R-020-204.13

4552

DOCUMENTATION SUPPORTING FERNALD ENVIRONMENTAL MANAGEMENT PROJECT REMOVAL OF WASTE INVENTORIES LOW LEVEL RADIOACTIVE WASTE AND THORIUM MANAGEMENT PROGRAM REMOVAL ACTION NUMBER 9 UPDATE

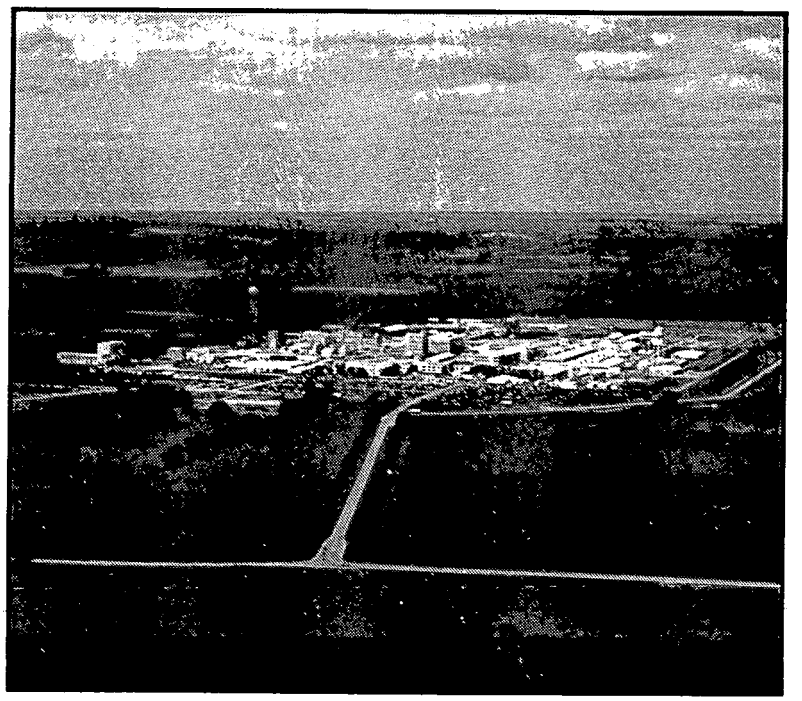
06/29/93

DOE-FN/EPA
~~550~~ 771
REPORT

- 4552-

Documentation Supporting Fernald Environmental Management Project Removal of Waste Inventories

Low Level Radioactive Waste
and
Thorium Management Program
Removal Action Number 9



Update June 1993

EXECUTIVE SUMMARY

This document is prepared as a compendium to the FEMP Removal of Waste Inventories, entitled Low Level Radioactive Waste and Thorium Management Program, Removal Action Number 9. This document provides an update that includes the following:

- a FEMP Document Hierarchy - a flow chart directing FEMP document drivers (Figure 1);
- graphs, indicates Fiscal Year 1993 low level waste disposal goals (Figures 2 and 3);
- Table 1, lists procedural changes/Change In Operations since June 1992 submittal;
- Table 2, identifies the types of waste streams and is indicated on Table 3 of waste stream breakdown;
- Table 3, provides a (draft) three-year waste shipment forecast.

