



Department of Energy

Oakland Operations Office

1301 Clay Street

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OCT 29 1999

Ms. Cindy Kemper
Director, Hazardous Waste Program
State of Missouri
Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102-0176

Subject: Transmittal of Federal Facility Compliance Act Site Treatment Plan FY99
Annual Update for the Missouri University Research Reactor

Dear Ms. Kemper,

Enclosed is the Federal Facility Compliance Act Site Treatment Plan (STP) Fiscal Year 1999 Annual Update for the Missouri University Research Reactor, as required by Section 2.3 of the STP.

Should you have any comments or questions, please feel free to call me at (510) 637-1629.

Sincerely,

A handwritten signature in cursive script, reading "Mary Gross", is written over a horizontal line.

Mary Gross
Mixed Waste Program Manager
Oakland Environmental Programs Division

Enclosure

Cc: Bob Geller, MDNR
Larry Erickson, MDNR
Mark Gabler, Boeing North American

FEDERAL FACILITY COMPLIANCE ACT
1999 ANNUAL SITE TREATMENT PLAN UPDATE
for Department of Energy Mixed Wastes at the
Missouri University Research Reactor
Columbia, Missouri

October 30, 1999

Prepared for
The State of Missouri
Department of Natural Resources
Division of Environmental Quality
P.O. Box 176
Jefferson City, Missouri 65102-0176

Submitted by
The U.S. Department of Energy
Oakland Operations Office
1301 Clay Street, N-700
Oakland, California 94612-5208

**FEDERAL FACILITY COMPLIANCE ACT
SITE TREATMENT PLAN
OCTOBER 30, 1999 ANNUAL REPORT**

1.0 PURPOSE AND INTRODUCTION

The objective of the Annual Report is to meet the requirements outlined in Section 2.3 of the Compliance Plan Volume (CPV) in the Site Treatment Plan (STP). The report covers Department of Energy Oakland Operations Office (DOE/OAK) Mixed Wastes at the Missouri University Research Reactor (MURR).

This report provides the status of the mixed wastes that are covered by the STP. The report is for the period from October 1, 1998 through September 30, 1999. As stated in section 2.3.1 of the Compliance Plan Volume, the purpose of the report is: to provide a mechanism to communicate and exchange information about schedules, technology development, funding, and other concerns that affect implementation of the STP; to update information in the Background Volume to the STP; to report on the status of target dates and milestones; and to report on proposed and approved revisions to the Compliance Plan Volume.

Waste volumes are provided by time period, i.e., prior to March 31, 1995; April 1 to September 30, 1995; Fiscal Year 1996 (FY96); FY97; FY98; and FY99. Asterisks are used throughout to indicate changes from the FY98 Annual Report.

2.0 MIXED WASTE TREATMENT AND TECHNOLOGY DEVELOPMENT

Schedule

MURR is on schedule to fulfill its commitments under the STP. Please refer to schedule 4-4(b) for more detail information.

Mixed Transuranic Waste and WIPP

On March 26, 1999, WIPP received its first shipment of defense-generated transuranic radioactive waste from the Los Alamos National Laboratory (LANL). WIPP has since received over 30 shipments of transuranic waste, primarily from LANL, the Idaho National Engineering and Environmental Laboratory, and the Rocky Flats Environmental Technology Site.

Although mixed transuranic (MTRU) waste designated to go to WIPP is not required to be treated to meet the Land Disposal Restrictions (under the September 1996 amendments to the WIPP Land Withdrawal Act), there are other difficult requirements associated with disposing of MTRU waste from MURR. In order to ship to WIPP, a site must be granted Certification Authority (both waste and transport). The required site documents, as listed in the August 1997 Generator Site Certification Guide from DOE's Carlsbad Area Office, are:

- TRU Waste Certification Plan
- Certification QA Plan
- TRU Waste Characterization Quality Assurance Project Plan (QAPjP)
- Graded Approach Procedure
- Sampling Plan
- Site-Specific TRAMPAC (TRUPACT-II Authorized Methods for Payload Control)
- TRAMPAC QA Plan
- Packaging QA Program Plan
- Implementing Procedures

Because of the difficult process involved and limited resources available it was determined that MURR's waste could not be certified for direct shipment to WIPP from MURR. Rather, MURR's waste would be shipped to a larger facility for consolidation and certification for shipment to WIPP. DOE-HQ identified 4 high priority, small quantity sites that would be consolidated prior to certification. MURR is part of this Small Quantity Site (SQS) initiative. The MURR MTRU Waste Management Plan and TRAMPAC have been prepared and were approved by DOE/Carlsbad on September 1, 1999. It appears that all transportation requirements have been met. Shipment of the waste to another site is pending DOE-HQ approval and equity discussions and approval from the receiving state.

