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TRANSMITTAL OF THE SIGNED OPERABLE UNIT 3 RECORD OF DECISION

08/23/96

DOE-1249-96
DOE-FN EPAS
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ROD

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Department of Energy

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

AUG 2 3 1996
DOE-1249-96

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:

TRANSMITTAL OF THE SIGNED OPERABLE UNIT 3 RECORD OF DECISION

The purpose of this letter is to submit the enclosed Operable Unit 3 (OU3) Record of Decision (ROD) for the signature of the U.S. Environmental Protection Agency (U.S. EPA) Region V Director of the Superfund Division. This ROD was signed by the Department of Energy, Ohio Field Office (DOE-OH) on August 21, 1996.

The final responses to your agency's comments on this document are also enclosed. The finalization of this last ROD is a significant milestone for our site. A Remedial Design/Remedial Action Work Plan for the remedy documented in this ROD will be submitted to your office within 60 days of the signature date of this ROD.

If you have any questions, please contact John Trygier at (513) 648-3154.

Sincerely,

Johnny Reising

Johnny W. Reising
Fernald Remedial Action
Project Manager

FEMP:Hall

Enclosures: As Stated

000001

Recycled and Recyclable

cc w/encs:

R. L. Nace, EM-425/GTN
G. Jablonowski, USEPA-V, 5HRE-8J
R. Beaumier, TPSS/DERR, OEPA-Columbus
F. Bell, ATSDR
D. S. Ward, GeoTrans
R. Vandergrift, ODOH
S. McLellan, PRC
T. Hagen, FERMCO/65-2
J. Harmon, FERMCO/90
AR Coordinator/78

cc w/o enc:

C. Little, FERMCO/2

OPERABLE UNIT 3
RECORD OF DECISION
FOR FINAL REMEDIAL ACTION

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
FERNALD, OHIO

AUGUST 1996

U.S. DEPARTMENT OF ENERGY
FERNALD AREA OFFICE

FINAL

Acknowledgement

This Record of Decision is the last of six RODs for the Fernald site, drawing the RI/FS phase of remediation to a close. As a result of intense efforts, this project was able to be completed significantly ahead of schedule to the satisfaction of the EPAs. The major contributors to the success of this document are:

DOE-FN
John Hall
John Trygier

FERMCO
Todd Clark
Paul Courtney
Lew Goidell
Lyle Hampshire

DECLARATION STATEMENT

SITE NAME AND LOCATION

Fernald Environmental Management Project (FEMP) Site, formerly known as the Feed Materials Production Center -- Operable Unit 3 (OU3), Fernald, Hamilton County, Ohio

STATEMENT OF BASIS AND PURPOSE

This Record of Decision (ROD) presents the selected final remedial action for OU3 at the U.S. Department of Energy FEMP Site in Fernald, Ohio. OU3, which is one of five operable units at the FEMP, consists of the former Production Area and production-associated buildings and equipment, including all above-, at-, and below-grade improvements, containerized materials, storage pads, roads, railroad tracks, above- and below-ground tanks, and utilities. This remedial action was selected in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (hereinafter jointly referred to as "CERCLA"), and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

The decision presented herein is based on the information available in the administrative record for OU3 and maintained in accordance with CERCLA. The major documents prepared through the CERCLA process include the OU3 Remedial Investigation/Feasibility Study (RI/FS) Work Plan Addendum, the OU3 Record of Decision for Interim Remedial Action (IROD), the OU3 RI/FS Report, and the Proposed Plan for the OU3 Final Remedial Action. This decision is also based on comments received subsequent to the public hearing held on April 23, 1996, at The Plantation, in Harrison, Ohio, following issuance of the OU3 RI/FS Report and Proposed Plan. All comments received during the public comment period on the Proposed Plan were reviewed and considered in the development of this ROD. Based on these comments, the public generally accepts the proposed remedy. The State of Ohio concurs with the selected remedy and the applicable or relevant and appropriate requirements (ARARs) put forth in this ROD for OU3.

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from OU3, if not addressed by implementing the response action selected in this ROD, may present an imminent and substantial endangerment to public health, welfare, or the environment.

DESCRIPTION OF THE SELECTED REMEDY

The selected remedy for OU3 is "Selected Material Treatment, On-Property Disposal, and Off-Site Disposition" of material generated by the OU3 interim remedial action and OU3 removal actions. The OU3 selected remedy:

- Provides for unrestricted/restricted release of materials, as economically feasible, for recycling, reuse, or disposal;
- Permits treatment of materials to meet the on-site disposal facility (OSDF) and/or off-site disposal facility waste acceptance criteria (WAC);
- Requires off-site disposal of process residues, product materials, and process-related metals;
- Requires off-site disposition of acid brick and concrete from specific locations and any other materials exceeding the OSDF WAC;
- Permits disposal of remaining OU3 wastes in the OSDF;
- Imposes administrative controls through deed restrictions and access controls; and
- Incorporates post-remediation activities that includes long-term monitoring and maintenance of the OSDF and operation of a groundwater monitoring network to evaluate the performance of the OSDF.

In addition to the selected remedy, this ROD also:

- Incorporates the decisions provided in the IROD so as to provide for an integrated implementation of the respective decisions;

- Adopts the procedures and disposition decisions of Removal Action 9 to continue disposition of the products, residues, and nuclear materials generated during site operations; and

- Adopts prior decisions made for management of Safe Shutdown (Removal Action 12), management of asbestos abatement (Removal Action 26), and management of debris (Removal Action 17).

STATUTORY DETERMINATIONS

The selected remedy is protective of human health and the environment, complies with federal and state requirements that are applicable or relevant and appropriate (ARAR) to the remedial action (or justifies a CERCLA waiver), and is cost effective. A waiver by the United States Environmental Protection Agency (U.S. EPA) is required for State of Ohio solid waste disposal requirements to allow waste disposal over a high-yield sole-source aquifer. A waiver is granted pursuant to CERCLA 121(d)(4)(D) that allows a waiver of an ARAR if "the remedial action selected will attain a standard of performance that is equivalent to that required under the otherwise applicable standard, requirement, criteria, or limitation, through the use of another method or approach." The justification for this waiver is provided in this ROD and is supported by the administrative record for OU3. By signing this ROD, the U.S. EPA grants the waiver required to implement the on-site disposal element of the OU3 final remedial action.

The OU3 selected remedy uses permanent solutions and alternative treatment technologies to the maximum extent practicable. The selected remedy, coupled with the OU3 IROD and on-going programmatic removal actions, fully addresses the remediation of OU3 and satisfies the statutory preference for remedies that employ treatment that reduces contaminant toxicity, mobility, or volume as a principal element.

Because this remedy will result in contaminants remaining on-site in an engineered disposal facility, a review will be conducted no less than five years after commencement of the remedial actions to ensure that the remedy continues to provide adequate protection of human health and the environment. The results of each five-year evaluation will be provided to the U.S. EPA and the public for review and comment.

William E. Muno
Director, Superfund Division
U.S. Environmental Protection Agency, Region V

Date

Glenn Griffith

8-21-96

for J. Phil Hamric
Manager, Ohio Field Office
U.S. Department of Energy

Date

OPERABLE UNIT 3

RECORD OF DECISION FOR FINAL REMEDIAL ACTION

FINAL

AUGUST 1996

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LIST OF ACRONYMS AND ABBREVIATIONS

ACM	asbestos-containing material
ARAR	applicable or relevant and appropriate requirement
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
D&D	decontamination and dismantlement
DOE	United States Department of Energy
FEMP	Fernald Environmental Management Project
FFCA	Federal Facilities Compliance Agreement
FRESH	Fernald Residents for Environmental Safety and Health
FS	feasibility study
IROD	Record of Decision for Interim Remedial Action
K_d	coefficient of adsorption/desorption
LDR	land disposal restriction
LLW	low-level radioactive waste
MCL	maximum contaminant level
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NTS	Nevada Test Site
OAC	Ohio Administrative Code
Ohio EPA	State of Ohio Environmental Protection Agency
ORC	Ohio Revised Code
OSDF	On-Site Disposal Facility
PCB	polychlorinated biphenyl
RCRA	Resource Conservation and Recovery Act
RD/RA	remedial design/remedial action
RI	remedial investigation
RAO	remedial action objective
ROD	record of decision
S.R.	State Route
SWIFTS	Sitewide Waste Inventory Forecasting and Tracking System
Tc	technetium
TCLP	toxicity characteristic leaching procedure
TSCA	Toxic Substances Control Act
U.S. EPA	United States Environmental Protection Agency
WAC	waste acceptance criteria

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1.0 BACKGROUND AND HISTORY

This Record of Decision (ROD) documents the planned final remedial activities for Operable Unit 3 (OU3) at the Fernald Environmental Management Project (FEMP) site. The site, formerly known as the Feed Materials Production Center, is owned by the United States Department of Energy (DOE) and produced high-purity uranium and thorium products between 1951 and 1989. OU3 addresses the structures (e.g., process buildings, storage pads, warehouses, and above-grade storage tanks), remaining product, and equipment that were contaminated by FEMP production activities and waste management practices.

1.1 Site Location and Description

The FEMP is a 1,050-acre site in a rural, agricultural area approximately 18 miles northwest of downtown Cincinnati, Ohio. The site, shown in Figure 1-1, is near the villages of Fernald, New Baltimore, New Haven, Ross, and Shandon, Ohio, and located west and south of Ohio State Routes (S.R.) 128 and 126, respectively. The street address of the FEMP is 7400 Willey Road, Fernald, Ohio, 45030.

Site surface and subsurface features that are a result of human activity are shown in Figure 1-2, which is an oblique view of OU3 structures located mostly in the 136-acre former Production Area near the center of the FEMP site. Various other subsurface structures, such as the effluent line and groundwater monitoring wells, are also located in the former Production Area. Most of the buildings on-site are generally steel framed with transite siding, concrete block, or pre-engineered with metal siding and roofing.

Most of the facilities and structures rest on a relatively flat plain approximately 580 feet above mean sea level. The site elevation slopes slightly toward Paddys Run, a small intermittent stream on the west side of the site. Natural drainage at the FEMP generally flows from east to west, with the exception of the extreme northeast corner, which drains east toward the Great Miami River. The western portion of the FEMP property lies within the north-south corridor of the 100- and 500-year floodplain of Paddys Run. On-property surface waters are confined to Paddys Run and its unnamed tributaries and total approximately 8.9 acres. Results from a site-wide wetlands delineation indicate a total of 35.9 acres of freshwater wetlands on the site.

The Great Miami Aquifer is the principal aquifer within the FEMP study area and has been designated as a sole-source aquifer under the provisions of the Safe Drinking Water Act. The Great Miami Aquifer has been the primary source of water for local residences and businesses. Until recently, to protect public health, DOE provided bottled water to those whose private wells were impacted by contamination of the Great Miami Aquifer from the FEMP. DOE, in conjunction with local stakeholders, recently completed the installation of alternate drinking water supply lines to permanently replace the affected wells.

The area around the FEMP remains predominantly undeveloped and agricultural, as was the site itself before construction of the production facilities in 1951. Residences, many of them farmsteads, are scattered around the area. Due to the long history of intensive agriculture, there is no nearby land where a natural environment remains intact.

According to the 1990 United States census, the five-mile radius around the FEMP contains an estimated 23,000 people while the eight-county Cincinnati consolidated metropolitan statistical area has a population of more than 1.7 million and a labor force of approximately 920,000. Scattered residences and several villages are located near the FEMP property. Residential units are concentrated in Ross to the northeast, in a trailer park to the east, and

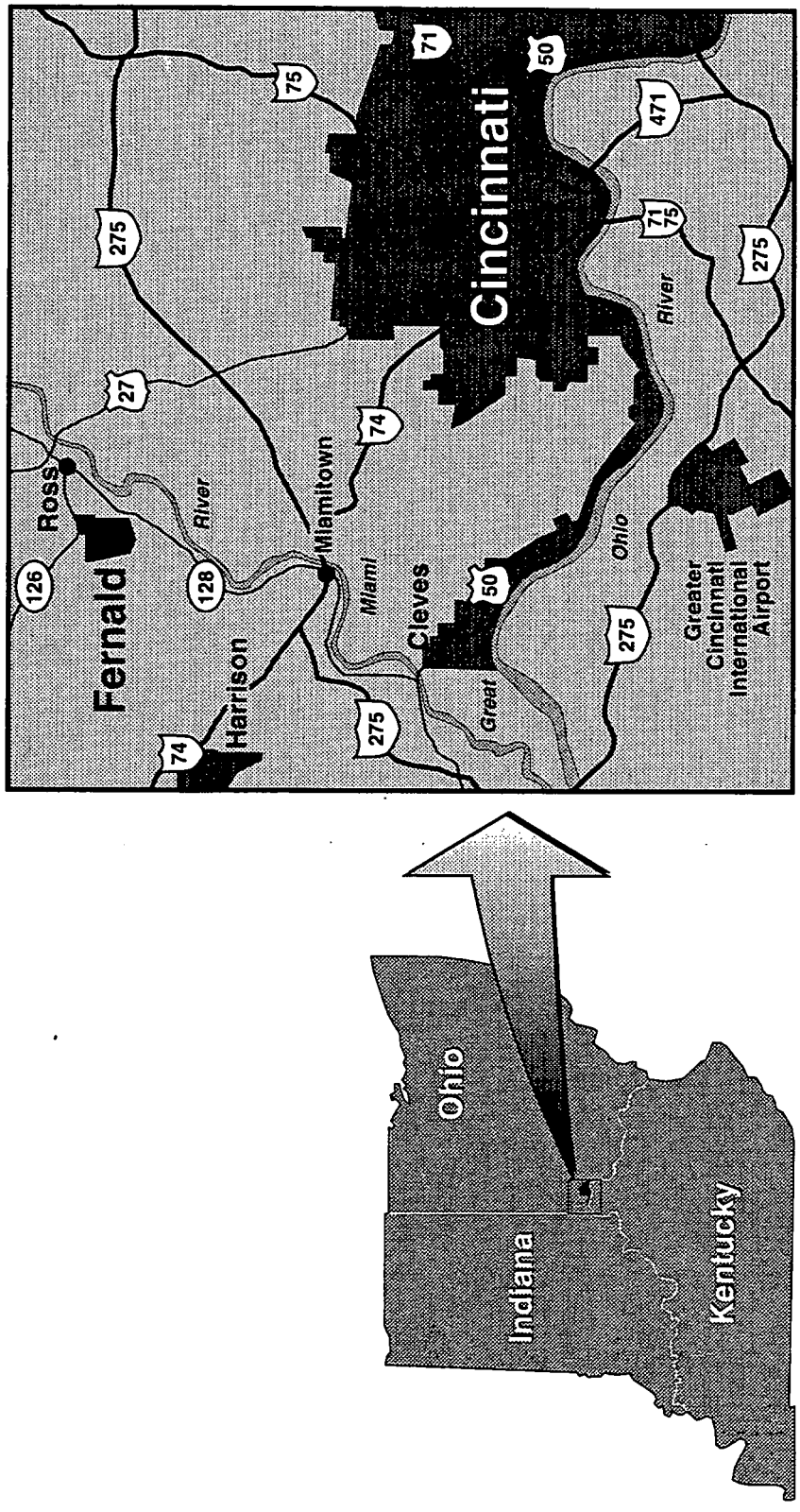
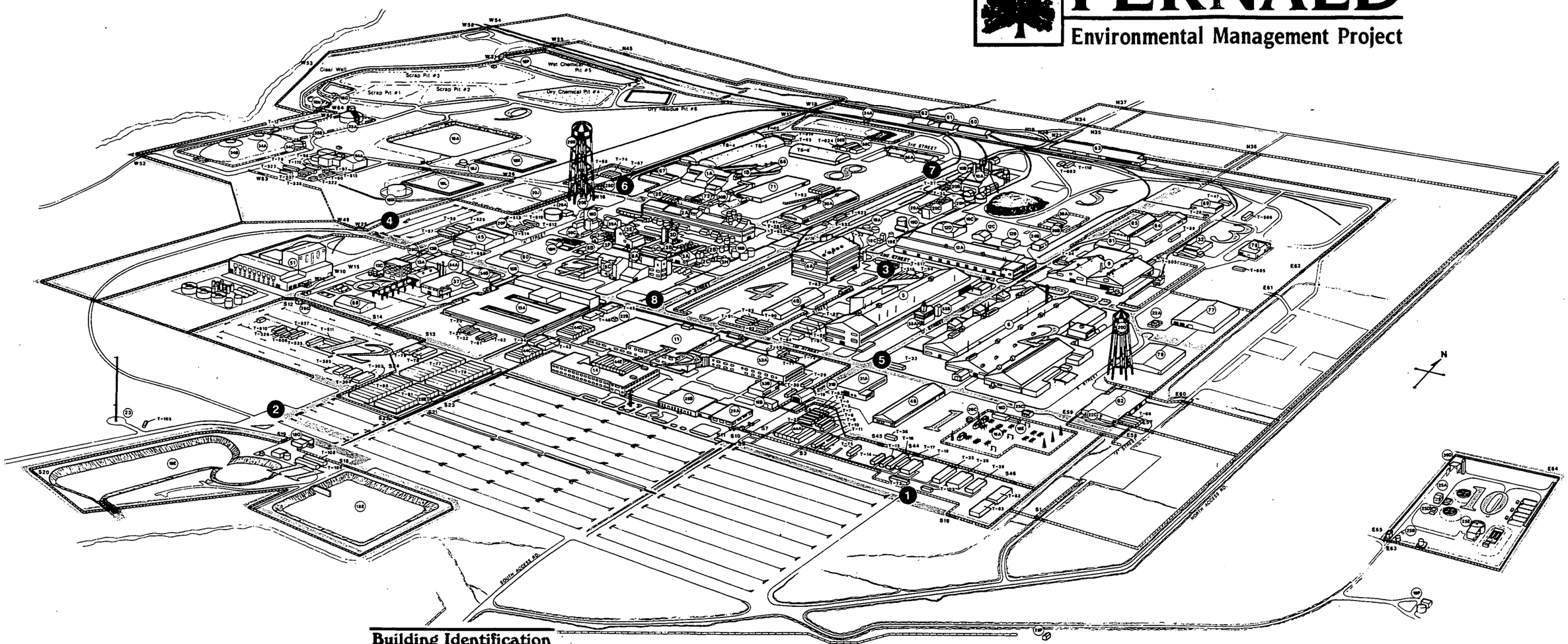


FIGURE 1-1 FEMP FACILITY LOCATION MAP

FERNALD
Environmental Management Project



Building Identification

00	General	6b	Plant 6 Covered Storage Area	13d	Pilot Plant Thonum Tank Farm	19a	Main Metal Tank Farm	26b	Elevated Water Storage Tank	44e	Trailer Complex - 10-Plex	74f	Plant 7 Pad		
1a	Preparation Plant	6c	Plant 6 Electrostatic Precipitator (South)	14a	Administration Building	19b	Pilot Plant Ammonia Tank Farm	26c	Main Electrical Strainer House	45a	Construction Diversion Building	74g	Plant 5 East Pad		
1b	Plant 1 Storage Building	6d	Plant 6 Electrostatic Precipitator (Central)	14b	Bldg. 14 EDG Generator Set	19c	Tank Farm Control House	26e	Security Building	45b	Utility Shed East of Rust Trailers	74h	Plant 5 South Pad		
2a	Ore Refinery Plant	6e	Plant 6 Electrostatic Precipitator (North)	15a	Laboratory	19d	Old North Tank Farm	26b	Human Resources Building	46	Heavy Equipment Garage	74j	Plant 8 Pads		
2b	General/Refinery Sump Control Bldg.	6f	Plant 6 Batch Oil Heat Treat Building	15b	Laboratory Chemical Storage Bldg.	19e	Tank Farm Lime Slitter Bldg.	26c	Guard Post on South End of "D" Street	51	Advanced Waste Water Treatment Facility	74k	Plant 9 Pad		
2c	Bulk Lime Handling Building	6g	Plant 6 Sump Building	16a	Main Electrical Station	20a	Pump Station and Power Center	26d	Guard Post on West End of "2nd" Street	53a	Occupational Safety & Health Building	74l	Building 65 West Pad		
2d	Metal Dissolver Building	6a	Recovery Plant	16b	Electrical Substation	20b	Water Plant	26e	Guard Post at T-41	53b	In-Vivo Building	74m	Building 65 East Pad & R.R. Dock		
2e	KFS Storage and Pump House	6b	Plant 6 Maintenance Building	16c	Electrical Panels & Transformer	20c	Cooling Towers	26f	Skuer Range Bldg.	54a	UF6 to UF4 Reduction Facility I	74n	Building 12 North Pad		
2f	Cold Side Ore Conveyor	6c	Rotary Kiln/Drum Reconditioning	16d	Main Electrical Switch House	20d	Elevated Storage Tank (Potable H_2O)	26g	Guard Post South of Bldg. 51	54b	Pilot Plant Warehouse	74o	Decontamination Pad		
2g	Hot Side Ore Conveyor	6d	Plant 6 Railroad Filter Building	16e	Main Electrical Transformers	20e	Well House #1	26h	Guard Post South of K-65 Area	54c	Pilot Plant Dissociator Shelter	74p	Plant 8 Old Metal Dissolver Pad		
2h	Conveyor Tunnel (from Plant 1)	6e	Drum Conveyor Shelter	16f	Trailer Substation #1	20f	Well House #2	26i	Guard Post Northwest of Bldg. 45	55a	Slag Recycling Plant	74r	Plant 8 North Pad		
2i	Maintenance Building	6f	Plant 6 Old Drum Washer	16g	Trailer Substation #2	20g	Well House #3	30a	Chemical Warehouse	55b	Slag Recycling Pit/Elevator	74s	Building 63 West Pad		
2j	Ozone Building	6g	Special Products Plant	16h	10 Pieces North Substation	20h	Process Water Storage Tank	30b	Drum Storage Warehouse	56a	CP Storage Warehouse	74t	Plant 1 Storage Pad		
2k	Control House	6h	Plant 9 Sump Treatment Facility	16j	10 Pieces South Substation	20i	# Lime Slurry Pits	31a	Engine House (Garage)	56b	Storage Shed (West)	74u	Pilot Plant Pad		
2l	HAR Towers	6i	Plant 9 Dust Collector	16k	EDN Surge Lagoon	22a	Gas Meter Building	31b	Old Truck Scale	56c	Storage Shed (East)	74v	Laboratory Pad		
2m	Hot Refinery Building	6j	Plant 9 Substation	16l	General Sump	22b	Storm Sewer Lift Station	32a	Magnesium Storage Building	60	Quonset #1	74w	Incinerator Bldg. Pad		
2f	Hanshaw Digression Fume Recovery	6k	Plant 9 Cylinder Shed	16c	Coal Pile Runoff Basin	22c	Truck Scale	32b	Bldg. 32 Covered Loading Dock	61	Quonset #2	77	Finished Products Warehouse		
2g	Refrigeration Building	6l	Plant 9 Electrostatic Precipitator	16d	Bioderentification Towers	22d	Scale House & Weight Scale	34a	- K-63 Storage Tank - North	62	Quonset #3	78	New D & D Facility		
2h	Refinery Sump	10a	Boiler Plant	16e	Storm Water Retention Basin	22e	Utility Trench to Pit Area	34b	- K-63 Storage Tank - South	63	KC-2 Warehouse	79	Plant 8 Warehouse		
3i	Combined Raffinate Tanks	10b	Boiler Plant Maintenance Building	16f	Pit 5 Sluice Gate	23	Meteorological Tower	34c	- RTS Building	64	Thonum Warehouse	80	Plant 8 Warehouse		
3k	Old Cooling Water Tanks	10c	Wet Salt Storage Bin	16g	Cleanwert Pump House	24a	Railroad Scale House	35a	- Metal Oxide Storage Tank - North	65	(Old) Plant 5 Warehouse	81	Plant 9 Warehouse		
3l	Electrical Power Center Bldg.	10d	Contaminated Graphite/Oil Burn Pad	16h	EDN Effluent Treatment Facility	24b	Railroad Engine House	35b	- Metal Oxide Storage Tank - South	66	Drum Reconditioning Building	82a	Receiving & Incoming Materials Inspection Area		
4a	Green Salt Plant	10e	Utilities Heavy Equipment Building	16j	Methanol Tank	25a	Chlorination Building	37	Pilot Plant Annex	67	Plant 1 Thorium Warehouse	82b	Fuel Loading / Unloading Facility		
4b	Plant 4 Warehouse	10f	Southwest Boiler House	16k	Low Nitrate Tank	25b	MH #173	38a	Propane Storage	68	Pilot Plant Warehouse	88	Cleanwell Line		
5a	Metals Production Plant	11	Service Building	16l	High Nitrate Tank	25c	Sewage Lift Station Building	38b	Cylinder Filling Station	69	Decontamination Building	89	Parking Lots		
5b	Plant 5 Ingot Pickling	12a	Maintenance Building (Main)	16m	High Nitrate Storage Tank	25d	U.V. Disinfection Building	38c	Incinerator Building	71	General In-Process Storage Warehouse	94a	CRU 4 Vitrification Pilot Plant		
5c	Plant 5 Electrical Substation	12b	Cylinder Storage Building	16n	- Waste Pit Area Storm Water Runoff Control	25e	Digester Control Building	38d	Waste Oil Decant Shelter	72	Drum Storage Building	176	Interim Office Space		
5d	West Derby Breakout / Slag Ladling	12c	Lumber Storage Building	16o	Dissolved Oxygen Bldg.	25f	Sludge Drying Beds	38e	Incinerator Sprinkler Riser House	74a	Plant 2 East Pad	177	Interim Office Space		
5e	Plant 5 Floor Building	12d	Maintenance Bldg. Warehouse	16p	South Plume Interim Treatment Bldg.	25g	Primary Settling Basins	38d	Sewage Treatment Plant Incinerator	74b	Plant 2 West Pad	180	Interim Office Space		
5f	Plant 5 Covered Storage Pad	13a	Pilot Plant Wet Side	16r	Outfall Line Pit	25h	Trickling Filters	44a	Trailer Complex - 6-Plex	74c	Plant 6 East Pad	181	Interim Office Space		
5g	Plant 5 Ingot Storage Shelter	13b	Pilot Plant Maintenance Building	16s	Recovery Well System Control Bldg.	25i	10 Piece Sewer Lift Station	44c	Trailer Complex - 7-Plex - South	74d	Plant 6 West Pad				
6a	Metals Fabrication Plant	13c	Sump Pump House	16t	Public Water Supply Meter House	26a	Pump House - H.P. Fire Protection	44d	Trailer Complex - 7-Plex - North	74e	Plant 4 Pad				

* OU1 Components # OU2 Components ~ OU4 Components

GRAPHICS 34##

FIGURE 1-2 FEMP SITE MAP

in New Baltimore farther to the southeast. No sensitive sub-populations occur within one mile of the FEMP except for 29 children who live in the area. Six schools that enroll approximately 3,300 students, two daycare centers that enroll an estimated 160 children, and residences that house approximately 8,100 children are within five miles of the FEMP. Recreational facilities are centered in the Miami Whitewater Forest to the south. Two youth camps operated in the area, but were recently closed.

Commercial activity is generally greatest in the village of Ross, approximately three miles to the northeast. Industrial use concentrations near the FEMP include a small industrial park to the south along S.R. 128, industries located in the village of Fernald, and industries located along the site's western boundary.

1.2 History of Site

In January 1951, the New York Operations Office of the Atomic Energy Commission selected a 1,050 acre site near Fernald, Ohio to construct a facility to produce uranium products. Construction operations were initiated in May 1951. The facility was designated the Feed Materials Production Center prior to initiation of on-property pilot operations in October 1951. Production operations began in 1952 and continued until July 1989, at which time operations were placed on standby to focus on environmental compliance and waste management initiatives. Following appropriate congressional authorizations, the facility was formally closed in June 1991. To reflect a new site mission focused on environmental restoration, the name of the facility was changed to the FEMP in August 1991.

In 1985, the United States Environmental Protection Agency (U.S. EPA) issued a Notice of Noncompliance to DOE, identifying its concerns over potential environmental impacts associated with the FEMP's production activities, which included the release of uranium and other substances to the air, surface soil, and water. In addition, large quantities of low-level radioactive waste and hazardous wastes were (and continue to be) in storage at the site. Conferences were subsequently held between DOE and U.S. EPA to discuss the conditions at the FEMP and to identify the steps proposed by DOE to achieve and maintain compliance with environmental regulations and standards. These steps are documented in a Federal Facilities Compliance Agreement (FFCA), signed by DOE and U.S. EPA on July 18, 1986. Pursuant to the FFCA, a site-wide remedial investigation and feasibility study (RI/FS) was initiated in July 1986 pursuant to the Comprehensive Emergency Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986 (hereinafter jointly referred to as CERCLA).

In 1988, DOE entered into a Consent Decree with the Ohio Environmental Protection Agency (Ohio EPA) that provided for the management of water pollution and hazardous wastes. This decree was amended in 1993 by the Stipulated Amendment to the Consent Decree (Ohio 1993).

A series of technical discussions was held with the U.S. EPA and the Ohio EPA, which led to the development of an RI/FS Work Plan (DOE 1988). This document identified 27 units of the FEMP to be investigated during the RI/FS. Several modifications eventually increased the total to 39 units. In the course of the investigation, it became apparent that, for technical and program management purposes, these 39 units needed to be categorized and grouped accordingly. The FEMP was subsequently divided into five operable units to promote a more structured and expedient cleanup. The final RI/FS Work Plan was approved in May 1988.

In November 1989, the FEMP was placed on the National Priorities List (NPL), a list of sites identified by the U.S. EPA for possible long-term remedial action under CERCLA. The NPL

listing was considered appropriate because of the federal government's concern over the real or potential impacts to human health and the environment associated with the documented past releases of hazardous substances from the facility.

In conformance with the statutory requirements of CERCLA, the DOE entered into a Consent Agreement with the U.S. EPA in 1990. The Consent Agreement established the procedural and schedule requirements for investigating the FEMP site, using the CERCLA-defined RI/FS process, to determine the most prudent cleanup actions that would address identified environmental concerns at the facility. The Consent Agreement also formally identified the FEMP operable units. The Consent Agreement was subsequently amended in 1991, modifying some of the schedules for completing the RI/FS and significantly revising the OU3 definition to include the structures at the site. The Amended Consent Agreement (EPA 1991a) established that separate RI/FS documentation, including RI and FS Reports, Proposed Plans, and RODs, were to be prepared for each operable unit. The operable unit concept is in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (EPA 1990) and is used in U.S. EPA's RI/FS guidance (EPA 1988) to define logical, physical groupings of environmental areas of concern at a site.

As noted, the division of the Fernald site into five operable units in 1988 was done in a manner that promoted an expedient evaluation and selection of appropriate remedial actions. The five operable units were formed based on logical groupings of facilities, waste areas, or environmental media. Except for OU3, which is defined in Section 1.0, the definitions of the other operable units at the FEMP are provided below:

- Operable Unit 1 (OU1) addresses the Clearwell, burn pit, and six waste pits, plus the berms, liners, and soil (approximately three feet deep) beneath them;
- Operable Unit 2 (OU2) addresses the solid waste landfill, lime sludge ponds, flyash piles and other South Field disposal areas, and the berms, liners, and soil within the unit's boundary;
- Operable Unit 4 (OU4) addresses Silos 1, 2, 3, and 4, their berms and underlying soil and decant sump tank system; and
- Operable Unit 5 (OU5) addresses the environmental media that includes soil, surface water and sediment, groundwater and perched water, and flora and fauna.

The existing site strategy for cleanup is the remediation of each individual operable unit with integration among the operable units with respect to treatment, disposition options, and land use. The selected final remedial action for OU3 represents a significant portion of the remedial action for the site as a whole. Five RODs have been finalized for the FEMP; the date when each operable unit ROD was signed by the U.S. EPA is as follows:

- OU3 ROD for Interim Remedial Action signed by U.S. EPA on July 22, 1994;
- OU4 ROD signed by U.S. EPA on December 7, 1994;
- OU1 ROD signed by U.S. EPA on March 1, 1995;
- OU2 ROD signed by U.S. EPA on June 8, 1995; and
- OU5 ROD signed by U.S. EPA on January 31, 1996.

1.3 History of Operable Unit 3

OU3 addresses the above- and below-grade improvements on the FEMP property not covered by the other operable units. The remediation of OU3 does not include the soil and groundwater beneath the various facilities; the remediation of these environmental media is being conducted as part of OU5.

Following the formal cessation of the production mission in August 1991, the FEMP was formally closed and the mission of the facility was officially redirected towards environmental restoration. Many of the production facilities (process lines, drumming stations, etc.) and equipment still contained quantities of raw, intermediate, and finished production-related products, which were termed "holdup materials." The Safe Shutdown program was initiated as a removal action (Removal Action 12) to remove and properly disposition all nuclear product and in-process residue materials, excess supplies, chemicals, and associated process equipment that were abandoned in place when the FEMP stopped production in 1989. Subsequent to removal, the materials have been, and continue to be, transported to the DOE Nevada Test Site (NTS) for disposal.

The Safe Shutdown program also provides for the isolation and de-energizing of former production-related equipment and utilities. For a given building, safe shutdown is to be completed prior to the start of decontamination and dismantlement (D&D) activities for that building. On a programmatic basis, the Safe Shutdown program is being incorporated into the OU3 final remedial action. For more information on the Safe Shutdown program and other programmatic removal actions, see Section 2.2.

1.3.1 Interim Remedial Action

The former production buildings are at or beyond their design lives and no future mission exists for the buildings and structures. These facts led to the decision, documented in the OU3 Record of Decision for Interim Remedial Action (IROD) (DOE 1994) for the D&D of all above- and below-grade buildings and facilities. The IROD also provided that the ROD for the OU3 final remedial action would establish the strategy for the final disposition of the materials generated from the interim remedial action. The specific activities associated with the interim remedial action are:

- Decontamination of more than 200 structures by removing loose contamination;
- Dismantlement of the above-grade structures;
- Removal of foundations, storage pads, ponds, basins, and underground utilities and other at- and below-grade structures;
- Off-site disposal of no more than ten percent, by volume, of the nonrecoverable or nonrecyclable waste and debris generated from structural D&D until the issuance of the OU3 final remedial action ROD; and
- Interim storage of the remaining waste and debris until a final decision is reached for treatment and/or disposition.