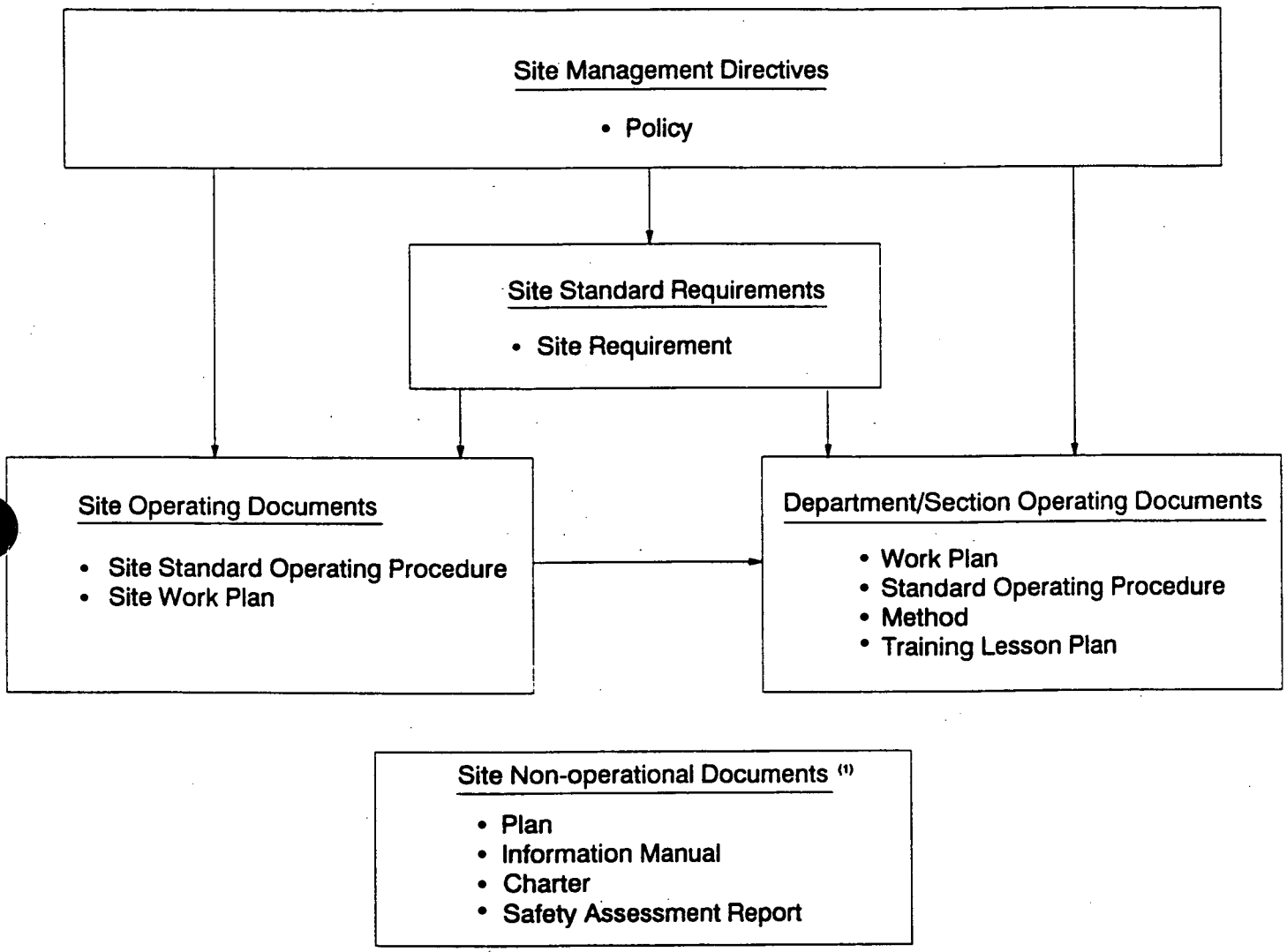
Documentation

As of December 1, 1992, the FEMP underwent a transition from Westinghouse Environmental Management Company of Ohio (WEMCO) to Fernald Environmental Restoration Management Corporation (FERMCO). Due to the transition from WEMCO to FERMCO, not all procedures controlling activities at the FEMP have been revised to reflect the new organizations at the time of this printing. Procedures will be updated to reflect the new organizations through the annual review process; the FEMP will continue to implement the existing procedures.

Waste Inventory Reduction

The amount of low level waste shipped from the FEMP to the Nevada Test Site (NTS) since July 1992, through June 24, 1993, is 85,252 drum equivalents (DEs). Normal reporting of waste inventories is done by fiscal years (FY), October 1 to September 30 respectfully. The graphs indicate FY-1993, waste inventory reduction goal of 117,000 DEs. FERMCO has placed an extremely high priority on accelerating the disposition of the large inventory of backlog waste. Diligent work from all organizations on-site will be needed to accomplish this goal.

FEMP DOCUMENT HIERARCHY



(1) *Site Non-Operational documents may or may not be developed based on a hierarchial driver. It is possible that there will be a need for one of these documents without being driven by policy, requirement, or other documents.*

