



Department of Energy
Ohio Field Office
Fernald Closure Project
175 Tri-County Parkway
Springdale, Ohio 45246
(513) 648-3155



DEC 21 2004

Mr. Paul Pardi, RCRA Group Leader and FFCA Project Manager
Ohio Environmental Protection Agency
Division of Hazardous Waste Management
401 East 5th Street
Dayton, Ohio 45042-2911

DOE-0100-05

Mr. Michael Savage, Assistant Chief
Ohio Environmental Protection Agency
Division of Hazardous Waste Management
Lazarus Government Center
P. O. Box 1049
Columbus, Ohio 43216-1049

Dear Mr. Pardi and Mr. Savage:

**FERNALD CLOSURE PROJECT FISCAL YEAR 2004 SITE TREATMENT PLAN
ANNUAL UPDATE**

Reference: Letter and Directors Findings and Orders (DF&O), Thomas E. Crepeau, OEPA to Phil Hamric, U.S. DOE, dated October 4, 1995

Enclosed is the Fernald Closure Project's (FCP) Fiscal Year (FY) 2004 Site Treatment Plan (STP) Annual Update. The submittal of this report is required by Section V.C. of the referenced Directors Findings and Orders (DF&O) and provides an update of the FCP's progress in treating its mixed waste inventory during FY 2004.

The FCP is also proposing several minor changes to the STP with the submittal of this update. These changes include the designation of all FY 2004 milestones as completed (Sections 3.1.4.1 (Wastewater Treatment, Phase II), 3.1.7.1 (TSCA Incinerator, Phase II), 3.1.8 (Organic Treatment Project), and 3.1.9 (Inorganic Treatment Project)) and the identification of several STP Preferred Options/Projects as completed since the mixed waste dispositioned by these projects can be managed in accordance with the Ohio Administrative Code (OAC) 3745-270-50 requirements (Sections 3.1.4.1 (Wastewater Treatment, Phase II), 3.1.7.1 (TSCA Incinerator, Phase II), 3.1.8 (Organic Treatment Project), 3.1.9 (Inorganic Treatment Project), and 3.1.1.11

Mr. Paul Pardi
Mr. Michael Savage

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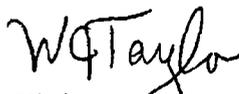
DOE-0100-05

(Thorium Legacy Mixed Waste Stabilization Project)). As a result, the only active STP Project is the Uranium Waste Disposition (UWD) Materials, T-Hopper Wastes and Small-Volume Waste Streams Project with a project completion date of September 30, 2005.

The submittal of these amendments also serves as a notification and is being provided in accordance with Section V.D of the FFCAct DF&O. A copy of the proposed amended STP is provided as Appendix A. The proposed changes to the STP affect pages 7, 12, 13, 14, and 16. These changes are identified with redlines and strikeouts for easy identification.

If you have any questions regarding this information, please contact Ed Skintik at (513) 246-1369.

Sincerely,


William J. Taylor
Director

FCP:Skintik

Enclosures: As Stated

cc w/enclosures:

E. Brucken, Fluor Fernald, Inc./MS52-3

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FLUOR

December 15, 2004

Fernald Closure Project
 Letter No. C:CPD:2004-0126

Mr. William J. Taylor, Director
 U. S. Department of Energy
 Ohio Field Office - Fernald Closure Project
 175 Tri-County Parkway
 Cincinnati, Ohio 45246

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Dear Mr. Taylor:

**CONTRACT DE-AC24-010H20115, FERNALD CLOSURE PROJECT FISCAL YEAR 2004
 SITE TREATMENT PLAN ANNUAL UPDATE**

Reference: Letter and Directors Findings and Orders (DF&O), Thomas E. Crepeau, OEPA
 to Phil Hamric, U.S. DOE, dated October 4, 1995

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The FCP is also proposing several minor changes to the STP with the submittal of this Update. These changes include the following:

- 1) The designation of all FY2004 milestones as completed Sections 3.1.4.1 (Wastewater Treatment, Phase II); 3.1.7.1 (TSCA Incinerator, Phase II); 3.1.8 (Organic Treatment Project); 3.1.9 (Inorganic Treatment Project); and
- 2) The identification of several STP Preferred Options/Projects as completed since the mixed waste dispositioned by these projects can be managed in accordance with Ohio Administrative Code (OAC) 3745-270-50 requirements Sections 3.1.4.1 (Wastewater Treatment, Phase II); 3.1.7.1 (TSCA Incinerator, Phase II); 3.1.8 (Organic Treatment Project); 3.1.9 (Inorganic Treatment Project); and 3.1.1.11 (Thorium Legacy Mixed Waste Stabilization Project).

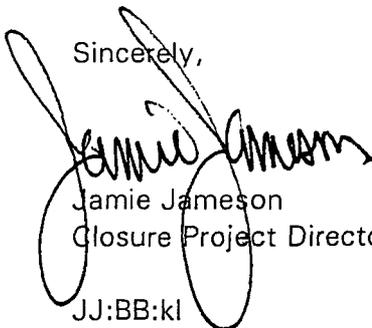
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Mr. William J. Taylor, Director
Letter No. C:CPD:2004-0126
Page 2

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If you have any questions regarding this information, please contact Elizabeth Brucken at (513) 648-5254.

Sincerely,



Jamie Jameson
Closure Project Director

JJ:BB:kl
Enclosures

c: With Enclosures
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Walter S. Heffron, MS52-3
Susan K. Lorenz, MS52-3
Robert F. Schulten, MS52-3
Edward Skintik, DOE-OH
DOE Records Center
File Record Subject - Fernald Closure Project Fiscal Year 2004 Treatment Plan
Annual Update
Project Number- 80000

Without Enclosures
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Ralph E. Holland, DOE Contracting Officer, DOE-OH/FCP
Dennis Sizemore, Fluor Fernald, Inc. Prime Contract, MS 2

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401 East 5th Street
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2. The identification of several STP Preferred Options/Projects as completed since the mixed waste dispositioned by these projects can be managed in accordance with Ohio Administrative Code (OAC) 3745-270-50 requirements Sections 3.1.4.1 (Wastewater Treatment, Phase II), 3.1.7.1 (TSCA Incinerator, Phase II), 3.1.8 (Organic Treatment Project), 3.1.9 (Inorganic Treatment Project), and 3.1.1.11 (Thorium Legacy Mixed Waste Stabilization Project).

As a result, the only active STP Project is the Uranium Waste Disposition (UWD) Materials, T-Hopper Wastes and Small-Volume Waste Streams Project with a project completion date of September 30, 2005.

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If you have any questions regarding this information, please contact Ed Skintik at (513) 246-1369.

Sincerely,

William J. Taylor
Director

cc: E. Brucken
B. Schulten

FERNALD CLOSURE PROJECT FISCAL YEAR 2004 SITE TREATMENT PLAN ANNUAL UPDATE

1.0 INTRODUCTION

Section 3021(b) of the Resource Conservation and Recovery Act (RCRA), as amended by the Federal Facility Compliance Act (FFCAct), required the U. S. Department of Energy (DOE) to prepare Site Treatment Plans (STP) describing the development of treatment capacities and technologies for treating mixed waste. Mixed waste is defined by the FFCAct as waste containing both a hazardous waste subject to RCRA, and a source, special nuclear, or by-product material subject to the Atomic Energy Act (AEA) of 1954 (42 U.S.C. 2011 *et seq.*). The Fernald Closure Project (FCP) submitted a Proposed Site Treatment Plan (PSTP) to Ohio Environmental Protection Agency (Ohio EPA) in April 1995 describing plans and schedules for treating its inventory of mixed waste. The Director's Final Findings and Orders (DF&O) implementing the requirements of the FCP's STP was issued to DOE by Ohio EPA on October 4, 1995.

Section V.C. of the DF&O requires the issuance, by December 31st, of the STP Annual Update. The Update describes the site's progress in treating its mixed waste inventory for the previous fiscal year and includes an updated STP which incorporates all approved amendments to the STP made during the previous fiscal year. This STP Annual Update summarizes the status of the FCP's efforts to treat its inventory of mixed waste for FY2004. As a result, only projects that are currently active for treating mixed waste are discussed in this report.

1.1 Proposed Changes to STP

The FCP is proposing several minor changes to the STP with the submittal of this Update. These changes include the following:

- 1) The designation of all FY2004 milestones as completed (Sections 3.1.4.1 (Wastewater Treatment, Phase II), 3.1.7.1 (TSCA Incinerator, Phase II), 3.1.8 (Organic Treatment Project), and 3.1.9 (Inorganic Treatment Project)); and
- 2) The identification of several STP Preferred Options/Projects as completed since the mixed waste dispositioned by these projects can be managed in accordance with Ohio Administrative Code (OAC) 3745-270-50 requirements (Sections 3.1.4.1 (Wastewater Treatment, Phase II), 3.1.7.1 (TSCA Incinerator, Phase II), 3.1.8 (Organic Treatment Project), 3.1.9 (Inorganic Treatment Project), and 3.1.1.11 (Thorium Legacy Mixed Waste Stabilization Project)).

As a result, the only active STP Project is the Uranium Waste Disposition (UWD) Materials, T-Hopper Wastes and Small-Volume Waste Streams with a project completion date of September 30, 2005.

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provided in accordance with Section V.D of the FFCAct DF&O. A copy of the proposed amended STP is provided as Appendix A. The proposed changes to the STP affect pages 7, 12, 13, 14, and 16. These changes are identified with redlines and strikeouts for easy identification.

2.0 REQUIREMENTS

Under Section V.C of the DF&O, the STP Annual Update is required to address specific items relevant to the facility's progress in treating its inventory of mixed waste for the fiscal year. These items and their status for FY2004 are discussed below:

- *An accounting of the status of the projects described in the approved STP:*

Each project described in the approved STP had a corresponding Preferred Option. Table 2-1 provides summary information on the quantities of waste treated/shipped during FY2004 and the inventory assigned to each project as of September 30, 2004. A description of activities completed by each project in FY2004 is provided in Section 3.0.

