333</b>				<b>7.69</b>	

\*\* Analytical results not yet available.

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**ENCLOSURE A**

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: 4001 Total Discharge

DATE: NOVEMBER 1995

	Flow (MGD)	Total Alpha (pCi/l)(2)	Total Beta (pCi/l)(2)	Total U (ug/l)(2)	Total U (kgs)	Calculated Total U-238 (pCi/l)(1)(2)
Avg.	2.311	12	250	29	0.26	10
Max.	2.847	25	490	106	0.70	36
Min.	1.723	**	**	15	0.13	5

The average uranium concentration for the month was 29 ug/l.  
This is 3.26 percent of the Derived Concentration Guide (DOE Order 5400.5)  
for ingested water.

Comments: (1) The activity of this discharge has been and will continue to be reported as Uranium-238 (pCi/l) in accordance with the Ohio EPA format for reporting uranium. Since this does not account for the activity of the other uranium isotopes in the effluent, the total uranium data is also presented. The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.

(2) Average values presented are flow-weighted.

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**ENCLOSURE A**

**EFFLUENT RADIATION REPORT**

**FACILITY:** Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O.Box 398705  
Cincinnati, Ohio 45239-8705  
9002 M 9501 900212

**LOCATION:** 11O00004002  
4002 Discharge (Overflow) to Storm Sewer Outfall Ditch  
Stormwater Retention Basin Spillway (Effluent to Paddy's Run)

**DATE:** NOVEMBER 1995

There was no discharge to Paddy's Run from the Stormwater Retention Basin.

Based on 2.09 inches of rainfall for the month, the uranium discharge to Paddy's Run from uncontrolled areas of the FEMP is estimated to be 5.94 kgs.

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**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE  
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**ENCLOSURE B**

**FFCA: INITIAL REMEDIAL MEASURES**

**AND OTHER OPEN ACTIONS**

**000044**

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR CONTROL AND ABATEMENT OF RADON-222 EMISSIONS MONTHLY PROGRESS REPORT**

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**ENCLOSURE B**

**INTRODUCTION**

Enclosure B describes actions undertaken at the FEMP during the period November 1, through November 30, 1995 that are not covered by the reporting requirements of the Consent Agreement As Amended under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Sections 120 and 106(a).

**WORK ASSIGNMENTS AND PROGRESS**

Descriptions of ongoing work progress are presented in the following sections of this report. The status of ongoing work in support of the Federal Facility Compliance Agreement (FFCA) is summarized in Table 1 of Enclosure B. Completed work previously reported upon has been eliminated for the sake of brevity. In this portion of the report and in Table 1, descriptions of actions are presented in a format consistent with that of the FFCA.

**COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT AS AMENDED (CERCLA)**

- 1. Initial Remedial Measures

*Section C*

K-65 Silo Project - Status information on the K-65 Silo project normally reported in this section is being provided under Operable Unit 4: Silos 1-4.

- 2. Remedial Investigation/Feasibility Study (RI/FS)

Status information on the Remedial Investigation/Feasibility Study (RI/FS) normally reported in this section is being provided separately in accordance with the requirements of Section X of the Consent Agreement As Amended under CERCLA Sections 120 and 106(a).

- 3. Reports and Record Keeping

*Section B*

The RI/FS Monthly Technical Progress Report for October 1995 was transmitted to the U.S. EPA and OEPA on November 16, 1995, as an integral part of the Consolidated Consent Agreement/Federal Facility Compliance Agreement/Federal Facility Agreement for Control and Abatement of Radon-222 Emissions (CA/FFCA/FFA-CARE) Monthly Progress Report in accordance with the requirements of Section X of the Consent Agreement As Amended.

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**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
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**ENCLOSURE B**

**CLEAN AIR ACT (CAA)**

*Section E*

The Quarterly Particulate Emissions Report will now be incorporated into the Annual NESHAP Compliance Report.

**RADIATION DISCHARGE INFORMATION**

*Section A*

This information will now be submitted on an annual basis as part of the FEMP Site Environmental Report.

**REPORTING REQUIREMENTS**

*Section B*

The Federal Facility Compliance Agreement Monthly Progress Report for October 1995, was transmitted to the U.S. EPA and OEPA on November 16, 1995 as Enclosure B of the Consolidated Consent Agreement/Federal Facility Compliance Agreement/Federal Facility Agreement for Control and Abatement of Radon-222 Emissions (CA/FFCA/FFA-CARE) Monthly Progress Report.

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**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
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**ENCLOSURE B**

