

4051

**COMMUNITY RELATIONS PLAN REMOVAL
ACTION ADDENDA**

01/14/93

**DOE/FN
DOE-0852
60
ADDENDA**



Department of Energy
Fernald Environmental Management Project
P.O. Box 398705
Cincinnati, Ohio 45239-8705
(513) 738-6357

4051

JAN 14 1993
DOE-0852-93

Mr. James A. Saric, Remedial Project Director
U.S. Environmental Protection Agency
Region V - 5HRE-8J
77 W. Jackson Boulevard
Chicago, Illinois 60604-3590

Dear Mr. Saric:

COMMUNITY RELATIONS PLAN REMOVAL ACTION ADDENDA

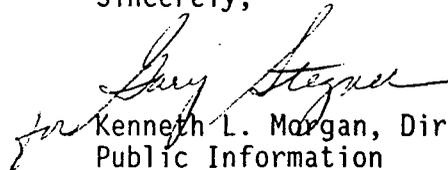
Enclosed are six Community Relations Plan Removal Action Addenda. The addenda pertain to the following work plans:

- Removal Action No. 15, Scrap Metal Piles
- Removal Action No. 17, Improved Storage of Soil and Debris (Revision No. 1)
- Removal Action No. 18, Control Exposed Material in Pit 5
- Removal Action No. 22, Waste Pit Area Containment Improvement
- Removal Action No. 24, Pilot Plant Sump
- Removal Action No. 25, Nitric Acid Tank Car and Area

The Notice of Availability for these work plans ran in three local newspapers on November 4, 1992. The subsequent public comment period ran until December 18, 1992. There were no comments from the public.

If you or your staff have any questions, please contact me at FTS/Commercial 513-738-9245.

Sincerely,


Kenneth L. Morgan, Director
Public Information

Enclosure: As Stated

cc w/o enc.:

4051

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K. A. Hayes, EM-424, TREV
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ADDENDUM
TO THE
RI/FS COMMUNITY RELATIONS PLAN
FOR REMOVAL ACTION No. 15
SCRAP METAL PILES

Fernald Environmental Management Project
Fernald, Ohio

U.S. Department of Energy
Fernald Field Office

January 1993

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
List of Acronyms	ii
Introduction	1
Objectives	2
Background	3
Overview of Community Concerns	5
Highlights of Community Relations Activities	5
Timetable	6
References	7

LIST OF ACRONYMS

CERCLA:	Comprehensive Environmental Response, Compensation, and Liability Act [of 1980] (also known as Superfund)
CRP:	Community Relations Plan
DOE:	U.S. Department of Energy
EPA:	U.S. Environmental Protection Agency
EE/CA:	engineering evaluation/cost analysis
FEMP:	Fernald Environmental Management Project (formerly the Feed Materials Production Center)
FFCA:	Federal Facility Compliance Agreement
NCP:	National Oil and Hazardous Substances Pollution Contingency Plan [of 1990]
RI/FS:	remedial investigation and feasibility study
SARA:	Superfund Amendments and Reauthorization Act [of 1986]

Introduction

This document is prepared as an addendum to the Fernald Environmental Management Project (FEMP) Remedial Investigation and Feasibility Study (RI/FS) Community Relations Plan (CRP), dated August 1992. This addendum addresses Removal Action No. 15, Scrap Metal Piles.

This removal action is being conducted pursuant to the laws, regulations and agreements listed below, and will comply with the provisions of each:

- The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), also known as Superfund, that provides for the investigation and cleanup of uncontrolled hazardous waste sites
- The Superfund Amendments and Reauthorization Act of 1986 (SARA) that renewed and updated CERCLA
- The National Oil and Hazardous Substances Pollution Contingency Plan of 1990 (NCP) that spells out how CERCLA and SARA will be implemented
- The Federal Facility Compliance Agreement of 1986 (FFCA) between the U.S. Department of Energy (DOE) and the U.S. Environmental Protection Agency (EPA) that provides for the investigation and cleanup of environmental impacts from past and present activities at the FEMP
- The Consent Agreement of 1990 that amended the FFCA and fostered consistency among the operable unit concept and the current commitments of the RI/FS program without modifying the underlying objectives
- The Amended Consent Agreement of 1991 that establishes definitions and schedules for completion of RI/FS documents for the five operable units and identifies additional specific removal actions at the FEMP

The 1990 Consent Agreement specified four removal actions and provided for the identification of three more; these seven are now referred to as the Phase One Removal Actions. The Amended Consent Agreement for the FEMP, signed on September 20 and effective on December 19, 1991, specified 11 additional removal actions, referred to as Phase Two Removal Actions.

On January 14, 1992 six more removal actions, known as Phase Three Removal Actions, were approved by EPA and three emergency removal actions were initiated. In all, the three phases total 27 separate, sequentially numbered removal actions. DOE may identify additional removal actions each year by January 15, if needed.

Objectives

The objective of removal actions under CERCLA and the NCP is to "...take appropriate action to abate, stabilize, mitigate, or eliminate the release or threat of release..." of hazardous materials or waste in a manner that reduces or eliminates the threat to public health, welfare, or the environment. Removal actions are emergency or short-term responses to immediate threats. They differ from remedial actions in that they are generally more limited in scope and cost.

Removal actions can be divided into three general categories: emergency, time critical, and non-time-critical. They are as follows:

- Emergency removal actions call for an immediate response. An Administrative Record file must be established and affected citizens must be notified.
- Time-critical removal actions have a planning period of less than six months. If on-site removal actions are expected to extend beyond 120 days, then an addendum to the CRP is required based on interviews with community residents and/or public interest groups to identify their concerns and determine ways in which residents would like to become involved.
- Non-time-critical removal actions usually have a planning period of at least six months and dictate the same community relations activities as discussed above. An added requirement is the preparation of an engineering evaluation/cost analysis (EE/CA). In this case, the addendum to the CRP must be completed before the EE/CA approval memorandum is signed.

The specific objective of Removal Action No. 15, Scrap Metal Piles, a time-critical removal action, is to protect human health and the environment by eliminating the potential threat of release of contaminants from the Scrap Metal Piles. There are indications that the open storage of the contaminated scrap metal has resulted in contaminant releases to the environment. Elevated uranium concentrations in fugitive airborne releases have been detected near the scrap metal piles.

Routine air monitoring is performed at defined air monitoring locations to determine radiological emission at the boundary of the FEMP. For Air Monitoring Location No. 9, which is located on the Plant 1 Pad in the northwest corner of the site, the airborne uranium readings are about four times higher than the next highest station. This reading indicates that the scrap metal piles on the Decontamination Building Pad may contribute to airborne releases. Weather conditions also may cause hazardous substances, pollutants or contaminants to migrate or be released from the exposed scrap metal piles.

The removal action will be managed in two phases. Phase I will address the scrap ferrous and non-ferrous metal pile and Phase II will deal with the scrap copper pile. Specific treatment and disposition will be determined based on the type, size and contamination level of the metal. The field activities of this removal action will be completed by a qualified subcontractor. The work includes processing and off-site disposal or reuse of approximately 3,300 tons of low-level radioactively contaminated ferrous and non-ferrous scrap metal and the interim packaging, processing and beneficial reuse of approximately 1,400 tons of low-level radioactively contaminated scrap copper. These two piles comprise all of the recoverable scrap metal stockpiled at the FEMP.

The scope of work for the services to be performed in this removal action potentially involves the receipt, transportation, necessary interim storage, processing, packaging and disposition or beneficial reuse of the low-level radioactive scrap metal piles.

Background

The scrap metal piles were created as a result of demolition projects, removal of abandoned equipment and the upgrade of facilities and vehicles at the FEMP. The scrap metal is contaminated with low-level radioactivity. The copper was generated from the Cascade Improvements/Cascade Upgrades Project at the DOE Gaseous Diffusion plant at Paducah, Kentucky, and initially was sent to the FEMP for shredding and casting. However, the copper casting operations were abandoned because of the lack of options for disposition of the resulting copper ingots with the given uranium concentrations. Uranium concentrations within copper ingots cast from the scrap copper were estimated to be a maximum of 70 pCi/g.

In May, 1987, the FEMP scrap metal inventory on the Decontamination Building Pad was separated into two major groups based on the thickness of the material and its potential for recovery. The recoverable scrap metals make up the scope of this removal action, whereas the refuse metal is being handled under Removal Action No. 9, Removal of Waste Inventories, Part I -- Current Low-Level Waste Management. The scrap metal has been categorized in the following way:

- Recoverable Metal, which is any metal that is greater than or equal to 1/4-inch thick and requires only minimal processing prior to being made available for beneficial reuse or unrestricted release, such as I-beams, plate steel and structural components.
- Ferrous Metal, which is scrap carbon steel.
- Non-ferrous Metal, which is generally stainless steel and aluminum.
- High-Count Scrap Metal, which is recoverable scrap metal with gross fixed alpha contamination greater than 200,000 disintegrations per minute (dpm)/window area. The 200,000 dpm/window area level is based on criteria in the FEMP Radioactively Contaminated Metal Segregation Project.
- Low-Count Scrap Metal, which is recoverable scrap metal with gross fixed alpha contamination less than 200,000 (dpm)/window area. The 200,000 dpm/window area level also is based on criteria in the FEMP Radioactively Contaminated Metal Segregation Project.
- Refuse Metal, which is any metal that is less than 1/4-inch thick, is wrapped with non-metallic material (except copper), or material generally requiring extensive efforts to render it available for recovery. (A field decision will be made for this determination.) Generally, refuse metal is comprised of thin gauge material, wire, conduit and piping. Disposal of refuse material is being addressed through Removal Action No. 9, Removal of Waste Inventories, Part I -- Low Level Waste Management.