**Table 2-1
STATUS OF FCP PROJECTS/PREFERRED TREATMENT OPTIONS FOR FY2004**

PROJECT/PREFERRED TREATMENT OPTION	QUANTITY IN STORAGE (KG)	QUANTITY TREATED/SHIPPED IN FY2004 (KG)
Wastewater Treatment	0	981
TSCA Incinerator	0	0 ¹
Organic Treatment Project	0	84,244 ²
Inorganic Treatment Project	0	31,145
Uranium Waste Disposition (UWD) Materials, T-Hopper Wastes and Small-Volume Waste Streams	2,561	1,589
Thorium Legacy Mixed Waste Stabilization Project	0	36

¹Note: The FCP was granted an extension to the 9/30/04 milestone for completing shipment of Batch 14 to the TSCA Incinerator. Shipment of Batch 14 (37,721 kg of waste) was completed on 10/18/04 in accordance with the revised milestone.

²Note: In addition, 2,423 kg of inventory assigned to the Organic Treatment Project in the FY2003 STP Annual Update was shipped to Envirocare for direct disposal after it was confirmed that the waste met LDR treatment standards.

- *A statement regarding compliance with the milestones contained in the approved STP:*

There were six milestones initially established for FY2004 in the approved STP. One milestone was associated with Phase II of the Wastewater Treatment Preferred Option (Section 3.1.4.1 of the STP). This milestone established a schedule for completing treatment of the inventory of mixed waste assigned to this project in the FY2003 STP Annual Update. This milestone has been completed.

One milestone was associated with the UWD Materials, T-Hopper Wastes and Small-Volume Waste Streams Project (Section 3.1.10) and required the submittal of schedules to Ohio EPA for completing treatment of these wastes. This milestone has been completed.

Three milestones required the completion of shipment of wastes assigned to three STP Projects in the FY2003 STP Annual Update – the Organic Treatment Project (Section 3.1.8), the Inorganic Treatment Project (Section 3.1.9), and the Thorium Legacy Mixed Waste Stabilization Project (Section 3.1.11). These shipments were completed in accordance with the STP milestones.

A sixth milestone had initially been established to complete shipment of Batch 14 to the TSCA Incinerator by September 30, 2004. However, the FCP received approval from Ohio EPA to extend this milestone to 10/31/04 due to unanticipated delays in obtaining the required approvals to ship this waste and the limited availability of certified tanker trucks to complete the shipment. Shipment of Batch 14 (37,721 kg. of waste) was completed on 10/18/04 in accordance with the revised milestone.

- *A description of any projected difficulties in achieving compliance with future milestones and target dates.*

No difficulties are currently anticipated in achieving compliance with future milestones and target dates.

- *Updated Tables 1-8 of Section 3 of the Background Volume of DOE's amended PSTP.*

The FCP's mixed waste streams were organized by Preferred Option in the Background Volume of the PSTP. Each Preferred Option was followed by a table which listed the waste streams that could be treated to LDR treatment standards using the technology(ies) specified by the Preferred Option. An updated table reflecting the current status of this inventory is provided in Appendix B. Note that the UWD Materials, T-Hopper Wastes and Small-Volume Waste Stream Project comprises the only active project remaining in the STP.

The tables in the PSTP also included five-year estimates of projected mixed waste generation. These waste streams come from two primary sources -

routinely generated mixed waste streams managed in Satellite Accumulation Areas (SAAs) and mixed wastes generated from CERCLA remedial activities. Since closure of the FCP will be achieved in 2006, quantities of mixed waste projected to be generated are provided as two-year estimates. Information on specific types and quantities of mixed waste projected to be generated during the time period from FY2005 through 2006 is provided in Section 4.0. Note that it is anticipated that all newly-generated mixed waste will be in storage at the FCP for less than a year so these waste streams should not become subject to the provisions of the FFCA Act DF&O.

- *An index or chart that clearly indicates all pages of the approved STP affected by approved amendments of the approved STP.*

**Table 2-2
FY2004 STP Amendments And Affected Pages Of The Approved STP**

AMENDMENT	AFFECTED PAGES
On December 29, 2003, the FCP submitted the following changes to the STP:	
1) A new milestone for completing shipment of Batch14 was provided for Phase II of the TSCA Incinerator Preferred Option (Section 3.17.1)	12
2) A new milestone for completing shipment of the Uranium Waste Disposition (UWD) and T-Hopper Wastes was proposed for Section 3.1.10.	14
3) Minor changes were made to identify additional fixed milestones that had been completed during FY2003 (Sections 3.1.7.1, (TSCA Incinerator, Phase II), 3.3.10 (UWD Materials and T-Hopper Wastes) and 3.1.11 (Thorium Legacy Mixed Waste Stabilization Project)), to update information in Section 3.1.7 (TSCA Incinerator), and to change the name of the facility to FCP.	1, 2, 6, 7, 11, 12, 14, 15

AMENDMENT	AFFECTED PAGES
<p>On March 11, 2004, the FCP resubmitted the 12/29/03 proposed amendments and modified the description of each active STP Preferred Option/Project (Section 3.1.4.1, Wastewater Treatment, Phase II; Section 3.1.7.1, TSCA Incinerator, Phase II; Section 3.1.8, Organic Treatment Project; Section 3.1.9, Inorganic Treatment Project; Section 3.1.10, UWD and T-Hopper Wastes; Section 3.1.11, Thorium Legacy Mixed Waste Stabilization Project) to include a planned project completion date. Approval for these revisions was received from Ohio EPA on June 24, 2004.</p> <p>On September 30, 2004, the FCP submitted the following changes to the STP:</p> <ol style="list-style-type: none"> 1) An extension to the schedule for completing shipment of Batch 14 to the TSCA Incinerator (Section 3.1.7.1). 2) A revision to the title and description of the UWD Materials and T-Hopper Wastes Project (Section 3.1.10) to include several small volume-waste streams with limited disposition pathways. 	<p>1, 2, 6, 7, 11, 12, 13, 14, 15</p> <p>12</p> <p>14</p>

- *A summary of new waste streams generated or identified within the previous fiscal year.*

A total of 2,018 kg of mixed waste in storage at the end of FY2004 was generated or newly identified in FY2004. Of this total, only 1,974 kg of wastes were identified for inclusion in the STP based on potential non-compliance with the LDR Storage Prohibition (these containers were all Newly-Identified rather than Newly-Generated). The FCP has the capability to disposition the remaining inventory within one year of generation so it was not included as part of the STP inventory. Detailed information on the STP portion of this inventory is provided in Appendix C.

- *A summary of any additional waste characterization information regarding existing new, or projected waste streams.*

All newly identified/generated mixed waste streams included in this update have been sufficiently characterized to assign to a mixed waste

Project/Preferred Option. Characterization of these wastes has been conducted in accordance with the processes described in Section 2.4 of the PSTP. If required, sampling and analysis will be performed prior to treatment. The sampling and analysis will provide information on additional parameters required to assure proper treatment.

- *An updated STP that incorporates all approved amendments of the approved STP made during the previous fiscal year.*

A current copy of the FCP's approved STP is provided as Appendix D.

3.0 STATUS OF FCP PROJECTS/PREFERRED OPTIONS

The following sections provide information on the FY2004 status of each Project/Preferred Option identified in the STP. Only projects that were active in FY2004 are included in this summary.

3.1 Wastewater Treatment

The Wastewater Treatment Preferred Option is discussed in Section 3.1.4 of the STP. This Preferred Option was implemented as part of the Liquid Mixed Waste Project which also included treatment of organic liquids under the TSCA Incinerator Preferred Option (Section 3.1.7 of the STP).

The Wastewater Treatment Preferred Option was split into two phases. Phase I involved treatment of the initial inventory of mixed waste identified in the FCP's 1995 Site Treatment Plan. The milestones associated with this phase of the project were completed in 1996.

In FY2004, mixed waste treatment was conducted under Phase II of this Preferred Option. Treatment of these waste streams occurred on-site through the Advanced Waste Water Treatment System (AWWT). The AWWT utilizes precipitation/filtration to treat metal constituents while organic constituents are treated by an activated carbon adsorption unit operation as part of AWWT Phase 2. Discharges from the AWWT are regulated under the site's National Pollution Discharge Elimination System (NPDES) permit.

There was one milestone associated with this project for FY2004. This milestone required the treatment of 2,441 kg of aqueous mixed waste identified in Appendix B of the FY2003 STP Annual Update by June 30, 2004. Treatment of 982 kg of these wastes was completed on June 10, 2004 in accordance with this milestone. The remaining inventory was either recharacterized as non-hazardous or transferred to other STP projects based on results from visual inspection or analyses that indicated that the waste could not be treated through AWWT.

This project is now considered to be completed since all mixed waste streams to be dispositioned by this project can be managed in accordance with Ohio Administrative Code (OAC) 3745-270-50 requirements.

3.2 TSCA Incinerator

The TSCA Incinerator Preferred Option (Section 3.1.7 of the STP), along with the Wastewater Treatment Preferred Option, was implemented as part of the Liquid Mixed Waste Project. Treatment of these waste streams occurred at the East Tennessee Technology Park (ETTP) in Oak Ridge, Tennessee. Containers of mixed organic liquid wastes were bulked on-site into batches prior to shipment to the TSCA Incinerator. Since the issuance of the STP, the TSCA Incinerator Preferred Option has been split into two phases. Phase I involved treatment of the initial inventory of mixed waste identified in the FCP's 1995 Site Treatment Plan. The milestones associated with this phase of the project were completed in 1996.

In FY2004, a new milestone was initially established to complete shipment of Batch 14 to the TSCA Incinerator by September 30, 2004 as part of Phase II of this Preferred Option. However, the FCP received approval from Ohio EPA to extend this milestone to 10/31/04 due to unanticipated delays in obtaining the required approvals to ship this waste and the limited availability of certified tanker trucks to complete the shipment. Shipment of Batch 14 (37,721 kg of waste) was completed on 10/18/04 in accordance with the revised milestone.

This project is now considered to be completed since all mixed waste streams to be dispositioned by this project can be managed in accordance with Ohio Administrative Code (OAC) 3745-270-50 requirements.