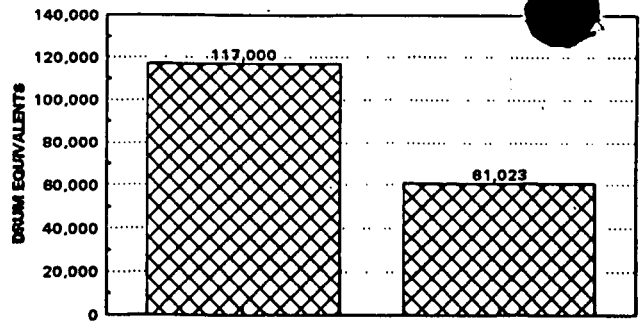
Figure 1 - FEMP Document Hierarchy

October 1, 1992 through June 24, 1993

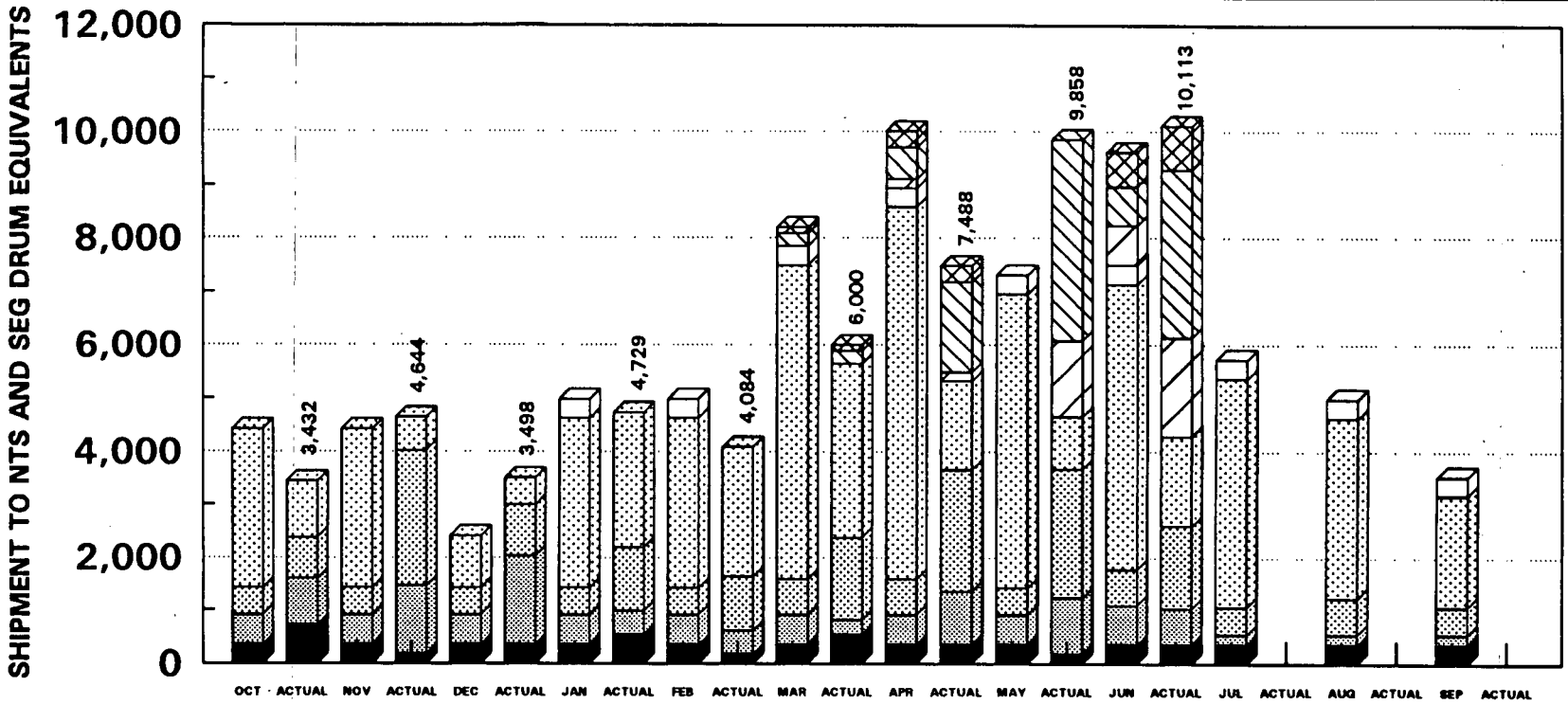
LOW LEVEL WASTE DISPOSITION

SHIP 67,000 DEs TO NTS

SHIP 50,000 DEs TO SEG



Goal	Actual
117,000	61,023



TRASH	WOOD	METAL	CONSTRUCTION
THORIUM	RESIDUES	SEG METAL	SEG RESIDUES

Figure 2

WASTE REDUCTION SIX-MONTH PLAN AS OF JUNE 24, 1993

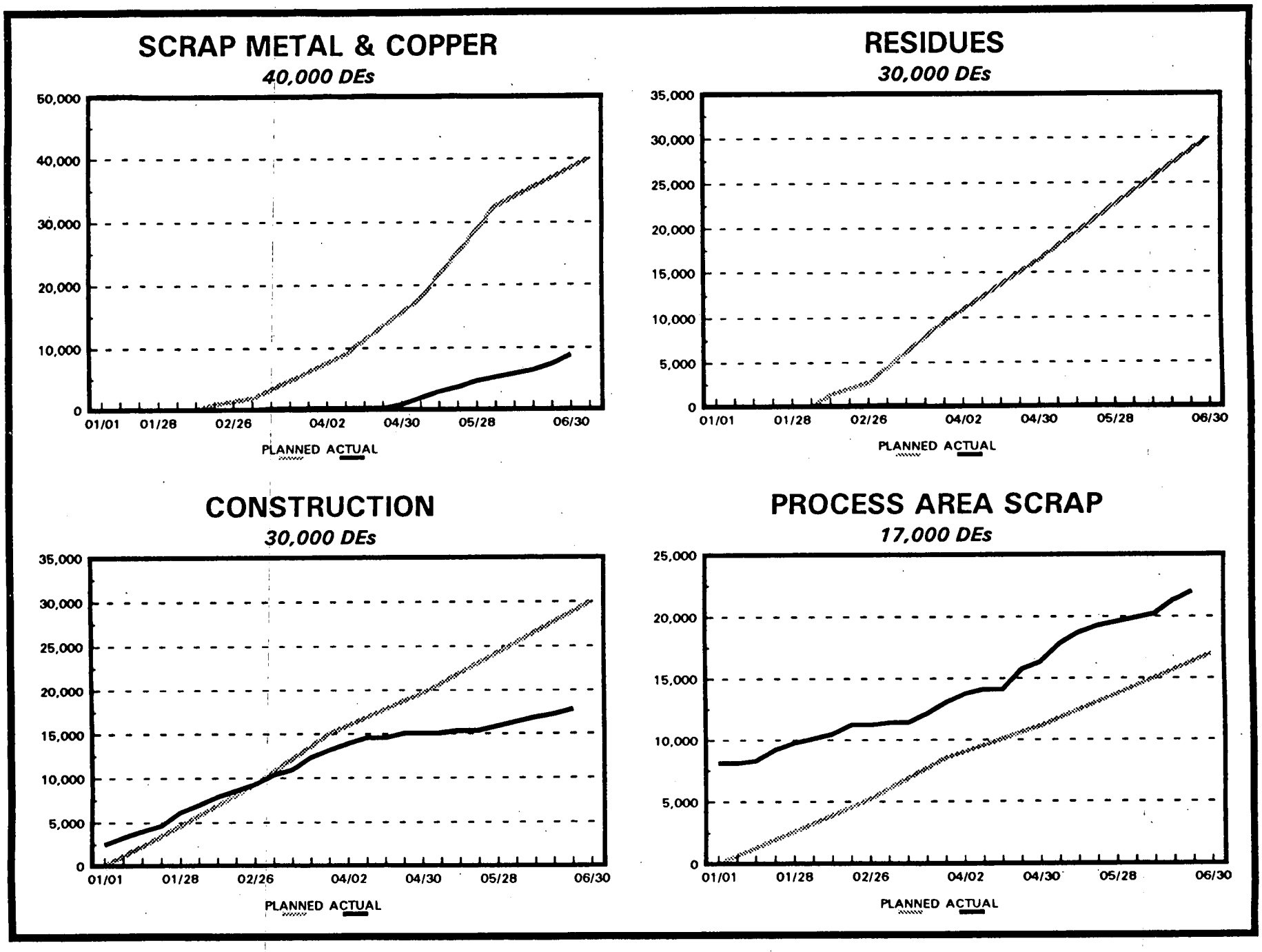


Figure 3

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Table 1

This table provides the procedural changes which have incurred since June 1992.

SECTION/STEP	PROCEDURE	TITLE	REVISION/ ISSUE DATE
SECTION I.	SSOP-0103 (Replaces PP-0103)	FEMP Site Document System	0 10/14/92
SECTION I.	SDI-100	Site Document Index	MONTHLY
SECTION I. (Division Index Added)	DI-776	Remediation Support Operations (RSO) Document Program Index	MONTHLY
SECTION I.	SSOP-0023	Deviation and Corrective Action Reporting	2 06/25/92
SECTION I.	RM-0012*	Quality Assurance Program Description	2 04/30/93
SECTION II. STEP 1.	SOP 1-C-604	Inspection and Evaluation of Containerized Low Level Radioactive Waste (LLRW)	2 02/05/93
STEP 2.	SOP 1-C-101	Change in Operation CIO No. C93-017	Page 1 08/09/93
STEP 2.	SOP 20-C-805	Change in Operation CIO No. C93-479 Change in Operation CIO No. C92-162 Change in Operation CIO No. C92-161 Change in Operation CIO No. C92-160	Page 4 10/01/93 Page 12 05/10/93 Page 17 04/15/93 Page 20 08/25/93
STEP 3.	RM-0005	FEMP Lot Marking and Color Coding System	3 05/05/93
STEP 3.	SOP 20-C-618	Completing the Low Level Radioactive Waste Container Data Sheet	Cancelled 03/18/93
STEP 3.	SOP 20-C-600	Change in Operation CIO No. C93-129	Page 1 08/09/93
