



Department of Energy

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OCT 09 2001

3895

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 45402-2911

DOE-0007-02

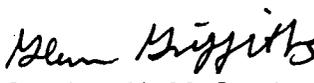
Dear Mr. Pardi:

DRAFT CONTAINER MANAGEMENT PLAN

This letter transmits the Fernald Environmental Management Project Draft Container Management Plan (CMP) for your review and subsequent approval. The CMP is a revision to the Drum Management Plan that has been in effect since August of 1990. This document has been prepared to reflect the numerous changes since the original plan was submitted and has been expanded from drum management to container management. The enclosed Executive Summary further explains the rationale for the CMP.

If you have any questions regarding this plan, please contact Mr. Ed Skintik at (513) 648-3151.

Sincerely,

for 
Stephen H. McCracken
Director

FEMP:Skintik

Enclosure: As stated

cc: w/enclosure:
P. Harris, OEPA
Administrative Record, MS78

Mr. Paul Pardi

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DOE-0007-02

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cc: w/o enclosure

K. Klei, OH/FEMP

B. Brucken, Fluor Fernald, Inc./MS65-2

J. Buckley, Fluor Fernald, Inc./MS52-3

D. Carr, Fluor Fernald, Inc./MS2

S. Eleton, Fluor Fernald, Inc./MS69

R. Holmes, Fluor Fernald, Inc./MS3

B. Huffman, Fluor Fernald, Inc./MS52-3

B. Irvine, Fluor Fernald, Inc./MS28

J. Jameson, Fluor Fernald, Inc./MS69

T. Poff, Fluor Fernald, Inc./MS65-2

D. Sizemore, Fluor Fernald, Inc./MS5

CONTAINER MANAGEMENT PLAN EXECUTIVE SUMMARY

In May 2001, the Department of Energy (DOE) commenced a review of the existing Drum Management Plan (DMP) for the Fernald Environmental Management Project (FEMP). The DOE determined that the DMP should be revised because the site's physical condition had substantially changed in the ten years since the last revision, primarily due to on-going remediation activities. The DOE has prepared a Container Management Plan (CMP) for submittal to the Ohio Environmental Protection Agency (OEPA) for its review and approval. Upon approval, the CMP will supercede the DMP.

The 2001 revised plan describes the FEMP procedures and processes for complying with the Ohio hazardous waste management rules that pertain to containerized waste management, the 1988 Consent Decree, as modified by the 1993 Stipulated Amendment to the Consent Decree (SACD), and any other applicable hazardous waste regulations.

The CMP describes in detail the major changes. The following is a summary of those changes.

- ◆ The CMP includes all containers in which hazardous, mixed waste, and uncharacterized waste is stored. This is consistent with the beneficial changes that have occurred for waste management at the FEMP since 1991.
- ◆ Sections have been added, namely Section 1.2 (Background) and Section 1.3 (Operational Changes/Improvements), to provide the historical information and identify the changes to site conditions and operations.
- ◆ A cross-reference table is included as an attachment to the CMP. Its purpose is to facilitate the identification of the SACD requirement and the CMP section addressing that requirement.
- ◆ The description of the storage areas has been revised. This includes the upgrades completed at Plant 1 Pad since submittal of the 1991 DMP, and includes Building 64/65 (used to store containers of thorium mixed waste) and the four additional container storage units identified in the Part B Permit Application (Buildings 68, 56, 79 and 80). This section also identifies Building 56 and 80 as inactive hazardous waste management storage units.
- ◆ Information on inspections has been revised to include the annual inspection of buildings identified in the Part B Permit Application that are not currently being used for hazardous waste storage (Buildings 56 and 80), and the required inspections for Building 64/65.
- ◆ Criteria and procedures used in conducting inspections of hazardous waste storage areas have also been updated to reflect current site practices.