3.3 Organic Treatment Project

The Organic Treatment Project (Section 3.1.8 of the STP) involved the off-site shipment of mixed wastes containing primarily organic constituents and debris for treatment to Materials and Energy Corporation (M&EC) in Oak Ridge, Tennessee. Additionally, this project had the option to ship waste off-site to Envirocare in Clive, Utah for treatment by vacuum-assisted thermal desorption.

In FY2004, the FCP shipped 84,244 kg of mixed waste assigned to this project to Envirocare for treatment by vacuum thermal desorption. Shipment of these wastes was completed by September 30, 2004 in accordance with the STP milestone.

This project is now considered to be completed since all mixed waste streams to be dispositioned by this project can be managed in accordance with Ohio Administrative Code (OAC) 3745-270-50 requirements.

3.4 Inorganic Treatment Project

The Inorganic Treatment Project (Section 3.1.9 of the STP) involved the off-site shipment of mixed wastes containing primarily inorganic constituents and debris for treatment by a commercial facility. The FCP divided these wastes into three groupings: Mercury, Macroencapsulation Wastes (debris

treated using debris treatment standards, batteries and lead), and Soils, Sludge, and Debris (debris treated using waste-specific treatment standards).

During FY2004, the FCP shipped 0 kg of mercury waste, a total of 3,221 kg of soil, sludge and debris waste to WCS for treatment by stabilization, and 27,924 kg of Macroencapsulation Wastes to Envirocare for treatment by macroencapsulation. Shipment of these wastes was completed by September 30, 2004 in accordance with the STP milestone.

This project is now considered to be completed since all mixed waste streams to be dispositioned by this project can be managed in accordance with Ohio Administrative Code (OAC) 3745-270-50 requirements.

3.5 Envirocare

The FCP and DOE have contracts in place for the disposal of mixed waste at Envirocare. The Envirocare Preferred Option is being implemented through the Non-LDR Treatment Standard Concentration (TSC) Disposal Project. These waste streams currently have variances to LDR treatment standards or the concentration of constituents is below the specified treatment standard. This project consists of bulking and packaging for the purpose of shipment and disposal. Free liquids are decanted from the containers prior to shipment and transferred to the Liquid Mixed Waste Project.

In FY2004, 2,423 kg of mixed waste was shipped off-site for direct disposal at Envirocare.

3.6 Uranium Waste Disposition (UWD) Materials, T-Hopper Wastes and Small-Volume Waste Streams

Uranium Waste Disposition Materials (Section 3.1.10 of the STP) refers to a population of uranium materials that were declared waste in December 1998 and March 2002. A portion of these wastes have been characterized as mixed waste. This project also initially included approximately 270 kg of mixed waste containing transuranic constituents at greater than 100 nCi/g and 170 kg of mixed low level waste formerly stored in T-Hopper containers and additional mixed waste streams with a high uranium content.

In FY 2004, the FCP submitted a proposed amendment to the STP to revise the project description to include several small-volume waste streams with limited disposition options. Most of this inventory was transferred over to UWD from other STP Projects when it was determined that they presented unique concerns for dispositioning. With the submittal of the FY2003 STP Update, the FCP also established a September 30, 2005 milestone for completing shipment of all wastes assigned to this project.

In FY2004, the FCP shipped 1,536 kg of these wastes to Envirocare for treatment by vacuum thermal desorption, 12 kg of debris to Envirocare for treatment by macroencapsulation, and 408 kg of waste to WCS for treatment by stabilization. An additional 11,379 kg of waste was

recharacterized as non-hazardous based on results from sampling and analysis. The original characterization of these wastes as hazardous was due to uranium interference (spectral interference from high uranium content can result in the reporting of elevated levels of metals in TCLP extracts).

The FCP is reviewing several options for the treatment of the remaining waste streams. Under the Uranium Assay Adjustment Work Plan, the portion of this inventory with a high uranium content will be blended on-site with an inert material to meet off-site radiological waste acceptance criteria. These wastes will then be shipped off-site for treatment to meet RCRA land disposal restriction requirements. Four drums of highly corrosive wastes are planned for shipment to M&EC. Four drums contain unknown samples or small quantities of waste that will require sampling and analysis in order to determine a disposition path. All containers of "newly-identified waste" can be managed under existing disposition options.

One container (W236136) poses special disposition problems since it is characterized as F027 (among a number of other listed waste codes) and contains greater than 500 ppm PCBs. No treatment facility has yet been found which can accept this waste and there are no facilities that can currently accept mixed F027 treatment residues for disposal. The FCP is reviewing options for this container, including sending it off-site for storage until a disposition pathway can be found.

A total of 2,561 kg of mixed waste is currently assigned to the UWD Materials Project. Appendix B provides additional information regarding this inventory.

3.7 Thorium Legacy Mixed Waste Stabilization Project

The Thorium Legacy Mixed Waste Stabilization Project (Section 3.1.11 of the STP) involved the disposition of thorium mixed wastes. This project had one milestone scheduled for completion in FY2004. This was a December 5, 2003 milestone to complete shipment of the inventory assigned to this project in the FY2003 STP Update. Shipment of these wastes (36 kg) was completed in accordance with this milestone.

This project is now considered to be completed since all mixed waste streams to be dispositioned by this project can be managed in accordance with Ohio Administrative Code (OAC) 3745-270-50 requirements.

4.0 FUTURE MIXED WASTE GENERATION

Tables 1 through 8 of the PSTP included five-year projections of mixed waste generation. These estimates came from two primary sources - routinely generated mixed waste streams managed in Satellite Accumulation Areas (SAAs) and wastes generated from CERCLA remedial actions. Since closure of the FCP will be achieved in 2006, quantities of mixed waste projected to be generated are provided as two-year estimates. Table 4-1 summarizes the types

and quantities of mixed waste expected to be generated through site closure.

Table 4-1
PROJECTED TWO-YEAR MIXED WASTE GENERATION

MEF NUMBER	WASTE DESCRIPTION	EPA WASTE CODES	PROJECTED 3-YEAR GENERATION (M ³)
1815	Spent Fuels	D001, D018	9.2
1725	Oils From Gasoline	D008	2.3
2547	Gasoline/Diesel Fuel Filters	D018	0.4
874	Lead-Containing Materials	D008	3.8
406	Unpunctured Aerosol Cans	D001	0.8
1585	Cracked Lead-Acid Batteries	D002, D008	0.2

TOTAL = 16.7 M³

APPENDIX A

Proposed Amendments to the Site Treatment Plan

**FERNALD CLOSURE PROJECT
PROPOSED SITE TREATMENT PLAN
PLAN VOLUME**

1.0 PURPOSE AND SCOPE

1.1 The U.S. Department of Energy (DOE) is required to prepare a plan for developing treatment capacities and technologies for each facility at which DOE generates or stores mixed waste, pursuant to Section 3021(b) of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C 6939c(b), as amended by Section 105(a) of the Federal Facility Compliance Act [(P.L.102-386) (FFCAct)]. The mixed waste must be treated or otherwise managed in accordance with the land disposal restriction standards under Section 3004 of RCRA. Upon submission of the plan to the appropriate regulatory agency, the FFCAct requires the recipient agency to solicit and consider public comments, and approve, approve with modification, or disapprove the plan within six months. The agency is to consult with EPA and any State in which a facility affected by the plan is located. Upon approval of a plan, the regulatory agency must issue a FFCAct Order requiring compliance with the approved plan.

1.2 The DOE Fernald Office, hereinafter referred to as DOE-FCP, has prepared this Proposed Site Treatment Plan (PSTP) for mixed waste at the Fernald Closure Project (FCP), which identifies how DOE-FCP proposes to obtain treatment of the site's mixed waste or develop technologies for treatment where technologies do not exist or need modification. For some waste streams, a plan and schedules for characterizing wastes, undertaking technology assessments, and for providing the required plans and schedules for developing capacities and technologies, as appropriate, are provided.

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2.0 IMPLEMENTATION OF THE PROPOSED SITE TREATMENT PLAN

The mechanisms and procedures for administering and implementing the treatment plans and schedules in Sections 3.0 through 5.0 of the Plan Volume will be established in the FFCAct Order.

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2.2 Modification of Technologies

Emerging or new technologies not yet considered that provide opportunities to manage waste more safely, effectively, and at lower cost than the current technologies identified in the PSTP may be identified in the future. Working closely with regulators and other interested parties during the implementation of the PSTP, DOE will continue to evaluate and develop technologies that offer potential advantages in the areas of public acceptance, risk abatement, performance, and life-cycle cost. Should more promising technologies be identified, DOE may request a modification of its PSTP in accordance with provisions of the implementing FFCAct Order.

3.0 MIXED LOW LEVEL WASTE STREAMS

The Plan Volume of the PSTP establishes overall schedules for achieving compliance with LDR requirements for mixed wastes at the FCP. The schedules include those activities required to bring existing waste treatment facilities or technologies into operation, and those required to develop new facilities and capacity for treatment. The assumptions upon which individual schedules are dependent are contained in Sections 3.0 through 5.0 of the Background Volume. The schedules may be affected if the underlying assumptions change. The project completion dates provided on the schedules do not include final disposition of treatment residues. Dates provided in the Plan Volume schedules become enforceable through the procedure established in the implementing FFCAct Order.

3.1 Mixed Waste Streams for which Technology Exists

The FCP has identified eleven Preferred Options for the treatment of characterized mixed low level waste streams in inventory. Only minor modifications of the Preferred Option, if any, are needed to treat the wastes. These preferred options and their respective waste streams are presented in Sections 3.1.1 through 3.1.11.

3.1.1 Waste Stream for which Technology Exists - Preferred Option: Hydrofluoric Acid (HF) Neutralization System

Project Name: HF RCRA Closure

The FEMP mixed waste stream for which the Preferred Option is identified as the HF Neutralization System is listed in Table 1 of the Background Volume. Treatment can be accomplished through the use of on-site existing facilities. Treatment of this single waste stream is planned as a RCRA Closure of a Hazardous Waste Management Unit (HWMU) using the HF Neutralization System. Detailed information on this treatment is located in Section 3.1.1 of the Background Volume.

Consistent with closure plan requirements, this project is expected to be completed within 180 days after final approval of the Closure Plan Information and Data (CPID) from OEPA. The schedules presented below reflect dates established by the approved closure plan.