STEP 4.	SOP 1-C-608	Storage of Radioactive Material	2 03/12/93

STEP 5.	SSOP-0075 (Replaces SSOP-0024)	Packaging Low Level Radioactive Waste (LLRW) in Drums for Offsite Shipment	0 12/14/92
STEP 5.	SSOP-0078 (Replaces SSOP-0024)	Packaging Low Level Radioactive Waste (LLRW) into ISO Containers for Offsite Shipment	0 12/14/92
STEP 5.	SSOP-0079 (Replaces SSOP-0024)	Packaging Low Level Radioactive Waste (LLRW) in Metal Boxes for Offsite Shipment	0 12/14/92
STEP 5.	EQP-12.03-00-01	Change Notice	Page 8 07/31/92
STEP 6.	SOP 1-C-602	Low Level Radioactive Waste (LLRW) Shipment Preparation	2 07/30/92
STEP 6.	EQP-12.04-00-03 EQP-12.04-00-05 EQP-12.04-00-04	Change Notice Change Notice Change Notice	Page 8 07/31/92 Page 8 10/23/92 Page 14 09/30/92
STEP 6. (Added)	EQP-12.07	Certification of Low Level Waste Shipments to NTS	0 09/06/91
STEP 7.	NVO-325*	Nevada Test Site Defense Waste Acceptance Criteria, Certification, and Transfer Requirements	1 June 1992
STEP 8.	WO1	FEMP Application to Ship Waste to the Nevada Test Site (NTS)	4.2 February 1993
STEP 8.	SSOP-0049	Audit Program	0 08/31/92
STEP 9.	SOP 1-C-101	Change in Operation CIO No. C93-017	Page 1 08/09/93
STEP 10. (Replaces FMPC-2205)	PL-FMPC-3009*	Waste Minimization Pollution Prevention Awareness Plan	0 04/30/91
STEP 11.	SOP 20-C-607	Change in Operation CIO No. C93-134	Page 1 08/09/93

*Copies will be made available upon request.

Table 2

A waste stream identification number is a unique 13-character alphanumeric code which identifies generator and generator's waste stream code. The intent of this number is to clearly identify the waste generator and to separate waste streams. The following is a list of waste streams currently being used at the FEMP.