**TABLE 1**

**STATUS OF ASSIGNMENTS FOR WORK REQUIRED ON  
FEDERAL FACILITY COMPLIANCE AGREEMENT ACTIONS**

ACTION	DESCRIPTION	COMPLETION TIME AFTER FFCA SIGNED	FY1995 STATUS
<b>CERCLA</b>			
1.	INITIAL REMEDIAL MEASURES		
1.C	Implement radon control plan approved by the U.S. EPA.	-----	No longer applicable. Progress on actions to address radon emissions from the K-65 Silos are being reported separately under Section IX- Removal Actions of the Consent Agreement/FFCA Monthly Progress Report.
2.	REMEDIAL INVESTIGATION/FEASIBILITY STUDY		No action required.
2.A	RI/FS work is to be conducted in accordance with the U.S. EPA guidelines.	N/A	
2.B	--No Action Required--	-----	Status information on the RI/FS is being reported in accordance with the requirements of Section X of the Consent Agreement As Amended under CERCLA Sections 120 and 106(a).
2.E	Amend and submit revised RI/FS Work Plan to U.S. EPA if deficiencies are found.		Status information on the RI/FS is being reported in accordance with the requirements of Section X of the Consent Agreement As Amended under CERCLA Sections 120 and 106(a).
2.F	Implement tasks described in the approved RI/FS Work Plan		Status information on the RI/FS is being reported in accordance with the requirements of Section X of the Consent Agreement As Amended under CERCLA sections 120 and 106(a).
3.	REPORTS AND RECORD KEEPING		
3.B	Submit monthly RI/FS progress reports.	monthly	The RI/FS Monthly Progress Report for October 1995 was transmitted to the U.S. EPA and OEPA on November 16, 1995.

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**ENCLOSURE B**

**TABLE 1**

**STATUS OF ASSIGNMENTS FOR WORK REQUIRED ON  
FEDERAL FACILITY COMPLIANCE AGREEMENT ACTIONS**

ACTION	DESCRIPTION	COMPLETION TIME AFTER FFCA SIGNED	FY1995 STATUS
<b>CLEAN AIR ACT</b>			
B.4	Prepare annual progress report installation and replacement of emission control devices.	yearly	The Sixth Annual Progress Report on the installation and replacement of emission control devices was prepared by the Effluent Monitoring and Control Section of the ES&H Division. The report was transmitted to DOE on July 15, 1994.
C.	Provide annual reports to the U.S. EPA per 40 CFR 61.94(c).	yearly	The Annual NESHAP Compliance Report for CY1993 was transmitted to the U.S. EPA on June 29, 1995.
D.1	Provide U.S. EPA with yearly stack-testing schedule.	yearly	<p>No stacks related to production were operating in 1994 or to this date in 1995.</p> <p>Due to the permanent shutdown of metals production, resumption of the FFCA Stack Testing Program is unlikely. A proposal is being developed to substitute the NESHAP Subpart H testing/monitoring program for the FFCA Stack Testing. When this proposal is completed it will be formally submitted to U.S. EPA.</p>
D.2	Provide U.S. EPA with stack-test results for stacks tested that year.	45 days	<p>The following test were conducted in May 1995:</p> <p>May 9            Test contractor tests Laundry stack (6 hour test)</p> <p>May 10          Test contractor test EIMCO stack (3 hour test)</p> <p>The results of the stack tests were sent to the U.S. EPA at the address listed in the FFCA. These reports were returned, address unknown. Contact with U.S. EPA will be initiated to determine; 1) Does the U.S. EPA want these reports and if so then, 2) Where should they be mailed.</p>
E.1	Maintain records of monthly particulate matter emissions.	-----	Ongoing.

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ENCLOSURE B

TABLE 1

STATUS OF ASSIGNMENTS FOR WORK REQUIRED ON FEDERAL FACILITY COMPLIANCE AGREEMENT ACTIONS

ACTION	DESCRIPTION	COMPLETION TIME AFTER FFCA SIGNED	FY1995 STATUS
<b>RCRA</b>			
A.1	Conduct a hazardous waste determination on all waste streams.	30 days	Complete. Pursuant to the Proposed Amended Consent Decree, a RCRA waste evaluation was conducted on all identified waste streams pertaining to the PACD.
A.2	Commence a hazardous waste analysis program for materials in the landfill and going to the incinerator.	30 days	Complete. Operation of these units was discontinued and data on the waste which had gone to them was provided in a 30-day FFCA deliverable on August 17, 1986.
A.5	Update the facility closure plan to reflect the year the facility expects to begin closure.	30 days	The Facility closure date is dependent upon closure schedules for individual TSD units as presented most recently in Section I of the RCRA Part B Permit Application transmitted to the Ohio EPA and the U.S. EPA on March 26, 1993 (DOE-1471-93). Facility closure will be completed on a date the last TSD unit is closed.
<b>REPORTING REQUIREMENTS</b>			
B.	Issue monthly progress report of actions taken to ensure compliance with FFCA requirements.	monthly	October's CA/FFCA Monthly Progress Report was transmitted to the U.S. EPA and OEPA on November 16, 1995.

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**ENCLOSURE C**

**FEDERAL FACILITY AGREEMENT:  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS**

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
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**ENCLOSURE C**

**Introduction**

The Federal Facility Agreement for Control and Abatement of Radon-222 Emissions (FFA-CARE) between the U.S. Department of Energy (DOE) and the U.S. Environmental Protection Agency (U.S. EPA), signed November 19, 1991, requires that a monthly report be submitted to the U.S. EPA regarding all steps undertaken in the preceding month to implement Part V of the agreement and that all data generated as a result of those actions be submitted.

Enclosure C fulfills those requirements by describing steps taken at the FEMP during the period November 1, through November 30, 1995, to implement Part V, Radon-222 Control and Abatement Plan, paragraphs 19-33 of the FFA-CARE.

**Work Assignments and Progress**

In this section of Enclosure C, action descriptions and work progress are presented in a format consistent with that of the FFA-CARE. Immediately following this section are the K-65 Silos Report and the Selected Radon Data Report. Reporting this data is also a requirement included in the U.S. EPA approved Silos 1 and 2 Removal Action Work Plan (Removal Action No. 4).