As referenced in the first bullet, all OU3 buildings and structures will first be decontaminated and then dismantled. The sequence and schedule by which the above-grade portions of all OU3 structures will undergo D&D were initially outlined in the OU3 Remedial Design Prioritization and Sequencing Report (PSR) (DOE 1995a). A revised D&D sequence and

schedule for implementation plan submittals were provided to U.S. EPA and Ohio EPA on May 17, 1996 and were approved. At- and below-grade remediation of OU3 structures, storage pads, etc. will be integrated with soil remediation and will be sequenced and scheduled as part of the OU5 remedial design/remedial action (RD/RA) process.

As stated in the fourth bullet above, the IROD allowed for the disposition of OU3 materials prior to the issuance of the OU3 final remedial action ROD, but imposed a ten percent limit. As of August 1996, the only materials generated during the OU3 interim remedial action that have been dispositioned off-site are 20 Sea/Land containers of non-recoverable materials (primarily process-related equipment) from Building 4A that were shipped to NTS. This equates to approximately 10,800 cubic feet (unbulked) or 0.14 percent of OU3 materials, by volume, which is well below the IROD allowance.

1.3.2 Remedial Investigation/Feasibility Study Report and Proposed Plan

The OU3 RI/FS Report (DOE 1996a) described the nature of the chemical and radiological contamination of OU3 materials and the development and evaluation of alternatives for the final disposition of material generated during the OU3 interim remedial action. The RI/FS process supported the development of quantity estimates, based upon material types and contamination levels, for contaminated facilities and structures that will be dismantled during the interim remedial action. The Proposed Plan for the Operable Unit 3 Final Remedial Action (DOE 1996b), which identified the preferred remedial alternative and invited public comment, was issued on April 3, 1996.

2.0 SCOPE AND ROLE OF FINAL REMEDIAL ACTION

The scope of the OU3 final remedial action addresses the final disposition of materials generated by the OU3 interim remedial action. The purpose of the final remedial action is to prevent unacceptable current and future exposure to residual contamination remaining on the OU3 materials and to mitigate potential releases of hazardous substances to the environment.

The adopted FEMP site-wide remedy incorporates a balanced approach to waste disposition that recognizes the technical and economic impracticality of removing and disposing of all contaminated FEMP materials at an off-site disposal facility. Materials contaminated with relatively higher levels of radiological and chemical contaminants (e.g., OU1 waste pit materials, OU3 "legacy wastes," OU4 silo wastes, etc.), deemed to represent the principal threat at the FEMP, will be treated, if required, and shipped off-site for disposal. Secondary threat materials, exhibiting relatively lower concentrations of contaminants, will be permanently dispositioned at the FEMP.

The OU3 final remedial action will address the principal threat associated with OU3 by incorporating the activities associated with the four programmatic removal actions discussed in Section 2.2 of this document. As presented in the OU3 RI/FS Report, materials deemed to be the principal threats for OU3, consisting primarily of legacy wastes, are scheduled for off-site disposal under Removal Action 9. Likewise, materials generated by safe shutdown activities (Removal Action 12) will be dispositioned off-site.

One of the primary programmatic objectives of the OU3 final remedial action is the integration of ongoing OU3 removal actions, the OU3 interim remedial action, and remedial actions being conducted by Operable Units 1, 2, 4, and 5. The integration of each of these remediation activities is necessary to ensure the continuity and concerted approach towards achieving

site-wide remediation goals. The key aspects of integrating these actions with the OU3 final remedial action are discussed in the following subsections.

2.1 Integration of the Interim and Final Remedial Actions

The scope of the OU3 interim remedial action consists primarily of structural D&D and interim storage of, and limited off-site disposal of, two material categories: nonrecoverable and nonrecyclable materials, and recyclable or reusable materials. Materials in the first category would either be stored on an interim basis or transported directly to a disposal facility. Materials in the second category would be released to certain facilities that are able to recycle or reuse those materials, or be placed in interim storage. The IROD specifies that only ten percent of the total volume of materials generated from the D&D of OU3 facilities could be dispositioned off-site prior to the issuance of the OU3 final remedial action ROD. Requirements specifically related to the selected final remedy, as documented in this ROD, will be integrated with the OU3 interim remedial action to allow effective segregation of materials in order to meet the requirements of the selected treatment and/or disposition options.

This ROD incorporates, by reference, the decisions provided in the IROD so as to provide for an integrated implementation of the respective decisions. To ensure the proper integration of the OU3 interim and final remedial actions, the OU3 Remedial Design/Remedial Action Work Plan for Interim Remedial Action (DOE 1995b) will be superseded by a work plan that combines existing and updated implementation strategies for the OU3 interim remedial action with strategies developed for implementing the OU3 final remedial action. This OU3 integrated RD/RA work plan will be submitted to U.S. EPA and Ohio EPA within 60 days following the issuance of this final remedial action ROD.

2.2 Integration of Operable Unit 3 Removal Actions

Since production operations were halted in 1989, 30 removal actions have been identified and used to address immediate threats from the facilities, structures, and contaminants. These actions have been implemented as interim measures until the interim and final remedial actions can fully address the threats to human health and the environment. The scope of four programmatic removal actions will be integrated with the OU3 final remedial action. The four removal actions are as follows:

- Removal Action 9 - Removal of Waste Inventories;
- Removal Action 12 - Safe Shutdown;
- Removal Action 17 - Improved Storage of Soil and Debris; and
- Removal Action 26 - Asbestos Abatement.

These four removal actions and their coordination with the interim remedial action were introduced in the OU3 Proposed Plan/Environmental Assessment for Interim Remedial Action (DOE 1993a) and were further detailed in the OU3 RD/RA Work Plan for Interim Remedial Action. By reference in this ROD, the scope of each of these removal actions (including decisions, planning, and procedures) will be incorporated into the OU3 final remedial action. The general scope of each of these removal actions, and generally how each one will be integrated into the scope of the OU3 final remedial action, is discussed below.

Removal Action 9 - Removal of Waste Inventories

Removal Action 9 involves the safe, off-site disposal of existing waste inventories. It was initiated in August 1985 to provide for the transfer of inventoried and newly generated waste to the NTS. The program is defined by various procedures which include the characterization, treatment, packaging, and transportation of waste in a manner that ensures full compliance with DOE Orders, Department of Transportation shipping requirements, and NTS waste acceptance criteria (WAC). As of June 21, 1996, approximately 4,550,000 cubic feet or 615,000 drum equivalents have been transferred from the FEMP to the NTS for disposal. The FEMP currently has an inventory of low-level waste, mixed waste, and polychlorinated biphenyl (PCB) wastes generated as a result of production operations, facility maintenance, upgrades, and cleanup activities. These materials are actively undergoing disposition to off-site disposal locations. Mixed waste will be treated in accordance with the Site Treatment Plan (DOE 1995c) as specified in the FFCA. The procedures and disposition decisions of Removal Action 9 are being adopted by this final remedial action ROD and will be incorporated by reference into the OU3 integrated RD/RA work plan for continued implementation during the OU3 final remedial action.

Removal Action 12 - Safe Shutdown

Removal Action 12 was created to provide the planning, engineering, and program control for the removal and proper disposition of in-process residue materials, excess supplies, chemicals, and associated process equipment that remained when the FEMP stopped production in 1989. The primary goal of this removal action is to reduce the overall risks posed by the production related materials remaining in the facilities. Residue materials removed are transported to NTS under Removal Action 9. As of August 1996, approximately 21,000 cubic feet or 2,700 drum equivalents of residual materials generated under Removal Action 12 have been shipped to NTS for disposal. This removal action also provides for the isolation and de-energizing of former production-related equipment and utilities and provides for the identification of customers for Fernald equipment and nuclear products. For most buildings, on an individual basis, safe shutdown will be completed prior to the start of D&D activities for the building. On a programmatic basis, the scope, planning, and procedures that comprise this removal action are being adopted by this ROD and will be incorporated by reference into the OU3 integrated RD/RA work plan for continued implementation during the OU3 final remedial action.

Removal Action 17 - Improved Storage of Soil and Debris

Removal Action 17 was initiated to provide controlled storage of excess contaminated soil and debris generated during maintenance, construction, removal, and remedial actions at the FEMP through a soil and debris management plan. This removal action establishes framework and procedures for the management and storage of soil and debris that will be generated during site-wide remedial activities. Revision 3 of the Removal Action 17 Work Plan (DOE 1995d), along with an addendum submitted to U.S. EPA on May 23, 1996, provide the detail necessary for management of debris during the OU3 interim and final remedial action.

On a programmatic basis, the scope, planning, and procedures that comprise this removal action are being adopted by this ROD and will be incorporated into the OU3 final remedial action. The Removal Action 17 Work Plan will be incorporated by reference into the OU3 integrated RD/RA work plan to provide the direction necessary for interim storage and staging of OU3 materials during the OU3 interim and final remedial actions.

Removal Action 26 - Asbestos Removal

Removal Action 26 was established as a specialized maintenance related activity used to mitigate potential asbestos release and migration. Asbestos abatement activities within this program includes in situ repair, encasement, encapsulation, and removal of asbestos-

containing materials (ACM), and are a necessary step prior to initiating D&D activities. Transite (wall and roof sheeting made of a mixture of asbestos and cement), other non-friable (fixed) ACM, and undamaged friable (loose) asbestos are not specifically covered under this removal action but will be addressed under performance specifications during D&D subcontracting. Currently, only non-friable asbestos is accepted for disposal at NTS under Removal Action 9; friable asbestos is retained in interim storage and managed under requirements of the Toxic Substances Control Act (TSCA) pending final disposition under the OU3 final remedial action as documented by this ROD. This ROD adopts prior decisions made for management of this removal action. Details regarding the integration of asbestos removal procedures into the OU3 final remedial action will be provided in the OU3 integrated RD/RA work plan.

2.3 Integration with Other Operable Unit Remedial Actions

The OU3 final remedial action will be integrated with other remediation activities at the FEMP and will contribute towards meeting the site-wide remedial strategy for the FEMP. The site-wide remedial strategy, as presented in the OU5 ROD, sets remediation goals necessary to attain long-term (minimum of 200 years, with a goal of 1,000 years) protection of the environment. The site-wide remedy incorporates the selected or preferred alternatives for each operable unit, as appropriate. The intent of the strategy is to progressively monitor the interfaces among the operable units to ensure that the final adopted site-wide remedy is well reasoned, cost-effective, and would ensure the long-term protection of human health and the environment. In general, the site-wide remedy incorporates a balanced approach to waste disposition that recognizes the technical and economic impracticality of removing and disposing of all contaminated FEMP materials at an off-site disposal facility. Under the site-wide remedy, materials with higher levels of contamination, deemed to represent the principal threat at the site, would be treated, if required, and shipped off-site for disposal. Material exhibiting lower contaminant concentrations distributed over a larger volume, termed a secondary threat, would be permanently dispositioned at the Fernald site in one central engineered disposal facility. The OU3 selected remedy has been developed in a manner consistent with this site-wide strategy.

Integration of the six remedial actions is also concerned with coordination of activities that have or could have some impact on the operations of one or more of the other operable units. For example, the RODs for Operable Units 1, 2, and 4 and the IROD for OU3 defer the final disposition of any soil and perched groundwater that may be generated during the remedial actions to OU5 remedy decisions. The RODs for Operable Units 1, 2, 4, and 5 and the ROD for the OU3 interim remedial action defer the final disposition of structural debris that will be generated during those remedial actions to the OU3 final remedial action. The sequencing of disposal facility preparation, D&D, and the final soil and groundwater remediation will be closely coordinated among all operable units through the remedial design and remedial action phases of the site cleanup.

3.0 COMMUNITY PARTICIPATION

In 1985, DOE initiated a community relations program to provide information about Fernald site operations and activities to local stakeholders. A variety of forums were used to inform the community, including newsletters, fact sheets, community meetings, workshops, and roundtables, news releases, Speakers Bureau engagements, site tours, and open houses. In 1989, DOE established the Administrative Record which contains an official file of all information used or considered during the RI/FS process to determine the remedial decision for each of Fernald's operable units. To provide convenient public access to this information,

DOE relocated the Administrative Record and information repository (public reading room) to its present location at the Public Environmental Information Center (PEIC), 10845 Hamilton-Cleves Highway (S.R. 128), about one mile from the Fernald site. A copy of the Administrative Record is also maintained at U.S. EPA Region V offices in Chicago, Illinois, 77 W. Jackson Boulevard.

In an effort to move from one-way, non-participatory communication to two-way communication with stakeholder involvement in the decision process, DOE implemented a public involvement program in 1993. The program includes increased emphasis on involvement of Fernald management, person-to-person communications, and maintaining a strong public information approach. DOE's new emphasis on shared decision making, combined with the community relations activities required under CERCLA, have effectively involved interested parties in the decision-making process at the site, resulting in five signed RODs prior to the preparation of this ROD.

To involve stakeholders in the decision process for OU3 remediation issues, the following public involvement activities were performed:

- Notice of Availability was placed in the Cincinnati Enquirer, the Hamilton Journal-News, and the Harrison Press on September 27, 1995, to announce the submittal of the OU3 RI/FS Report and the OU3 Proposed Plan to U.S. EPA and Ohio EPA.

- For several months prior to the opening of the public comment period for the OU3 Proposed Plan, updates were provided on a regular basis in the *Fernald Report*, a monthly newsletter which is distributed to more than 1,000 stakeholders on the community mailing list, to inform the public of upcoming opportunities for involvement in OU3 cleanup decisions.

- Notice of Availability was placed in the Cincinnati Enquirer, the Hamilton Journal-News, and the Harrison Press on April 3, 1996 announcing the availability of the OU3 Proposed Plan for public review and comment during the 30-day public comment period.

- Display advertisements announcing the April 23, 1996 public meeting on the OU3 Proposed Plan were published in three local newspapers: the Cincinnati Enquirer on April 11, 1996; the Hamilton Journal-News on April 11, 1996; and the Harrison Press on April 10, 1996.

- OU3 technical personnel briefed Fernald envoys (i.e., individuals who are employed at the FEMP who inform groups or opinion leaders about site activities, solicit feedback, and deliver that feedback to Fernald decision-makers) at the March and April 1996 monthly envoy meetings to inform them of upcoming OU3 public involvement opportunities. The envoys then communicated this information to their respective stakeholder groups.

- Prior to the public comment period, advance copies of the OU3 Proposed Plan were hand delivered to Fernald envoys, the Fernald Residents for Environmental Safety and Health (FRESH), the Fernald Citizens Task Force members, and to the NTS Community Advisory Board. Copies were also placed in the PEIC for the general public.

- A post card announcing the public comment period and public meeting was mailed to approximately 1,000 stakeholders, including local residents and

merchants, elected officials, public interest groups, and the Fernald Citizens Task Force.

- The OU3 Proposed Plan was issued for a 30-day public comment period from April 3, 1996 to May 2, 1996. Copies of the OU3 Proposed Plan were available to the public in the PEIC.

- On April 19, 1996 DOE issued a news release titled: "*DOE to Hold Public Meeting on the Proposed Plan for the Permanent Disposition of Fernald Building Materials,*" to local media announcing the public meeting and opportunity for public involvement in the decision process. Articles written about the meeting were published in the April 20, 1996 issue of the Hamilton Journal-News titled: "*DOE to Explain Fernald Cleanup Plan at Open Meeting Tuesday,*" and the April 21, 1996 issue of the Cincinnati Enquirer titled: "*Fernald to be Discussed.*"

- Ohio EPA hosted its own public meeting on April 11, 1996, with local stakeholders to discuss the OU3 Proposed Plan.

- DOE hosted a public meeting on April 23, 1996, to discuss OU3 remedial action alternatives, including the preferred alternative, and to accept written and oral comments on the OU3 Proposed Plan. Over 50 people attended the meeting, including local stakeholders, regulators, and Fernald employees. Prior to the meeting, DOE and FERMCO staff were available to meet individually with interested stakeholders to discuss the preferred alternative and answer questions. A detailed story-board on the proposed remedial alternatives for OU3, with pictures of visible cleanup progress, was displayed at the back of the room for meeting attendees to study during the evening. A copy of the meeting transcript was placed in the PEIC.

- On April 24, 1996, the Cincinnati Enquirer published an article titled: "*Fernald Site Cleanup Plans Meet with Little Resistance,*" and on April 26, 1996, the Hamilton Journal-News published an article titled: "*No Resistance Voiced to Fernald Disposal Plans.*"

- In direct response to requests by several local stakeholders during the April 23, 1996 public meeting, DOE conducted a separate public workshop on June 11, 1996 to address specific questions on recycling, reuse, and free-release of structural steel and other Fernald materials. Display advertisements announcing the workshop were placed in the three local papers on May 29, 1996 and post card invitations were sent to the community mailing list two weeks prior to the workshop.

Responses to comments received on the OU3 Proposed Plan during the public comment period are included in the Responsiveness Summary, Appendix A of this ROD. As mentioned above, all background information used in the selection of the OU3 remedy is contained in Fernald's Administrative Record which is located in the PEIC. The Administrative Record contains a complete history of all documents pertaining to OU3, including the IROD, removal actions, RD/RA activities under the IROD, the OU3 RI/FS Report and Proposed Plan, public comments, transcripts of public meetings, and other documents that support the development of this ROD. The Administrative Record will continue to be updated throughout OU3 remediation.

DOE is committed to continue to offer opportunities for public involvement throughout the RD/RA process. Future public involvement is considered a key component of the OU3 final remedial action and is discussed further in Section 8.3.

4.0 SUMMARY OF OPERABLE UNIT 3 CHARACTERISTICS

Section 4 presents a summary of characterization data regarding contaminants associated with OU3 materials. The information presented in this section builds on the general overview of OU3 presented in Section 1 of this document and was summarized from Section 3 and Appendices A, B, and L of the OU3 RI/FS Report. The sampling approach during the OU3 RI involved the analysis of intrusive samples from major media (concrete, asphalt, acid brick, masonry, transite, and steel coatings) and loose samples from supplemental media (residues, floor sweepings, sediment, sludges, etc.) for the analytes listed in Table 4-1.

4.1 Known or Suspected Sources of Contamination

The sources of contamination within OU3 consist of the various types of materials that make up the physical structures of the former process areas at the FEMP. As discussed in Section 1.3.1 of this document, the former process structures will undergo D&D during the OU3 interim remedial action. Additionally, the former process residues and wastes, which are defined as the "principal threat" materials for OU3, will be dispositioned off-site under Removal Action 9, which has been incorporated into this ROD. The following subsections present a summary of pertinent information from the OU3 RI/FS Report regarding the types and amounts of OU3 materials and the contamination associated with them.

4.1.1 Material Types/Categories

The construction materials that make up the buildings, structures, and associated facilities in OU3 have been classified into ten distinct material categories based on similar or inherent properties and configuration. These categories are shown in Table 4-2.

4.1.2 Material Volume Estimates

As detailed in Appendix B of the OU3 RI/FS Report, an inventory of volumes and weights associated with OU3 materials has been compiled into the Sitewide Waste Inventory Forecasting and Tracking System (SWIFTS) database. To summarize the quantity of OU3 materials, Table 4-3 provides SWIFTS unbulked volume estimates for OU3 materials by category and contaminant classifications, the latter of which is discussed in Section 4.2.

In total, OU3 is estimated to contain approximately 9.3 million cubic feet of unbulked material. A significant amount of the material associated with OU3 is the principal threat materials (listed as "Product, Residues, and Special Materials" in Table 4-3). As mentioned above, these materials are being dispositioned by ongoing, approved programs and are therefore not addressed by the decision-making process in this ROD.

The total unbulked volume of OU3 materials addressed by this ROD is the aforementioned total amount less the volume of those materials. The net volume of materials to be dispositioned pursuant to decisions made in this ROD is equal to approximately 7.54 million unbulked cubic feet (approximately 377,000 tons).

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TABLE 4-1 OU3 RI/FS Characterization Study Analyte List

Radionuclides

Alpha/Beta Screening
Americium-241
Cesium-137
Isotopic thorium
Isotopic uranium
Isotopic plutonium
Lead-210
Neptunium-237
Plutonium-241
Polonium-210
Radium-226 and 228
Strontium-90
Technetium-99

TAL Metals

Aluminum
Antimony
Arsenic
Barium
Beryllium
Cadmium
Calcium
Chromium
Cobalt
Copper
Iron
Lead
Magnesium
Manganese
Mercury
Nickel
Potassium
Selenium
Silver
Sodium
Thallium
Vanadium
Zinc

TCL Semi-Volatile Organics

1,2-Dichlorobenzene
1,2,4-Trichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
2-Chloronaphthalene
2-Chlorophenol
2-Methylnaphthalene
2-Methylphenol
2-Nitroanilene
2-Nitrophenol
2,2-Oxybis-(1-chloropropane)
2,4-Dichlorophenol
2,4-Dimethylphenol
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
2,6-Dinitrotoluene
3-Nitroaniline
3,3-Dichlorobenzidine
4-Bromophenyl-phenyl ether
4-Chloro-3-methylphenol
4-Chloroaniline
4-Chlorophenyl-phenyl ether
4-Methylphenol
4-Nitroaniline
4-Nitrophenol
4,6-Dinitro-2-methylphenol
Acenaphthene
Acenaphthylene
Anthracene
Benzo(a)anthracene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(g,h,i)perylene
Benzo(k)fluoranthene
bis(2-Chloroethyl) ether
bis(2-Chloroethoxy) methane
bis(2-Ethylhexyl)phthalate
Butylbenzylphthalate
Carbazole
Chryzene
Dibenzofuran
Dibenzo(a,h)anthracene
Diethylphthalate
Dimethylphthalate
Di-n-butylphthalate
Di-n-octylphthalate
Fluoranthene
Fluorene
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Ideno(1,2,3-cd)pyrene
Isophorone
Napthalene
Nitrobenzene
N-Nitroso-di-n-dipropylamine
N-Nitrosodiphenylamine
Pentachlorophenol
Phenanthrene
Phenol
Pyrene

TCL PCBs

Arochlor-1016
Arochlor-1221
Arochlor-1232
Arochlor-1242
Arochlor-1248
Arochlor-1254
Arochlor-1260

TCL Volatile Organics

1,1-Dichloroethane
1,1-Dichloroethene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
1,1,2,2-Tetrachloroethane
1,2-Dichloroethane
1,2-Dichloroethene (total)
1,2-Dichloropropane
2-Butanone
2-Hexanone
4-Methyl-2-pentanone
Acetone
Benzene
Bromodichloromethane
Bromoform
Bromomethane
Carbon tetrachloride
Carbon disulfide
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
cis-1,3-Dichloropropene
Dibromochloromethane
Ethylbenzene
Methylene chloride
Styrene
Tetrachloroethene
Toluene
Total Xylenes
trans-1,3-Dichloropropene
Trichloroethene
Vinyl Chloride

TCLP Metals

Arsenic
Barium
Cadmium
Chromium
Lead
Mercury
Selenium
Silver

TCLP Semi-Volatile Organics

1,4-Dichlorobenzene
2,4-Dinitrotoluene
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
Hexachloro-1,3-butadiene
Hexachlorobenzene
Hexachloroethane
m-Cresol
Nitrobenzene
o-Cresol
p-Cresol
Pentachlorophenol
Pyridine

TCLP Volatile Organics

1,1-Dichloroethylene
1,2-Dichloroethane
2-Butanone
Benzene
Carbon tetrachloride
Chlorobenzene
Chloroform
Tetrachloroethylene
Trichloroethylene
Vinyl chloride

TABLE 4-2 OU3 Material Categories/Descriptions

Category A Accessible Metals	Category B Inaccessible Metals	Category C Process-Related Metals	Category D Painted Light-Gauge Metals	Category E Concrete	Category F Brick	Category G Non-Regulated ACM	Category H Regulated ACM	Category I Miscellaneous Materials	Category J Product, Residues, and Special Materials
Structural and Miscellaneous Steel	Doors	Electrical Equipment	Ductwork	Asphalt	Acid Brick	Ceiling Demo.	Ductwork Insulation	PVC Conduit	Coal Pile
	Conduit/Wire/Cable Tray	HVAC Equipment	Lead Flashing	Slabs		Feeder Cable	Piping Insulation	Basin Liners	Gravel Pile
	Electrical Wiring and Fixtures	Material Handling Equipment	Louvers	Columns		Fire Brick	Personal Protective Equipment	Fabric	Hazardous/Mixed Waste
	Electrical Transformers	Process Equipment	Metal Wall and Roof Panels	Beams		Floor Tile	Copper Scrap Metal Pile	Drywall	Low-Level Waste
	Miscellaneous Electrical Items	Miscellaneous Equipment		Foundations		Transite Wall and Roof Panels		Building Insulation	Marketable Nuclear Material
	Electrical Equipment	Process Piping		Walls				Miscellaneous Debris	Outside Equipment Storage Area
	HVAC Equipment			Masonry				Personal Protective Equipment	Rock Salt Pile
	Material Handling Equipment			Clay Piping				PVC Piping	Sand Piles
	Process Equipment							Roofing Build-Up	Soil Piles
	Miscellaneous Equipment							Process Trailers	Thorium Inventory
	Piping							Non-Process Trailers	Scrap Metal Pile
								Windows	
								Wood	

TABLE 4-3 Summary of OU3 Waste Volumes as Estimated by Category (in cubic feet)

OU3 Material Category	Potentially Hazardous/ Mixed Waste	Regulated PCBs (TSCA)	Low-Level Radioactive Waste	Below Baseline	Total
Accessible Metals	0	0	63,400	0	63,400
Inaccessible Metals	0	14,900	1,730,000	0	1,740,000
Process-Related Metals	0	0	151,000	0	151,000
Painted Light-Gauge Metals	49	0	7,100	0	7,150
Concrete	0	0	541,000	4,160,000	4,700,000
Brick	5,280	0	15,400	0	20,700
Non-Regulated Asbestos-Containing Materials	0	0	71,300	0	71,300
Regulated Asbestos-Containing Materials	0	0	80,200	0	80,200
Miscellaneous Materials	0	0	163,000	541,000	704,000
Product, Residues, and Special Materials	56,000	0	1,670,000	105	1,730,000
Total	**61,300**	**14,900**	**4,490,000**	**4,700,000**	**9,270,000**

4.2 Contamination Characteristics

Based on the results of the OU3 RI/FS process, the material categories presented in Table 4-2 were further subdivided into segregation categories based on regulatory status (mixed waste, PCB waste, low-level waste, and below baseline) to evaluate treatment and disposal options. Table 4-3 provides a summary of data which was detailed in the OU3 Proposed Plan showing the estimated volumes of OU3 materials by segregation category and contaminant category. Among the contaminant categories, "below baseline" represents materials that have levels of contamination, either radiological or chemical, below an estimated concentration that represents a background level for an analyte in a material based on OU3 RI/FS sampling data and literature values. A brief discussion of both radiological and chemical characteristics that resulted in the distribution of materials shown in Table 4-3 is provided below.

4.2.1 Radiological Characteristics

Detailed radiological analytical results for OU3 are presented in Appendices A and L of the OU3 RI/FS Report and are summarized in Section 3 of that document. Consistent with the production history at the FEMP, the most common (and highest level of) radionuclide contaminants found within OU3 major media are uranium-238 and its decay products (uranium-234, thorium-230, and radium-226), uranium-235 and its primary decay product (actinium-227), and thorium-232 and its decay products (radium-228 and thorium-228). The highest levels and most extensive of these is, by far, uranium. The highest levels of uranium are associated with residual material remaining in piping and equipment. Overall, sampling results indicate that the majority of uranium handled at the FEMP was either natural or depleted uranium. Only a small fraction of the total quantity of uranium that passed through processes at the FEMP was enriched in uranium-234 and uranium-235.

As shown in Table 4-3, 89 percent of concrete, the single largest material type in OU3, does not exhibit radiological contamination above baseline concentrations. Contamination within other materials ranges from minimal levels, in many administrative and support facilities and at lower depths in most facilities, to high levels, in former production and process-related areas.

The most significant radiological contamination includes elemental uranium, isotopic uranium (-234, -235/-236, and -238), technetium-99 (Tc-99), and thorium-230. Uranium and isotopic uranium is significant due to its total mass, or "source term", within OU3 materials and potential impact on disposition alternatives. Thorium-230 (an impurity in ores and ore concentrates processed at the site) is significant because it presents a potential inhalation risk during remedial activities due to its prevalence in non-regulated ACM within process buildings. Tc-99 (a trace impurity in recycled uranium) is a concern because it was detected in over 75 percent of all samples and is relatively mobile in the environment. Treatability studies performed during the OU3 RI program demonstrated the leachability of Tc-99 from concrete.

As noted above, OU3 RI/FS sampling data reveals that the most significant radiological contamination in OU3 is associated with the process buildings. The eight structures in which most processing occurred include the Ore Refinery Plant (2A), the Green Salt Plant (4A), the Metals Production Plant (5A), the Metals Fabrication Plant (6A), the Recovery Plant (8A), the Special Products Plant (9A), the Pilot Wet Side (13A), and the Laboratory (15A). These structures constitute 85 percent of the total volume of materials having Tc-99, thorium-230, and/or uranium that exceeded their respective baseline concentrations. The sampling data identified that concrete below a depth of one inch from both the Metals Fabrication Plant and the Laboratory contribute 29 percent and 12 percent, respectively, to the total volume of concrete that exceeded baseline concentrations. Combined, they contribute nearly 11 percent of a total of 3.0 million cubic feet above baseline, excluding product, residues, and special materials to be dispositioned under Removal Action 9.

4.2.2 Chemical Characteristics

The most common inorganic chemical contaminants found within OU3 major media and having the highest levels are barium, chromium, cadmium, lead, and mercury. Although most inorganic analytes shown in Table 4-1 are found in varying amounts in OU3 materials, these five inorganics are considered more significant in comparison to others since a significant number of sample results revealed their presence at levels that exceeded 20 times Toxicity Characteristic Leachate Procedure (TCLP) limits. Furthermore, a significant percent of detected results for barium, chromium, cadmium, and mercury exceeded their respective Part B Soil Screening Levels, indicating a potential concern for direct contact. Most significant is the finding that a limited amount of OU3 materials (61,300 cubic feet) is potentially mixed waste under the Resource Conservation and Recovery Act (RCRA). Whereas the majority of that volume is associated with current inventory (drummed waste to be removed under Removal Action 9), 5,330 cubic feet of that total volume is associated with acid brick and lead flashing that will be generated during dismantlement of OU3 structures. It is important to note that all other media types that were associated with inorganic results greater than 20 times TCLP limits are not considered potential hazardous or mixed wastes because, as discussed in Appendix A.III.2.6.2 of the OU3 RI/FS Report, the volumes of those materials associated with samples (contaminated portion) represent only very small fractions of the total volume of those materials and do not represent the characterization of the entire volumes.

The most common organic chemical contaminants in OU3 materials and having the highest concentrations are 1,4-dichlorobenzene, hexachlorobutadiene, nitrobenzene, and tetrachloroethene. Although some of the transite was found to have one or more of these

contaminants at levels exceeding Part B Soil Screening Levels and TCLP limits, as stated in Appendix II.7 of the OU3 RI/FS Report, it is not expected to be hazardous since the samples only represent a small fraction of the entire volume of transite, most of which does not exhibit these contaminants.

Of the samples analyzed for pesticides/PCBs, 27 exceeded the Part B reference criteria; however, none of the samples analyzed exceeded the 50 parts per million TSCA limit for PCBs established by 40 CFR 761. The estimated volume of 14,900 cubic feet of PCB waste listed in Table 4-3 is attributed to a large number of electrical transformers that are assumed to contain PCBs, although no samples were taken.

5.0 SUMMARY OF OPERABLE UNIT 3 RISKS

It was noted in the OU3 RI/FS Work Plan Addendum (DOE 1993b) that the implementation of the OU3 interim remedial action (removal of all structures associated with the former Production Area) would limit the range of remedial alternatives in the feasibility study. The requirement for a final remedial action for OU3 was inherent in the IROD. Since the Sitewide Characterization Report (DOE 1993c) already sufficiently documented the general level of risk from the current condition of OU3, a baseline risk assessment was not conducted. In addition, because the information was not needed to support decisions in this ROD, no assessment was made of long-term risks associated with interim storage.

However, OU3 RI results clearly show that a significant amount of contamination found in some OU3 materials is below the material surface and as a result will remain in the materials following D&D, since the OU3 interim remedial action generally provides for only in situ surface decontamination of materials. Furthermore, surface decontamination will not remove all surface contamination. Consequently, some materials will still exhibit contamination characteristics that could possibly present unacceptable risks for human contact or environmental release over time, should those materials remain on-site in interim storage. If contaminated materials were to remain in interim storage, the potential routes for contaminant migration would be surface water, soil, groundwater, air, and direct contact. Potential receptors would include remediation and non-remediation workers (in the short-term) and the off-site public. These considerations formed the basis for DOE's and U.S. EPA's agreement that OU3 materials generated during the interim remedial action would not remain in interim storage for an indefinite period, an agreement that was stated in the IROD.

The need to conduct a final remedial action which deals with disposition of OU3 wastes is based on potential future risks to human health and the environment. On the basis of contamination found during the OU3 RI/FS process, and risks associated with such contamination, final disposition of OU3 materials is justified.

6.0 DESCRIPTION OF REMEDIAL ALTERNATIVES

One goal of CERCLA is to select remedial actions, or an appropriate combination of actions, that protect human health and the environment, that maintain protection over time, and that minimize the amount of untreated waste. This goal reflects the preference for treatment over engineering and/or institutional controls to reduce toxicity and/or mobility of COCs whenever practical to ensure that material remaining on-property can be reliably controlled over time. However, for secondary threat materials, or wastes that pose a relatively low long-term threat, U.S. EPA expects that engineering controls or a combination of engineering and institutional controls will be used where appropriate.