Waste Stream Identification Number ONL0000000001
Contaminated Process Area Scrap Waste

Waste Stream Identification Number ONL0000000002
Contaminated Construction/Removal Action Waste

Waste Stream Identification Number ONL0000000006
Low/High Grade Residues

Waste Stream Identification Number ONL0000000007
Contaminated Trash

Waste Stream Identification Number ONL0000000008
Low/High Grade Residues - Subcontracted

Waste Stream Identification Number ONL0000000009
Metal Melt Waste

Waste Stream Identification Number ONL0000000010
Radioactively Contaminated Regulated Asbestos Containing Material

Waste Stream Identification Number ONL0000000011
Thorium Residues and Waste Not Amenable to Sampling

Waste Stream Identification Number ONL0000000012
Thorium Residues

Waste Stream Identification Number ONL0000000013
Depleted Uranium Metal

June 1993

THREE - YEAR WASTE SHIPMENT FORECAST

GENERATOR: Fernald Environmental Management Project PREPARED BY: J. G. Rowe DATE: DRAFT

FORECAST PERIOD	WASTE STREAM NUMBER	WASTE TYPE	CONTAINER			NUMBER OF SHIPMENTS	TOTAL VOLUME (meters^3)
			TYPE	SIZE	NUMBER		
FY-1994 10/01-12/31	ONL0000000001	LLW	Sea/Land	8'x 8'x 20'	12	9	436
01/01-03/31	ONL0000000001	LLW	Sea/Land	8'x 8'x 20'	13	10	472
04/01-06/30	ONL0000000001	LLW	Sea/Land	8'x 8'x 20'	21	18	762
07/01-09/30	ONL0000000001	LLW	Sea/Land	8'x 8'x 20'	13	10	472
FY-1995	ONL0000000001	LLW	Sea/Land	8'x 8'x 20'	41	28	1488
FY-1996	ONL0000000001	LLW	Sea/Land	8'x 8'x 20'	50	40	1815

REMARKS:

June 1993

THREE - YEAR WASTE SHIPMENT FORECAST

GENERATOR: Fernald Environmental Management Project PREPARED BY: J. G. Rowe DATE: DRAFT

FORECAST PERIOD	WASTE STREAM NUMBER	WASTE TYPE	CONTAINER			NUMBER OF SHIPMENTS	TOTAL VOLUME (meters^3)
			TYPE	SIZE	NUMBER		
FY-1994 10/01-12/31	ONL0000000002	LLW	Sea/Land	8'x 8'x 20'	20	20	725
			Metal Box	4'x 4'x 7'	384	48	387
01/01-03/31	ONL0000000002	LLW	Sea/Land	8'x 8'x 20'	25	25	908
			Metal Box	4'x 4'x 7'	702	87	2247
04/01-06/30	ONL0000000002	LLW	Sea/Land	8'x 8'x 20'	30	30	1089
			Metal Box	4'x 4'x 7'	1126	140	3603
07/01-09/30	ONL0000000002	LLW	Sea/Land	8'x 8'x 20'	20	20	726
			Metal Box	4'x 4'x 7'	560	70	1792
FY-1995	ONL0000000002	LLW	Sea/Land	8'x 8'x 20'	95	63	3449
			Metal Box	4'x 4'x 7'	2800	127	8960
FY-1996	ONL0000000002	LLW	Sea/Land	8'x 8'x 20'	100	60	3630
			Metal Box	4'x 4'x 7'	1000	90	3208

REMARKS: _____

June 1993

THREE - YEAR WASTE SHIPMENT FORECAST

GENERATOR: Fernald Environmental Management Project PREPARED BY: J. G. Rowe DATE: DRAFT

FORECAST PERIOD	WASTE STREAM NUMBER	WASTE TYPE	CONTAINER			NUMBER OF SHIPMENTS	TOTAL VOLUME (meters^3)
			TYPE	SIZE	NUMBER		
FY-1994 10/01-12/31	ONL0000000006	LLW	Drums	85-Gallon	1000	0	3964E-01
			Metal Box	4'x 4'x 7'	200	0	640
01/01-03/31	ONL0000000006	LLW	Drums	85-Gallon	1000	0	3964E-01
			Metal Box	4'x 4'x 7'	200	0	640
04/01-06/30	ONL0000000006	LLW	Drums	85-Gallon	1000	4	3964E-01
			Metal Box	4'x 4'x 7'	200	2	640
07/01-09/30	ONL0000000006	LLW	Drums	85-Gallon	1000	6	3964E-01
			Metal Box	4'x 4'x 7'	200	3	640
FY-1995	ONL0000000006	LLW	Drums	85-Gallon	2000	0	7928E-01
			Metal Box	4'x 4'x 7'	200	22	640
FY-1996	ONL0000000006	LLW	Drums	85-Gallon	500	0	1982E-01
			Metal Box	4'x 4'x 7'	150	17	480

REMARKS:

June 1993

THREE - YEAR WASTE SHIPMENT FORECAST

GENERATOR: Fernald Environmental Management Project PREPARED BY: J. G. Rowe DATE: DRAFT

FORECAST PERIOD	WASTE STREAM NUMBER	WASTE TYPE	CONTAINER			NUMBER OF SHIPMENTS	TOTAL VOLUME (meters^3)
			TYPE	SIZE	NUMBER		
FY-1994 10/01-12/31	ONL0000000007	LLW	Sea/Land	8'x 8'x 20'	1	20	36
			Metal Box	4'x 4'x 7'	6	48	6
01/01-03/31	ONL0000000007	LLW	Sea/Land	8'x 8'x 20'	1	25	36
			Metal Box	4'x 4'x 7'	6	87	6
04/01-06/30	ONL0000000007	LLW	Sea/Land	8'x 8'x 20'	1	30	36
			Metal Box	4'x 4'x 7'	6	140	6
07/01-09/30	ONL0000000007	LLW	Sea/Land	8'x 8'x 20'	1	20	36
			Metal Box	4'x 4'x 7'	6	70	6
FY-1995	ONL0000000007	LLW	Sea/Land	8'x 8'x 20'	4	63	145
			Metal Box	4'x 4'x 7'	6	127	6
FY-1996	ONL0000000007	LLW	Sea/Land	8'x 8'x 20'	4	60	145
			Metal Box	4'x 4'x 7'	6	90	6