Another possible cause for delay in shipment may occur when the WIPP RCRA permit is approved by the State of New Mexico. Once the RCRA permit is approved, current acceptance requirements may change to become consistent with the waste acceptance criteria as identified in the RCRA permit. The permit is currently scheduled for approval in calendar year 1999. Additional information about WIPP is available on the internet at <http://www.wipp.carlsbad.nm.us/>. The WIPP home page includes photos, press releases, maps showing DOE sites with transuranic waste, and other related information.

DOE/OAK is actively pursuing all opportunities to get the waste off site in the near future, but would like to emphasize that there are factors beyond its control that may prevent the movement from occurring in the desired timeframe.

3.0 FUNDING

Management of STP mixed waste at the MURR is funded through contracts between DOE/OAK and MURR. The funding for Fiscal Year 1999 was appropriated at the beginning of the fiscal year, in October 1998.

4.0 UPDATE TO SITE TREATMENT PLAN BACKGROUND VOLUME

The tables included in the Site Treatment Plan Background Volume (BGV) have been updated and are provided as an attachment to this report. The tables are organized by site and are provided together with the tables from the Compliance Plan Volume. The updated tables include the following information:

- a. The amount of each covered waste stored at the Site as follows: (1) the estimated amount in storage at the end of the previous fiscal year, and (2) the estimated amount anticipated to be placed in storage in the next five fiscal years.
- b. A brief description of progress made. In some cases, a description is provided of the alternative treatment options that are being evaluated.
- c. Data changes in the tables. This includes waste form, waste code, technology, capacity needs and new waste streams.
- d. Proposed deletions of waste streams from the STP. DOE/OAK lists deleted waste streams one update prior to removing the waste streams from the respective tables.

Please note that Table 1-1 of the BGV is a historical record of all mixed wastes that have been covered in the STP. Tables 3-1 and 4-1 of both volumes are a record of current waste streams, and whether or not there is any waste in inventory. Waste streams are proposed for deletion when no further need for coverage is anticipated.

When portions of waste streams are consolidated in preparation for treatment, the consolidated waste volume is then tracked under the time period “prior to 03/31/95”.

5.0 UPDATE TO SITE TREATMENT PLAN COMPLIANCE PLAN VOLUME

The tables included in the Site Treatment Plan, Compliance Plan Volume (CPV) have been updated and are provided. The updated tables include the following information:

- a. Changes to the Site Treatment Plan CPV tables.
- b. Changes to the schedules.
- c. Proposed deletions of waste streams.

TABLE 1-1

HISTORICAL SUMMARY OF MURR MIXED WASTE STREAMS

Waste Stream No.	Waste Stream Description	BGV Section	Status
MU-W001	TRUMP-S Decontaminated and Failed Equipment Debris Contaminated with Cadmium and Silver	1-1	DELETED from MURR STP (DOE/OAK 6/15/98)
MU-W002	TRUMP-S Analytical Wastes and Equipment Debris Contaminated with Cadmium and Silver	4-1, 4-2 & 4-4(b)	*Waste was repackaged in 12/98 for eventual transportation offsite, certification and disposal at WIPP

* Denotes change since submittal of October 30, 1998 Annual Report.

TABLE 4-1

SUMMARY OF MURR MTRU WASTE STREAMS

Waste Stream No.	Waste Stream Description	Status
MU-W002	TRUMP-S Analytical Wastes and Equipment Debris Contaminated with Cadmium and Silver	*Waste was repackaged in 12/98 for eventual transportation offsite, certification and disposal at WIPP

* Denotes change since submittal of October 30, 1998 Annual Report.