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CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR CONTROL AND ABATEMENT OF RADON-222 EMISSIONS MONTHLY PROGRESS REPORT

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ENCLOSURE C

Table with 4 columns: FFA Part, Paragraph(s), Description of Commitment, FFA Due Date, Status of Commitment. Rows include commitments for silo removal, radon reduction, methodology submission, performance evaluation, and radon flux measurement.

10/1/95

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
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<b>FFA Part, Paragraph(s)</b>	<b>Description of Commitment</b>	<b>FFA Due Date</b>	<b>Status of Commitment</b>
Part V, 26	Include direct measurement data from Waste Pits 1, 2, 3, 4, and 5 and the Clearwell in the RI/FS under the CERCLA Consent Agreement.	None specified.	See above.
Part V, 27	Estimate radon-222 emissions from Silo 3 based upon characterization data; include the estimated radon-222 emission data from Silo 3 in the RI/FS that includes Silo 3 under the CERCLA Consent Agreement.	None specified.	Completed.
Part V, 28	Submit documentation or estimates of current radon-222 emissions from existing but newly discovered sources that contain radium-226 in sufficient concentrations to emit radon-222 in excess of NESHAP Subpart Q prior to final remediation.	Within 30 days of discovery.	No new sources identified.
Part V, 30	Submit methodology for direct measurement or other appropriate means of characterization of the relevant emissions pursuant to paragraph 29 of the FFA.	Within 45 days of the U.S. EPA response pursuant to paragraph 29.	None required.
Part V, 31	Submit results of measurements pursuant to paragraph 30.	Within 30 days of U.S. EPA approval of characterization method.	None required.
Part VI, 31	Submit monthly report on steps undertaken to implement Part V of the FFA-CARE and the data obtained in the preceding month.	20th day of succeeding month.	The progress report being submitted herewith as an integral part of the CERCLA Consent Agreement Monthly Progress Report.

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**ENCLOSURE C**

**Data Reporting Requirements: RA No. 4: Silos 1 and 2**

As defined in the Silos 1 and 2 Removal Action Work Plan and the Federal Facility Agreement, data associated with monitoring the effectiveness of the bentonite installation are included in the following tables: the K-65 Silos Report and the Selected Radon Data Report.

The K-65 Silos Report includes data on the following parameters:

- ambient temperature and pressure near the silos,
- Silos 1 and 2 headspace temperature,
- Silos 1 and 2 differential pressure,
- Silos 1 and 2 radon headspace concentration, and
- Silos 1 and 2 headspace humidity.

The Selected Radon Data Report includes radon data from the following locations:

- Air monitoring station number 5 (AMS-5),
- Air monitoring station number 6 (AMS-6),
- Pilot Plant,
- Background data, and
- K-65 Monitoring Data (K-65 NW, K-65 SW, K-65 NE, K-65 SE).

Per letter dated July 18, 1995, U.S. EPA granted DOE-FN relief from reporting non-radon parameter data. Non-radon data would only need to be reported if the effectiveness of the bentonite was in question.

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**ENCLOSURE C**

The radon data submitted in Enclosure C: Due to its high source strength, unique measurement methods had to be devised to measure radon emissions from this nonstandard source. The data that has been gathered since 1992 is collected by qualified technicians using detailed procedures. This data although not yet verified, serves as a very good qualitative indicator of the integrity of the bentonite sealant layer covering the residues in the silos. Activities have been initiated to enhance the quality and independently verify the data that is being collected.

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**ENCLOSURE C**

MONTH: NOVEMBER  
YEAR: 1995

FACILITY: Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O. Box 538704  
Cincinnati, Ohio 45253 Hamilton

**SELECTED RADON DATA REPORT**  
(Monthly Summary of Selected Sampling Locations)

Daily Averages	AMS #5	AMS #6	PILOT PLANT	BKGD-1	BKGD-2
	(pCi/L)	(pCi/L)	WAREHOUSE (pCi/L)	(Fairfield) (pCi/L)	(Miami town) (pCi/L)
11/01/95	1.1	0.7	0.9	0.5	0.8
11/02/95	0.8	0.6	0.7	0.4	0.6
11/03/95	0.9	0.6	0.9	0.9	0.7
11/04/95	1.2	0.8	1.2	0.6	0.9
11/05/95	1.5	1.1	1.7	0.7	1.1
11/06/95	1.6	1.2	1.7	0.7	1.0
11/07/95	0.9	0.7	0.9	0.5	0.7
11/08/95	0.8	0.5	1.0	0.5	0.7
11/09/95	1.2	0.8	1.6	0.6	0.9
11/10/95	0.7	0.5	0.8	0.4	0.6
11/11/95	0.7	0.5	0.9 (b)	0.5	0.6
11/12/95	0.8	0.6	n/a(b)	0.4	0.7
11/13/95	0.9	0.6	n/a(b)	0.5	0.7
11/14/95	0.7	0.5	n/a(b)	0.4	0.6
11/15/95	0.7	0.6	n/a(b)	0.4	0.6
11/16/95	0.8	0.6	0.8 (b)	0.5	0.7
11/17/95	1.2	0.8	0.9	0.7	0.9
11/18/95	0.8	0.6	0.8	0.5	0.7
11/19/95	1.1	0.8	0.8	0.5	0.8
11/20/95	1.5	1.2	1.4	0.6	1.0
11/21/95	0.7	0.5	0.9	0.4	0.6
11/22/95	1.0	0.7	1.3	0.5	0.7
11/23/95	0.9	0.6	0.9	0.5	0.7
11/24/95	1.2	0.9	1.4 (b)	0.6	1.0
11/25/95	1.5	1.2	n/a(b)	0.8	1.1
11/26/95	1.8	1.3	n/a(b)	0.8	1.0
11/27/95	0.8	0.6	n/a(b)	0.5	0.6
11/28/95	0.8	0.5	0.7 (b)	0.5	0.7
11/29/95	1.5	1.0	1.1	0.7	0.9
11/30/95	1.5	1.2	1.5	0.7	0.9