MIXED WASTE STREAM FOR WHICH TECHNOLOGY EXISTS

Project Start Date: January 31, 1992 (COMPLETED)

Schedule for submitting all applicable permit applications: Not applicable. Treatment of this waste stream will be performed under a RCRA Closure of a HWMU. The CPID for this project was submitted on July 17, 1994 and approved by the OEPA in February 1995. (COMPLETED)

Schedule for entering into contracts: The contract necessary for this project is in place. (COMPLETED)

Schedule for initiating construction: December 31, 1994 (COMPLETED)

Schedule for conducting systems testing: June 30, 1995 (COMPLETED)

Schedule for commencing operations: June 30, 1995 (COMPLETED)

Schedule for processing backlogged and currently generated mixed wastes: June 30, 1995 through August 30, 1995 (COMPLETED)

Project Completion Date: September 30, 1995 (COMPLETED)

PROJECT UPDATE

Treatment of this waste stream was completed as scheduled.

3.1.2 Waste Stream for which Technology Exists - Preferred Option: Uranyl Nitrate Hexahydrate (UNH) Treatment System

Project Name: UNH Neutralization System

The FEMP mixed waste stream for which the Preferred Option is identified as the UNH Treatment System is listed in Table 2 of the Background Volume. For clarity, it should be noted the scope of waste treatment under this Preferred Option is more extensive than that covered by the Director's Final Findings and Orders (DF&O), dated December 27, 1994 directing treatment of UNH material. Specifically, this Preferred Option includes treatment of approximately 30,000 gallons of radiologically contaminated nitric acid from the Nitric Acid Recovery (NAR) system. This waste stream was not included within the above-referenced DF&O. Treatment of the UNH waste stream associated with this preferred option was completed by September 25, 1995. Treatment can be accomplished through the use of on-site existing facilities augmented with new piping and new skid-mounted pumps. The FEMP is a CERCLA site and has been working with USEPA and OEPA to treat this waste on-site through CERCLA Removal Action #20. Detailed information on this treatment is located in Section 3.1.2 of the Background Volume.

The construction phase of the UNH Neutralization System is scheduled and proceeding.

MIXED WASTE STREAM FOR WHICH TECHNOLOGY EXISTS

Project Start Date: November 30, 1993 (COMPLETED)

Schedule for submitting all applicable permit applications: Not applicable. No permit required. Treatment of this waste will be performed under CERCLA Removal Action #20. (COMPLETED)

Schedule for entering into contracts: No contracts anticipated.

Schedule for initiating construction: May 31, 1994 (COMPLETED)

Schedule for conducting systems testing: March 24, 1995 (COMPLETED)

Schedule for commencing operations: Operations is the date the FEMP began treatment utilizing this Preferred Option.

March 24, 1995 (COMPLETED)

Schedule for processing backlogged and currently generated mixed wastes: March 24, 1995 - April 30, 1996 (COMPLETED)

Project Completion Date: April 30, 1996† (COMPLETED)

† Denotes milestone dates

3.1.3 Waste Stream for which Technology Exists - Preferred Option: Thorium Nitrate Treatment System

Project Name: Thorium Nitrate

The FEMP mixed waste stream for which the Preferred Option is identified as Thorium Nitrate Treatment System is listed in Table 3 in the Background Volume. Treatment of this single waste stream is planned under CERCLA Removal Action #9. Treatment of this waste stream will occur on-site using a vendor provided service. Detailed information on the alternatives is located in Section 3.1.3 of the Background Volume.

MIXED WASTE STREAM FOR WHICH TECHNOLOGY EXISTS

Project Start Date: December 31, 1994 **(COMPLETED)**

Schedule for submitting all applicable permit applications: Not applicable. Treatment of this waste stream will be performed under CERCLA Removal Action #9. The Project Specific Plan for this project was submitted in August 31, 1995. **(COMPLETED)**

Schedule for entering into contracts: Award contract with vendor for treatment. May 31, 1995 **(COMPLETED)**

Schedule for initiating construction: Vendor will supply and mobilize equipment needed for treatment. August 31, 1995 **(COMPLETED)**

Schedule for conducting systems testing: Systems testing will determine Operational Readiness using water to simulate operations. September 30, 1995 **(COMPLETED)**

Schedule for commencing operations: Operations will begin with the recirculation of the thorium waste as specified in the Project Specific Work Plan. September 30, 1995 **(COMPLETED)**

Schedule for processing backlogged and currently generated mixed wastes: September 30, 1995 - February 29, 1996 **(COMPLETED)**

Project Completion Date: February 29, 1996† **(COMPLETED)**

† Denotes milestone dates

3.1.4 Waste Streams for which Technology Exists - Preferred Option: Wastewater Treatment, Phase 1

Project Name: Liquid Mixed Waste Project

The FCP mixed waste streams for which the Preferred Option is identified as Wastewater Treatment are located in Table 4 of the Background Volume. Treatment of these waste streams will occur on-site in an existing facility. This project is part of the Liquid Mixed Waste Project. Liquids will be bulked, tested and a determination will be made whether they are acceptable for the FEMP Wastewater Treatment System. Detailed information on this treatment is located in Section 3.1.4 of the Background Volume.

The Liquid Mixed Waste Project is designed to address treatment and disposal of all liquid mixed waste currently in storage through the WWTS or the TSCA Incinerator Preferred Options.

MIXED WASTE STREAMS FOR WHICH TECHNOLOGY EXISTS

Project Start Date: October 31, 1994 (COMPLETED)

Schedule for submitting all applicable permit applications: Not applicable. This project was initiated as part of CERCLA Removal Action #9 (RA #9). RA #9 was modified to clarify the scope of work and is consistent with the FCP's Investigation Derived Waste (IDW) policy and NPDES permit and meets the requirements of the RCRA wastewater treatment unit exclusion. Activities conducted under RA #9 have been incorporated into the Operable Unit 3 Final Record of Decision (ROD).

Schedule for entering into contracts: No contract is required.

Schedule for initiating construction: No construction is required for this project.

Schedule for conducting systems testing: Tank set-up and testing of WWTS is complete. October 31, 1994 (COMPLETED)

Schedule for commencing operations: Operations is the date the FCP will begin treatment utilizing this Preferred Option. February 29, 1996† (COMPLETED)

Schedule for processing backlogged and currently generated mixed wastes: February 29, 1996 through September 30, 1996 (COMPLETED)

Project Completion Date: September 30, 1996† (COMPLETED)

3.1.4.1 Waste Streams for Which Technology Exists - Preferred Option: Wastewater Treatment, Phase II

Section 3.1.4.1 provides updated schedules for treating FCP mixed waste streams for which the preferred option is Wastewater Treatment. As part of Phase II of this preferred option, these waste streams will be treated on-site using the FCP's Advanced Waste Water Treatment System (AWWT).

Waste waters are introduced into the AWWT-Slurry Dewatering Facility for precipitation and filtration of metal constituents. Filtrate from this process is directed to AWWT Phase 2 which consists of an activated carbon adsorption unit operation. Organic constituents are removed with the filter cake from the precipitation/filtration process or treated through AWWT Phase 2 if they remain in the filtrate. ~~This project is scheduled to be completed by June 30, 2004.~~

~~This project is now considered to be completed since all mixed waste streams to be dispositioned by this project can be managed in accordance with Ohio Administrative Code (OAC) 3745-270-50 requirements.~~

Schedule for Initiating Treatment of Mixed Waste Identified in the 1998 STP Annual Update: November 1, 1999† **(COMPLETED)**

Project Completion Date: March 1, 2000† **(COMPLETED)**

Schedule for Initiating Treatment of Mixed Waste Identified in the Most Recent Version of the STP Annual Update: March 1, 2001† **(COMPLETED)**

Project Completion Date: June 30, 2001† **(COMPLETED)**

Schedule for Initiating Treatment of Mixed Waste Identified in the 2001 STP Annual Update:
December 31, 2001† **(COMPLETED)**

Project Completion Date: June 30, 2002† **(COMPLETED)**

Project Completion Date: Mixed waste identified in the most recent version of the STP Annual Update will be treated within six months following submittal of the update (by June 30th)† **(COMPLETED)**

† Denotes milestone dates

3.1.5 Waste Streams for which Technology Exists - Preferred Option: Ohio Mobile Stabilization System

Project Name: Stabilization Project

The FEMP mixed waste streams for which the Preferred Option is identified as Ohio Mobile Stabilization System are listed in Table 5 of the Background Volume. Treatment of these waste streams will occur on-site using a vendor provided mobile service. Detailed information on this treatment is located in Section 3.1.5 of the Background Volume.

The FEMP published a request for information in the *Commerce Business Daily*. Multiple responses were received from companies capable of performing Mobile Stabilization.

The FEMP implemented the Stabilization Project as part of CERCLA Removal Action #9 (RA #9). Treatment operations began after obtaining Ohio EPA approval. Activities conducted under Removal Action #9 have been incorporated into the Operable Unit 3 Final Record of Decision (ROD).

MIXED WASTE STREAMS FOR WHICH TECHNOLOGY EXISTS

Project Start Date: October 31, 1994 (COMPLETED)

Schedule for submitting all applicable permit applications: Not applicable. This project was initiated as part of RA #9. Activities conducted under Removal Action #9 have been incorporated into the Operable Unit 3 Final Record of Decision (ROD).

The Project Specific Plan for this project was submitted in September 30, 1995. (COMPLETED)

Schedule for entering into contracts: May 31, 1995 (COMPLETED)

Schedule for initiating construction: Vendor will supply a fully constructed mobile system. October 31, 1995† (COMPLETED)

Schedule for conducting systems testing: November 30, 1995† Complete Operational Readiness Review. (COMPLETED)

Schedule for commencing operations: Operations is the date the FEMP will begin treatment utilizing this Preferred Option. November 30, 1995† (COMPLETED)

Schedule for processing backlogged mixed wastes: November 30, 1995 through September 30, 1996 (COMPLETED)

3.1.5 Waste Streams for which Technology Exists - Preferred Option: Ohio Mobile Stabilization System (cont.)

Project Completion Date: September 30, 1996† (COMPLETED)

† Denotes milestone dates

3.1.6 Waste Streams for which Technology Exists - Preferred Option: Ohio Mobile Chemical Treatment System

Project Name: Chemical Treatment Project

The FEMP mixed waste streams where the Preferred Option is identified as Ohio Mobile Chemical Treatment System are listed in Table 6 of the Background Volume. Treatment of these waste streams will occur on-site using vendor provided services, except for some debris (as defined in RCRA) macroencapsulation, which will occur off-site at a commercial facility. Detailed information on this treatment is located in Section 3.1.6 of the Background Volume.

