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

01/18/96

**DOE-0433-96
DOE-FN EPAS
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REPORT**



Department of Energy
Fernald Environmental Management Project
P.O. Box 398705
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(513) 738-6357

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JAN 18 1996

DOE-0433-96

Mr. James A. Saric, Remedial Project Director
U.S. Environmental Protection Agency
Region V - SRF-5J
77 West 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 DECEMBER 1995

Enclosure 1 is the consolidated CA/FFCA and RI/FS Monthly Progress Report which describes the activities accomplished December 1 through 31, 1995, and planned actions for the period of January 1996. 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:

**R. L. Nace, 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
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M. Yates, FERMCO**

**CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
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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 December 1 through December 31, 1995, and planned actions for the period January 1 through January 31, 1996.

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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 December 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.	All plants operational except Plant 9 during December 1995
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: 11/29/91
			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.	Completed: 1/3/95
15	Scrap Metal Piles	Phase I - Disposition LLW ferrous/non-ferrous scrap metal	Completed: 11/14/94
		Phase II - IIA - Containerization of scrap copper	Completed: 9/29/92
		IIB - Disposition of scrap copper	Final Report Submitted 12/8/95
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REMOVAL ACTION SUMMARY

NO.	TITLE	SCOPE	STATUS
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
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: 8/18/95
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: 1/14/94
25	Nitric Acid Tank Car and Surrounding Area	Remove residual contents from tank car and decontaminate and dispose of tank car.	Complete pending OEPA approval
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.	Completed: 12/25/95
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

* Shading denotes completed actions

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Removal Actions

RA No. 1, Contaminated Water Under FEMP Buildings

Current Month:

All RA No. 1 pumping and sampling is being 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 includes analysis of the findings. This report was completed in December and should be delivered in January 1996.

All transmission main construction, excluding service connections to R/W, has been completed. Cincinnati Water Works (CWW) is performing acceptance testing and chlorination.

FERMCO initiated a coordination meeting with CWW regarding chlorination of the FEMP public water tap. This may take place in January 1996.

Hamilton County Department of Public Works (HCDPW) received bid proposals for service connections on December 14, 1995. Proposals included four separate lump sum contracts. Contracts matched the work limits for the transmission lines to provide better coordination and information.

Provided initial evaluation of HCDPW's submittal of costs (as of October 31, 1995).

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Removal Actions

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. This includes scheduling chlorination of the FEMP water line by Cincinnati Water Works (CWW).
- Continue providing 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:

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:

- Continue to operate.

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RA No. 3, South Groundwater Contamination Plume

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

IAWWT Bionitrification Effluent Treatment System (BDN-ETS) Unit

Current Month:

System will be operational until current inventory of high NO₃ water has been processed.

Planned Activities:

- None to report.

Part 4 - Groundwater Monitoring and Institutional Controls

Current Month:

Partial plugging of one of the residence's ion exchange (IX) units was reported by the homeowner as evidenced by low flow rate of water. To alleviate this problem, a new IX unit was delivered to the residence for replacement. The partially plugged IX vessel will be packed and returned to the FEMP after installation of the new vessel is complete.

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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Removal Actions

RA No. 7, Plant 1 Pad Continuing Release

Current Month:

The concrete refill continues to be 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) through December 1995 is 97,810 (external) and 84,617 (internal). As of December 29, 1995, the FEMP has shipped 2,698 cf (external) and 2,232 cf (internal) to NTS for Fiscal Year (FY) 1996.

Low level waste volume reduction includes approximately 2,731 containers of legacy waste materials (generated prior to October 1, 1994) identified in "FY 1996 Inventory Reduction Plan for Legacy Wastes at the FEMP."

Shipment of uranium derbies to Manufacturing Sciences Corporation (MSC) in Oak Ridge, Tennessee was re-initiated on December 29, 1995 per approval to receive from MSC indicating storage facilities were again available.

The volume of low level waste materials shipped to NTS in FY 1996 per waste stream is as follows:

WASTE STREAM	INTERNAL VOL. (cf)	EXTERNAL VOL. (cf)
Process Area Scrap	0	0
Thorium	0	0
Residues to NTS	2,232	2,698
Contaminated Trash	0	0
Construction (Legacy)	0	0
Construction (Newly Generated)	0	0

Note : 1 drum equivalent = 7.4 cubic feet

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Removal Actions

RA No. 9, Removal of Waste Inventories

Current Month: (continued)

Liquid Mixed Waste Project - Wastewater Treatment

The Liquid Mixed Waste CERCLA Work Plan was revised to include the Waste Water Treatment Technical Specific Work Plan and transmitted to DOE-FN on December 1, 1995. DOE-FN transmitted the revised work plan to OEPA on December 7, 1995. Hazardous and Mixed Waste Management (HMWM) along with Environmental Compliance and DOE-FN attended a meeting with OEPA on December 21, 1995 to review the Wastewater Technical Specific Work Plan.

The inventory of liquid mixed waste identified in the Amended Site Treatment Plan to be treated in the FEMP WWTS is being grouped into compatible batches for addition to the WWTS at Plant 8 VOC System. HMWM is working with Waste Operations to establish a heated 90 day area to move the liquid mixed waste to so that the waste is not frozen when waste transfer operations begin. HMWM is also working with Environmental Compliance to complete the Waste Water Discharge requests in advance of regulatory approval of the work plan so that all internal steps necessary to add the liquid mixed waste to the WWTS are completed when regulatory approval is obtained.

Liquid Mixed Waste Project - Incineration

Tank decontamination activities were completed on three of the waste bulking tanks during the month of December. These tanks will be surveyed to determine they meet free release criteria.

The Residue Management Plan was revised to address OEPA comments. DOE-FN reviewed the document and transmitted it to OEPA on December 28, 1995 for approval.

FERMCO received approval from TSCA Operations to resume shipments of waste to the TSCA Incinerator on December 18, 1995. Two shipments of Aqueous waste are scheduled for the week of January 2, 1996. The waste shipments to TSCA were shut down until our Residue Management Plan was reviewed by the state of Tennessee.

Chemical Treatment Project

Contracts are currently in place for recycling scrap metals such as lead, and electrical components such as Ni-Cd batteries. Each satisfies the requirement to establish a treatment contract by April 30, 1996.

The first treatment activities will be waste segregation. A detailed schedule for implementing the project is being prepared. Currently, this phase of the project is on schedule to be started by March 31, 1996.

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RA No. 9, Removal of Waste Inventories

Current Month: (continued)

Mixed Waste Stabilization Project

The project milestone to "Start Treatment" was completed on November 21, 1995, nine days ahead of the Compliance Order schedule.

The next project milestone to "Treat 1500 Containers" is scheduled for completion by February 26, 1996. This completion date is based on treating 30 drums per day, starting December 4, and breaking for holidays December 22 through January 2. The project is ahead of this schedule based on the completion of 379 drums as of December 19, 1995.