The inventory of scrap metal and scrap copper within the scope of this work plan consists of:

- 238 tons of high-count recoverable ferrous metal
- 2,843 tons of low-count recoverable ferrous metal
- 54 tons of high-count recoverable non-ferrous metal
- 139 tons of low-count recoverable non-ferrous metal
- 1,370 tons of copper

Even though the refuse was segregated from the scrap metal piles in 1987, with approximately 2,400 tons of refuse segregated, the possibility exists of discovering more refuse metal during the removal action. The estimated percentage of non-recoverable metals and other materials anticipated to be encountered during this removal action is less than 10 percent by volume, and will be handled by Removal Action No.

9. Newly generated scrap metal will be addressed under Removal Action No. 17, Improved Storage of Soil and Debris. Therefore, no additional scrap metal will be added to the recoverable scrap metal piles within the scope of this removal action.

Overview of Community Concerns

In preparing this addendum, transcripts of community meetings held on: January 31, 1989; May 15, 1989; October 24, 1989; February 20, 1990; May 22, 1990; September 25, 1990; December 11, 1990; March 19, 1991; July 16, 1991; and October 29, 1991; February 25, 1992; July 21, 1992, and November 9, 1992 were reviewed. Also reviewed were transcripts from the RI/FS Environmental Impact Statement scoping meetings held on June 12 and 13, 1990.

A 45-day public comment period for the Scrap Metal Piles Removal Action was held from November 4 - December 18, 1992. The announcement ran in three local newspapers. There were no oral or written comments submitted.

Highlights of Community Relations Activities

Community concerns regarding the Scrap Metal Piles Removal Action suggest an active FEMP community relations effort with the following objective:

- Maintain an active effort to keep interested community members informed throughout the implementation of the Scrap Metal Piles Removal Action.

The following specific activities have been identified to support the community relations objective for this removal action:

1. Prepare one or more fact sheets or updates for the purpose of providing information about the removal action and answering key concerns about the Scrap Metal Piles at the FEMP and distribute them at the quarterly public meetings.
2. Devote some portion of future community meetings to this issue; update the RI/FS exhibit to include new information as it becomes available. (Community meetings are held at regular intervals on dates selected by DOE.)
3. Include coverage about the Scrap Metal Piles Removal Action in the Fernald Project Cleanup Report as needed during the removal action.

4. Offer a roundtable presentation on the Scrap Metal Piles.
5. Provide a 24-hour phone line at the FEMP so concerned citizens can contact a FEMP representative during a time of alarm. The number is 513-738-6295, which is FEMP Security.
6. Make appropriate additions to the Administrative Record and publicize their availability at the Public Environmental Information Center, JAMTEK Building, 10845 Hamilton-Cleves Highway, Harrison, Ohio, 45030.

Timetable

The preparation of materials for all community relations activities will be tied to the removal action schedules. For a complete list of schedule dates and activities, please see the Scrap Metal Piles Work Plan, which is in the Administrative Record, located at the Public Environmental Information Center. The activities will be scheduled to provide the maximum flexibility and information to the public. The work plan for this removal action has been approved by EPA. Discussions and updates on the status of the removal action will be given at future public meetings.

REFERENCES

1. U.S. Department of Energy, "Fernald Environmental Management Project Scrap Metal Piles Removal Action Number 15 Work Plan," January 1992.

ADDENDUM

TO THE

RI/FS COMMUNITY RELATIONS PLAN

FOR REMOVAL ACTION No. 17

IMPROVED STORAGE OF SOIL AND DEBRIS

Fernald Environmental Management Project
Fernald, Ohio

Revision No. 1

U.S. Department of Energy
Fernald Field Office

January 1993

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
List of Acronyms	ii
Introduction	1
Objectives	2
Background	4
Overview of Community Concerns	5
Highlights of Community Relations Activities	5
Timetable	6
References	7

LIST OF ACRONYMS

AOC:	area of contamination
CERCLA:	Comprehensive Environmental Response, Compensation, and Liability Act [of 1980] (also known as Superfund)
CFR:	Code of Federal Regulations
CRP:	Community Relations Plan
DOE:	U.S. Department of Energy
EPA:	U.S. Environmental Protection Agency
EE/CA:	engineering evaluation/cost analysis
FEMP:	Fernald Environmental Management Project (formerly the Feed Materials Production Center)
FFCA:	Federal Facility Compliance Agreement
FR:	Federal Register
NCP:	National Oil and Hazardous Substances Pollution Contingency Plan [of 1990]
pCi/g:	pico-curie per gram, a unit of measurement for radioactivity
RI/FS:	remedial investigation and feasibility study
SARA:	Superfund Amendments and Reauthorization Act [of 1986]

Introduction

This document is prepared as an addendum to the Fernald Environmental Management Project (FEMP) Remedial Investigation and Feasibility Study (RI/FS) Community Relations Plan (CRP), dated August 1992. This addendum addresses Removal Action No. 17, Improved Storage of Soil and Debris.

This removal action is being conducted pursuant to the laws, regulations and agreements listed below, and will comply with the provisions of each:

- The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), also known as Superfund, that provides for the investigation and cleanup of uncontrolled hazardous waste sites
- The Superfund Amendments and Reauthorization Act of 1986 (SARA) that renewed and updated CERCLA
- The National Oil and Hazardous Substances Pollution Contingency Plan of 1990 (NCP) that specifies how CERCLA and SARA will be implemented
- The Federal Facility Compliance Agreement of 1986 (FFCA) between the U.S. Department of Energy (DOE) and the U.S. Environmental Protection Agency (EPA) that provides for the investigation and cleanup of environmental impacts from past and present activities at the FEMP
- The Consent Agreement of 1990 that amended the FFCA and fostered consistency among the operable unit concept and the current commitments of the RI/FS program without modifying the underlying objectives
- The Amended Consent Agreement of 1991 that establishes definitions and schedules for completion of RI/FS documents for the five operable units and identifies additional specific removal actions at the FEMP

The 1990 Consent Agreement specified four removal actions and provided for the identification of three more; these seven are now referred to as the Phase One Removal Actions. The Amended Consent Agreement for the FEMP, signed on September 20 and effective on December 19, 1991, specified 11 additional removal actions, referred to as Phase Two Removal Actions.

On January 14, 1992 six more removal actions, known as Phase Three Removal Actions, were approved by EPA and three emergency removal actions were initiated. In all, the three phases total 27 separate, sequentially numbered removal actions. DOE may identify additional removal actions each year by January 15, if needed.

Objectives

The objective of removal actions under CERCLA and the NCP is to "...take appropriate action to abate, stabilize, mitigate, or eliminate the release or threat of release..." of hazardous materials or waste in a manner that reduces or eliminates the threat to public health, welfare, or the environment. Removal actions are emergency or short-term responses to immediate threats. They differ from remedial actions in that they are generally more limited in scope and cost.

Removal actions can be divided into three general categories: emergency, time critical, and non-time-critical. They are as follows:

- Emergency removal actions call for an immediate response. An Administrative Record file must be established and affected citizens must be notified.
- Time-critical removal actions have a planning period of less than six months. If on-site removal actions are expected to extend beyond 120 days, then an addendum to the CRP is required based on interviews with community residents and/or public interest groups to identify their concerns and determine ways in which residents would like to become involved.
- Non-time-critical removal actions usually have a planning period of at least six months and dictate the same community relations activities as discussed above. An added requirement is the preparation of an engineering evaluation/cost analysis (EE/CA). In this case, the addendum to the CRP must be completed before the EE/CA approval memorandum is signed.

The specific objective of Removal Action No. 17, Improved Storage of Soil and Debris, a time-critical removal action, is to protect human health and the environment by eliminating the potential threat of release of contaminants from the soil and debris. This work plan introduces three primary components for soil and debris management at the FEMP: 1) formation of areas of contamination (AOC), 2) establishment of a 100 pico-curie per gram (pCi/g) activity concentration for total uranium, a 5 pCi/g

activity concentration for total radium and a 50 pCi/g activity concentration for total thorium in soil to determine storage requirements, and 3) construction of improved storage facilities.

This removal action, in establishing a sitewide management plan for the handling of soil and debris, proposes the construction of four improved storage facilities and four controlled stockpiles at the FEMP. There are four AOCs that have been identified thus far. The purpose of the AOC concept is to establish an additional management option to minimize the generation of waste during implementation of maintenance activities and removal actions prior to the completion of the feasibility studies and the issuance of the Records of Decision.