Multiple contracts will be entered into for the performance of treatment for each technology in the Chemical Treatment Project. Specific work plans will be developed for each on-site treatment technology. The technology specific work plans will be submitted to the State for approval. Construction of the facilities will be initiated upon State approval of the technology specific work plans.

MIXED WASTE STREAMS FOR WHICH TECHNOLOGY EXISTS

Project Start Date: October 31, 1994 (COMPLETED)

Schedule for submitting all applicable permit applications: Not applicable. It is anticipated that this project will be initiated as part of CERCLA Removal Action #9. This project was initiated as part of CERCLA Removal Action #9. Activities conducted under this removal action have been incorporated into the Operable Unit 3 Final Record of Decision (ROD). The Draft Work Plan for this project will be submitted in November 30, 1995.† (COMPLETED)

3.1.6 Waste Streams for which Technology Exists - Preferred Option: Ohio Mobile Chemical Treatment System (cont.)

A schedule for commencing operations will be provided in each technology project specific work plan submitted for approval.

Schedule for entering into contracts: The contract for implementation of the first technology will be entered into in April 30, 1996.†(COMPLETED)

The project specific work plan for each technology will be submitted for approval within 120 days of entering into the contract.†

Schedule for initiating construction: Vendor will supply a fully constructed mobile system. Construction for each technology will be initiated within 30 days of approval of the project specific work plan.†

Schedule for conducting systems testing: Operational Readiness and systems testing will be completed 120 days after completion of treatment facility construction.†

Schedule for commencing operations: Treatment will be initiated within 14 days of completion of system testing for each technology.†

Schedule for processing backlogged and currently generated mixed wastes: February 28, 1997 through September 30, 2001.

A schedule for processing backlogged and currently generated mixed waste will be provided by technology in each project specific work plan submitted for approval.

Project Completion Date: September 30, 2001† The last project conducted as part of the Ohio Mobile Chemical Treatment System was completed on August 19, 1998.

† Denotes milestone dates

3.1.7 Waste Streams for which Technology Exists - Preferred Option: TSCA Incinerator, Phase 1

Project Name: Liquid Mixed Waste Project

The FCP mixed waste streams (liquid portion only) for which the Preferred Option is identified as the TSCA Incinerator are listed in Table 7 of the Background Volume. Treatment of these waste streams will occur off-site at the DOE K-25 site in Oak Ridge, Tennessee.

The FCP is allotted capacity at the TSCA Incinerator on a fiscal year basis. Detailed information on this treatment is located in Section 3.1.7 of the Background Volume.

Bulking and transport of these wastes was implemented as part of CERCLA Removal Action #9 (RA #9). These activities began after obtaining Ohio EPA approval. Activities conducted under this removal action have been incorporated into the Operable Unit 3 Final Record of Decision (ROD).

The milestone dates for TSCA Incinerator are shipping dates. The shipping dates are dependent on acceptance of the waste by the TSCA Incinerator and the State of Tennessee.

The Liquid Mixed Waste Project is designed to address treatment and disposal of all liquid mixed waste currently in storage through the WWTS or the TSCA Incinerator Preferred Options.

MIXED WASTE STREAMS FOR WHICH TECHNOLOGY EXISTS

Project Start Date: October 1994 (COMPLETED)

Schedule for submitting all applicable permit applications: Not applicable. This project was initiated as part of RA #9. (COMPLETED)

Schedule for entering into contracts: Contracting complete (DOE facility to DOE facility agreement). (COMPLETED)

Schedule for initiating construction: No construction is required for this project.

Schedule for conducting systems testing: Tank set-up and testing were completed in October 1994. (COMPLETED)

3.1.7 Waste Streams for which Technology Exists - Preferred Option: TSCA Incinerator (cont.)

Schedule for commencing operations: Operations began with the bulking of waste streams. June 30, 1995 **(COMPLETED)**

Schedule for processing backlogged and currently generated mixed wastes: June 30, 1995 through September 30, 1996 **(COMPLETED)**

Project Completion Date: Shipments from the FEMP to the TSCA Incinerator will be complete by September 30, 1996† **(COMPLETED)**

3.1.7.1 Waste Streams for which Technology Exists - Preferred Option: TSCA Incinerator, Phase II

Phase II of the TSCA Incinerator Preferred Option provides updated schedules for the shipment of individual batches of liquid mixed waste to the TSCA Incinerator and/or commercial mixed waste incineration facilities. These schedules are based on the TSCA Incinerator Burn Plan and commercial facility waste acceptance timeframes. Since capacity at the TSCA Incinerator is allocated on a fiscal year basis, schedules for shipping additional batches of liquid mixed waste will be established in future amendments to the STP. ~~This project is scheduled to be completed by October 31, 2004.~~

~~This project is now considered to be completed since all mixed waste streams to be dispositioned by this project can be managed in accordance with Ohio Administrative Code (OAC) 3745-270-50 requirements.~~

Schedule for Completing Shipment: Shipment of Batch 9 to the TSCA Incinerator will be completed by September 30, 2000†. **(COMPLETED)**

Shipment of Batch 10 to the TSCA Incinerator or a commercial mixed waste incineration facility will be completed by September 30, 2001†. **(COMPLETED)**

Shipment of Batch 11 to the TSCA Incinerator will be completed by September 30, 2002†. **(COMPLETED)**

Schedule for Providing Additional Milestones for Shipment: Schedules for shipping additional batches of mixed waste to the TSCA Incinerator or a commercial mixed waste incineration facility will be provided by December 31, 2001†. **(COMPLETED)**

Schedule for Completing Shipment: Shipment of Batch 12 to the TSCA Incinerator or a commercial mixed waste incineration facility will be completed by October 31, 2002 †. **(COMPLETED)**

Schedule for Completing Shipment: Shipment of Batch 13 to the TSCA Incinerator or a commercial mixed waste incineration facility will be completed by September 30, 2003 †. **(COMPLETED)**

3.1.7.1 Waste Streams for which Technology Exists - Preferred Option: TSCA Incinerator, Phase II (cont.)

Schedule for Completing Shipment: Shipment of Batch 14 to the TSCA Incinerator or a commercial mixed waste incineration facility will be completed by October 31, 2004 †.

(COMPLETED)

† Denotes milestone dates

3.1.8 Waste Streams for Which Technology Exists - Organic Treatment Project

The Organic Treatment Project involves the off-site shipment of mixed wastes containing primarily organic constituents and debris to a commercial facility for treatment under the DOE Broad-Spectrum contract or an alternate off-site mixed waste treatment contract. Free liquids may be decanted from these containers for treatment on-site through AWWT or inclusion in a TSCA Incinerator batch prior to shipment. This project is scheduled to be completed by September 30, 2004.

This project is now considered to be completed since all mixed waste streams to be dispositioned by this project can be managed in accordance with Ohio Administrative Code (OAC) 3745-270-50 requirements.

Schedule for Entering into Contract: March 31, 1999†**(COMPLETED)**

Schedule for Initiating Preparation of Wastes for Transport: September 15, 1999†
(COMPLETED)

Schedule for Completing Shipment for Off-Site Treatment of Mixed Wastes Identified in the Most Recent Version of the STP Annual Update: September 30, 2004† **(COMPLETED)**

† Denotes milestone dates

3.1.9 Waste Streams for Which Technology Exists - Inorganic Treatment Project

The Inorganic Treatment Project involves the shipment of mixed waste containing primarily inorganic constituents and debris off-site to a commercial facility for treatment. Free liquids may be decanted from these containers for treatment on-site through AWWT prior to shipment. This project is scheduled to be completed by September 30, 2004.

This project is now considered to be completed since all mixed waste streams to be dispositioned by this project can be managed in accordance with Ohio Administrative Code (OAC) 3745-270-50 requirements.

Schedule for Entering into Contract: March 31, 2001† **(COMPLETED)**

Schedule for Initiating Preparation of Wastes for Transport: October 1, 2001† **(COMPLETED)**

Schedule for Completing Shipment for Off-Site Treatment of Mixed Wastes Identified in the Most Recent Version of the Annual STP Update: September 20, 2002† **(COMPLETED)**

Schedule for Completing Shipment for Off-site Treatment of Mixed Wastes Identified in the Most Recent Version of the STP Update : Mixed waste will be shipped off-site for treatment within nine months following submittal of the STP Annual Update (by September 30th)† **(COMPLETED)**

† Denotes milestone dates

3.1.10 Waste Streams for Which Technology Exists - Uranium Waste Disposition (UWD) Materials, T-Hopper Wastes, and Small-Volume Waste Streams

The FCP has identified mixed waste which is primarily included in a population of uranium materials declared waste in December 1998. A portion of these materials are enriched (contain > 1% U235) and may require blending to reduce uranium content prior to processing. In addition, the FCP has identified approximately 270 kilograms of mixed waste containing transuranic constituents above 100 nCi/g and 170 kilograms of mixed low-level waste formerly stored in two T-hopper containers and several small-volume waste streams with limited disposition pathways. This project is scheduled to be completed by September 30, 2005.

Schedule for Entering into Contract: The contract for implementation of this preferred option will be entered into by June 30, 2003†. **(COMPLETED)**

Schedule for Providing Additional Milestones for Treatment: Additional milestones for treating the UWD inventory and the T-Hopper Wastes will be provided by December 31, 2003†. **(COMPLETED)**

Schedule for Completing Shipments for Off-Site Treatment of the UWD inventory, T-Hopper Wastes and Small-Volume Waste Streams Identified in the Most Recent Version of the Annual STP Update: September 30, 2005†.

