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# CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT AND REMEDIAL INVESTIGATION/FEASIBILITY STUDY MONTHLY PROGRESS REPORT FOR MARCH 1996

04/15/96

DOE-0801-96
DOE-FN EPAS
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REPORT

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**Department of Energy**
**Ohio Field Office**
**Fernald Area Office**
P. O. Box 538705
Cincinnati, Ohio 45253-8705
(513) 648-3155

APR 1 8 1996

DOE-0801-96

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 MARCH 1996**

Enclosure 1 is the consolidated CA/FFCA and RI/FS Monthly Progress Report which describes the activities accomplished March 1 through 31, 1996, and planned actions for the period of April 1996. Also, enclosed are diskettes containing Lotus 1-2-3 (Version 2.2) data files of the K-65 hourly data (see Enclosure 2).

The May 1996 version of this submittal will be modified to reflect the agreed upon changes listed in our letter of January 16, 1996.

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
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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 March 31, 1996**

## 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 March 1 through March 31, 1996, and planned actions for the period April 1 through April 30, 1996.

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

**Period Ending March 31, 1996**

## 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 March 1996. Information is presented for each of the Removal Actions identified in the Consent Agreement As Amended.

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

**Period Ending March 31, 1996**

## 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. | Removal Action pumping discontinued December 1995 per USEPA and OEPA approval |
| 2 | Waste Pit Area Run-off Control | Collect and treat contaminated storm water run-off from the waste pit area. | Operational: 7/30/92<br>Operation Ongoing |
| 3 | South Groundwater Contamination Plume | Part 1 - Install new alternate water supply and transfer to industrial user. | Operational: 12/7/92<br>Operation Ongoing |
| | | Part 2 - Pump and discharge groundwater from South Plume. | Operational: 8/27/93<br>Operation RW 5 offline indefinitely |
| | | Part 3 - Install and operate Interim Advanced Waste Water Treatment system to reduce uranium contaminant loading to the Great Miami River. | Operational: 7/30/92<br>Operation Ongoing |
| | | Part 4 - Conduct groundwater monitoring and institutional controls by sampling private and existing RI/FS wells in the South Plume area and installing homeowner treatment systems. | Ongoing |
| | | Part 5 - Conduct groundwater modeling and geochemical investigation to define the extent of the groundwater plume contaminated with uranium. | Completed: 2/25/94 |
| | | 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. | Operational: 3/31/94<br>Operation Ongoing |

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* Shading denotes completed actions

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

**Period Ending March 31, 1996**

## 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: 11/26/91<br>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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• Shading denotes completed actions

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

**Period Ending March 31, 1996**

## 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<br>Maintenance: Ongoing |
| 30 | Seepage Control at the South Field and Inactive Flyash Pile | Minimize future groundwater contamination by intercepting contaminated seeps that drain from the South Field and Inactive Flyash Pile and infiltrate to the GMA. | Ongoing |

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• Shading denotes completed actions

## *Removal Actions*

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

**Current Month:**

All RA No. 1 pumping and sampling was 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.

### 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.

All transmission main construction, excluding service connections to right of way, has been completed. Cincinnati Water Works (CWW) continues acceptance testing and chlorination. Service connection work has begun for individual parcels.

Construction has restarted on the 500,000 gallon reservoir located on Crosby Road (construction had been halted due to winter weather conditions).

**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 Hamilton County Department of Public Works (HCDPW) on installation of the entire PWS including service connections.
- Continue providing assistance with technical evaluation of HCDPW's submittal of costs applied to DOE grant as of October 31, 1995 (and subsequent submittals) for transmittal to the Ohio Field Office with a request for payment.

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**Period Ending March 31, 1996**

***Removal Actions***

RA No. 3, South Groundwater Contamination Plume (continued)

Part 2 - Pumping and Discharge System

**Current Month:**

The July 1, 1995 - December 31, 1995 status report (South Plume Removal Action System Evaluation Report) was submitted to the EPAs on March 29, 1996.

Fourteen Design, Monitoring, and Evaluation Program Plan wells have been surveyed with the colloidal borescope for detailed flow direction and velocity information.

**Planned Activities:**

- Review sampling results from first quarter of CY 1996. Begin collecting and analyzing data for the next scheduled report.

Part 3 - Interim Advanced Waste Water Treatment (IAWWT)

IAWWT Storm Water Retention Basin (SWRB) Unit

**Current Month:**

The unit continues to operate smoothly.

**Planned Activities:**

- Continue to operate.

IAWWT Biodenitrification Effluent Treatment System (BDN-ETS) Unit

**Current Month:**

System will be operational until current inventory of high $NO_3$ water has been processed. Treatment of the current inventory is expected to be completed in late April 1996.

**Planned Activities:**

- None to report.

*Removal Actions*

RA No. 3, South Groundwater Contamination Plume (continued)

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.

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.

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**Period Ending March 31, 1996.**

***Removal Actions***

RA No. 3, South Groundwater Contamination Plume

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

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.

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.

The Plant 1 Pad railing installation was completed on March 28, 1996.

**Planned Activities:**

- None to report.

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

**Period Ending March 31, 1996**

***Removal Actions***

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 March 1996 is 134,564 (external) and 115,764 (internal). As of March 29, 1996, the FEMP has shipped 108,488 cf (external) and 93,383 cf (internal) to NTS for Fiscal Year (FY) 1996.

Low level waste volume reduction includes approximately 3,713 and 2,000 containers of legacy low level residue and mixed waste materials, respectively; 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 continued in March 1996.

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 | 50,301 | 57,816 |
| Thorium | 0 | 0 |
| Residues to NTS | 30,552 | 36,131 |
| Contaminated Trash | 800 | 1,051 |
| Construction (Legacy) | 5,870 | 6,745 |
| Construction (Newly Generated) | 5,870 | 6,745 |

Note : 1 drum equivalent = 7.4 cubic feet

Liquid Mixed Waste Project:

The Waste Water Treatment Project (WWTP) processed an additional 2 containers of Liquid Mixed Waste through the on-site WWTP during the month of March. This brings the total number of containers processed to date to 109.

The TSCA Incinerator Project, blending of Batches 1 and 5 is still on hold due to ice in the Batch 5 tank. This blending is required to reduce the radiation levels of Batch 1 material which will allow the waste to be shipped in tankers that are currently available at the TSCA Incinerator. The initial blending operation took place in February and upon sampling, a layer of ice was discovered which has been keeping the two wastes from blending. The tank has been monitored and we expect to complete the blending and sampling in early April.

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**Period Ending March 31, 1996**

***Removal Actions***

RA No. 9, Removal of Waste Inventories

**Current Month:**

Liquid Mixed Waste Project (continued)

Batch 6 has been developed and sampling for compatibility is being performed at this time. Upon completion of the compatibility test, bulking of the waste into the Batch 6 holding tank will begin.

The TSCA Incinerator in Oakridge, Tennessee has experienced an unscheduled outage. This outage has effected the ability of the Incinerator to accept the waste as previously scheduled. On March 25 and 26, representatives from DOE-FN and FERMCO attended a TSCA Incinerator Generators meeting to discuss the Fiscal Year 1996 Burn Plan. Lockheed-Martin, operators of the TSCA Incinerator, are working with the FEMP to arrange a schedule which will allow us to ship Batches 1, 5, and 6 before our Site Treatment Plan Milestone date of September 30, 1996.

Mixed Waste Stabilization Project:

382 containers were treated during the month of March 1996. This brings the total number of containers treated by this project to 1932.

Started treating the contract "Option Clause" waste. The total number of containers currently in the project is 2181. Waste Characterization is working to complete MEF's that are defined in the Site Treatment Plan, this could increase the total by approximately 70 containers.

The total number of "Half High Metal Boxes" filled with stabilized waste to date is 306.

Chemical Treatment Project:

The Chemical Treatment Project started two projects and initiated procurement of a third in the month of March.

March 21, 1996, the Waste Segregation Project was initiated. This project segregates mixed waste into categories to be treated at a later date. Approximately 35% of the identified inventory has been segregated.

March 22, 1996, the Decontamination Project initiated operations by performing initial surveys on lead solids to sort into those requiring decontamination, those meeting free release limits, and those not free releasable. Materials that can be free released will be recycled or disposed of as hazardous waste. The preliminary surveys are expected to be completed by mid-April.

A request for proposal was issued for Neutralization, Precipitation, and Deactivation of four mixed waste categories. A contract is expected to be issued in mid-April.

*Removal Actions*

RA No. 9, Removal of Waste Inventories (continued)

**Planned Activities:**

- Continue shipment of uranium derbies to Oak Ridge, Tennessee upon approval from MSC.
- Continue packaging operations to develop a surplus of LLW materials to be shipped to NTS.
- Continue radiological characterization efforts for wastes to be shipped to NTS, and implement a radiological characterization program.
- Complete the blending and sampling of Batches 1 and 5.
- Batch 6 bulking operations are expected to begin the week of April 15, 1996.
- Segregation of mixed waste for the Chemical Treatment project is expected to be completed by mid-April.

RA No. 12, Safe Shutdown

**Current Month:**

Pilot Plant

Material removal is complete on Dust Collector 7041. Removal and packaging of biological waste (bird carcasses) in Building 13A continues. Work on the Thoria Gel System and Dust Collector G6-93A continues. Material removal from the non-enriched Portable Dust Collectors is complete. Material removal is also complete for the HF Tank Car, the Autoclave System and the Ammonia Dissociators.

Plant 5

95% of the Plant 5 Implementation Plans have received final FERMCO internal review and approval and have been turned over to Field Activities for scheduling and execution. Material removal is near completion in the Graphite Shop. Material removal has been initiated on the Hapman Conveyor portion of the East and the West Jolters.

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*Removal Actions*

RA No. 12, Safe Shutdown (continued)

**Planned Activities:**

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

RA No. 13, Plant 1 Ore Silos

**Current Month:**

No further activities are planned for RA No. 13.

**Planned Activities:**

- None to report.

RA No. 15, Scrap Metal Piles

**Current Month:**

Review of the RA No. 15 Final Report by DOE-FN continues.

| KEY MILESTONES | | STATUS | DUE DATE |
|---|---|---|---|
| Phase I - | On-Site Processing<br>Off-Site Processing | Completed<br>Completed | Sept. 30, 1993<br>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 |

*Removal Actions*

RA No. 15, Scrap Metal Piles (continued)

**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.

RA No. 17, Improved Storage of Soil and Debris

**Current Month:**

March activities included negotiations with the EPAs to determine a strategy in which to respond to the EPA comments on Rev. 3 of the RA No. 17 Work Plan.