Extensive surface decontamination of buildings and structures will be performed during the interim remedial action. Based on the projected residual contamination of remediation materials following D&D activities, and the results of treatment technology evaluation, the OU3 final remedial action would provide for further treatment on a supplemental basis only to ensure protectiveness during the final remedial phase.

The three remedial alternatives identified in the RI/FS were developed based on technology types and process options that were identified to achieve remedial action objectives. The primary focus of the alternative development was disposition rather than treatment, since treatment of materials is linked predominantly to land disposal restrictions (LDRs) for RCRA hazardous wastes. Therefore, institutional and engineering controls were the primary bases on which alternatives were developed. Engineering controls for the on-site disposal facility (OSDF) will be determined through the OU2 remedial design process pursuant to the OU2 ROD (DOE 1995e). Institutional controls for the FEMP have been established in the OU5 ROD (DOE 1996c).

6.1 Alternative 1 - No Further Action

Alternative 1 assumes that the interim remedial action proceeds to completion and places all generated materials within a hypothetical interim storage area. The interim storage area would contain uncovered piles of accessible metals, inaccessible metals, concrete, and transite. All other materials would be staged in containers. At the completion of the interim remedial action, maintenance of the interim storage area would be terminated. Thus, materials would be exposed to the environment with potential releases of contamination to environmental media. Within an unmaintained area, no mechanisms would be employed to prevent trespassers from entering the area. Because of commitments to the public by DOE and U.S. EPA, the IROD specifically commits to performing a final remedial action that involves the disposition of OU3 materials. However, Alternative 1 is required by CERCLA and the NCP to be retained as a baseline against which the effectiveness of other alternatives may be compared.

6.2 Alternative 2 - Selected Material Treatment, On-Property Disposal, and Off-Site Disposition

As stated in Section 4, most OU3 remediation materials contain low levels of contaminants and are therefore not a principal threat. For these materials, utilization of the OSDF for disposal is consistent with the balanced approach employed for the FEMP operable units. Only materials exceeding the OSDF WAC or administratively identified for off-site disposition or eligible for alternative disposition (i.e. recycling or free release) would be dispositioned off-site.

The OSDF WAC for OU3 were based on the OU2 and OU5 feasibility study modeling, and then adjusted to apply to OU3-specific materials. Of the OU3 RI/FS analytes (listed in Table 4-1), only uranium and Tc-99 were identified as having the potential to exceed acceptable groundwater levels beneath the OSDF. Experimental lab studies were conducted to determine uranium and Tc-99 leachability from various construction materials. For conservativeness, samples of OU3 materials with highest Tc-99 and uranium concentrations were used. The results of the studies demonstrated that uranium that leached from all test samples had concentrations that were well below acceptable levels for on-property disposal. Conservative modeling also showed that the small volume of OU3 materials that was not tested for uranium leachability was also acceptable for on-property disposal. Therefore, all uranium-contaminated materials, with the exception of highly contaminated process materials, can be safely disposed of in the OSDF.

On the other hand, the studies showed that Tc-99 has the potential to leach at levels that could impact groundwater. Modeling was then used to determine that a safe level of Tc-99 within the OSDF is 105 grams. This modeling used the conservative assumption that Tc-99 would completely leach out of the OSDF over a 70-year span (which is considered by U.S. EPA to be an average human lifespan). Therefore, an allowable mass of 105 grams was adopted as the OU3 on-property WAC for Tc-99. Specific details on the development of the OSDF WAC are provided in Appendix G of the OU3 RI/FS Report.

The OU3 RI/FS process estimated that the total amount of Tc-99 in OU3 materials is approximately 127 grams. However, leachability study data, supplemented with conservative modeling assumptions, showed that the maximum amount of Tc-99 for OU3 materials that could safely be stored in the OSDF is 105 grams. In order to not exceed this 105-gram limit for the OSDF, those materials that have the highest amounts of Tc-99 will be packaged and transported to NTS or an off-site commercial disposal facility.

Process-related metals, acid brick, product, residues, and special materials generally have high concentrations of several contaminants, including Tc-99. By administratively deciding to disposition these materials off-site, the Tc-99 source term remaining in materials considered for on-property disposal is 116 grams. Of all materials contributing to this source term, the most significant contributor is concrete (and concrete-like materials) with a total 102 grams. In order to further reduce the amount of Tc-99 going into the OSDF, Alternative 2 includes scabbling the top inch of the three most contaminated concrete areas within OU3: the enriched uranium casting area in Plant 9; the uranium machining area in Plant 9; and the muffle furnace area in Plant 8. Additionally, due to inherent chemical and radiological contamination in the Pilot Plant, the top half inch of concrete in the southern extraction area would also be scabbled. The removal and off-site disposition of the scabbled concrete from these four process areas would reduce the total amount of Tc-99 going into the OSDF to less than 59 grams, which is 44 percent below the 105-gram allowable mass limit.

In addition to the Tc-99 mass-based WAC, initial physical size criteria for debris to be dispositioned to the OSDF were developed in the OU3 RI/FS Report. The Impacted Materials Placement Plan for the On-Site Disposal Facility (DOE 1996d) will provide final physical acceptance criteria, based on OSDF design parameters and transportation and handling considerations. The final WAC for OU3 materials will be adopted by the OU3 integrated RD/RA work plan and/or subsequent D&D implementation plans.

Under Alternative 2, most of the OU3 materials could be permanently dispositioned in the OSDF, which would be designed and constructed in accordance with the relevant requirements of RCRA, the Uranium Mill Tailings Remediation Control Act, TSCA (for PCB disposal), and the Clean Air Act (for ACM disposal). As described in the OU2 ROD, the facility would feature a multi-layer capping system, including a vegetative soil layer, a filter layer, a biotic barrier, a drainage layer, and an infiltration barrier. The disposal facility would also feature a multi-layer liner that would include a leachate collection system, primary and secondary liners separated by a leak detection system, and a low-permeability compacted clay layer. The layers of both the cap and liner would be separated by geotextile fabrics and high-density polyethylene and bentonite composites for added protection. The disposal facility would prevent contaminant migration to the air and surface water and is modeled to protect groundwater for a 200- to 1,000-year performance period.

Key elements of Alternative 2 are summarized below:

- Provides for unrestricted/restricted release of materials, as economically feasible, for recycling, reuse, or disposal;

- Permits treatment of materials to meet the on-site disposal facility (OSDF) and/or off-site disposal facility waste acceptance criteria (WAC);
- Requires off-site disposal of process residues, product materials, and process-related metals;
- Requires off-site disposition of acid brick and concrete from specific locations and any other materials exceeding the OSDF WAC;
- Permits disposal of remaining OU3 wastes in the OSDF;
- Imposes administrative controls through deed restrictions and access controls; and
- Incorporates post-remediation activities that includes long-term monitoring and maintenance of the OSDF and operation of a groundwater monitoring network to evaluate the performance of the OSDF.

Table 6-1 represents assumptions made in the OU3 RI/FS Report about most likely disposition routes for the OU3 materials. Note that product, residues, and special materials are not included in this table, since those materials are currently being dispositioned under Removal Action 9.

TABLE 6-1 Alternative 2 Estimated Material Disposition Quantities (in cubic feet)

OU3 Material Category	On-Property Disposal	Unrestricted Release	Off-Site Disposal	Total
Accessible Metals	62,600	835	0	63,400
Inaccessible Metals	1,740,000	0	0	1,740,000
Process-Related Metals	0	0	151,000	151,000
Painted, Light-Gauge Metals	7,150	0	0	7,150
Concrete	4,700,000	0	2,400	4,700,000
Brick	0	0	20,700	20,700
Non-Regulated ACM	71,300	0	0	71,300
Regulated ACM	80,200	0	0	80,200
Miscellaneous Materials	396,000	308,000	0	704,000
Total	7,060,000	309,000	174,000	7,540,000

6.2.1 Unrestricted Release and Recycling

One of the alternatives to disposal of OU3 materials is unrestricted release. Certain categories of materials in OU3 (generally those which are non-porous and have only surface contamination) are suitable for consideration for decontamination and release under DOE Order 5400.5. Materials that are no longer considered radiologically contaminated and are released are the most valuable for recycling. The OU3 RI/FS Report identified 308,000 cubic feet of

miscellaneous materials and 835 cubic feet of structural steel associated with administrative facilities at the FEMP that would be particularly amenable to decontamination and release.

6.2.2 Restricted Recycling

Although not specifically estimated by the OU3 RI/FS Report, restricted recycling (recycling of contaminated materials without decontamination for release) is one alternative to disposal for OU3 metals that will be considered. DOE is currently evaluating the use of contaminated metals to make contaminated waste disposal containers for use within DOE. The results of these evaluations will determine whether significant quantities of OU3 metals are recycled in this manner. DOE will continue over the life of the D&D of the Former Production Area to aggressively evaluate existing and emerging recycling technologies and markets to identify opportunities for cost-competitive application at the FEMP. The DOE strives to maintain recycling and reuse as disposition options to be considered for each material at the time of its intended generation, and will continue to evaluate recycling and reuse on a case-by-case basis within each D&D complex implementation plan.

6.2.3 Treatment

Much of the treatment of OU3 materials is accomplished during the Safe Shutdown program and building D&D processes. Additional treatment of OU3 materials would primarily be envisioned as a means to meet on-site or off-site WAC, such as treating to remove RCRA hazardous characteristic. For example, lead sheeting from OU3 structures will be segregated from materials collected for OSDF disposal and could be subject to macro-encapsulation to achieve LDR treatment standards. Decontamination to allow for unrestricted recycling of lead sheeting and other materials is another potential treatment.

6.2.4 Off-Site Disposal

Disposal of certain materials at off-site locations has been administratively determined as a means to remain consistent with the "balanced approach" for FEMP waste disposition. Application of this principle results in retention of the larger volume of materials that have lower levels of contamination at the FEMP, while the smaller volumes of more highly contaminated materials are dispositioned off-site to locations with respectively higher protectiveness. For OU3, process-related metals (Category C), products/residues, acid brick (Category F), and technetium-contaminated concrete (Category E) from specific locations are designated for off-site dispositioning.

6.2.5 On-Site Disposal

The OU3 RI/FS Report estimated that approximately 7 million cubic feet of OU3 materials would be disposed in the OSDF (without accounting for pursuit of recycling, reuse, and release alternatives to disposal). As a result of the IROD D&D activities, some of the materials to be dispositioned to the OSDF under this alternative will be stored in containers and in bulk for an interim period until disposition can occur. Alternative 2 includes the movement of those materials, as well as receipt of materials directly from ongoing D&D on a just-in-time basis. Movement of materials from storage is estimated to require up to three years after the OSDF is open for OU3 wastes.

In order to comply with State of Ohio requirements and public preference that characteristic hazardous waste streams are not disposed in the OSDF, acid brick and lead sheeting will be segregated from materials that are destined for the OSDF. In order to minimize materials that are destined for the OSDF, alternatives to disposal will be evaluated for each of the OU3 D&D

complexes during respective remedial design activities. A methodology for this evaluation will be adopted as part of the OU3 integrated RD/RA work plan, ensuring significant levels of public involvement are practicable. This alternative in no way permits the disposal of wastes not associated with the FEMP. A specific prohibition of the disposal of off-site generated wastes in the OSDF, except for secondary wastes associated with off-site processing of FEMP materials (which must also meet applicable WAC), has been included in the OU2 ROD.

6.3 Alternative 3 - Selected Material Treatment and Off-Site Disposal

The primary difference between Alternatives 2 and 3 is the disposal location for OU3 materials. Under this alternative, all remediation materials would be dispositioned at an off-site disposal facility. Key elements of the alternative are summarized below:

- Permits the unrestricted release of materials for recycling, reuse, or disposal at a commercial landfill when release criteria can be readily met and demonstrated;
- Permits restricted recycling and/or reuse of materials as practicable to reduce the volume of waste requiring disposal;
- Requires off-site disposal of all remaining remediation materials at a commercial disposal facility; and
- Requires treatment of materials, where needed, to meet the off-site disposal facility WAC.

Like Alternative 2, approximately 309,000 cubic feet of miscellaneous materials and structural steel, which are not contaminated, could be released or disposed of in a commercial landfill. The remaining material (7.23 million cubic feet) would be disposed of at NTS or an off-site disposal facility. Implementation of Alternative 3 would rely on coordination with other FEMP remedial actions to provide for certain elements, including the waste shipment facilities, and the fencing and security prescribed under institutional controls. For this alternative, the off-site transport of OU3 materials would be coordinated with the shipments scheduled to occur for OU1 remediation wastes.

7.0 SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

Section 7.0 profiles the basis for evaluating the relative performance of the alternatives with respect to the nine NCP evaluation criteria, noting how the preferred alternative compares to the other alternatives under consideration. The following are the NCP evaluation criteria:

1. **Overall Protection of Human Health and Environment** addresses whether or not a remedy provides adequate protection and describes how risks posed through each pathway are eliminated, reduced, or controlled through treatment engineering controls or institutional controls.

2. **Compliance with ARARs** addresses whether or not a remedy will meet all of the applicable or relevant and appropriate requirements of Federal and State environmental statutes and/or provide grounds for invoking a waiver.

3. **Long-Term Effectiveness and Permanence** refers to the magnitude of residual risk and the ability of a remedy to maintain reliable protection of human health and the environment over time once cleanup goals have been met.

4. **Reduction of Toxicity, Mobility, or Volume Through Treatment** is the anticipated performance of the treatment technologies that may be employed in a remedy.

5. **Short-Term Effectiveness** refers to the speed with which the remedy achieves protection, as well as the remedy's potential to create adverse impacts on human health and the environment that may result during the construction and implementation period.

6. **Implementability** is the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement the chosen solution.

7. **Cost** includes capital and operation and maintenance costs.

8. **State Acceptance** indicates whether, based on its review of the OU3 RI/FS Report and Proposed Plan, the State concurs with or opposes the preferred remedial alternative.

9. **Community Acceptance** is assessed in this ROD based on public comments received on the OU3 Proposed Plan.

The nine evaluation criteria are categorized into three groups: threshold criteria; primary balancing criteria; and modifying criteria. The first two criteria are "threshold" criteria, meaning that they must be attained if the alternative is to be considered further in the evaluation and selection process. The one notable exception is that waivers to ARARs can be obtained in accordance with 40 CFR 300.430 (f)(1)(ii)(C), as long as protectiveness of human health and the environment can still be demonstrated. The next five criteria form the basis for the comparative analysis of viable remedial alternatives. These five are called "primary balancing" criteria because they are used to evaluate the relative tradeoffs among the alternatives that pass the threshold criteria. The last two criteria are "modifying" criteria because DOE and U.S. EPA may modify the preferred alternative or select another response action based on comments received during the public comment period.

The following subsections summarize the information which was presented in Section 6 of the OU3 RI/FS Report regarding the comparison of alternatives. Table 7-1 provides a summary of the comparative analysis for OU3 alternatives for the threshold and primary balancing criteria.

7.1 Overall Protection of Human Health and the Environment

This criterion addresses the means by which a potential remedy would reduce, eliminate, or control the risks posed by OU3 materials to human health and the environment. The methods used to achieve an adequate level of protection may include engineering controls, waste treatment techniques, or other controls such as restriction on the future use of the site. Total elimination of risk is often impossible; however, a remedy must minimize risk to ensure human health and the environment are protected.

Under Alternative 1, all OU3 materials at the site would be stored without continued maintenance. Over the long-term, exposure of these materials to the weather would lead to unacceptable releases to the environment. This alternative would not protect human health or the environment. Alternative 2 would employ conservative design considerations from other engineered disposal facilities, including Uranium Mill Tailings Remediation Control Act standards and RCRA regulations, to ensure the long-term performance of the disposal facility.

TABLE 7-1 Summary of Comparative Analysis of Remedial Alternatives

Evaluation Criteria	Alternative 1 No Further Action	Alternative 2 Selected Material Treatment, On-Property and Off-Site Disposal	Alternative 3 Selected Material Treatment and Off-Site Disposal
Threshold Criteria			
Overall Protection of Human Health and the Environment	Not protective of human health and the environment.	Provides overall protection of human health and the environment.	Provides overall protection of human health and the environment.
Compliance with ARARs	Not compliant because no further action would likely result in exposures to the public and releases to the environment.	Meets the requirements for a U.S. EPA waiver of the State of Ohio solid waste disposal facility siting requirements and complies with all other ARARs.	Compliant with all ARARs.
Primary Balancing Criteria			
Long-Term Effectiveness and Permanence	Not protective in the long-term. Would result in unacceptable long-term risks to the public.	Is protective of human health and the environment through site geology, engineering, and administrative controls. However, Alternative 2 is less effective and permanent in the long-term than Alternative 3 due to residual risk associated with materials remaining on-site in the OSDF.	Is the most effective and permanent since all contaminated material would be removed from Fernald with no long-term requirements for continued administrative controls, surveillance, or maintenance activities.
Reduction in Toxicity, Mobility, or Volume Through Treatment	Due to unmaintained storage of dismantled debris, contaminant mobility is expected to increase.	Potentially treats 5,280 cubic feet of material to meet LDRs for off-site disposal and 50 cubic feet of material to meet criteria for on-property disposal.	Potentially treats 5,330 cubic feet of material to meet LDRs for off-site disposal.
Short-Term Effectiveness	No short-term risks since no action would be taken.	All radiological and chemical exposures are estimated to be within acceptable limits. This alternative presents lower short-term risks associated with mechanical hazards than Alternative 3.	All radiological and chemical exposures are estimated to be within acceptable limits. Greater mechanical hazards than Alternative 2 due to injuries from transporting all materials to off-site disposal facilities.
Implementability	Easier to implement than Alternatives 2 or 3 because no action occurs.	Easier to implement than Alternative 3 because this alternative requires placement of most OU3 materials into the OSDF, which is already being constructed for OU2 and OU5 materials.	Most difficult to implement because it is dependent on agreements with off-site disposal facilities to accept OU3 materials. Considerably more coordination would be required with state and local authorities along the transportation routes then for Alternative 2. The volume of material would also require a longer time period to complete shipments than for Alternative 2.
Current year (1995) cost (in millions)	$0	$95	$190
Present worth cost (in millions)	$0	$71	$150

These standards would require the use of multilayered capping and lining systems, the development of contaminant- and material-specific WAC, and the use of a design which ensures protectiveness for 200 to 1,000 years. These design considerations would supplement the natural containment capabilities of the existing site geology to ensure the long-term performance of the disposal system. Alternative 3 would also protect human health and the environment because all OU3 materials would be removed from Fernald and dispositioned off-site.

7.2 Compliance with ARARs

This criterion determines whether a selected remedy will meet all related federal, state, and local requirements. These requirements may specify maximum concentrations of chemicals that can remain at a site, specify design or performance requirements for treatment technologies, and impose restrictions that may limit potential remedial activities at a site because of its location.

Because of anticipated releases from ongoing storage, Alternative 1 would not comply with ARARs. Alternative 2 would comply with all identified ARARs or meet the requirements of an ARAR waiver of the State of Ohio solid waste disposal facility siting requirements [OAC 3745-27-07(H)(2)(c)and(d)]. To be granted the waiver, the DOE would be required to adopt an engineering design for the facility which, when coupled with existing site geologic conditions, would attain a standard of performance that is equivalent to that required under State of Ohio solid waste disposal facility siting requirements. Alternative 3 would comply with all ARARs.

7.3 Long-Term Effectiveness and Permanence

This criterion evaluates the ability of a potential remedy to reliably protect human health and the environment over a long period of time after the remedial goals have been accomplished.

Alternative 1 would present an unacceptable magnitude of risk remaining at Fernald and would provide the most limited amount of reliability and permanence. Long-term risks to potential trespassers from uncontrolled storage of contaminated materials would exceed acceptable risk levels. Both Alternatives 2 and 3 achieve high levels of protectiveness and permanence. The implementation of Alternative 2 would rely on engineering and administrative controls to ensure the long-term performance of the remedy and maintain the protection of human health and the environment over time. Long-term monitoring activities are currently proposed by other approved remedial actions and would continue for OU3. For Alternative 3, the removal of all materials to off-site disposal locations would ensure the long-term protection of human health and the environment at Fernald. Under Alternative 3, no long-term requirements for continued administrative controls, surveillance, or maintenance would be necessary for OU3.

7.4 Reduction of Toxicity, Mobility, or Volume Through Treatment

This criterion assesses how effectively a proposed remedy will address the contamination problem. Factors considered include the nature of the treatment process, the amount of hazardous materials that will be destroyed by the treatment process, how effectively the process reduces the toxicity, mobility, or volume of waste, and the type and quantity of contamination that will remain after treatment.

Alternative 1 would provide no reduction in contaminant toxicity, mobility, or volume. Furthermore, by placing all materials into storage without continued maintenance, contaminants would eventually be released to the environment. For Alternatives 2 and 3,

mixed wastes would be treated through solidification or encapsulation to meet LDRs and would thereby reduce the contaminant mobility. Because the same quantity of material would be treated, the reduction of toxicity, mobility, or volume would be the same for Alternatives 2 and 3.

7.5 Short-Term Effectiveness

This criterion evaluates the potential impacts of the alternative to workers, the public, and the environment.

Alternative 1 presents no short-term impacts since no worker action would occur. Risks from radiological and chemical exposures from both Alternatives 2 and 3 are within acceptable levels. The most significant element of the short-term effectiveness of Alternatives 2 and 3 is the risk associated with projected injuries related to mechanical hazards. These risks are greater for Alternative 3 than Alternative 2 due to the greater number of manhours associated with weighing, certifying, and loading containers for off-site shipment. Additionally, the increased number of shipments off-site associated with Alternative 3 raises the risk for potential accidents.

7.6 Implementability

This criterion addresses the relative ease or difficulty with which a remedy can be put in place. Factors affecting implementability include materials and services.

Alternative 1 is the most readily implementable, since it requires no additional action beyond the implementation of the OU3 IROD. Because of the approval and construction of the OSDF for OU2 and OU5 materials, Alternative 2 would be easier to implement than Alternative 3. The construction of the OSDF is considered readily implementable through the use of existing technologies and construction methods. Furthermore, under Alternative 2, a small portion of the OU3 materials would be dispositioned off-site, and would thus require truck transportation. For Alternative 3, implementation would require coordination with OU1 to transport OU3 material to the representative off-site disposal facility. This quantity to be transported off-site currently exceeds Fernald's shipping capacity. Considerable coordination would be required between DOE and various states and municipalities to facilitate the transportation of such large quantities of materials. Due to the large quantity of material to be disposed and the extended duration of the project, the available capacity for off-site disposal at current facilities or facilities yet to be constructed is unclear. For these reasons, Alternative 3 is considered less implementable than Alternative 2.

7.7 Cost

This criterion includes capital costs for design and construction as well as projected long-term maintenance costs. The cost is considered and compared to the benefit that will result from implementing the remedy.

Two methods are used to present costs associated with implementing each of the alternatives. The first method illustrates the costs in 1995 constant dollars. In other words, if the entire cost of the alternative was paid in 1995, then that cost would be considered to be in 1995 constant dollars. However, because of inflation, work performed in the future will undoubtedly cost more than work performed today.

To account for this and the time value (or investment potential) of money, a second cost estimating approach is used, called present worth analysis. Present worth analysis calculates

the amount of money that would have to be invested today to pay for the cleanup over the years of implementation. The real interest rate applied in the present worth analysis is determined by the Federal Government's Office of Management and Budget to be 4.8 percent, based on an investment interest rate minus the rate of inflation.

No additional cost is associated with Alternative 1 since no additional action would be required.

Current estimates, as detailed in Appendix E of the OU3 RI/FS Report, indicate that Alternative 2 would cost $95 million in constant year dollars, which is equivalent to a present worth cost of $71 million. The Alternative 2 estimates include OU3's contribution to the OSDF. The unit cost of $3.05 per cubic foot for on-property disposal includes costs for engineering, construction (cap and liner), material placement, construction management, radiological safety, engineering support during construction, equipment for material placement, equipment maintenance, and air and radon monitoring. The operation and maintenance cost of $1.20 million per year is based on maintenance and monitoring activities for the entire OSDF over a 30-year period; this corresponds to a unit cost of $1.17 per cubic foot for OU3 materials. These rates were based on the cost estimates presented in the OU2 Feasibility Study and subsequent OSDF design documentation.

Due to the higher costs associated with off-site transportation and disposal, the cost of Alternative 3 is estimated to be $190 million in constant year dollars. This equates to a present worth cost of $150 million.

Table 7-2 summarizes the costs (in 1995 constant dollars) associated with Alternatives 2 and 3 and also contains the corresponding present worth costs

TABLE 7-2 Summary Costs for Alternatives 2 and 3

Cost Item	Alternative 2 Costs	Alternative 3 Costs
Capital Costs	$ 59,000,000	$ 139,000,000
Staffing and Management	$ 9,600,000	$ 14,000,000
Operation and Maintenance [1]	$ 7,900,000	$ 0
Risk Budget	$ 18,000,000	$ 37,000,000
Total Cost (in 1995 dollars)	$ 95,000,000	$ 190,000,000
Present Worth Cost	$ 71,000,000	$150,000,000

[1] Operation and maintenance costs for Alternative 2 include costs associated with post-remediation.

7.8 State Acceptance

The State of Ohio supports DOE's selected remedy; a letter detailing Ohio EPA's support is shown in Appendix A.

7.9 Community Acceptance

Based on public comments received during the formal comment period, the public accepted the proposed remedy. Public comments focused on how the remedy should be implemented

instead of whether it should be implemented. All stakeholder comments received are identified and responded to in the Responsiveness Summary (Appendix A).

8.0 SELECTED REMEDY

Based upon consideration of the requirements of CERCLA, the results of the detailed analysis of alternatives using the nine criteria, and stakeholder comments, DOE and the U.S. EPA have determined that Alternative 2 is the most appropriate remedy for OU3. Therefore, Alternative 2 is the selected remedy.

The selected remedy provides for the protection of existing and future human and environmental receptors through the implementation of remedial actions involving the potential additional treatment of materials generated by D&D activities during the OU3 interim remedial action, the final disposition of most D&D materials in the OSDF, and the final disposition of those D&D materials that exceed the OSDF WAC at off-site disposal facilities. The selected remedy also adopts the long-term monitoring and security measures to be implemented pursuant to the OU5 ROD.

This ROD provides for the disposition of materials generated by the OU3 interim remedial action D&D activities. The materials, which may exhibit residual contamination subsequent to the D&D efforts, consist of accessible metals, inaccessible metals, painted light-gauge metals, concrete, non-regulated ACM, regulated ACM, and miscellaneous materials. The placement of any waste generated off of the FEMP site in the OSDF is prohibited under the selected remedy. Specifically excluded from this prohibition are laboratory wastes generated at off-site facilities resulting directly from the chemical, radiological, and engineering analysis of the FEMP waste materials/contaminated media, or wastes generated at off-site facilities during the conduct of treatability or demonstration-type studies of FEMP materials.

8.1 Key Components

Section 6.2 identified the key components of the selected remedy. The following includes the key components of the selected remedy and incorporates the components of prior OU3 decisions to form a complete, integrated remedy for OU3:

- <u>Adoption of Previous OU3 Decisions</u>
    - Incorporates the decisions provided in the IROD so as to provide for an integrated implementation of the respective decisions;
    - Adopts the procedures and disposition decisions of Removal Action 9 to continue disposition of the products, residues, and nuclear materials generated during site operations;
    - Adopts prior decisions made for management of Safe Shutdown (Removal Action 12), management of asbestos abatement (Removal Action 26), and management of debris (Removal Action 17);
- <u>Alternatives to Disposal</u>
    - Permits the unrestricted/restricted release of materials, as economically feasible, for recycling, reuse, or disposal;

- Treatment
  - Permits treatment of materials to meet the OSDF WAC and/or off-site disposal facility WAC;
- Off-Site Disposal
  - Requires off-site disposal of process residues, product materials, and process-related metals;
  - Requires off-site disposition of acid brick and concrete from specific locations (identified in Section 6.2) and any other materials exceeding the OSDF WAC;
- On-Property Disposal
  - Permits disposal of remaining OU3 wastes in the OSDF;
  - Imposes administrative controls through deed restrictions and access controls; and
  - Incorporates post-remediation activities that includes long-term monitoring and maintenance of the OSDF and operation of a groundwater monitoring network to evaluate the performance of the OSDF.

The following subsections further discuss the selected remedy, its appropriateness for addressing OU3, and its integration with other operable unit remedies and issues at the FEMP.

8.1.1 Adoption of Previous OU3 Decisions

During the development of the OU3 final decision, a number of early decisions were made to accelerate remedial actions in OU3. Those decisions include several program level removal actions and a ROD for interim remedial action. Each of the decision-making activities under the removal actions and IROD were developed in anticipation of a flexible final remedy. Each of the decisions focused on addressing a specific threat and has undergone appropriate approvals under CERCLA. These decisions are currently being implemented and an assumption was made in the development of this remedy that these actions would continue to completion. Therefore, these prior decisions have not been reevaluated. Discussions of the interim remedial action and the OU3 programmatic removal actions are provided in Sections 2.1 and 2.2, respectively.

To ensure the proper integration of the OU3 interim and final remedial actions, the OU3 RD/RA Work Plan for Interim Remedial Action will be superseded by a work plan that combines existing and updated implementation strategies for the OU3 interim remedial action with strategies developed for implementing the OU3 final remedial action. This OU3 integrated RD/RA work plan will be submitted to U.S. EPA and Ohio EPA within 60 days following the issuance of this final remedial action ROD.

The combination of the existing programmatic removal actions, the remedy selected for the interim remedial action in the IROD, and the selected remedy for disposition of the OU3 materials represents a complete remedy for OU3, as defined by the Amended Consent Agreement. The integrated remedial action for OU3 will commence upon U.S. EPA approval of the OU3 integrated RD/RA work plan.

8.1.2 Alternatives to Disposal

The selected remedy represents a flexible disposition decision, which permits detailed disposition decision-making during the planning of individual D&D activities. This flexibility allows planning and design of recycling, reuse, and waste minimization activities to coincide with that of D&D. Public preference for recycling, reuse, and waste minimization was expressed during the OU3 formal public comment period. As a means to assure public input to final decision-making with regard to the disposition of OU3 materials, the draft Decision Methodology for Fernald Scrap Metal Disposition Alternatives (DOE 1996e) has been developed to provide a methodology to evaluate alternate disposition options. This methodology will be used as a tool, with public review, to evaluate disposition options for Building 4A structural steel. If successful, the use of the methodology may be expanded to include materials other than structural steel. The implementation of the methodology will also permit new and evolving technologies to be incorporated into the remediation strategies of OU3. The methodology, as amended by public comment, will be adopted by the OU3 integrated RD/RA work plan.

As shown in Table 6-1, an estimated 309,000 cubic feet of Accessible Metals (Category A) and Miscellaneous Materials (Category I) associated primarily with administrative structures have contamination concentrations that are below baseline and could potentially be released for unrestricted reuse, recycling, or disposal in a commercial sanitary landfill. These unrestricted release materials must be in compliance with the surface contamination guidelines found in DOE Order 5400.5.

Additionally, over 1.8 million cubic feet of Accessible Metals (Category A), Inaccessible Metals (Category B), and Painted, Light-Gauge Metals (Category D) represent a grouping of materials which have the potential for recycling. If these metals cannot meet the unrestricted release guidelines set forth in DOE Order 5400.5, they could be recycled and formed into disposal containers, shield blocks, etc. Specific decisions regarding recycling and other alternatives to disposal will be made based on the results of the methodology discussed above. Those decisions will be incorporated into implementation plans resulting from the remedial design process for each D&D project.

8.1.3 Treatment

During the D&D of OU3 structures, a number of activities involving the removal of contaminants occur. These treatment activities include the removal of process residues from equipment, piping, and ductwork under the Safe Shutdown program and the washdown of structures and equipment during dismantlement under the interim remedial action. Consistent with the balanced approach concept for waste disposition, these treatment activities substantially limit the mass of contaminants which could be disposed in the OSDF under this remedy in favor of more protective disposal of a smaller amount of material. These activities also provide a mechanism to prepare materials for unrestricted release, reuse, or recycling, when practicable, and, overall, reduce the mass of materials considered too contaminated for disposal in the OSDF (by removing significant contamination). Because final disposition decisions impact the methods used for decontamination and material handling during the D&D actions, these treatment activities are governed primarily by this final remedy.

In addition to decontamination, OU3 materials exhibiting RCRA characteristic properties will receive treatment to achieve waste acceptance criteria, consistent with the FEMP Site Treatment Plan. In the OU3 RI/FS Report, two OU3 materials were determined to exhibit characteristic hazardous properties under RCRA: lead sheeting (formed as flashing, window sills, and door moldings) and acid brick. Both materials will be subject to treatment to meet

TCLP criteria of the LDRs. Treatment selection decisions for these materials will be documented in the respective implementation plans for each D&D complex.

Due to the mobility of Tc-99, a limit of 105 grams of Tc-99 is imposed for all OU3 materials dispositioned in the OSDF. Removal of surface concrete is required to meet this limit. Mechanical removal or scabbling will be used as a form of treatment to separate the more contaminated materials for off-site disposition (balanced approach). The specific locations for concrete scabbling are identified in Section 6.2.

8.1.4 Off-Site Disposal

The selected remedy includes the off-site disposal of primary threat materials, namely process residues, product materials, and equipment containing process residues. Also, to ensure that the mass-based Tc-99 WAC for on-property disposal is attained, the selected remedy includes the off-site disposition of those materials with the highest concentrations of Tc-99. Therefore, as discussed in Section 6.2, the top surfaces of concrete in four process areas will be scabbled and dispositioned off-site. Acid brick is also designated for off-site disposition due to its inherent concentrations of several RCRA constituents. As shown in Table 6-1, these three material types have been estimated to have a combined volume of 174,000 cubic feet, representing the approximate quantity of OU3 remediation materials that will be shipped to either a commercial disposal facility or the NTS facility over the duration of the OU3 final remedial action.