The scope of this removal action is divided into two phases. In broad terms, Phase I will entail identifying contaminated soil and debris, reducing the potential for contaminant release through a variety of actions and building appropriate storage facilities. Phase II will involve storing the soil and debris in these improved storage facilities until the final remedial actions are selected. This work plan addressed the segregation and management of both existing and future soil and debris during Phase I and Phase II. Uranium will be the primary contaminant in soil and debris at the FEMP.

During Phase I, controlled stockpiles will be created for excess soil that has activity concentrations of less than or equal to 100 pCi/g total uranium, 5 pCi/g total radium, 50 pCi/g total thorium and is not contaminated with nonradiological regulated waste materials. Excess soil that exceeds these concentrations and is not contaminated with other nonradiological regulated waste substances will be stored temporarily under tarpaulins until the improved storage facilities are built. Soil that contains hazardous waste or polychlorinated biphenyls at concentrations that exceed the regulatory standards will be containerized and stored in designated storage facilities on site, regardless of the uranium, radium and thorium activity concentrations.

Soil piles now on site will be managed according to current site policy during this time period. The Soil and Rubble Pile north of Third Street will be handled in a similar manner as the other existing piles until its in-place containment structure is completed.

Debris will be decontaminated and recycled/re-used if possible. Recoverable contaminated debris will be stored under tarpaulins prior to being decontaminated. Non-recoverable radiologically contaminated debris will be containerized and shipped for off-site disposal if possible. Non-recoverable debris that cannot be shipped off-site will be containerized until the improved storage facilities are constructed. Uncontaminated debris that cannot be shipped off-site to an industrial solid waste landfill will be stored in appropriate containers, such as Sea-Land containers, until a disposal facility is identified.

Phase II is similar to Phase I, with the exception that existing soil piles containing total uranium activity concentration greater than 100 pCi/g, a total radium concentration exceeding 5 pCi/g, a total thorium concentration exceeding 50 pCi/g, or nonradiological regulated waste materials will be placed in the Central Storage Facility. Soil and debris that have similar hazardous constituents will be stored together. Materials that exceed these concentrations will be stored in an improved storage facility. The Soil and Rubble Pile north of Third Street will have a containment structure built over it. Contaminated debris will be put in the Scrap Metal Pad structure and the Decontamination Facility Pad structure in addition to the Central Storage Facility.

Background

Soil and debris are generated at the FEMP during construction and demolition projects, removal actions, environmental response actions, routine maintenance and other operation or remediation activities. At present, there are approximately 20 on-site soil piles that will require handling and storage. Additional soil and debris will continue to be generated as a result of the ongoing activities, and all future contaminated soil and debris will be managed according to this plan.

The following are the regulatory definitions for soil and debris.

Soil

The EPA has proposed to redefine soil (in 40 Code of Federal Regulations [CFR] Part 268 {55 Federal Register [FR] 55172}) as unconsolidated earth material composing the surface geologic strata, consisting of clay, silt, sand, or gravel-size particles (sizes as classified by the U.S. Soil Conservation Service). Soil also will include a mixture of these materials with other liquids, sludges or soils that are inseparable by simple mechanical removal processes. In general, soil at the FEMP is defined as dirt or gravel particles with maximum dimensions of 2 inches. Soil requiring management at the FEMP will result from excavation activities.

Debris

The EPA has proposed to redefine debris (in revised 40 CFR Parts 148, 260, 261 and other regulatory changes [57 FR 983]) as solid materials that have been manufactured or processed (excluding treatment residuals). This proposed rule has been finalized, but has not yet been published in the Federal Register. Debris also includes natural geologic material that exceeds a 9.5-mm-sieve size, such as gravel, cobbles and boulders, or is an inseparable mixture of such materials with soil, liquid, sludge or other solid waste materials. The EPA also classifies plant or animal matter as debris.

The FEMP also has defined debris as substances such as concrete block, stone, asphalt paving and similar material that cannot be reused and varies in size from broken fragments of masonry or stone to large structures like tank pads or walls that are scheduled for demolition. Debris at the FEMP primarily will consist of process equipment and scrap building materials that will be generated during decontamination and decommissioning activities.

Debris materials are further categorized into:

- Concrete and construction rubble
- Structural steel
- Non-ferrous metals
- Process equipment
- Glass
- Wood
- Paper and cloth
- Rubber and plastic
- Ferrous metal that is not recoverable

The materials that are not easily decontaminated -- or, recoverable -- will be sent off site for disposal or stored in an improved storage facility.

Overview of Community Concerns

In preparing this addendum, transcripts of community meetings held on: January 31, 1989; May 15, 1989; October 24, 1989; February 20, 1990; May 22, 1990; September 25, 1990; December 11, 1990; March 19, 1991; July 16, 1991; and October 29, 1991; February 25, 1992; July 21, 1992, and November 9, 1992 were reviewed. Also reviewed were transcripts from the RI/FS Environmental Impact Statement scoping meetings held on June 12 and 13, 1990.

A 45-day public comment period for the Improved Storage of Soil and Debris Removal Action was held from November 4 - December 18, 1992. The announcement ran in three local newspapers. There were no oral or written comments submitted.

Highlights of Community Relations Activities

Community concerns regarding the Improved Storage of Soil and Debris Removal Action suggest an active FEMP community relations effort with the following objective:

- **Maintain an active effort to keep interested community members informed throughout the implementation of the Improved Storage of Soil and Debris Removal Action.**

The following specific activities have been identified to support the community relations objective for this removal action:

1. **Prepare one or more fact sheets or updates for the purpose of providing information about the removal action and answering key concerns about the Improved Storage of Soil and Debris at the FEMP and distribute them at the quarterly public meetings.**
2. **Devote some portion of future community meetings to this issue; update the RI/FS exhibit to include new information as it becomes available. (Community meetings are held at regular intervals on dates selected by DOE.)**
3. **Include coverage about the Improved Storage of Soil and Debris Removal Action in the Fernald Project Cleanup Report as needed during the removal action.**
4. **Offer a roundtable presentation on the Improved Storage of Soil and Debris.**
5. **Provide a 24-hour phone line at the FEMP so concerned citizens can contact a FEMP representative during a time of alarm. The number is 513-738-6295, which is FEMP Security.**
6. **Make appropriate additions to the Administrative Record and publicize their availability at the Public Environmental Information Center, JAMTEK Building, 10845 Hamilton-Cleves Highway, Harrison, Ohio, 45030.**

Timetable

The preparation of materials for all community relations activities will be tied to the removal action schedules. For a complete list of schedule dates and activities, please see the Improved Storage of Soil and Debris Work Plan, which is in the Administrative Record, located at the Public Environmental Information Center. The activities will be scheduled to provide the maximum flexibility and information to the public. The work plan for this removal action has been approved by EPA. Discussions and updates on the status of the removal action will be given at future public meetings.

REFERENCES

1. U.S. Department of Energy, "Fernald Environmental Management Project Improved Storage of Soil and Debris Removal Action Number 17 Work Plan," Revision 1, August 1992.

ADDENDUM

TO THE

RI/FS COMMUNITY RELATIONS PLAN

FOR REMOVAL ACTION No. 18

CONTROL EXPOSED MATERIAL IN WASTE PIT 5

Fernald Environmental Management Project
Fernald, Ohio

U.S. Department of Energy
Fernald Field Office

January 1993

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
List of Acronyms	ii
Introduction	1
Objectives	2
Background	4
Overview of Community Concerns	5
Highlights of Community Relations Activities	5
Timetable	6
References	7

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NCP:	National Oil and Hazardous Substances Pollution Contingency Plan [of 1990]
RI/FS:	remedial investigation and feasibility study
SARA:	Superfund Amendments and Reauthorization Act [of 1986]

Introduction

This document is prepared as an addendum to the Fernald Environmental Management Project (FEMP) Remedial Investigation and Feasibility Study (RI/FS) Community Relations Plan (CRP), dated August 1992. This addendum addresses Removal Action No. 18, Control Exposed Material in Waste Pit 5.

This removal action is being conducted pursuant to the laws, regulations and agreements listed below, and will comply with the provisions of each:

- The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), also known as Superfund, that provides for the investigation and cleanup of uncontrolled hazardous waste sites
- The Superfund Amendments and Reauthorization Act of 1986 (SARA) that renewed and updated CERCLA
- The National Oil and Hazardous Substances Pollution Contingency Plan of 1990 (NCP) that spells out how CERCLA and SARA will be implemented
- The Federal Facility Compliance Agreement of 1986 (FFCA) between the U.S. Department of Energy (DOE) and the U.S. Environmental Protection Agency (EPA) that provides for the investigation and cleanup of environmental impacts from past and present activities at the FEMP
- The Consent Agreement of 1990 that amended the FFCA and fostered consistency among the operable unit concept and the current commitments of the RI/FS program without modifying the underlying objectives
- The Amended Consent Agreement of 1991 that establishes definitions and schedules for completion of RI/FS documents for the five operable units and identifies additional specific removal actions at the FEMP

The 1990 Consent Agreement specified four removal actions and provided for the identification of three more; these seven are now referred to as the Phase One Removal Actions. The Amended Consent Agreement for the FEMP, signed on September 20 and effective on December 19, 1991, specified 11 additional removal actions, referred to as Phase Two Removal Actions.