Meetings were held to devise the path forward to provide a revised version of Rev. 3 or addendum to the Revision 3 of the RA No. 17 Work Plan.

The site procedure, EW-0006, will still require an update to incorporate the new management strategies introduced within the revised or amended Revision No. 3 of RA No. 17 Work Plan.

**Planned Activities:**

None to report.

RA No. 19, Plant 7 Dismantling

**Current Month:**

FERMCO continues for completion of the Final Reports for the recycling of the steel and lead Data Validation continues on the waste streams sampled from the structural steel waste returned to the FEMP.

**Planned Activities:**

- Complete consolidation of containers of primary waste at the Plant 7 Pad in April.
- Complete final reports for Plant 7 structural steel and lead recycle for completion of project reports in April.

*Removal Actions*

RA No. 20, Stabilization of UNH Inventories

**Current Month:**

Tank D1-7 has been emptied and rinsed and samples have verified it to be clean according to RCRA.

Tank D1-11 has also been emptied and rinsed and samples have verified it to be clean according to RCRA.

Addition of acid to 3000 gallons of liquid waste in Tank F1-26 was completed on March 29, 1996.

**Planned Activities:**

- Tank F1-26 should be rinsed and verified clean according to RCRA requirements, by April 4, 1996.

RA No. 26, Asbestos Removals (Asbestos Program)

**Current Month:**

Removal of friable asbestos from the Plant 4 furnaces continues. Removal of interior transite continues from Plant 1.

**Planned Activities:**

- Continue removal of friable asbestos from the Plant 4 furnaces.
- The friable asbestos (piping) is scheduled to be removed from Building 66 in April.

RA No. 28, Contamination at the Fire Training Facility

**Current Month:**

No further activities are planned for RA No. 28.

**Planned Activities:**

- None to report.

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**Period Ending March 31, 1996**

***Removal Actions***

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

**Current Month:**

No further activities are planned for RA No. 30.

**Planned Activities:**

- RSO will continue to monitor and sample in accordance with the 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<br>April 25, 1995 | August 16, 1995 |
| Submit Final Report to EPA | Completed<br>Sent to EPA on November 30, 1995 | December 8, 1995 |

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

**Period Ending March 31, 1996**

***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, Burn Pit, berms, liners, and soil within the operable unit boundary.

### 1.1 RI/FS Work Plan

**Status:**

Complete.

### 1.2 Remedial Investigation

**Status:**

Complete.

### 1.3 Feasibility Study/Proposed Plan

**Status:**

Complete.

### 1.4 Treatability Studies

**Status:**

The DEEP final report was completed and included in the Pre-final Design Package submitted to U.S. EPA and Ohio EPA on March 20, 1996.

**Issues/Corrective Actions:**

None to report.

### 1.5 Record of Decision

**Status:**

Complete.

## 1.6 RD Work Plan

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

**Status:**

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

An Addendum to the Remedial Design Work Plan (ARDWP) for OU 1 was developed and submitted to the U.S. EPA and Ohio EPA for review and approval. This ARDWP describes design plan changes associated with the pursuance of an Alternative Remedial Action Subcontracting Approach (ARASA) for OU 1. This ARDWP provides an explanation of ARASA and describe its impact on the current OU 1 design. Specifically, this ARDWP includes: 1) a definition of ARASA; 2) integrating the current design into ARASA; 3) DOE and ARASA subcontractor responsibilities and RD/RA deliverables; and 4) Agency review and subsequent finalization of ARASA deliverables. The ARDWP was submitted with the Pre-final Design deliverables on March 20, 1996.

**Issues/Corrective Actions:**

None to report.

## 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 pre-final design deliverables.

Based on an evaluation and subsequent adoption of the ARASA concept, the Addendum to the RD Work Plan presents necessary design plan changes. Under the ARASA concept, the subcontractor would install and operate remedial facilities, excavate, treat, and load waste for shipment. The subcontractor would provide construction capital and recover these costs through processing charges, allowing the government to avoid significant up-front expenses. Design deliverables to be provided by the ARASA subcontractor will be identified in the Remedial Action (RA) Work Plan scheduled for submittal to U.S. EPA and Ohio EPA by October 22, 1996.

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***Remedial Investigations/Feasibility Studies***

1.7 **Remedial Design (continued)**

**Status:**

The preliminary design package was submitted to U.S. EPA and Ohio EPA for review October 23, 1995. In a letter dated December 14, 1995, U.S. EPA provided comments on the preliminary design package. U.S. EPA stated this package adequately addresses record of decision requirements and conforms to generally accepted engineering practices, but disapproved the package pending resolution of comments. Ohio EPA provided preliminary design package comments December 22, 1995. A Response to Comments document was submitted to U.S. EPA and Ohio EPA on January 19, 1996, formally responding to Agency comments on the preliminary design package. In a letter dated February 20, 1996, Ohio EPA identified two remaining concerns relative to its comments on the Preliminary Design package and DOE response to Ohio EPA's comments. Responses were provided by DOE in a letter dated March 5, 1996. U.S. EPA approved the preliminary design packages in a letter dated March 13, 1996, stating that the responses to comments adequately addressed U.S. EPA's previous comments.

Efforts continued in March 1996 to provide further detail to the design leading to the finalization of the Pre-final Design deliverables, for submittal to U.S. EPA and Ohio EPA on March 20, 1996.

A draft Decision Document for ARASA was transmitted to DOE for review on February 21, 1996. This document is the culmination of efforts by the ARASA Task Force in reviewing the potential for implementing a subcontracting approach wherein a private subcontractor would perform the excavation, processing, and loadout of OU 1 wastes in lieu of the current design, build, and operate concept. The Decision Document concludes that there is a clear advantage for ARASA, especially in the short term, and that there are no challenges which are "fatal flaws" to adopting ARASA. The recommendation of the Decision Document to proceed ahead with the implementation of ARASA was agreed to by DOE-FN by letter of March 6, 1996.

Efforts were expended in March 1996 in the development of a request for proposal (RFP), including a statement of work for procurement of the ARASA subcontractor. In support of this procurement process, a notice was developed and transmitted for publication in the Commerce Business Daily (CBD), seeking qualified sources interested in performing the ARASA scope of work. Expressions of interest and qualifications, based on the criteria established in the CBD notice, are due by April 26, 1996. The intent of this process is to establish a qualified bidders list to whom the RFP will be sent.

An amendment to the draft RFP for procurement of services at a permitted off-site commercial disposal facility including DOE-OFO wastes from other DOE-OFO facilities along with OU 1 wastes, was sent to prospective vendors March 15, 1996, for review and comment. By the March 29th closing date comments were received from perspective vendors. The draft RFP is being revised.

## 1.8 RA Work Plan

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

**Status:**

An RA Work Plan is scheduled for submittal to U.S. EPA and Ohio EPA by October 22, 1996, as stated in the Remedial Design Deliverable Schedule submitted as part of the RD Work Plan. With the implementation of ARASA, however, the scope of this RA Work Plan will be limited to those portions of the remedial action (e.g., transportation) which will continue to be the direct responsibility of DOE. As noted in the Addendum to the RD Work Plan, this RA Work Plan will also identify deliverables to be provided by the ARASA subcontractor. Because the subcontract will not yet have been awarded, DOE will identify a date, such as the subcontract award date, by which DOE must propose enforceable submittal dates for subcontractor deliverables.

Additionally, RA Work Plan-type information will be developed by the ARASA subcontractor defining the basis for implementation of his portions of the OU 1 remedial action. Because this information will not have been developed until after the above discussed RA Work Plan has been submitted and reviewed, it will need to be submitted separately as a supplement to the RA Work Plan at a later (to be determined) date.

**Issues/Corrective Actions:**

None to report.

## 1.9 Planned Activities for April 1996:

- Review comments from prospective vendors on the draft request for proposal for the permitted off-site commercial disposal facility and revise request for proposal as needed.
- Continue development of the request for proposal for procurement of an ARASA subcontractor.
- Receive expressions of interest and qualifications in response to the Commerce Business Daily notice seeking sources interested in performing the ARASA scope of work.

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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 RI/FS Work Plan Addendum

**Status:**

Complete.

### 2.1.1 RI Field Investigation

**Status:**

Complete.

### 2.2 Remedial Investigation

**Status:**

Complete.

OPERABLE UNIT 2 REMEDIAL INVESTIGATION REPORT — PRIMARY MILESTONES

| SCOPE | SUBMIT TO EPAs | RECEIVE FROM EPAs | FINAL DUE DATE TO EPAs | 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

### 2.3 Feasibility Study/Proposed Plan

**Status:**

Complete.

*Remedial Investigations/Feasibility Studies*

OPERABLE UNIT 2 FEASIBILITY STUDY/PP REPORT — PRIMARY MILESTONES

| SCOPE | SUBMIT DRAFT TO EPAs | RECEIVE FROM EPAs | SUBMIT FINAL DRAFT TO EPAs | ACTUAL FINAL SUBMITTAL TO EPAs |
|---|---|---|---|---|
| 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.

## 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.

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*Remedial Investigations/Feasibility Studies*

## 2.7 Pre-Design Field Investigation

**Status:**

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. The Addendum is currently being reviewed by DOE and the U.S. Environmental Protection Agency. Ohio EPA completed its review and transmitted comments to FERMCO on January 24, 1996. FERMCO is currently addressing the OEPA review comments. Field work began on January 26, 1996.

## 2.8 Geotechnical Field Investigation

**Status:**

Operable Unit 2 received for review and comment the Off-site Borrow Materials Evaluation Report, submitted by PARSONS on March 29, 1996. This is a 90% evaluation report and presents the results of laboratory testing analyses on off-site borrow samples gathered in accordance with FERMCO's Geotechnical Sampling and Testing Plan.

**Planned Activities for April:**

Review and comment on 90% submittal of the Off-Site Borrow Materials Evaluation Report.

## 2.9 Disposal Facility

**Status:**

**Site-Wide Disposal Facility Title I/II/II**

On March 19, 1996 the Response to Comments for the Preliminary 30% Design Package for the On-Site Disposal Facility (OSDF) was transmitted to the DOE. The comment response package detailed the U.S. EPA and Ohio EPA comments, the proposed DOE response and the associated actions resulting from the comment.

**On-Site Disposal Facility Remedial Action Work Plans**

The Draft Remedial Action Work Plan for the On-Site Disposal Facility was transmitted to DOE for review and comment on February 29, 1996. DOE comments are expected around March 29, 1996. This work plan is due to the EPAs by April 12, 1996.