Materials designated for off-site shipment will be containerized and shipped either by truck or rail. Estimates contained in the OU3 RI/FS Report conclude that approximately 590 truck shipments are needed for the off-site disposition of OU3 materials. Through coordinated efforts with OU1, the off-site shipment of OU3 materials to a representative commercial disposal facility could potentially be combined with the off-site rail shipment of OU1 remediation materials. The details of these coordinated efforts are currently being developed in the OU1 remedial design effort.

8.1.5 On-Property Disposal

A general description of the OSDF design is provided in the Design Criteria Package for the On-Site Disposal Facility Design (DOE 1996f). The FEMP OSDF will be designed as an above-grade unit to provide permanent disposal for affected soil, wastes, and materials generated by site remedial actions, including the OU3 interim remedial action. Containment of materials in the facility will minimize the potential for direct contact or incidental ingestion/inhalation of residual contaminants. It will also minimize migration of contaminants to air and surface water and will protect groundwater for a minimum period of 200 to 1,000 years. Because the FEMP is situated over the Great Miami Aquifer, which is a sole-source drinking water aquifer, the placement of OU3 materials in the OSDF will require a U.S. EPA waiver of State of Ohio solid waste disposal facility siting requirements [OAC 3745-27-07(H)(2)(c)and(d)]. The specific requirements of this waiver are presented in Section 9.2 of this document. By signing this ROD, U.S. EPA grants the waiver required to implement the on-site disposal element of the OU3 final remedial action.

The OSDF is designed for 2.5 million unbulked cubic yards, approximately 90 percent of which will be excavated soil and wastes from OU2 and OU5, with a small amount of low-level radioactive material and soil expected from OU1 and OU4. The facility will occupy an area of approximately 800 feet by 3,700 feet. It will have a multilayer composite cover and a multilayer composite liner with a leachate detection/collection system. Leachate collected by

the leachate collection system will be transferred to the Advanced Wastewater Treatment Facility for treatment prior to discharge to the Great Miami River.

The OSDF will be secured by fences and guards during the remediation period. OSDF remedial action planning documents will govern: air monitoring for the OSDF; post-closure institutional controls (e.g., site ownership, access controls and restrictions, deed restrictions, and land use restrictions); and long-term monitoring of the OSDF.

The OSDF WAC are comprised of three elements: chemical/radiological-specific limits; material prohibitions; and physical size criteria. As discussed in Section 6.2, the only chemical/radiological-specific WAC for OU3 materials is Tc-99, which is limited to a total of 105 grams from OU3 materials in the OSDF.

The following items are specifically prohibited from disposal in the OSDF:

- impacted material from any off-site source, including any other DOE site, except as provided in the OU5 ROD;
- pressurizable gas cylinders;
- process-related metals (Category C materials);
- lead sheeting that has not been treated to meet LDR treatment standards;
- product, residues, and other special materials (Category J materials);
- materials containing free liquids;
- intact drums (i.e., drums must be empty and crushed);
- acid brick (Category F materials);
- transformers which have not been either crushed or had their void spaces filled with grout (or other acceptable materials);
- scrap tires;
- used oils; and
- materials not accompanied by an applicable transportation manifest.

Physical size criteria for the OU3 debris are being determined during the design of the OSDF and will be specified in the Impacted Materials Placement Plan for the OSDF. These physical size criteria, once finalized, will be incorporated into the OU3 integrated RD/RA work plan and/or subsequent project-specific implementation plans.

The OU3 RI/FS Report estimated that almost 98 percent of materials governed under this ROD will meet the WAC for on-property disposal. Of these materials, approximately 309,000 cubic feet are associated with non-process administrative structures and are expected to meet the unrestricted release guidelines of DOE Order 5400.5. This leaves an estimated seven million cubic feet of OU3 D&D material that could either be decontaminated (where practical) to meet DOE Order 5400.5 unrestricted release limits or be dispositioned in the OSDF.

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8.2 Remediation Goals

As detailed in Section 4.1 of the OU3 RI/FS Report, remedial action objectives (RAOs) were developed in accordance with the NCP and U.S. EPA guidance with the intention of setting goals to ensure the protection of human health and the environment. The objectives were designed to mitigate the potential adverse effects of any residual contaminants present on materials following D&D.

For OU3, the OU3 IROD dictates that the final remedial action provide for dispositioning material resulting from the D&D of OU3 structures. Because none of the OU3 material will remain "in place," preliminary remediation goals, which are typically established to determine the extent of remediation required to meet RAOs, were not required (and would not have been meaningful). The RAOs are appropriate to support the decision to remediate the materials placed in interim storage by the interim remedial action and to guide the final disposition of these materials. Section 4.1 of the OU3 RI/FS Report identified the RAOs that serve both of these purposes.

The OU3 RAOs stipulate the dispositioning of all materials remaining from the OU3 interim remedial action in a manner that confines risks to human health and the environment to acceptable limits. These RAOs, the ARARs identified for the selected remedy, and the potential post-remediation land use objectives discussed in the OU5 ROD will result in a final, site-wide remedy that is protective of human health and the environment.

8.3 Future Public Involvement

DOE will continue to offer opportunities for public involvement throughout the RD/RA phases of the FEMP cleanup consistent with the Fernald Community Relations Plan (1995f). Although the requirements for public involvement during the RD/RA phases are limited, DOE is committed to providing opportunities for public involvement and input into the decision process beyond those required by law. One example, as discussed in the response to stakeholder comments on recycling, reuse, and free-release of OU3 materials (see Appendix A), involves the draft Decision Methodology for Fernald Scrap Metal Disposition Alternatives. This methodology will be used as a tool, with public review, to evaluate disposition options for certain materials, such as structural steel. The methodology, as amended by public comment, will be adopted by the OU3 integrated RD/RA work plan. Additional details regarding future public involvement during RD/RA will also be outlined in the OU3 integrated RD/RA work plan.

9.0 STATUTORY DETERMINATIONS

In accordance with the statutory requirements of Section 121 of the CERCLA, remedial actions taken pursuant to Sections 104 and 106 must satisfy the following criteria:

- Be protective of human health and the environment;
- Comply with all ARARs established under federal and state environmental laws (or justify a waiver);
- Be cost-effective;
- Utilize permanent solutions and alternative technologies or recovery technologies to the maximum extent practicable; and

- Satisfy the statutory preference for remedies that utilize treatment and also significantly reduce the toxicity, mobility and volume of the hazardous substances, pollutants, or contaminants (or justify why this preference cannot be satisfied).

In addition, CERCLA requires five year reviews to determine if adequate protection of human health and the environment is being maintained where remedial actions result in hazardous substances remaining on-property above health-based levels. The following sections demonstrate how the selected response actions for OU3 satisfy these statutory requirements.

9.1 Protection of Human Health and the Environment

The selected remedy achieves the requirement of being protective of human health and the environment by:

- dictating the removal of potential residual contamination sources to achieve the WAC for on-property disposal;

- treating, when necessary, materials pursuant to LDRs and the FEMP Site Treatment Plan;

- dispositioning the majority of OU3 materials in an engineered OSDF, thereby reducing potential risks to potential human and environmental receptors to acceptable levels;

- dispositioning the remaining materials at off-site locations, depending on the nature of the materials; and

- reducing the potential short-term risks associated with the packaging and transport of materials through the use of engineering and administrative controls that will be specified in the OU3 integrated RD/RA work plan and project-specific implementation plans.

Once the OSDF is available to accept OU3 materials, the OU3 D&D materials that were placed into interim storage will be transferred to the OSDF. Any contaminated soil generated by OU3 remediation activities will also be removed and disposed in a manner consistent with the OU5 ROD. None of the OU3 disposition options (i.e., on-property disposal, off-site disposal, recycling, etc.) results in unacceptable risks to human health or the environment. At the completion of the OU3 interim and final remedial actions, no materials will be left in place; therefore, there will not be any residual risks associated with OU3.

9.2 Compliance with ARARs

Under Section 121 (d)(1) of CERCLA, remedial actions must attain standards, requirements, or criteria that are "applicable or relevant and appropriate" (i.e., ARARs) under the circumstances of the release at a site. All ARARs will be met upon completion of the selected remedy, with the exception of two Ohio EPA solid waste disposal facility siting criteria (contained in OAC 3745-27-07 and -20) that restrict the siting of a disposal facility over a high yield and/or a sole-source aquifer regulated under the Safe Drinking Water Act. A waiver to the OAC 3745-27-07 and -20 solid waste disposal facility siting requirements is necessary in order to locate the OSDF over the Great Miami Aquifer.

A definitive list of the ARARs and TBC criteria that will be attained by the selected remedy is provided in Appendix B, organized by chemical-specific, location-specific, and action-specific requirements. The justification supporting the issuance of an ARAR waiver to the OAC 3745-27-07 and -20 solid waste disposal facility siting requirements is provided in Section 9.2.1. The U.S. EPA grants the waiver and concurs with DOE that the selected remedy will attain a standard of performance equivalent to that required by the ARAR being waived, in accordance with the ARAR waiver provisions provided by the NCP (40 CFR 300.430).

9.2.1. Waiver of State of Ohio Solid Waste Disposal Facility Requirements

OU3 remediation materials that meet the WAC for the OSDF and placed in thereupon as part of the selected remedy are considered by the Ohio EPA to be solid wastes. The Ohio EPA disposal facility siting criteria from the Ohio solid waste disposal facility siting regulations are pertinent ARARs for on-property disposal. OAC 3745-27-07 and -20 list the following areas where a solid waste disposal facility may not be located:

- In surface and subsurface areas surrounding a public water supply well through which contaminants may move toward and may reach the public water supply well within a period of five years;
- Above an aquifer declared by the Federal government under the Safe Drinking Water Act to be a sole-source aquifer;
- Above an unconsolidated aquifer capable of sustaining a yield of 100 gallons per minute for a 24-hour period to a water supply well located within 1,000 feet of the limits of solid waste placement;
- In a regulatory floodplain;
- Within 1,000 feet of a water supply well or developed spring;
- Within 300 feet of the facility's property line;
- Within 1,000 feet of a domicile whose owner has not consented in writing to the location of the facility;
- Within 200 feet of a stream, lake, or natural wetland; and
- The isolation distance between the uppermost aquifer system and the bottom of the recompacted soil liner of the disposal facility cannot be less than 15 feet of in situ or added geologic material.

The proposed feasible location of the OSDF is on the eastern side of the FEMP which is not in a floodplain; near a stream, lake, or wetland; within 1,000 feet of an existing water supply well or developed spring nor near enough to a public water supply well so that contaminants may reach the well within a period of five years. The facility would not be placed within 300 feet of the FEMP property line or within 1,000 feet of an existing residence. The isolation distance between the uppermost aquifer system and the bottom of the recompacted soil liner will be greater than 15 feet.

The remaining two siting requirements (bullets two and three) cannot be met because of the FEMP's location over a sole-source aquifer that is capable of sustaining a yield of 100 gallons per minute for a 24-hour period. Ohio EPA has established two specific criteria (GD202.101

and GD202.102) that identify conditions that would be acceptable to allow an exemption to the siting criteria. While these policies state that several factors will be considered in evaluation an exemption, the specific factors identified indicate the at the protection of human health and the environment should be provided solely by the existing hydrogeologic conditions. This has been reaffirmed by the Ohio EPA in several meetings.

The primary hydrogeologic standards established by these policies are:

- Significant thickness of low-permeable material between the disposal facility and the aquifer;
- Lack of inter-connection between the sole-source aquifer and any significant zones of saturation;
- Significant amount of sediment [soil] between the disposal facility and the high-yield aquifer to prevent leachate from migrating to the high-yield aquifer during the life of the landfill and the post-closure care period. The post-closure care period for a solid waste is a minimum of 30 years [OAC 3745-17-14(A)].

It has been determined, based on existing hydrogeologic information, that the existing hydrogeologic conditions at the FEMP do not fully meet these conditions. This is based on the possibility that some granular soil are interbedded in the till and the need to protect the aquifer for significantly longer that 30 years (at least 200 years; an ARAR under 40 CFR 192).

Because the aquifer underlies the entire site, a waiver was requested to locate the OSDF on the FEMP. The waiver request was based on the ability of the selected remedial action, through the use of another method or approach, to attain a standard of performance that is equivalent to that required by the ARARs. The criteria used to determine ARAR equivalency per 40 CFR 300.430(f)(1)(ii)(C)(4) include degree of protection, level of performance, reliability into the future, and time required for results.

9.2.2. Equivalent Standard of Performance

The preamble in the NCP to 40 CFR 300.430(f)(1)(ii)(C)(4) states that the purpose of an ARAR waiver is for the use of alternative but equivalent technologies and comparison based on risk is only permitted where the original standard is risk-based. The Ohio exemption guidance, with its focus on geological conditions, is for the most part analogous to a technology standard but also appears to be, with respect to level of performance, risk- and technology-based. Therefore, the following analysis of CERCLA waiver criteria uses a technology-based comparison, except for level of performance, which is a risk-based comparison. The circumstances of the selected remedy are considered equivalent to the Ohio EPA requirements and thereby warrant the granting of a CERCLA ARAR waiver. The basis for equivalency is identified below for each of the identified criteria.

Degree of protection:

- **Ohio EPA Standard** - The justification to allow a solid waste landfill over a high-yield sole-source aquifer is that the existing hydrogeology will provide adequate protection to the high-yield sole-source aquifer from the effects of a release of leachate and thereby protect the aquifer from contamination. The approach spelled out by the pertinent policies is to prevent leachate from reaching the aquifer during the active life of the landfill and the post closure period of 30 years. The active life of the OSDF for OU3 wastes is estimated to be seven years

under the FY-96 Baseline. It should be noted that if future funding does not support this schedule, the impact to resources (i.e., manpower) would extend the maximum active life to approximately 27 years pursuant to the original OU3 schedule.

- **Equivalent Standard** - The combination of engineering controls and existing hydrogeology provided by the selected remedy will provide the same degree of protection to the aquifer as the hydrogeologic conditions described in the Ohio EPA policy. Modeling with the combined controls shows that the leachate will not reach the aquifer during the active life of the landfill and a post-closure period of 30 years. It should be noted that the modeling performed for the OU5 FS Report (Appendix F) used a period of 1,000 years and assumed that the liner system and man-made materials (e.g., leachate collection, leak detection and synthetic liners) of the OSDF would fail. This modeling shows that with the enhanced cap to reduce infiltration and the existing hydrogeology, leachate that may eventually reach the aquifer would not cause the constituent concentrations in the aquifer to exceed the promulgated and proposed maximum contaminant levels (MCLs).

Level of performance (method-based):

- **Ohio EPA Standard** - Significant thickness of low permeable material between the disposal facility and the aquifer.

- **Equivalent Standard** - Decisions for on-property disposal of OU3 materials have been based on a combination of 20 feet of gray clay, geochemical parameters in gray clay, OU3 specific leaching potential, and conservative leaching assumptions to achieve equivalent protective requirements. An approach similar to OU2 and OU5 was followed for development of protective WAC for OU3 materials. Two parameters in the engineering model were updated for OU3 WAC development to reflect site-specific information. The OSDF dimensions were based on the OU2 Disposal Facility Pre-Design Geotechnical Investigation Soil Investigation Data Report (DOE 1995g) which identified the best hydrogeology for placement of the OSDF. An additional modification increased the Tc-99 K_d (the coefficient of adsorption/desorption) based on site sampling within the area overlying the OSDF location as determined within the OU2 pre-design report. Based on these changes, modeling under the EPA 70-year rule has shown that a contribution by OU3 of less than or equal to 105 grams of Tc-99 to the OSDF will not exceed a 10^{-5} risk level at the boundary of the OSDF.

- **Ohio EPA Standard** - Lack of interconnection between the sole-source aquifer and any significant zones of saturation.

- **Equivalent Standard** - Any interconnections will be minimized by: 1) locating the OSDF in an area with the greatest thickness of gray clay and the least occurrence of interbedded granular material; and/or 2) providing an increase in the engineered controls to compensate for any reduction of protection due to interbedded granular material; and/or 3) providing engineering control of lateral movement of water in an area of interbedded granular material by removing the granular material affecting the geologic protection of the aquifer or by preventing the movement of water from these areas to the aquifer.

- **Ohio EPA Standard** - Significant amount of sediment [soil] between the disposal facility and the high-yield aquifer to prevent leachate from migrating to the high-yield aquifer during the life of the landfill and the post-closure care period. The post-closure care period for a solid waste landfills is a minimum of 30 years [OAC 3745-27-14(A)].

- **Equivalent Standard** - At a minimum, a total of four additional layers will be added to the standard solid waste cap and liner [OAC 3745-27-08(C)]. These layers are a sand filter, biotic barrier, and bentonite geocomposite layers in the cap to reduce infiltration and to protect the integrity of the cap. A leak-detection layer will be provided in the liner to monitor the integrity of the containment system and to provide early warning to allow corrective action prior to any adverse impact to the aquifer. These additional engineering controls together with the natural hydrogeology will prevent leachate from reaching the aquifer during the post-closure care period.

Level of performance (risk-based):

- **Ohio EPA Standard** - Ohio Revised Code (ORC) 3734.02(G) allows exemptions of Ohio EPA regulations if a remedy is unlikely to adversely affect the public health or safety or the environment. The pertinent policies mirror this requirement using an approach which requires existing hydrogeologic conditions to provide this protection. Ohio EPA does not propose a specific definition for the protection of human health and the environment. However, OAC 3745-27-10(F)(7)(a)-(d), which specifies solid waste landfill operating requirements, sets forth concentration levels for constituents detected in the groundwater for which a corrective action is required. This standard provides an appropriate framework for risk analysis in this case because the waiver concerns the establishment of a solid waste disposal unit. These levels are concentrations that are at a statistically significant level to be protective of human health and the environment, and the promulgated MCL, or background concentrations for constituents that do not have a promulgated MCL, or alternative groundwater protection standard (for a known or suspected carcinogen, concentration levels that represent a cumulative excess upper-bound lifetime cancer risk to an individual within the 1×10^{-4} to 1×10^{-6} range).

- **Equivalent Standard** - This same definition has been used as a threshold criteria in evaluating alternatives in the CERCLA decision-making process at the FEMP and specifically in the OU5 FS with the addition that constituents in groundwater should not be higher than the proposed MCLs. The selected remedy meets this threshold criteria. Protection of human health has been determined through the risk assessment process based on contaminant transport modeling and the NCP acceptable incremental lifetime cancer risk range of 1×10^{-4} to 1×10^{-6} and in compliance with promulgated and proposed MCLs.

Reliability into the future:
The combination of hydrogeologic and engineering controls (including additional controls beyond the requirements for a solid waste disposal facility) provides increased reliability into the future because of the following:

- The biotic barrier in the cap will prevent burrowing animals or vegetative roots from compromising the integrity of the cap and thereby increasing the infiltration.

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- Leak detection monitoring will provide an early warning of any problem in leachate containment and allow corrective measures to be undertaken prior to adverse impact to the aquifer.

Time required for results:
Construction of a disposal facility with additional engineering controls will not take significantly longer than the time required for a disposal facility that strictly meets the Ohio Solid Waste Disposal Regulations.

A CERCLA ARAR waiver of the Ohio EPA prohibition of siting a disposal facility over a high-yield, sole-source aquifer is justified based on an equivalent standard of performance [40 CFR 300.430(f)(1)(ii)(C)(4)] to the Ohio EPA policies allowing an exemption to the siting requirements. This waiver is applicable only to OU3 on-property remediation materials.

The disposal facility location and design will be subject to review and approval during the OU2 remedial design phase. DOE intends to construct only one disposal facility at the FEMP. Therefore, since on-property disposal has been selected for additional FEMP operable units, the disposal facility capacity and location will be adjusted accordingly during the OU2 remedial design process.

9.3 Cost Effectiveness

The selected remedy is cost-effective because it has been determined to provide overall effectiveness proportional to its costs, the net present-worth value being $71 million and an estimated total cost of $95 million. Overall the selected remedy achieves the remedial action objectives established for OU3 for the least cost.

The selected remedy is estimated to be one-half the total cost and one-half the present-worth cost of transporting all OU3 remediation materials to off-site facilities for final disposal (Alternative 3). Alternative 3 would have an estimated present-worth cost of $150 million and an estimated total cost of $190 million. Alternative 3 is not considered proportionally cost effective relative to differences in protectiveness provided.

9.4 Utilization of Permanent Solutions and Alternative Treatment Technologies or Resource Recovery Technologies to the Maximum Extent Practicable

Of those alternatives that are protective of human health and the environment and comply with ARARs, the selected remedy for OU3 provides the best balance of trade-offs among the alternatives with respect to the evaluation criteria; it provides a remedy which is reliable over the long term, is less costly, and is readily implementable. The selected remedy represents the maximum extent to which permanent solutions and treatment technologies can be utilized in a cost-effective manner for OU3.

The selected remedy provides adequate short-term effectiveness and is readily implementable. Because the majority of the waste material will remain on-site during remediation, there is very little opportunity for public exposure to the contaminants. The exposure potential to remediation workers will be managed in accordance with a health and safety plan and is, therefore, considered acceptable. The on-site disposal alternative is considered to provide more short-term effectiveness and is more implementable than off-site disposal. The selected remedy is half the cost of off-site disposal.

The State of Ohio and the public were provided the opportunity to review the proposed remedy for OU3. Their comments and concerns were fully considered in determining the

selected remedy. The responses to the comments that were provided can be found in the Responsiveness Summary (Appendix A). The State of Ohio and the public support the selected remedy.

The selected remedy will result in the final disposition of OU3 materials generated during the D&D of former Production Area structures. Those materials that either are considered to be principal threat materials, do not meet the OSDF WAC, or meet unrestricted release criteria will be permanently removed from the Fernald site for off-site disposition at an approved location. Treatment will be performed as needed to meet the appropriate disposal facility WAC. Alternative treatment technologies will be considered on a case-by-case basis and will be documented in the project-specific D&D implementation plans.

9.5 Preference for Treatment as a Principal Element

The NCP [40 CFR 300.430 (a)(iii)(A) and (B)] in part states that "EPA expects to use treatment to address the principal threats posed by a site, wherever practicable..." and "EPA expects to use engineering controls, such as containment, for waste that poses a relatively low long-term threat or where treatment is impracticable." OU3 materials considered to be principal threat at the FEMP generally consist of the "legacy wastes." Legacy wastes are defined as the inventory of waste that was generated during the FEMP production period. Legacy wastes include containerized low-level radioactive waste, hazardous waste, mixed waste, and PCB wastes. These materials will be treated, as required, in accordance with the FEMP Site Treatment Plan and the FFCA, and dispositioned under existing removal actions. The "legacy wastes" that do not require treatment will also be dispositioned off-site. The materials to be generated during the interim remedial action and dispositioned under the final remedial action constitute low-threat materials relative to the "legacy wastes."

This approach is consistent with the adopted site-wide remedy, which incorporates a balanced approach to waste disposition that recognizes the technical and economic impracticality of removing and disposing of all contaminated FEMP materials at an off-site disposal facility. Materials contaminated with relatively higher radiological and chemical concentrations (e.g., OU1 waste pit materials and OU4 silo wastes), deemed to represent the principal threat at the FEMP, would be treated, if required, and shipped off-site for disposal. Secondary threat materials, exhibiting relatively lesser concentrations, would be permanently disposed of at the FEMP. Consistent with this approach, the OU1 and the OU4 remediation wastes are considered principal threat materials because of the nature and concentration of their constituents; treatment and off-site disposal has been selected as the remedy for these operable units. Also in accordance with this approach, relatively low concentration wastes and soil associated with OU2 and OU5 are being considered for on-property disposal.

For OU3, the interim remedial action, as prescribed in the IROD, satisfies the statutory preference for treatment of OU3 materials through the application of in situ gross decontamination methods. Based on the projected residual contamination levels on remediation materials following the in situ treatment and D&D of OU3 structures, the role of further treatment during the OU3 final remedial action will be on a supplemental basis to ensure protectiveness during the final disposition activities and to meet WAC for the off-site commercial disposal facility.

9.6 Irreversible and Irretrievable Commitment of Resources

Natural resources will be permanently committed as a result of implementing the selected remedy over a period of ten years. These commitments not only include the resources and land, but the services they provide as well.

The selected remedy will result in the permanent commitment of land at the off-site disposal facilities. Up to 0.4 acres of land could be committed at the commercial disposal facility due to the disposition of OU3 materials that exceed the OSDF WAC. Up to 2.5 acres of land could be required at the NTS due to the disposition of OU3 materials that exceed both the OSDF WAC and the commercial disposal facility WAC. Terrestrial habitat at the commercial disposal facility is sparse, resulting in minimal displacement of species. Habitat for the Desert Tortoise at NTS is not expected to be impacted. Additionally, up to 13 acres of land could be required at a local sanitary landfill for the dispositioning of OU3 materials that meet the unrestricted release criteria. In addition to off-site land commitments, on-property disposition of OU3 materials could utilize up to 10 percent (or 6.8 acres) of the OSDF.

Consumptive use of petroleum products (e.g., diesel fuel and gasoline) will be required for construction of final action support facilities, material transport, and on-property disposal activities. These materials will be available at the FEMP. Additional fuel use will result from off-site transport of the materials. However, adequate supplies are available without affecting local requirements for these products. Potential additional treatment processes for the selected action alternative will require consumptive use of materials (i.e., polymers) and energy.

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REFERENCES

State of Ohio vs. U.S. Department of Energy, et al, Ohio 1993, "Stipulated Amendment of Consent Decree Entered December 2, 1988," as amended on January 22, 1993.

U.S. Department of Energy, DOE 1988, "Remedial Investigation/Feasibility Study Work Plan for the Feed Materials Production Center," Revision 3, DOE, Oak Ridge Operations Office, Oak Ridge, TN.

U.S. Department of Energy, DOE 1993a, "Operable Unit 3 Proposed Plan/Environmental Assessment for Interim Remedial Action," Final, DOE, Fernald Field Office, Fernald, OH.

U.S. Department of Energy, DOE 1993b, "Operable Unit 3 RI/FS Work Plan Addendum," DOE, Fernald Field Office, Fernald, OH.

U.S. Department of Energy, DOE 1993c, "Sitewide Characterization Report," DOE, Fernald Field Office, Fernald, OH.

U.S. Department of Energy, DOE 1994, "Operable Unit 3 Record of Decision for Interim Remedial Action and Responsiveness Summary," Final, DOE, Fernald Field Office, Fernald, OH.

U.S. Department of Energy, DOE 1995a, "Operable Unit 3 Remedial Design Prioritization and Sequencing Report," Final, DOE, Fernald Area Office, Fernald, OH.

U.S. Department of Energy, DOE 1995b, "Operable Unit 3 Remedial Design/Remedial Action Work Plan for Interim Remedial Action," Final, DOE, Fernald Field Office, Fernald, OH.

U.S. Department of Energy, DOE 1995c, "Proposed Site Treatment Plan," Revision 1.1, DOE, Fernald Field Office, Fernald, OH.

U.S. Department of Energy, DOE 1995d, "Removal Action 17 Work Plan," Revision 3, DOE, Fernald Field Office, Fernald, OH.

U.S. Department of Energy, DOE 1995e, "Record of Decision for Remedial Actions at Operable Unit 2," DOE, Fernald Area Office, Fernald, OH.

U.S. Department of Energy, DOE 1995f, "Fernald Community Relations Plan," Final, DOE, Fernald Area Office, Fernald, OH.

U.S. Department of Energy, DOE 1995g, "Predesign Investigation and Site Selection Report for the On-Site Disposal Facility," Draft, DOE, Fernald Area Office, Fernald, OH.

U.S. Department of Energy, DOE 1996a, "Operable Unit 3 Remedial Investigation/Feasibility Study Report," Final, DOE, Fernald Area Office, Fernald, OH.

U.S. Department of Energy, DOE 1996b, "Proposed Plan for the Operable Unit 3 Final Remedial Action," Final, DOE, Fernald Area Office, Fernald, OH.

U.S. Department of Energy, DOE 1996c, "Record of Decision for Remedial Actions at Operable Unit 5," Final, DOE, Fernald Area Office, Fernald, OH.

REFERENCES (CONTINUED)

U.S. Department of Energy, DOE 1996d, "Impacted Materials Placement Plan for the On-Site Disposal Facility," Draft, DOE, Fernald Area Office, Fernald, OH.

U.S. Department of Energy, DOE 1996e, "Decision Methodology for Fernald Scrap Metal Disposition Alternatives," Draft, DOE, Fernald Area Office, Fernald, OH.

U.S. Department of Energy, DOE 1996f, "Design Criteria Package for the On-Site Disposal Facility Design," Pre-Final, DOE, Fernald Area Office, Fernald, OH.

U.S. Environmental Protection Agency, EPA 1988, "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA," EPA 540/G-89.004, Office of Emergency and Remedial Response, Washington D.C.

U.S. Environmental Protection Agency, EPA 1990, "National Oil and Hazardous Substances Pollution Contingency Plan," Final Rule (40 CFR 300), Federal Register, 55(46):8666-8865.

U.S. Environmental Protection Agency, EPA 1991a, "Consent Agreement as Amended under CERCLA Sections 120 and 106(a) in the Matter of: U.S. Department of Energy Feed Materials Production Center, Fernald, Ohio," Administrative Docket No. V-W-90-C-052, Region V, Chicago, Illinois, September 18.

U.S. Environmental Protection Agency, EPA 1991b, "Risk Assessment Guidance for Superfund, Volume 1 - Human Health Evaluation Manual (Part B, Development of Risk-Based Preliminary Remediation Goals)," 9285.7-01B, EPA, Office of Emergency and Remedial Response, Washington, DC.

APPENDIX A

OPERABLE UNIT 3 RESPONSIVENESS SUMMARY

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A.1 INTRODUCTION AND ORGANIZATION

This Responsiveness Summary documents formal public comments on the Proposed Plan for the Operable Unit 3 Final Remedial Action (April 1996) made during the OU3 Public Meeting at The Plantation in Harrison, Ohio on April 23, 1996 and those comments submitted in writing during the formal public comment period. It also presents the DOE's responses to all comments received.

Based on the evaluation of alternative remedial actions in the OU3 Remedial Investigation and Feasibility Study Report (February 1996) and on stakeholder comments recorded in this Responsiveness Summary, the preferred alternative of "Selected Material Treatment, On-Property Disposal, and Off-Site Disposition," as identified in the Proposed Plan, has been selected in the Record of Decision (ROD).

As stated in U.S. EPA's Guidance on Preparing Superfund Decision Documents (January 1992, Preliminary Draft), this Responsiveness Summary serves three important purposes. First, it provides the DOE, U.S. EPA, and Ohio EPA with information about community concerns with the site and preferences regarding the proposed remedial alternative. Second, it demonstrates to stakeholders how stakeholder comments were integrated into the decision-making process. Third, it allows DOE to formally respond to stakeholder comments.

This Responsiveness Summary has been prepared pursuant to the terms of the 1991 Amended Consent Agreement between DOE and the U.S. EPA, as well as other requirements, including:

- The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments Reauthorization Act, 42 United States Code, Sections 9601, et. seq.;
- National Oil and Hazardous Substances Pollution Contingency Plan, 40 Code of Federal Regulations (CFR), Part 300;
- Community Relations in Superfund: A Handbook, January 1992, EPA/540/R-92/009;
- Guidance on Preparing Superfund Decision Documents: The Proposed Plan, The Record of Decision, Explanation of Significant Differences, The Record of Decision Amendment, Interim Final, July 1989, EPA/540/G-89/007; and
- Fernald Community Relations Plan, Revision 4, January 1995, PL-3045.

As stated above, this Responsiveness Summary documents the DOE's responses to all comments received. After reviewing the transcripts of verbal comments and written comments, DOE grouped comments together according to common issue areas. These issue areas are listed in the comment/response crosswalk, Table A-1. For each issue identified, DOE has summarized all individual comments into summary comments and prepared a response to each summary comment. After the response, the individual comments are quoted. Summary comments, responses, and individual comments are provided in Section A.2.

TABLE A-1 Crosswalk Between Stakeholder Comments and DOE Responses

	Summary Comments and Numbers	Commentor	Comment Page No.	Response Page No.
1. SELECTION OF THE PROPOSED REMEDY				
1a	Support for the Proposed Remedy	Lisa Crawford	A-33	A-6
		Vicky Dastillung	A-35	
		Pamela Dunn	A-38	
		NTS CAB	A-43	
		John Throckmorton	A-46	
		Edwa Yocum	A-47	
		Ohio EPA	A-48	
2. REMEDIAL ACTION IMPLEMENTATION				
2a	Recycling, Reuse, and Free Release	Lisa Crawford	A-33	A-9
			A-34	
		Vicky Dastillung	A-35	
		Pamela Dunn	A-39	
		Gary Storer	A-45	
		Edwa Yocum	A-47	
		Ohio EPA	A-48	
			A-49	
2b	Non-FEMP Waste Prohibition for On-Property Disposal	Lisa Crawford	A-33	A-12
		Vicky Dastillung	A-35	
		Pamela Dunn	A-38	
			A-39	
		Edwa Yocum	A-47	
		Ohio EPA	A-48	
			A-49	
			A-50	
2c	On-Property Disposal WAC for OU3 Materials	Lisa Crawford	A-33	A-14
		Pamela Dunn	A-38	
			A-39	
		NTS CAB	A-43	
		Ohio EPA	A-48	
2d	OSDF Restriction of OU3 Characteristic Hazardous Waste	Lisa Crawford	A-33	A-16
		Ohio EPA	A-48	
2e	Off-Site Transportation and Disposal	NTS CAB	A-42	A-16
			A-43	
			A-44	
2f	Incorporating Waste Minimization and Pollution Prevention Strategies in Remedial Action Activities	Lisa Crawford	A-34	A-19
		Vicky Dastillung	A-35	
			A-36	
		Pamela Dunn	A-39	
		Ohio EPA	A-49	
2g	Preference for Implementing New and/or Evolving Technologies	Lisa Crawford	A-33	A-20
		Vicky Dastillung	A-36	
		Pamela Dunn	A-38	
		Ohio EPA	A-49	
2h	Environmental Monitoring	Lisa Crawford	A-34	A-22
		Vicky Dastillung	A-37	
		Pamela Dunn	A-39	
		Ohio EPA	A-49	

TABLE A-1 Crosswalk Between Stakeholder Comments and DOE Responses (Continued)

	Summary Comments and Numbers	Commentor	Comment Page No.	Response Page No.
3. COMMUNITY INVOLVEMENT AND NOTIFICATION				
3a	Addressing Public Comments in the ROD	NTS CAB	A-42 A-44	A-24
3b	Continuing Public Involvement	Lisa Crawford Vicky Dastillung Pamela Dunn Ohio EPA	A-34 A-37 A-38 A-49	A-25
3c	Future Reviews and/or Revisions to the OU3 ROD	Vicky Dastillung	A-35 A-36 A-37	A-25
4. COMMENTS NOT DIRECTLY APPLICABLE TO THE OU3 DECISION				
4a	Design and Construction of the OSDF	Vicky Dastillung	A-36	A-27
4b	Future Land Use	Lisa Crawford Pamela Dunn Ohio EPA	A-34 A-39 A-49	A-28
4c	Posting of Accessible Remediated Areas	Vicky Dastillung	A-37	A-28
5. SPECIFIC COMMENTS AND QUESTIONS REGARDING THE OU3 RI/FS REPORT AND PROPOSED PLAN				
5a	Integration of CERCLA and NEPA	NTS CAB	A-42	A-29
5b	EPA Evaluation Criteria	NTS CAB	A-43	A-30
5c	Cost	NTS CAB	A-44	A-30
5d	State Acceptance	NTS CAB	A-44	A-30
5e	Transportation Routes	NTS CAB	A-44	A-31
5f	Distinction Between OU3 Interim and Final Remedial Actions	NTS CAB	A-44	A-31

Section A.3 contains the transcript of the formal comment portion of the April 23, 1996 public meeting and copies of all written comments submitted during the public comment period. Verbal and written comments submitted formally are presented verbatim, bracketed, and identified by a number that corresponds to the number assigned to each issue.