On January 14, 1992 six more removal actions, known as Phase Three Removal Actions, were approved by EPA and three emergency removal actions were initiated. In all, the three phases total 27 separate, sequentially numbered removal actions. DOE may identify additional removal actions each year by January 15, if needed.

Objectives

The objective of removal actions under CERCLA and the NCP is to "...take appropriate action to abate, stabilize, mitigate, or eliminate the release or threat of release..." of hazardous materials or waste in a manner that reduces or eliminates the threat to public health, welfare, or the environment. Removal actions are emergency or short-term responses to immediate threats. They differ from remedial actions in that they are generally more limited in scope and cost.

Removal actions can be divided into three general categories: emergency, time critical, and non-time-critical. They are as follows:

- Emergency removal actions call for an immediate response. An Administrative Record file must be established and affected citizens must be notified.
- Time-critical removal actions have a planning period of less than six months. If on-site removal actions are expected to extend beyond 120 days, then an addendum to the CRP is required based on interviews with community residents and/or public interest groups to identify their concerns and determine ways in which residents would like to become involved.
- Non-time-critical removal actions usually have a planning period of at least six months and dictate the same community relations activities as discussed above. An added requirement is the preparation of an engineering evaluation/cost analysis (EE/CA). In this case, the addendum to the CRP must be completed before the EE/CA approval memorandum is signed.

The specific objective of Removal Action No. 18, Control Exposed Material in Waste Pit 5, a time-critical removal action, is to protect human health and the environment by eliminating the potential threat of release of contaminants from the Control Exposed Material in Waste Pit 5. Waste Pit 5 also could potentially release airborne particulate radioactive material; once this removal action is complete, all of the material will be covered with water, thereby reducing the threat of a release of airborne particulate radioactive materials.

Waste Pit 5 is a potential contributor to risk from radon emissions. Waste Pit 5 has the highest level of Radium-226 of any of the six waste pits. By completing this removal action, the threat of Radon-222 being released from Waste Pit 5 will be mitigated.

Seven initial alternatives for controlling exposed material in Waste Pit 5 were assessed. After the preliminary screening, the following four alternatives were chosen for additional evaluation:

- 1) Increase water level with pit modifications
- 2) Distribute material below the water line utilizing a crane
- 3) Distribute material below the water line utilizing a small pond dredge
- 4) Place a flexible membrane over the pit

The alternative selected is to distribute the material below the water line using a small pond dredge.

In the first alternative, Increase Water Level with Pit Modifications, the entire waste surface would be covered with water without moving any waste. For this alternative, it is estimated that the water level would need to be raised and maintained at an approximate elevation of 589.74 feet. To maintain the water level at this elevation, modifications to the berm height and the existing effluent tower would be necessary. Although this alternative would effectively reduce the mobility of the waste material and would not create any airborne emissions during implementation, it was not selected because the height of the dike by earthwork would involve significant volumes of earth -- more than 11,000 cubic yards -- and may not be consistent with the final action. Also, this alternative would involve a major construction effort.

In the second alternative, Distribute Material Utilizing a Crane, a crane with a clamshell would be used to move the exposed material from the east to the west end of Waste Pit 5. The crane would pick up the waste and deposit it in the west end of the pit. The crane would sit in the road just south of the pit, and would have to be repositioned once or twice to allow all of the material to be distributed to the west end of the pit. The entire waste surface would then be covered with about one foot of water, which would be inspected daily and replenished as needed. However, this alternative was not selected because the possibility of potential releases and the spread of contamination during removal action activities was high and great care would have been needed to protect the environment. Workers would have been needed near the waste material, making the occupational hazards of this alternative high.

In the third alternative, Distribute Material Utilizing a Small Pond Dredge, a small pond dredge would be used to move the exposed material from the east end to the west end of Waste Pit 5. The water level will be raised to its pre-existing elevation of 558.74 feet, and the waste would be dredged and pumped as a slurry to the west end of the pit. The entire waste surface then would be covered with an average

one foot of water. The water level would be inspected daily and replenished as necessary. Dry material will not be disturbed during the moving process, which would eliminate potential airborne releases. This removal action also is consistent with the final remedial action because it does not affect the volume or treatment method of the waste material. Using the small pond dredge keeps exposure to personnel to a minimum because the dredging operation will be conducted from a remote location. Also, the small pond dredge is a moderate cost item and incorporates proven technology and equipment.

In the fourth alternative, Flexible Membrane, the water level would be maintained at elevation 588.74 feet and all the remaining exposed material would be covered with a flexible membrane liner. Existing drainage facilities that control the water level would continue to be used. The liner would need to be a strong, tear-resistant material with good weather-resistant properties and be unaffected by the ultraviolet rays in sunlight. The liner installation would require a skilled labor force and special provisions would be necessary to accommodate its installation in one piece across the pit; equipment and personnel are not permitted to be on the exposed waste material. Three sides of the liner would be anchored, while the fourth side would be fashioned in such a way as to allow it to be pulled over the pit. The liner would need to be weighted to keep it from blowing free in the wind. Although a liner would control potential airborne emissions, installation and maintenance would be difficult. A slight amount of additional waste would be generated in the form of the liner and the weights.

Background

Waste Pit 5 was built in 1968 and was used as a surface impoundment to hold slurry waste streams from the refinery and recovery plant, including neutralized raffinate settled solids, slag leach slurry, sump slurry and lime sludge. Between 1983 and 1987, Waste Pit 5 received waste from the general sump, filtrate from the recovery plant and non-radioactive slurries. Waste Pit 5 also contains an estimated 111,700 pound of uranium and 37,450 pounds of thorium.

The pit is about 30 feet deep, covers about 161,100 square feet and contains about 98,000 cubic yards of waste material. Waste Pit 5 historically contained surface water ranging in depth from three feet in the west end to zero feet in the east end. The surface elevation of the water varied depending on precipitation and evaporation rates. Waste in the eastern third of the pit was not covered by water, and the exposed material was subject to dispersal from wind erosion. At present, potable water is being added to the pit to return the water surface to the historical elevation of 588.74 feet.

Waste Pit 5 is lined with a 60-mill-thick Royal Seal ethylene propylene diene monomer (EPDM) elastomeric membrane. The pit was taken out of service in February 1987 and remains uncovered.

Overview of Community Concerns

In preparing this addendum, transcripts of community meetings held on: January 31, 1989; May 15, 1989; October 24, 1989; February 20, 1990; May 22, 1990; September 25, 1990; December 11, 1990; March 19, 1991; July 16, 1991; and October 29, 1991; February 25, 1992; July 21, 1992, and November 9, 1992 were reviewed. Also reviewed were transcripts from the RI/FS Environmental Impact Statement scoping meetings held on June 12 and 13, 1990.

A 45-day public comment period for the Control Exposed Material in Waste Pit 5 Removal Action was held from November 4 - December 18, 1992. The announcement ran in three local newspapers. There were no oral or written comments submitted.

Highlights of Community Relations Activities

Community concerns regarding the Control Exposed Material in Waste Pit 5 Removal Action suggest an active FEMP community relations effort with the following objective:

- Maintain an active effort to keep interested community members informed throughout the implementation of the Control Exposed Material in Waste Pit 5 Removal Action.

The following specific activities have been identified to support the community relations objective for this removal action:

1. Prepare one or more fact sheets or updates for the purpose of providing information about the removal action and answering key concerns about the Control Exposed Material in Waste Pit 5 at the FEMP and distribute them at the quarterly public meetings.
2. Devote some portion of future community meetings to this issue; update the RI/FS exhibit to include new information as it becomes available. (Community meetings are held at regular intervals on dates selected by DOE.)
3. Include coverage about the Control Exposed Material in Waste Pit 5 Removal Action in the Fernald Project Cleanup Report as needed during the removal action.
4. Offer a roundtable presentation on the Control Exposed Material in Waste Pit 5.

5. Provide a 24-hour phone line at the FEMP so concerned citizens can contact a FEMP representative during a time of alarm. The number is 513-738-6295, which is FEMP Security.
6. Make appropriate additions to the Administrative Record and publicize their availability at the Public Environmental Information Center, JAMTEK Building, 10845 Hamilton-Cleves Highway, Harrison, Ohio, 45030.

Timetable

The preparation of materials for all community relations activities will be tied to the removal action schedules. For a complete list of schedule dates and activities, please see the Control Exposed Material in Waste Pit 5 Work Plan, which is in the Administrative Record, located at the Public Environmental Information Center. The activities will be scheduled to provide the maximum flexibility and information to the public. The work plan for this removal action has been approved by EPA. Discussions and updates on the status of the removal action will be given at future public meetings.

REFERENCES

1. U.S. Department of Energy, "Fernald Environmental Management Project Control Exposed Material in Waste Pit 5 Removal Action Number 18 Work Plan," July 1992.