2.9 **Disposal Facility**

**Status: (continued)**

**On-Site Disposal Facility Leachate/Liner Compatibility Study**

The Work Plan for the Leachate/Liner Compatibility Study - On-Site Disposal Facility, Revision C, February 1996 was transmitted to the DOE for review and comment on March 5, 1996. The work plan covers the evaluation of the chemical compatibility characteristics of the High Density Polyethylene (HDPE) liner with the leachate, review and analysis of the available technical literature, and details of the HDPE liner compatibility testing.

**Planned Activities for April 1996:**

- Continue preparation of the Intermediate (60%) Design Package and incorporate any comments received from DOE.
- Incorporation of comments received from DOE on the Draft Remedial Action Work Plan for the On-Site Disposal Facility.
- Submit Draft Permitting Plan to the EPAs.

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***Remedial Investigations/Feasibility Studies***

## 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:**

The OU 3 Final RI/FS Report and Proposed Plan were unconditionally approved by U.S. EPA and Ohio EPA on March 22, 1996, and March 14, 1996, respectively. The Notice of Availability (NOA) for the Proposed Plan is expected to be released and published in local newspapers in early April. The NOA will open the 30-day public comment period on the Proposed Plan. A public hearing has been scheduled for Tuesday, April 23, 1996, at The Plantation in Harrison, Ohio.

**Issues/Corrective Actions:**

Nothing to report.

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

## 3.2 Record of Decision

**Status:**

Comments received in February 1996 from DOE (FN, HQ, OFO, and ANL) were incorporated into the draft ROD. July 25th is the anticipated submittal date of the draft ROD to the EPAs, which is 60 days after the close of the public comment period.

**Issues/Corrective Actions:**

Comment incorporation and revision of the draft ROD will be completed this month. March 19, 1996 has been identified as the date for resubmittal of the revised draft ROD for DOE review.

**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:**

A decision was 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 out for internal FERMCO review.

Contaminated pipe insulation (asbestos) collected by Safe Shutdown from two areas in Plant 9 was received by Westinghouse Science and Technology Center (WSTC) in Pittsburgh, PA. WSTC and KAI Tech. Inc. are continuing efforts to develop 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.

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***Remedial Investigations/Feasibility Studies***

## 3.4 Interim Remedial Action

**Status:**

**Dismantlement of MAWS Equipment** -The MAWS soil washing system, which has been completely dismantled, is currently being radiologically surveyed for shipment to one of Lockheed's Nuclear Regulatory Commission licensed facilities. As of the end of March 1996, two of the five trucks had been shipped; the other three are expected to leave the FEMP by April 5, 1996. A project close-out meeting, including a walkdown of the MAWS area with Lockheed Vice-President Mike Arndt, is scheduled to occur on April 11, 1996. FERMCO is awaiting direction from DOE, pending reconciliation of contractual issues with Duratek, on the dismantlement of the MAWS vitrification and water treatment systems.

**Dismantlement of the High and Low Nitrate Tanks** -The draft implementation plan for the above-grade dismantlement of the High and Low Nitrate Tanks was conditionally approved by Ohio EPA, pending resolution of five comments. USEPA has not yet responded. Sampling analyses of the Low Nitrate Tank sediment showed elevated concentrations of thorium. Therefore, from a health physics standpoint, thorium is considered the primary contaminant of concern for the removal and treatment of this sediment. As a result, some piping in the Plant 8 wastewater treatment system had to be modified to isolate the sediment from other waste streams. The Low Nitrate Tank cover has been removed and containerized. Sediment removal and treatment began the week of March 25, 1996. The required level of PPE has increased due to thorium concerns which will impede the sediment removal and dewatering processes. These unavoidable delays may impact the start of constructing the OU 1 Waste Treatment Facility.

**Issues/Corrective Actions:**

None to report.

## 3.5 Planned Activities for April 1996:

- Develop the Notice of Availability (NOA) to announce the public comment period for the OU 3 proposed plan.
- Schedule and continue planning for the OU 3 public comment period. This includes determining the appropriate date and location for the public hearing. Planning also includes preparation of presentation slides and dry runs for the meeting.
- Incorporate DOE comments on the draft ROD and revise the ROD accordingly.
- Remove the cover of the Low Nitrate Tank in preparation for removing the 120,000 gallons of sediment for Plant 8 dewatering.
- Review and incorporate technical comments into the summary report for the Ultrasonic Cleaning of Strategic Metals Engineering Study. Issue the draft report.

3.5 **Planned Activities for April 1996: (continued)**

- Submit an addendum or amendment to the RA 17 Work Plan to the EPAs responding to the EPA comments on Revision 3 of the RA No. 17 Work Plan.
- Begin developing a revised site procedure, EW-0006, to provide guidance on implementation of RA No. 17 Work Plan concepts into field activities at the FEMP.
- Final disposition of the waste streams continues to be determined for Phase I of RA No.15.
- The Engineering Study of the RA No. 15 Phase II waste streams will be managed by Waste Programs Management.

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*Remedial Investigations/Feasibility Studies*

## 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.

*Remedial Investigations/Feasibility Studies*

### 4.4.2 Pilot Plant Treatability Studies

**Status:**

Response to DOE-FN comments on the Phase I Work Plan were submitted on January 18, 1996. The Final Phase I Work Plan was submitted to DOE-FN on February 22, 1996 for submittal to the U.S. EPA. Currently awaiting U.S. EPA comments on the Phase I Work Plan. Comments on the Phase II Work Plan are being addressed for submittal to DOE-FN in June 1996.

**Issues/Corrective Actions:**

The Vitrification Pilot Plant has incurred schedule delays and cost overruns. These problems have been traced to delays in delivery of vendor information causing major redesign, improper fabrication of certain equipment items and numerous other factors. Remaining pilot plant work has been replanned and rescheduled in great detail using experience from the FEMP and from other vitrification facilities to generate an aggressive but achievable schedule. Activities are progressing toward initiation of melter bakeout in early May.

### 4.5 Record of Decision

**Status:**

Complete.

### 4.6 RD Work Plan

**Status:**

Advance remediation construction packages are proceeding on schedule. The Site Preparation/Underground Utilities construction package was awarded on February 29, 1996 ahead of the required date for beginning substantial and continuous remediation activities 15 months after approval of the Record of Decision. Design work for the Silo Superstructures package is also on schedule for submittal of the prefinal design package on May 2, 1996.

### 4.7 Planned Activities for April 1996:

- Complete construction of the Phase I Pilot Plant facility.
- Address comments on the Phase II Work Plan.
- Continue System Operability Testing and Pre-Start activities.

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**Period Ending March 31, 1996**

***Remedial Investigations/Feasibility Studies***

## 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.

**OPERABLE UNIT 5 REMEDIAL INVESTIGATION REPORT** **PRIMARY MILESTONES**

| SCOPE | SUBMIT TO EPAs | RECEIVE FROM EPAs | SUBMIT TO EPAs 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<br>11/01/94 A |

C = Consent Agreement Date
A = Actual Date

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

**Status:**

Complete.

**OPERABLE UNIT 5 FEASIBILITY STUDY/PROPOSED PLAN** **PRIMARY MILESTONES**

| SCOPE | SUBMIT TO EPAs | RECEIVE FROM EPAs | SUBMIT TO EPAs 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<br>11/15/94 A | 01/16/95 C | 02/14/95 C |

C = Consent Agreement Date
A = Actual Date

*Remedial Investigations/Feasibility Studies*

5.3 **RCRA Monitoring**

**Status:**

Several recommendations for improvement were made with the February submittal of the 1995 RCRA Annual Report. Changes to the RCRA Monitoring program resulting from the recommendations will be implemented when concurrence is received from the EPAs.

**Issues/Corrective Actions:**

None to report.

5.4 **Treatability Studies**

Complete.

5.5 **Record of Decision (ROD)**

**Status:**

The Operable Unit 5 Record of Decision was signed by the Regional Administrator of the EPA on January 31, 1996. Full distribution of the ROD, including the signed Declaration, was completed on February 16, 1996.

**Issues/Corrective Actions:**

None to report.

5.6 **Other Studies/Reports**

**Status:**

South Field Injection Test Report - Responses to U.S. and Ohio EPA comments were forwarded to the EPAs in early March. A revised Injection Test Report will be prepared after agency acceptance of the responses. An additional injection test was initiated in late March and is scheduled to be completed in early April.

An Addendum to the existing Project-Specific Plan for the South Field Injection Test was forwarded to the U.S. and Ohio EPAs in mid-March to outline conducting an additional injection test and performing geochemical modeling.

**Issues/Corrective Actions:**

None to report.

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5.7 **RD/RA Activities**

**Status:**

The draft Remedial Design Work Plan for Remedial Actions at Operable Unit 5 was submitted to U.S. EPA and OEPA on March 29, 1996. Comments are expected in 30 days. Two associated documents, the Baseline Remedial Strategy Report and the Integrated Environmental Monitoring Plan, are being prepared in order to meet the delivery schedule put forth in the Remedial Design Work Plan.

**Issues/Corrective Actions:**

None to report.

5.8 **Planned Activities for April 1996:**

- Continue preparation of the draft Baseline Remedial Strategy Report and the Integrated Environmental Monitoring Plan.

## 6.0 Community Relations

**Status:**

Public Affairs issued a note to editors titled, "FERMCO Provides Information in Response to Media Inquiry," responding to inquiries from the media regarding Hazardous Waste Management Units handling and documentation, the Vitrification Pilot Plant, and the LMI report.

In conjunction with FERMCO Human Resources, Public Affairs conducted a survey of employees following the February 16, 1996 all-supervisors meeting and *The Cincinnati Enquirer* articles to determine message pickup and employee perception of articles.

Public Affairs collected 37 Fernald-related news clips from media publications and published one advertisement in both the *Journal-News* and *The Cincinnati Enquirer* to publicize the March 9 Fernald Citizens Task Force meeting.

March 6, 1996 Public Affairs accompanied Don Ofte, former FERMCO president, at a *Journal-News* editorial board meeting to discuss *The Enquirer's* allegations, Ofte's retirement and departure from Fernald.

Representatives of the FERMCO Office of the President gave presentations at the FERMCO Management Team meeting, Ohio Summit Meeting and the Fernald Leadership Forum.

FERMCO President John Bradburne formally introduced himself to FRESH meeting attendees at their regularly scheduled meeting on March 28, 1996. Public Affairs and other FERMCO representatives, including Environmental Compliance Division Director Terry Hagen, also attended the meeting.