† Denotes milestone dates

3.1.11 Waste Streams for Which Technology Exists - Thorium Legacy Mixed Waste Stabilization Project

The Thorium Legacy Mixed Waste Stabilization Project involves treatment of the thorium legacy mixed waste inventory. These wastes will be decanted as need, prepared and packaged as required for shipment to the selected off-site vendor for treatment and disposal. ~~This project has been completed.~~

This project is now considered to be completed since all mixed waste streams to be dispositioned by this project can be managed in accordance with Ohio Administrative Code (OAC) 3745-270-50 requirements.

Schedule for Entering into Contract: The contract for implementation of this preferred option will be entered into by September 30, 2002 †(COMPLETED)

Schedule for Providing Additional Milestones for Treatment: Additional milestones for treating the thorium legacy mixed waste inventory will be provided by September 30, 2002 †(COMPLETED)

Schedule for Initiating Preparation of Wastes for Transport: Thorium legacy mixed waste onsite processing and packaging will begin by June 30, 2003†. (COMPLETED)

Schedule for Completing Shipments for Off-Site Treatment of the Thorium Legacy Waste Identified in the Most Recent Version of the Annual STP Update: December 5, 2003†. (COMPLETED)

3.2 Mixed Waste Streams for which Technology Exists But Needs Adaptation or for which No Technology Exists

The FCP has not identified any mixed waste streams for which significant adaptation and technology development is required for treatment. After final characterization, which will occur as a part of the project management process, certain variances may be requested. Specifically, there may be some constituents for which the LDR treatment standard is incineration. The FCP may request a variance to allow chemical destruction or stabilization. Also, certain debris may require a technology which is not practical, therefore, a variance may be requested for these wastes.

3.3 Mixed Waste Streams Requiring Further Characterization or for which Technology Assessment Has Not Been Done

All FCP mixed low level waste streams identified in the STP have a Preferred Option for treatment.

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APPENDIX B

Uranium Waste Disposition (UWD) Materials, T-Hopper Wastes and Small Volume-Waste Streams Inventory

FFCACT SITE TREATMENT PLAN FY2004

UWD

F.No	Inv No	MEF Description	EPA Codes	Net Wt (kg)
7	W234711	CONTAMINATED OIL, INSOLUBLE	D039, D040, F001	210.5
7	W234852	CONTAMINATED OIL, INSOLUBLE	D039, D040, F001	172.4
7	W234882	CONTAMINATED OIL, INSOLUBLE	D039, D040, F001	129.7
3	W207823	BARIUM CONTAMINATED WASTES FROM RMI	D005	80.7
3	W233544	CONTAMINATED NON-BURNABLES	D006, D007, D008	2.3
3	W234484	CONTAMINATED NON-BURNABLES	D006, D007, D008	80.7
	W236718	LITHIUM BATTERIES	D003	39
	W233409	THORIUM NITRATE SOLUTION	D002, D006, D007	2.7
	W236136	EXPIRED ORGANIC STANDARDS - PCB	D001, F027, P004, P022, P037, P048, P050, P051, P059, P071, P082, P094, P123, U002, U004, U012, U019, U021, U022, U024, U027, U028, U031, U036, U037, U039, U043, U044, U045, U047, U048, U050, U052, U055, U057, U060, U061, U066, U068, U070, U072, U073, U075, U076, U077, U078, U079, U080, U081, U082, U083, U084, U088, U101, U102, U105, U106, U112, U120, U127, U128, U129, U130, U131, U141, U154, U159, U161, U165, U167, U168, U169, U170, U171, U179, U183, U185, U187, U188, U191, U192, U196, U203, U207, U208, U209, U210, U220, U226, U227, U228, U239	12.2
	W234848	SULFURIC ACID & PIPES	D002	361.1
	W234873	SULFURIC ACID & PIPES	D002	360.2
	W234874	SULFURIC ACID & PIPES	D002	361.5
	W207183	DUST AND DUST BAGS FROM TRANE INCINERATOR	D008, F002	176.9
	W207184	DUST AND DUST BAGS FROM TRANE INCINERATOR	D008, F002	81.6
	W236141	CONSOLIDATED SAMPLES - CONTAMINATED WATER OR SUMP LIQUOR	F002, F005	6.8
	W230664	LIQUIDS FROM THE LEGACY LOW LEVEL LIQUIDS PROJECT	D039, F002	67.1
4	W514065	U308, +8MESH, LOWF	D007, F001, F002	377.8
3	W236910	WASTE SOLVENT FROM BOILER PLANT	D001, D008, D029, F002	15
	W191046	NI CD BATTERIES	D006	17.7

FFCACT SITE TREATMENT PLAN FY2004

UWD

No	Inv No	MEF Description	EPA Codes	Net Wt (kg)
	W246713	TETRACHLOROETHYLENE - ARCHIVED (COVERED BY MEF 60011)		5

2560.9

Inventory: 20
Net Wt (kg): 2560.9

APPENDIX C

Newly-Identified/Newly-Generated Waste Streams in FY2004 Site Treatment Plan Inventory

**NEWLY-IDENTIFIED/NEWLY-GENERATED WASTE STREAMS IN FY2004 STP
INVENTORY**

MEF NUMBER	INVENTORY NUMBER	MEF DESCRIPTION	STP PROJECT	EPA CODES	NET WEIGHT (KG)
2120	W236718	Lithium Batteries	UWD	D003	39
TBD	W246713	Samples	UWD	TBD	5

Total Inventory: 2

Total Net Wt (kg): 44

APPENDIX D

Approved Site Treatment Plan

**FERNALD CLOSURE PROJECT
PROPOSED SITE TREATMENT PLAN
PLAN VOLUME**

1.0 PURPOSE AND SCOPE

1.1 The U.S. Department of Energy (DOE) is required to prepare a plan for developing treatment capacities and technologies for each facility at which DOE generates or stores mixed waste, pursuant to Section 3021(b) of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C 6939c(b), as amended by Section 105(a) of the Federal Facility Compliance Act [(P.L.102-386) (FFCAct)]. The mixed waste must be treated or otherwise managed in accordance with the land disposal restriction standards under Section 3004 of RCRA. Upon submission of the plan to the appropriate regulatory agency, the FFCAct requires the recipient agency to solicit and consider public comments, and approve, approve with modification, or disapprove the plan within six months. The agency is to consult with EPA and any State in which a facility affected by the plan is located. Upon approval of a plan, the regulatory agency must issue a FFCAct Order requiring compliance with the approved plan.

1.2 The DOE Fernald Office, hereinafter referred to as DOE-FCP, has prepared this Proposed Site Treatment Plan (PSTP) for mixed waste at the Fernald Closure Project (FCP), which identifies how DOE-FCP proposes to obtain treatment of the site's mixed waste or develop technologies for treatment where technologies do not exist or need modification. For some waste streams, a plan and schedules for characterizing wastes, undertaking technology assessments, and for providing the required plans and schedules for developing capacities and technologies, as appropriate, are provided.

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2.0 IMPLEMENTATION OF THE PROPOSED SITE TREATMENT PLAN

The mechanisms and procedures for administering and implementing the treatment plans and schedules in Sections 3.0 through 5.0 of the Plan Volume will be established in the FFCAct Order.

2.1 This section intentionally left blank.

2.2 Modification of Technologies

Emerging or new technologies not yet considered that provide opportunities to manage waste more safely, effectively, and at lower cost than the current technologies identified in the PSTP may be identified in the future. Working closely with regulators and other interested parties during the implementation of the PSTP, DOE will continue to evaluate and develop technologies that offer potential advantages in the areas of public acceptance, risk abatement, performance, and life-cycle cost. Should more promising technologies be identified, DOE may request a modification of its PSTP in accordance with provisions of the implementing FFCAct Order.

3.0 MIXED LOW LEVEL WASTE STREAMS

The Plan Volume of the PSTP establishes overall schedules for achieving compliance with LDR requirements for mixed wastes at the FCP. The schedules include those activities required to bring existing waste treatment facilities or technologies into operation, and those required to develop new facilities and capacity for treatment. The assumptions upon which individual schedules are dependent are contained in Sections 3.0 through 5.0 of the Background Volume. The schedules may be affected if the underlying assumptions change. The project completion dates provided on the schedules do not include final disposition of treatment residues. Dates provided in the Plan Volume schedules become enforceable through the procedure established in the implementing FFCAct Order.

3.1 Mixed Waste Streams for which Technology Exists

The FCP has identified eleven Preferred Options for the treatment of characterized mixed low level waste streams in inventory. Only minor modifications of the Preferred Option, if any, are needed to treat the wastes. These preferred options and their respective waste streams are presented in Sections 3.1.1 through 3.1.11.

3.1.1 Waste Stream for which Technology Exists - Preferred Option: Hydrofluoric Acid (HF) Neutralization System

Project Name: HF RCRA Closure

The FEMP mixed waste stream for which the Preferred Option is identified as the HF Neutralization System is listed in Table 1 of the Background Volume. Treatment can be accomplished through the use of on-site existing facilities. Treatment of this single waste stream is planned as a RCRA Closure of a Hazardous Waste Management Unit (HWMU) using the HF Neutralization System. Detailed information on this treatment is located in Section 3.1.1 of the Background Volume.

Consistent with closure plan requirements, this project is expected to be completed within 180 days after final approval of the Closure Plan Information and Data (CPID) from OEPA. The schedules presented below reflect dates established by the approved closure plan.

MIXED WASTE STREAM FOR WHICH TECHNOLOGY EXISTS

Project Start Date: January 31, 1992 (**COMPLETED**)

Schedule for submitting all applicable permit applications: Not applicable. Treatment of this waste stream will be performed under a RCRA Closure of a HWMU. The CPID for this project was submitted on July 17, 1994 and approved by the OEPA in February 1995. (**COMPLETED**)

Schedule for entering into contracts: The contract necessary for this project is in place. (**COMPLETED**)

Schedule for initiating construction: December 31, 1994 (**COMPLETED**)

Schedule for conducting systems testing: June 30, 1995 (**COMPLETED**)

Schedule for commencing operations: June 30, 1995 (**COMPLETED**)

Schedule for processing backlogged and currently generated mixed wastes: June 30, 1995 through August 30, 1995 (**COMPLETED**)

Project Completion Date: September 30, 1995 (**COMPLETED**)

PROJECT UPDATE

Treatment of this waste stream was completed as scheduled.