This appendix is organized so that commentors can find their comments and DOE's response to their comments in several ways. The subsequent subsections provide directions for either finding DOE's response to a summary comment topic by using Table A-1 or finding DOE's response to an individual oral or written comment in the public meeting transcript presented in Section A.3.

A.1.1 Finding DOE's Response to a Summary Comment Topic

DOE's response to comments made in a particular topic area can be found using Table A-1 as follows:

1. Turn to Table A-1.

2. Select an issue of interest from the list in the second column from the left. Summary comment topics are organized by larger issue areas that include:
    1. Selection of the Proposed Remedy
    2. Remedial Action Implementation
    3. Community Involvement and Notification
    4. Comments Not Directly Applicable to the OU3 Decision
    5. Specific Comments and Questions Regarding the OU3 RI/FS Report and Proposed Plan

3. Follow the row to the right from the topic to the last column on the right. This column lists the page number of where the summary comment and DOE response can be found. The column titled "Commentor" on Table A-1 lists the name of all the commentors who provided comments on the same issue.

4. Turn to the page number listed in the right-hand column. The referenced page will be in Section A.2 of this Responsiveness Summary.

A.1.2 Finding DOE's Response to a Stakeholder Comment

Stakeholder comments submitted during the public comment period are presented alphabetically (by the last name of the commentor) in Section A.3. DOE's responses to these comments are presented in Section A.2 as summary comment responses and can be located as follows:

1. Find an oral or written comment in Section A.3.

2. Find the issue number assigned to the comment on a bracket in the right-hand margin of the page.

3. Turn to Table A-1 and find the topic that corresponds to that issue number. Issue numbers are listed in the left-hand column of the table.

4. Follow the row to the right from the topic to the last column on the right. This column lists the page number where the summary comment and DOE response can be found.

5. Turn to the page number listed in the right-hand column. The page will be in Section A.2 of this Responsiveness Summary.

Steps 3 and 4 may be omitted by turning directly to Section A.2 after finding the issue number assigned to the comment in the margin of the letter. Section A.2 is organized numerically by issue number with lowercase letters identifying subtopics within an issue.

A.2 SUMMARY COMMENTS AND RESPONSES

This section presents summary comments and DOE responses to these summary comments, followed by individual comments quoted from meeting transcripts and letters submitted by stakeholders during the formal public comment period. Summary comments have been grouped into the following four categories:

1. Selection of the Proposed Remedy
2. Remedial Action Implementation
3. Community Involvement and Notification
4. Comments Not Directly Applicable to the OU3 Decision

Additionally, a fifth category (entitled Specific Comments and Questions Regarding the OU3 RI/FS Report and Proposed Plan) was included to address several specific comments raised by the Nevada Test Site (NTS) Community Advisory Board (CAB) related to the contents of the support documents. These comments were not grouped with others into summary comments, but were addressed individually.

Under the summary comment headings, logical groupings of issues were developed to reflect individual comments received. Summary comments are identified by the heading category number and a lower-case letter. DOE has addressed all stakeholder comments under one of the summary comments identified below. In parentheses is the number of commentors who commented on the particular issue.

1. Selection of the Proposed Remedy
   - 1a Support for the Proposed Remedy (7 commentors)

2. Remedial Action Implementation
   - 2a Recycling, Reuse, and Free Release (6 commentors)
   - 2b Non-FEMP Waste Prohibition for On-Property Disposal (5 commentors)
   - 2c On-Property Disposal WAC for OU3 Materials (4 commentors)
   - 2d OSDF Restriction of OU3 Characteristic Hazardous Waste (2 commentors)
   - 2e Off-Site Transportation and Disposal (1 commentor)
   - 2f Incorporating Waste Minimization and Pollution Prevention Strategies in Remedial Action Activities (4 commentors)
   - 2g Preference for Implementing New and/or Evolving Technologies (4 commentors)
   - 2h Environmental Monitoring (4 commentors)

3. Community Involvement and Notification
   - 3a Addressing Public Comments in the ROD (1 commentor)
   - 3b Continuing Public Involvement (4 commentors)
   - 3c Future Reviews and/or Revisions to the OU3 ROD (1 commentor)

4. Comments Not Directly Applicable to the OU3 Decision
   - 4a Design and Construction of the OSDF (1 commentor)
   - 4b Future Land Use (3 commentors)
   - 4c Posting of Accessible Remediated Areas (1 commentor)

5. Specific Comments and Questions Regarding the OU3 RI/FS Report and Proposed Plan
   - 5a Integration of CERCLA and NEPA (1 commentor)
   - 5b EPA Evaluation Criteria (1 commentor)
   - 5c Cost (1 commentor)
   - 5d State Acceptance (1 commentor)
   - 5e Transportation Routes (1 commentor)
   - 5f Distinction Between OU3 Interim and Final Remedial Actions (1 commentor)

Table A-1 provides the page number of the transcript or letter where each original stakeholder comment appears. Public meeting transcripts and written comments can be found in Sections A.3.1 and A.3.2, respectively, cross referenced to summary comments and DOE responses by the numbers identified above. All oral and written comments are part of the Administrative Record for Final Remedial Action at Operable Unit 3.

1. SELECTION OF THE PROPOSED REMEDY

SUMMARY COMMENT #1a - Support for the Proposed Remedy
Several members of the public and the Ohio EPA expressed support for the remedy proposed by the OU3 Proposed Plan.

DOE RESPONSE #1a
The Proposed Plan summarized information from the OU3 RI/FS Report and identified DOE's proposed remedy of Selected Material Treatment, On-Property Disposal, and Off-Site Disposition. In the FS, the alternatives were evaluated against seven of the nine evaluation criteria required under the National Oil and Hazardous Substance Contingency Plan (40 CFR 300). The remaining two criteria, state acceptance and community acceptance, have now been evaluated based on comments received during the formal public comment period. Based on all nine criteria, the Preferred Alternative identified in the OU3 Proposed Plan has been modified and identified as the Selected Remedy in the OU3 ROD.

In addition to the specific comments below supporting the proposed remedy, one comment indicated some opposition to the proposed remedy. DOE understands that some members of the community near the FEMP site want all contamination removed from the site and shipped to an off-site location. The site-wide remedial approach, of which OU3 is a component, involves balancing the off-site disposal of the FEMP's inventory of highly contaminated wastes

with on-property disposal of less contaminated soil and rubble. This "balanced approach" was used in developing the RODs for Operable Units 1, 2, 4, and 5, and has been reflected in the OU3 decision process as well.

The majority of comments received were related to how to safely implement the proposed remedy rather than questioning its selection. Accordingly, DOE has concluded that the public and the State of Ohio are supportive of making the proposed remedy (as amended by stakeholder inputs) the Selected Remedy. DOE will continue to work with the community throughout the remedial design and remedial action phases to expand further upon the details of the design and cleanup process, and to ensure that concerns are addressed in the remedial design.

SPECIFIC COMMENTS #1a[1]

Lisa Crawford; Written Comments

"I believe that the selected alternative is the appropriate one. I also believe that the balanced approach - low volume, high concentration wastes go off-site for disposal and high volume, lower contamination wastes are disposed of in an engineered facility on-site. I believe that this is the best strategy for remediation of the FEMP facility."

Vicky Dastillung; Written Comments

"As a nearby resident, let me once again state up front that my preference would be for a total cleanup of the site that would return the site to background levels and leave no waste on site. However, since technological, political, and practical considerations must also come into play, I realize that this is probably not going to happen."

Pamela Dunn; Written Comments

"I support the decision to seek a balanced approach in the remediation efforts for Fernald, with higher concentrations of waste shipped off-site and lower concentrations of waste remaining on-site in an engineered disposal facility. I can accept the preferred alternative if the following issues [see pages A-44 and A-45 for Ms. Dunn's entire comment] are addressed and implemented in the final OU3 ROD."

NTS Community Advisory Board; Written Comments

"Of the three alternatives presented, Alternative 2 is an obvious middle-ground between Alternative 1, which does not protect the public, and Alternative 3 which proposes to transport all of the waste to the NTS, or to another facility and move the risk elsewhere."

John Throckmorton; Written Comments

"I endorse the selection of Alternative 2, Selected Material Treatment, On-Property Disposal, and Off-Site Disposition for the following reason:

---

1 Quotations are presented exactly as they were received in writing during the public comment period.

- *Utilizes the balanced approach to disposition highly contaminated materials off-site with the remaining materials at low levels of contamination remaining on-site;*
- *Uses the existing on-site disposal facility (OSDF) under OU2 and OU5;*
- *Promotes recycle and reuse of materials and cost effective basis;*
- *Provides long term protection of human health and the environment;*
- *Meets all required ARARs with receipt of the waiver; and*
- *Is the most cost effective alternative.*

"Furthermore, I endorse the use of a commercial Subtitle D solid waste landfill to the maximum extent for the permanent disposal of materials from the Administrative Area. In order to facilitate and accelerate the overall remediation of the site, it is imperative to remove the existing structures to allow soil and perched groundwater remediation to occur. Therefore, DOE should attempt to prioritize funding for the D&D of the OU3 structures."

Edwa Yocum; Written Comments

"I agree with the Alternative 2 for OU3 - Selected Material Treatment, On-Property Disposal and Off-Site Disposition."

Ohio EPA; Written Comments

"The OU3 Proposed Plan is the culmination of efforts by U.S. DOE, Ohio EPA, and U.S. EPA to understand and develop a plan for mitigating releases to the environment from OU3. Ohio EPA believes the alternative selected in the Proposed Plan is protective of human health and the environment. Ohio EPA believes the preferred alternative is the appropriate one, when considered in the context of overall site cleanup. Ohio EPA supports the concept of a balanced approach where the low volume, high concentration wastes go off-site for disposal and high volume, lower concentration wastes are disposed of in an engineered facility on-site. We believe that this approach provides the most implementable and protective strategy for remediation of the FEMP site."

2. REMEDIAL ACTION IMPLEMENTATION

SUMMARY COMMENT #2a - Recycling, Reuse, and Free Release
Based on comments received, stakeholders seem uncomfortable with notion of "free-releasing" scrap metals and other items from the FEMP. Some confusion exists regarding FEMP policies and plans for material decontamination, free-release recycling, restricted release recycling, on-site reuse, and off-site reuse. Stakeholders wish to learn more about these issues, preferably through a community workshop/roundtable forum. After these policies, plans, and criteria are better defined (with public involvement), they should be included in the OU3 ROD for Final Remedial Action and supporting remedial design/remedial action (RD/RA) documents.

Stakeholders also expressed interest in maintaining review and comment rights for FEMP policies, programs, and criteria regarding recycling, reuse, and free-release. In particular,

stakeholders are interested in seeing the draft FEMP "policy" for evaluating recycling versus disposal issues. Stakeholder comments indicated support for recycling over disposal, but not if the cost is too high, if it adversely impacts safety, or if it takes too long. They want to review the policy to make sure these issues are adequately considered. Furthermore, stakeholders want to see a "recycling program" at the FEMP which will draw upon extensive public input to steer its activities.

DOE RESPONSE #2a

Issues related to recycling, reuse, and free-release were discussed at length in a community roundtable held June 14, 1994 at The Plantation. Since then, community input has been received through many other public meetings. In response to stakeholders' requests for additional information on recycling, reuse, and free-release of FEMP materials, a workshop was held on June 11, 1996 to further solicit public input and address methodologies and strategies that are currently being developed. Existing regulations and requirements pertinent to these issues were discussed in addition to future opportunities for public input during the OU3 remedial design process. DOE-FN and FERMCO personnel active in recycling, free-release, reuse, waste minimization planning, radiological compliance, environmental compliance, and property management were on hand to discuss site initiatives, identify additional opportunities for public involvement, and answer questions.

The draft Decision Methodology for Fernald Scrap Metal Disposition Alternatives was distributed to stakeholders at the June 11, 1996 workshop. Stakeholders were invited to comment on the approach. This document is intended to be used as a guide to facilitate the evaluation of competing disposition options for OU3 materials generated during decontamination and dismantlement (D&D) projects. Initial use of this process will be an evaluation of disposition options for Building 4A structural steel, which will include a public review session to determine the success of the application following the action. The methodology takes into account both quantitative and qualitative factors, including short term and long term economics, public and worker safety, and environmental protection. The methodology, as amended based on public comment, will be incorporated into the OU3 integrated RD/RA work plan and, through the remedial design process, additional opportunities for public involvement will exist. Through this approach, DOE has made a public commitment to continue to evaluate alternatives to disposal. Implementation plans for OU3 D&D actions will incorporate the decisions for material disposition determined as a result of the methodology. These implementation plans will be made available to the public for review upon submittal to the regulatory agencies.

At the June 11, 1996 workshop, DOE identified a wide variety of recycling studies performed to date on materials including structural steel, scrap steel, and lead sheeting. The FEMP is also currently recycling lead acid batteries, fluorescent lights, used oil, used tires, aluminum cans, paper, toner cartridges, polystyrene packing material, etc. One study to support disposition of copper motor windings is now under contract. While not all-inclusive, this list of examples provides the highlights of recycling projects and activities which have been completed or are in progress. These studies have generally been performed to gather additional cost and performance data to support responsible decision-making. Based on lessons learned from these studies, future recycling initiatives will be performed expeditiously with minimal on-site temporary storage. The methodology identified above will utilize these data to determine "economic feasibility." Economic feasibility, in this sense, refers to the political economy aspect which includes not only costs, but also socioeconomic factors and stakeholder preferences.

One alternative to recycling, currently employed extensively by DOE, is reuse. DOE attempts to maximize the use of existing equipment and minimize the purchase of new items by identifying equipment which can be reused at the FEMP, reused within the DOE complex, or sold or donated for reuse within the community. If equipment is determined to be low-level radioactively contaminated through process knowledge and/or radiological surveying, the equipment is screened to ascertain reuse opportunities either at the FEMP, within the DOE complex, or a licensed radiological facility.

Several success stories have resulted from the effort to reuse low-level contaminated equipment which has allowed DOE-FN to lower costs. For example, a chiller unit previously located outside of the Pilot Plant is now being used to support the OU4 Vitrification Pilot Plant project, an unused compressor previously located outside Building 4A is being reused for grit blasting operations in Building 78 (the Material Release Facility), and a tugger located in Building 4A with minor exterior surface contamination was decontaminated and is now being reused in the FEMP's on-site transportation program. In addition, several pieces of contaminated equipment have been transferred for use at other DOE sites. For example, the Mound Plant has requested several of the FEMP's excess radiation detection panels, Paducah requested the transfer of the enriched uranium fuel rod storage bins previously located in Building 1A, Lawrence Livermore National Laboratories requested a plasma spray system from Building 37, and Oak Ridge has requested the Plant 5 air handling equipment.

If the equipment is determined to be non-contaminated through process knowledge (e.g., uninstalled/unused equipment, administratively determined) and/or meets the DOE Order 5400.5 criteria for unrestricted release, the equipment is not regarded as contaminated material and is free to be dispositioned without restriction. Unrestricted release, also known as free-release, is the typical route taken for recycling, since material released as clean truly has value to the commercial industry. Restricted recycling of radioactively contaminated metal is most suited to support DOE's waste container needs and national programs are being developed to implement evaluations of this option. Several hundred computers which have passed free-release criteria have been donated to local schools, and the Liquid Nitrogen system previously located outside of Building 4A has been excessed and is planned to be sold through an auctioneer.

For materials which pass free-release criteria but are not reusable or recyclable, the option to use a commercial landfill has been included in the ROD. This option reflects a desire to minimize the size of the OSDF to the extent practical. The use of a commercial solid waste landfill would be based also upon current estimates that indicate it may cost less overall than the OSDF per cubic foot of debris. Again, only materials which meet the free-release criteria of DOE Order 5400.5 would be eligible.

SPECIFIC COMMENTS #2a

<u>Lisa Crawford; Written Comments</u>

"DOE should commit themselves to developing a policy for defining criteria for implementing recycling of materials, rather than disposing of them as waste. Along with this commitment DOE should allow the public to review and comment on this policy with regard to OU3."

"DOE should commit to reuse any materials on-site to the extent possible as well as encouraging other DOE facilities to reuse Fernald materials."

"With regard to the issue of "free-release", I believe that there should be a public workshop held to have a further discussion regarding this specific issue. A commitment should be made to the public to assure them that items of any kind that leave the FEMP site will be used in a responsible manner and not just sold and lost into unknown and unsuspecting hands."

"While I agree with free release for recycling, again this is an issue that needs to be discussed further. Releasing items such as metals/steel/etc. for recycling metal boxes that will then ship wastes is a satisfactory way of releasing these contaminated items. For other more public purposes, this is not acceptable."

"DOE should commit to the public that they will create a "recycling program" and have full public input into this process. This would eliminate what is unsatisfactory and what is satisfactory to the public at large."

Vicky Dastillung; Written Comments

"The reuse and recycling parts of the ROD should provide room for the community's input. Apparently there is a draft policy now. The public should be allowed to review and comment on it. The certification program should also be explained to the public and the public should be allowed to provide input. While recycling and reuse are important goals, we want to make sure that there are no exposures to the public because of it. Also the term "economically feasible" needs to be defined, with public input. Perhaps a Roundtable or other meeting format could begin the dialogue on these issues."

"The use of a commercial solid waste landfill needs to be explained to the public carefully, both the advantages and the disadvantages."

Pamela Dunn; Written Comments

"The provision for unrestricted release of materials associated with OU3 must be defined and presented to the public for input and acceptance before final adoption of this provision. The criteria for this "unrestricted release" must be developed, with public involvement, and included in the final OU3 ROD."

Gary Storer; Written Comments

"I am concerned about the long time element involved in determining whether or not the building metal (Cu & Fe) can be economically decontaminated for release and sold to recyclers. It should not take over 2 yrs."

Edwa Yocum; Written Comments

"DOE to have a policy and standards for the reuse material.
- *DOE remain responsible for recycled, reuse material."*

Ohio EPA; Written Comments

"DOE should commit to developing a policy defining criteria for implementing recycling of materials rather than disposing of them as waste. In addition, a commitment to allowing public and regulatory review and comment on such a policy should be included in the OU3 ROD."

"DOE should include a commitment to reuse of materials on-site to the extent practical as well as encouraging other facilities to reuse Fernald materials. Examples of such on-site reuse could include crushed concrete as road base or reuse of equipment in remediation facilities."

SUMMARY COMMENT #2b - Non-FEMP Waste Prohibition for On-Property Disposal
Several commentors noted that the ARARs waiver from the Ohio EPA siting criteria contained in this ROD (or the ROD itself) should include stipulations that no wastes initially generated off the FEMP site are to be disposed of in the OSDF.

DOE RESPONSE #2b
Commitments were made in the EPA-approved RODs for both OU2 and OU5, which addressed the construction of the OSDF, that no wastes generated off-site would be accepted for disposal in the OSDF. This ROD also incorporates that commitment, as stated in Section 8.0. To address the public's concern for "storage" of off-site wastes in the OSDF, the OSDF will not be used for storing any wastes since it will serve only as a permanent "disposal" facility for on-site wastes. However, under the Site Treatment Plan issued in accordance with the requirements of the Federal Facilities Compliance Act, there exists the potential for wastes from other DOE sites to be brought to the FEMP for treatment. Equity discussions with other States may result in additional DOE sites identifying the FEMP for treatment of mixed wastes in the future. Acceptance of waste from off-site may impact current treatment schedules by requiring issuance of a Resource Conservation and Recovery Act (RCRA) permit for mixed waste treatment and would require a revision to the approved Site Treatment Plan. In addition, the FEMP has not established waste acceptance criteria for receipt of off-site waste streams. Any such criteria will include provisions to assure that this waste is not commingled with waste generated at the FEMP and that it is returned to the site of origin for ultimate disposition. The FEMP will continue to discuss these issues with stakeholders as they arise. Additionally, it is important to note that, as stated in their comment, Ohio EPA supports the waiver of State of Ohio siting requirements needed to implement the Selected Remedy, providing the on-site disposal restrictions discussed in Comments #2b, #2c, and #2d are met.

SPECIFIC COMMENTS #2b

Lisa Crawford; Written Comments

"The following restrictions should be placed on the OU3 ROD:
a) No disposal or long-term storage of off-site waste in the proposed engineered disposal facility or any other facility located on the FEMP property;..."

Vicky Dastillung; Written Comments

"No off-site waste will be brought onto FEMP property for storage or disposal. (Define off-site waste as anything not currently on the site, except for samples that were sent off-site for characterization or treatability studies.)"

"Any waiver given so that a disposal cell can be built, must include wording to keep all off-site waste from entering the FEMP for storage or disposal. It must also be so site-specific that it does not create a precedent for future federal or commercial disposal sites in the vicinity of the FEMP.

Pamela Dunn; Written Comments

"Waste generated from outside the FEMP will not be allowed to be disposed of or stored within the FEMP boundaries under any circumstances. This includes, but is not limited to hazardous, toxic, radioactive, and any and all waste/contaminants which were not a result of on-site activities."

"A USEPA waiver of the Ohio solid waste siting criteria should only be granted if... the waiver specifically states that there will be no off-site waste disposed of on the FEMP property and no on-site waste will be capped and left in place. DOE's commitment to abide by these stipulations must be included in the OU3 ROD."

Edwa Yocum; Written Comments

"Only Fernald waste disposed in cell - No off-site hazardous or mixed waste brought into Fernald for interim storage or disposal."

Ohio EPA; Written Comments

"The Operable Unit 3 Record of Decision (ROD) should clearly place restrictions on the use of the engineered on-site disposal facility. Ohio EPA understands the need to allow flexibility for incorporation of other operable units but also feels the following restrictions must be made in the ROD:

a) No disposal or long-term storage of off-site waste in the proposed engineered disposal facility or any other facility on the FEMP site;..."

"With regard to the request for a USEPA waiver of the Ohio solid waste siting criteria, Ohio EPA supports this waiver only in that it allows for a remedy more protective than capping in place and more implementable than off-site shipment. Since the DOE FEMP is a CERCLA site and its location would not allow issuance of an Ohio EPA exemption of criteria, Ohio EPA believes a waiver is the appropriate mechanism to support the preferred alternative. Ohio EPA's support of the waiver is inherently tied to the restrictions described [in Comment 2b, 2c, and 2d]."

SUMMARY COMMENT #2c - On-Property Disposal WAC for OU3 Materials
Several individuals commented on the criteria for disposal of OU3 wastes in the OSDF and noted that DOE must commit in the ROD to the Tc-99 WAC for on-site disposal of OU3 materials.

DOE RESPONSE #2c
As explained in the OU3 RI/FS Report (referenced in the discussion in the OU3 Proposed Plan), studies indicated that Tc-99 is the only contaminant in OU3 materials that may potentially exceed groundwater criteria due to its inherent solubility. The allowable mass of 105 grams for Tc-99 in OU3 materials disposed of in the OSDF was established using a leachability study and the EPA 70-year rule. Although the 105-gram limit in the OSDF is considered protective, a best management practice of additional concrete scabbling will be used to ensure that the Tc-99 source term entering the OSDF will be well below the waste acceptance criterion shown above. Specifically, the concrete in the enriched uranium casting area in Plant 9, the uranium machining area in Plant 9, and the muffle furnace area in Plant 8 will be scabbled to a depth of one inch and the southern extraction area in the Pilot Plant will be scabbled to a depth of one-half inch to collectively remove a calculated 57 grams of Tc-99 from OU3 debris to reduce the quantity of Tc-99 to be placed in the OSDF to 59-grams. Disposition of the scabbled concrete will be in accordance with the established WAC for the off-site facility to ensure protection of public health and the environment at that location. This discussion is included in Section 6.2 of the ROD. The removal of the 57 grams of Tc-99 from OU3 materials being considered for disposal in the OSDF is considered to be consistent with the balanced approach philosophy which identifies that relatively small volumes of more highly contaminated materials be dispositioned to locations more suitable than the FEMP site. As a conservative measure, certain engineering controls were not allowed to be considered in the development of the OSDF WAC. As a result, no additional amount of contaminants would be considered acceptable in the OSDF, regardless of additional controls employed.

In addition to the Tc-99 chemical-based WAC, initial physical size criteria for debris to be dispositioned to the OSDF were developed in the OU3 RI/FS Report. The Impacted Materials Placement Plan for the On-Site Disposal Facility will provide final physical acceptance criteria, based on OSDF design parameters and transportation and handling considerations. The final WAC for OU3 materials will be incorporated into the OU3 integrated RD/RA work plan and subsequent D&D implementation plans. Criteria for the actual placement of OU3 wastes and non-OU3 wastes (e.g., soils) into the OSDF are addressed in the Impacted Materials Placement Plan for the On-Site Disposal Facility under a section titled, "Special Placement Requirements."

SPECIFIC COMMENTS #2c

<u>Lisa Crawford; Written Comments</u>

"The following restrictions should be placed on the OU3 ROD:...
b) DOE must commit to the ALARA mass-based WAC for Tc-99 of 59 grams;..."

Pamela Dunn; Written Comments

"The implementation of the waste acceptance criteria (WAC) established per ALARA for Tc-99, and all other contaminants, must be adhered to and stated in the OU3 ROD. No averaging or dilution of contaminants will be permitted in meeting the WAC."

"Criteria for the disposal of building materials and other solid materials other than soil must be established and included in the OU3 ROD. In addition, the ratio of these forms of solid materials to soil slated for the on-site disposal facility must be developed, adopted, and included in the OU3 ROD to ensure the integrity of the cell is not compromised by their inclusion."

"A USEPA waiver of the Ohio solid waste siting criteria should only be granted if the DOE abides by the WAC upper limit stipulations as described in Comments #3 and #4 above... [see pages A-44 and A-45 for Ms. Dunn's original comments]."

NTS Community Advisory Board; Written Comments

"It is still unclear why the site has a 105 gram safety limit on Technetium-99 allowable mass? If this is the case the discussion in Alternative 2 (the preferred alternative) in the summary document does not make a compelling case for why concrete needs to be transported off-site to reduce the on-site level to 59 grams (and thereby raise the level of risk, if there is a risk elsewhere).

"Why couldn't another option be considered that would be to keep all the waste on-site in a facility that would protect the public? The plan notes the OU-3 wastes are secondary wastes, or, "...wastes that pose a relatively low long-term threat," and that, "USEPA allows the use of engineering controls or a combination of engineering controls or a combination of engineering controls (mechanical means like barriers), or administrative controls (e.g. management)" (Page 9). This would avoid the real uncertainty of transporting the waste thousands of miles with an enhanced potential for accident and release of material.

Ohio EPA; Written Comments

"The Operable Unit 3 Record of Decision (ROD) should clearly place restrictions on the use of the engineered on-site disposal facility. Ohio EPA understands the need to allow flexibility for incorporation of other operable units but also feels the following restrictions must be made in the ROD:...

b) DOE must commit to implementing the ALARA mass based WAC for Tc-99 of 59 grams. The goal should be met through scabbling and other efforts to reduce Tc-99 loading to the disposal facility;..."

SUMMARY COMMENT #2d - OSDF Restriction of OU3 Characteristic Hazardous Waste
Several commentors noted that the ARARs waiver from the Ohio EPA siting criteria contained in this ROD (or the ROD itself) should include stipulations that no characteristic hazardous wastes are to be disposed of in the OSDF.

DOE RESPONSE #2d
In development of the OU3 RI/FS Report and Proposed Plan, Ohio EPA had required that DOE evaluate OU3 materials and identify characteristic hazardous wastes to be segregated from the bulk D&D debris for separate handling. In that process, the lead sheeting that exists on a number of FEMP buildings was identified to be removed from the D&D debris stream for treatment and disposal or decontamination and recycling. The commitment to remove and segregate this material is made in Sections 6.2 and 8.1.3 of the ROD.

No other characteristic hazardous wastes exist among the remaining OU3 material categories which are eligible for disposal in the OSDF.

SPECIFIC COMMENTS #2d

Lisa Crawford; Written Comments

"The following restrictions should be placed on the OU3 ROD:...
c) No characteristic hazardous waste should be disposed of in this facility."

Ohio EPA; Written Comments

"The Operable Unit 3 Record of Decision (ROD) should clearly place restrictions on the use of the engineered on-site disposal facility. Ohio EPA understands the need to allow flexibility for incorporation of other operable units but also feels the following restrictions must be made in the ROD:...
c) No characteristic hazardous waste should be disposed of in the facility."

SUMMARY COMMENT #2e - Off-Site Transportation and Disposal
One commentor expressed numerous concerns regarding shipment of waste from Fernald to NTS. These concerns addressed cumulative impacts of OU3 materials combined with remediation wastes from other FEMP operable units and other sites destined for disposal at NTS, risks from transportation, and socioeconomic impacts.

DOE RESPONSE #2e
The OU3 final remedy addresses treatment and final disposition of the materials and wastes resulting from performance of the interim remedial action. It reflects the balanced approach being used for disposal of FEMP wastes - material with higher levels of contamination, deemed to represent the principal threat at the site, will be treated (if required) and shipped off-site for disposal; material exhibiting lower contaminant concentrations distributed over a larger volume, termed a secondary threat, will be permanently disposed of at the Fernald site in one central engineered disposal facility. This approach has been generally accepted by stakeholders, including other impacted states, in the selected remedies of the other FEMP operable units.

The cumulative impact analysis (as discussed in Appendix J of the OU3 RI/FS Report) addresses impacts resulting from the concurrent implementation of the preferred alternatives from each operable unit. This analysis focuses on how the potential impacts for Operable Units 1, 2, 4, and 5 relate to the potential impacts of OU3. Efforts have been made throughout the cumulative impact analysis to quantify to the extent possible impacts at the

Fernald site and impacts occurring from Fernald activities in conjunction with other regional and national actions.

The analysis of waste transportation (as discussed in Appendix H of the OU3 RI/FS Report) quantifies exposure risks to workers and the public. The transportation evaluation does not quantify exposure risks associated with Fernald waste shipments and all other shipments of waste on a local, regional, or national level. It is the position of DOE-FN that the amount of waste material transported from Fernald to NTS is not of a magnitude that necessitates a detailed quantitative evaluation of risks and impacts. Since the amount of low-level waste from the OU3 final remedial action that is proposed for shipment to NTS is significantly less than the volume of Fernald waste already being disposed there, it is DOE's position that the waste transported from Fernald is within acceptable risk ranges to workers and the public. An additional quantitative evaluation of human health risks through an area like Las Vegas would be extensive and difficult given the amount of radioactive and hazardous material transported to and from NTS that pass through the area. Such an evaluation would be more appropriate in the NTS Environmental Impact Statement (EIS), where existing data could be used to assess cumulative impacts. Including such an evaluation in this ROD would not be justified based on the amount of material being transported from Fernald.

Potential human health risks from disposal of low-level waste at NTS are specifically dealt with in performance assessments conducted under applicable DOE Orders. These performance assessments are conducted to ensure that waste disposal practices and allowable source terms fall within acceptable risk limits.

It appears to DOE-FN that socioeconomic variables such as property values and tourism would be within the scope of the NTS EIS. These are legitimate issues and concerns which are regional and must be considered on a macro-level such as the NTS EIS. These socioeconomic concerns are inclusive of all waste material transported to and from NTS that is permitted to pass through Las Vegas which can be controlled through city ordinances. Given the quantity of Fernald material which will be transported to NTS within acceptable risk ranges, these evaluations of regional issues are more appropriately determined by regional evaluations. This is also true from the perspective that NTS is only one of several off-site disposal options currently available for OU3 wastes.

It is correctly noted in the specific comments that there will be potential impacts and associated costs for materials that will be dispositioned elsewhere. However, the evaluation criterion of long-term effectiveness and permanence specifically relates to long-term requirements for continued administrative controls, surveillance, or maintenance at the original contaminated site that required remediation. Off-site disposal facility(ies) needs are addressed through the appropriate procedures, permits/approvals, WACs, and costs.

Because the Fernald site is one of the larger generators of waste disposed of at the NTS, a very active liaison has been and continues to be maintained with the NTS and the NTS Community Advisory Board. Through these close interactions DOE is aware of the preferred routes designated for transport of wastes to the NTS. Similar liaisons are maintained with other off-site disposal locations.