Planned Activities:

- January 1996, continue shipment of uranium derbies to Oak Ridge, Tennessee upon approval from MSC.
- January 1996, continue packaging operations to develop a surplus of LLW materials to be shipped to NTS.

RA No. 12, Safe Shutdown

Current Month:

All Plant 9 holdup material removal implementation plans have been completed. All utility disconnections, with the exception of essential support and safety systems, are complete. Holdup removal verification inspections and the removal and packaging of selected duct work and vacuum piping continues. The redistribution of electrical power that runs through the Plant 9 complex is complete.

Completed holdup removal from the Heat Treatment area, the Plasma Spray/Grit Blaster, Dust Collector G2-7051, the Briquetter, Building 37 sumps and Furnaces P-1 and P-2. Commenced holdup removal from the Shot Blaster and Building 54 sumps. Commenced removal, and packaging as biologic waste, of bird carcasses in Building 13A. Several utility disconnections were accomplished.

All Plant 5 Implementation Plans have been prepared and are in the review process. Continued utility disconnections and the removal and redistribution of salvageable equipment in Plant 5. Commenced draining oil from the Hilco Oil Reclaimer. Work on the design for redistribution of electrical power that runs through the Plant 5 complex continues.

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Removal Actions

RA No. 12, Safe Shutdown (continued)

Planned Activities:

- Complete the final removal of materials, remaining utility disconnections, verification inspections and turnover of Plant 9 to construction.
- Continue utility disconnections and holdup material removal in the Pilot Plant.
- Continue utility disconnections and review of holdup material removal plans for Plant 5. Commence preparations to support holdup material removal.
- Continue advanced planning to support Safe Shutdown of Plant 2/3.

RA No. 13, Plant 1 Ore Silos

Current Month:

There are no further activities planned for RA No. 13.

Planned Activities:

- None to report.

RA No. 15, Scrap Metal Piles

Current Month:

The RA No. 15 Final Report was submitted DOE-FN for review on December 8, 1995.

Phase I: None to report.

Phase II: The Engineering Study contract was awarded to Manufacturing Sciences Corporation, Oak Ridge, Tennessee, 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.

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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:

December activities included OEPA approval of the final report/closeout documentation for the two completed field activities (Third St. Soil and Rubble Pile and the Removal/Containerization of the SMP residues) on December 1, 1995. The new draft Revision No. 3 of the RA 17 Work Plan (which contained the final report/closeout documentation) was conditionally approved by the U.S. EPA on November 22, 1995.

Planned Activities:

- Submit the resolution of comments received by U.S. and Ohio EPA from their review of the draft Revision No. 3 of RA 17 Work Plan. Submit copies of the Final Revision No. 3 of RA 17 Work Plan.
- Update site policies and procedures to incorporate the new management strategies introduced and approved within the Revision No. 3 of RA 17 (Improved Storage of Soil and Debris) Work Plan.

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Removal Actions

RA No. 19, Plant 7 Dismantling

Current Month:

Comments on the ALARON draft Final Report for processing of the Plant 7 steel were sent to ALARON on December 15, 1995.

The Final Report for the Plant 7 Lead was received from SEG on November 3, 1995. Secondary wastes were returned to the FEMP.

Planned Activities:

- ALARON to incorporate comments and resubmit the draft final report by January 12, 1996.
- Continue consolidation of containers of primary waste at Plant 7 Pad.
- Sampling/analysis of the waste streams that were returned to the FEMP is in progress.

RA No. 20, Stabilization of UNH Inventories

Current Month:

During the month of November, the rinsing of piping pieces removed during isolation of the UNH storage tanks was completed. An oil skimmer has been ordered to skim floating organic from the surface of Tank D1-11 and return it to Tank D1-7.

As of the end of December 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 Tanks F1-25 and F1-26, and
- rinsing of Tanks D1-7 and D1-11.

As discussed previously, processing operations were 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.

Planned Activities:

- Prepare procedures for oil skimmer and pH adjustment.
- Complete plans for restarting operation when skimmer is installed.

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RA No. 26, Asbestos Removals (Asbestos Program)

Current Month:

The asbestos abatement work in Plant 6 was completed in December 1995.

The asbestos floor tile removal in the cafeteria continues.

All friable asbestos (pipe insulation) in Plant 4 was removed in December 1995. Work continues on the non-friable asbestos (interior transite).

Planned Activities:

- Continue to remove asbestos floor tile from the cafeteria.
- Complete non-friable asbestos (interior transite) removal in Plant 4 by January 1996.
- Begin friable asbestos (interior piping) removal in Plant 1 by early February 1996.

RA No. 28, Contamination at the Fire Training Facility

Current Month:

There are no further activities are planned for RA No. 28.

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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**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 until remediation of the South Field.

KEY MILESTONES	STATUS	DUE DATE
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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Period Ending December 31, 1995

Remedial Investigations/Feasibility Studies

1.0 Operable Unit 1

Operable Unit 1, as defined in the Amended Consent Agreement, includes Waste Pits 1 - 6, Clearwell, Bum 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 could not be supported on it. The excavation was completed on November 1, 1995. Decontamination and Decommission of equipment for the project has been completed. Laboratory analysis of DEEP samples is progressing for incorporation into the final report. The DEEP final report will be issued in the Pre-Final Design Package on March 21, 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. In a letter dated December 14, 1995, U.S. EPA provided comments on the preliminary design package. In the letter, U.S. EPA stated that this package adequately addresses the record of decision requirements and conforms to generally accepted engineering practices, but disapproved the package pending resolution of comments. In a letter dated December 22, 1995, Ohio EPA provided comments on the preliminary design package. Efforts were subsequently initiated to develop responses to comments.

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 December 1995 to provide further detail to the design, and otherwise keep the process moving, including various design meetings.

Issues/Corrective Actions:

None to report.

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.

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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 January 1996:

- Continue to finalize the DEEP final report.
- By January 22, 1996, develop and submit a Comment Response Document to the EPAs addressing comments received from U.S. EPA and Ohio EPA in letters of December 14, 1995, and December 22, 1995, respectively.

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2.0 Operable Unit 2

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 RVFS 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 _s	RECEIVE FROM EPA _s	FINAL DUE DATE TO EPA _s	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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Remedial Investigations/Feasibility Studies

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 _s	RECEIVE FROM EPA _s	SUBMIT FINAL DRAFT TO EPA _s	ACTUAL FINAL SUBMITTAL TO EPA _s
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. The U.S. Environmental Protection Agency conditionally approved the document on September 18, 1995 and gave final approval on November 16, 1995 in accordance with the Award Fee Milestone. The OEPA submitted their conditional approval September 29, 1995 and gave final approval on November 3, 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. Submittal of the Draft Addendum to the Project Specific Plan for Phase I and Phase II of the Operable Unit 2 Predesign was sent to DOE on December 14, 1995 and transmitted to the U.S. EPA and Ohio EPA on December 15, 1995.