3.1.2 Waste Stream for which Technology Exists - Preferred Option: Uranyl Nitrate Hexahydrate (UNH) Treatment System

Project Name: UNH Neutralization System

The FEMP mixed waste stream for which the Preferred Option is identified as the UNH Treatment System is listed in Table 2 of the Background Volume. For clarity, it should be noted the scope of waste treatment under this Preferred Option is more extensive than that covered by the Director's Final Findings and Orders (DF&O), dated December 27, 1994 directing treatment of UNH material. Specifically, this Preferred Option includes treatment of approximately 30,000 gallons of radiologically contaminated nitric acid from the Nitric Acid Recovery (NAR) system. This waste stream was not included within the above-referenced DF&O. Treatment of the UNH waste stream associated with this preferred option was completed by September 25, 1995. Treatment can be accomplished through the use of on-site existing facilities augmented with new piping and new skid-mounted pumps. The FEMP is a CERCLA site and has been working with USEPA and OEPA to treat this waste on-site through CERCLA Removal Action #20. Detailed information on this treatment is located in Section 3.1.2 of the Background Volume.

The construction phase of the UNH Neutralization System is scheduled and proceeding.

MIXED WASTE STREAM FOR WHICH TECHNOLOGY EXISTS

Project Start Date: November 30, 1993 (COMPLETED)

Schedule for submitting all applicable permit applications: Not applicable. No permit required. Treatment of this waste will be performed under CERCLA Removal Action #20. (COMPLETED)

Schedule for entering into contracts: No contracts anticipated.

Schedule for initiating construction: May 31, 1994 (COMPLETED)

Schedule for conducting systems testing: March 24, 1995 (COMPLETED)

Schedule for commencing operations: Operations is the date the FEMP began treatment utilizing this Preferred Option.
March 24, 1995 (COMPLETED)

Schedule for processing backlogged and currently generated mixed wastes: March 24, 1995 - April 30, 1996 (COMPLETED)

Project Completion Date: April 30, 1996† (COMPLETED)

† Denotes milestone dates

3.1.3 Waste Stream for which Technology Exists - Preferred Option: Thorium Nitrate Treatment System

Project Name: Thorium Nitrate

The FEMP mixed waste stream for which the Preferred Option is identified as Thorium Nitrate Treatment System is listed in Table 3 in the Background Volume. Treatment of this single waste stream is planned under CERCLA Removal Action #9. Treatment of this waste stream will occur on-site using a vendor provided service. Detailed information on the alternatives is located in Section 3.1.3 of the Background Volume.

MIXED WASTE STREAM FOR WHICH TECHNOLOGY EXISTS

Project Start Date: December 31, 1994 **(COMPLETED)**

Schedule for submitting all applicable permit applications: Not applicable. Treatment of this waste stream will be performed under CERCLA Removal Action #9. The Project Specific Plan for this project was submitted in August 31, 1995. **(COMPLETED)**

Schedule for entering into contracts: Award contract with vendor for treatment. May 31, 1995 **(COMPLETED)**

Schedule for initiating construction: Vendor will supply and mobilize equipment needed for treatment. August 31, 1995 **(COMPLETED)**

Schedule for conducting systems testing: Systems testing will determine Operational Readiness using water to simulate operations. September 30, 1995 **(COMPLETED)**

Schedule for commencing operations: Operations will begin with the recirculation of the thorium waste as specified in the Project Specific Work Plan. September 30, 1995 **(COMPLETED)**

Schedule for processing backlogged and currently generated mixed wastes: September 30, 1995 - February 29, 1996 **(COMPLETED)**

Project Completion Date: February 29, 1996† **(COMPLETED)**

† Denotes milestone dates

3.1.4 Waste Streams for which Technology Exists - Preferred Option: Wastewater Treatment, Phase 1

Project Name: Liquid Mixed Waste Project

The FCP mixed waste streams for which the Preferred Option is identified as Wastewater Treatment are located in Table 4 of the Background Volume. Treatment of these waste streams will occur on-site in an existing facility. This project is part of the Liquid Mixed Waste Project. Liquids will be bulked, tested and a determination will be made whether they are acceptable for the FEMP Wastewater Treatment System. Detailed information on this treatment is located in Section 3.1.4 of the Background Volume.

The Liquid Mixed Waste Project is designed to address treatment and disposal of all liquid mixed waste currently in storage through the WWTS or the TSCA Incinerator Preferred Options.

MIXED WASTE STREAMS FOR WHICH TECHNOLOGY EXISTS

Project Start Date: October 31, 1994 (COMPLETED)

Schedule for submitting all applicable permit applications: Not applicable. This project was initiated as part of CERCLA Removal Action #9 (RA #9). RA #9 was modified to clarify the scope of work and is consistent with the FCP's Investigation Derived Waste (IDW) policy and NPDES permit and meets the requirements of the RCRA wastewater treatment unit exclusion. Activities conducted under RA #9 have been incorporated into the Operable Unit 3 Final Record of Decision (ROD).

Schedule for entering into contracts: No contract is required.

Schedule for initiating construction: No construction is required for this project.

Schedule for conducting systems testing: Tank set-up and testing of WWTS is complete. October 31, 1994 (COMPLETED)

Schedule for commencing operations: Operations is the date the FCP will begin treatment utilizing this Preferred Option. February 29, 1996† (COMPLETED)

Schedule for processing backlogged and currently generated mixed wastes: February 29, 1996 through September 30, 1996 (COMPLETED)

Project Completion Date: September 30, 1996† (COMPLETED)

3.1.4.1 Waste Streams for Which Technology Exists - Preferred Option: Wastewater Treatment, Phase II

Section 3.1.4.1 provides updated schedules for treating FCP mixed waste streams for which the preferred option is Wastewater Treatment. As part of Phase II of this preferred option, these waste streams will be treated on-site using the FCP's Advanced Waste Water Treatment System (AWWT).

Waste waters are introduced into the AWWT-Slurry Dewatering Facility for precipitation and filtration of metal constituents. Filtrate from this process is directed to AWWT Phase 2 which consists of an activated carbon adsorption unit operation. Organic constituents are removed with the filter cake from the precipitation/filtration process or treated through AWWT Phase 2 if they remain in the filtrate. This project is scheduled to be completed by June 30, 2004.

Schedule for Initiating Treatment of Mixed Waste Identified in the 1998 STP Annual Update: November 1, 1999† **(COMPLETED)**

Project Completion Date: March 1, 2000† **(COMPLETED)**

Schedule for Initiating Treatment of Mixed Waste Identified in the Most Recent Version of the STP Annual Update: March 1, 2001† **(COMPLETED)**

Project Completion Date: June 30, 2001† **(COMPLETED)**

Schedule for Initiating Treatment of Mixed Waste Identified in the 2001 STP Annual Update:
December 31, 2001† **(COMPLETED)**

Project Completion Date: June 30, 2002† **(COMPLETED)**

Project Completion Date: Mixed waste identified in the most recent version of the STP Annual Update will be treated within six months following submittal of the update (by June 30th)†

† Denotes milestone dates

3.1.5 Waste Streams for which Technology Exists - Preferred Option: Ohio Mobile Stabilization System

Project Name: Stabilization Project

The FEMP mixed waste streams for which the Preferred Option is identified as Ohio Mobile Stabilization System are listed in Table 5 of the Background Volume. Treatment of these waste streams will occur on-site using a vendor provided mobile service. Detailed information on this treatment is located in Section 3.1.5 of the Background Volume.

The FEMP published a request for information in the *Commerce Business Daily*. Multiple responses were received from companies capable of performing Mobile Stabilization.

The FEMP implemented the Stabilization Project as part of CERCLA Removal Action #9 (RA #9). Treatment operations began after obtaining Ohio EPA approval. Activities conducted under Removal Action #9 have been incorporated into the Operable Unit 3 Final Record of Decision (ROD).

MIXED WASTE STREAMS FOR WHICH TECHNOLOGY EXISTS

Project Start Date: October 31, 1994 (COMPLETED)

Schedule for submitting all applicable permit applications: Not applicable. This project was initiated as part of RA #9. Activities conducted under Removal Action #9 have been incorporated into the Operable Unit 3 Final Record of Decision (ROD). The Project Specific Plan for this project was submitted in September 30, 1995. (COMPLETED)

Schedule for entering into contracts: May 31, 1995 (COMPLETED)

Schedule for initiating construction: Vendor will supply a fully constructed mobile system. October 31, 1995† (COMPLETED)

Schedule for conducting systems testing: November 30, 1995† Complete Operational Readiness Review. (COMPLETED)

Schedule for commencing operations: Operations is the date the FEMP will begin treatment utilizing this Preferred Option. November 30, 1995† (COMPLETED)

Schedule for processing backlogged mixed wastes: November 30, 1995 through September 30, 1996 (COMPLETED)

3.1.5 Waste Streams for which Technology Exists - Preferred Option: Ohio Mobile Stabilization System (cont.)

Project Completion Date: September 30, 1996† (COMPLETED)

† Denotes milestone dates

3.1.6 Waste Streams for which Technology Exists - Preferred Option: Ohio Mobile Chemical Treatment System

Project Name: Chemical Treatment Project

The FEMP mixed waste streams where the Preferred Option is identified as Ohio Mobile Chemical Treatment System are listed in Table 6 of the Background Volume. Treatment of these waste streams will occur on-site using vendor provided services, except for some debris (as defined in RCRA) macroencapsulation, which will occur off-site at a commercial facility. Detailed information on this treatment is located in Section 3.1.6 of the Background Volume.

Multiple contracts will be entered into for the performance of treatment for each technology in the Chemical Treatment Project. Specific work plans will be developed for each on-site treatment technology. The technology specific work plans will be submitted to the State for approval. Construction of the facilities will be initiated upon State approval of the technology specific work plans.