Monthly Statistics of Daily Averages:	AMS #5	AMS #6	PILOT PLANT	BKGD-1	BKGD-2
	(pCi/L)	(pCi/L)	WAREHOUSE (pCi/L)	(Fairfield) (pCi/L)	(Miami town) (pCi/L)
AVERAGE:	1.1	0.8	1.1	0.6	0.8
MAXIMUM:	1.8	1.3	1.7	0.9	1.1
MINIMUM:	0.7	0.5	0.7	0.4	0.6
MEDIAN:	0.9	0.7	0.9	0.5	0.7
STD. DEV:	0.3	0.2	0.5	0.1	0.2

STANDARD LEGEND: 1. \*(a)\* indicates censored data due to erroneous readings from the monitoring equipment.  
2. \*(b)\* indicates partial or complete data loss due to monitor malfunction.  
3. \*(c)\* indicates partial or complete data loss due to programming error in monitor.

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

Period Ending November 30, 1995

**ENCLOSURE C**

MONTH: NOVEMBER  
YEAR: 1995

FACILITY: Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O. Box 538704  
Cincinnati, Ohio 45253 Hamilton

**SELECTED RADON DATA REPORT**  
(Monthly Summary of Selected Sampling Locations)

Daily Averages	K65-NW	K65-SW	K65-NE	K65-SE
	(pCi/L)	(pCi/L)	(pCi/L)	(pCi/L)
11/01/95	3.0	1.1	1.3	1.3
11/02/95	0.8	0.6	1.5	0.8
11/03/95	0.8	0.6	3.3	2.3
11/04/95	1.4	1.3	4.2	2.5
11/05/95	3.2	3.2	12.2	6.4
11/06/95	2.5	3.0	28.7	19.9
11/07/95	2.2	2.4	5.0	3.9
11/08/95	0.7	0.5	3.4	3.0
11/09/95	2.3	2.3	7.6	4.9
11/10/95	0.7	0.4	0.6	0.5
11/11/95	0.7	0.5	2.1	1.7
11/12/95	1.2	0.5	2.4	1.1
11/13/95	1.3	0.6	2.3	1.0
11/14/95	0.7	0.5	0.9	1.8
11/15/95	0.7	0.7	3.7	2.9
11/16/95	0.9	0.8	3.3	1.5
11/17/95	3.3	2.2	3.6	2.9
11/18/95	1.0	0.8	3.3	1.7
11/19/95	3.4	2.5	5.9	3.3
11/20/95	2.7	2.4	19.2	11.8
11/21/95	0.8	0.7	5.7	3.2
11/22/95	1.4	1.4	3.9	2.6
11/23/95	0.9	0.8	1.3	1.1
11/24/95	2.7	3.1	8.1	5.1
11/25/95	3.0	2.5	18.4	11.8
11/26/95	3.8	4.1	22.9	13.4
11/27/95	0.8	0.5	0.9	0.6
11/28/95	0.8	1.6	2.5	1.7
11/29/95	3.6	5.3	14.2	9.9
11/30/95	1.9	1.6	15.7	11.6

Monthly Statistics of Daily Averages:	K65-NW	K65-SW	K65-NE	K65-SE
	(pCi/L)	(pCi/L)	(pCi/L)	(pCi/L)
AVERAGE:	1.8	1.6	6.9	4.5
MAXIMUM:	3.8	5.3	28.7	19.9
MINIMUM:	0.7	0.4	0.6	0.5
MEDIAN:	1.4	1.2	3.7	2.7
STD. DEV:	1.0	1.2	7.2	4.7

STANDARD LEGEND: 1. "(a)" indicates censored data due to erroneous readings from the monitoring equipment.  
2. "(b)" indicates partial or complete data loss due to monitor malfunction.  
3. "(c)" indicates partial or complete data loss due to programming error in monitor.

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**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

Period Ending November 30, 1995

**ENCLOSURE C**

MONTH: NOVEMBER  
YEAR: 1995

FACILITY: Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O. Box 538704  
Cincinnati, Ohio 45253 Hamilton

