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**REMOVAL ACTION NO. 9 LIQUID MIXED WASTE PROJECT,
AMENDMENT**

10/13/95

**DOE-0034-96
DOE-FN EPAS
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AMENDMENT**



Department of Energy
Fernald Environmental Management Project
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OCT 13 1995
 DOE-0034-96

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

Mr. Tom Schneider, Project Manager
 Ohio Environmental Protection Agency
 401 East 5th Street
 Dayton, OH 45402-2911

Dear Mr. Saric and Mr. Schneider:

REMOVAL ACTION NO. 9 LIQUID MIXED WASTE PROJECT, AMENDMENT

The purpose of this letter is to transmit for approval the Department of Energy, Fernald Area Office (DOE-FN) Removal Action No. 9 Work Plan Amendment for the Liquid Mixed Waste Project. This Amendment consists of the Tank Decontamination Plan which includes information describing how the bulk containers and secondary containment structure will be decontaminated, in a manner consistent with appropriate regulations.

This Work Plan Amendment will resolve the Ohio Environmental Protection Agency (OEPA) comments on the Liquid Mixed Waste Project. Also, with the approval of this amendment, DOE-FN will have met the requirements for final approval of the Liquid Mixed Waste Project which was required by the OEPA letter, dated May 1, 1995.

If you have any questions regarding the enclosed document, please contact Robert Danner at (513) 648-3167.

Sincerely,

for Susan M. Feterman
 Johnny Reising
 Fernald Remedial Action
 Project Manager

FN:Danner

Enclosure: As Stated

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LIQUID MIXED WASTE PROJECT
STORAGE CONTAINER
DECONTAMINATION PLAN

Document # HWM-95004
Rev. 0

Prepared By:

Hazardous and Mixed Waste Disposition Projects

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1.0 INTRODUCTION

The Liquid Mixed Waste Project (LMWP) has been designed to consolidate and transport ignitable and combustible liquid mixed waste presently stored at the Fernald Environmental Management Project (FEMP) to the Department of Energy's (DOE) K-1435 Toxic Substances Control Act (TSCA) Incinerator located in Oak Ridge, Tennessee. After waste consolidation and shipping activities are completed, leased equipment associated with the project will need to be decontaminated and returned to the supplier. Leased equipment associated with the LMWP consists of six portable bulk liquids storage containers (See Figure 1). This plan will be implemented as an amendment to the CERCLA work plan for the Liquid Mixed Waste Disposal Project, titled Work Plan for FEMP Liquid Mixed Waste, dated April 11, 1995, document no. HMWM-001-95, Rev 0.

2.0 SCOPE

This plan specifies the steps required to accomplish the decontamination of leased equipment, and characterization, management, and disposition of secondary wastes generated during the decontamination process. It also addresses steps required to mitigate and clean-up releases, in the event a release should occur.

3.0 OBJECTIVE

The objectives of this plan are to: 1) successfully decontaminate leased equipment associated with the project so it can be returned to the supplier in accordance with the rental agreement entered into for the project. 2) manage secondary waste streams in accordance with applicable site procedure and regulatory requirements.

4.0 DEFINITIONS

- 4.1 *Resource Conservation and Recovery Act (RCRA)* - The Congressional act which establishes safe and environmentally acceptable management practices for specific waste including hazardous waste. RCRA requires the strict "cradle to grave" control and management of hazardous waste.
- 4.2 *RCRA Hazardous Waste* - A material which satisfies the United States Environmental Protection Agency's definition of a RCRA hazardous waste as stated in Part 261 Code of Federal Regulations, Title 40 (40 CFR § 261) also stated in the Ohio EPA Administrative Code (section 3745-51). A waste can be one that is listed by waste stream or chemical substance, or one that exhibits any of the following four characteristics: ignitability, corrosivity, reactivity, or toxicity by exceeding Toxic Characteristic Leaching Protocol (TCLP) concentration limits which have been set for specific chemicals. These are termed RCRA Listed wastes and RCRA Characteristic wastes respectively.
- 4.3 *Low-Level Radioactive Waste* - Radioactive waste material that is not high-level radioactive waste, spent nuclear fuel, transuranic waste or byproduct material as defined in Section IIe(2) of the Atomic Energy Act (10 CFR § 62).
- 4.4 *Mixed Waste* - (1) Radioactive waste (as defined by the Atomic Energy Act) that contains material listed as hazardous waste in Subpart C of 40 CFR 261 {3745-51 of Ohio Administrative Code} or that exhibits any of the hazardous waste characteristics identified in subpart C of 40 CFR 261 {3745-51 OAC}. (2) Waste that contains both radioactive and hazardous components, as defined by the Atomic Energy Act (AEA), the Resource Conservation and Recovery Act (RCRA). The term "radioactive component" refers only to the radionuclides dispersed or suspended in the waste substance.
- 4.5 *Contact Waste* - Any waste material generated or disposed during the decontamination process or material contaminated by spillage or leakage during handling of the waste material.
- 4.6 *Exclusion Zone* - An area established around the work area perimeter that controls access of personnel. The exclusion zone shall be established by erecting a barrier.