REMARKS: _____

June 1993

THREE - YEAR WASTE SHIPMENT FORECAST

GENERATOR: Fernald Environmental Management Project PREPARED BY: J. G. Rowe DATE: DRAFT

FORECAST PERIOD	WASTE STREAM NUMBER	WASTE TYPE	CONTAINER			NUMBER OF SHIPMENTS	TOTAL VOLUME (meters^3)
			TYPE	SIZE	NUMBER		
FY-1994 10/01-12/31	ONL0000000008	LLW	Drums	85-Gallon	0	0	0
			Metal Box	4'x 4'x 7'	0	0	0
01/01-03/31	ONL0000000008	LLW	Drums	85-Gallon	4000	55	15,856E-01
			Metal Box	4'x 4'x 7'	0	0	0
04/01-06/30	ONL0000000008	LLW	Drums	85-Gallon	3500	50	13,874E-01
			Metal Box	4'x 4'x 7'	0	0	0
07/01-09/30	ONL0000000008	LLW	Drums	85-Gallon	3000	40	11,892E-01
			Metal Box	4'x 4'x 7'	0	0	0
FY-1995	ONL0000000008	LLW	Drums	85-Gallon	0	0	0
			Metal Box	4'x 4'x 7'	0	0	0
FY-1996	ONL0000000008	LLW	Drums	85-Gallon	0	0	0
			Metal Box	4'x 4'x 7'	0	0	0

REMARKS:

June 1993

THREE - YEAR WASTE SHIPMENT FORECAST

GENERATOR: Fernald Environmental Management Project PREPARED BY: J. G. Rowe DATE: DRAFT

FORECAST PERIOD	WASTE STREAM NUMBER	WASTE TYPE	CONTAINER			NUMBER OF SHIPMENTS	TOTAL VOLUME (meters^3)
			TYPE	SIZE	NUMBER		
FY-1994 0/01-12/31	ONL0000000009	LLW	Metal Box	4'x 4'x 7'	8	2	26
01/01-03/31	ONL0000000009	LLW	Metal Box	4'x 4'x 7'	8	2	26
04/01-06/30	ONL0000000009	LLW	Metal Box	4'x 4'x 7'	0	0	0
07/01-09/30	ONL0000000009	LLW	Metal Box	4'x 4'x 7'	0	0	0
FY-1995	ONL0000000009	LLW	Metal Box	4'x 4'x 7'	0	0	0
FY-1996	ONL0000000009	LLW	Metal Box	4'x 4'x 7'	0	0	0

REMARKS:

THREE - YEAR WASTE SHIPMENT FORECAST

GENERATOR: Fernald Environmental Management Project PREPARED BY: J. G. Rowe DATE: DRAFT

FORECAST PERIOD	WASTE STREAM NUMBER	WASTE TYPE	CONTAINER			NUMBER OF SHIPMENTS	TOTAL VOLUME (meters^3)
			TYPE	SIZE	NUMBER		
FY-1994 10/01-12/31	ONL00000000010	LLW	Drums	55-Gallon	98	10	20
			Metal Box	4'x 4'x 7'	50	40	161
			Sea/Land	8'x 8'x 20'	20	10	363
01/01-03/31	ONL00000000010	LLW	Drums	55-Gallon	198	20	40
			Metal Box	4'x 4'x 7'	50	5	161
			Sea/Land	8'x 8'x 20'	20	10	363
04/01-06/30	ONL00000000010	LLW	Drums	55-Gallon	98	2	20
			Metal Box	4'x 4'x 7'	20	2	64
			Sea/Land	8'x 8'x 20'	1	1	36
07/01-09/30	ONL00000000010	LLW	Drums	55-Gallon	250	4	99
			Metal Box	4'x 4'x 7'	20	2	64
			Sea/Land	8'x 8'x 20'	1	1	36
FY-1995	ONL00000000010	LLW	Metal Box	4'x 4'x 7'	20	2	64
			Sea/Land	8'x 8'x 20'	4	2	145
FY-1996	ONL00000000010	LLW	Metal Box	4'x 4'x 7'	15	2	48
			Sea/Land	8'x 8'x 20'	4	2	145

REMARKS:

June 1993

THREE - YEAR WASTE SHIPMENT FORECAST

GENERATOR: Fernald Environmental Management Project PREPARED BY: J. G. Rowe DATE: DRAFT

FORECAST PERIOD	WASTE STREAM NUMBER	WASTE TYPE	CONTAINER			NUMBER OF SHIPMENTS	TOTAL VOLUME (meters^3)
			TYPE	SIZE	NUMBER		
FY-1994 10/01-12/31	ONL00000000011	LLW	Sea/Land	8'x 8'x 20'	3	2	109
			Metal Box	4'x 4'x 7'	45	9	45
01/01-03/31	ONL00000000011	LLW	Sea/Land	8'x 8'x 20'	3	2	109
			Metal Box	4'x 4'x 7'	45	9	45
04/01-06/30	ONL00000000011	LLW	Sea/Land	8'x 8'x 20'	3	3	109
			Metal Box	4'x 4'x 7'	45	9	45
07/01-09/30	ONL00000000011	LLW	Sea/Land	8'x 8'x 20'	3	3	109
			Metal Box	4'x 4'x 7'	45	9	45
FY-1995	ONL00000000011	LLW	Sea/Land	8'x 8'x 20'	4	4	145
			Metal Box	4'x 4'x 7'	45	2	32
FY-1996	ONL00000000011	LLW	Sea/Land	8'x 8'x 20'	4	4	145
			Metal Box	4'x 4'x 7'	45	2	32