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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.

PARSONS submitted the Geotechnical Investigation Report for the On-Site Disposal Facility to FERMCO on December 20, 1995. This report includes the results of geotechnical testing on samples gathered in accordance with the Geotechnical Sampling and Testing Plan for Phase III of the Site-Wide Disposal Facility Field Investigation. This report will be given to DOE-FN for transmittal to the EPAs.

Planned Activities for January 1996:

- 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 was submitted to U.S. EPA and Ohio EPA two days ahead of schedule on December 20, 1995. The preliminary design package included: Design Criteria Package, Design Calculations, Design Drawings, and Technical Specifications.

Planned Activities for January 1996:

- Review and incorporate any comments received on submittal of the Preliminary Design Package.

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3.0 Operable Unit 3

Operable Unit 3, 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. The U.S. and Ohio EPA submitted comments on the OU 3 RI/FS Report. The resolution of these comments occurred throughout the first half of December 1995 with submittal of a Responsiveness Summary and attached change pages to the EPAs on December 13, 1995. Comments are anticipated from the agencies on or about January 15, 1996.

Issues/Corrective Actions:

None.

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 Record of Decision

A preliminary draft of the ROD without the responsiveness summary has been developed and was reviewed by internal FERMCO personnel for consistency with other projects and commitments. These internal review comments have been incorporated into the preliminary draft ROD. DOE is expected to receive the draft ROD on January 5, 1996 for its initial review. Submittal to the EPAs will occur 60 days after the close of the public comment period.

Issues/Corrective Actions:

None to report.

OPERABLE UNIT 3 RECORD OF DECISION

PRIMARY MILESTONES

SCOPE	SUBMIT TO EPAs	RECEIVE FROM EPAs	SUBMIT TO EPAs FINAL
Finalizes the decision between the DOE and the U.S. EPA on the remediation approach for Operable Unit 3. The document contains multiple sections including the Declaration, the Decision Summary, and the Responsiveness Summary.	07/25/96 C	08/23/96 F	09/25/96 F

C = Consent Agreement Date

F = Forecast Date

3.3 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 in January 1996.

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 and will be sent out for review in January 1996.

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Contaminated pipe insulation (asbestos) has been collected by Safe Shutdown from two areas in Plant 9 have been sent to Westinghouse Science and Technology Center (WSTC) in Pittsburgh, PA. WSTC and KAI Tech. Inc. are developing a process that uses ion exchange to remove radiological and metal contamination from asbestos. The project is being funded by DOE Morgantown Energy Technology Center (DOE-METC) on a Program Research and Development Announcement (PRDA).

Issues/Corrective Actions:

None to report.

3.4 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 were expected from the USEPA by December 22, 1995. Comments have not been received yet.

Dismantlement of MAWS Equipment - Continued planning activities associated with the project. Equipment removal from Plant 9 will start in January 1996 to support D&D activities.

Issues/Corrective Actions:

None to report.

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3.5 Planned Activities for January 1996:

- EPA comments on the OU 3 RI/FS Report are expected on January 15, 1996. Responses to any comments received will be developed and the OU 3 RI/FS Report will be finalized to address all comments.
- Complete the detailed comparison of the September RI/FS database to the November RI/FS database. Appendix L will be revised to include the final data set.
- Finalize the short-term risk assessment based on EPA comments. Incorporate the revised calculations into Appendix H of the RI/FS Report.
- Finalize Appendix B source term tables for the RI/FS Report.
- Revise and prepare for publication the OU 3 RI/FS Report as a final document.
- Submittal of the draft OU 3 Record of Decision to DOE for review and comment.
- 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.

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4.0 Operable Unit 4

Operable Unit 4, 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 January 12, 1996. Comments on the Phase II Work Plan are being addressed for submittal to DOE-FN on January 31, 1996.

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 January 1996:

- 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 Operable Unit 5

Operable Unit 5, 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 _s	RECEIVE FROM EPA _s	SUBMIT TO EPA _s 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

SCOPE	SUBMIT TO EPA _s	RECEIVE FROM EPA _s	SUBMIT TO EPA _s FINAL
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.	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:

The annual report is being prepared and is due to the EPA's on March 1, 1996.

Issues/Corrective Actions:

None to report.

5.4 Treatability Studies

Complete.

5.5 Record of Decision (ROD)

Status:

The U.S. EPA approved the Operable Unit 5 Record of Decision on December 8, 1995. Ohio EPA provided conditional approval on December 11; they asked for one change to a comment response on the previous iteration of the ROD. The change was made and agreed upon and the ROD was prepared for official signatures. Mr. Phil Hamric signed for DOE on December 19. The document was forwarded to EPA on December 21 for Mr. Adamkus's signature. When the signed Declaration Statement is available, distribution of the Operable Unit 5 ROD will take place.

Issues/Corrective Actions:

None to report.

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5.6 Other Studies/Reports

Status:

The South Field Injection Test Report was sent to U.S. EPA and OEPA on December 20, 1995 for review. This document reports on results of an injection test that took place during the week of October 8, 1995.

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 January 1996:

- Print and distribute the Operable Unit 5 ROD following joint signature by EPA and DOE.
- Continue preparation of the draft Remedial Design Work Plan.
- Continue work on the draft Integrated Environmental Monitoring Plan.
- Continue work on the draft Groundwater Section of the 1995 RCRA Annual Report.
- Respond to any comments received on the South Field Injection Test Report.

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6.0 Community Relations

Status:

On December 8, Fluor Corporate Communications issued a news release titled, "Fluor Daniel Selects Partner for Small Business Loan Program." The news release was issued to inform the public of Fluor Daniel's selection of a partner to implement a business loan program for small, small-disadvantaged, and women-owned businesses which seek to participate in the remediation effort at the Fernald site.

Public Affairs provided information regarding the vitrification pilot plant schedule extension to George Lobsenz, *Energy Daily*; Mike Parente, *Nuclear Waste News*; and Steve Ostin, *Nuclear Remediation Week*.

New releases were issued informing the community of the December 12, 1995 community meeting.

An article on Fernald's accelerated 10-year cleanup plan was submitted with photos to *ANS RadWaste Journal* for publication in January 1996.

More than 1,000 issues of the monthly *Fernald Report* were mailed to stakeholders, informing them about Fernald activities and progress.

The revised draft *Fernald Economic Impact Assessment* was returned to the University of Cincinnati, which is preparing the report. The report is currently being finalized.