ADDENDUM
TO THE
RI/FS COMMUNITY RELATIONS PLAN
FOR REMOVAL ACTION No. 22
WASTE PIT AREA CONTAINMENT IMPROVEMENT

Fernald Environmental Management Project
Fernald, Ohio

U.S. Department of Energy
Fernald Field Office

January 1993

TABLE OF CONTENTS

4051

<u>SECTION</u>	<u>PAGE</u>
List of Acronyms	ii
Introduction	1
Objectives	2
Background	4
Overview of Community Concerns	6
Highlights of Community Relations Activities	6
Timetable	7
References	8

LIST OF ACRONYMS

4051

CERCLA:	Comprehensive Environmental Response, Compensation, and Liability Act [of 1980] (also known as Superfund)
CRP:	Community Relations Plan
DOE:	U.S. Department of Energy
EPA:	U.S. Environmental Protection Agency
EE/CA:	engineering evaluation/cost analysis
FEMP:	Fernald Environmental Management Project (formerly the Feed Materials Production Center)
FFCA:	Federal Facility Compliance Agreement
NCP:	National Oil and Hazardous Substances Pollution Contingency Plan [of 1990]
RI/FS:	remedial investigation and feasibility study
SARA:	Superfund Amendments and Reauthorization Act [of 1986]

Introduction

This document is prepared as an addendum to the Fernald Environmental Management Project (FEMP) Remedial Investigation and Feasibility Study (RI/FS) Community Relations Plan (CRP), dated August 1992. This addendum addresses Removal Action No. 22, Waste Pit Area Containment Improvement.

This removal action is being conducted pursuant to the laws, regulations and agreements listed below, and will comply with the provisions of each:

- The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), also known as Superfund, that provides for the investigation and cleanup of uncontrolled hazardous waste sites
- The Superfund Amendments and Reauthorization Act of 1986 (SARA) that renewed and updated CERCLA
- The National Oil and Hazardous Substances Pollution Contingency Plan of 1990 (NCP) that spells out how CERCLA and SARA will be implemented
- The Federal Facility Compliance Agreement of 1986 (FFCA) between the U.S. Department of Energy (DOE) and the U.S. Environmental Protection Agency (EPA) that provides for the investigation and cleanup of environmental impacts from past and present activities at the FEMP
- The Consent Agreement of 1990 that amended the FFCA and fostered consistency among the operable unit concept and the current commitments of the RI/FS program without modifying the underlying objectives
- The Amended Consent Agreement of 1991 that establishes definitions and schedules for completion of RI/FS documents for the five operable units and identifies additional specific removal actions at the FEMP

The 1990 Consent Agreement specified four removal actions and provided for the identification of three more; these seven are now referred to as the Phase One Removal Actions. The Amended Consent Agreement for the FEMP, signed on September 20 and effective on December 19, 1991, specified 11 additional removal actions, referred to as Phase Two Removal Actions.

On January 14, 1992 six more removal actions, known as Phase Three Removal Actions, were approved by EPA and three emergency removal actions were initiated. In all, the three phases total 27 separate, sequentially numbered removal actions. DOE may identify additional removal actions each year by January 15, if needed.

Objectives

The objective of removal actions under CERCLA and the NCP is to "...take appropriate action to abate, stabilize, mitigate, or eliminate the release or threat of release..." of hazardous materials or waste in a manner that reduces or eliminates the threat to public health, welfare, or the environment. Removal actions are emergency or short-term responses to immediate threats. They differ from remedial actions in that they are generally more limited in scope and cost.

Removal actions can be divided into three general categories: emergency, time critical, and non-time-critical. They are as follows:

- Emergency removal actions call for an immediate response. An Administrative Record file must be established and affected citizens must be notified.
- Time-critical removal actions have a planning period of less than six months. If on-site removal actions are expected to extend beyond 120 days, then an addendum to the CRP is required based on interviews with community residents and/or public interest groups to identify their concerns and determine ways in which residents would like to become involved.
- Non-time-critical removal actions usually have a planning period of at least six months and dictate the same community relations activities as discussed above. An added requirement is the preparation of an engineering evaluation/cost analysis (EE/CA). In this case, the addendum to the CRP must be completed before the EE/CA approval memorandum is signed.

The specific objective of Removal Action No. 22, Waste Pit Area Containment Improvement, a time-critical removal action, is to protect human health and the environment by eliminating the potential threat of release of contaminants from the Waste Pit Area. The removal action will improve the containment of specified contaminated soil areas, correct the Waste Pit 4 south berm, protect the Burn Pit from wind erosion and improve the vegetation cover on the waste pits.

An evaluation of inhalation exposure from suspended airborne contaminants and direct radiation exposure from surface contamination was conducted. From site inspections and aerial photographs, exposed soil surfaces were found on the roads and shoulders, graded areas, water drainage paths and on the waste pits. A total of eight areas of concern were identified:

- Immediate area between Waste Pits 4 and 6
- Area south and east of Waste Pit 2
- Section east of the waste pit area
- The cover on Waste Pit 3
- Waste Pit 4 South Berm erosion
- Burn Pit wind erosion
- Vegetation cover on the waste pits
- Weston Road area

Surface contamination involving radionuclides has been detected along the roads in the drainage ditches within the waste pit area. Elevated radioactive contamination levels were detected along the road in the drainage ditches between Waste Pits 3 and 5, between Waste Pits 4 and 6, and south of Waste Pits 4 and 6. Elevated radioactive contamination levels also were detected on the road between Waste Pits 4 and 6. In order to mitigate the potential for a release of contamination, these drainage ditches will have to be upgraded and the road between Waste Pits 4 and 6 will have to be improved. The road between Waste Pits 4 and 6 already has been covered with a one-ply layer of a special mat to allow access to Waste Pit 5.

The toe of the slope of the Waste Pit 4 south berm area has eroded. The primary cause of the erosion is a drainage ditch located at the toe. Some moderate erosion gullies and rills are evident on the berm slope. The main focus of the repairs to the berm will concentrate on erosion controls of the ditch at the toe of the dike and across its total width.

Excessive traffic and wind erosion have caused areas of the Burn Pit to become exposed. Vehicle traffic on the Burn Pit now is being controlled by administrative access points. The only traffic allowed on the Burn Pit now is to provide access to the monitoring wells in the area. The exposed material could potentially migrate through fugitive dust emissions or surface water runoff. The cover on the Burn Pit needs to be improved to protect the Burn Pit from further erosion.

There are several areas of stressed vegetation on the surface of Waste Pits 1, 2 and 3. It is estimated that the exposed area is less than 10 percent of the total surface area of Waste Pits 1, 2 and 3. These areas of stressed vegetation are exposing potentially contaminated soil which might become airborne or migrate

through surface water runoff. The vegetative cover needs to be improved in various areas of Waste Pits 1, 2 and 3.

To improve containment of specified contaminated soil areas, selected drainage ditches will be improved and a layer of special mats will be placed on the road between Waste Pits 4 and 6. The Waste Pit 4 south berm erosion will be corrected by constructing a foundation of broken stones, or riprap. A soil and vegetative cover will be put over the Burn Pit and Waste Pits 1, 2 and 3 to protect against erosion in the Burn Pit and to improve the vegetation cover on the waste pits.

Background

The Waste Pit Area covers approximately 23 acres of the FEMP site and consists of Waste Pits 1 through 6, the Clearwell and the Burn Pit. When the FEMP was in operation, low-level radioactive waste generated by the various chemical and metallurgical processes were deposited in one of the 6 waste pits or burned in the Burn Pit.

Waste Pit 1 was backfilled and covered with clean soil in 1959. It was built in 1952 in existing native clay and then lined with an additional four feet of clay. The maximum depth of the pit is 17 feet. It has an 80,000 square foot surface area with an estimated 40,000 cubic yards of buried waste. The pit contains neutralized waste filter cake, fly ash, scrap graphite, brick scraps, sump liquor/cake, depleted slag and an estimated 115,000 pounds of uranium.

In 1964, Waste Pit 2 was backfilled and covered with clean soil. Pit 2 was built in 1957 in native clay with a 17-foot maximum depth. It has a 48,215 square foot surface area with an estimated 13,000 cubic yards of buried waste. This pit contains neutralized waste filter cake, scrap graphite, brick scrap, concrete, construction rubble, sump liquor/cake, depleted slag, an estimated 2,700,000 pounds of uranium and approximately 900 pounds of thorium.

Waste Pit 3 was taken out of service, backfilled and covered with clean soil in 1977. It was built in 1959 in an existing clay layer and was lined with an additional foot of clay. The maximum depth of the pit is 27 feet. It has a 238,500 square foot surface area with an estimated 227,000 cubic yards of buried waste. This pit contains lime-neutralized raffinate, raffinate concentrate, slag leach residues, filter cake and fly ash. There are an estimated 290,000 pounds of uranium and approximately 900 pounds of thorium.