Employee volunteers representing the Fernald Speakers Bureau gave presentations to environmental law students at Northern Kentucky University Chase Law School and to students at the Fairfield Middle School. In addition, through education outreach initiatives, Public Affairs conducted or facilitated the following presentations at:

- -- Assumption School: Fernald overview;
- -- Midway Elementary School: food chains;
- -- Mt. Healthy North School: Minorities in Math Science and Engineering; and
- -- St. John's Elementary School: flight, matter and capillary action.

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**Period Ending March 31, 1996**

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## 6.0 Community Relations

**Status: (continued)**

Public Affairs participated in the second Annual Hamilton County Waterfest event at the University of Cincinnati. Public Affairs personnel gave a presentation on the effects of soap on water to 150 local students. The purpose of Waterfest is to educate students and teachers of the importance of and our dependence on water resources. Twenty-six schools and 1,609 students participated in the event.

Public Affairs conducted 10 tours, with 63 people participating. Visitors included:

- -- DOE representatives from Idaho, Chicago, Richland and Headquarters;
- -- Crosby Township trustees and spouses;
- -- a University of Cincinnati professor;
- -- Nevada Test Site auditors;
- -- General Accounting Office representatives;
- -- Ohio Citizen Action Group representatives; and
- -- students from Northern Kentucky University.

Fernald's Partnership in Education employee volunteers conducted the following activities: a video production at Ross Middle School; a tye-dye T-shirt project at Miamitown and Crosby and a chemical reaction project at Garfield Junior High School.

Public Affairs recruited more than 20 employee volunteers to serve as judges for several local schools' science fairs. In addition, FERMCO presented a $1,000 contribution to the Hamilton Rotary Club to sponsor its annual science fair at Garfield Junior High School; approximately 800 students attended the event.

A Public Affairs staffer attended the DOE Science Education Directors meeting in Washington, DC.

Public Affairs prepared and distributed the monthly *Waste Shipping Report.*

Public Affairs prepared and mailed the *Fernald Report* to 1,000-plus stakeholders.

Public Affairs mailed Federal Facilities Compliance Act and Public Environmental Impact Statement materials to stakeholders.

Public Affairs sent handouts from the February 27, 1996 Ohio EPA Environmental Monitoring workshop to the Public Environmental Information Center for availability to the public.

6.0 **Community Relations**

**Status: (continued)**

Public Affairs supported the regular quarterly meeting of the Fernald Citizens Task Force at the Joint Information Center. Issues discussed at the meeting included the Community Reuse Organization, on-site materials removal, groundwater remediation, and subcommittee reports. In addition, Public Affairs attended the following task force meetings:

-- Transportation Subcommittee;
-- Waste Management Subcommittee; and
-- Joint meeting held with FRESH.

6.1 **Planned Activities for April 1996:**

- Operable Unit 3 personnel will hold the April 23 public hearing on the proposed plan for final remedial action. The meeting will begin at 7 p.m. and will be held at the Plantation.

**Issues/Corrective Action:**

None to report.

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PERIOD ENDING MARCH 31, 1996

ENCLOSURE A

WASTE WATER FLOWS AND RADIONUCLIDE

CONCENTRATIONS UNDER CA SECTION XXIII.B

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**Period Ending March 31, 1996**

**ENCLOSURE A**

## Introduction

The accompanying Effluent Radiation Reports provide, in accordance with the requirements of Section XXIII.B of the Consent Agreement As Amended under CERCLA Sections 120 and 106 (a), data on the daily waste water flows, radionuclide concentrations, and loadings released to the Great Miami River and an estimate of runoff and radionuclide concentrations to Paddy's Run during March 1996. Effective November 1, 1995, the new NPDES permit, 1Io00004*ED, identified the Parshall Flume as the monitoring location for all discharges to the Great Miami River.

## Summary - March 1996

The total quantity of uranium discharged from the FEMP to the Great Miami River from the Parshall Flume (Outfall 1Io00004001) was 16.27 kilograms. The average uranium concentration for the month was 54 ug/L. This is 6.1 % of the Derived Concentration Guide (DOE Order 5400.5) for ingested water.

There were no discharges from the Storm Water Retention Basin Spillway (Outfall 1Io00004002) to Paddy's Run via the Storm Sewer Outfall Ditch in March 1996.

Based on 4.19 inches of rainfall in March 1996, the total quantity of uranium discharged to Paddy's Run from uncontrolled areas of the FEMP is estimated to be 11.90 kilograms.

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## Period Ending March 31, 1996

## 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: 1IO00004001
4001 Total Discharge
Parshall Flume (Effluent to Great Miami River)

DATE: MARCH 1996

| Day | Flow (MGD) | Total Alpha (pCi/l) | Total Beta (pCi/l) | Total U (ug/l) | Total U (kgs) | Calculated Total U-238 (pCi/l) (1) |
|---|---|---|---|---|---|---|
| 1 | 2.437 | 12 | 740 | 33 | 0.30 | 11 |
| 2 | 2.391 | 20 | 770 | 34 | 0.30 | 11 |
| 3 | 2.502 | 45 | 860 | 49 | 0.47 | 17 |
| 4 | 2.397 | 34 | 690 | 67 | 0.61 | 23 |
| 5 | 2.450 | 54 | 740 | 87 | 0.81 | 29 |
| 6 | 2.595 | 28 | 540 | 43 | 0.43 | 15 |
| 7 | 2.611 | 24 | 530 | 53 | 0.53 | 18 |
| 8 | 2.463 | 21 | 500 | 38 | 0.35 | 13 |
| 9 | 2.578 | 22 | 560 | 38 | 0.37 | 13 |
| 10 | 2.747 | 18 | 530 | 34 | 0.36 | 12 |
| 11 | 2.780 | 18 | 570 | 39 | 0.41 | 13 |
| 12 | 2.416 | 32 | 780 | 43 | 0.39 | 14 |
| 13 | 2.356 | 46 | 1000 | 75 | 0.67 | 25 |
| 14 | 2.243 | 52 | 1100 | 88 | 0.74 | 30 |
| 15 | 2.197 | 51 | 1000 | 96 | 0.80 | 32 |
| 16 | 2.306 | 31 | 720 | 51 | 0.45 | 17 |
| 17 | 2.192 | 18 | 660 | 33 | 0.27 | 11 |
| 18 | 2.288 | ** | ** | 29 | 0.25 | 10 |
| 19 | 2.886 | ** | ** | 59 | 0.64 | 20 |
| 20 | 4.052 | ** | ** | 149 | 2.28 | 50 |
| 21 | 4.072 | ** | ** | 156 | 2.40 | 53 |
| 22 | 2.232 | ** | ** | 41 | 0.35 | 14 |
| 23 | 2.235 | ** | ** | 31 | 0.27 | 11 |
| 24 | 2.511 | ** | ** | 27 | 0.26 | 9 |
| 25 | 2.601 | ** | ** | 39 | 0.38 | 13 |
| 26 | 2.617 | ** | ** | 30 | 0.29 | 10 |
| 27 | 2.586 | ** | ** | 21 | 0.21 | 7 |
| 28 | 2.410 | ** | ** | 23 | 0.21 | 8 |
| 29 | 2.443 | ** | ** | 21 | 0.19 | 7 |
| 30 | 2.313 | ** | ** | 18 | 0.16 | 6 |
| 31 | 2.250 | ** | ** | 16 | 0.13 | 5 |
| Total | 79.157 | | | | 16.27 | |

** Analytical results not yet available.

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

## Period Ending March 31, 1996

## ENCLOSURE A

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: 4001 Total Discharge

DATE: MARCH 1996

| | 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. | 2.553 | 16 | 376 | 54 | 0.52 | 18 |
| Max. | 4.072 | 54 | 1100 | 156 | 2.40 | 53 |
| Min. | 2.192 | ** | ** | 16 | 0.13 | 5 |

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 March 31, 1996

## 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: 1IO00004002
4002 Discharge (Overflow) to Storm Sewer Outfall Ditch
Stormwater Retention Basin Spillway (Effluent to Paddy's Run)

DATE: MARCH 1996

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

Based on 4.19 inches of rainfall for the month, the uranium discharge to Paddy's Run from uncontrolled areas of the FEMP is estimated to be 11.90 kgs.

000043

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

PERIOD ENDING MARCH 31, 1996

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

**Period Ending March 31, 1996**

**ENCLOSURE B**

## INTRODUCTION

Enclosure B describes actions undertaken at the FEMP during the period March 1 through March 31, 1996 that are not covered by the reporting requirements of the Amended Consent Agreement under the Comprehensive Environmental Response, Compensation, and Liability Act as amended (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 February 1996 was transmitted to the U.S. EPA and OEPA on March 15, 1996, 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 Amended Consent Agreement.

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

**Period Ending March 31, 1996**

**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 February 1996, was transmitted to the U.S. EPA and OEPA on March 15, 1996 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.

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

## Period Ending March 31, 1996

## 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 |
|---|---|---|---|
| CERCLA | | | |
| 1. | INITIAL REMEDIAL MEASURES | | |
| 1.C | Implement radon control plan approved by the U.S. EPA. | ----- | No longer applicable. Progress on actions to address radon emissions from the K-65 Silos are being reported separately under Section IX-Removal Actions of the Consent Agreement/FFCA Monthly Progress Report. |
| 2. | REMEDIAL INVESTIGATION/FEASIBILITY STUDY | | No action required. |
| 2.A | RI/FS work is to be conducted in accordance with the U.S. EPA guidelines. | N/A | |
| 2.B | --No Action Required-- | ----- | Status information on the RI/FS is being reported in accordance with the requirements of Section X of the Consent Agreement As Amended under CERCLA Sections 120 and 106(a). |
| 2.E | Amend and submit revised RI/FS Work Plan to U.S. EPA if deficiencies are found. | | Status information on the RI/FS is being reported in accordance with the requirements of Section X of the Consent Agreement As Amended under CERCLA Sections 120 and 106(a). |
| 2.F | Implement tasks described in the approved RI/FS Work Plan | | Status information on the RI/FS is being reported in accordance with the requirements of Section X of the Consent Agreement As Amended under CERCLA sections 120 and 106(a). |
| 3. | REPORTS AND RECORD KEEPING | | |
| 3.B | Submit monthly RI/FS progress reports. | monthly | The RI/FS Monthly Progress Report for February 1996 was transmitted to the U.S. EPA and OEPA on March 15, 1996. |

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

## Period Ending March 31, 1996

## 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 1995 or to this date in 1996.<br><br>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 | No stack tests performed this year. |
| E.1 | Maintain records of monthly particulate matter emissions. | ----- | Ongoing. |

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

## Period Ending March 31, 1996

## 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 | February's CA/FFCA Monthly Progress Report was transmitted to the U.S. EPA and OEPA on March 15, 1996. |

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

PERIOD ENDING MARCH 31, 1996

ENCLOSURE C

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

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

**Period Ending March 31, 1996**

**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 March 1 through March 31, 1996, 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).