The University of Cincinnati (UC) has determined, based on available information, that numerous sources of radium-226 exist worldwide, and that K-65 material stored at the Niagara Falls Storage Site and the Fernald site provides the richest, most concentrated supplies of unrefined radium-226 in the United States. In a draft document titled *University of Cincinnati Support for Fernald Environmental Management Project Radium Initiatives*, UC reported the findings on its investigation of alternative radium-226 sources for potential cancer treatment. In support of DOE's initiative to investigate sources of the needed radioisotopes for medical research, FERMCO subcontracted UC in October 1995 to conduct the worldwide investigation. On December 14, 1995 Dr. Roy Eckart and Eugene Rutz, lead researchers on UC's project team, presented the results to date to DOE, FERMCO, and a Fernald Citizens Task Force representative. DOE and FERMCO are currently reviewing the draft report.

On December 19, 1995, DOE published a notice in the *Federal Register*, announcing the 60-day extension of the public comment period for the draft *Waste Management Programmatic Environmental Impact Statement* (WM PEIS). The extension time frame is December 21, through February 19, 1996. All comments received by February 19 will be considered when preparing the final PEIS. A public hearing on the WM PEIS was held for the Fernald site on October 26, 1995.

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6.0 Community Relations

Status: (continued)

A notice of availability of the draft document was published September 22, 1995, and amended October 25, to revise the schedule of public hearings. All other information contained in the notice of availability remains unchanged. The WM PEIS is available at the Fernald Public Environmental Information Center, 10845 Hamilton-Cleves Road.

In response to community interest, DOE will hold a public workshop on January 24 to discuss the remedial design of Fernald's on-site disposal facility. The meeting will begin at 7 p.m. and will be held at the Plantation, 9660 Dry Fork Road, Harrison. At the workshop, Fernald representatives will provide updates on the design of the on-site disposal facility and will respond to stakeholder questions and concerns.

DOE donated 10 Fernald computers to the Hamilton Chapter of American Red Cross; the Bright (Indiana) Fire Department; and the Butler County Emergency Management Agency. Declared excess property, the computers lack the power for most of the software currently being used at Fernald. To date, DOE has donated a total of 71 computers to local, nonprofit organizations.

Public Affairs conducted six tours, with a total of 30 visitors who were briefed about the Fernald site.

On behalf of the Fernald Speakers Bureau and Education Outreach Program, employees informed a total of 172 stakeholders about Fernald-related activities or career fields. Also, four Partnership In Education sessions were held this month. Problem solving/thinking games and activities were the subjects at Garfield. Students learned about environmental sampling and monitoring at Ross Middle School and rainforest activities at Crosby and Miamitown Elementary schools.

Over 500 copies of *The Web: A Resource Guide for the Science Classroom* have been requested and distributed to area educators.

On December 12, approximately 100 people attended the DOE community meeting at the Plantation, in Harrison, Ohio. Breakout session topics were the "Remedial Design Process -- Opportunities for Public Involvement" and the "Accelerated 10-year Cleanup Plan." Following the breakout sessions, updates from U.S. EPA, Ohio EPA and FRESH representatives were presented. A transcript of the meeting is available at the Public Environmental Information Center.

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6.0 Community Relations

Status: (continued)

At the December 12 community meeting, DOE Fernald Area Office Public Information Officer Gary Stegner announced plans to convene the Community Reuse Organization (CRO). This new stakeholder group will provide a forum for public dialogue on community transition and economic development issues affecting final disposition of Fernald property. Public Affairs regularly meets and is maintaining two-way communications with the stakeholders, who are interested in local economic development, the Ross Area Merchants Association, for example, to get their input regarding the CRO. Efforts are underway to convene the CRO in early 1996.

The December 7 quarterly meeting of the Fernald Citizens Task Force was attended by approximately 20 people. During the meeting, Chair John Applegate introduced a new, ex-officio task force member French Bell of The Agency for Toxic Substances and Disease Registry. Also, during the meeting, Applegate suggested that Gloria McKinley be recommended to DOE for appointment to the task force board. McKinley, a Butler County resident, has several years of environmental engineering experience. She is also a trustee for the Pristine Facility Trust Fund, which was established by more than 100 companies, institutions and individuals to pay for the cleanup of another Superfund site.

DOE has begun building a "home page" on the Internet's World Wide Web. By going online with its own home page, Fernald will provide another link in DOE's already-established chain of Internet information pages, enabling other DOE sites, Ohio and U.S. EPA, federal and state government officials, news media and millions of interested "net surfers" to receive information about Fernald activities and progress.

6.1 Planned Activities for January 1996:

- During the fourth week of January 1996, the *Fernald Report* will be mailed to more than 1,000 stakeholders, including those in the immediate community.
- DOE hopes to get Fernald's Internet home page online in early 1996.

Issues/Corrective Action:

None to report.

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ENCLOSURE A

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

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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 December 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 - December 1995

The total quantity of uranium discharged from the FEMP to the Great Miami River from the Parshall Flume (Outfall 11o00004001) was 10.22 kilograms. The average uranium concentration for the month was 39.5 ug/L. This is 4.44% 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 December 1995.

Based on 3.09 inches of rainfall in December 1995, the total quantity of uranium discharged to Paddy's Run from uncontrolled areas of the FEMP is estimated to be 8.78 kilograms.

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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: DECEMBER 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	1.745	22	790	30.4	0.20	10
2	1.666	15	730	20.1	0.13	7
3	1.700	14	550	22.9	0.15	8
4	1.820	15	510	23.3	0.16	8
5	2.586	21	470	22.3	0.22	8
6	2.479	17	500	17.1	0.16	6
7	2.500	9	400	21.4	0.20	7
8	2.645	9	420	17.5	0.18	6
9	2.457	15	370	21.7	0.20	7
10	1.718	24	570	35.4	0.23	12
11	1.722	30	530	40.3	0.26	14
12	1.704	24	69	27.0	0.17	9
13	1.758	14	50	18.9	0.13	6
14	1.653	15	24	18.9	0.12	6
15	1.745	17	90	15.2	0.10	5
16	1.767	12	65	14.0	0.09	5
17	2.490	13	36	16.8	0.16	6
18	2.771	17	49	22.1	0.23	7
19	3.318	**	**	44.5	0.56	15
20	3.402	**	**	119.0	1.53	40
21	2.618	**	**	27.4	0.27	9
22	2.636	**	**	17.4	0.17	6
23	2.545	**	**	27.2	0.26	9
24	2.556	**	**	35.3	0.34	12
25	2.514	**	**	38.2	0.36	13
26	2.494	**	**	51.4	0.49	17
27	2.686	**	**	52.4	0.53	18
28	1.673	**	**	109.0	0.69	37
29	1.657	**	**	177.0	1.11	60
30	1.621	**	**	82.4	0.51	28
31	1.658	**	**	49.2	0.31	17
Total	68.304	**			10.22	

** 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: DECEMBER 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.	2.203	9	184	39.5	0.33	13
Max.	3.402	30	790	177.0	1.53	60
Min.	1.621	**	**	14.0	0.09	5

The average uranium concentration for the month was 39.5 pCi/l.
This is 4.4 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: DECEMBER 1995

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

Based on 3.09 inches of rainfall for the month, the uranium discharge to Paddy's Run from uncontrolled areas of the FEMP is estimated to be 8.78 kgs.