- ◆ Sections 6.0 (Indoor Storage) and 7.0 (Material Storage Evaluation) of the 1991 DMP have been revised to identify the FEMP procedures for storage of uncharacterized waste.
- ◆ Information about the FEMP repack/overpack area operations have been updated.
- ◆ Releases/spill response actions have been revised. These changes are consistent with the SACD and the hazardous waste management rules. It was determined that these changes would not impact harm to human health or the environment. These changes are:
 - 1) Type I definition has been changed for consistency with Section 3.8(c) of the SACD;
 - 2) The CMP meets the SACD requirement to manage (by repair or overpack/repack) hazardous/mixed/uncharacterized waste containers within twenty-four (24) hours of discovery, except where accomplishing this will violate DOE safety processes and procedures. The CMP also emphasizes that the requirements for remediating Type I and II containers will be met once all required safety issues have been resolved.
 - 3) The CMP provides examples of safety parameters that will be considered during a response;
 - 4) Allows for repair of Type I containers and states that repair will be the preferred option;
 - 5) Revised response actions for Type II containers to allow for additional flexibility in managing these containers;
 - 6) Further defines the criteria used in identifying and responding to Type III containers, and;
 - 7) Addresses changes in administrative requirements.
- ◆ Section 7.0 has been added to provide a mechanism for making minor changes and revisions to the CMP.
- ◆ Section 8.0 is the Notice provision for communications that are made pursuant to the CMP.

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**DRAFT
CONTAINER MANAGEMENT
PLAN**

**CONTAINER MANAGEMENT PLAN
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1.0 INTRODUCTION

1.1 Purpose

The Container Management Plan (the CMP) identifies the primary aspects of the program used at the Fernald Environmental Management Plan for the management of containerized wastes. The program is intended to minimize the environmental impact of stored containers of hazardous, mixed and uncharacterized waste.

1.2 Background

For purposes of the CMP, references to "RCRA" shall mean the Resource Conservation and Recovery Act, as amended and the Ohio Hazardous Waste Management Rules, as amended. References to "the SACD" shall mean the 1988 Consent Decree and the 1993 Stipulated Amendment to the Consent Decree. References to "Stipulated Amendment" shall refer solely to the 1993 Stipulated Amendment to the Consent Decree.

Pursuant to the 1988 Consent Decree with the Ohio Environmental Protection Agency (OEPA), the Department of Energy (DOE) was required to provide internal operational and administrative controls pertaining to hazardous waste management, including drum storage. Some of these are included in the August 1990 Drum Management Plan; other actions and controls are found in the RCRA Part B Permit application. In 1991, the Drum Management Plan (the DMP) was revised and has remained unchanged since that revision. The Stipulated Amendment formally acknowledged the submittal of the Drum Management Plan.

In 1996, Ohio EPA issued a Director's Findings & Orders (DF&O) for the FEMP. The DF&O exempted the FEMP from compliance with certain parts of Ohio Revised Code (ORC) Sections 3734.02 and 3734.05 and Ohio Administrative Code (OAC) 3745-50. The provisions in question would have required the DOE to obtain a hazardous waste facility installation and operation permit for the hazardous waste storage activities described in the DF&O and the RCRA Part B Permit Application. The FEMP facility is exempt from these requirements provided that all the terms and conditions of its Part B permit application (latest version) and all other applicable hazardous waste laws and regulations are complied with.

In April 2001, the DOE received a Notice of Violation from the OEPA alleging noncompliance with the DMP. As part of its response to the NOV, the DOE reviewed the DMP and determined that current FEMP physical conditions and operations should be reflected in the plan.

1.3 Operational Changes/Improvements

Some of the site conditions and operational changes that have occurred at the FEMP since the 1991 DMP revision are:

- In 1990, the Plant 1 Pad was an unsealed, uncovered, concrete pad with incomplete drainage controls and limited covered storage. The USEPA and OEPA approved CERCLA Removal Action No. 7. Pursuant to that removal action, the Plant 1 Pad Upgrade was begun in 1992, and completed in 1995. This upgrade included resurfacing, coating, and berming of the Pad, and the installation of three permanent tension structures (TS-4, 5, & 6), which provide for covered storage. These upgrades were followed by the later addition of several hazardous waste storage lockers designed to store ignitable hazardous waste.
- In 1991, several of the FEMP's former production plants (such as Plant 6) were being utilized to provide covered storage for certain uncharacterized waste drums and nuclear material. In the late 1990's, a relocation effort was initiated to move all general waste container storage from other site locations to the Plant 1 Pad and tension support structures TS-4, 5, & 6. The Plant 1 Pad and its facilities are now the primary location for containerized waste storage at the FEMP (including hazardous/mixed and uncharacterized waste containers). Other areas currently being used for the storage of specific hazardous/mixed and uncharacterized waste types include Building 64/65, Building 68, and Building 79.
- The Stipulated Amendment identified a large population of drummed wastes for which final characterization was pending. Characterization for these wastes was completed in accordance with the schedules in the Stipulated Amendment. Since 1991, these wastes have been characterized and managed in accordance with the waste determination plan.
- Pursuant to the 1992 Federal Facility Compliance Act, the FEMP and OEPA signed a DF&O in October, 1995 that included, in part, a Site Treatment Plan (STP) for FEMP mixed wastes. The STP includes schedules for the treatment of FEMP mixed waste. In accordance with the STP, a significant portion of the FEMP mixed waste has been treated.
- Continuous evaluation and improving of the FEMP safety procedures for container management have resulted in the venting of gas-generating drums for those wastes that include gases such as hydrogen; safer storing & handling of various material types; and increased use of hoisting & rigging.

- In 1991, the FEMP primarily used standard 55-gallon metal drums for waste storage. The DOE determined that other types of storage containers were better suited to specific material types and quantities. These containers include plastic and poly-lined drums, metal boxes, portable tanks, sea-land containers and wooden boxes.

2.0 HAZARDOUS WASTE STORAGE UNITS

OEPA has approved the use of certain FEMP facilities/areas for the storage of containerized hazardous and mixed waste. These designated facilities/areas are:

Plant 1 Pad. In 1992, upgrade and renovation of the Plant 1 Pad commenced, in accordance with Removal Action 7. The following are some of the major changes that were made to the pad.

- Dust, loose material and other debris were removed and the pad was coated with a polyethylene surface sealant/barrier prior to installing a new layer of concrete. This minimizes the likelihood that a release from a container would cause harm to the environment or human health.
- A concrete curb was installed to provide containment as well as run on and run-off control where needed. Stormwater runoff from the pad is collected and treated through the Advanced Waste Water Treatment System (AWWT);
- Three tension support structures (TS-4, TS-5 and TS-6) were installed to provide covered storage;
- New wearing surfaces were covered with 86 mils of chemically resistant polyurethane or silicon coating, and;
- The trenches in the controlled areas were coated with an epoxy sealant.

TS-4, TS-5 and TS-6 are used to provide covered storage on the Plant 1 Pad. Diked areas within the three structures provide secondary containment in accordance with OAC 3745-55-75 requirements for the storage of containers of hazardous waste with free liquids. The two larger structures (TS-4 and TS-5) provide 70,000 square feet of storage area. The third structure (TS-6) provides 22,500 square feet of storage. The containment for each structure includes a centrally located trench drain. These drains have no connection to site drainage systems and are intended to locally collect accumulated liquid from a leak or spill. The trench drains are sealed with a chemically resistant epoxy coating. The concrete bases for the structures have been sealed with an 86 mil chemically resistant polyurethane-wearing surface.

Currently, nine hazardous waste storage lockers are located on the Plant 1 Pad south of the tension support structures. Each locker measures 28' in length by 13' in width x 8' in height. The lockers are constructed of galvanized steel with a steel grate flooring. The flooring is elevated to prevent containers from contacting spilled materials in the secondary containment area. The secondary containment is constructed of structural steel and is sealed with a chemically-resistant epoxy coating. Each locker has at least one forklift access door on each end and two on each side. Metal ramps placed at the entrances provide access to the interior.

Plant 6 Warehouse (Building 79). The Plant 6 Warehouse consists of a steel framed, enclosed, metal building with an 8-inch thick, reinforced concrete slab and is equipped with a secondary containment system. This containment system includes six-inch by six-inch concrete dikes around the perimeter of the three containment units (Bays A, B, and C). Ramps are used to allow access to the containment areas. The building is fully sprinklered using a dry pipe sprinkler system and meets the standards for storage of ignitable liquids.