REMARKS:

June 1993

THREE - YEAR WASTE SHIPMENT FORECAST

GENERATOR: Fernald Environmental Management Project **PREPARED BY:** J. G. Rowe **DATE:** DRAFT

FORECAST PERIOD	WASTE STREAM NUMBER	WASTE TYPE	CONTAINER			NUMBER OF SHIPMENTS	TOTAL VOLUME (meters^3)
			TYPE	SIZE	NUMBER		
FY-1994 10/01-12/31	ONL00000000012	LLW	Sea/Land	8'x 8'x 20'	5	5	181
			Metal Box	4'x 4'x 7'	200	40	202
01/01-03/31	ONL00000000012	LLW	Metal Box	4'x 4'x 7'	200	40	202
04/01-06/30	ONL00000000012	LLW	Metal Box	4'x 4'x 7'	200	40	202
07/01-09/30	ONL00000000012	LLW	Metal Box	4'x 4'x 7'	200	40	202
FY-1995	ONL00000000012	LLW	Metal Box	4'x 4'x 7'	400	80	404
FY-1996	ONL00000000012	LLW	Metal Box	4'x 4'x 7'	0	0	0

REMARKS:

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THREE - YEAR WASTE SHIPMENT FORECAST

GENERATOR: Fernald Environmental Management Project PREPARED BY: J. G. Rowe DATE: DRAFT

FORECAST PERIOD	WASTE STREAM NUMBER	WASTE TYPE	CONTAINER c"			NUMBER OF SHIPMENTS	TOTAL VOLUME (meters^3)
			TYPE	SIZE	NUMBER		
FY-1994 0/01-12/31	ONL0000000013	LLW	Metal Box	4'x 4'x 7'	360	72	40,320 ft^3
01/01-03/31	ONL0000000013	LLW	Metal Box	4'x 4'x 7'	0	0	0
04/01-06/30	ONL0000000013	LLW	Metal Box	4'x 4'x 7'	0	0	0
07/01-09/30	ONL00000000013	LLW	Metal Box	4'x 4'x 7'	0	0	0
FY-1995	ONL00000000013	LLW	Metal Box	4'x 4'x 7'	0	0	0
FY-1996	ONL00000000013	LLW	Metal Box	4'x 4'x 7'	0	0	0

REMARKS:

NON-CONTROLLED COPY
SITE STANDARD OPERATING PROCEDURE
DOCUMENT NO. SSOP-0103
REVISION NO. 0
REPLACES PP-0103

- 4552 -

FEMP SITE DOCUMENT SYSTEM

SSOP-0103

Effective Date: 10-14-92

AUTHORIZED BY: _____ 9/30/92
H. F. Daugherty, President Date

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

Westinghouse Environmental Management Company of Ohio
P. O. Box 398704
Cincinnati, Ohio 45239-87042

WESTINGHOUSE ENVIRONMENTAL MANAGEMENT COMPANY OF OHIO		SITE STANDARD OPERATING PROCEDURE Page 1 of 44
Title: FEMP SITE DOCUMENT SYSTEM		DOCUMENT NO: SSOP-0103 REVISION NO. 0
Authorization: H. F. Daugherty, President	Replaces: PP-0103, Dated 08-28-91, Rev. 0	Effective Date: 10-14-92

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Title: **FEMP SITE DOCUMENT SYSTEM**		DOCUMENT NO: SSOP-0103 REVISION NO. 0
Authorization: H. F. Daugherty, President	Replaces: PP-0103, Dated 08-28-91, Rev. 0	Effective Date: 10-14-92

RECORD OF ISSUE/REVISIONS

DATE	REV. NO	DESCRIPTION AND AUTHORITY
10-14-92	0	Procedure required to establish new Site Document System per Request No. S92-165, initiated by L. A. Tilney.

1.0 PURPOSE

This procedure establishes the document control system by which Westinghouse Environmental Management Company of Ohio (WEMCO) develops, processes, and controls the site documents at the Fernald Environmental Management Project (FEMP). Additional objectives of this procedure are to define when a document is required and the type of site document that must be developed.

2.0 SCOPE

This procedure outlines (1) the criteria for determining whether a site document is required; (2) the instructions for initiating, developing, validating, reviewing, approving, authorizing, revising, controlling, implementing, and cancelling site documents; (3) document implementation and use; (4) the FEMP document hierarchy; (5) the types of site documents; (6) document control and support functions; and (7) the required elements of a department procedure program.

The procedure applies to all FEMP organizations and complies with DOE 5480.19, "Conduct of Operations Requirements for DOE Facilities" and Site Requirement RM-0012, "Quality Assurance Program Description".

3.0 DEFINITIONS

Action Memo - A transmittal form used to initiate specific activities during the processing of documents in the Site Document System, including review, comment resolution, and approval.

Charter (CH) - A document identifying the functions of a department, committee, or board.

Department Document - A document detailing administrative, technical, or operational activities within a department.

Document Review Coordinator (DRC) - An individual assigned to represent a department for tracking the internal review, comment resolution, and approval of a site document.