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

## Period Ending March 31, 1996

## 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. |

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

## Period Ending March 31, 1996

## ENCLOSURE C

| 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. |

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

**Period Ending March 31, 1996**

**ENCLOSURE C**

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

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

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

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

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

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

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

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

**Period Ending March 31, 1996**

**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.

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

## Period Ending March 31, 1996

## ENCLOSURE C

**MONTH:** MARCH
**YEAR:** 1996

**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: 04/08/96

| Daily | SILO 1 | | | | SILO 2 | | | |
|---|---|---|---|---|---|---|---|---|
| Statistics | Average | Maximum | Minimum | Std. Dev. | Average | Maximum | Minimum | Std. Dev. |
| 03/01/96 | 2.10E+06 | 5.78E+06 | 1.05E+04 | 2.45E+06 | 7.35E+06 | 1.01E+07 | 2.34E+05 | 2.45E+06 |
| 03/02/96 | 2.05E+06 | 5.78E+06 | 2.34E+05 | 1.56E+06 | 7.45E+06 | 1.00E+07 | 2.05E+06 | 2.46E+06 |
| 03/03/96 | 9.34E+05 | 5.30E+06 | 6.79E+04 | 1.30E+06 | 5.52E+06 | 8.13E+06 | 8.40E+05 | 2.06E+06 |
| 03/04/96 | 6.27E+05 | 1.56E+06 | 1.41E+05 | 4.06E+05 | 5.51E+06 | 7.75E+06 | 6.44E+05 | 2.70E+06 |
| 03/05/96 | 3.77E+06 | 6.31E+06 | 1.17E+06 | 1.92E+06 | 8.00E+06 | 8.40E+06 | 7.49E+06 | 2.30E+05 |
| 03/06/96 | 2.82E+06 | 5.82E+06 | 9.90E+05 | 1.57E+06 | 6.00E+06 | 8.35E+06 | 6.92E+05 | 2.24E+06 |
| 03/07/96 | 4.51E+05 | 1.60E+06 | 2.46E+04 | 4.67E+05 | 7.90E+06 | 8.22E+06 | 7.65E+06 | 1.38E+05 |
| 03/08/96 | 3.97E+05 | 8.93E+05 | 3.69E+04 | 2.60E+05 | 8.06E+06 | 8.54E+06 | 7.79E+06 | 1.93E+05 |
| 03/09/96 | 5.46E+05 | 1.25E+06 | 1.28E+05 | 3.13E+05 | 7.60E+06 | 8.62E+06 | 6.24E+06 | 8.19E+05 |
| 03/10/96 | 6.67E+05 | 1.06E+06 | 1.15E+05 | 2.74E+05 | 6.66E+06 | 8.23E+06 | 3.91E+06 | 1.27E+06 |
| 03/11/96 | 2.20E+06 | 4.98E+06 | 6.24E+05 | 1.48E+06 | 7.93E+06 | 8.43E+06 | 6.25E+06 | 5.33E+05 |
| 03/12/96 | 3.89E+06 | 6.29E+06 | 1.08E+06 | 1.64E+06 | 8.45E+06 | 8.91E+06 | 7.71E+06 | 3.45E+05 |
| 03/13/96 | 4.38E+06 | 6.41E+06 | 1.33E+06 | 1.80E+06 | 8.32E+06 | 9.23E+06 | 7.40E+06 | 6.64E+05 |
| 03/13/96 | 3.12E+06 | 6.48E+06 | 3.34E+05 | 2.10E+06 | 6.65E+06 | 7.27E+06 | 6.29E+06 | 2.33E+05 |
| 03/14/96 | 4.03E+06 | 6.44E+06 | 1.43E+06 | 1.58E+06 | 7.96E+06 | 8.96E+06 | 6.90E+06 | 7.57E+05 |
| 03/15/96 | 4.90E+06 | 6.40E+06 | 2.96E+06 | 1.00E+06 | 6.82E+06 | 7.39E+06 | 6.31E+06 | 4.40E+05 |
| 03/17/96 | 1.10E+06 | 2.79E+06 | 5.81E+04 | 7.99E+05 | 6.55E+06 | 7.01E+06 | 5.89E+06 | 2.81E+05 |
| 03/18/96 | 2.16E+06 | 5.05E+06 | 2.22E+05 | 1.20E+06 | 6.50E+06 | 7.17E+06 | 6.14E+06 | 2.34E+05 |
| 03/19/96 | 2.04E+06 | 4.18E+06 | 4.10E+05 | 1.03E+06 | 6.43E+06 | 6.82E+06 | 6.06E+06 | 1.73E+05 |
| 03/20/96 | 4.62E+05 | 1.92E+06 | 2.62E+04 | 5.78E+05 | 6.33E+06 | 6.79E+06 | 5.75E+06 | 2.68E+05 |
| 03/21/96 | 2.34E+05 | 5.37E+05 | 1.38E+05 | 8.66E+04 | 6.70E+06 | 6.95E+06 | 5.86E+06 | 2.64E+05 |
| 03/22/96 | 4.62E+05 | 1.19E+06 | 1.75E+05 | 2.44E+05 | 6.69E+06 | 7.25E+06 | 5.95E+06 | 2.73E+05 |
| 03/23/96 | 4.53E+05 | 1.17E+06 | 3.62E+04 | 2.91E+05 | 6.50E+06 | 6.97E+06 | 5.80E+06 | 3.49E+05 |
| 03/24/96 | 1.77E+06 | 3.64E+06 | 4.89E+05 | 9.73E+05 | 6.52E+06 | 7.26E+06 | 6.15E+06 | 2.44E+05 |
| 03/25/96 | 3.52E+06 | 5.87E+06 | 1.13E+06 | 1.43E+06 | 6.38E+06 | 6.61E+06 | 5.98E+06 | 1.91E+05 |
| 03/26/96 | 1.06E+06 | 5.11E+06 | 2.74E+04 | 1.33E+06 | 6.33E+06 | 7.12E+06 | 5.86E+06 | 3.14E+05 |
| 03/27/96 | 5.73E+05 | 2.21E+06 | 2.64E+04 | 5.38E+05 | 6.37E+06 | 6.85E+06 | 5.70E+06 | 2.42E+05 |
| 03/28/96 | 8.15E+05 | 2.75E+06 | 1.68E+05 | 7.03E+05 | 6.45E+06 | 7.06E+06 | 5.76E+06 | 3.39E+05 |
| 03/29/96 | 1.26E+06 | 2.90E+06 | 1.54E+05 | 8.42E+05 | 6.52E+06 | 7.15E+06 | 6.06E+06 | 2.87E+05 |
| 03/30/96 | 9.46E+05 | 2.59E+06 | 1.95E+05 | 6.56E+05 | 6.59E+06 | 6.88E+06 | 6.17E+06 | 2.11E+05 |
| 03/31/96 | 3.54E+06 | 6.09E+06 | 1.63E+05 | 2.20E+06 | 6.29E+06 | 6.99E+06 | 6.00E+06 | 2.62E+05 |

Grab Samples of Headspace

| Date: | SILO 1 Concentration | SILO 2 Concentration |
|---|---|---|
| 03/01/96 | 4.27E+05 | 4.88E+06 |
| 03/05/96 | 6.90E+05 | 5.12E+06 |
| 03/08/96 | 4.62E+05 | 2.74E+06 |
| 03/12/96 | 6.37E+06 | 5.00E+06 |
| 03/14/96 | 9.68E+05 | 5.00E+06 |
| 03/21/96 | 4.33E+05 | 5.04E+06 |
| 03/25/96 | 8.79E+03 | 4.84E+06 |
| 03/29/96 | 6.13E+05 | 4.84E+06 |

STANDARD LEGEND
1. All values reported in pCi/L.
2. Continuous data reported to three significant digits to remain consistent with the calibration data.
3. "(a)" indicates continuous counting method used for radon concentration calculation.
4. "*" indicates partial or complete data loss due to computer failure.

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G:\WPSC\FFCA\MAR96\ENCC - MAR.WK3

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

## Period Ending March 31, 1996

## ENCLOSURE C

**MONTH:** MARCH
**YEAR:** 1996

**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 (pCi/L) | AMS #6 (pCi/L) | PILOT PLANT WAREHOUSE (pCi/L) | BKGD-1 (Fairfield) (pCi/L) | BKGD-2 (Miamitown) (pCi/L) |
|---|---|---|---|---|---|
| 03/01/96 | 0.7 | 0.7 | 0.7 | 0.5 | 0.5 |
| 03/02/96 | 0.6 | 0.5 | 0.7 | 0.4 | 0.4 |
| 03/03/96 | 0.6 | 0.5 | 0.7 | 0.5 | 0.4 |
| 03/04/96 | 0.9 | 0.8 | 0.9 | 0.6 | 0.6 |
| 03/05/96 | 0.6 | 0.6 | 0.6 | 0.4 | 0.4 |
| 03/06/96 | 0.5 | 0.5 | 0.7 | 0.4 | 0.4 |
| 03/07/96 | 0.5 | 0.5 | 0.6 | 0.4 | 0.4 |
| 03/08/96 | 0.5 | 0.5 | 0.8 | 0.5 | 0.4 |
| 03/09/96 | 0.6 | 0.5 | 0.7 | 0.4 | 0.5 |
| 03/10/96 | 0.8 | 0.7 | 0.9 | 0.5 | 0.5 |
| 03/11/96 | 1.1 | 1.0 | 1.0 | 0.6 | 0.6 |
| 03/12/96 | 1.2 | 1.0 | 1.3 | 0.6 | 0.6 |
| 03/13/96 | 1.2 | 1.1 | 1.2 | 0.6 | 0.6 |
| 03/14/96 | 1.0 | 0.9 | 1.0 | 0.5 | 0.5 |
| 03/15/96 | 0.9 | 0.7 | 0.8 | 0.5 | 0.5 |
| 03/16/96 | 0.7 | 0.6 | 0.6 | 0.5 | 0.4 |
| 03/17/96 | 0.6 | 0.6 | 0.6 | 0.4 | 0.4 |
| 03/18/96 | 0.7 | 0.6 | 0.6 | 0.7 | 0.5 |
| 03/19/96 | 0.6 | 0.6 | 0.7 | 0.5 | 0.4 |
| 03/20/96 | 0.5 | 0.5 | 0.6 | N/A (b) | 0.3 |
| 03/21/96 | 0.5 | 0.4 | 0.6 | N/A (b) | 0.3 |
| 03/22/96 | 0.5 | 0.5 | 0.6 | N/A (b) | 0.4 |
| 03/23/96 | 0.6 | 0.6 | 0.6 | N/A (b) | 0.5 |
| 03/24/96 | 0.6 | 0.6 | 0.6 | N/A (b) | 0.4 |
| 03/25/96 | 0.5 | 0.4 | 0.6 | N/A (b) | 0.4 |
| 03/26/96 | 0.5 | 0.5 | 0.6 | 0.5 (b) | 0.4 |
| 03/27/96 | 0.5 | 0.7 | 0.7 | 0.5 | 0.4 |
| 03/28/96 | 0.5 | 0.6 | 0.7 | 0.5 | 0.5 |
| 03/29/96 | 0.5 | 0.6 | 0.7 | 0.5 | 0.4 |
| 03/30/96 | 0.5 | 0.6 | 0.7 | 0.4 | 0.4 |
| 03/31/96 | 1.1 | 1.1 | 1.1 | 0.6 | 0.5 |