SPECIFIC COMMENT #2e

NTS Community Advisory Board

"How will the potential effects to the public and the environment from the remediation of Operable Unit 3, be considered cumulatively with those from the other Operable Units?

"The transportation of the waste to the NTS, for example, is an issue of concern to Nevadans. Appendix J, while mentioning transportation and the total number of shipments to the NTS (Page J-15), essentially performs no analysis on the cumulative impacts of the shipments to Las Vegas (through which the shipments will be transported as noted on J-16), or other rapidly growing areas of Southern Nevada (the Pahrump area of Nye County as an example). The issue becomes more important because the NTS is being considered for the storage, treatment or disposal of radioactive and mixed waste from a number of other DOE sites currently undergoing remediation.

"The analyses in Appendix J (and in Appendix H the Risk section) are totally inadequate in determining actual risk to the public in Southern Nevada, or for the matter, anywhere else along the route. To more accurately consider true risk (either by RADTRAN as described in Appendix H, or another measure) local conditions need to be analyzed. Given the total number of shipments being contemplated more accidents will occur (e.g. an accident of course took place last year in Southern Missouri involving a radioactive waste truck from Fernald).

"The Nevada Test Site DOE released a draft Environmental Impact Statement in March of this year. Incorporated as part of the EIS was a Transportation Study that examined ten routing options to transport rad waste to the NTS. Eight of the routes consider the shipment of the waste through urbanized Clark County. The primary and secondary routes (so named although the routes were not noted as recommended) would carry, if implemented, thousands of shipments of waste either through downtown Las Vegas (primary), or through what has essentially become a residential and commercial area (secondary).

"A careful analysis would avoid potential problem areas throughout the nation. Appendix J falls short of the mark. The analysis should include coordination with local officials in Southern Nevada and elsewhere to ensure that potential accident locations and other areas of high risk can be avoided.

"Throughout the analyses of Alternative 2 and 3 (Section 6) impacts to the public are said to be "minor," "minimal," "are not expected to be adversely impacted" and similar, yet there does not seem to be a strong analytical basis to conclude that this necessarily will be the case. Likewise, the range of socioeconomic impacts goes well beyond impacts on available resources, and labor costs (Pages 6-12, and 6-15).

"For example, the Socioeconomic and Land Use section of Alternative 2 (Page 6-12) does not consider the potential impacts from the transportation of the waste, conceivably through Las Vegas. A whole range of potential affects have been documented from other sources including potential transportation affects on property values (See Komios v. The City of Santa Fe) to studies of possible affects on tourism from accidents involving radioactive materials (which is of interest to Nevada's tourist-based economy).

"The communities and citizens that are on the receiving end can't assume that the affects will be minor, minimal or will not adversely affect our economy, quality of life, or property values."

"The conclusion about protecting human health while undoubtedly protecting human health at Fernald under Alternative 3, ignores potential health affects as a result of the transport of the waste, or at the final disposal site. The health affects in these two areas need to be described."

"The conclusion reached for Alternative 3 (no long-term requirements for continued administrative controls...) seems to ignore the fact that this material will impact another area (presumably the NTS). There would be a cost for this."

"The preferred alternative does not discuss potential environment effects at the disposal sites (the NTS, and Envirocare in Utah)."

SUMMARY COMMENT #2f - Incorporating Waste Minimization and Pollution Prevention Strategies in Remedial Action Activities

Several members of the public and Ohio EPA expressed that the OU3 remedial design process should incorporate as low as reasonably achievable (ALARA) principles by specifying methods that will minimize or prevent environmental releases during OU3 remedial activities. It was stressed by one individual that remediation levels should be as close to background as possible rather than just meet a regulatory limit.

DOE RESPONSE #2f

In accordance with Executive Order 12856, DOE policy is to apply waste minimization and pollution prevention (WM/PP) principles to the design and operation of its facilities. This policy applies to the design and implementation of the OU3 final remedial action just as it is also applied to the OU3 interim remedial action (Section 3.4.3 of the OU3 RD/RA Work Plan for Interim Remedial Action). As stated in Section 8.1.2, the DOE is committed to employing all practical methods and administrative and engineering controls consistent with ALARA principles during the integrated OU3 remedial action to minimize waste and/or eliminate discharges from activities.

Although measures for WM/PP were incorporated into generic performance specifications for each D&D project under the OU3 interim remedial action, the OU3 final remedial action will include among initial design/planning tasks the review and, if necessary, revision of existing performance specifications to ensure that each project employs the most effective methods for meeting or exceeding WM/PP goals. One such performance specification governs removal or fixing of contamination; key provisions of this specification state that the remediation subcontractor must minimize the generation of wastes and use decontamination methods that will not generate excessive secondary waste. Remediation subcontractors methods are subject to review and approval by DOE prior to implementation. Under the site WM/PP policy, DOE will approve those methods that will be used to minimize releases to the environment and maximize decontamination of OU3 materials, thus striving towards levels closest to background as reasonably achievable (i.e., ALARA).

SPECIFIC COMMENTS #2f

Lisa Crawford; Written Comments

"DOE should attempt to use pollution prevention activities when possible and all available methods to reduce or eliminate discharges and releases from the demolition and disposal activities should be considered during the design of remedial activities."

Vicky Dastillung; Written Comments

"The ROD should state that DOE will follow a sort of ALARA-principle in designing and executing the remediation. The remediation levels should be as close to background as possible given the technological, risk, and cost constraints. If an additional process or activity could get us substantially closer to background at a reasonable cost and risk, this should be pursued. The goal should be background levels, not just staying within a remediation level."

Pamela Dunn; Written Comments

"Additional discharges of contaminants during the remediation of OU3 should be avoided when possible. Methods to achieve minimal releases during remediation should be conducted throughout the RD/RA process."

"ALARA principles must be utilized during the RD process."

Ohio EPA; Written Comments

"DOE should attempt to incorporate pollution prevention activities whenever possible during the design and operation of the OU3 remedial action systems. All available methods to reduce or eliminate discharges and releases from the demolition and disposal activities should be considered during the design of remedial activities."

SUMMARY COMMENT #2g - Preference for Implementing New and/or Evolving Technologies
Several comments were received which suggested that DOE remain open to ideas for and evaluate new and improved technologies that would reduce volume, toxicity, and mobility of waste being disposed on-site.

DOE RESPONSE #2g
Both the IROD and the OU3 ROD for Final Remedial Action reflect a recognition that through the course of the OU3 remedial actions (D&D for IROD and disposition for final remedial action ROD), there may be improvements in technology or practice which would enhance the remedial action in any of a number of ways, including reduction in toxicity, mobility, or volume of contaminants, safety of workers, safety for the public, and improved cost performance. Both RODs are structured to allow flexibility for the detailed remedial action planning to adopt the best balance of inputs available at the time to implement the ROD decision.

In addition, because the OU3 remedial actions are planned and implemented one D&D project at a time, the designs of subsequent D&D projects benefit from lessons learned on the earlier

designs and advancement of the state-of-the-art technologies can and will be incorporated into planning. The first several D&D actions in OU3 are good examples of this principle in action. The Plant 1 D&D Large Scale Technology Demonstration is also a good example. DOE is investing in direct improvements to the technologies needed for OU3 D&D through the demonstration project. Several currently proposed technology demonstrations are designed to improve worker safety, reduce the amount of contamination on materials that could go to the OSDF, and improve characterization of the structure. DOE is also investing in D&D at other DOE sites. There will potentially be results from those demonstrations, as well, that will may apply to D&D at Fernald. DOE is thoroughly committed to the review and improve philosophy that is presented by the commentors and will continue to invest in technology advancement to benefit its remediation projects. Specific approaches to assuring incorporation of best practices will be detailed in the OU3 integrated RD/RA work plan.

SPECIFIC COMMENTS #2g

Lisa Crawford; Written Comments

"DOE should commit to being open to considering new technologies that will reduce volume, toxicity, and mobility of wastes being disposed of on-site. I believe that DOE should remain open to new technologies which could render the on-site waste safer."

Vicky Dastillung; Written Comments

"The 5 year reviews of the ROD for effectiveness should include an analysis of the then current technologies' ability to pursue further remediation. If at a future time a technology would allow for a way to truly deactivate the radioactivity or hazardous chemicals or for a way to greatly enhance the long-term storage of the material, we would want to be able to evaluate if it was desirable to pursue further action. This process would also call attention to the technology research needs of the DOE."

Pamela Dunn; Written Comments

"Continued efforts in technology development should proceed in an attempt to discover more effective methods for treatment and disposal of the waste streams designated for the disposal cell. Efforts should continue to develop technology that may one day have the ability to remove additional contamination from the soils without total destruction of the existing eco-system present on the site."

Ohio EPA; Written Comments

"DOE should commit to being open to consider new technologies which may reduce the volume, toxicity, or mobility of wastes being disposed of on-site. Ohio EPA is simply requesting the DOE remain open to the idea of additional technologies which may result in a safer waste form for on-site disposal."

SUMMARY COMMENT #2h - Environmental Monitoring

Several members of the public and the Ohio EPA requested that DOE commit to real-time monitoring for discharges to the environment during remedial action. Ohio EPA requested that

DOE attempt to incorporate new developments in real-time monitoring from the DOE's Office of Science and Technology and requested that data obtained from real-time monitors and any additional information be provided to the Ohio EPA and the public in a timely manner.

DOE RESPONSE #2h

DOE is committed to continually pursuing and supporting the development of real-time environmental monitoring technology that could be used during OU3 remediation activities. Unfortunately, at this time, a reliable real-time environmental monitoring technology does not exist that is compatible with background conditions at the FEMP. The FEMP's inability to use available real-time monitoring is due to naturally occurring and/or process generated radon and thoron (short-lived) daughters that are present in ambient air. These short-lived daughters have been found to interfere with measurements for long-lived uranium and thorium when utilizing state-of-the-art alpha spectroscopy continuous air monitors. Nevertheless, DOE will continue to evaluate new and innovative environmental air monitoring technologies that could be used to provide more reliable real-time results.

Despite the limitations imposed by the relatively higher radon background concentrations at the FEMP, it is important to note that air monitoring performed in the work area for occupational safety purposes does provide a form of real-time monitoring by use of general area continuous samplers which have alarms that are set to activate if pre-determined radioactivity action levels are reached on the sample media. This type of sampling ensures airborne radioactivity levels are maintained below levels of concern. Should an occupational monitor alarm sound, work practices are halted until causes are determined and corrective measures are implemented. By conducting work in this manner, any significant release within a work environment is minimized and limited to the work area. These activities are currently managed under the OU3 RD/RA Work Plan for Interim Remedial Action and respective D&D implementation plans.

Since most OU3 remediation work that could produce any significant emissions to the environment will be contained within an enclosure (e.g., sealed building), significant emissions will be prevented from being released to the environment. Since materials will have been treated in place by removing or fixing contamination, material handling, storage, and disposal activities will result in minimal releases to air and water resources. Material placement activities for the OSDF will also be conducted in a manner to minimize possibilities of airborne radioactivity impacts. Air monitoring will be an integral part of all actions which have the potential to significantly impact airborne radioactivity concentrations. Respective environmental documents for each of the OU3 D&D projects include air monitoring plans and opportunities for stakeholder input.

Currently, a variety of action levels exist depending upon the monitoring location. Each sampling result, whether site perimeter, job boundary, local area, or breathing zone, is assessed versus its applicable action level and corrective action is taken. For example, if airborne contaminants are detected inside OU3 structures above guidelines, corrective actions could include construction of an enclosure around the offending task, removal of contaminants prior to completion of the task, and/or selection of an alternate tool for the task.

The Integrated Environmental Monitoring Plan, upon approval from U.S. EPA, will provide for reporting of all environmental data pertaining to projects at the FEMP on a quarterly basis. DOE will provide a copy of the plan to Ohio EPA and place a copy in the Public Environmental Information Center immediately upon publication. Quarterly reporting consists of the results

of sampling at established project-specific air monitors over a three-month period and a reference to both the background and action levels during those weeks. Graphic illustrations will be included for "viewing" results at both background and downwind sample locations during the sample period. To ensure that engineering controls are adequate, and to take prompt mitigative action if necessary, preliminary results of weekly sampling from the active D&D projects are evaluated by the project manager and project engineer soon after they are made available from the laboratory to support the fastest possible identification of problems and implementation of corrective actions.

SPECIFIC COMMENTS #2h

Lisa Crawford; Written Comments

"DOE should commit to including and/or developing real-time monitoring for discharges to the environment coming from remedial actions. Data obtained from real-time monitoring and any additional monitoring should be provided to the public in a timely manner."

Vicky Dastillung; Written Comments

"Air monitoring data during D&D and transporting waste to its disposal site will be extremely important to the community and workers. The best available devices and techniques should be used to give the workers and community a clear picture of air emissions. Action levels should be developed (with the community) so that work can be halted if they occur."

"Developing accurate real-time monitoring should be a DOE priority!"

"Because the annual Environment Monitoring report is issued so long after the monitoring is actually done, the public deserves to see the environmental monitoring results often, perhaps monthly, so they can be assured that the OU3 ROD activities are not affecting the community's air, water, or environmental quality."

"Also, the monitoring done specifically for the ROD should be made available to the public. An update at community meetings would be nice. Fast turnaround on analyzing samples is important so that any problems will be detected promptly enough for mitigating measures to be taken."

Pamela Dunn; Written Comments

"Real time monitoring and other monitoring activities should be implemented during remediation and for the period for which the materials contained within the disposal cell pose a threat and risk to human health and the environment. These monitoring activities should be conducted on a regular and frequent basis with the results provided to the public in a timely manner."

Ohio EPA; Written Comments

"DOE should commit to including and/or developing real-time monitoring for discharges to the environment resulting from remedial actions. DOE should attempt to incorporate any new developments in real-time monitoring from the DOE Office of Science and Technology

as well as the private sector. Data obtained from real-time monitors and any additional monitoring activities should be provided to the Ohio EPA and public in a timely manner."

3. COMMUNITY INVOLVEMENT AND NOTIFICATION

SUMMARY COMMENT #3a - Addressing Public Comments in the ROD
One commentor asked how stakeholder comments and recommendations were considered in the development of the ROD.

DOE RESPONSE #3a
As part of the CERCLA process, U.S. EPA has identified nine criteria in the National Oil and Hazardous Substances Pollution Contingency Plan that must be evaluated for each alternative identified in the Feasibility Study (FS). The first seven criteria are used during the development of the Proposed Plan to assess and compare the alternatives and to arrive at a "preferred" alternative (also referred to as the proposed remedy).

The eighth and ninth criteria are State Acceptance and Community Acceptance, respectively. These criteria are assessed based on comments received on the Proposed Plan. Interested stakeholders could have either submitted written comments on the OU3 Proposed Plan during the 30-day public comment period (April 3 through May 2, 1996) or submitted them orally at the April 23, 1996 public meeting. All comments received (provided in Section A.3) are assessed in this Responsiveness Summary to determine if the state and community accept the OU3 proposed remedy and/or if modifications to the proposed remedy are necessary.

SPECIFIC COMMENTS #3a

<u>NTS Community Advisory Board; Written Comments</u>

"Since this is a "Final" document how will the comments and recommendations from the public, NTS CAB, and others be considered in the IROD/ROD?"

"Section 6 [of the OU3 RI/FS Report], Page 6-4 (State and Community Acceptance) State and Community acceptance are noted as criteria to be included in the evaluation of alternatives addressed within the responsiveness summary of the ROD. As noted the consideration of these criteria are not addressed within Alternatives 2 and 3 in Section 6. Since these decisions will affect both the source and the recipient communities (the latter being communities in Nevada and Utah) this should be noted in the ROD. A key issue with respect to community acceptance, particularly in the Las Vegas Valley is the transportation of the waste."

SUMMARY COMMENT #3b - Continuing Public Involvement
Several stakeholders requested that DOE's commitment to continued public involvement be stated in the OU3 ROD.

DOE RESPONSE #3b
DOE is committed to continuing the active public involvement program currently in place at the FEMP throughout the duration of remedial activities at the site. This issue has been discussed at several public meetings including a topical roundtable. The Community Relations Plan addresses DOE's commitment to continued public involvement during the RD/RA process. Additionally, language has been added to Section 8.3 of this ROD to formalize this commitment for the OU3 RD/RA process.

SPECIFIC COMMENTS #3b

Lisa Crawford; Written Comments

"DOE must make a commitment to the public that their involvement will not be lessened during the RD/RA. DOE should commit in the ROD for OU3 to having on-going public involvement during the RD/RA."

Vicky Dastillung; Written Comments

"A commitment to continue the public involvement process that has been developed over the years should be stated clearly in the ROD. This should extend through design, remediation, and out into the O&M years."

Pamela Dunn; Written Comments

"Meaningful public involvement beyond the ROD and throughout the RD/RA process. DOE's commitment to this involvement is essential due to the implications of this alternative and must be included in the ROD."

Ohio EPA; Written Comments

"DOE must ensure the public that their involvement will not be diminished during Remedial Design and Remedial Action (RD/RA). DOE should commit within the Record of Decision for OU3 to maintaining the exceptional on-going public involvement program during RD/RA."

SUMMARY COMMENT #3c - Future Reviews and/or Revisions to the OU3 ROD
One commentor suggested that the ROD should be reopened with a formal comment period if there is a change in the type or quantities of OU3 waste that will be placed in the OSDF. There were other recommendations made by the same commentor on conditions for reopening the ROD and regarding future funding requests to support the activities to be undertaken pursuant to this ROD.

DOE RESPONSE #3c
Because material is remaining on-site, CERCLA mandates that the remedy be reviewed five years after commencement of remedial action to ensure it is still protective of human health and the environment. This statement is included in the Declaration Statement. Additionally, changes to the remedy that occur during remedial design and remedial action require at least some level of notification/review. Under the regulations which comprise CERCLA, individuals

and organizations have specific legal rights which are guaranteed without need for specific addition of those claims into individual RODs. Some examples follow:

- Minor changes that require differences to be documented in the post-ROD file; these would be changes such as refined cost or material quantity estimates that do not significantly affect the scope, performance, or cost of the selected remedy.

- Significant changes that modify or replace a component of the selected remedy require development of an Explanation of Significant Differences (ESD); an ESD requires that public notice be given. An ESD does not alter the overall approach that the remedy represents.

- Fundamental changes that revise the scope (overall approach) or performance of the selected remedy require the development of a ROD amendment; a full public comment period would occur through publication of a revised Proposed Plan and formal amendment to the ROD.

DOE will follow these requirements as appropriate (as will any successor agency since acceptance of ownership or authority for a CERCLA remediation site includes the responsibility for the legally binding remediation and/or the post-remediation operation and maintenance of the site). Additionally, the public will be encouraged and afforded opportunity to participate in the RD and RA phases of the actions and to provide input on proposed changes through available mechanisms such as community meetings, news releases, notices of availability, and direct mailings to any resident, group, or agency that wishes to be on the mailing list.

DOE is further committed to seeking the funding required to support the accelerated remediation scenario. DOE has committed to seeking stakeholder input into annual priorities to support budget requests. DOE recognizes that each ROD is enforceable, and the budget requests will reflect this.

SPECIFIC COMMENTS #3c

<u>Vicky Dastillung; Written Comments</u>

"Also, if there is a change in the type or quantities of waste from OU3 that DOE will want to place in the cell, the ROD should be reopened and a formal comment period for the public should occur."

"Copies of the annual reports and the 5 year reviews should be mailed to:
a. Ross, Crosby, and Morgan Townships
b. Butler and Hamilton Counties
c. OEPA, USEPA, ODH
d. Congressional and State Reps that have the FEMP in their district
e. Any resident, group, or agency that wishes to be on the mailing list."

"DOE will be responsible for requesting proper levels of funding for remediation and O&M (including future repairs). If Congress does not provide adequate funding, letters of inadequate funding should go out to those on the above mailing list. Defining "inadequate funding" should be worked out with the stakeholders. If at some time in the future

another agency takes over the remediation and O&M functions of the site, it must accept the responsibilities in the RODs as well."

"DOE should commit to detailing the O&M process within its administrative orders so that future DOE decision makers will be clear about the importance of this ongoing task."

"The RODs should be enforceable with fines and lawsuits if necessary."

"A mechanism for the stakeholders to initiate a request for future review and possible amendment of the ROD should be included in the ROD."

"If for some reason, the ROD for OU3 can't be implemented fully, the ROD should be reopened with full public participation."

4. COMMENTS NOT DIRECTLY APPLICABLE TO THE OU3 DECISION

SUMMARY COMMENT #4a - Design and Construction of the OSDF
One commentor made several requests regarding the design and construction of the OSDF. These requests were that the OSDF be placed over the best site geology, have constant oversight by an independent expert, and be constructed to allow for future access if needed.

DOE RESPONSE #4a
DOE concurs, and has addressed these issues in the OU2 ROD and OU5 ROD, the documents which establish the basis for construction of the OSDF. The OU3 ROD for Final Remedial Action allows certain materials from the D&D of site structures to be disposed of in the existing OSDF. To ensure consideration of public comments regarding the OSDF, public meetings and/or workshops on the OSDF design have been and will continue to be offered, as necessary, based on stakeholder interest.

SPECIFIC COMMENTS #4a

<u>Vicky Dastillung; Written Comments</u>

"When the disposal cell is built, it should be placed over the best geology on the site."

"When the disposal cell is built, there should be constant oversight by an independent expert as the engineering, construction, and filling are performed to ensure that they are done properly. Reports from the independent expert should be part of the public record."

"When the disposal cell is built, it should be built in such a way that the contents can be accessed for future remediation efforts if needed. This does not mean it must be in containers in neat rows, but be stored in a way that heavy machinery could get to it without letting it in the air or increasing the risks to workers, community or the environment unnecessarily."

SUMMARY COMMENT #4b - Future Land Use
Several comments were received stating that DOE must retain ownership of the Fernald site and maintain institutional controls to ensure that the site is protective of human health and the environment.

DOE RESPONSE #4b
The OU3 decision on final disposition of materials from the D&D of site structures is being made based on the assumption that there will be no OU3 materials remaining in place after the final remediation is complete. Continued federal ownership is committed to by the OU2 and OU5 RODs. Final site land use will be determined based on recommendations from the Fernald Citizens Task Force, the Fernald Community Reuse Organization, and other stakeholders.

SPECIFIC COMMENTS #4b

Lisa Crawford; Written Comments

"DOE must make firm commitments that the land-use used to develop the clean-up standards is maintained into the future. DOE must and will retain ownership and maintain institutional controls and limited land use to ensure protectiveness of the FEMP site."

Pamela Dunn; Written Comments

"The DOE or how it may evolve in the future under another name and the federal government must retain ownership of the FEMP property. This is necessary to provide adequate institutional controls to protect the site and limit future land use so as to not allow discharges of the contaminants left in the soils. These restrictions must be defined and fully disclosed in the OU3 ROD and included in the deed to the land."

Ohio EPA; Written Comments

"DOE must provide commitments to ensure the land-use employed to develop the cleanup standards is maintained into the future. DOE ownership is essential to maintaining institutional controls and limiting land-use to ensure protectiveness of the site."

SUMMARY COMMENT #4c - Posting of Accessible Remediated Areas
One comment was received concerning the posting of remediated areas that would be made accessible to the public.

DOE RESPONSE #4c
The OU3 decision on final disposition of materials from the D&D of site structures is being made based on the assumption that there will be no OU3 materials remaining in place after the final remediation is complete. The comment noted here is more directly related to remediation of environmental media, and more appropriately should be, and has been, addressed in Section 9.1.7 of the OU5 ROD. Specifically, Section 9.1.7 of the OU5 ROD states DOE's commitment to institutional and access controls, deed restrictions, buffer zones, and continued Federal ownership of the site. Since all of the components of OU3 will have

been completely removed upon completion of remediation, there will not be a need for OU3-specific access or institutional controls.

SPECIFIC COMMENTS #4c

Vicky Dastillung; Written Comments

"Also, once cleanup is considered complete, all areas where the public will have access and that are above background (even if they are below the cleanup criteria) should be posted so that the public can make informed choices as to any exposures they might incur."

5. SPECIFIC COMMENTS AND QUESTIONS REGARDING THE OU3 RI/FS REPORT AND PROPOSED PLAN

SPECIFIC COMMENT #5a (NTS Community Advisory Board; Written Comments)
"Where do the recommendations from the proposed remedial action plan fit into the NEPA process?"

DOE RESPONSE #5a
On June 13, 1994, DOE issued a revised policy for NEPA Compliance. The revised policy entitled "Secretarial Policy Statement of National Environmental Policy Act," allows for the substantive aspects of NEPA to be integrated into CERCLA evaluations while relying on the CERCLA process to meet the procedural requirements of NEPA consistent with U.S. EPA's own policies. The OU3 RI/FS Report and Proposed Plan represent an integrated CERCLA/NEPA evaluation that tiers from the "lead" operable unit FS/PP-EIS (i.e., OU4).

The integrated OU4 FS/PP-EIS followed all procedural and substantive requirements of a NEPA EIS and was written as the lead document to contain cumulative impacts from the leading remedial alternatives for Operable Units 1-5 based on available data. Each operable unit feasibility study that followed was tiered from the OU4 EIS and contains an evaluation of the operable unit-specific alternatives and an updated NEPA cumulative impact analysis for the entire Fernald remedial action.

It should be noted that the NTS Community Advisory Board reviewed and provided written comments on the Fernald OU4 FS/PP-EIS.

SPECIFIC COMMENT #5b (NTS Community Advisory Board; Written Comments)
"Page 12 [of OU3 Proposed Plan] (EPA Evaluation Criteria). What is the source for the specific regulations to which this table refers?"

DOE RESPONSE #5b
The nine criteria for evaluation for each alternative identified in a feasibility study are delineated in 40 CFR 300.430. The nine criteria are categorized into 3 groups: threshold criteria (overall protection of human health and the environment; and compliance with ARARs) which must be met for an alternative to be eligible for selection; primary balancing criteria (long-term effectiveness and permanence; reduction of toxicity, mobility, or volume through treatment; short-term effectiveness; implementability; and cost); and modifying criteria (state acceptance and community acceptance). The modifying criteria are typically evaluated upon completion of the public review period.

SPECIFIC COMMENT #5c (NTS Community Advisory Board; Written Comments)
"Page 14 [of the OU3 Proposed Plan] (Cost). In Alternative 2 what would the cost be if the material proposed for transport/treatment/disposal to Utah/Nevada would remain on-property at Fernald?"

DOE RESPONSE #5c
Since only a very small portion of the OU3 building materials is proposed for off-site disposal, and since this material is not eligible to remain on the FEMP site, this evaluation was not performed. There are certainly costs associated with off-site disposal; however, they are not costs which can be avoided. The project will ultimately select the least cost disposal option from options that are available at the time of the selection.

SPECIFIC COMMENT #5d (NTS Community Advisory Board; Written Comments)
"Page 15 [of the OU3 Proposed Plan] (State Acceptance). Does this include acceptance by the State of Nevada and local Nevada communities as well as Ohio?"

DOE RESPONSE #5d
The OU3 RI/FS Report and Proposed Plan were prepared by DOE and approved by U.S. EPA with concurrence from the Ohio EPA. The Proposed Plan was provided to both the State of Nevada and the State of Utah for review and comment during the public review period. Although neither State provided comments to DOE on the OU3 Proposed Plan, they have previously commented on selected remedies from other operable units at the FEMP. These comments are also being considered in the evaluation for the State Acceptance criterion.

Evaluation of public acceptance under CERCLA is intended to provide a process to ensure that decision-making is sensitive to local desires. Strong public resistance to technically sound approaches in early CERCLA projects identified the need for a way to address this modifying input. For the Envirocare site in Utah, the state permit and site WAC already reflect the technical and public acceptance aspects of the process. For the NTS, the EIS process will result in similar balanced results. Since all stakeholders along all possible routes to a disposal or treatment facility cannot possibly be consulted for all remedies, state authorities are relied upon for representation of their constituents in the CERCLA evaluation process.

SPECIFIC COMMENT #5e (NTS Community Advisory Board; Written Comments)
"Page 15 [of the OU3 Proposed Plan] (Health Effects: General Public). What were the transportation routes considered in the health effects analyses?"

DOE RESPONSE #5e
Risk modeling was used to evaluate impacts to an individual along the primary transportation route during the transportation of OU3 materials. The primary route to NTS was used in the model because it was determined to be the most direct route with the smallest populations along the route. As stated on page 15 of the Proposed Plan, the model, which assessed the exposure of this hypothetical individual to radiological and chemical contaminants, estimated the risk to be below the EPA acceptable risk range of 10^{-4} to 10^{-6}.

The primary transportation route to NTS used in the risk modeling is as follows: depart the Fernald Site; S.R. 128 Southwest to Miamitown, Ohio; I-74 East to Cincinnati, Ohio; I-75 South to Walton, Kentucky; I-71 South to Louisville, Kentucky; I-64 West to St. Louis, Missouri; I-44 West to Oklahoma City, Oklahoma; I-40 West to Kingman, Arizona; U.S. Route 93 Northwest to Alunite, Nevada; U.S. Route 95 to Mercury, Nevada.

SPECIFIC COMMENT #5f (NTS Community Advisory Board; Written Comments)
"Section 5 [of the OU3 RI/FS Report], page 5-8 (5.3.2- Integration of the Interim and Final Remedial Actions). It is unclear what the difference is between the Interim and Final Remedial Actions for Alternative 2. Is the material that will remain at Fernald under an interim action being stored temporarily, or is Fernald the final disposal site? Could the Final Remedial Action ultimately mean the transport of this material to the NTS or another off-site location?"

DOE RESPONSE #5f
Because the former uranium processing facilities that comprise OU3 are at or beyond their design life and in a state of advancing deterioration, and because of concerns regarding further releases of hazardous substances to the environment in the event of structural collapse or other failure mechanisms, it was decided by DOE and the U.S. EPA to divide the OU3 remedial action into two components. The first component, known as the interim remedial action, addressed the D&D of all above- and below-ground improvements. A Record of Decision for the Interim Remedial Action (IROD) was signed in July 1994. According to the IROD, the building debris and resultant waste would primarily be placed in interim storage until a final remedial decision is made, although some limited material disposition could occur off-site.

The final remedy addresses treatment and final disposition of the materials and wastes resulting from performance of the interim remedial action. It is the selected remedy contained in the OU3 ROD for Final Remedial Action. It reflects the balanced approach being used for disposal of FEMP wastes; material with higher levels of contamination, deemed to represent the principal threat at the site, would be treated (if required) and shipped off-site for disposal and material exhibiting lower contaminant concentrations distributed over a larger volume, termed a secondary threat, would be permanently disposed of at the Fernald site in one central engineered disposal facility. Off-site disposal of the material with higher levels of contamination will take place at a location that provides greater protectiveness of human health than would on-site disposal at Fernald. This approach has been supported by stakeholders, including other impacted states, in the selected remedies of each of the other

four FEMP operable units. Only a small portion of the OU3 building debris will be disposed off-site. The NTS is one potential repository for this material.

A.3 ORIGINAL COMMENTS SUBMITTED BY STAKEHOLDERS

During the OU3 formal comment period, seven letters from the public and a letter from the Ohio EPA were received by DOE. Although there was an opportunity for stakeholders to give verbal comments at the April 23, 1996 public meeting, no comments related to the remediation of OU3 were given. Section A.3 presents the seven public letters alphabetically, followed by the Ohio EPA letter. Formal comments have been bracketed with a number that corresponds to an issue number in Section A.2. The issue number identifies the location of DOE's response to the comment. Comments that were similar or identical were grouped together, with one response to avoid redundancy. Comments unique to only one commentor were addressed individually with as much weight given to the comment response as was given to those presented by multiple commentors.

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Lisa Crawford, Written Comments, Page 1

May 1, 1996

RE: DOE FEMP - OU3 PPP Comments

Mr. Gary Stegner
Director, Public Information
U.S. DOE Fernald Area Office
P.O. Box 538705
Cincinnati, OH 45235-8705

Dear Mr. Stegner:

Below you will find my comments on the O.U. 3 Proposed Plan. They are as follows:

1. I believe that the selected alternative is the appropriate one. I also believe that the balanced approach -- low volume, high concentration wastes go off-site for disposal and high-volume, lower contamination wastes are disposed of in an engineered facility on-site. I believe that this is the best strategy for remediation of the FEMP facility. 1a

2. The following restrictions should be placed on the O.U. 3 ROD:
   a.) no disposal or long-term storage of off-site waste in the proposed engineered disposal facility or any other facility located on the FEMP property; 2b
   b.) DOE must commit to the ALARA mass based WAC for Tc-99 of 59 grams; 2c
   c.) No characteristic hazardous waste should be disposed of in this facility. 2d

3. DOE should commit themselves to developing a policy for defining criteria for implementing recycling of materials, rather than disposing of them as waste. Along with this commitment DOE should allow the public to review and comment on this policy with regard to OU 3. 2a

4. DOE should commit to reuse any materials on-site to the extent possible as well as encouraging other DOE facilities to reuse Fernald materials.

5. DOE should commit to being open to considering new technologies that will reduce volume, toxicity and mobility of wastes being disposed of on-site. I believe that DOE should remain open to new technologies which could render the on-site waste safer. 2g

Lisa Crawford, Written Comments, Page 2

6. DOE should commit to including and/or developing real-time monitoring for discharges to the environment coming from remedial actions. Data obtained from real-time monitoring and any additional monitoring should be provided to the public in a timely manner. **2h**

7. DOE should attempt to use pollution prevention activities when possible and all available methods to reduce or eliminate discharges and releases from the demolition and disposal activities should be considered during the design of remedial activities. **2f**

8. DOE must make a commitment to the public that their involvement will not be lessened during the RD/RA. DOE should commit in the ROD for OU 3 to having on-going public involvement during the RD/RA. **3b**

9. DOE must make firm commitments that the land-use used to develop the clean-up standards is maintained into the future. DOE must and will ~~retain ownership and maintain institutional~~ controls and limited land use to ensure protectiveness of the FEMP site. **4b**

10. With regard to the issue of "free-release" -- I believe that there should be a public work-shop held to have a further discussion regarding this specific issue. A commitment should be made to the public to assure them that items of any kind that leave the FFMP site will be used in a responsible manner and not just sold and lost into unknown and unsuspecting hands.