CP Storage Warehouse (Building 56). The Warehouse is a pre-engineered building with ribbed metal siding and metal roofing. The upgrade project for the storage of wastes with free liquids in this storage unit was completed in January 1993. The upgrade project included the installation of six-inch by six-inch concrete dikes around the perimeter of the unit. Since March 1999, this building has not been used for hazardous/mixed waste storage.

Pilot Plant Warehouse (Building 68). The Pilot Plant Warehouse is a pre-engineered metal fabricated building that is completely enclosed and covered by metal roofing. The base of the warehouse is constructed of eight-inch thick concrete with wire mesh fabric reinforcement. Part of the building is used for the storage of samples. In addition to waste storage, the plant is used for ongoing operations in support of the FEMP remediation.

The hazardous waste storage area measures 25 feet by 35 feet and is located in the southwest corner of the building. The containment system consists of Herculite sheeting which extends up and over a dike constructed of four inch PVC piping. All seams in the dike have been sealed using an adhesive to provide a barrier to contain hazardous waste spills.

Plant 8 Warehouse (Building 80). The Plant 8 Warehouse is a steel-framed, enclosed, metal building. The base of the unit is constructed of eight inch thick concrete with number 4 reinforcement rods at twelve inch intervals. The secondary containment dike is constructed of a four-inch by six-inch steel angle iron frame dike. The building is fully sprinklered using a dry pipe sprinkler system. Since October 1999, this building has not been used for hazardous/mixed waste storage.

Thorium Warehouse/Old Plant 5 Warehouse (Building 64/65). The Building 64/65 complex consists of two single-story buildings constructed of

corrugated metal walls and roofing supported by steel beams and columns and a concrete floor. This facility is used for thorium mixed waste storage. Inventory is currently scheduled to be removed from this complex by February 2002.

3.0 AISLE SPACING AND INSPECTION GUIDELINES

3.1 Aisle Spacing

A minimum aisle spacing of 22 inches in covered storage areas and a minimum of 24 inches in outdoor storage areas shall be maintained between pallets of drums or between containers not stored on pallets (e.g., boxes.) A four-foot main aisle is also provided in each area to allow the unobstructed movement of personnel, fire protection equipment, and spill control equipment. These aisle spaces meet the requirements of OAC 3745-65-35 and 40 CFR 265.35.

The number of containers and hazardous waste volume for each storage unit varies depending on the size of containers and the applicable aisle spacing and stacking height necessary to meet additional fire protection standards required on-site. The number of containers in each RCRA storage unit shall not exceed the maximum storage capacity for the unit as identified in the latest revision of the FEMP's RCRA Part B Permit Application.

3.2 Inspections

The hazardous/mixed waste container storage areas shall be inspected in accordance with OAC 3745-55-74 and the Facility Inspection Schedule. Weekly inspections are conducted of the Plant 1 Pad, Plant 6 Warehouse (Building 79), Pilot Plant Warehouse (Building 68) and Building 64/65. OEPA approved changing to annual inspections for Buildings 56 and 80 because they are not used to store hazardous/mixed waste. If these HWMUs again become active storage facilities for storage of hazardous/mixed waste, weekly inspections will resume.

The Stipulated Amendment requires DOE to conduct weekly inspections of containers of uncharacterized, hazardous and mixed waste. Daily leakage inspections of containers of hazardous, mixed and uncharacterized waste must also be conducted until the containers have been removed from the Plant 1 Pad or are determined not to contain hazardous or mixed waste. The tension support structures and hazardous waste storage lockers are considered to be covered storage. Therefore, daily leakage inspections are not required in these structures that are located at the Plant 1 Pad.

Because of ALARA concerns for the thorium waste stored therein, weekly inspections of Building 64/65 are limited to the outside of the

building. Container inspections will occur at such times as personnel are required to enter these building to perform work. The remaining storage areas shall be inspected weekly for proper aisle spacing, stacking, pallet conditions, evidence of leaks or spills and condition of the floor and dikes in accordance with OAC 3745-65-15 and OAC 3745-66-74 requirements. The inspector immediately reports to the supervisor if a hazardous waste release is observed. Additional actions required to address leaking containers are described in Section 6.0.