| Monthly Statistics from Daily Averages | AMS #5 (pCi/L) | AMS #6 (pCi/L) | PILOT PLANT WAREHOUSE (pCi/L) | BKGD-1 (Fairfield) (pCi/L) | BKGD-2 (Miamitown) (pCi/L) |
|---|---|---|---|---|---|
| AVERAGE: | 0.7 | 0.6 | 0.7 | 0.5 | 0.4 |
| MAXIMUM: | 1.2 | 1.1 | 1.3 | 0.7 | 0.6 |
| MINIMUM: | 0.5 | 0.4 | 0.6 | 0.4 | 0.3 |
| MEDIAN: | 0.6 | 0.6 | 0.7 | 0.5 | 0.4 |
| STD. DEV: | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 |

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

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

## Period Ending March 31, 1996

## ENCLOSURE C

**MONTH:** MARCH
**YEAR:** 1996

**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 (pCi/L) | K65-SW (pCi/L) | K65-NE (pCi/L) | K65-SE (pCi/L) |
|---|---|---|---|---|
| 03/01/96 | 3.5 | 2.6 | 12.8 | 6.0 |
| 03/02/96 | 1.0 | 0.8 | 4.1 | 1.5 |
| 03/03/96 | 1.7 | 1.0 | 4.4 | 2.5 |
| 03/04/96 | 4.1 | 2.7 | 6.6 | 4.8 |
| 03/05/96 | 1.1 | 0.9 | 1.4 | 0.9 |
| 03/06/96 | 0.8 | 1.4 | 0.7 | 0.7 |
| 03/07/96 | 0.9 | 0.7 | 1.0 | 1.0 |
| 03/08/96 | 1.0 | 0.7 | 3.3 | 2.8 |
| 03/09/96 | 1.4 | 0.7 | 2.8 | 1.4 |
| 03/10/96 | 3.1 | 2.9 | 5.7 | 3.5 |
| 03/11/96 | 6.5 | 8.3 | 12.7 | 10.8 |
| 03/12/96 | 2.9 | 5.2 | 25.9 | 22.6 |
| 03/13/96 | 3.4 | 4.1 | 20.9 | 16.7 |
| 03/14/96 | 3.3 | 4.3 | 8.5 | 8.2 |
| 03/15/96 | 3.0 | 3.0 | 4.3 | 4.2 |
| 03/16/96 | 1.3 | 4.7 | 1.1 | 1.3 |
| 03/17/96 | 0.9 | 1.6 | 1.9 | 2.0 |
| 03/18/96 | 1.2 | 2.2 | 2.8 | 2.1 |
| 03/19/96 | 1.1 | 1.2 | 0.6 | 1.0 |
| 03/20/96 | 0.8 | 0.6 | 0.7 | 2.0 |
| 03/21/96 | 0.7 | 0.6 | 1.8 | 2.7 |
| 03/22/96 | 0.8 | 0.6 | 3.1 | 1.6 |
| 03/23/96 | 1.6 | 2.1 | 4.4 | 2.9 |
| 03/24/96 | 3.1 | 2.7 | 0.8 | 0.7 |
| 03/25/96 | 0.7 | 0.6 | 1.7 | 0.9 |
| 03/26/96 | 0.8 | 0.6 | 4.1 | 3.5 |
| 03/27/96 | 1.1 | 4.9 | 3.6 | 3.4 |
| 03/28/96 | 1.1 | 7.4 | 0.7 | 0.8 |
| 03/29/96 | 0.8 | 1.7 | 0.6 | 0.7 |
| 03/30/96 | 2.5 | 3.9 | 4.3 | 4.0 |
| 03/31/96 | 2.5 | 4.9 | 7.8 | 7.0 |

| Monthly Statistics from Daily Averages | K65-NW (pCi/L) | K65-SW (pCi/L) | K65-NE (pCi/L) | K65-SE (pCi/L) |
|---|---|---|---|---|
| AVERAGE: | 1.9 | 2.6 | 5.0 | 4.0 |
| MAXIMUM: | 6.5 | 8.3 | 25.9 | 22.6 |
| MINIMUM: | 0.7 | 0.6 | 0.6 | 0.7 |
| MEDIAN: | 1.2 | 2.1 | 3.3 | 2.5 |
| STD. DEV: | 1.3 | 2.1 | 5.8 | 4.8 |

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

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

PERIOD ENDING MARCH 31, 1996

ENCLOSURE D

EFFLUENT RADIATION DISCHARGES TO THE GREAT MIAMI RIVER

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

**Period Ending March 31, 1996**

## 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 March 31, 1996

## 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: FEBRUARY 1996

| 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 | 0.185 | 1.4 | 4.3 | 1.3 | 0.0009 < | 2.0 | 8.1 | 8.2 |
| 2 | 0.165 | 4.0 | 8.5 | 5.6 | 0.0035 < | 2.0 | 8.2 | 8.2 |
| 3 | 0.184 | 4.8 | 6.4 | 6.1 | 0.0042 < | 2.0 | 8.0 | 8.1 |
| 4 | 0.185 | 5.1 | 5.8 | 6.6 | 0.0046 < | 2.0 | 8.1 | 8.1 |
| 5 | 0.120 | 4.5 | 5.9 | 6.5 | 0.0030 < | 2.0 | 8.1 | 8.2 |
| 6 | 0.063 | 3.8 | 4.5 | 7.7 | 0.0018 < | 2.0 | 8.0 | 8.2 |
| 7 | 0.099 | 4.5 | 6.8 | 7.5 | 0.0028 < | 2.0 | 8.1 | 8.3 |
| 8 | 0.181 | 4.4 | 6.9 | 7.3 | 0.0050 | 2.4 | 8.0 | 8.1 |
| 9 | 0.183 | 4.5 | 6.2 | 7.2 | 0.0050 < | 2.0 | 8.0 | 8.0 |
| 10 | 0.185 | 4.0 | 5.8 | 7.2 | 0.0050 < | 2.0 | 8.0 | 8.0 |
| 11 | 0.186 | 4.9 | 5.8 | 7.0 | 0.0049 < | 2.0 | 8.1 | 8.1 |
| 12 | 0.172 | 3.9 | 5.4 | 7.3 | 0.0048 < | 2.0 | 8.0 | 8.1 |
| 13 | 0.188 | 5.3 | 6.8 | 12.2 | 0.0087 < | 2.0 | 8.0 | 8.1 |
| 14 | 0.185 | 4.0 | 5.4 | 7.6 | 0.0053 | 2.6 | 8.0 | 8.1 |
| 15 | 0.186 | 4.7 | 6.1 | 11.3 | 0.0080 < | 2.0 | 8.0 | 8.1 |
| 16 | 0.155 | 5.1 | 6.9 | 8.0 | 0.0047 < | 2.0 | 8.0 | 8.1 |
| 17 | 0.183 | 3.4 | 5.5 | 7.6 | 0.0053 | 2.4 | 8.0 | 8.0 |
| 18 | 0.185 | 4.2 | 6.7 | 7.8 | 0.0055 < | 2.0 | 8.0 | 8.0 |
| 19 | 0.186 | 5.8 | 5.9 | 8.2 | 0.0058 < | 2.0 | 8.0 | 8.0 |
| 20 | 0.185 | 4.6 | 5.8 | 7.3 | 0.0051 < | 2.0 | 8.0 | 8.0 |
| 21 | 0.146 | 3.8 | 5.2 | 7.1 | 0.0039 < | 2.0 | 8.0 | 8.0 |
| 22 | 0.185 | 5.5 | 6.3 | 3.5 | 0.0025 < | 2.0 | 8.0 | 8.0 |
| 23 | 0.192 | 6.2 | 7.6 | 7.1 | 0.0052 < | 2.0 | 8.0 | 8.0 |
| 24 | 0.187 | 5.0 | 6.4 | 7.3 | 0.0052 < | 2.0 | 8.0 | 8.0 |
| 25 | 0.194 | 5.0 | 6.2 | 7.1 | 0.0052 < | 2.0 | 8.0 | 8.0 |
| 26 | 0.143 | 5.7 | 6.2 | 6.7 | 0.0036 < | 2.0 | 8.0 | 8.0 |
| 27 | 0.173 | 5.1 | 7.0 | 7.9 | 0.0052 < | 2.0 | 8.0 | 8.0 |
| 28 | 0.165 | 5.5 | 7.7 | 6.6 | 0.0041 < | 2.0 | 8.0 | 8.0 |
| 29 | 0.188 | 5.1 | 7.1 | 6.3 | 0.0045 < | 2.0 | 8.0 | 8.0 |
| Total | 4.934 | | | | 0.1332 | | | |

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

## Period Ending March 31, 1996

## ENCLOSURE D

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: [SP1] IAWWT - T108

DATE: FEBRUARY 1996

| | Flow (MGD) | Total Alpha(2) (pCi/l) | Total Beta(2) (pCi/l) | Total U (ug/l)(2) | Total U (kgs) |
|---|---|---|---|---|---|
| Avg. | 0.170 | 4.6 | 6.3 | 7.1 | 0.0046 |
| Max. | 0.194 | 6.2 | 8.5 | 12.2 | 0.0087 |
| Min. | 0.063 | 1.4 | 4.3 | 1.3 | 0.0009 |