**K-65 SILO REPORT  
RADON CONCENTRATIONS**  
(Daily Summary of Recorded Headspace Concentrations)

REPORT GENERATED: 12/07/95

Daily Statistics	SILO 1				SILO 2			
	Average	Maximum	Minimum	Std. Dev.	Average	Maximum	Minimum	Std. Dev.
11/01/95	2.55E+06	3.32E+06	1.42E+06	6.22E+05	5.46E+06	5.68E+06	5.15E+06	2.02E+05
11/02/95	1.46E+06	3.01E+06	1.64E+05	9.41E+05	5.54E+06	5.67E+06	5.27E+06	8.26E+04
11/03/95	5.35E+05	8.01E+05	2.81E+05	1.61E+05	5.26E+06	5.48E+06	5.05E+06	1.17E+05
11/04/95	7.46E+05	1.45E+06	2.95E+05	3.28E+05	5.52E+06	5.67E+06	5.30E+06	9.21E+04
11/05/95	1.78E+06	2.87E+06	1.24E+06	3.76E+05	5.72E+06	5.85E+06	5.59E+06	6.86E+04
11/06/95	2.54E+06	3.52E+06	1.65E+06	5.47E+05	5.92E+06	6.19E+06	5.66E+06	1.16E+05
11/07/95	1.38E+06	3.43E+06	1.41E+05	1.12E+06	5.91E+06	6.07E+06	5.59E+06	1.37E+05
11/08/95	5.16E+05	1.40E+06	1.65E+05	3.43E+05	5.65E+06	5.98E+06	5.32E+06	1.82E+05
11/09/95	2.25E+06	3.14E+06	1.16E+06	6.51E+05	6.10E+06	6.27E+06	5.73E+06	1.21E+05
11/10/95	1.55E+06	2.77E+06	2.65E+05	7.58E+05	5.58E+06	6.16E+06	4.96E+06	3.63E+05
11/11/95	1.47E+06	3.45E+06	2.20E+04	1.45E+06	5.84E+06	6.26E+06	5.25E+06	2.99E+05
11/12/95	1.69E+06	2.67E+06	5.21E+05	5.87E+05	5.98E+06	6.22E+06	5.65E+06	1.34E+05
11/13/95	1.23E+06	2.39E+06	4.16E+05	6.02E+05	6.02E+06	6.24E+06	4.45E+06	3.50E+05
11/14/95	6.19E+05	1.23E+06	1.99E+05	2.23E+05	6.33E+06	6.47E+06	6.19E+06	7.52E+04
11/15/95	5.58E+05	9.01E+05	1.50E+05	2.20E+05	6.10E+06	6.41E+06	5.44E+06	2.71E+05
11/16/95	5.81E+05	1.11E+06	2.67E+05	1.94E+05	5.76E+06	5.96E+06	5.26E+06	1.48E+05
11/17/95	2.07E+06	3.36E+06	8.49E+05	8.88E+05	5.96E+06	6.18E+06	5.59E+06	1.47E+05
11/18/95	1.04E+06	2.98E+06	1.68E+05	7.51E+05	5.93E+06	6.08E+06	5.77E+06	9.23E+04
11/19/95	1.75E+06	3.08E+06	5.71E+05	8.24E+05	6.01E+06	6.14E+06	5.90E+06	8.37E+04
11/20/95	1.68E+06	2.85E+06	8.34E+05	6.23E+05	6.01E+06	6.20E+06	5.75E+06	1.18E+05
11/21/95	4.45E+05	1.06E+06	8.86E+04	2.67E+05	5.55E+06	5.90E+06	4.79E+06	3.17E+05
11/22/95	1.54E+06	2.79E+06	6.13E+05	7.22E+05	5.82E+06	5.97E+06	5.50E+06	1.30E+05
11/23/95	5.75E+05	1.35E+06	5.60E+04	3.61E+05	5.72E+06	5.94E+06	5.59E+06	1.01E+05
11/24/95	1.16E+06	2.49E+06	5.16E+05	5.42E+05	5.91E+06	6.11E+06	5.79E+06	9.20E+04
11/25/95	1.76E+06	2.61E+06	6.91E+05	5.27E+05	5.99E+06	6.21E+06	5.70E+06	1.23E+05
11/26/95	2.17E+06	3.00E+06	3.85E+05	7.30E+05	5.92E+06	6.29E+06	5.18E+06	3.02E+05
11/27/95	1.60E+06	2.98E+06	1.16E+04	8.95E+05	5.22E+06	5.96E+06	3.12E+06	7.76E+05
* 11/28/95	5.48E+05	1.19E+06	1.70E+04	3.48E+05	5.00E+06	5.74E+06	3.87E+06	6.61E+05
* 11/29/95	1.21E+06	1.76E+06	6.86E+05	3.31E+05	5.88E+06	5.99E+06	5.78E+06	6.52E+04
11/30/95	1.86E+06	2.78E+06	5.20E+05	6.10E+05	5.85E+06	6.18E+06	4.89E+06	3.40E+05

**Grab Samples of Headspace**

Date:	SILO 1	SILO 2
	Concentration	Concentration
11/09/95	8.38E+05	3.85E+06
11/13/95	3.65E+05	2.82E+06
(a) 11/16/95	5.15E+05	4.25E+06
(a) 11/22/95	5.10E+05	3.89E+06
(b) 11/29/95	6.42E+05	6.21E+06

- Notes:
- All values reported in pCi/L.
  - Continuous data reported to three significant digits to remain consistent with the calibration data.
- \*(a)\* Indicates continuous counting method used for radon concentration calculation.  
\*(b)\* Indicates continuous counting method and 10% efficient lucas cell used for radon concentration calculation.  
\*\*\* Indicates partial or complete data loss due to computer failure.

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

**PERIOD ENDING NOVEMBER 30, 1995**

**ENCLOSURE D**

**EFFLUENT RADIATION DISCHARGES TO THE GREAT MIAMI RIVER**

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

**Period Ending November 30, 1995**

**ENCLOSURE D**

**Introduction**

Enclosure D lists monthly discharges to the Great Miami River. This information is required by the DOE/U.S. EPA Agreement Resolving Dispute Concerning Denial of Request for Extension of Time to Submit Operable Unit 2 Document and discussed in the "Addendum No. 1 to the South Groundwater Contamination Plume Removal Action Parts 2 and 3 Work Plan."