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ENCLOSURE B

**FFCA: INITIAL REMEDIAL MEASURES
AND OTHER OPEN ACTIONS**

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 December 1, through December 31, 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 November 1995 was transmitted to the U.S. EPA and OEPA on December 19, 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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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 November 1995, was transmitted to the U.S. EPA and OEPA on December 19, 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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ENCLOSURE B

TABLE 1

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

Table with 4 columns: ACTION, DESCRIPTION, COMPLETION TIME AFTER FFCA SIGNED, and FY1995 STATUS. Rows include CERCLA 1. INITIAL REMEDIAL MEASURES, 1.C Implement radon control plan, 2. REMEDIAL INVESTIGATION/FEASIBILITY STUDY, 2.A RI/FS work is to be conducted, 2.B --No Action Required--, 2.E Amend and submit revised RI/FS Work Plan, 2.F Implement tasks described in the approved RI/FS Work Plan, 3. REPORTS AND RECORD KEEPING, 3.B Submit monthly RI/FS progress reports.

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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
CLEAN AIR ACT			
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	No stacks related to production were operating in 1994 or to this date in 1995. 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.
D.2	Provide U.S. EPA with stack-test results for stacks tested that year.	45 days	The following test were conducted in May 1995: May 9 Test contractor tests Laundry stack (6 hour test) May 10 Test contractor test EIMCO stack (3 hour test) 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.
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
RCRA			
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.
REPORTING REQUIREMENTS			
B.	Issue monthly progress report of actions taken to ensure compliance with FFCA requirements.	monthly	November's CA/FFCA Monthly Progress Report was transmitted to the U.S. EPA and OEPA on December 19, 1995.

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ENCLOSURE C

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

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COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
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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 December 1, through December 31, 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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ENCLOSURE C

FFA Part, Paragraph(s)	Description of Commitment	FFA Due Date	Status of Commitment
Part V, 19 & 21	Implement the K-65 Silos 1 and 2 Removal Action in accordance with the approved Silos 1 and 2 Removal Action Work Plan.	12/1/91	Completed.
Part V, 20	Reduce radon-222 to a level As-Low-As Reasonably-Achievable (ALARA) with the goal as specified in the Silos 1 and 2 Removal Action Work Plan.	5/22/92	Completed.
Part V, 22	Submit proposed methodology for estimating radon-222 concentration reductions resulting from completion of the Silos 1 and 2 Removal Action.	Within 60 days of completing removal action; 1/27/92.	Completed.
Part V, 23	Evaluate performance of the removal action and determine whether or not additional actions are needed prior to final remediation.	None specified.	Completed.
Part V, 24, 25, and 33	Demonstrate compliance with NESHAP Subpart Q at the completion of final remediation using a methodology approved by the U.S. EPA. Applicable to: Silos 1, 2, and 3; Waste Pits 1, 2, 3, 4, and 5 and the Clearwell; and any newly discovered radon-222 emission sources.	None specified.	No information to report.
Part V, 26	Directly measure radon-222 flux from Waste Pits 1, 2, 3, 4, and 5 and the Clearwell in the RI/FS under the CERCLA Consent Agreement.	None specified.	Radon sampling is complete for Pits 1, 2, and 3. All measurements were below the criteria set by the U.S. EPA. A final report was issued to the U.S. EPA on June 25, 1992. A letter was received from the U.S. EPA on October 16, 1992 giving approval of the proposed method for measuring the radon flux from Pit 4. The letter also stated that since the Clearwell is water covered, and Pit 5 is nearly 100% water covered, the flux from Pit 5 and the Clearwell may be assumed to be zero.

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FFA Part, Paragraph(s)	Description of Commitment	FFA Due Date	Status of Commitment
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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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: DECEMBER
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 WAREHOUSE		BKGD-1 (Fairfield)	BKGD-2 (Miamitown)
	(pCi/L)	(pCi/L)	(pCi/L)		(pCi/L)	(pCi/L)
12/01/95	1.0	0.7	0.9		0.5	0.7
12/02/95	2.0	1.4	1.0		0.7	1.1
12/03/95	1.3	0.9	n/a	b	0.5	0.9
12/04/95	1.8	1.3	n/a	b	0.7	1.1
12/05/95	1.1	0.8	n/a	b	0.6	0.8
12/06/95	1.1	0.8	n/a	b	0.5	0.9
12/07/95	1.5	0.9	n/a	b	0.6	1.1
12/08/95	1.6	1.3	n/a	b	0.8	1.1
12/09/95	1.2	0.9	a	n/a	b	0.6
12/10/95	1.7	0.4	a	n/a	b	0.6
12/11/95	0.9	0.7	n/a	b	0.6	1.1
12/12/95	0.9	0.8	1.1	b	0.7	0.9
12/13/95	1.0	1.1	1.1		0.7	0.9
12/14/95	1.0	0.7	1.2		0.5	0.7
12/15/95	1.9	1.6	0.9		1.0	1.3
12/16/95	1.2	0.9	1.4		0.8	1.0
12/17/95	0.9	0.8	1.0		0.6	0.9
12/18/95	0.9	0.8	0.8		0.6	0.7
12/19/95	1.1	0.6	0.8		0.5	0.7
12/20/95	0.8	0.5	0.9		0.5	0.7
12/21/95	0.8	0.6	1.9		0.5	0.7
12/22/95	0.9	0.6	1.6		0.5	0.8
12/23/95	0.9	0.6	1.6	b	0.5	0.8
12/24/95	0.7	0.5	n/a	b	0.5	0.7
12/25/95	0.8	0.6	n/a	b	0.5	0.7
12/26/95	1.2	0.9	n/a	b	0.6	1.1
12/27/95	0.7	0.7	n/a	b	0.5	1.0
12/28/95	0.8	0.7	n/a	b	0.6	1.1
12/29/95	1.6	1.3	n/a	b	0.9	1.3
12/30/95	1.9	1.7	n/a	b	1.0	1.3
12/31/95	2.3	1.6	n/a	b	0.6	1.1

Monthly Statistics of Daily Averages:	AMS #5	AMS #6	PILOT PLANT WAREHOUSE		BKGD-1 (Fairfield)	BKGD-2 (Miamitown)
	(pCi/L)	(pCi/L)	(pCi/L)		(pCi/L)	(pCi/L)
AVERAGE:	1.2	0.9	1.2		0.6	1.0
MAXIMUM:	2.3	1.7	1.9		1.0	1.3
MINIMUM:	0.7	0.4	0.8		0.5	0.7
MEDIAN:	1.1	0.8	1.0		0.6	0.9
STD. DEV:	0.4	0.3	0.6		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.