Waste Pit 4 was covered with clean soil in 1986. A special cap was placed over Waste Pit 4 in 1988 and the pit was closed under an interim plan. This is a clay-lined pit and was built in 1960. It has a maximum depth of 24 feet and an 85,685 square foot surface area with an estimated 53,000 cubic yards of buried waste. This pit contains process residues, raffinates, slurries, filter cake, lime sludge, 23,500 pounds of

barium chloride, scrap graphite, noncombustible trash, asbestos and construction rubble. There are an estimated 1,400,000 pounds of uranium and 140,000 pounds of thorium.

Waste Pit 5 was taken out of service in 1987 and then covered with water. It was built in 1968 and is lined with a 60-mil-thick Royal-Seal ethylene rubber elastomeric membrane. The pit contains an estimated 102,500 cubic yards of settled waste material consisting of neutralized raffinate, slag leach slurry, sump slurry, lime sludge and some construction debris. There are an estimated 110,000 pounds of uranium and 38,000 pounds of thorium in the pit.

Waste Pit 6 was taken out of service in 1985 and covered with water. It is a 32,400 square foot, 24 foot deep pond lined with a 60-mil-thick Royal-Seal ethylene rubber elastomeric membrane. Built in 1979, the pit contains an estimate 9000 cubic yards of waste material consisting green salt, filter cake, depleted slag and process residues. There are an estimated 950,000 pounds of uranium.

The Burn Pit currently is overgrown with grass and part of it is overlain by the Waste Pit 4 berm and liner. There is a dirt access road on the Burn Pit which is now only used to access the monitoring wells in the area.

The Burn Pit was excavated in 1957 as a clay borrow pit. Its exact depth and size are not precisely known, but it is believed to be about 20 feet deep. The pit was used to dispose of and burn laboratory chemicals and such low-level contaminated materials such as wooden pallets. The residual waste quantities are not known.

From 1952 until 1987, the Clearwell was used as a final settling basin for process water that passed through Waste Pits 3 and 5 prior to being discharged to the Great Miami River. The Clearwell now receives surface water runoff from Waste Pits 1, 2 and 3 and excess storm water from Waste Pit 5.

Overview of Community Concerns

In preparing this addendum, transcripts of community meetings held on: January 31, 1989; May 15, 1989; October 24, 1989; February 20, 1990; May 22, 1990; September 25, 1990; December 11, 1990; March 19, 1991; July 16, 1991; and October 29, 1991; February 25, 1992; July 21, 1992, and November 9, 1992 were reviewed. Also reviewed were transcripts from the RI/FS Environmental Impact Statement scoping meetings held on June 12 and 13, 1990.

A 45-day public comment period for the Waste Pit Area Containment Improvement Removal Action was held from November 4 - December 18, 1992. The announcement ran in three local newspapers. There were no oral or written comments submitted.

Highlights of Community Relations Activities

Community concerns regarding the Waste Pit Area Containment Improvement Removal Action suggest an active FEMP community relations effort with the following objective:

- Maintain an active effort to keep interested community members informed throughout the implementation of the Waste Pit Area Containment Improvement Removal Action.

The following specific activities have been identified to support the community relations objective for this removal action:

1. Prepare one or more fact sheets or updates for the purpose of providing information about the removal action and answering key concerns about the Waste Pit Area Containment Improvement at the FEMP and distribute them at the quarterly public meetings.
2. Devote some portion of future community meetings to this issue; update the RI/FS exhibit to include new information as it becomes available. (Community meetings are held at regular intervals on dates selected by DOE.)
3. Include coverage about the Waste Pit Area Containment Improvement Removal Action in the Fernald Project Cleanup Report as needed during the removal action.
4. Offer a roundtable presentation on the Waste Pit Area Containment Improvement.
5. Provide a 24-hour phone line at the FEMP so concerned citizens can contact a FEMP representative during a time of alarm. The number is 513-738-6295, which is FEMP Security.
6. Make appropriate additions to the Administrative Record and publicize their availability at the Public Environmental Information Center, JAMTEK Building, 10845 Hamilton-Cleves Highway, Harrison, Ohio, 45030.

Timetable

The preparation of materials for all community relations activities will be tied to the removal action schedules. For a complete list of schedule dates and activities, please see the Waste Pit Area Containment Improvement Work Plan, which is in the Administrative Record, located at the Public

RI/FS Work Plan Vol III
Removal Action No. 22 Addendum
December 1993
Page 7 of 8

Environmental Information Center. The activities will be scheduled to provide the maximum flexibility and information to the public. The work plan for this removal action has been approved by EPA. Discussions and updates on the status of the removal action will be given at future public meetings.

REFERENCES

1. U.S. Department of Energy, "Fernald Environmental Management Project Waste Pit Area Containment Improvement Removal Action Number 22 Work Plan," August 1992.

ADDENDUM
TO THE
RI/FS COMMUNITY RELATIONS PLAN
FOR REMOVAL ACTION No. 24
PILOT PLANT SUMP

Fernald Environmental Management Project
Fernald, Ohio

U.S. Department of Energy
Fernald Field Office

January 1993

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
List of Acronyms	ii
Introduction	1
Objectives	2
Background	3
Overview of Community Concerns	5
Highlights of Community Relations Activities	5
Timetable	6
References	7

LIST OF ACRONYMS

CERCLA:	Comprehensive Environmental Response, Compensation, and Liability Act [of 1980] (also known as Superfund)
CRP:	Community Relations Plan
DOE:	U.S. Department of Energy
EPA:	U.S. Environmental Protection Agency
EE/CA:	engineering evaluation/cost analysis
FEMP:	Fernald Environmental Management Project (formerly the Feed Materials Production Center)
FFCA:	Federal Facility Compliance Agreement
NCP:	National Oil and Hazardous Substances Pollution Contingency Plan [of 1990]
RI/FS:	remedial investigation and feasibility study
SARA:	Superfund Amendments and Reauthorization Act [of 1986]

Introduction

This document is prepared as an addendum to the Fernald Environmental Management Project (FEMP) Remedial Investigation and Feasibility Study (RI/FS) Community Relations Plan (CRP), dated August 1992. This addendum addresses Removal Action No. 24, Pilot Plant Sump.

This removal action is being conducted pursuant to the laws, regulations and agreements listed below, and will comply with the provisions of each:

- The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), also known as Superfund, that provides for the investigation and cleanup of uncontrolled hazardous waste sites
- The Superfund Amendments and Reauthorization Act of 1986 (SARA) that renewed and updated CERCLA
- The National Oil and Hazardous Substances Pollution Contingency Plan of 1990 (NCP) that spells out how CERCLA and SARA will be implemented
- The Federal Facility Compliance Agreement of 1986 (FFCA) between the U.S. Department of Energy (DOE) and the U.S. Environmental Protection Agency (EPA) that provides for the investigation and cleanup of environmental impacts from past and present activities at the FEMP
- The Consent Agreement of 1990 that amended the FFCA and fostered consistency among the operable unit concept and the current commitments of the RI/FS program without modifying the underlying objectives
- The Amended Consent Agreement of 1991 that establishes definitions and schedules for completion of RI/FS documents for the five operable units and identifies additional specific removal actions at the FEMP

The 1990 Consent Agreement specified four removal actions and provided for the identification of three more; these seven are now referred to as the Phase One Removal Actions. The Amended Consent Agreement for the FEMP, signed on September 20 and effective on December 19, 1991, specified 11 additional removal actions, referred to as Phase Two Removal Actions.

On January 14, 1992 six more removal actions, known as Phase Three Removal Actions, were approved by EPA and three emergency removal actions were initiated. In all, the three phases total 27 separate, sequentially numbered removal actions. DOE may identify additional removal actions each year by January 15, if needed.

Objectives

The objective of removal actions under CERCLA and the NCP is to "...take appropriate action to abate, stabilize, mitigate, or eliminate the release or threat of release..." of hazardous materials or waste in a manner that reduces or eliminates the threat to public health, welfare, or the environment. Removal actions are emergency or short-term responses to immediate threats. They differ from remedial actions in that they are generally more limited in scope and cost.

Removal actions can be divided into three general categories: emergency, time critical, and non-time-critical. They are as follows:

- Emergency removal actions call for an immediate response. An Administrative Record file must be established and affected citizens must be notified.
- Time-critical removal actions have a planning period of less than six months. If on-site removal actions are expected to extend beyond 120 days, then an addendum to the CRP is required based on interviews with community residents and/or public interest groups to identify their concerns and determine ways in which residents would like to become involved.
- Non-time-critical removal actions usually have a planning period of at least six months and dictate the same community relations activities as discussed above. An added requirement is the preparation of an engineering evaluation/cost analysis (EE/CA). In this case, the addendum to the CRP must be completed before the EE/CA approval memorandum is signed.

The specific objective of Removal Action No. 24, Pilot Plant Sump, a time-critical removal action, is to protect human health and the environment by eliminating the potential threat of release of contaminants from the Pilot Plant Sump. The liquid level in the sump has been rising and falling, which was reported to regulatory authorities as a potential release to the environment. Although there is no direct evidence of leakage from the sump, a sampling and analysis program was performed on the sump contents. The surrounding soils and groundwater were reviewed as well.