4.0 DEFINITIONS CONT.

- 4.7 *Assistant Emergency Duty Officer (AEDO)* - The on-site management authority for all shifts and for all abnormal events.
- 4.8 *Event* - Any significant deviation from planned or expected behavior or course of events that could endanger or adversely affect people, property, or the environment.
- 4.9 *RCRA "Empty Container"* - For the purpose of defining an empty container relative to this plan, the following passages can be found in 40 CFR 261.7: {also stated in the Ohio EPA Administrative Code sections 3745-51-07 (B)(1); (B)(1)(a); and (B)(1)(c)(ii).}

(b)(1) A container or an inner liner removed from a container that has held any hazardous waste, except a waste that is compressed gas or that is identified as an acute hazardous waste listed in §§261.31, 261.32, or 261.33(e) of this chapter is empty if:

(i) all wastes have been removed that can be removed using the practices commonly employed to remove materials from that type of container, e.g., pouring, pumping, and aspirating, and

(B) No more than 0.3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is greater than 110 gallons in size.

5.0 REFERENCES

5.1 Site Plans & Manuals

- 5.1.1 "FMPC Emergency Plan" (PL-3020)
- 5.1.2 "Flammable and Combustible Liquids code" (NFPA-30)
- 5.1.3 "Flammable and Combustible liquids" (OSHA 29 CFR 1910.106)
- 5.1.4 "FMPC Industrial Hygiene & Safety Manual" (CEOSHP ESH-1-1000)
- 5.1.5 "FMPC Spill Prevention Control & Countermeasure Plan" (PL-2194)
- 5.1.6 "FMPC Radiation Control Manual" (RM-0009)
- 5.1.7 "FMPC Respiratory Protection Program" (RM-0007)
- 5.1.8 "FERMCO Quality Assurance Program Plan" (RM-0012)
- 5.1.9 "Control of Permits for Accomplishing Hazardous Work" (FMPC-0516)
- 5.1.10 "The On-site Transportation of Radioactive and Nonradioactive Hazardous Materials" (SSOP-0003)
- 5.1.11 "FEMP Lot Marking and Color Coding System" (RM-0005)
- 5.1.12 "Personnel Accountability" (OM-FMPC-0002)
- 5.1.13 "FMPC Site Health & Safety Plan, June 1990"
- 5.1.14 FEMP RCRA Contingency Plan

5.2 Site Standard Operating Procedures and Standard Operating Procedures

- 5.2.1 "Spill Incident Reporting and Clean up" (SSOP-0067)
- 5.2.2 "Emptying liquid hazardous waste storage containers" (SOP 20-C-613)
- 5.2.3 "Processing the site wide analysis request/custody record for sample control" (SSOP-0018)
- 5.2.4 "Respiratory Protection Program RM 0007"
- 5.2.5 "Hazardous Waste Spill Cleanup" (SOP 20-C-606)
- 5.2.6 "High Pressure Washer Operation in D&D Bldg."
- 5.2.7 "Movement of Hazardous Waste" (SOP 20-C-017)
- 5.2.8 "Storage of Hazardous Waste" (SOP 20-C-630)
- 5.2.9 "Completing the Material Evaluation Form" SSOP-0002, revised.
- 5.2.10 "Environmental On-Site Media Sampling" (EM-2-013)
- 5.2.11 "Environmental Media Sampling Extraction Methodology for Obtaining Samples of Liquid Materials Using a Disposable Glass Coliwasa" (EM-EXM-90-007 Rev. 03/06/1991)
- 5.2.12 "Inspection and Performance Testing of Portable Radiation Survey Instruments" (SP-P-35-028)

6.0 DECONTAMINATION SEQUENCE

Decontamination and final release of the storage containers will be performed using existing site plans and procedures and by implementing the following activities:

- 6.1 After liquids have been pumped from the container(s), open manways and hatches to ventilate and allow remaining organic vapors to be removed.
- 6.2 Confirm the storage containers meet the definition of empty under RCRA for both federal and state regulations by completing a visual inspection (No more than 0.3 percent by weight of the total capacity of the container remains in the container). This method of confirmation will be most effective for the following reasons:
 - the invert position of the containers fill/drain pipe is located at containers bottom most elevation,
 - the containers bottom is pitched in the form of a "V" toward the fill/drain pipe opening,
 - the pump used to transfer the waste is a diaphragm type pump and is very effective at removing heavy solids and viscous materials from the bottom of the containers, and
 - the liquid waste is filtered through a 1/16 inch screen before it enters the container to remove heavy sediment and/or sludge.
 - approximately 63 gallons of liquid waste equates to 0.3% by weight of the total capacity of the tank. The shape of the invert of the tank, the position of the tank drain valve and the pumping equipment utilized in this project removes liquid in the tank to a level which is well below 63 gallons based upon visual inspection.