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

Period Ending December 31, 1995

ENCLOSURE C

MONTH: DECEMBER
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)
12/01/95	1.0	0.9	2.8	1.1
12/02/95	4.7	2.4	4.6	3.5
12/03/95	1.4	1.3	3.4	2.3
12/04/95	3.2	4.8	3.2	2.1
12/05/95	4.5	4.2	3.5	2.0
12/06/95	1.7	1.5	5.7	3.3
12/07/95	2.3	2.0	14.2	6.9
12/08/95	5.6	3.9	9.9	6.8
12/09/95	1.3	0.8	5.5	2.0
12/10/95	1.4	0.7	2.7	1.6
12/11/95	1.3	1.0	5.3 a	3.0
12/12/95	1.3	6.6	0.9	0.7
12/13/95	1.8	9.3	1.1	0.9
12/14/95	1.2	1.1	2.5	2.5
12/15/95	4.4	6.2	3.7	3.9
12/16/95	2.3	2.1	7.1	6.5
12/17/95	1.2	7.0	0.9	0.8
12/18/95	1.0	8.6	0.6	0.6
12/19/95	1.0	4.0	0.6	0.5
12/20/95	1.0	0.6	3.5	1.8
12/21/95	1.0	0.7	4.6	1.7
12/22/95	1.4	1.2	5.4	4.5
12/23/95	1.4	1.4	9.0	4.9
12/24/95	0.9	0.6	4.0	0.9
12/25/95	1.1	0.7	4.5	1.8
12/26/95	2.4	2.1	8.1	4.7
12/27/95	1.3	1.1	2.8	2.3
12/28/95	1.9	1.2	6.4	3.5
12/29/95	3.9	3.4	20.1	11.6
12/30/95	5.3	5.7	32.2	23.1
12/31/95	5.8	4.3	7.4	6.0

Monthly Statistics of Daily Averages:	K65-NW	K65-SW	K65-NE	K65-SE
	(pCi/L)	(pCi/L)	(pCi/L)	(pCi/L)
AVERAGE:	2.2	2.9	6.0	3.9
MAXIMUM:	5.8	9.3	32.2	19.9
MINIMUM:	0.9	0.6	0.6	0.5
MEDIAN:	1.4	2.0	4.5	2.3
STD. DEV:	1.5	2.5	6.2	4.3

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 December 31, 1995

ENCLOSURE C

MONTH: DECEMBER
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: 01/08/96

Daily Statistics	SILO 1				SILO 2			
	Average	Maximum	Minimum	Std. Dev.	Average	Maximum	Minimum	Std. Dev.
12/01/95	3.08E+05	1.20E+06	4.13E+04	2.44E+05	5.12E+06	5.74E+06	4.39E+06	3.74E+05
12/02/95	2.11E+06	3.29E+06	5.81E+05	1.11E+06	5.91E+06	6.10E+06	5.70E+06	9.74E+04
12/03/95	8.52E+05	2.68E+06	4.40E+04	8.16E+05	5.71E+06	6.03E+06	5.40E+06	1.64E+05
12/04/95	1.54E+06	2.60E+06	7.02E+05	6.06E+05	6.02E+06	9.35E+06	5.72E+06	7.13E+05
12/05/95	1.63E+06	2.67E+06	2.49E+04	1.06E+06	5.56E+06	6.08E+06	4.85E+06	4.24E+05
12/06/95	1.39E+06	2.56E+06	5.42E+05	5.25E+05	6.10E+06	1.21E+07	5.53E+06	1.29E+06
12/07/95	8.48E+05	1.39E+06	2.53E+05	3.38E+05	5.90E+06	6.05E+06	5.51E+06	1.57E+05
12/08/95	2.00E+06	2.89E+06	9.72E+05	5.83E+05	6.17E+06	6.35E+06	5.98E+06	9.87E+04
12/09/95	6.51E+05	2.04E+06	4.60E+04	4.25E+05	5.72E+06	6.23E+06	5.09E+06	2.80E+05
12/10/95	1.50E+06	2.18E+06	8.26E+05	4.09E+05	6.20E+06	6.44E+06	5.75E+06	1.60E+05
12/11/95	8.51E+05	1.80E+06	3.05E+05	3.61E+05	6.25E+06	6.45E+06	5.93E+06	1.18E+05
12/12/95	1.86E+06	3.16E+06	9.17E+05	7.14E+05	6.72E+06	7.01E+06	6.43E+06	2.17E+05
12/13/95	1.13E+06	3.45E+06	8.95E+03	1.01E+06	6.41E+06	7.00E+06	5.74E+06	3.54E+05
12/14/95	2.02E+06	2.92E+06	1.37E+06	4.85E+05	6.74E+06	6.89E+06	6.39E+06	1.08E+05
12/15/95	1.38E+06	2.73E+06	4.27E+05	5.51E+05	7.22E+06	7.46E+06	6.91E+06	1.64E+05
12/16/95	6.16E+05	1.38E+06	2.52E+05	2.54E+05	6.93E+06	7.12E+06	6.36E+06	1.78E+05
12/17/95	9.98E+05	2.22E+06	1.97E+05	5.31E+05	7.37E+06	7.51E+06	7.07E+06	1.24E+05
12/18/95	3.22E+05	1.50E+06	.	3.78E+05	7.30E+06	7.39E+06	7.17E+06	6.24E+04
12/19/95	7.51E+05	1.64E+06	3.70E+05	3.35E+05	7.13E+06	7.38E+06	6.45E+06	1.97E+05
12/20/95	5.93E+05	9.68E+05	3.42E+05	1.59E+05	7.00E+06	7.22E+06	6.74E+06	1.10E+05
12/21/95	7.78E+05	1.89E+06	2.97E+05	3.61E+05	7.05E+06	7.29E+06	6.83E+06	1.13E+05
12/22/95	6.93E+05	1.87E+06	2.73E+05	3.99E+05	7.07E+06	7.30E+06	6.72E+06	1.61E+05
12/23/95	5.34E+05	1.16E+06	2.74E+05	1.91E+05	6.91E+06	7.19E+06	6.64E+06	1.47E+05
12/24/95	5.87E+05	1.29E+06	1.88E+05	2.88E+05	6.98E+06	7.30E+06	6.49E+06	2.52E+05
12/25/95	1.54E+06	3.02E+06	4.60E+05	6.50E+05	7.34E+06	7.59E+06	6.88E+06	1.69E+05
12/26/95	5.99E+05	2.20E+06	1.41E+05	4.88E+05	7.32E+06	7.62E+06	6.81E+06	2.01E+05
12/27/95	5.84E+05	1.05E+06	2.78E+05	2.16E+05	7.44E+06	7.61E+06	7.20E+06	1.05E+05
12/28/95	1.75E+06	3.10E+06	5.69E+05	7.73E+05	7.60E+06	7.82E+06	7.38E+06	1.19E+05
12/29/95	2.39E+06	3.34E+06	1.47E+06	5.89E+05	7.71E+06	8.00E+06	7.55E+06	1.24E+05
12/30/95	2.71E+06	3.42E+06	1.38E+06	5.17E+05	7.84E+06	7.91E+06	7.73E+06	4.74E+04
12/31/95								

Grab Samples of Headspace

Date:	SILO 1	SILO 2
	Concentration	Concentration
(b)12/01/95	4.20E+05	4.36E+06
(b)12/04/95	5.00E+05	6.83E+06
(b)12/07/95	8.06E+05	6.28E+06
(b)12/13/95	4.06E+06	7.72E+06
(b)12/15/95	6.43E+05	6.06E+06
(b)12/20/95	4.56E+06	7.90E+06
(b)12/26/95	8.34E+05	7.25E+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.