Two grab samples of sump liquid revealed that it contains heavy metals and radioactive uranium and thorium. These samples also exceed the toxicity characteristic leaching procedure level for lead, barium, benzene and mercury. There also are indications of appreciable levels of 1,1,1-Trichloroethane (200 ppm maximum), carbon tetrachloride (30 ppm maximum) and o-xylene (21 ppm maximum). These constituents are consistent with the by-products from operations known to have occurred in the Pilot Plant.

The results of analysis of soil samples collected during the installation of monitoring wells in the vicinity of the sump were also examined. Three of these wells are 15 to 30 feet from the sump. The analytical results from these samples indicate elevated levels, relative to background, of radioactive or nonradioactive contaminants that also are found in the sump.

The scope of the pilot plant sump removal action encompasses: 1) physical removal of the sump, including liquid and some solid contents and hardware components, 2) exploration of the inlet drain line, 3) capping the floor drain system line that is to be left in place, and 4) removal of contaminated soil, if applicable, from a zone surrounding the sump and inlet line. Any contaminated soil that may exist beyond this area will be addressed in the final remediation of Operable Unit 5. Following the removal of the sump, the Pilot Plant floor drain piping will be internally examined in an effort to characterize its contents and physical condition. Because the piping is an integral part of the Pilot Plant's concrete and brick floor, it cannot be externally accessed prior to demolition of the facility. For this reason, removal of the floor drain system will be limited to the section of piping that is connected to the sump outside the facility.

Background

The Pilot Plant is located in the southwest corner of the FEMP production area, which is Operable Unit 3, while the Pilot Plant Sump is located approximately 15 feet west outside of the southwest corner of the Pilot Plant. Pilot Plant operations began in October 1951. Initial activities centered on training operators for machining operations to be set up in the fabrication plant, known as Plant 6. The Pilot Plant operated as a general use facility for testing and for smaller operations, and the processes employed ranged from pilot to full scale. Often tests of new processes were run in the Pilot Plant before they were implemented at full scale in the main plants.

Over the years of operation, Pilot Plant processes included aqueous/organic extractions of uranium and thorium, calcining, vacuum furnace casting, reduction of uranium hexafluoride, reduction of uranium tetrafluoride to uranium metal, briquetting, heat treating, centrifugal casting, reject core reclamation and various wet tankage techniques. A series of thorium processing operations also were undertaken in the Pilot Plant equipment. Pilot Plant processes could produce purified thorium nitrate, oxalate, hydroxide

or metal. The following are brief summaries of the several processes that were conducted within the Pilot Plant:

- Solvent Extraction, conducted from 1964 to 1980. Purification of thorium or uranium digested liquors by liquid-liquid countercurrent extraction in perforated plate pulse columns. Diamyl-amyl phosphonate in kerosene and di-secbutyl phenyl phosphonate in kerosene made up the extractants for thorium. Raffinate was neutralized and filtered; filter cake was drummed and effluent went into the general sump. Solvent was recovered by nitric acid and soda ash treatment and centrifuging.
- Sump Process. All effluent from the floor sumps was collected in two outside tanks and treated in two neutralizing tanks, then filtered.
- Thorium Digestion, conducted from 1964 to 1980. Thorium ores, thorium oxalate and other thorium metals were dissolved in a single digester for extraction feed, then vented to an outside scrubber.
- Thorium Oxalate, conducted from 1971 to 1976. Thorium nitrate tetrahydrate was precipitated with oxalic acid to form a wet thorium oxalate, which was filtered. The oxalate was calcined at another location.
- Thoria Gel (hydrated oxide), conducted from 1964 to 1970 and 1977 to 1979. A thorium nitrate tetrahydrate solution was precipitated with carbon dioxide and ammonia to form thorium hydroxide. This was slurried with water and ammonia, filtered, dried and sent to another location for calcining to thorium oxide.
- Thorium Tetrafluoride Precipitation, conducted from 1969 to 1971. Thorium tetrafluoride was precipitated by adding hydrofluoric acid to thorium nitrate tetrahydrate solution. The thorium tetrafluoride was filtered and dried twice.
- Zinc Precipitation, conducted from 1969 to 1971. Zinc fluoride was precipitated by dumping bags of zinc oxide into dilute hydrofluoric acid. The zinc fluoride was filtered and dried twice for use in thorium metal production. This process used the same equipment used for the thorium tetrafluoride precipitation.
- Pot Liner Preparation. Calcium fluoride from thorium derby breakout was prepared for pot liner material by crushing and ball milling.

- Decladding Fuel Elements. Aluminum-clad, nickel-plated uranium fuel elements were declad by placing in a stainless steel ventilated trough and circulating sodium hydroxide and nitric acid. Declad elements were returned to the production stream in Plant 5 and the spent solution went to Plant 8.
- Enriched Oxidation Furnace, conducted from 1956 to 1985. A small single hearth, gas-fired furnace used to process enriched scrap uranium oxide, uranium metal and other residues.
- Barium Chloride Conversion. Barium chloride heat treating salts from the uranium extrusion operation were converted to barium sulfate.

The Pilot Plant Sump is a temporary sump constructed and connected to the floor drain system for use from 1968 to 1970. During this time, the main sump was refurbished and the facility floor and floor drain system were replaced. The sump is 9 feet long and 2 feet in diameter, and is made of stainless steel pipe, buried vertically in the ground. Floor drain liquids flowed by gravity to the sump, where they accumulated until pumped to a processing system for uranium and thorium recovery. The current condition of the sump walls, the welded bottom plate and the inlet line are not known; however, they may be actual or potential pathways for release to the environment because of their age and the corrosive nature of the sump contents.

Overview of Community Concerns

In preparing this addendum, transcripts of community meetings held on: January 31, 1989; May 15, 1989; October 24, 1989; February 20, 1990; May 22, 1990; September 25, 1990; December 11, 1990; March 19, 1991; July 16, 1991; and October 29, 1991; February 25, 1992; July 21, 1992, and November 9, 1992 were reviewed. Also reviewed were transcripts from the RI/FS Environmental Impact Statement scoping meetings held on June 12 and 13, 1990.

A 45-day public comment period for the Pilot Plant Sump Removal Action was held from November 4 - December 18, 1992. The announcement ran in three local newspapers. There were no oral or written comments submitted.

Highlights of Community Relations Activities

Community concerns regarding the Pilot Plant Sump Removal Action suggest an active FEMP community relations effort with the following objective:

- Maintain an active effort to keep interested community members informed throughout the implementation of the Pilot Plant Sump Removal Action.

The following specific activities have been identified to support the community relations objective for this removal action:

1. Prepare one or more fact sheets or updates for the purpose of providing information about the removal action and answering key concerns about the Pilot Plant Sump at the FEMP and distribute them at the quarterly public meetings.
2. Devote some portion of future community meetings to this issue; update the RI/FS exhibit to include new information as it becomes available. (Community meetings are held at regular intervals on dates selected by DOE.)
3. Include coverage about the Pilot Plant Sump Removal Action in the Fernald Project Cleanup Report as needed during the removal action.
4. Offer a roundtable presentation on the Pilot Plant Sump.
5. Provide a 24-hour phone line at the FEMP so concerned citizens can contact a FEMP representative during a time of alarm. The number is 513-738-6295, which is FEMP Security.
6. Make appropriate additions to the Administrative Record and publicize their availability at the Public Environmental Information Center, JAMTEK Building, 10845 Hamilton-Cleves Highway, Harrison, Ohio, 45030.

Timetable

The preparation of materials for all community relations activities will be tied to the removal action schedules. For a complete list of schedule dates and activities, please see the Pilot Plant Sump Work Plan, which is in the Administrative Record, located at the Public Environmental Information Center. The activities will be scheduled to provide the maximum flexibility and information to the public. The work plan for this removal action has been approved by EPA. Discussions and updates on the status of the removal action will be given at future public meetings.

REFERENCES

1. U.S. Department of Energy, "Fernald Environmental Management Project Pilot Plant Sump Removal Action Number 24 Work Plan," October 1992.

ADDENDUM

TO THE

RI/FS COMMUNITY RELATIONS PLAN

FOR REMOVAL ACTION No. 25

NITRIC ACID TANK CAR AND AREA

Fernald Environmental Management Project
Fernald, Ohio

U.S. Department of Energy
Fernald Field Office

January 1993

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
List of Acronyms	ii
Introduction	1
Objectives	2
Background	4
Overview of Community Concerns	4
Highlights of Community Relations Activities	4
Timetable	6
References	6

LIST OF ACRONYMS

CERCLA:	Comprehensive Environmental Response, Compensation, and Liability Act [of 1980] (also known as Superfund)
CRP:	Community Relations Plan
DOE:	U.S. Department of Energy
EPA:	U.S. Environmental Protection Agency
EE/CA:	engineering evaluation/cost analysis
FEMP:	Fernald Environmental Management Project (formerly the Feed Materials Production Center)
FFCA:	Federal Facility Compliance Agreement
NCP:	National Oil and Hazardous Substances Pollution Contingency Plan [of 1990]
RI/FS:	remedial investigation and feasibility study
SARA:	Superfund Amendments and Reauthorization Act [of 1986]

Introduction

This document is prepared as an addendum to the Fernald Environmental Management Project (FEMP) Remedial Investigation and Feasibility Study (RI/FS) Community Relations Plan (CRP), dated August 1992. This addendum addresses Removal Action No. 25, Nitric Acid Tank Car and Area.