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 March 31, 1996

## 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: FEBRUARY 1996

| 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 | 0.194 | 1.3 | 4.3 | 2.0 | 0.0015 | < | 2.0 | 8.1 | 8.2 |
| 2 | 0.181 | 5.8 | 16.0 | 8.0 | 0.0055 | < | 2.0 | 8.2 | 8.2 |
| 3 | 0.192 | 6.2 | 6.7 | 9.6 | 0.0070 | < | 2.0 | 8.0 | 8.1 |
| 4 | 0.189 | 4.2 | 6.8 | 9.7 | 0.0069 | < | 2.0 | 8.1 | 8.1 |
| 5 | 0.193 | 6.0 | 6.6 | 6.5 | 0.0047 | < | 2.0 | 8.1 | 8.2 |
| 6 | 0.202 | 6.3 | 6.5 | 11.2 | 0.0086 | < | 2.0 | 8.0 | 8.2 |
| 7 | 0.178 | 5.7 | 6.9 | 11.0 | 0.0074 | | 2.0 | 8.1 | 8.3 |
| 8 | 0.186 | 5.5 | 7.0 | 11.4 | 0.0080 | < | 2.0 | 8.0 | 8.1 |
| 9 | 0.186 | 5.5 | 6.4 | 11.1 | 0.0078 | < | 2.0 | 8.0 | 8.0 |
| 10 | 0.201 | 6.1 | 8.1 | 11.0 | 0.0084 | < | 2.0 | 8.0 | 8.0 |
| 11 | 0.218 | 8.0 | 6.8 | 10.9 | 0.0090 | < | 2.0 | 8.1 | 8.1 |
| 12 | 0.218 | 5.7 | 6.9 | 11.3 | 0.0093 | < | 2.0 | 8.0 | 8.1 |
| 13 | 0.191 | 7.0 | 6.9 | 8.0 | 0.0058 | < | 2.0 | 8.0 | 8.1 |
| 14 | 0.200 | 6.3 | 6.9 | 11.9 | 0.0090 | < | 2.0 | 8.0 | 8.1 |
| 15 | 0.204 | 6.6 | 7.6 | 11.3 | 0.0087 | < | 2.0 | 8.0 | 8.1 |
| 16 | 0.179 | 5.7 | 7.4 | 12.0 | 0.0081 | < | 2.0 | 8.0 | 8.1 |
| 17 | 0.211 | 7.4 | 6.7 | 12.3 | 0.0098 | | 3.8 | 8.0 | 8.0 |
| 18 | 0.214 | 6.1 | 7.0 | 11.4 | 0.0092 | < | 2.0 | 8.0 | 8.0 |
| 19 | 0.214 | 8.5 | 8.4 | 12.3 | 0.0100 | < | 2.0 | 8.0 | 8.0 |
| 20 | 0.215 | 6.3 | 6.8 | 11.7 | 0.0095 | < | 2.0 | 8.0 | 8.0 |
| 21 | 0.172 | 6.0 | 7.0 | 11.1 | 0.0072 | < | 2.0 | 8.0 | 8.0 |
| 22 | 0.216 | 7.9 | 7.4 | 10.7 | 0.0087 | < | 2.0 | 8.0 | 8.0 |
| 23 | 0.227 | 7.3 | 7.5 | 11.3 | 0.0097 | < | 2.0 | 8.0 | 8.0 |
| 24 | 0.217 | 7.3 | 7.9 | 11.1 | 0.0091 | < | 2.0 | 8.0 | 8.0 |
| 25 | 0.230 | 6.6 | 6.5 | 11.1 | 0.0097 | < | 2.0 | 8.0 | 8.0 |
| 26 | 0.193 | 7.4 | 6.7 | 10.1 | 0.0074 | < | 2.0 | 8.0 | 8.0 |
| 27 | 0.202 | 7.2 | 7.0 | 12.0 | 0.0092 | < | 2.0 | 8.0 | 8.0 |
| 28 | 0.210 | 6.8 | 7.0 | 10.1 | 0.0080 | < | 2.0 | 8.0 | 8.0 |
| 29 | 0.221 | 6.8 | 7.3 | 9.7 | 0.0081 | < | 2.0 | 8.0 | 8.0 |
| Total | 5.854 | | | | 0.2315 | | | | |

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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 March 31, 1996

## ENCLOSURE D

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: [SP1] IAWWT - T109

DATE: FEBRUARY 1996

| | Flow (MGD) | Total Alpha(2) (pCi/l) | Total Beta(2) (pCi/l) | Total U (ug/l)(2) | Total U (kgs) |
|---|---|---|---|---|---|
| Avg. | 0.202 | 6.4 | 7.3 | 10.4 | 0.0080 |
| Max. | 0.230 | 8.5 | 16.0 | 12.3 | 0.0100 |
| Min. | 0.172 | 1.3 | 4.3 | 2.0 | 0.0015 |

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 March 31, 1996

## 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: FEBRUARY 1996

| Day | Flow (MGD) | Total Alpha (pCi/l) | Total Beta (pCi/l) | Total U (ug/l) | Total U (kgs) |
|---|---|---|---|---|---|
| 1 | 0.607 | 310 | 190 | 472 | 1.08 |
| 2 | 0.609 | 290 | 170 | 444 | 1.02 |
| 3 | 0.000 | | | | |
| 4 | 0.000 | | | | |
| 5 | 0.000 | | | | |
| 6 | 0.000 | | | | |
| 7 | 0.000 | | | | |
| 8 | 0.000 | | | | |
| 9 | 0.000 | | | | |
| 10 | 0.541 | 560 | 350 | 962 | 1.97 |
| 11 | 0.588 | 660 | 320 | 1069 | 2.38 |
| 12 | 0.512 | 810 | 400 | 1398 | 2.71 |
| 13 | 0.456 | 700 | 390 | 1496 | 2.58 |
| 14 | 0.456 | 810 | 350 | 1368 | 2.36 |
| 15 | 0.457 | 800 | 330 | 1311 | 2.27 |
| 16 | 0.458 | 840 | 400 | 1355 | 2.35 |
| 17 | 0.458 | 750 | 320 | 1311 | 2.27 |
| 18 | 0.466 | 590 | 290 | 961 | 1.70 |
| 19 | 0.465 | 520 | 250 | 962 | 1.69 |
| 20 | 0.462 | 430 | 230 | 819 | 1.43 |
| 21 | 0.443 | 500 | 250 | 827 | 1.39 |
| 22 | 0.217 | 360 | 160 | 708 | 0.58 |
| 23 | 0.356 | 420 | 180 | 705 | 0.95 |
| 24 | 0.303 | 420 | 180 | 684 | 0.78 |
| 25 | 0.332 | 480 | 150 | 765 | 0.96 |
| 26 | 0.289 | 460 | 300 | 983 | 1.08 |
| 27 | 0.276 | 500 | 260 | 876 | 0.92 |
| 28 | 0.302 | 340 | 220 | 669 | 0.76 |
| 29 | 0.310 | 490 | 200 | 653 | 0.77 |
| | 9.363 | | | | 34.00 |

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

## Period Ending March 31, 1996

## ENCLOSURE D

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: (606) SWRB

DATE: FEBRUARY 1996

| | Flow (MGD) | Total Alpha(2) (pCi/l) | Total Beta(2) (pCi/l) | Total U (ug/l)(2) | Total U (kgs) |
|---|---|---|---|---|---|
| Avg. | 0.323 | 559 | 275 | 960 | 1.55 |
| Max. | 0.609 | 840 | 400 | 1496 | 2.71 |
| Min. | 0.000 | 290 | 150 | 444 | 0.58 |

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 March 31, 1996

## 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: FEBRUARY 1996

| Day | Flow (MGD) | Total Alpha (pCi/l) | Total Beta (pCi/l) | Total U (ug/l) | Total U (kgs) |
|---|---|---|---|---|---|
| 1 | 0.218 | 620 | 4000 | 1420 | 1.17 |
| 2 | 0.224 | 1500 | 7200 | 1405 | 1.19 |
| 3 | 0.229 | 850 | 4400 | 1815 | 1.57 |
| 4 | 0.230 | 1400 | 7100 | 1039 | 0.90 |
| 5 | 0.233 | 620 | 3900 | 1398 | 1.23 |
| 6 | 0.093 | 540 | 3500 | 1368 | 0.48 |
| 7 | 0.233 | 630 | 3700 | 1372 | 1.21 |
| 8 | 0.220 | 660 | 3600 | 1286 | 1.07 |
| 9 | 0.210 | 640 | 3700 | 1339 | 1.06 |
| 10 | 0.089 | 590 | 3600 | 1453 | 0.49 |
| 11 | 0.036 | 590 | 3500 | 1339 | 0.18 |
| 12 | 0.154 | 830 | 3800 | 1453 | 0.85 |
| 13 | 0.215 | 560 | 5900 | 1573 | 1.28 |
| 14 | 0.215 | 500 | 7000 | 1204 | 0.98 |
| 15 | 0.207 | 480 | 7700 | 1197 | 0.94 |
| 16 | 0.220 | 640 | 8600 | 1180 | 0.98 |
| 17 | 0.212 | 720 | 8100 | 1092 | 0.88 |
| 18 | 0.212 | 590 | 8400 | 1026 | 0.82 |
| 19 | 0.215 | 470 | 7900 | 1171 | 0.95 |
| 20 | 0.212 | 540 | 8100 | 1204 | 0.97 |
| 21 | 0.147 | 630 | 8000 | 1255 | 0.70 |
| 22 | 0.049 | 660 | 7700 | 1070 | 0.20 |
| 23 | 0.203 | 550 | 8500 | 1147 | 0.88 |
| 24 | 0.212 | 490 | 8300 | 1147 | 0.92 |
| 25 | 0.221 | 420 | 8300 | 1065 | 0.89 |
| 26 | 0.209 | 380 | 7700 | 1189 | 0.94 |
| 27 | 0.213 | 370 | 8400 | 1043 | 0.84 |
| 28 | 0.223 | 350 | 9600 | 936 | 0.79 |
| 29 | 0.204 | 420 | 9600 | 892 | 0.69 |
| Total | 5.558 | | | | 26.07 |

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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 March 31, 1996

## ENCLOSURE D

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: (605) BDN/ETS

DATE: FEBRUARY 1996

| | Flow (MGD) | Total Alpha(2) (pCi/l) | Total Beta(2) (pCi/l) | Total U (ug/l)(2) | Total U (kgs) |
|---|---|---|---|---|---|
| Avg. | 0.192 | 635 | 6723 | 1239 | 0.90 |
| Max. | 0.233 | 1500 | 9600 | 1815 | 1.57 |
| Min. | 0.036 | 350 | 3500 | 892 | 0.18 |