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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 DECEMBER 31, 1995

ENCLOSURE D

EFFLUENT RADIATION DISCHARGES TO THE GREAT MIAMI RIVER

000061

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

Period Ending December 31, 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 December 31, 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: NOVEMBER 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								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								

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

Total

000063

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

Period Ending December 31, 1995

ENCLOSURE D

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: [SP1] IAWWT - T108

DATE: NOVEMBER 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 December 31, 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: NOVEMBER 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	0.213	2.0	8.6	2.8	0.0023	2.8	9.4	9.5
2	0.210	2.1	7.3	2.6	0.0021 <	2.0	9.0	9.4
3	0.189	1.2	6.3	2.2	0.0016 <	2.0	9.0	9.0
4	0.212	1.3	7.9	2.1	0.0017 <	2.0	9.0	9.3
5	0.074	15.0	12.0	20.5	0.0057 <	2.0	8.3	9.1
6	0.029	8.9	9.3	14.2	0.0016 <	2.0	8.3	8.3
7	0.091	8.7	8.3	12.3	0.0042	8.6	8.0	8.3
8	0.212	7.5	8.8	11.6	0.0093 <	2.0	8.0	8.0
9	0.182	9.5	9.0	12.2	0.0084 <	2.0	8.0	8.2
10	0.187	8.9	8.9	13.1	0.0093 <	2.0	8.1	8.1
11	0.188	2.8	5.5	2.6	0.0019 <	2.0	8.0	8.7
12	0.000							
13	0.048	2.6	10.0	2.1	0.0004 <	2.0	7.9	7.9
14	0.209	2.3	6.7	2.3	0.0018 <	2.0	8.6	8.7
15	0.205	3.0	6.7	2.7	0.0021 <	2.0	8.6	8.7
16	0.225	3.1	7.7	2.7	0.0023 <	2.0	8.7	8.8
17	0.189	13.0	17.0	19.2	0.0137 <	2.0	8.7	8.7
18	0.217	2.9	13.0	2.3	0.0019 <	2.0	8.6	8.7
19	0.217	2.5	10.0	3.3	0.0027 <	2.0	8.6	8.8
20	0.242	2.9	10.0	4.0	0.0037 <	2.0	8.8	9.0
21	0.147	2.2	10.0	2.8	0.0016 <	2.0	8.7	8.9
22	0.204	2.3	10.0	2.9	0.0022 <	2.0	8.6	8.7
23	0.198	2.7	10.0	3.0	0.0022 <	2.0	8.6	8.6
24	0.213	2.5	11.0	3.4	0.0027 <	2.0	8.6	8.8
25	0.215	5.0	12.0	6.6	0.0054 <	2.0	8.8	8.9
26	0.219	11.0	13.0	16.4	0.0136 <	2.0	8.2	9.1
27	0.199	7.1	9.4	12.0	0.0090 <	2.0	8.1	8.2
28	0.225	8.3	11.0	13.1	0.0112 <	2.0	8.1	8.2
29	0.184	8.3	9.4	12.3	0.0086 <	2.0	8.1	8.2
30	0.213	8.4	9.4	11.5	0.0093 <	2.0	8.1	8.2
Total	5.356				0.1423			

000065

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

Period Ending December 31, 1995

ENCLOSURE D

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: [SP1] IAWWT - T109

DATE: NOVEMBER 1995

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (ug/l)(2)	Total U (kgs)
Avg.	0.179	5.1	9.6	7.0	0.0049
Max.	0.242	15.0	17.0	20.5	0.0137
Min.	0.000	1.2	5.5	2.1	0.0004

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 December 31, 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: NOVEMBER 1995

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (ug/l)	Total U (kgs)
1	0.753	190	89	260	0.74
2	0.756	170	79	235	0.67
3	0.732	200	95	287	0.79
4	0.659	200	80	72	0.18
5	0.000	0	0	0	0.00
6	0.000	0	0	0	0.00
7	0.000	0	0	0	0.00
8	0.000	0	0	0	0.00
9	0.000	0	0	0	0.00
10	0.000	0	0	0	0.00
11	0.456	130	150	225	0.39
12	0.523	180	170	287	0.57
13	0.614	190	180	293	0.68
14	0.791	200	190	295	0.88
15	0.770	200	190	335	0.98
16	0.792	210	240	311	0.93
17	0.743	240	230	385	1.08
18	0.798	250	170	439	1.33
19	0.788	240	260	406	1.21
20	0.879	230	250	363	1.21
21	0.734	250	220	377	1.05
22	0.817	240	260	389	1.20
23	0.812	240	280	389	1.20
24	0.834	230	270	328	1.03
25	0.810	160	290	314	0.96
26	0.000	0	0	0	0.00
27	0.000	0	0	0	0.00
28	0.000	0	0	0	0.00
29	0.000	0	0	0	0.00
30	0.000	0	0	0	0.00
31	0.000	0	0	0	0.00
	14.061				17.09

000067

7437

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

Period Ending December 31, 1995

ENCLOSURE D

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: (606) SWRB

DATE: NOVEMBER 1995

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (ug/l)(2)	Total U (kgs)
Avg.	0.454	211	199	321	0.55
Max.	0.879	250	290	439	1.33
Min.	0.000	0	0	0	0.00

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 December 31, 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: NOVEMBER 1995