Inspections shall be documented by recording results on inspection forms and copies of the completed inspection forms shall be maintained in the FEMP's RCRA Operating Record.

4.0 REPACK/OVERPACK AREA OPERATIONS

In accordance with the criteria outlined in Section 6.0, leaking containers shall be mitigated upon discovery. Once mitigated and if repair is not feasible, the container is over packed in place where practicable. For those containers that are not over packed in place the Plant 1 Pad complex currently utilizes three areas as overpack stations. These three areas are; TS-5, TS-6, and Building 30. These areas are used for Type II and III container overpacking and Type I containers that are deemed not to be candidates for overpacking in place.

For containers that require repacking, Buildings 30 and 71 are used because they have the appropriate ventilation systems in place. Whenever a repack is required, a temporary diked area shall be prepared for the activity.

Each of these areas used for overpacking or repacking shall be equipped with spill pallets or other containment, spill cleanup materials, and scales. All overpacking and repacking activities are controlled by procedure.

5.0 STORAGE OF UNCHARACTERIZED WASTE

The FEMP uses existing, OEPA-approved storage HWMUs for the storage of containerized, uncharacterized waste. These containers are stored on Plant 1 Pad or the Plant 6 Warehouse (Building 79) while the Pilot Plant Warehouse (Building 68) is used to stage sample containers prior to segregation/evaluation. Management of containers of uncharacterized waste stored in these areas is consistent with the criteria identified in Sections 3.1 and 3.2 for the operation of these storage units.

In the event that containers of uncharacterized wastes are stored in an area not identified as a HWMU in the FEMP's RCRA Part A Permit Application, DOE shall, as soon as reasonably possible but in no event more than sixty (60) days from a determination that any drummed materials are hazardous or mixed waste, move such material to units that are identified in the FEMP's RCRA Part A Permit Application. If storage space which meets RCRA

requirements is not available, DOE shall store such wastes in a manner as protective of human health and the environment as possible, shall perform daily leakage inspections on all such containers that are not located under cover, and shall, within sixty (60) day of a determination that sufficient hazardous waste storage space is not available, submit a plan and schedule for OEPA approval for short-term storage of such wastes. DOE shall perform weekly inspections in accordance with 40 CFR 265.15 and 265.174 and OAC 3745-65-15 and 3745-66-74 on all such containers of hazardous/mixed waste.

6.0 RELEASES AND SPILL RESPONSE

The continued long-term storage of DOE's containerized hazardous and mixed waste is necessary until such time as treatment/disposal options are identified by DOE and disposition schedules are in place. During the time that this waste is at the FEMP, there is always the possibility that a release (including spill) could occur. Upon discovery of a release from containers of hazardous, mixed, and uncharacterized wastes, DOE shall take immediate steps to contain the release. Additional actions shall be taken as described below to ensure that there is no threat to human health and/or the environment from the continued storage of these wastes until such time as DOE determines that compliance with OAC 3745-66-71 is met.

DOE has developed specific criteria to facilitate the prioritization of mitigation activities for deteriorated/leaking drums. Consistent with the Stipulated Amendment, the DOE has classified its containers, based upon the container condition. As a result of the classifications, those containers that DOE describes as Type I containers are subject to Section 3.8 (c) of the Stipulated Amendment.

The classifications are:

Type I Any container that has actually leaked in such a manner as to allow wastes to be released onto the pad or ground.

- Notify supervisor
- Immediately stop or contain leak
- Supervisor notifies Assistant Emergency Duty Officer
- Identify container as Type I on inspection form requiring further action
- Complete additional cleanup as necessary

After the initial leak is contained, the container will be managed in accordance with OAC 3745-66-71, as soon as possible after detection, but in no event more than 24 hours after discovery unless safety issues require a longer time period. For purposes of the CMP, the safety concerns are the Nuclear Criticality guidelines, radiological exposure, and/or personnel safety in handling, lifting, and movement activities.

If there are not safety concerns or the concerns are resolved, corrective action will be accomplished by repairing the container or repacking/overpacking it. If repair is not possible or not effective, repacking or overpacking will be done and the container will be staged in an individual secondary area such as a spill pallet. Type I containers take priority over other work activities.