TABLE 4-2

SUMMARY FOR MURR MTRU WASTE STREAMS

Waste Stream No. (Tracking Periods)	Waste Stream Description, DOE Treatability Code, and Waste Matrix Category	RCRA Waste Codes	LDR Treatment Standards	Proposed Treatment & Location	Volume Placed in Storage	Projected Add'l Volume Placed in Storage	Actual Volumes Treated	Total Volume in Storage as of 09/30/99	Unit	Status
MU-W002 prior to 03/31/95	TRUMP-S Analytical Wastes and Equipment Debris Contaminated with Cadmium and Silver TR-CH- - /S5440/RC-O90-M11-C90 Predominantly Organic Debris	D006 D011	LDR treatment exempt. †	Disposal at WIPP	0.10		0.00	0.10	m³	*COMPLETED milestone to provide schedule for offsite shipment to WIPP. Volume still in inventory; on schedule to ship to WIPP.
MU-W002 04/01/95 - 09/30/95	same as above	same as above	same as above	same as above	0.033		0.00	0.033	m³	*See above
MU-W002 FY 96	same as above	same as above	same as above	same as above	0.066		0.00	0.066	m³	*See above
MU-W002 FY 97	same as above	same as above	same as above	same as above	0.01		0.00	0.01	m³	*See above
MU-W002 FY 98	same as above	same as above	same as above	same as above	1.05		0.00	1.05	m³	*See above
MU-W002 *FY 99	same as above	same as above	same as above	same as above	*0.79		*0.00	*0.79	m³	*See above
TOTALS MU-W002					*2.049		0.00	*2.049		
PROJECTED VOLUMES										
04/01/95 - 09/30/99	same as above	same as above	same as above	same as above		0			m³	
10/01/96 - 09/30/01	same as above	same as above	same as above	same as above		0.79			m³	
10/01/97 - 09/30/02	same as above	same as above	same as above	same as above		0.79			m³	
10/01/98 - 09/30/03	same as above	same as above	same as above	same as above		0.79			m³	
*10/01/99 - 09/30/04	same as above	same as above	same as above	same as above		*0			m³	Reduced to zero; 0.79 m³ generated in FY99 due to repackaging.

Notes:

1 The total volume reflects the outer container volume of six 55-gallon drums. The waste was repackaged for transportation and reconfigured into seven drums to accommodate decay heat requirements per drum. The volume of the waste itself did not change. The drums are approximately half-full. The weight of the entire waste load is approximately 175 pounds.

* Denotes change since submittal of October 30, 1998 Annual Report.

† Pursuant to the September 1996 WIPP Land Withdrawal Act (Public Law 104-201, Subtitle F), MTRU designated by the Secretary of Energy for disposal at WIPP is exempt from the LDR treatment standards.

TABLE 4-4(b)

**SCHEDULE FOR MURR MTRU STREAMS
DESIGNATED FOR DISPOSAL AT WIPP OR OFFSITE TREATMENT BY EXISTING
TECHNOLOGIES AT EXISTING OR PLANNED TREATMENT UNITS**

Activities	MU-W002 WIPP
Characterize waste to confirm identification as MTRU for waste placed in storage prior to 03/31/95	10/1/1995 Completed.
Provide schedule for offsite shipment of waste to WIPP ¹ for waste placed in storage prior to 03/31/95	12/31/1998 *COMPLETED
Characterize waste to confirm identification as MTRU for waste placed in storage 04/01/95 - 09/30/95	10/1/1995 Completed.
Provide schedule for offsite shipment of waste to WIPP ¹ for waste placed in storage 04/01/95 - 09/30/95	12/31/1998 *COMPLETED
Characterize waste to confirm identification as MTRU for waste placed in storage FY 96	10/1/1995 Completed.
Provide schedule for offsite shipment of waste to WIPP ¹ for waste placed in storage FY 96	12/31/1998 *COMPLETED
Provide schedule for offsite shipment of waste to WIPP ¹ for waste placed in storage FY 97	12/31/1998 *COMPLETED
Provide schedule for offsite shipment of waste to WIPP ¹ for waste placed in storage FY 98	12/31/1998 *COMPLETED
Provide schedule for offsite shipment of waste to WIPP ¹ for waste placed in storage FY 99	12/31/1998 *COMPLETED

Notes:

- 1 This may include schedule dates for requesting the WIPP WAC, submitting a written certification plan, conducting additional sampling and analysis of waste if needed to meet WAC, requesting an acceptable shipping schedule from WIPP, and a date to complete shipment of waste offsite.

* Denotes change since submittal of October 30, 1998 Annual Report.