NOTE: Container residues will be managed in accordance with the approved MEF for the batch they were derived from.

NOTE: Personnel who enter the containers shall be trained in accordance with the project specific health and safety plan, project specific work plan, and applicable site plans and procedures.

- 6.3 Manually remove any remaining solid phase material and residues from the container(s) and place into waste drums.

6.0 DECONTAMINATION SEQUENCE CONT.

- 6.4 Decontaminate the interior surfaces of the container(s) in the following manner.

NOTE: Prior to entry into the containers all required health & safety permits will be secured.

NOTE: Wastewaters generated as a result of the decontamination process will be collected and managed in accordance with section 7.0 of this plan.

- 6.4.1 Wet the interior surfaces of the containers with an emulsifying detergent and allowed to soak.
- 6.4.2 Rinse wetted surfaces using a portable high pressure water spray system.
- 6.4.3 Drain the rinse water from the container into a White Metal Box (WMB) or bulk container for eventual processing through the wastewater treatment system.

NOTE: The FEMP "RADIOLOGICAL CONTROL REQUIREMENTS MANUAL" Document Number RM-0020, Revision Number 1, references radiological survey procedures and FEMP free release criteria to be used during the radiological survey/free release process.

- 6.5 Monitor the interior and exterior surfaces of the containers to verify that free release criteria for radiological contamination has been met.
- 6.6 If a container requires further cleaning to meet free release requirements, affected areas will be cleaned again prior to re-evaluation by Radiological Control . If further cleaning of the interior surfaces is required, repeat steps 6.4.1 through 6.5 until free release criteria are met.
- 6.7 After the container(s) have been adequately decontaminated in accordance with the steps above, secure container(s) in a controlled staging area to await supplier retrieval.

7.0 SECONDARY WASTE MANAGEMENT

Wastes generated during decontamination activities will be dispositioned in accordance with this plan and approved site procedures. RCRA determinations will be completed on all wastes generated through the FEMP material evaluation process. Treatment and/or disposal of wastes will be based on the results of the MEF process and completed utilizing waste treatment, and disposal options available at the FEMP, (i.e., Plant 8 VOC, General Sump, NTS, HMWM Projects) and in compliance with NPDES permit requirements.

Two waste streams will be generated during container decontamination. The first waste stream will consist of contact wastes. The contact waste stream will include; coveralls, gloves, respirator cartridges, absorbent pads and wipes, plastic bags and visqueen, and radiological survey swipes and/or maslin cloth. The second waste stream will consist of liquid wastes. The liquid waste stream will include contaminated water and detergent mixtures for processing through the WWTS. The estimated volume of secondary waste generation for each individual container is listed in the waste stream summary table below:

Waste Stream Summary Table

Waste Stream	Waste Stream Description	Waste Stream Volume
Contact Wastes	PPE, Respirator Cartridges, Absorbent Pads, swipes and maslin.	15.0 Ft ³ per storage container.
Liquid Wastes	Wastewater and detergent mixture.	720 gallons per storage container.

8.0 SECONDARY CONTAINMENT INSPECTION AND MANAGEMENT

The secondary containment structure shall remain on-site and continue to be utilized in support of hazardous and mixed waste projects until such time as it is no longer needed. When the secondary containment structure is no longer needed, a waste determination will be made by FERMCO in accordance with the FEMP material evaluation process. The secondary containment unit will be managed and disposed of in accordance with the waste determination.

A rinsing of the secondary containment structure will not be required based on the following controls being in place while the secondary containment is in use: RCRA inspections of the storage containers and secondary containment are documented daily. The inspection includes looking for evidence of leaks from the waste storage container and evidence of releases in the secondary containment unit. If a release is detected, the supervisor is notified immediately, and in turn the AEDO is called to evaluate the release. Releases are documented on the daily inspection form, in the supervisors log book, and in the AEDO log book.

All releases associated with the LMWP shall be reported, controlled, and cleaned-up in accordance with SOP 20-C-606, "Hazardous Material Spill Cleanup", rev. 0, issue date 01-27-95.