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

Period Ending November 30, 1995

**ENCLOSURE D**

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O.Box 398705  
Cincinnati, Ohio 45239-8705  
9002 M 9501 900212

LOCATION: [SP1]  
IAWWT - T108 (SWRB) Discharge  
Interim Advanced Wastewater Treatment Effluent

DATE: OCTOBER 1995

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (ug/l)	Total U (kgs)	TSS (mg/l)	pH (MIN) (S.U.)	pH (MAX) (S.U.)
1	0.000							
2	0.000							
3	0.000							
4	0.000							
5	0.000							
6	0.000							
7	0.000							
8	0.000							
9	0.000							
10	0.000							
11	0.000							
12	0.000							
13	0.000							
14	0.000							
15	0.000							
16	0.000							
17	0.000							
18	0.000							
19	0.000							
20	0.000							
21	0.000							
22	0.000							
23	0.000							
24	0.000							
25	0.000							
26	0.000							
27	0.000							
28	0.000							
29	0.000							
30	0.000							
31	0.000							
Total	0.000							

System not in service due to delay in receiving replacement parts.

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**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

Period Ending November 30, 1995

**ENCLOSURE D**

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: [SP1] IAWWT - T108

DATE: OCTOBER 1995

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (ug/l)(2)	Total U (kgs)
Avg.	0.000	0.0	0.0	0.0	0.0000
Max.	0.000	0.0	0.0	0.0	0.0000
Min.	0.000	0.0	0.0	0.0	0.0000

Comments: (1) The activity of this discharge has been and will continue to be reported as Uranium-238 (pCi/l) in accordance with the Ohio EPA format for reporting uranium. Since this does not account for the activity of the other uranium isotopes in the effluent, the total uranium data is also presented. The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.

(2) Average values presented are flow-weighted.

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

Period Ending November 30, 1995

**ENCLOSURE D**

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O.Box 398705  
Cincinnati, Ohio 45239-8705  
9002 M 9501 900212

LOCATION: [SP1]  
IAWWT - T109 (SWRB) Discharge  
Interim Advanced Wastewater Treatment Effluent

DATE: OCTOBER 1995

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (ug/l)	Total U (kgs)	TSS (mg/l)	pH (MIN) (S.U.)	pH (MAX) (S.U.)
1	0.215	6.7	7.8	11.4	0.0093 <	2.0	8.0	8.0
2	0.105	7.8	12.0	14.0	0.0056	6.6	8.0	9.5
3	0.189	7.4	13.0	11.2	0.0080	8.2	10.0	10.5
4	0.169	3.4	8.6	10.6	0.0068	11.0	10.4	10.5
5	0.216	0.6	5.0	1.3	0.0011	5.2	9.7	10.5
6	0.212 <	0.5	3.5 <	1.0	0.0008	2.8	9.7	9.8
7	0.204 <	0.5	4.1 <	1.0	0.0008 <	2.0	9.6	9.8
8	0.190	0.8	5.7 <	1.0	0.0007 <	2.0	9.0	9.6
9	0.168	6.3	9.2	10.3	0.0065	4.2	8.8	9.0
10	0.208	1.1	6.2 <	1.0	0.0008 <	2.0	8.9	9.0
11	0.180	0.6	5.7	1.0	0.0007 <	2.0	8.7	8.9
12	0.219 <	0.5	4.6 <	1.0	0.0008 <	2.0	8.7	8.8
13	0.186	2.5	5.9	3.9	0.0027 <	2.0	8.5	8.7
14	0.089	3.3	9.1	4.2	0.0014	7.2	8.5	8.7
15	0.101	2.5	8.4	4.6	0.0018	6.2	9.1	9.9
16	0.000							
17	0.000							
18	0.000							
19	0.000							
20	0.000							
21	0.196	1.8	8.8	2.7	0.0020	2.6	10.0	10.0
22	0.205	1.7	8.5	2.6	0.0020	4.0	10.0	10.0
23	0.185	44.0	28.0	87.1	0.0610	2.8	9.8	10.0
24	0.219	7.6	8.7	11.5	0.0095 <	2.0	8.0	8.5
25	0.089	6.6	9.4	10.9	0.0037 <	2.0	8.0	8.1
26	0.087	6.2	7.8	11.0	0.0036 <	2.0	8.1	8.2
27	0.199	8.7	8.4	13.3	0.0100 <	2.0	8.0	9.1
28	0.207	5.5	7.6	8.7	0.0068 <	2.0	8.0	8.2
29	0.219	5.9	7.9	12.0	0.0099 <	2.0	8.0	8.0
30	0.215	2.3	7.1	6.0	0.0049 <	2.0	8.2	9.0
31	0.215	1.9	8.8	4.2	0.0034 <	2.0	9.0	9.5
Total	4.687				0.1647			

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**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

Period Ending November 30, 1995

**ENCLOSURE D**

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: [SP1] IAWWT - T109

DATE: OCTOBER 1995

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (ug/l)(2)	Total U (kgs)
Avg.	0.151	5.1	8.3	9.3	0.0063
Max.	0.219	44.0	28.0	87.1	0.0610
Min.	0.000	0.5	3.5	1.0	0.0007

Comments: (1) The activity of this discharge has been and will continue to be reported as Uranium-238 (pCi/l) in accordance with the Ohio EPA format for reporting uranium. Since this does not account for the activity of the other uranium isotopes in the effluent, the total uranium data is also presented. The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.