MIXED WASTE STREAMS FOR WHICH TECHNOLOGY EXISTS

Project Start Date: October 31, 1994 (COMPLETED)

Schedule for submitting all applicable permit applications: Not applicable. It is anticipated that this project will be initiated as part of CERCLA Removal Action #9. This project was initiated as part of CERCLA Removal Action #9. Activities conducted under this removal action have been incorporated into the Operable Unit 3 Final Record of Decision (ROD). The Draft Work Plan for this project will be submitted in November 30, 1995.† (COMPLETED)

3.1.6 Waste Streams for which Technology Exists - Preferred Option: Ohio Mobile Chemical Treatment System (cont.)

A schedule for commencing operations will be provided in each technology project specific work plan submitted for approval.

Schedule for entering into contracts: The contract for implementation of the first technology will be entered into in April 30, 1996.†(COMPLETED)

The project specific work plan for each technology will be submitted for approval within 120 days of entering into the contract.†

Schedule for initiating construction: Vendor will supply a fully constructed mobile system. Construction for each technology will be initiated within 30 days of approval of the project specific work plan.†

Schedule for conducting systems testing: Operational Readiness and systems testing will be completed 120 days after completion of treatment facility construction.†

Schedule for commencing operations: Treatment will be initiated within 14 days of completion of system testing for each technology.†

Schedule for processing backlogged and currently generated mixed wastes: February 28, 1997 through September 30, 2001.
A schedule for processing backlogged and currently generated mixed waste will be provided by technology in each project specific work plan submitted for approval.

Project Completion Date: September 30, 2001† The last project conducted as part of the Ohio Mobile Chemical Treatment System was completed on August 19, 1998.

† Denotes milestone dates

3.1.7 Waste Streams for which Technology Exists - Preferred Option: TSCA Incinerator, Phase 1

Project Name: Liquid Mixed Waste Project

The FCP mixed waste streams (liquid portion only) for which the Preferred Option is identified as the TSCA Incinerator are listed in Table 7 of the Background Volume. Treatment of these waste streams will occur off-site at the DOE K-25 site in Oak Ridge, Tennessee.

The FCP is allotted capacity at the TSCA Incinerator on a fiscal year basis. Detailed information on this treatment is located in Section 3.1.7 of the Background Volume.

Bulking and transport of these wastes was implemented as part of CERCLA Removal Action #9 (RA #9). These activities began after obtaining Ohio EPA approval. Activities conducted under this removal action have been incorporated into the Operable Unit 3 Final Record of Decision (ROD).

The milestone dates for TSCA Incinerator are shipping dates. The shipping dates are dependent on acceptance of the waste by the TSCA Incinerator and the State of Tennessee.

The Liquid Mixed Waste Project is designed to address treatment and disposal of all liquid mixed waste currently in storage through the WWTS or the TSCA Incinerator Preferred Options.

MIXED WASTE STREAMS FOR WHICH TECHNOLOGY EXISTS

Project Start Date: October 1994 (COMPLETED)

Schedule for submitting all applicable permit applications: Not applicable. This project was initiated as part of RA #9. (COMPLETED)

Schedule for entering into contracts: Contracting complete (DOE facility to DOE facility agreement). (COMPLETED)

Schedule for initiating construction: No construction is required for this project.

Schedule for conducting systems testing: Tank set-up and testing were completed in October 1994. (COMPLETED)

3.1.7 Waste Streams for which Technology Exists - Preferred Option: TSCA Incinerator (cont.)

Schedule for commencing operations: Operations began with the bulking of waste streams. June 30, 1995 **(COMPLETED)**

Schedule for processing backlogged and currently generated mixed wastes: June 30, 1995 through September 30, 1996 **(COMPLETED)**

Project Completion Date: Shipments from the FEMP to the TSCA Incinerator will be complete by September 30, 1996† **(COMPLETED)**

3.1.7.1 Waste Streams for which Technology Exists - Preferred Option: TSCA Incinerator, Phase II

Phase II of the TSCA Incinerator Preferred Option provides updated schedules for the shipment of individual batches of liquid mixed waste to the TSCA Incinerator and/or commercial mixed waste incineration facilities. These schedules are based on the TSCA Incinerator Burn Plan and commercial facility waste acceptance timeframes. Since capacity at the TSCA Incinerator is allocated on a fiscal year basis, schedules for shipping additional batches of liquid mixed waste will be established in future amendments to the STP. This project is scheduled to be completed by October 31, 2004.

Schedule for Completing Shipment: Shipment of Batch 9 to the TSCA Incinerator will be completed by September 30, 2000†. **(COMPLETED)**

Shipment of Batch 10 to the TSCA Incinerator or a commercial mixed waste incineration facility will be completed by September 30, 2001†. **(COMPLETED)**

Shipment of Batch 11 to the TSCA Incinerator will be completed by September 30, 2002†. **(COMPLETED)**

Schedule for Providing Additional Milestones for Shipment: Schedules for shipping additional batches of mixed waste to the TSCA Incinerator or a commercial mixed waste incineration facility will be provided by December 31, 2001†. **(COMPLETED)**

Schedule for Completing Shipment: Shipment of Batch 12 to the TSCA Incinerator or a commercial mixed waste incineration facility will be completed by October 31, 2002 †. **(COMPLETED)**

Schedule for Completing Shipment: Shipment of Batch 13 to the TSCA Incinerator or a commercial mixed waste incineration facility will be completed by September 30, 2003 †. **(COMPLETED)**

Schedule for Completing Shipment: Shipment of Batch 14 to the TSCA Incinerator or a commercial mixed waste incineration facility will be completed by October 31, 2004 †.

† Denotes milestone dates

3.1.8 Waste Streams for Which Technology Exists - Organic Treatment Project

The Organic Treatment Project involves the off-site shipment of mixed wastes containing primarily organic constituents and debris to a commercial facility for treatment under the DOE Broad-Spectrum contract or an alternate off-site mixed waste treatment contract. Free liquids may be decanted from these containers for treatment on-site through AWWT or inclusion in a TSCA Incinerator batch prior to shipment. This project is scheduled to be completed by September 30, 2004.

Schedule for Entering into Contract: March 31, 1999†(COMPLETED)

Schedule for Initiating Preparation of Wastes for Transport: September 15, 1999†
(COMPLETED)

Schedule for Completing Shipment for Off-Site Treatment of Mixed Wastes Identified in the Most Recent Version of the STP Annual Update: September 30, 2004†

† Denotes milestone dates

3.1.9 Waste Streams for Which Technology Exists - Inorganic Treatment Project

The Inorganic Treatment Project involves the shipment of mixed waste containing primarily inorganic constituents and debris off-site to a commercial facility for treatment. Free liquids may be decanted from these containers for treatment on-site through AWWT prior to shipment. This project is scheduled to be completed by September 30, 2004.

Schedule for Entering into Contract: March 31, 2001† (COMPLETED)

Schedule for Initiating Preparation of Wastes for Transport: October 1, 2001†(COMPLETED)

Schedule for Completing Shipment for Off-Site Treatment of Mixed Wastes Identified in the Most Recent Version of the Annual STP Update: September 20, 2002† (COMPLETED)

Schedule for Completing Shipment for Off-site Treatment of Mixed Wastes Identified in the Most Recent Version of the STP Update : Mixed waste will be shipped off-site for treatment within nine months following submittal of the STP Annual Update (by September 30th)†

† Denotes milestone dates

3.1.10 Waste Streams for Which Technology Exists - Uranium Waste Disposition (UWD) Materials, T-Hopper Wastes, and Small-Volume Waste Streams

The FCP has identified mixed waste which is primarily included in a population of uranium materials declared waste in December 1998. A portion of these materials are enriched (contain > 1% U235) and may require blending to reduce uranium content prior to processing. In addition, the FCP has identified approximately 270 kilograms of mixed waste containing transuranic constituents above 100 nCi/g and 170 kilograms of mixed low-level waste formerly stored in two T-hopper containers and several small-volume waste streams with limited disposition pathways. This project is scheduled to be completed by September 30, 2005.

Schedule for Entering into Contract: The contract for implementation of this preferred option will be entered into by June 30, 2003†. **(COMPLETED)**

Schedule for Providing Additional Milestones for Treatment: Additional milestones for treating the UWD inventory and the T-Hopper Wastes will be provided by December 31, 2003†. **(COMPLETED)**

Schedule for Completing Shipments for Off-Site Treatment of the UWD inventory, T-Hopper Wastes and Small-Volume Waste Streams Identified in the Most Recent Version of the Annual STP Update: September 30, 2005†.

† Denotes milestone dates

3.1.11 Waste Streams for Which Technology Exists - Thorium Legacy Mixed Waste Stabilization Project

The Thorium Legacy Mixed Waste Stabilization Project involves treatment of the thorium legacy mixed waste inventory. These wastes will be decanted as need, prepared and packaged as required for shipment to the selected off-site vendor for treatment and disposal. This project has been completed.

Schedule for Entering into Contract: The contract for implementation of this preferred option will be entered into by September 30, 2002 †(COMPLETED)

Schedule for Providing Additional Milestones for Treatment: Additional milestones for treating the thorium legacy mixed waste inventory will be provided by September 30, 2002 †(COMPLETED)

Schedule for Initiating Preparation of Wastes for Transport: Thorium legacy mixed waste onsite processing and packaging will begin by June 30, 2003†. (COMPLETED)

Schedule for Completing Shipments for Off-Site Treatment of the Thorium Legacy Waste Identified in the Most Recent Version of the Annual STP Update: December 5, 2003†. (COMPLETED)

3.2 Mixed Waste Streams for which Technology Exists But Needs Adaptation or for which No Technology Exists

The FCP has not identified any mixed waste streams for which significant adaptation and technology development is required for treatment. After final characterization, which will occur as a part of the project management process, certain variances may be requested. Specifically, there may be some constituents for which the LDR treatment standard is incineration. The FCP may request a variance to allow chemical destruction or stabilization. Also, certain debris may require a technology which is not practical, therefore, a variance may be requested for these wastes.

3.3 Mixed Waste Streams Requiring Further Characterization or for which Technology Assessment Has Not Been Done

All FCP mixed low level waste streams identified in the STP have a Preferred Option for treatment.

4.0 This section intentionally left blank.

5.0 This section intentionally left blank.