    While I agree with free-release for recycling, again this is an issue that needs to be discussed further. Releasing items such as metals/steel/etc. for recycling for metal boxes that will then ship wastes is a satisfactory way of releasing these contaminated items. For other more public purposes, this is not acceptable.

    DOE should commit to the public that they will create a "recycling program" and have full public input into this process. This would eliminate what is unsatisfactory and what is satisfactory to the public at large. This goes back to comment #3. **2a**

Please feel free to contact me if you have any questions and or comments regarding these comments.

Sincerely,

Lisa Crawford

Lisa Crawford
10206 Crosby Road
Harrison, OH 45030
(513) 738-1688

Vicky Dastillung, Written Comments, Page 1

Comments on the Proposed Plan for OU 3 at the FEMP

As a nearby resident, let me once again state up front that my preference would be for a total cleanup of the site that would return the site to background levels and leave no waste on site. However, since technological, political, and practical considerations must also come into play, I realize that this is probably not going to happen. 1a

* * * * * * * * * *

The rest of my comments are aimed at bringing up concerns and suggestions relative to the Proposed Plan for OU 3. The ROD for OU 3 should clearly deal with or state the following:

* No off-site waste will be brought onto FEMP property for storage or disposal. (Define off-site waste as anything not currently on the site, except for samples that were sent off-site for characterization or treatability studies) Also, 2b
if there is a change in the type or quantities of waste from OU 3 that DOE will want to place in the cell, the ROD should be reopened and a formal comment period for the public should occur. 3c

* Any waiver given so that a disposal cell can be built, must include wording to keep all off-site waste from entering the FEMP for storage or disposal. It must also be so site-specific that it does not create a precedent for future federal or commercial disposal sites in the vicinity of the FEMP. 2b

* The reuse and recycling parts of the ROD should provide room for the community's input. Apparently there is a draft policy now. The public should be allowed to review and comment on it. The certification program should also be explained to the public and the public should be allowed to provide input. While recycling and reuse are important goals, we want to make sure that there are no exposures to the public because of it. Also the term "economically feasible" needs to be defined, with public input. Perhaps a Roundtable or other meeting format could begin the dialogue on these issues. 2a

* The use of a commercial solid waste landfill needs to be explained to the public carefully, both the advantages and the disadvantages.

* The ROD should state that DOE will follow a sort of ALARA-principle in designing and executing the remediation. The remediation levels should be as close to background as possible given the technological, risk, and cost constraints. If an additional process or activity could get 2f

Vicky Dastillung, Written Comments, Page 2

us substantially closer to background at a reasonable cost and risk, this should be pursued. The goal should be background levels, not just staying within a remediation level. 2f

* When the disposal cell is built, it should be placed over the best geology on the site.

* When the disposal cell is built, there should be constant oversight by an independent expert as the engineering, construction and filling are performed to ensure that they are done properly. Reports from the independent expert should be part of the public record.

* When the disposal cell is built, it should be built in such a way that the contents can be accessed for future remediation efforts if needed. This does not mean it must be in containers in neat rows, but be stored in a way that heavy machinery could get to it without lofting it in the air or increasing the risks to workers, community or the environment unnecessarily. 4a

* The 5 year reviews of the ROD for effectiveness should include an analysis of the then current technologies' ability to pursue further remediation. If at a future time a technology would allow for a way to truly deactivate the radioactivity or hazardous chemicals or for a way to greatly enhance the long-term storage of the material, we would want to be able to evaluate if it was desirable to pursue further action. This process would also call attention to the technology research needs of the DOE. 2g

* Copies of the annual reports and the 5 year reviews should be mailed to:

1. Ross, Crosby, and Morgan Townships
2. Butler and Hamilton Counties
3. OEPA, USEPA, ODH
4. Congressional and State Reps that have the FEMP in their district
5. Any resident, group or agency that wishes to be on the mailing list

* DOE will be responsible for requesting proper levels of funding for remediation and O & M (including future repairs). If Congress does not provide adequate funding, letters of inadequate funding should go out to those on the above mailing list. Defining "inadequate funding" should be worked out with the stakeholders. If at some time in the future another agency takes over the remediation and O & M functions of the site, it must accept the responsibilities in the RODs as well. 3c

* DOE should commit to detailing the O & M process within its Administrative orders so that future DOE decision

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Vicky Dastillung, Written Comments, Page 3

05/03/96 18:38 FERNALD PEIC → 513 6483075 NO.489 P003/003

makers will be clear about the importance of this ongoing task.

* The RODs should be enforceable with fines and lawsuits if necessary.

* A mechanism for the stakeholders to initiate a request for future review and possible amendment of the ROD should be included in the ROD. 3c

* If for some reason, the ROD for OU 3 can't be implemented fully, the ROD should be reopened with full public participation.

* Air monitoring data during D & D and transporting waste to its disposal site will be extremely important to the community and workers. The best available devices and techniques should be used to give the workers and community a clear picture of air emissions. Action levels should be developed (with the community) so that work can be halted if they occur.

* Developing accurate real-time monitoring should be a DOE priority!

* Because the annual Environmental Monitoring report is issued so long after the monitoring is actually done, the public deserves to see the environmental monitoring results often, perhaps monthly, so they can be assured that the OU 3 ROD activities are not affecting the community's air, water, or environmental quality. 2h

* Also, the monitoring done specifically for the ROD should be made easily available to the public. An update at community meetings would be nice. Fast turnaround on analyzing samples is important so that any problems will be detected promptly enough for mitigating measures to be taken.

* A commitment to continue the public involvement process that has been developed over the years should be stated clearly in the ROD. This should extend through design, remediation, and out into the O & M years. 3b

* Also, once cleanup is considered complete, all areas where the public will have access and that are above background (even if they are below the cleanup criteria) should be posted so that the public can make informed choices as to any exposures they might incur. 4c

Submitted by Vicky Dastillung
5/2/96

Pamela Dunn, Written Comments, Page 1

P DUNN 5137382293 P.01

May 02, 1996

Mr. Gary Stegner
Director, Public Information
U.S. DOE Fernald Office
P.O. Box 538705
Cincinnati, Ohio 45253-8705

RE: Comments on the Proposed Plan for Remediation of OU 3

Dear Mr. Stegner,

The purpose of this letter is to submit comments on OU 3's Proposed Plan. I support the decision to seek a balanced approach in the remediation efforts for Fernald, with higher concentrations of waste shipped off-site and lower concentrations of waste remaining on-site in an engineered disposal facility. I can accept the preferred alternative if the following issues are addressed and implemented in the final OU 3 ROD. 1a

1. Meaningful public involvement beyond the ROD and throughout the RD/RA process. DOE's commitment to this involvement is essential due to the implications of this alternative and must be included in the ROD. 3b

2. Continued efforts in technology development should proceed in an attempt to discover more effective methods for treatment and disposal of the waste streams designated for the disposal cell. Efforts should continue to develop technology that may one day have the ability to remove additional contamination from the soils without total destruction of the existing eco-system present on the site. 2g

3. The implementation of the waste acceptance criteria (WAC) established per ALARA for Tc-99, and all other contaminants, must be adhered to and stated in the OU 3 ROD. No averaging or dilution of contaminants will be permitted in meeting the WAC. 2c

4. Waste generated from <u>outside</u> the FEMP will <u>not</u> be allowed to be disposed of or stored within the FEMP boundaries under any circumstances. This includes, but is not limited to hazardous, toxic, radioactive, and any and all waste/contaminates which were not a result of on-site activities. 2b

5. Criteria for the disposal of building materials and other solid materials other than soil must be established and included in the OU 3 ROD. In addition, the ratio of these forms of solid materials to soil slated for the on-site disposal facility must be developed, adopted and included in the OU 3 ROD to ensure the integrity of the cell is not compromised by their inclusion. 2c

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Pamela Dunn, Written Comments, Page 2

P DUNN 5137382293 P.02

Page -2-
OU 3 Comments

6. Additional discharges of contaminates during the remediation of OU 3 should be avoided when possible. Methods to achieve minimal releases during remediation should be conducted throughout the RD/RA process. **2f**

7. Real time monitoring and other monitoring activities should be implemented during remediation and for the period for which the materials contained within the disposal cell pose a threat and risk to human health and the environment. These monitoring activities should be conducted on a regular and frequent basis with the results provided to the public in a timely manner. **2h**

8. The DOE or how it may evolve in the future under another name and the federal government must retain ownership of the FEMP property. This is necessary to provide adequate institutional controls to protect the site and limit future land use so as to not allow discharges of the contaminants left in the soils. These restrictions must be defined and fully disclosed in the OU 3 ROD and included in the deed to the land. **4b**

9. ALARA principles must be utilized during the RD process. **2f**

10. A USEPA waiver of the Ohio solid waste siting criteria should only be granted if the DOE abides by the WAC upper limit stipulations has described in comment #3 and #4 above, the waiver specifically states that there will be no off-site waste disposed of on the FEMP property and no on-site waste will be capped and left in place. DOE's commitment to abide by these stipulations must be included in the OU 3 ROD. **2c** **2b**

11. The provision for unrestricted release of materials associated with OU 3 must be defined and presented to the public for input and acceptance before final adoption of this provision. The criteria for this "unrestricted release" must be developed, with public involvement, and included in the final OU 3 ROD. **2a**

Should you have any questions or comments please feel free to contact me.

Submitted by,

Pamela Dunn
7781 New Haven Rd.
Harrison, Ohio 45030

cc:file

Nevada Test Site Community Advisory Board, Written Comments, Page 1

COMMUNITY ADVISORY BOARD

FOR NEVADA TEST SITE PROGRAMS
ENVIRONMENTAL RESTORATION AND WASTE MANAGEMENT

May 15, 1996

Mr. Gary Stegner
Public Information Director
DOE Fernald Area Office
The Department of Energy
P.O. Box 538705
Cincinnati, Ohio 45253-9985

Subject: **COMMENTS FROM THE NEVADA TEST SITE COMMUNITY ADVISORY BOARD ON THE PROPOSED PLAN FOR THE OPERABLE UNIT 3 FINAL REMEDIAL ACTION**

Dear Mr. Stegner:

Attached are comments from the Nevada Test Site (NTS), Community Advisory Board (CAB) on the ***Proposed Plan for the Operable Unit 3 Final Remedial Action.***

The CAB is, of course, extremely interested in all facets of the remediation work taking place at Fernald. Since the NTS will be the recipient of an extensive amount of Fernald's waste we obviously have a stake in decisions being considered at Fernald. We appreciate your Board's consideration to our comments from previous operable units.

Operable Unit 3 is, of course, one of a series of operable units that are undergoing remediation at the Fernald site. We are concerned about the potential cumulative affects from activities such as the shipment of the waste. While the proposed number of shipments from OU-3 is relatively low (over 500 containers of waste), the total number of shipments from the Fernald facility to the NTS will be considerably greater. It is important, therefore, that the cumulative effect of transportation impacts be characterized comprehensively in the ROD. Further elaboration on the transportation issue is provided in our comments.

The Board has previously commented on the recommendations being considered for **Operable Units 2, 4** and **5.** As we have noted in our responses to the recommendations for remediation from the other Operable Units we are supportive of the efforts at Fernald and at other sites to consider, where feasible, on-site storage options. Given the significant amounts of waste present at Fernald and other locations throughout the nation, it is of course important to remediate,

1050 EAST FLAMINGO, SUITE 367 LAS VEGAS, NEVADA 89119

(Chair) Dale Schutte; (Members) Richard Arnold, Dennis Bechtel, Chris Brown, Diane Cravotta, Marilynn Hall, James Henderson, Stephanie Lawton, Lathia McDaniels, Richard Nocilla, Mary O'Brien, Paul Richitt, Stanley Sims, Connie Simkins, Joanne Stockill, Bill Vasconi; (Ex Officio) Joe Fiore, Dave Bedsun, Paul Liebendorfer, Frank Tussing

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Nevada Test Site Community Advisory Board, Written Comments, Page 2

Gary Stegner letter
Page 2
May 15, 1996

wherever possible, potential health and safety risks to the public. Reducing the amounts of waste that need to be transported is also important in reducing the total potential for risk to the public from the cleanup efforts at **Operable Unit 3** and other sites.

While we appreciate the opportunity to provide input to the final remedial action for **Operable Unit 3** members of the Nevada Test Site Community Advisory Board are concerned that we are not receiving the documents in sufficient time to perform more than a cursory review, and general comments. The OU-3 document, for example, is dated February 1996. The CAB, however, was only informed of the proposed action in late April. There should have been more than ample time for its early distribution. Since the NTS is being recommended for some of the proposed actions more lead time is obviously needed to comprehensively assess potential impacts.

The CAB looks forward to your consideration of our comments and concerns with respect to remediation decisions at **Operable Unit 3** and a written response to the issues raised.

If you have questions or require clarification of our comments please contact the CAB. The CAB also urges DOE to notify the CAB as early as possible on other cleanup efforts at Fernald potentially affecting the NTS and surrounding communities to enable the Board to adequately determine potential impacts.

Sincerely,

for Earle C. Dixon (Technical Advisor)
Dale Schutte, Chairperson
Nevada Test Site Community Advisory Board

Attachment

fernald.ou3

cc: CAB Members
Ex officio Members
Kevin Rohrer, DOE/NV
Earle Dixon, UNLV/HRC
Administrative record

Nevada Test Site Community Advisory Board, Written Comments, Page 3

NEVADA TEST SITE (NTS), COMMUNITY ADVISORY BOARD (CAB) COMMENTS ON PROPOSED PLAN FOR THE REMEDIATION OF FERNALD, OHIO OPERABLE UNIT 3

General Comments, Questions and Concerns (relating generally to items in the Summary Document except where noted)

1. Where do the recommendations from the proposed remedial action plan fit into the NEPA process? Since this is a "Final" document how will the comments and recommendations from the public, NTS CAB, and others be considered in the IROD/ROD? 5a 3a

2. How will the potential effects to the public and the environment from the remediation of **Operable Unit 3**, be considered cumulatively with those from the other Operable Units?

The transportation of the waste to the NTS, for example, is an issue of concern to Nevadans. Appendix J, while mentioning transportation and the total number of shipments to the NTS (Page J-15), essentially performs no analysis on the cumulative impacts of the shipments to Las Vegas (through which the shipments will be transported as noted on J-16), or other rapidly growing areas of Southern Nevada (the Pahrump area of Nye County as an example). The issue becomes more important because the NTS is being considered for the storage, treatment or disposal of radioactive and mixed waste from a number of other DOE sites currently undergoing remediation.

The analyses in Appendix J (and in Appendix H the Risk section) are totally inadequate in determining actual risk to the public in Southern Nevada, or for that matter, anywhere else along the route. To more accurately consider true risk (either by RADTRAN as described in Appendix H,or another measure) local conditions need to be analyzed. Given the total number of shipments being contemplated more accidents will occur (e.g. an accident of course took place last year in Southern Missouri involving a radioactive waste truck from Fernald). 2e

The Nevada Test Site DOE released a draft Environmental Impact Statement in March of this year. Incorporated as part of the EIS was a Transportation Study that examined ten routing options to transport rad waste to the NTS. Eight of the routes consider the shipment of the waste through urbanized Clark County. The primary and secondary routes (so named although the routes were not noted as recommended) would carry, if implemented, thousands of shipments of waste either through downtown Las Vegas (primary), or through what has essentially become a residential and commercial area (secondary).

A careful analysis would avoid potential problem areas throughout the nation. Appendix J falls far short of the mark. The analysis should include coordination with local officials in Southern Nevada and elsewhere to ensure that potential accident locations and other areas of high risk can be avoided.

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Nevada Test Site Community Advisory Board, Written Comments, Page 4

3. It is still unclear why the site has a 105 gram safety limit on *Technetium-99* allowable mass? If this is the case the discussion in Alternative 2 (the preferred alternative) in the summary document does not make a compelling case for why concrete needs to be transported off-site to reduce the on-site level to 59 grams (and thereby raise the level of risk, if there is a risk, elsewhere). 2c

4. Of the three alternatives presented, *Alternative 2* is an obvious middle-ground between *Alternative 1*, which does not protect the public, and *Alternative 3* which proposes to *transport* all of the waste to the NTS, or to another facility and move the risk elsewhere. 1a

Why couldn't another option be considered that would be to keep all the waste on-site in a facility that would *protect* the public? The Plan notes that OU-3 wastes are *secondary wastes*, or, "*...wastes that pose a relatively low long-term threat," and that, "USEPA allows the use of engineering controls or a combination of engineering controls (mechanical means like barriers), or administrative controls (e.g. management)"* (Page 9). This would avoid the real uncertainty of transporting the waste thousands of miles with an enhanced potential for accident and release of material. 2c

5. Throughout the analyses of Alternatives 2 and 3 (Section 6) impacts to the public are said to be *"minor," "minimal," "are not expected to be adversely impacted"* and similar, yet there does not seem to be a strong analytical basis to conclude that this necessarily will be the case. Likewise, the range of socioeconomic impacts goes well beyond impacts on available resources, and labor costs (Pages 6-12, and 6-15).

For example, the Socioeconomic and Land Use section of Alternative 2 (Page 6-12) does not consider the potential impacts from the transportation of the waste, conceivably through Las Vegas. A whole range of potential affects have been documented from other sources including potential transportation affects on property values (See Komis v. The City of Santa Fe) to studies of possible affects on tourism from accidents involving radioactive materials (which is of interest to Nevada's tourist-based economy). 2e

The communities and citizens that are on the receiving end can't assume that the affects will be minor, minimal or will not adversely affect our economy, quality of life, or property values.

Specific Comments, Questions and Concerns (Page numbers refer to those in the brief Summary Document)

Page 12 (EPA Evaluation Criteria). What is the source for the specific regulations to which this table refers? 5b

Page 13 (Overall Protection of Human Health and the Environment) The conclusion about protecting human health while undoubtedly protecting human health at Fernald under Alternative 2e

000102

3, ignores potential health affects as a result of the transport of the waste, or at the final disposal site. The health affects in these two areas need to be described.

Page 14 (Long-Term Effectiveness and Permanence) Last Sentence. The conclusion reached for Alternative 3 [no long-term requirements for continued administrative controls...] seems to ignore the fact that this material will impact another area (presumably the NTS). There would be a cost for this. 2e

Page 14 (Cost). In Alternative 2 what would the cost be if the material proposed for transport/treatment/disposal to Utah/Nevada would remain on-property at Fernald? 5c

Page 15 (State Acceptance). Does this include acceptance by the State of Nevada and local Nevada communities as well as Ohio? 5d

Page 15 (Health Effects: General Public). What were the transportation routes considered in the health effects analyses? 5e

Page 17 (Environmental Effects). The preferred alternative does not discuss potential environment effects at the disposal sites (the NTS, and Envirocare in Utah) 2e

Other Comments, Questions and Concerns (Volume 1)

Section 5

Page 5-8 (5.3.2- Integration of the Interim and Final Remedial Actions). It is unclear what the difference is between the Interim and Final Remedial Actions for Alternative 2. Is the material that will remain at Fernald under an interim action being stored temporarily, or is Fernald the final disposal site? Could the Final Remedial Action ultimately mean the transport of this material to the NTS or another off-site location? 5f

Section 6

Page 6-4 (State and Community Acceptance) State and Community acceptance are noted as criteria to be included in the evaluation of alternatives addressed within the responsiveness summary of the ROD. As noted the consideration of these criteria are not addressed within Alternatives 2 and 3 in Section 6. Since these decisions will affect both the source and the recipient communities (the latter being communities in Nevada and Utah) this should be noted in the ROD. A key issue with respect to community acceptance, particularly in the Las Vegas Valley is the transportation of the waste. 3a

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Gary Storer, Written Comments

COMMENT SHEET

DOE is interested in your comments on the cleanup alternatives being considered in the Operable Unit 3 Proposed Plan, including the preferred alternative. Please use the space provided below to write your comments, then fold, staple or tape, and mail this form. DOE must receive your comments on or before the close of the public comment period on May 2, 1996. If you have questions about the comment period, please contact Gary Stegner, the DOE Fernald Area Office Public Information Director, at (513) 648-3153.

I AM CONCERNED ABOUT THE LONG TIME ELEMENT INVOLVED IN DETERMINING WHETHER OR NOT THE BUILDING METAL (CU & FE) CAN BE ECONOMICALLY DECONTAMINATED FOR RELEASE AND SALE TO RECYCLERS. IT SHOULD NOT TAKE OVER 2 yrs. 2a

Name: GARY STORER

Address: [redacted]

City: [redacted] State/Zip: OH 45030

Phone [redacted]

MAILING LIST ADDITIONS:

Please add my name to the Fernald Mailing List to receive additional information on the cleanup progress at the Fernald Environmental Management Project:

YES___ NO___

John Throckmorton, Written Comments

COMMENT SHEET

DOE is interested in your comments on the cleanup alternatives being considered in the Operable Unit 3 Proposed Plan, including the preferred alternative. Please use the space provided below to write your comments, then fold, staple or tape, and mail this form. DOE must receive your comments on or before the close of the public comment period on May 2, 1996. If you have questions about the comment period, please contact Gary Stegner, the DOE Fernald Area Office Public Information Director, at (513) 648-3153.

I endorse the selection of Alternative 2, Selected Material Treatment, On-Property Disposal, and Off-Site Disposition for the following reasons:

- Utilizes the balanced approach to disposition highly contaminated materials off-site with the remaining materials at low levels of contamination remaining on-site;
- Uses the existing on site disposal facility (OSDF) under OU2 and OU5;
- Promotes recycle and reuse of materials on a cost effective basis;
- Provides long term protection of human health and the environment;
- Meets all required ARARs with receipt of the waiver; and
- Is the most cost effective alternative.

Furthermore, I endorse the use of a commercial Subtitle D solid waste landfill to the maximum extent for the permanent disposal of materials from the Administrative Area. In order to facilitate and accelerate the overall remediation of the site, it is imperative to remove the existing structures to allow soil and perched groundwater remediation to occur. Therefore, DOE should attempt to prioritize funding for the D&D of the OU3 structures. 1a

Name: [redacted]

Address: [redacted]

City: [redacted] State/Zip: OH 45011

Phone:

MAILING LIST ADDITIONS:

Please add my name to the Fernald Mailing List to receive additional information on the cleanup progress at the Fernald Environmental Management Project:

YES X NO ___

7807

Edwa Yocum, Written Comments

COMMENT SHEET

DOE is interested in your comments on the cleanup alternatives being considered in the Operable Unit 3 Proposed Plan, including the preferred alternative. Please use the space provided below to write your comments, then fold, staple or tape, and mail this form. DOE must receive your comments on or before the close of the public comment period on May 2, 1996. If you have questions about the comment period, please contact Gary Stegner, the DOE Fernald Area Office Public Information Director, at (513) 648-3153.

1) I agree with the alternative 2 for OU3 - Selected material treatment, On-property disposal and Off-Site disposition. 1a

2) Only Fernald waste disposed in cell - No Off-Site Hazardous or mixed waste brought into Fernald for interium storage or disposal. 2b

3) DOE to have a policy and standards for the reuse material.
- DOE remain responsible for recycled, reuse material. 2a

Name: Edwa Yocum
Addr [redacted]
City [redacted] State/Zip: Ohio
Pho [redacted]

MAILING LIST ADDITIONS:

Please add my name to the Fernald Mailing List to receive additional information on the cleanup progress at the Fernald Environmental Management Project:

YES___ NO___

Ohio Environmental Protection Agency, Written Comments, Page 1

SENT BY:OEPA ; 4-30-96 ; 1:55PM ; SOUTHWEST OFFICE→ 513 738 6650;# 1

OhioEPA
State of Ohio Environmental Protection Agency
Southwest District Office
401 East Fifth Street
Dayton, Ohio 45402-2911
(513) 285-6357
FAX (513) 285-6249

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Co./Dept. DOE	Co.	
Phone #	Phone # 513 285 6466	
Fax # 513 648 3076	Fax #	

Voinovich
Governor

April 30, 1996

RE: DOE FEMP
HAMILTON COUNTY
OU3 PROPOSED PLAN -
PUBLIC COMMENTS

Mr. Gary Stegner
Director, Public Information
U.S. DOE Fernald Area Office
P.O. Box 538705
Cincinnati, OH 45253-8705

Dear Mr. Stegner:

The purpose of this letter is to provide Ohio EPA's official comments on the Operable Unit 3 Proposed Plan during the public comment period. Ohio EPA's comments are as follows:

1. The OU3 Proposed Plan is the culmination of efforts by U.S. DOE, Ohio EPA, and U.S. EPA to understand and develop a plan for mitigating releases to the environment from OU3. Ohio EPA believes the alternative selected in the Proposed Plan is protective of human health and the environment. Ohio EPA believes the preferred alternative is the appropriate one, when considered in the context of overall site cleanup. Ohio EPA supports the concept of a balanced approach where the low volume, high concentration wastes go off-site for disposal and high volume, lower concentration wastes are disposed of in an engineered facility on-site. We believe that this approach provides the most implementable and protective strategy for remediation of the FEMP site. **1a**

2. The Operable Unit 3 Record of Decision (ROD) should clearly place restrictions on the use of the engineered on-site disposal facility. Ohio EPA understands the need to allow flexibility for incorporation of other operable units but also feels the following restrictions must be made in the ROD: **2b**
   a) No disposal or long-term storage of off-site waste in the proposed engineered disposal facility or any other facility on the FEMP site;
   b) DOE must commit to implementing the ALARA mass based WAC for Tc-99 of 59 grams. The goal should be met through scabbling and other efforts to reduce Tc-99 loading to the disposal facility; **2c**
   c) No characteristic hazardous waste should be disposed of in the facility. **2d**

3. DOE should commit to developing a policy defining criteria for implementing recycling **2a**

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Ohio Environmental Protection Agency, Written Comments, Page 2

SENT BY:OEPA ; 4-30-96 ; 1:56PM ; SOUTHWEST OFFICE→ 513 738 6650;# 2

Mr. Stegner
April 30, 1996
Page 2

of materials rather than disposing of them as waste. In addition, a commitment to allowing public and regulatory review and comment on such a policy should be included in the OU3 ROD.

4. DOE should include a commitment to reuse of materials on-site to the extent practical as well as encouraging other facilities to reuse Fernald materials. Examples of such on-site reuse could include crushed concrete as road base or reuse of equipment in remediation facilities. 2a

5. DOE should commit to being open to consider new technologies which may reduce the volume, toxicity or mobility of wastes being disposed of on-site. Ohio EPA is simply requesting that DOE remain open to the idea of additional technologies which may result in a safer waste form for on-site disposal. 2g

6. DOE should commit to including and/or developing real-time monitoring for discharges to the environment resulting from remedial actions. DOE should attempt to incorporate any new developments in real-time monitoring from the DOE Office of Science and Technology as well as the private sector. Data obtained from real-time monitors and any additional monitoring activities should be provided to the Ohio EPA and public in a timely manner. 2h

7. DOE should attempt to incorporate pollution prevention activities whenever possible during the design and operation of the OU3 remedial action systems. All available methods to reduce or eliminate discharges and releases from the demolition and disposal activities should be considered during the design of remedial activities. 2f

8. DOE must ensure the public that their involvement will not be diminished during Remedial Design and Remedial Action (RD/RA). DOE should commit within the Record of Decision for OU3 to maintaining the exceptional on-going public involvement program during RD/RA . 3b

9. DOE must provide commitments to ensure the land-use employed to develop the cleanup standards is maintained into the future. DOE ownership is essential to maintaining institutional controls and limiting land-use to ensure protectiveness of the site. 4b

10. With regard to the request for a USEPA waiver of the Ohio solid waste siting criteria, Ohio EPA supports this waiver only in that it allows for a remedy more protective than capping in place and more implementable than off-site shipment. Since the DOE FEMP is a CERCLA site and its location would not allow issuance of an Ohio EPA exemption 2b

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Ohio Environmental Protection Agency, Written Comments, Page 3

SENT BY:OEPA ; 4-30-96 ; 1:57PM ; SOUTHWEST OFFICE→ 513 738 6650;# 3

Mr. Stegner
April 30, 1996
Page 3

of the criteria, Ohio EPA believes a waiver is the appropriate mechanism to support the preferred alternative. Ohio EPA's support of the waiver is inherently tied to the restrictions described in comment #2 above. 2b

If you have any questions concerning these comments please contact me at (513) 285-6466.

Sincerely,

Thomas A. Schneider
Fernald Project Manager
Office of Federal Facilities Oversight

cc: Terry Finn, Ohio AG
Jim Saric, USEPA
Terry Hagen, FERMCO
Dave Ward, Geotrans
Sharon McLellan, PRC
Manager TPSS, OEPA/DERR
Jeff Hurdley, OEPA/Legal
Ruth Vandegrift, ODH

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APPENDIX B

ARARS FOR OPERABLE UNIT 3

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LIST OF ACRONYMS AND ABBREVIATIONS . . . . . B-ii

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LIST OF ACRONYMS AND ABBREVIATIONS

AEA	Atomic Energy Act
ARAR	Applicable or Relevant and Appropriate Requirement
CAA	Clean Air Act, as amended
COC	Constituent of Concern
CAMU	corrective action management unit
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CWA	Clean Water Act, as amended
DOE	Department of Energy
EPA	Environmental Protection Agency
FR	Federal Register
FS	feasibility study
HMR	Hazardous Materials Regulations
ILCR	incremental lifetime cancer risk
LDR	land disposal restriction
MCLs	maximum contaminant levels
MCLG	maximum contaminant level goal
MTR	Minimum Technological Requirements
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
OAC	Ohio Administrative Code
ORC	Ohio Revised Code
OSDF	on-site disposal facility
OU	operable unit
PCBs	polychlorinated biphenyls
RCRA	Resource Conservation and Recovery Act, as amended
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
TBC	to be considered
TSCA	Toxic Substances Control Act
TU	temporary units
UMTRCA	Uranium Mill Tailings Radiation Control Act
USC	United States Code

B.1 THE ARARs TABLES

This appendix contains five tables that summarize the ARARs that apply to the selected remedy. Tables B-1 through B-3 detail chemical-, location-, and action-specific ARARs, respectively. Table B-4 lists other requirements pertinent to this action. Many key discussions affecting the final disposition of materials generated during the OU3 interim remedial action were made under RODS from other FEMP operable units; these four tables are listings of ARARs previously identified in other operable units and are, therefore, not discussed at length. Table B-5 discusses those ARARs/TBCs that are specifically germane to this final disposition decision, including new issues that were not addressed in previous documents and newly promulgated regulations. This table also includes only brief descriptive titles or summary descriptions of the requirements; the regulation, statute, or Federal Register citation listed on the tables should be consulted for a full description of the requirement.