(2) Average values presented are flow-weighted.

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CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT

Period Ending November 30, 1995

ENCLOSURE D

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O.Box 398705  
Cincinnati, Ohio 45239-8705  
9002 M 9501 900212

LOCATION: [606]  
SWRB Pump Station Discharge  
Stormwater Retention Basin Effluent

DATE: OCTOBER 1995

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (ug/l)	Total U (kgs)
1	0.000				
2	0.435	120	180	200	0.33
3	0.889	130	190	190	0.64
4	0.910	140	190	240	0.83
5	1.476	130	130	230	1.28
6	2.292	140	85	190	1.65
7	2.059	150	94	210	1.64
8	0.937	180	99	230	0.82
9	0.936	150	85	210	0.74
10	0.990	88	64	120	0.45
11	0.937	110	76	130	0.46
12	0.995	100	71	160	0.60
13	0.828	120	81	180	0.56
14	0.768	270	170	370	1.08
15	0.602	220	150	310	0.71
16	0.000				
17	0.000				
18	0.000				
19	0.000				
20	0.000				
21	0.832	170	86	240	0.76
22	0.903	200	100	290	0.99
23	0.877	180	110	290	0.96
24	0.000				
25	0.000				
26	0.000				
27	0.000				
28	0.000				
29	0.000				
30	0.773	150	66	240	0.70
31	0.773	200	69	290	0.85
	19.212				16.04

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CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR CONTROL AND ABATEMENT OF RADON-222 EMISSIONS MONTHLY PROGRESS REPORT

Period Ending November 30, 1995

ENCLOSURE D

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: (606) SWRB

DATE: OCTOBER 1995

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (ug/l)(2)	Total U (kgs)
Avg.	0.620	151	108	221	0.84
Max.	2.292	270	190	370	1.65
Min.	0.000	88	64	120	0.33

Comments: (1) The activity of this discharge has been and will continue to be reported as Uranium-238 (pCi/l) in accordance with the Ohio EPA format for reporting uranium. Since this does not account for the activity of the other uranium isotopes in the effluent, the total uranium data is also presented. The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.

(2) Average values presented are flow-weighted.

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**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

Period Ending November 30, 1995

**ENCLOSURE D**

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O.Box 398705  
Cincinnati, Ohio 45239-8705  
9002 M 9501 900212

LOCATION: [605]  
Biodenitrification Tower  
BDN Tower Effluent

DATE: OCTOBER 1995

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (ug/l)	Total U (kgs)
1	0.126	510	13000	1000	0.48
2	0.124	580	14000	1100	0.52
3	0.129	720	14000	1200	0.59
4	0.130	630	14000	1100	0.54
5	0.120	590	14000	990	0.45
6	0.117	550	13000	950	0.42
7	0.000				
8	0.000				
9	0.122	560	13000	990	0.46
10	0.128	620	13000	1100	0.53
11	0.129	530	12000	980	0.48
12	0.131	580	12000	1000	0.50
13	0.099	610	13000	1000	0.37
14	0.000				
15	0.000				
16	0.000				
17	0.000				
18	0.000				
19	0.000				
20	0.000				
21	0.000				
22	0.000				
23	0.000				
24	0.000				
25	0.000				
26	0.000				
27	0.000				
28	0.000				
29	0.000				
30	0.000				
31	0.000				
<b>Total</b>	<b>1.355</b>				<b>5.33</b>

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CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR CONTROL AND ABATEMENT OF RADON-222 EMISSIONS MONTHLY PROGRESS REPORT

Period Ending November 30, 1995

ENCLOSURE D

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: (605) BDN/ETS

DATE: OCTOBER 1995

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (ug/l)(2)	Total U (kgs)
Avg.	0.044	589	13179	1039	0.48
Max.	0.131	720	14000	1200	0.59
Min.	0.000	510	12000	950	0.37

Comments: (1) The activity of this discharge has been and will continue to be reported as Uranium-238 (pCi/l) in accordance with the Ohio EPA format for reporting uranium. Since this does not account for the activity of the other uranium isotopes in the effluent, the total uranium data is also presented. The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.

(2) Average values presented are flow-weighted.

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

Period Ending November 30, 1995

**ENCLOSURE D**

EFFLUENT REPORT

FACILITY: Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O.Box 398705  
Cincinnati, Ohio 45239-8705  
9002 M 9501 900212

LOCATION: [605]  
Biodenitrification Tower  
BDN Tower Effluent

DATE: OCTOBER 1995

Day	C-BOD5 (mg/l)	TSS (mg/l)	NH3-N (mg/l)	NO3-N (mg/l)	Chromium (ug/l)	Copper (ug/l)	Nickel (ug/l)	Hex-Chrom (ug/l)
1								
2								
3	17.92							
4		18	0.16	94.8	6.7	14.0	17.0	6.0
5								
6								
7								
8								
9								
10	147.00	42	0.10	67.2	7.6	14.0	17.0	6.0
11								
12								
13								
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**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

Period Ending November 30, 1995

**ENCLOSURE D**

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O.Box 398705  
Cincinnati, Ohio 45239-8705  
9002 M 9501 900212