Type II - Localized evidence of material on exterior of container but no material contact with pad or ground.

- Notify supervisor
- Immediately stop or contain leak
- Identify container as Type II on inspection form requiring further action.
- Complete additional cleanup as necessary

After the initial leak is contained, the container will be managed in accordance with OAC 3745-66-71, as soon as practicable after detection, unless safety concerns prevent this. For purposes of the CMP, safety concerns are the Nuclear Criticality guidelines; a radiological exposure; and/or personnel safety in handling, lifting, and movement activities. The DOE will document the safety concerns. Once safety concerns are resolved, final corrective actions will be taken.

Type III - Severe corrosion without evidence of a release.

- Evaluate container condition through required inspections to assess further actions.
- Overpack/repack container prior to off-site disposition.

If a container's condition causes its classification to change (e.g. Type III to Type II), it will be managed in accordance with the container management procedures for the new classification.

7.0 CHANGES/REVISIONS TO THE CONTAINER MANAGEMENT PLAN

As the FEMP site conditions continue to change, it is anticipated that the CMP will be modified or revised accordingly. Any change that DOE determines are minor, shall be documented by written communication from the DOE to the OEPA, notifying of the change. This notification will occur within thirty (30) days of the change(s) occurring. OEPA concurrence will be presumed if written objection is not received by DOE within ten (10) workdays from the date of the DOE notification to OEPA.

A revision to the CMP is any change that DOE determines is more than a minor change. DOE shall provide OEPA with all proposed

revisions to the CMP, for its review and approval. Upon receipt of OEPA written concurrence, the revised CMP shall supersede the existing version.

8.0 Notices

All notices and written communications should be addressed to:

U.S. Department of Energy
Fernald Environmental Management Project
Attn: Waste Management Project Leader
P. O. Box 538705
Cincinnati, OH 45253-8705

Ohio Environmental Protection Agency
Division of Hazardous Waste Management
Attn: Hazardous Waste Management Director
401 East 5th Street
Dayton, OH 45402-2911

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ATTACHMENT

CROSS-REFERENCE OF SACD AND CMP REQUIREMENTS

SACD REFERENCE	COMMITMENT	CMP REFERENCE
Subsection 3.5.1(f)	DOE shall, as soon as reasonably possible but in no event more than sixty (60) days from a determination that any drummed materials are hazardous or mixed waste, move such materials to units that are identified in the FMPC Part A Permit Application submitted September 1989, or subsequent revisions. If storage space which meets RCRA and Ohio hazardous waste storage requirements is not available, DOE shall store such wastes in a manner as protective of human health and the environment as possible, shall perform daily leakage inspections on all such containers that are not located under cover, and shall, within sixty (60) days of a determination that sufficient hazardous waste storage space is not available, submit a plan and schedule for Ohio EPA approval for short-term storage of such wastes. DOE shall perform weekly inspections in accordance with 40 CFR 265.15 and 265.174, and OAC 3745-65-15 and 3745-66-74 on all such containers.	Section 5.0
Subsection 3.5.1(f)	DOE shall store backlog material which is being evaluated for the potential to be hazardous or mixed waste, but for which such evaluations have not been completed, on the best available hard surfaced facilities at the FMPC in such a manner that any leakage can be readily detected and shall maintain aisle space meeting the requirements of 40 CFR 265.35 and OAC 3745-65-35.	Section 5.0
Section 3.8(a)	DOE shall ensure that sufficient aisle space is maintained on the Plant 1 Pad to meet the requirements of 40 CFR 265.35 and OAC 3745-65-35, except on the covered staging area.	Section 3.1
Section 3.8(b)	Until such time as the approximate 16,000 drums identified on Attachment 1 are removed from the Plant 1 Pad, or such drums are determined not to contain hazardous or mixed waste, DOE shall perform daily leakage inspections on all such drums, and shall perform weekly inspections in accordance with 40 CFR 265.15 and 265.174, and OAC 3745-65-15 and 3745-66-74. DOE shall	Section 3.2

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