This removal action is being conducted pursuant to the laws, regulations and agreements listed below, and will comply with the provisions of each:

- The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), also known as Superfund, that provides for the investigation and cleanup of uncontrolled hazardous waste sites
- The Superfund Amendments and Reauthorization Act of 1986 (SARA) that renewed and updated CERCLA
- The National Oil and Hazardous Substances Pollution Contingency Plan of 1990 (NCP) that spells out how CERCLA and SARA will be implemented
- The Federal Facility Compliance Agreement of 1986 (FFCA) between the U.S. Department of Energy (DOE) and the U.S. Environmental Protection Agency (EPA) that provides for the investigation and cleanup of environmental impacts from past and present activities at the FEMP
- The Consent Agreement of 1990 that amended the FFCA and fostered consistency among the operable unit concept and the current commitments of the RI/FS program without modifying the underlying objectives
- The Amended Consent Agreement of 1991 that establishes definitions and schedules for completion of RI/FS documents for the five operable units and identifies additional specific removal actions at the FEMP

The 1990 Consent Agreement specified four removal actions and provided for the identification of three more; these seven are now referred to as the Phase One Removal Actions. The Amended Consent Agreement for the FEMP, signed on September 20 and effective on December 19, 1991, specified 11 additional removal actions, referred to as Phase Two Removal Actions.

On January 14, 1992 six more removal actions, known as Phase Three Removal Actions, were approved by EPA and three emergency removal actions were initiated. In all, the three phases total 27 separate, sequentially numbered removal actions. DOE may identify additional removal actions each year by January 15, if needed.

Objectives

The objective of removal actions under CERCLA and the NCP is to "...take appropriate action to abate, stabilize, mitigate, or eliminate the release or threat of release..." of hazardous materials or waste in a manner that reduces or eliminates the threat to public health, welfare, or the environment. Removal actions are emergency or short-term responses to immediate threats. They differ from remedial actions in that they are generally more limited in scope and cost.

Removal actions can be divided into three general categories: emergency, time critical, and non-time-critical. They are as follows:

- Emergency removal actions call for an immediate response. An Administrative Record file must be established and affected citizens must be notified.
- Time-critical removal actions have a planning period of less than six months. If on-site removal actions are expected to extend beyond 120 days, then an addendum to the CRP is required based on interviews with community residents and/or public interest groups to identify their concerns and determine ways in which residents would like to become involved.
- Non-time-critical removal actions usually have a planning period of at least six months and dictate the same community relations activities as discussed above. An added requirement is the preparation of an engineering evaluation/cost analysis (EE/CA). In this case, the addendum to the CRP must be completed before the EE/CA approval memorandum is signed.

The specific objective of Removal Action No. 25, Nitric Acid Tank Car and Area, an emergency removal action, is to protect human health and the environment by eliminating the potential threat of release of contaminants from the Nitric Acid Tank Car and Area. The volume of liquid estimated to be contained in the Tank Car is too small to pose a threat to either groundwater or surface water. Although nitric acid (HNO_3) reacts aggressively with certain materials, under current storage conditions this is unlikely to occur.

However, a loss of tank integrity would result in contamination of the immediate environment inside the FEMP site. This release would pose a potential threat to unprotected workers, as well as members of the hazardous material cleanup crews and various flora and fauna exposed to the corrosive liquid.

Under this removal action, the following steps will be taken: 1) survey and mark the boundaries of the area to be addressed, 2) transport the Tank Car, 3) remove its contents, 4) decontaminate and dispose of the Tank Car, and 5) collect and analyze soil samples. Contamination that may exist beyond the boundary of the Tank Car area is not included in this removal action. The management of any contaminated soils beyond the boundary will be addressed in the final remediation of Operable Unit 5.

The Nitric Acid Tank Car and its contents will be managed as mixed low-level waste. Analysis of the Tank Car's contents has revealed that the contents are a hazardous waste because of the characteristic of corrosivity and a radioactive waste because of low levels of uranium. Since chromium has been found in the nitric acid in the tank car, it will be processed along with the current volumes of contaminated acid being processed as part of another removal action, Removal Action No. 20, Stabilization of Uranyl Nitrate Inventories.

To the extent practicable, the Nitric Acid Tank Car removal action will utilize existing procedures to maximize technical and cost effectiveness. These procedures and protocols have been developed for related actions, including Removal Action No. 12, Safe Shutdown Procedures and Protocols; Removal Action No. 17, Improved Storage of Soil and Debris, and Removal Action No. 9, Removal of Waste Inventories.

It is anticipated that Safe Shutdown personnel will perform all activities necessary to complete the closure and removal of the Tank Car. The specific procedures that are applicable to the closure and removal of the Tank Car include:

- Movement of hazardous waste
- Establishment and control of satellite accumulation areas
- Hazardous material spill cleanup
- Preparation and transfer of uncharacterized waste to the controlled holding area

In addition, the management of soil and debris that may be generated by the Nitric Acid Tank Car and Area Removal Action is detailed in the work plan for Removal Action No. 17. The activity concentrations for radiological elements are specified in the Removal Action No. 17 Work Plan. Removal Action No. 9 addresses the procedures required for packaging, shipping and disposing of low-level radioactive wastes generated by production, maintenance and construction activities at the FEMP.

The disposal of the Nitric Acid Tank Car may be governed by Removal Action No. 9 if decontamination efforts cannot remove this equipment from the low-level radioactive waste category.

Background

When the FEMP was producing uranium metal, nitric acid was an important process chemical. It was a primary chemical used in the formation of uranyl nitrate hexahydrate (UNH) solution and subsequently was chemically transformed into uranium tetrafluoride. Nitric acid also was used throughout the production area for acid cleaning and metal pickling operations. From 1975 until 1981, more than 56 million pounds of concentrated nitric acid had been purchased.

During peak production, the Tank Car (designated as DODX17135) was used as an efficient means of temporary storage of nitric acid. The tank car provided 100,000 pounds of mobile storage capacity, and was normally kept on a rail siding until either its contents or storage capacity were needed elsewhere on site. Following acid transfers, the car was returned to the siding. The Tank Car has been in its present location, unused, for approximately 6 years.

The Nitric Acid Tank Car is located on a railway siding in the northeast corner of Operable Unit 3.

Overview of Community Concerns

In preparing this addendum, transcripts of community meetings held on: January 31, 1989; May 15, 1989; October 24, 1989; February 20, 1990; May 22, 1990; September 25, 1990; December 11, 1990; March 19, 1991; July 16, 1991; and October 29, 1991; February 25, 1992; July 21, 1992, and November 9, 1992 were reviewed. Also reviewed were transcripts from the RI/FS Environmental Impact Statement scoping meetings held on June 12 and 13, 1990.

A 45-day public comment period for the Nitric Acid Tank Car and Area Removal Action was held from November 4 - December 18, 1992. The announcement ran in three local newspapers. There were no oral or written comments submitted.

Highlights of Community Relations Activities

Community concerns regarding the Nitric Acid Tank Car and Area Removal Action suggest an active FEMP community relations effort with the following objective:

- **Maintain an active effort to keep interested community members informed throughout the implementation of the Nitric Acid Tank Car and Area Removal Action.**

The following specific activities have been identified to support the community relations objective for this removal action:

1. Prepare one or more fact sheets or updates for the purpose of providing information about the removal action and answering key concerns about the Nitric Acid Tank Car and Area at the FEMP and distribute them at the quarterly public meetings.
2. Devote some portion of future community meetings to this issue; update the RI/FS exhibit to include new information as it becomes available. (Community meetings are held at regular intervals on dates selected by DOE.)
3. Include coverage about the Nitric Acid Tank Car and Area Removal Action in the Fernald Project Cleanup Report as needed during the removal action.
4. Offer a roundtable presentation on the Nitric Acid Tank Car and Area.
5. Provide a 24-hour phone line at the FEMP so concerned citizens can contact a FEMP representative during a time of alarm. The number is 513-738-6295, which is FEMP Security.
6. Make appropriate additions to the Administrative Record and publicize their availability at the Public Environmental Information Center, JAMTEK Building, 10845 Hamilton-Cleves Highway, Harrison, Ohio, 45030.

Timetable

The preparation of materials for all community relations activities will be tied to the removal action schedules. For a complete list of schedule dates and activities, please see the Nitric Acid Tank Car and Area Work Plan, which is in the Administrative Record, located at the Public Environmental Information Center. The activities will be scheduled to provide the maximum flexibility and information to the public. The work plan for this removal action has been approved by EPA. Discussions and updates on the status of the removal action will be given at future public meetings.

REFERENCES

1. U.S. Department of Energy, "Fernald Environmental Management Project Nitric Acid Tank Car and Area Removal Action Work Plan and Closure Plan Information and Data Package," October 1992.