9.0 IMPLEMENTATION TIMETABLE

Containers will either be decontaminated or used for waste storage as part of the Chemical Treatment Project within 90 days after wastes from the LMWP have been removed. Containers which have been decontaminated as part of the LMWP will not be removed from the secondary containment structure until all of the containers from the LMWP (containers that are not part of the CTP) are emptied and decontaminated. Containers which are designated for use in the CTP shall remain in the secondary containment structure until the CTP is completed. Prior to new wastes being placed inside of containers which contained waste from the LMWP, a compatibility evaluation will be completed to ensure incompatible wastes are not commingled in the same container. Upon completion of the CTP the remaining containers will be decontaminated in accordance with section 6.0 of this plan and returned to the supplier.

PROJECT OVERVIEW

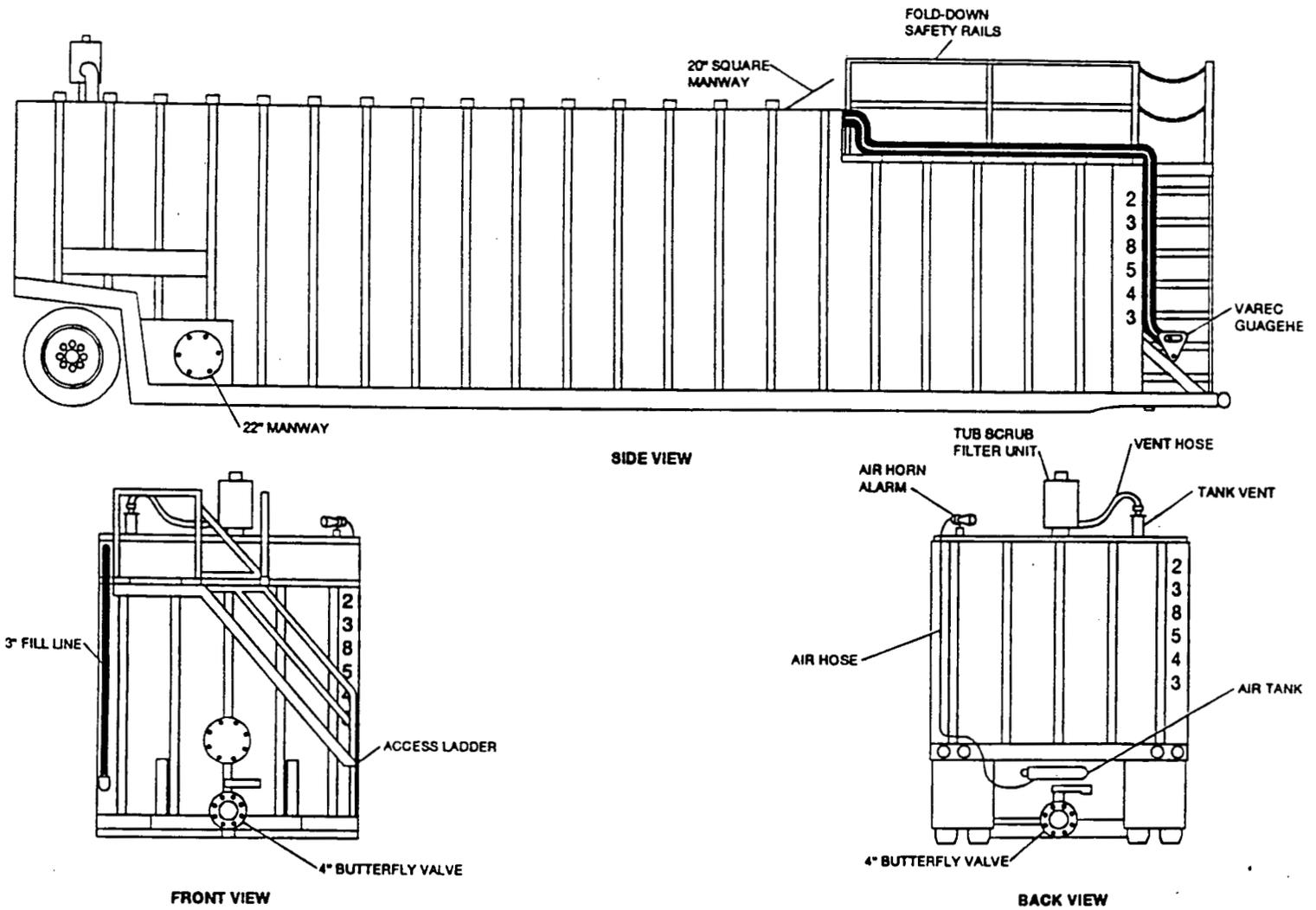


Figure 1 Storage Container