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (ug/l)	Total U (kgs)
1	0.066	470	9300	742	0.19
2	0.123	760	16000	1070	0.50
3	0.128	***	***	1710	0.83
4	0.129	***	***	1753	0.86
5	0.128	***	***	1753	0.85
6	0.132	***	***	1921	0.96
7	0.125	***	***	1881	0.89
8	0.128	***	***	2137	1.04
9	0.128	1100	21000	2058	1.00
10	0.129	1500	23000	2212	1.08
11	0.129	900	20000	2394	1.17
12	0.127	1000	21000	2259	1.09
13	0.127	980	19000	2048	0.98
14	0.126	920	20000	2167	1.03
15	0.129	1100	20000	2130	1.04
16	0.135	900	19000	1600	0.82
17	0.127	870	19000	2223	1.07
18	0.125	850	20000	2092	0.99
19	0.123	810	19000	2137	0.99
20	0.127	880	20000	2223	1.07
21	0.126	910	20000	2052	0.98
22	0.129	820	20000	2008	0.98
23	0.125	1000	21000	2052	0.97
24	0.128	840	20000	1966	0.95
25	0.124	740	20000	2052	0.96
26	0.129	920	21000	2145	1.05
27	0.125	870	23000	2097	0.99
28	0.074	830	21000	2048	0.57
29	0.128	920	22000	2092	1.01
30	0.122	800	20000	1840	0.85
Total	3.701				27.75

*** No sample collected; monthly average values used for calculations.

000069

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

Period Ending December 31, 1995

ENCLOSURE D

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: (605) BDN/ETS

DATE: NOVEMBER 1995

	Flow (MGD)	Total Alpha(2) (pCi/l)	Total Beta(2) (pCi/l)	Total U (ug/l)(2)	Total U (kgs)
Avg.	0.123	871	18930	1981	0.93
Max.	0.135	1500	23000	2394	1.17
Min.	0.066	0	0	742	0.19

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 December 31, 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: NOVEMBER 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								
4								
5								
6								
7	10.35	0	0.00	0.0	10.9	0.0	0.0	0.0
8								
9								
10								
11								
12								
13	8.70	0	0.00	0.0	8.9	0.0	0.0	0.0
14								
15								
16								
17								
18								
19		0	0.00	0.0	8.5	0.0	0.0	0.0
20								
21	2.26							
22								
23								
24								
25								
26								
27		0	0.00	0.0	9.6	0.0	0.0	0.0
28	2.70							0.0
29								0.0
30								0.0
31								0.0

000071

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

Period Ending December 31, 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: NOVEMBER 1995

Table with 2 columns: Day (1-31) and Flow (MGD). All flow values are 0.000. Total flow is 0.000.

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

Period Ending December 31, 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: NOVEMBER 1995

Day	Flow (MGD)	Total U (ug/l)	Total U (kgs)
1	2.186	16.2	0.13
2	2.121	16.9	0.14
3	2.208	18.1	0.15
4	2.248	17.8	0.15
5	1.956	17.4	0.13
6	2.031	19.1	0.15
7	2.061	20.7	0.16
8	1.910	18.4	0.13
9	2.076	15.8	0.12
10	2.031	17.3	0.13
11	2.189	17.3	0.14
12	2.069	18.0	0.14
13	1.892	17.5	0.13
14	2.064	21.3	0.17
15	2.238	18.4	0.16
16	1.831	17.7	0.12
17	2.103	19.2	0.15
18	2.067	19.1	0.15
19	2.020	18.5	0.14
20	1.998	18.1	0.14
21	2.014	19.1	0.15
22	2.036	18.7	0.14
23	2.103	18.4	0.15
24	1.969	20.2	0.15
25	2.111	20.8	0.17
26	1.975	21.6	0.16
27	2.104	21.9	0.17
28	2.023	19.1	0.15
29	1.893	18.3	0.13
30	2.074	18.0	0.14
Total	61.601		4.34

000073

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

Period Ending December 31, 1995

ENCLOSURE D

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: South Plume

DATE: NOVEMBER 1995

	<u>Flow (MGD)</u>	<u>Total U (ug/l)(2)</u>	<u>Total U (kgs)</u>
Avg.	2.053	18.6	0.14
Max.	2.248	21.9	0.17
Min.	1.831	15.8	0.12

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 December 31, 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: NOVEMBER 1995

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.)
1	3.005	12	37	15	0.17		7
2	3.000 <	7	56	14	0.16 <	2.0	7.3
3	3.068	17	120	15	0.17		7
4	3.036	9	140	16	0.18		6.7
5	2.084 <	7	190	24	0.19		7.2
6	2.163	21	210	34	0.28		6.9
7	2.186	16	250	29	0.24		7
8	2.038	18	290	28	0.22		6.9
9	2.204	12	300	25	0.21	#	7
10	2.160	8	330	23	0.19		7
11	2.774	11	300	21	0.22		7.3
12	2.719	18	290	19	0.20		7.2
13	2.633	25	330	20	0.20		7.2
14	2.981	31	300	18	0.20		7.2
15	3.137	7	310	18	0.21		7.3
16	2.758	12	350	18	0.19 <	2.0	7.3
17	2.973	14	360	21	0.24		7.2
18	2.990	13	400	24	0.27		7.2
19	2.931	16	460	25	0.28		7.2
20	3.004	15	430	28	0.32		7
21	2.874	16	430	30	0.33		7.2
22	2.982	36	480	30	0.34		7.2
23	3.040	22	470	36	0.41	2.2	7.2
24	2.931	20	470	39	0.43		7.3
25	3.045	26	500	53	0.61		7.2
26	2.104	49	680	78	0.62		7.4
27	2.229	48	770	71	0.60		7.3
28	2.097	32	400	45	0.36		7.3
29	2.021	20	780	31	0.24		7.3
30	2.196	21	810	36	0.30		7.2

Total 79.363

8.57

Sample collected; no analysis performed.

* 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.

000075

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

Period Ending December 31, 1995

ENCLOSURE D

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: [SP3] Valve House

DATE: NOVEMBER 1995

Table with 5 columns: Flow (MGD), Total Alpha(2) (pCi/l), Total Beta(2) (pCi/l), 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
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Period Ending December 31, 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: NOVEMBER 1995

Day	Flow (MGD)	DO (mg/l)	IRON (mg/l)	MANGANESE (mg/l)
1	2.593			
2	2.847	8.3	0.45	0.1
3	2.633			
4	2.646			
5	1.892			
6	1.995			
7	2.011			
8	2.031			
9	1.909	8.6	0.24	0.1
10	1.859			
11	2.267			
12	2.433			
13	2.471			
14	2.671			
15	2.598			
16	2.755	9.5	0.77	0.1
17	2.581			
18	2.560			
19	2.515			
20	2.700			
21	2.615			
22	2.607			
23	2.479	7.7	0.56	< 0.1
24	2.261			
25	2.522			
26	1.751			
27	1.723			
28	1.807			
29	1.800			
30	1.801	8.6	< 0.10	< 0.1
Total	69.333			

000077

7437

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
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MONTHLY PROGRESS REPORT

Period Ending December 31, 1995

ENCLOSURE D

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: [SP4] Parshall Flume

DATE: NOVEMBER 1995

	Flow (MGD)	DO (mg/l)	Fe (mg/l)	Mn (mg/l)
Avg.	2.225	8.5	0.46	0.1
Max.	2.847	9.5	0.77	0.1
Min.	1.723	7.7	0.10	0.1

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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