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 March 31, 1996

## 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: FEBRUARY 1996

| 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 | | ** | ** | ** | < 6.0 | ** | ** | ** |
| 5 | | ** | ** | ** | | ** | ** | ** |
| 6 | 2.94 | ** | ** | ** | | ** | ** | ** |
| 7 | | ** | ** | ** | | ** | ** | ** |
| 8 | | ** | ** | ** | | ** | ** | ** |
| 9 | | ** | ** | ** | | ** | ** | ** |
| 10 | | ** | ** | ** | | ** | ** | ** |
| 11 | | ** | ** | ** | | ** | ** | ** |
| 12 | | ** | ** | ** | < 6.0 | ** | ** | ** |
| 13 | 18.40 | ** | ** | ** | | ** | ** | ** |
| 14 | | ** | ** | ** | | ** | ** | ** |
| 15 | | ** | ** | ** | | ** | ** | ** |
| 16 | | ** | ** | ** | | ** | ** | ** |
| 17 | | ** | ** | ** | | ** | ** | ** |
| 18 | | ** | ** | ** | | ** | ** | ** |
| 19 | | ** | ** | ** | | ** | ** | ** |
| 20 | 49.00 | ** | ** | ** | 7.0 | ** | ** | ** |
| 21 | | ** | ** | ** | | ** | ** | ** |
| 22 | | ** | ** | ** | | ** | ** | ** |
| 23 | | ** | ** | ** | | ** | ** | ** |
| 24 | | ** | ** | ** | | ** | ** | ** |
| 25 | | ** | ** | ** | | ** | ** | ** |
| 26 | | ** | ** | ** | | ** | ** | ** |
| 27 | 3.92 | ** | ** | ** | | ** | ** | ** |
| 28 | | ** | ** | ** | 7.6 | ** | ** | ** |
| 29 | | ** | ** | ** | | ** | ** | ** |

** Parameters are no longer required to be monitored under the new NPDES permit 1IO0000*ED, issued November 1, 1995.

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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 March 31, 1996

## 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: FEBRUARY 1996

| Day | Flow (MGD) |
|---|---|
| 1 | 0.000 |
| 2 | 0.000 |
| 3 | 0.000 |
| 4 | 0.000 |
| 5 | 0.000 |
| 6 | 0.000 |
| 7 | 0.000 |
| 8 | 0.000 |
| 9 | 0.000 |
| 10 | 0.000 |
| 11 | 0.000 |
| 12 | 0.000 |
| 13 | 0.000 |
| 14 | 0.000 |
| 15 | 0.000 |
| 16 | 0.000 |
| 17 | 0.000 |
| 18 | 0.000 |
| 19 | 0.000 |
| 20 | 0.000 |
| 21 | 0.000 |
| 22 | 0.000 |
| 23 | 0.000 |
| 24 | 0.000 |
| 25 | 0.000 |
| 26 | 0.000 |
| 27 | 0.000 |
| 28 | 0.000 |
| 29 | 0.000 |
| Total | 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 March 31, 1996

## 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: FEBRUARY 1996

| Day | Flow (MGD) | Total U (ug/l) | Total U (kgs) |
|---|---|---|---|
| 1 | 1.780 | 25.0 | 0.17 |
| 2 | 1.243 | 27.6 | 0.13 |
| 3 | 1.519 | 27.4 | 0.16 |
| 4 | 1.829 | 26.9 | 0.19 |
| 5 | 1.471 | 24.1 | 0.13 |
| 6 | 1.273 | 30.7 | 0.15 |
| 7 | 1.562 | 17.4 | 0.10 |
| 8 | 1.973 | 17.7 | 0.13 |
| 9 | 2.058 | 18.3 | 0.14 |
| 10 | 2.049 | 18.8 | 0.15 |
| 11 | 2.103 | 18.5 | 0.15 |
| 12 | 1.990 | 18.0 | 0.14 |
| 13 | 2.062 | 21.3 | 0.17 |
| 14 | 2.091 | 19.2 | 0.15 |
| 15 | 2.029 | 19.2 | 0.15 |
| 16 | 1.989 | 21.6 | 0.16 |
| 17 | 1.962 | 19.3 | 0.14 |
| 18 | 2.031 | 18.9 | 0.15 |
| 19 | 2.131 | 20.6 | 0.17 |
| 20 | 2.024 | 20.1 | 0.15 |
| 21 | 2.117 | 19.6 | 0.16 |
| 22 | 1.928 | 11.6 | 0.08 |
| 23 | 2.004 | 17.1 | 0.13 |
| 24 | 2.190 | 17.0 | 0.14 |
| 25 | 2.278 | 17.9 | 0.15 |
| 26 | 2.318 | 17.2 | 0.15 |
| 27 | 2.215 | 19.4 | 0.16 |
| 28 | 2.248 | 19.2 | 0.16 |
| 29 | 2.277 | 15.9 | 0.14 |
| Total | 56.744 | | 4.25 |

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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 March 31, 1996

## ENCLOSURE D

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: South Plume

DATE: FEBRUARY 1996

| | Flow (MGD) | Total U (ug/l)(2) | Total U (kgs) |
|---|---|---|---|
| Avg. | 1.957 | 19.8 | 0.15 |
| Max. | 2.318 | 30.7 | 0.19 |
| Min. | 1.243 | 11.6 | 0.08 |

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 March 31, 1996

## 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: FEBRUARY 1996

| 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 | 2.605 | 17 | 360 | 33 | 0.33 | | 7.1 |
| 2 | 2.076 | 20 | 360 | 36 | 0.28 | | 7.0 |
| 3 | 1.748 | 26 | 410 | 45 | 0.30 | | 7.1 |
| 4 | 2.059 | 21 | 390 | 41 | 0.32 | | 7.2 |
| 5 | 1.704 | 14 | 340 | 30 | 0.19 | | 7.2 |
| 6 | 1.366 | 13 | 420 | 25 | 0.13 | | 7.3 |
| 7 | 1.795 | 21 | 510 | 27 | 0.18 | | 7.3 |
| 8 | 2.193 | 15 | 610 | 23 | 0.19 | 3.6 | 7.4 |
| 9 | 2.268 | 10 | 690 | 18 | 0.15 | | 7.4 |
| 10 | 2.679 | 12 | 530 | 20 | 0.20 | | 7.3 |
| 11 | 2.727 | 17 | 340 | 32 | 0.33 | | 7.3 |
| 12 | 2.656 | 20 | 200 | 30 | 0.30 | | 7.2 |
| 13 | 2.733 | 24 | 280 | 42 | 0.43 | | 7.2 |
| 14 | 2.762 | 21 | 520 | 38 | 0.40 | | 7.3 |
| 15 | 2.693 | 33 | 750 | 40 | 0.41 | 2.0 | 7.3 |
| 16 | 2.667 | 29 | 860 | 43 | 0.43 | | 7.3 |
| 17 | 2.632 | 32 | 800 | 52 | 0.52 | | 7.2 |
| 18 | 2.709 | 35 | 700 | 49 | 0.50 | | 7.2 |
| 19 | 2.811 | 37 | 750 | 46 | 0.49 | | 7.2 |
| 20 | 2.698 | 41 | 750 | 49 | 0.50 | | 6.9 |
| 21 | 2.707 | 42 | 570 | 81 | 0.83 | | 6.5 |
| 22 | 2.194 | 43 | 200 | 70 | 0.58 | < 2.0 | 7.0 |
| 23 | 2.563 | 40 | 510 | 65 | 0.63 | | 7.0 |
| 24 | 2.705 | 29 | 560 | 38 | 0.39 | | 7.2 |
| 25 | 2.831 | 24 | 690 | 31 | 0.33 | | 7.2 |
| 26 | 2.816 | 17 | 600 | 29 | 0.31 | | 7.2 |
| 27 | 2.704 | 10 | 620 | 24 | 0.25 | | 7.3 |
| 28 | 2.773 | 16 | 670 | 23 | 0.24 | | 7.2 |
| 29 | 2.791 | 13 | 660 | 22 | 0.23 | < 2.0 | 7.3 |
| Total | 71.665 | | | | 10.39 | | |

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

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

## Period Ending March 31, 1996

## ENCLOSURE D

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: [SP3] Valve House

DATE: FEBRUARY 1996

| | Flow (MGD) | Total Alpha(2) (pCi/l) | Total Beta(2) (pCi/l) | Total U (ug/l)(2) | Total U (kgs) |
|---|---|---|---|---|---|
| Avg. | 2.471 | 24 | 552 | 38 | 0.36 |
| Max. | 2.831 | 43 | 860 | 81 | 0.83 |
| Min. | 1.366 | 10 | 200 | 18 | 0.13 |

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 March 31, 1996

## 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: FEBRUARY 1996

| Day | Flow (MGD) | DO (mg/l) | IRON (mg/l) | MANGANESE (mg/l) |
|---|---|---|---|---|
| 1 | 3.139 | | | |
| 2 | 3.098 | | | |
| 3 | 2.646 | | | |
| 4 | 2.691 | | | |
| 5 | 2.643 | | | |
| 6 | 2.343 | | | |
| 7 | 1.983 | | | |
| 8 | 1.590 | 9.3 | 0.28 | 0.1 |
| 9 | 1.566 | | | |
| 10 | 2.034 | | | |
| 11 | 2.048 | | | |
| 12 | 2.194 | | | |
| 13 | 2.335 | | | |
| 14 | 2.189 | | | |
| 15 | 2.409 | 9.4 | 0.33 | < 0.1 |
| 16 | 2.329 | | | |
| 17 | 2.270 | | | |
| 18 | 2.282 | | | |
| 19 | 2.284 | | | |
| 20 | 2.322 | | | |
| 21 | 2.290 | | | |
| 22 | 1.938 | 7.2 | 0.35 | 0.1 |
| 23 | 2.265 | | | |
| 24 | 2.434 | | | |
| 25 | 2.386 | | | |
| 26 | 2.439 | | | |
| 27 | 2.305 | | | |
| 28 | 2.479 | | | |
| 29 | 2.507 | 9.1 | 0.28 | < 0.1 |
| Total | 67.438 | | | |

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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 March 31, 1996

## ENCLOSURE D

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: [SP4] Parshall Flume

DATE: FEBRUARY 1996

| | Flow (MGD) | DO (mg/l) | Fe (mg/l) | Mn (mg/l) |
|---|---|---|---|---|
| Avg. | 2.325 | 8.8 | 0.31 | 0.1 |
| Max. | 3.098 | 9.4 | 0.35 | 0.1 |
| Min. | 1.566 | 7.2 | 0.28 < | 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.