All five ARAR tables use the following codes to distinguish the type of ARAR:

- A - Applicable
- R - Relevant and Appropriate
- R/A - Relevant and Appropriate for On-Site Disposition; Applicable for Off-Site Disposal
- T - To Be Considered

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TABLE B-1 CHEMICAL-SPECIFIC ARARS

	Source	OU3 Selected Remedy
DRINKING WATER		
40 CFR 141.15 to 141.16	EPA National Primary Drinking Water Regulations	R
56 FR 33050	Proposed Maximum Contaminant Limit (MCL) for Radiological Contaminants (July 18, 1991)	T
DOE Order 5400.5	Radiation Protection of the Public and Environment	T
DOE Order 5480.11	Radiation in All Media	T
OAC 3745-1	Ohio Water Quality Standard Chemical Discharge to Surface Water	A
40 CFR 141.12 and .50	EPA National Primary Drinking Water Standard MCLGs	R
40 CFR 141.61	EPA National Primary Drinking Water Standard	R
OAC 3745-81-12	Ohio Drinking Water Regulations for Maximum Contaminant Limits	R
40 CFR 141.11 and 141.51	EPA National Primary Drinking Water Regulations for MCLGs and MCLs for Inorganic and Organic Chemicals in Drinking Water	R
40 CFR 141.62 40 CFR 143.3	EPA National Primary and Secondary Drinking Water Regulations for MCLs for Inorganic Chemicals in Drinking Water	R
OAC 3745-81-11, -15, and -16	Ohio Primary Drinking Water Regulations for MCLGs and MCLs for Inorganic Chemicals in Drinking Water	R
40 CFR 257.4-3	Chemicals in Drinking Water (Solid Waste Disposal Facility)	R
OAC 3745-27-10(D)	Groundwater Monitoring Program Parameters for Sanitary Landfill Facilities	R
40 CFR 264.94	Chemicals in Drinking Water (Hazardous Waste Disposal Facility)	R
OAC 3745-54-94	Concentration Limits for Hazardous Constituents in the Groundwater	R
40 CFR 141.80	Control of Copper and Lead	R

TABLE B-1 CHEMICAL-SPECIFIC ARARS (Continued)

	Source	OU3 Selected Remedy
DRINKING WATER (Continued)		
	Proposed MCLs from 'Drinking Water Regulations and Health Advisories' by the Office of Water, U.S. EPA, Washington, D.C. (May 1993)	T
50 FR 46936	Proposed MCLGs for Arsenic (November 13, 1989)	T
SURFACE WATER		
OAC 3745-1-04	Ohio Water Quality Standards (Discharge of Liquid Waste to Surface Water)	R
OAC 3745-1-21	Ohio Water Quality Standards (Use Designation of Surface)	A
OAC 3745-1-07	Ohio Water Quality Standards (Warm Water Habitat and Water Supply Criteria)	A
OAC 3745-1	Ohio Water Quality Standard Chemical Discharge to Surface Water	A
OAC 3701-38-15(A)(1), (B)	Ohio General Radiation Protection Standard	R
AIR		
40 CFR 61 Subpart H	National Emission Standards for Emissions of Radionuclides Other Than Radon From DOE Facility	A
40 CFR 192.02(b) Subpart A	Health and Environmental Protection Standard for Uranium and Thorium Mill Tailings	R
40 CFR 192.32(B)(1)(ii) Subpart D	Health and Environmental Protection Standard for Uranium and Thorium Mill Tailings	R
40 CFR 61 Subpart Q	National Emission Standard for Hazardous Air Pollutants, Radon - 222 Emissions	R
OEPA Proposed Policy January 1994	Ohio De Minimis Air Emission Levels for Process Equipment	T

TABLE B-1 CHEMICAL-SPECIFIC ARARS (Continued)

	Source	OU3 Selected Remedy
AIR (Continued)		
OAC 3545-21-07(G)(2)	Organic Air Emissions	A
40 CFR 61.150 - 61.155	National Emission Standard for Asbestos	R
OAC 3745-20-06(A)	Ohio Asbestos Handling Regulations	A
OAC 3745-20-07(C)	Ohio Regulations for Inactive Asbestos Waste Disposal Facilities (posting methods)	A
SOILS AND CONTAMINATED MEDIA		
40 CFR 192.02 Subpart A	Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings	R
40 CFR 192.12(a) Subpart B	Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings	R
40 CFR 192.20 Subpart C	Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings	R
40 CFR 192.21(f) to 192.22(b) Subpart C	Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings	R
40 CFR 192.32(b)(2) Subpart D	Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings	R
40 CFR 192.40 - .42 Subpart E	Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings	R
US NRC Regulatory Guide 1.86	Reasonable Effort to Eliminate Residual Contamination (see Table B-5 for additional discussion)	T
DOE Order 5820.2A	Radioactive Waste Management	T

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TABLE B-2 LOCATION-SPECIFIC ARARS

	Source	OU3 Selected Remedy
THREATENED AND ENDANGERED SPECIES		
16 USC §1531 et seq.	Endangered Species Act	A
50 CFR 17.21, 17.31, 17.61, 17.71 and 17.94	Endangered and Threatened Wildlife and Plants	A
50 CFR 402.01	Interagency Cooperation - Endangered Species Act	A
50 CFR 402.12(a)(b)	Interagency Cooperation - Endangered Species Act	A
ORC 1513.25	Ohio Endangered Species Act	A
OAC 1501:18-1 ORC 1518.02	Ohio Endangered Species Act	A
40 CFR 257.3-2	Classification of Solid Waste Disposal Facilities and Practices	A
16 USC §661 et seq.	Fish and Wildlife Coordination Act	A
HISTORIC AND CULTURAL RESOURCE PROTECTION		
16 USC §431-33	Antiquities Act of 1906	A
16 USC §461-467	Historic Sites Preservation Act	A
16 USC §408(a)	Archeological Recovery Act	A
40 CFR 6.301(a), (b), (c)	Procedures for Implementing NEPA	A
43 CFR 7.4(a)	Protection of Archeological Resources	A
16 USC §106 and 110	National Historic Preservation Act	A
36 CFR §60, §60.4, §63, and §800	Protection of Historic and Cultural Properties	A
16 USC §469, 16 USC §470 and §470aa et seq	Archaeological and Historic Preservation Act and the National Historic Preservation Act	A

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TABLE B-2 LOCATION-SPECIFIC ARARS (Continued)

	Source	OU3 Selected Remedy
HISTORIC AND CULTURAL RESOURCE PROTECTION (Continued)		
42 USC §1996	American Indian Religious Freedom Act	A
Executive Order 11593	Protection and Enhancement of Cultural Environment	A
25 USC §3001	Native American Graves Protection and Repatriation Act	A
36 CFR §65.2(c)(2)	National Historic Landmarks Program	A
FLOOD PLAINS AND WETLANDS		
10 CFR 1022.3(a), (b)(1), (2),(3),(5),(6),(c), (d), (e)	DOE Compliance with Flood Plains/Wetlands Environmental Review Requirement	A
10 CFR 1022.5(b),(h)	DOE Compliance with Flood Plains/Wetlands Environmental Review Requirement	A
33 U.S.C. 1341(a)(1), (d) and 33 CFR §330	Clean Water Act Nationwide Permit Program	R
40 CFR 258.12	Protection of Wetlands	A
OHIO SOLID WASTE SITING CRITERIA		
OAC 3745-27-05(A)	Ohio Solid Waste Disposal Regulations (Solid Waste Disposal Methods)	A
OAC 3745-27-07(H)(2)(a)	Ohio Solid Waste Disposal Regulations (Sand or Gravel Pits)	A
OAC 3745-27-07(H)(2)(b)	Ohio Solid Waste Disposal Regulations (Limestone Quarry or Sandstone Quarry)	A
OAC 3745-27-07(H)(1)	Ohio Solid Waste Disposal Regulations (National or State Parks or Recreation Area)	A
OAC 3745-27-07(H)(3)(a)	Ohio Solid Waste Disposal Regulations (Location of a Facility within a 5 Year Migration Area of Influence for a Public Water Supply Well)	A

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TABLE B-2 LOCATION-SPECIFIC ARARS (Continued)

	Source	OU3 Selected Remedy
OHIO SOLID WASTE SITING CRITERIA (Continued)		
OAC 3745-27-07(H)(2)(c)	Ohio Solid Waste Disposal Regulations (Sole Source Aquifer)	A
Guidance Document 202.105	OEPA Guidance on Solid Waste Siting Criteria (Minimum Distance from a Public Water Supply Well)	T
Guidance Document 202.101	OEPA Guidance on Solid Waste Siting Criteria (Sole Source Aquifer)	T
42 USC §1424(e)	Safe Drinking Water Act (Review of Projects Constructed in Area of Sole Source Aquifer)	A
OAC 3745-27-07(H)(4)(a)	Ohio Solid Waste Disposal Regulations (Natural Areas)	A
OAC 3745-27-20(C)(3)	Ohio Solid Waste Disposal Regulations (Fault Limit on Solid Waste Placement)	A
OAC 3745-27-07(H)(3)(b)	Ohio Solid Waste Disposal Regulations (Underground Mine)	A
OAC 3745-27-07(H)(2)(d)	Ohio Solid Waste Disposal Regulations (Allows OEPA Director to Accept Facility Location Over a High-Yield Aquifer)	A
Guidance Document 202.102	OEPA Guidance on Solid Waste Siting Criteria (100 Gallons Per Minute Aquifer)	T
OAC 3745-27-07(B)(10)	Ohio Solid Waste Disposal Regulations (Allows OEPA Director to Accept Facility in a Flood Plain)	A
OAC 3745-27-20(C)(2)	Ohio Solid Waste Disposal Regulations (Allows OEPA Director to Accept Facility Location Near a Water Supply or Developed Spring)	A
Guidance Document 202.103	OEPA Guidance on Solid Waste Siting Criteria (Minimum Isolation Distances to Wells and Developed Springs)	T
OAC 3745-27-07(H)(4)(b)	Ohio Solid Waste Disposal Regulations (Property Line Limit on Solid Waste Placement)	A

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TABLE B-2 LOCATION-SPECIFIC ARARS (Continued)

	Source	OU3 Selected Remedy
OHIO SOLID WASTE SITING CRITERIA (Continued)		
OAC 3745-27-07(H)(4)(c)	Ohio Solid Waste Disposal Regulations (Domicile Limit on Solid Waste Placement)	A
OAC 3745-27-07(H)(4)(d)	Ohio Solid Waste Disposal Regulations (Lake, Stream, or Natural Wetlands Limit on Waste Placement - Allows OEPA Director to Accept Facility Location)	A
OAC 3745-27-07(H)(2)(e)	Ohio Solid Waste Disposal Regulations (Allows OEPA Director to Accept Facility Location Over Less Than 15 Feet InSitu or Added Geological Material)	A
Guidance Document 202.104	OEPA Guidance on Solid Waste Siting Criteria: Material Acceptable to the Director	T
OAC 3745-27-06	Ohio Solid Waste Disposal Regulation (Permit to Install)	R
ORC 3734.02A	Protection of Human Health and the Environment - Authority of the Director to approve variance requests	A
OTHER SITING CRITERIA		
40 CFR 241.200 to .211	On-Site Nonhazardous Waste Management Facilities (See Table B-5 for additional discussion)	A
	CERCLA Compliance with Other Laws Manual Section 2.7	T
DOE Order 5820.2A Chapter III(7)	Radioactive Waste Management (Disposal Site Selection)	T
	Joint NRC-EPA Guidance on Siting of Mixed Low-Level Radioactive and Hazardous Waste Units (March 13, 1987)	T

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TABLE B-3 ACTION-SPECIFIC ARARS

	Source	OU3 Selected Remedy
GENERAL		
40 USC §4901 et seq.	Noise Control Act	R
42 USC §7641	Noise Pollution and Abatement Act	R
40 CFR 261.6	Requirements for Recyclable Materials (See Table B-5 for additional discussion)	A
OAC 3745-51-06	Requirements for Recyclable Materials (See Table B-5 for additional discussion)	A
40 CFR Part 300	The off-site rule under CERCLA finalized 58 FR 49200 (September 22, 1993) (See Table B-5 for additional discussion)	A
	Hamilton County Earthwork Regulations Erosion Control Specifications	T
ORC 3734.02.7 (a,b)	Prohibits Commingling of Low Level Waste with Solid Waste	A
HAZARDOUS WASTE MANAGEMENT (GENERAL FACILITY STANDARDS)		
40 CFR 262.11	RCRA Hazardous Waste Determination	R/A
OAC 3745-52-11	Hazardous Waste Determination	R/A
40 CFR 265.13 through .16	Interim Status: Treatment, Storage, and Disposal General Facility Standards (See Table B-5 for additional discussion)	R/A
OAC 3745-65-13 through -16	Interim Status: Treatment, Storage, and Disposal General Facility Standards (See Table B-5 for additional discussion)	R/A
40 CFR 265.31 through .35, .37	Interim Status: Treatment, Storage, and Disposal Facility Preparedness and Prevention	A
OAC 3745-65-31 through -35, -37	Interim Status: Treatment, Storage, and Disposal Facility Preparedness and Prevention	A

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TABLE B-3 ACTION-SPECIFIC ARARS

	Source	OU3 Selected Remedy
HAZARDOUS WASTE MANAGEMENT (GENERAL FACILITY STANDARDS) (Continued)		
40 CFR 265.51, .52, .55, .56	Interim Status: Treatment, Storage, and Disposal Facility Contingency Plan and Emergency Procedures	A
OAC 3745-65-51, -52, -55, -56	Interim Status: Treatment, Storage, and Disposal Facility Contingency Plan and Emergency Procedures	A
40 CFR 261.7	RCRA Empty Containers	A
OAC 3745-51-07	Empty Containers	A
40 CFR 265.171 through .174, .176 and .177	RCRA Condition of Containers	A
OAC 3745-55-71 through -74, -76, and -77	Condition of Containers	A
40 CFR 265.175(a)-(c)	RCRA Containment Storage Area Requirements	A
OAC 3745-55-75	Containment Storage Area Requirements	A
40 CFR 264.1100 through 1102	RCRA Permitted Containment Building Requirements	R
40 CFR 262.20 through .33, 40 CFR 263.20	RCRA - Preparing and Transporting Hazardous Waste Off-Site	A
OAC 3745-53-20 through .31 and OAC 3745-52-30 and 33	Preparing and Transporting Hazardous Waste Off-Site	A
40 CFR 268.40 through .44	RCRA Land Disposal Restrictions (See Table B-5 for additional discussion)	A
OAC 3745-59	Land Disposal Restrictions (See Table B-5 for additional discussion)	A
40 CFR 268.2	RCRA Definition of Hazardous Waste Debris (See Table B-5 for additional discussion)	A

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TABLE B-3 ACTION-SPECIFIC ARARS

	Source	OU3 Selected Remedy
HAZARDOUS WASTE MANAGEMENT (GENERAL FACILITY STANDARDS) (Continued)		
40 CFR 268.45	RCRA Hazardous Waste Debris Land Disposal Requirements (See Table B-5 for additional discussion)	A
40 CFR 261.3	RCRA Hazardous Waste Determination (See Table B-5 for additional discussion)	A
ORC 3734.02 (i)	Air Emissions from Hazardous Waste Facilities	R
HAZARDOUS WASTE MANAGEMENT (GROUNDWATER MONITORING)		
40 CFR 265.90 Subpart F	Interim Status: Groundwater Monitoring Program	R
OAC 3745-65-90	Interim Status: Groundwater Monitoring Program	R
40 CFR 264.92 through 100	Permitted Status: Groundwater Protection Standards	R
OAC 3745-54-92 through 100	Permitted Status: Groundwater Protection Standards	R
HAZARDOUS WASTE MANAGEMENT (TRANSPORTATION)		
59 Federal Register page 67390 12/29/94	Implementation of the United Nations Recommendations, International Maritime Dangerous Goods Code, and International Civil Aviation Organization's Technical Instructions (See Table B-5 for additional discussion)	A
40 CFR 262.20 - 262.33 and 263.20 through 263.31	Generators Who Transport Hazardous Waste for Off-Site Treatment, Storage, and Disposal (See Table B-5 for additional discussion)	A
OAC 3745-52-20 through 33 and 3745-53-20 through 31	Generators Who Transport Hazardous Waste for Off-Site Treatment, Storage, and Disposal (See Table B-5 for additional discussion)	A
HAZARDOUS WASTE MANAGEMENT (CLOSURE)		
40 CFR 265.111	Interim Status: Closure Performance Standards for Hazardous Waste Management Units (HWMUs)	A

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TABLE B-3 ACTION-SPECIFIC ARARS

	Source	OU3 Selected Remedy
HAZARDOUS WASTE MANAGEMENT (CLOSURE) (Continued)		
OAC 3745-66-11	Interim Status: Closure Performance Standards for HWMUs	A
40 CFR 265.114	Interim Status: Closure Performance Standards	A
40 CFR 265.191 and .197	Interim Status: Closure of Tank Systems	A
OAC 3745-66-14	Interim Status: Closure Performance Standards	A
OAC 3745-66-91 and -97	Interim Status: Closure of Tank Systems	A
40 CFR 264.310 OAC 3745-68-10	Minimum RCRA Landfill Design Requirements for Closure	R
40 CFR 265.116	Hazardous Waste Disposal Survey Plot Filing	A
OAC 3745-66-16	Hazardous Waste Disposal Survey Plot Filing	A
HAZARDOUS WASTE MANAGEMENT (OTHER)		
58 FR 48092 9/14/93	Contained in Policy Proposed Rule	T
59 FR 10778 3/8/94	Contained in Policy, Clarification, Partial Withdrawal	T
40 CFR 264.552, .553	Subpart S: Corrective Action Management Unit 58 FR 865829 (February 16, 1993) (See Table B-5 for additional discussion)	R
RADIOACTIVE		
40 CFR 192.02	AEA/Uranium Mill Tailings Radiation Control Act (UMTRCA): Landfill Requirements	R
40 CFR 192.20	AEA/UMTRCA: Implementation of Standards in 40 CFR 192, Subparts A and B	R
40 CFR 192.30 - .34	AEA/UMTRCA: Management of Uranium By-Products	R

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TABLE B-3 ACTION-SPECIFIC ARARS

	Source	OU3 Selected Remedy
RADIOACTIVE (Continued)		
DOE Order 5400.1	DOE Facility Monitoring Guidance	T
10 CFR 61.7(b)(2), (4) and (5)	Land Disposal of Radioactive Waste (See Table B-5 for additional discussion)	R
10 CFR 61.40 to .44	Performance Objective of Land Disposal of Radioactive Waste (See Table B-5 for additional discussion)	R
10 CFR 61.50 to .57	Technical Requirements of Land Disposal of Radioactive Waste (See Table B-5 for additional discussion)	R
DOE Order 5400.5	Radiation Protection of the Public and the Environment	T
10 CFR 20, Subpart D	Standards for Protection Against Radiation	R
WATER		
40 CFR 122.26	Discharge of Stormwater Run-off	A
OAC 3745-38	Discharge of Stormwater Run-off	A
40 CFR 122.41	National Pollutant Discharge Elimination System (NPDES) Wastewater Discharges	A
ORC 6111.07 a,c OAC 3745-33-05	NPDES Wastewater Discharges	A
40 CFR 125.100	Discharge of Treatment System Effluent	A
40 CFR 125.104	Clean Water Act Best Management Practices	R
ORC 6111.04	Ohio Water Pollution Control Regulations	R
OAC 3745-1-05	Antidegradation Policy	A

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TABLE B-3 ACTION-SPECIFIC ARARS

	Source	OU3 Selected Remedy
AIR		
40 CFR 264.1030, .1032 through .1034	Permitted Status: Air Emission Standards for Process Vents	R
OAC 3745-15-07	General Provisions on Air Pollution Control Prevention of Air Pollution Nuisance	A
OAC 3745-17-07	Control of Visible Emissions From Stationary Sources (See Table B-5 for additional discussion)	A
OAC 3745-17-11	Restrictions on Particulate Emissions from Industrial Processes (See Table B-5 for additional discussion)	R
OAC 3745-19-04	Ohio Open-Burning Prohibition	A
OAC 3745-31-05(A)(3)	Permit to Install (See Table B-5 for additional discussion)	R
OAC 3745-17-08	Restriction of Emission of Fugitive Dust	A
SOLID WASTE DISPOSAL - FACILITY DESIGN		
OAC 3745-27-08(C), (D), (F), (G)	Solid Waste Disposal Facility Design	A
40 CFR 241	Solid Waste Disposal Facility Design Criteria	R
SOLID WASTE DISPOSAL - FACILITY OPERATIONS		
OAC 3745-27-19	Requirements for Operation of Solid Waste Disposal Facilities	A
OAC 3745-27-11(H); (O)	Final Closure of Sanitary Landfill Facilities	A
OAC 3745-27-14	Post-Closure Care of Sanitary Landfill Facilities	A
40 CFR 258.61	Post-Closure Care of Sanitary Landfill Facilities	A
ORC 3734.03 OAC 3745-27-05	Ohio Solid Waste Disposal Regulations	A

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TABLE B-3 ACTION-SPECIFIC ARARS

	Source	OU3 Selected Remedy
SOLID WASTE DISPOSAL - FACILITY OPERATIONS (Continued)		
OAC 3745-27-10	Groundwater Monitoring	A
OAC 3745-27-19(E)(30)(2)	Prohibits Disposal of Scrap Tires in Sanitary Landfills	A
40 CFR 257.3-3 and .3-4	Classification of Solid Waste Disposal Facilities and Practices (See Table B-5 for additional discussion)	A
40 CFR 257.3-7	US EPA Solid Waste Disposal Regulations (Open Burning Prohibited)	A
OAC 3745-09-10	Abandonment of Test Holes and Wells	A
OAC 3745-400-04(A)	Construction and Demolition Debris Facility (See Table B-5 for additional discussion)	R
POLYCHLORINATED BIPHENYLS (PCBs)		
40 CFR 761.3	Excluded PCB Materials	R
40 CFR 761.60(a)(3), (4)	PCB Disposal Requirements (See Table B-5 for additional discussion)	A
40 CFR 761.60(e)	PCB Treatment (See Table B-5 for additional discussion)	A
40 CFR 761.65	PCB Storage for Disposal	A
40 CFR 761.120, .125, .130	PCB Cleanup Policy (For Spills Created During Remediation) (See Table B-5 for additional discussion)	T

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TABLE B-4 OTHER REQUIREMENTS

	Source	OU3 Selected Remedy
OTHER REQUIREMENTS		
49 CFR 171-173, 177, 178	DOT Requirements for the Transportation of Hazardous Materials	*
49 USC §1801-1812	Hazardous Materials Transportation Act	*
10 CFR 835	Occupational Radiation Protection	*
DOE Order 5440.1E	NEPA Compliance Program	*
DOE Order 5480.1B	Environmental, Safety, and Health Program for DOE Operations	*
DOE Order 5480.3A	Hazardous Materials Packaging and Transportation Safety	*
DOE Order 5480.4	Environmental Protection, Safety, and Health Protection Standards	*
DOE Order 5483.1A	Occupational Safety and Health Programs for DOE Employees at Government Owned, Contractor Operated Facilities	*
DOE Order 5700.6C	Quality Assurance	*

Note: In addition to ARARs, there are other requirements from Occupational Safety and Health Administration (OSHA), Department of Transportation (DOT), and DOE Orders with which this remedial action must comply. These other requirements include standards which the U.S. EPA has determined not to be standards for environmental protection (e.g., worker protection and off-site actions) and are therefore not ARARs. EPA classifies worker protection, particularly OSHA's 29 CFR 1910.120, as a requirement rather than an ARAR because it cannot be waived and it is not an environmental standard. This listing of other requirements is not an all inclusive list of requirements. There are additional requirements which could result from off-site actions and would be required under CERCLA Section 121 (d)(3). Under this requirement, the CERCLA Off-Site Rule, activities that occur off-site shall be at facilities that are in compliance with RCRA, Toxic Substances Control Act, and other environmental laws and applicable state requirements. Determinations under this rule will be made during the remedial action.

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TABLE B-5 EXPANDED DISCUSSION

Citation	Requirement	ARAR/ TBC	Remarks
CHEMICAL-SPECIFIC			
US NRC Regulatory Guide 1.86 (June 1974)	**Reasonable Effort to Eliminate Residual Contamination** - A reasonable effort shall be made to eliminate residual contamination and to achieve the acceptable surface contamination levels stated in the guide.	T	Radiation surveys will be performed prior to releasing any potentially contaminated materials off-site to demonstrate compliance with the specified standards. This requirement is a TBC since it is a guidance document.
LOCATION-SPECIFIC			
40 CFR 241.200	**On-Property Solid Waste Management Facilities - Design** - Standards are presented in the following citations: 241.200-2, 241.201-2, 241.203-2, 241.204-2, 241.205-2, 241.206-2, 241.207-2, 241.208-2, 241.209-2, and 241.210-2.	A	Solid, non-hazardous wastes generated as a result of remediation must be managed in accordance with federal and state regulations. This requirement is applicable to wastes generated by the remedial action.
ACTION-SPECIFIC			
40 CFR 257.3-3 and .3-4	**Surface Water (257.3-3)** - Remediation activities shall not cause a discharge of pollutants into waters of the United States that is in violation of the requirements of the NPDES under section 402 of the Clean Water Act. A solid waste disposal facility or practice shall not cause non-point source pollution of waters of the United States that violates applicable legal requirements implementing an area-wide or Statewide water quality management plan that has been approved by the Administrator under section 208 of the Clean Water Act, as amended. **Groundwater Protection (257.3-4)** - A solid waste disposal facility or practice shall not contaminate an underground water source beyond the solid waste facility boundary.	A	These requirements are considered applicable where remediation wastes are managed on-site. Additionally, the site possesses a NPDES permit.

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TABLE B-5 EXPANDED DISCUSSION (Continued)

Citation	Requirement	ARAR/ TBC	Remarks
ACTION-SPECIFIC (Continued)			
40 CFR 261.6 OAC 3745-51-06	**Requirements for Recyclable Materials** - The following recyclable materials are not subject to regulation under parts 262 through 266 or parts 268, 270 or 124 of 40 CFR, and are not subject to the notification requirements of section 3010 of RCRA: i) used batteries returned to a battery manufacturer for regeneration; ii) scrap metal; iii) used oil that exhibits a hazardous waste characteristic that is recycled is regulated under 40 CFR 279.	A	This requirement is considered applicable for remediation generated materials as the site is a regulated hazardous waste generator. Recycling of remediation generated materials may be conducted.
40 CFR Part 300	**The Off-Site Rule under CERCLA** was finalized 58 CFR 49200 (September 22, 1993). EPA requires that remedial actions at Federal facilities comply with the Off-Site Rule. DOE must comply with the Off-Site Rule for all cleanups taken using DOE's lead agency authority under CERCLA.	A	The Off-Site Rule applies to all situations where DOE is authorized under CERCLA to remediate a site and the CERCLA wastes generated are transferred off-site.
40 CFR 265.13 through .16 and OAC 3745-65-13 through -16	**General facility standards** require that operators of a facility must obtain chemical and physical analysis of a representative sample of each hazardous waste to be treated, stored or disposed of at the facility prior to treatment, storage or disposal. The analysis may include existing published or documented data on the hazardous waste or on hazardous waste generated from similar processes. The operator of a facility must also provide controlled access for the facility. In addition, the operator must maintain and inspect all monitoring equipment, safety and emergency equipment, security devices and operating and structural equipment that are important to preventing human health hazards. Operators must train personnel for procedures relevant to their emergency response training.	R/A	The requirement is relevant and appropriate where RCRA wastes are managed on site. This requirement is not applicable because RCRA wastes managed on site are considered as "remediation wastes," not as "generated wastes," under the Corrective Action Management Unit (CAMU) rule. The requirement is applicable where RCRA wastes are sent to off-site facilities.

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TABLE B-5 EXPANDED DISCUSSION (Continued)

Citation	Requirement	ARAR/ TBC	Remarks
ACTION-SPECIFIC (Continued)			
40 CFR 268.40 through .44 and OAC 3745-59	**RCRA Land Disposal Restrictions** - A restricted hazardous waste may be land disposed only if: 1) an extract of the waste or of the treatment residue of the waste does not exceed the value shown in 40 CFR 268.41, or 2) it is treated using a technology specified in 40 CFR 268.42(a) or an equivalent method, or 3) the constituent concentrations in the waste or treatment residue of the waste do not exceed the value shown in 40 CFR 268.43.	A	This requirement is applicable to those RCRA hazardous wastes that will be disposed off-site. Land Disposal Restrictions will not apply to on-property disposal under the CAMU rule.
40 CFR 268.2 40 CFR 268.45 40 CFR 261.3	**40 CFR 268.2** - Debris means solid material exceeding 60 mm particle size that is intended for disposal and that is a manufactured object, plant or animal matter or natural geologic material. Hazardous debris means debris that contains a listed hazardous waste, or that exhibits a characteristic of hazardous waste. **40 CFR 268.45** - Hazardous debris must be treated prior to land disposal unless the EPA determines that the debris is no longer contaminated with hazardous waste or the debris is treated to the waste-specific treatment standard for the waste containing debris. **40 CFR 261.3** - Provided the debris does not exhibit a RCRA characteristic it is not subject to regulation under 40 CFR Parts 260 to 266, 268, or 270 if: 1) the hazardous debris has been treated using one of the required extraction or destruction technologies specified in 40 CFR 268.45; or 2) the debris, considering the extent of contamination, is determined to no longer be contaminated with hazardous waste.	A	This requirement is applicable to those RCRA hazardous wastes that will be disposed off-site. Hazardous waste debris land disposal restrictions will not apply to on-property disposal under the CAMU rule.

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TABLE B-5 EXPANDED DISCUSSION (Continued)

Citation	Requirement	ARAR/ TBC	Remarks
ACTION-SPECIFIC (Continued)			
59 FR 67390 12/29/94, as amended 60 FR 26796 05/18/95	**Hazardous Materials Transport** - The final rule comprehensively revises the Hazardous Materials Regulations (HMR), 49 CFR Parts 171-173, 177, 178 with respect to hazard communication, classification, and packaging requirements based on the United Nations recommendations.	A	The Final Rule was effective October 1, 1995.
40 CFR 262.20 through .33, 40 CFR 263.20 through .31, OAC 3745-52-20 through -33, and OAC 3745-53-20 through -31	**Hazardous Waste Transportation Manifesting** - Any generator who transports hazardous waste for off-site treatment, storage or disposal must originate and follow-up the manifest for off-site shipments. Pre-transporting requirements include appropriate packaging, labeling, marking, and placarding.	A	Any materials determined to be RCRA hazardous waste destined for off-site disposal are subject to manifest requirements. Remedial actions involving off-site disposal of RCRA hazardous wastes will be subject to this requirement.
40 CFR 264.552, .553 58 FR 865829 2/16/93	**Corrective Action Management Unit** (CAMU) means an area within a facility that is designated by the Regional Administrator under 40 CFR 264 Subpart S, for the purpose of implementing corrective action requirements under Sec. 264.101 and RCRA section 3008(h). CAMUs might be designated at the site as areas where remediation wastes (solid, hazardous, or contaminated media and debris) might be placed during the process of remediation. Temporary Units (TUs) consisting of tanks and container storage units might be used to store and treat hazardous waste during the process of corrective action.	R	This requirement is relevant and appropriate as the remediation is not of a RCRA permitted facility. All of the materials generated from remediation of the site are considered remediation wastes. Some of the waste material might exhibit a RCRA characteristic, or otherwise be sufficiently similar to hazardous waste to make this requirement relevant and appropriate.

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TABLE B-5 EXPANDED DISCUSSION (Continued)

Citation	Requirement	ARAR/ TBC	Remarks
ACTION-SPECIFIC (Continued)			
10 CFR 61.7(b)(5)	**Land Disposal of Radioactive Waste** - Disposal facility requirements should include intruder barriers with an effective life of 500 years.	R	The prescriptive intruder protection requirements in 10 CFR 61 will be addressed to provide a reasonable assurance of the long-term protection of the inadvertent intruder. Under OU2 and OU5 this requirement has been considered relevant and appropriate at this site.
10 CFR 61.42	**Land Disposal Of Radioactive Wastes: Performance Objective** - Design, operation, and closure of the land disposal facility must ensure protection of any individual inadvertently intruding into the disposal site and occupying the site or contacting the waste at any time after active institutional controls over the disposal site are removed.	R	The prescriptive intruder protection requirements in 10 CFR 61 will be addressed to provide a reasonable assurance of the long-term protection of the inadvertent intruder. Under OU2 and OU5 this requirement has been considered relevant and appropriate at this site.
10 CFR 61.52(a)(2) and 10 CFR 61.56(b)	**Land Disposal of Radioactive Wastes: Technical Requirements** - Waste must be disposed so that the top of the waste is a minimum of 5 meters below the top surface of the cover or with intruder barriers destined to protect against inadvertent intrusion for at least 500 years. This section includes requirements to provide stability of the waste to ensure degradation or failure of the disposal unit does not occur, which may result in exposure to an inadvertent intruder.	R	This prescriptive intruder protection requirements in 10 CFR 61 will be adopted to provide reasonable assurance of the long-term protection of the inadvertent intruder. Under OU2 and OU5 this requirement has been considered relevant and appropriate at this site.
OAC 3745-17-07	**Control of Visible Particulate Emissions from Stationary Sources** - Discharge of particle emissions into ambient air from any stack of a shade or density greater than 20 percent opacity is prohibited. Transient exceedance limits are included in this regulation.	A	Treatment operations might result in the release of particulate material for which this regulation would be applicable.

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TABLE B-5 EXPANDED DISCUSSION (Continued)

Citation	Requirement	ARAR/ TBC	Remarks
ACTION-SPECIFIC (Continued)			
OAC 3745-17-11	**Restrictions on Particulate Emissions from Industrial Processes** - This requirement applies to any operation, process, or activity which releases or may release particulate emissions into the ambient air. Emission restriction requirements for sources... are specified in "Figure II" and in "Table 1." "Figure II" relates uncontrolled mass rate of emission (ordinate) ... specific process (at its maximum capacity) that may result in particulate emissions to maximum allowable mass rate of emission.	R	Treatment operations might result in release of particulate material for which these standards would apply.
OAC 3745-31-05 (A)(3)	**Air Permit to Install (PTI)** - The Director shall issue a PTI if he/she determines that the installation or modification and operation of the air contaminant source will employ the best available technology.	R	Although an administrative Permit to Install is not required for treatment, the substantive requirements of this section must be met by employing Best Available Technology (BAT) for treating particle and off-gas emissions.
OAC 3745-27-19(E)(30)(2)	**Prohibition on Disposal of Scrap Tires in Sanitary Landfill** - Scrap tires from vehicles used on site cannot be disposed in the on-site disposal facility (OSDF).	A	The rule becomes effective September 30, 1996.
OAC 3745-400-04(A)	**Construction and Demolition Debris** - The construction and demolition debris generated in the deconstruction and decommissioning of the site may be disposed of by landfilling, or other methods that are protective of the environment and within the Ohio EPA's regulatory purview.	R	The OSDF is not a facility solely for the disposition of construction and demolition debris. The OSDF is intended to manage the bulk of wastes generated during the site decontamination and dismantlement. The OSDF being constructed on-site is not a "Construction and Demolition Debris Facility."

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TABLE B-5 EXPANDED DISCUSSION (Continued)

Citation	Requirement	ARAR/ TBC	Remarks
ACTION-SPECIFIC (Continued)			
40 CFR 761.60(a)(4)	**Non-liquid PCB Disposal Requirements** - Any non-liquid PCBs at concentrations of 50 parts per million (ppm) or greater in the form of contaminated soil, rags, or other debris shall be disposed of: in an incinerator which complies with 761.70, or in a chemical waste landfill which complies with 761.75.	A	This requirement is relevant and appropriate only if PCB contaminated or containing materials are managed on site. This requirement is applicable for PCB contaminated or containing material managed off-site.
40 CFR 761.60(e)	**PCB Treatment Requirements** - Any person who is required to incinerate any PCBs and PCB items under this Subpart and who can demonstrate that an alternative method of destroying PCBs and PCB items exists and that this alternative method can achieve a level of performance equivalent to 761.70 incinerators or high efficiency boilers.	A	This requirement is applicable only if PCB contaminated items (cloth, debris), or soil, are greater than 50 ppm and are treated on property using a method besides incineration.
40 CFR 761.75	**Chemical Waste Landfills** - This section specifies the technical requirements for a chemical waste landfill used for the disposal of PCB items.	A	This requirement is applicable only if non-liquid PCBs at concentrations of 50 ppm or greater in the form of contaminated soil, rags, or other debris is disposed of on-site.
40 CFR 761.120, .125, and .130	**PCB Cleanup Policy** - This policy established criteria that the EPA will use to determine the adequacy of the cleanup of spills resulting from the release of materials containing PCBs at concentrations of 50 ppm or greater. The policy applies to spills which occur after May 4, 1987.	T	This requirement is not applicable to the remediation material, due to the spills occurring on or before May 4, 1987. The requirement will be considered for spills which occur during remediation and when remediating areas where PCB contamination exists in the soil.

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