LOCATION: [SP2]  
Stormwater Retention Basin Emergency Bypass  
SWRB Bypass Effluent

DATE: OCTOBER 1995

Day	Flow (MGD)
1	0.000
2	0.000
3	0.000
4	0.000
5	0.000
6	0.696
7	1.759
8	1.424
9	0.000
10	0.000
11	0.000
12	0.000
13	0.000
14	0.000
15	0.000
16	0.000
17	0.000
18	0.000
19	0.000
20	0.000
21	0.000
22	0.000
23	0.000
24	0.000
25	0.000
26	0.000
27	0.000
28	0.000
29	0.000
30	0.000
31	0.000
<b>Total</b>	<b>3.879</b>

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**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT**

Period Ending November 30, 1995

**ENCLOSURE D**

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project  
U.S. Department of Energy  
7400 Willey Road, P.O.Box 398705  
Cincinnati, Ohio 45239-8705  
9002 M 9501 900212

LOCATION: Valve House  
South Groundwater Contamination Plume

DATE: OCTOBER 1995

Day	Flow (MGD)	Total U (ug/l)	Total U (kgs)
1	2.093	16.4	0.13
2	2.133	16.6	0.13
3	1.862	10.2	0.07
4	2.060	17.8	0.14
5	1.999	23.2	0.18
6	2.034	17.1	0.13
7	2.053	17.4	0.14
8	2.041	34.9	0.27
9	2.120	12.0	0.10
10	1.886	20.9	0.15
11	2.137	4.2	0.03
12	1.367	3.9	0.02
13	1.477	4.0	0.02
14	1.516	3.0	0.02
15	1.335	4.6	0.02
16	1.437	4.0	0.02
17	1.421	12.3	0.07
18	1.790	12.7	0.09
19	1.921	21.9	0.16
20	1.770	23.0	0.15
21	1.740	4.7	0.03
22	0.748	16.5	0.05
23	1.146	23.4	0.10
24	1.580	21.6	0.13
25	1.349	28.1	0.14
26	1.563	21.7	0.13
27	1.833	20.6	0.14
28	1.895	20.3	0.15
29	2.178	20.3	0.17
30	1.885	20.6	0.15
31	2.142	24.1	0.20
Total	54.511		3.41

\*\* No sample collected; monthly average value used for calculations.

10/31/95

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CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR CONTROL AND ABATEMENT OF RADON-222 EMISSIONS MONTHLY PROGRESS REPORT

Period Ending November 30, 1995

ENCLOSURE D

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project
LOCATION: South Plume
DATE: OCTOBER 1995

Table with 4 columns: Category, Flow (MGD), Total U (ug/l)(2), Total U (kgs). Rows include Avg., Max., and Min. values.

Comments: (1) The activity of this discharge has been and will continue to be reported as Uranium-238 (pCi/l) in accordance with the Ohio EPA format for reporting uranium. Since this does not account for the activity of the other uranium isotopes in the effluent, the total uranium data is also presented. The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.

(2) Average values presented are flow-weighted.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR CONTROL AND ABATEMENT OF RADON-222 EMISSIONS MONTHLY PROGRESS REPORT

Period Ending November 30, 1995

ENCLOSURE D

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project U.S. Department of Energy 7400 Willey Road, P.O.Box 398705 Cincinnati, Ohio 45239-8705 9002 M 9501 900212

LOCATION: [SP3] Valve House South Plume/Stormwater Retention Basin \*/BDN-ETS \*\*

DATE: OCTOBER 1995

Table with 8 columns: Day, Flow (MGD), Total Alpha (pCi/l), Total Beta (pCi/l), Total U (ug/l), Total U (kgs), TSS (mg/l), pH (Grab (S.U.)). Rows 1-31 and a Total row.

\* Effective 3/11/94, the SWRB discharges were combined with the South Plume. \*\* Effective 1/27/95, the BDN-ETS discharges were routed from MH #175 to the AWWT.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY  
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR  
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS  
MONTHLY PROGRESS REPORT

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Period Ending November 30, 1995

ENCLOSURE D

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: [SP3] Valve House

DATE: OCTOBER 1995

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (ug/l)(2)	Total U (kgs)
Avg.	2.422	27	200	44	0.40
Max.	4.443	50	570	88	1.37
Min.	1.349	4	38	16	0.18

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Comments: (1) The activity of this discharge has been and will continue to be reported as Uranium-238 (pCi/l) in accordance with the Ohio EPA format for reporting uranium. Since this does not account for the activity of the other uranium isotopes in the effluent, the total uranium data is also presented. The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.

(2) Average values presented are flow-weighted.

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CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR CONTROL AND ABATEMENT OF RADON-222 EMISSIONS MONTHLY PROGRESS REPORT

Period Ending November 30, 1995

ENCLOSURE D

EFFLUENT REPORT

FACILITY: Fernald Environmental Management Project U.S. Department of Energy 7400 Willey Road, P.O.Box 398705 Cincinnati, Ohio 45239-8705 9002 M 9501 900212

LOCATION: [SP4] Parshall Flume Effluent Downstream of Manhole 176B

DATE: OCTOBER 1995

Table with 4 columns: Day, DO (mg/l), IRON (mg/l), MANGANESE (mg/l). Rows 1-31 showing data points for DO, IRON, and MANGANESE.

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