Driver - Operational, technical, and administrative standards imposed on WEMCO or the FEMP by agreement, law, contract, regulations, DOE Directives, or Corporate Directives.

Information Manual (IM) - A site document providing information on a subject for FEMP personnel.

3.0 DEFINITIONS (cont.)

Major Revision - A change to a document that is 20% or more of the document text.

Minor Revision - A change to a document that is less than 20% of the document text.

One-time Deviation - A task requiring deviation from normal procedure that will be accomplished one time.

Orientation - A class provided by Documentation Control (DC) to introduce the Site Document System to SMEs, DRCs, and other applicable personnel.

Plan (PL) - A site document defining the strategy and goals for establishing and implementing an activity, program, or system. (A plan is a document that defines what work will be done, not how work will be done. It is not an instructional document and is not to be used when performing work. This definition is not applicable to site work plans.)

Policy (PO) - A site document that defines the fundamental principles that govern FEMP organizations.

Safety Analysis Report (SAR) - A report that documents the adequacy of safety analysis for a nuclear facility to ensure that the facility can be constructed, operated, maintained, shut down, and decommissioned safely and in compliance with applicable laws and regulations.

Site Document - A document detailing FEMP administrative, technical, and/or operational subject matter affecting more than one department/contractor organization.

Site Document Change (SDC) - The form by which an urgent change is processed and issued.

Site Document Request (SDR) - The form used to initiate development of the document draft and the processing of the document through the Site Document System.

Site Document System - The system controlling site documents at the FEMP that governs the performance of administrative, technical, and operational activities.

3.0 DEFINITIONS (cont.)

Site Requirement (SR) - A site document, previously titled a requirements manual, defining and establishing federal and state regulations/laws or management practices that are applicable to the FEMP. All organizations are responsible for implementing site requirements, as applicable, through a department procedure. (A site requirement is not an instructional document and is not to be used when performing work.)

Site Standard Operating Procedure (SSOP) - A type of site document providing detailed operating or administrative instruction for an ongoing activity/process (a sequence of actions).

Site Work Plan (SWP) - A site document providing detailed operating instructions for a required activity which will not be repeated.

Subject Matter Expert (SME) - An individual qualified, or previously qualified, and experienced in the applicable activity who has been documented per SSOP-0014 and is responsible for the content and update of a document.

User - An individual who has been or will be directly involved in utilizing the document.

Validation - The process of ensuring that a procedure or other instructional document is correct. The process will involve a walk-through of the procedure (where the procedure is used in the work area and verified under work conditions) or a table-top review (a step by step examination of the procedure with appropriate personnel during a meeting).

4.0 RESPONSIBILITIES

Site employee/User shall be responsible for notifying management when a document appears to be incorrect or when a new document is needed.

Department Managers or Designee

- Reviewing and approving the need for a new document or revision to an existing document.
- Reviewing and approving the initial draft.
- Implementing review controls per this procedure and resolving overdue actions.
- Approving final document (if it affects that department).

4.0 RESPONSIBILITIES (cont.)

- Initiating training, as required, for an issued site document.
- Establishing and maintaining a department document program and department charter per this procedure.
- Determining what site/department documents are needed to support the functions and responsibilities of their organization.
- Ensuring assigned SMEs complete orientation of the Site Document System as scheduled by Documentation Control.

The Documentation Control (DC) Manager

- Establishing and maintaining a document system to develop, issue, and control site documents.
- Providing orientation classes on the Site Document System and document development to Subject-Matter Experts, Document Review Coordinators, and other applicable personnel.
- Providing technical writers to write documents/revisions and comment resolutions with the SME and User.
- Providing an Editor to assist the SME, Technical Writer, and User with document development.
- Ensuring internal and external document actions are tracked throughout the processing phase of a document.
- Providing word processing support to prepare site documents.
- Providing controlled and non-controlled site documents to WEMCO and subcontractor employees.
- Resolving problems and issues throughout the processing of a site document.

The Subject-Matter Expert (SME)

- Conducting research to verify a new document, revision, or urgent change is required.
- Developing a flowchart for a procedure or work plan.
- Developing a document outline of the process/activity.

4.0 RESPONSIBILITIES (cont.)

- Providing the Technical Writer with the information from which the writer will develop the draft.
- Validating the document.
- Resolving comments with Technical Writer.
- Completing the orientation class on the Site Document System and document development.

Document Review Coordinators (DRC) shall be responsible for tracking the department reviews, comment resolution, and approval of a site document.

The WEMCO President shall be responsible for authorizing the issue of site documents.

Managers/Supervisors

- Maintaining all current site documents.
- Reviewing issued site documents for applicability to their organization and ensuring affected personnel are informed and trained as necessary.
- Ensuring personnel within their organization comply with issued site documents.

The User shall be responsible for providing information on the activity to the SME/Technical Writer for document development and validation.

Department reviewers shall be responsible for reviewing site documents in accordance with this procedure.

The Technical Writer

- Writing the document draft and incorporating comment resolutions into the document from the information provided by the SME and User.
- Taking the lead role in processing the document through the Site Document System.

The Editor

- Completing a critique of the document draft.
- Completing a final edit of the document prior to approval.

4.0 RESPONSIBILITIES (cont.)

DC Tracking

- Assisting SME in filling out the milestone chart.
- Tracking document from request initiation through document distribution.

5.0 GENERAL

5.1 Figure 1, FEMP Document Hierarchy shows (a) the flow of site documents and department documents and (b) the types of non-operational documents at the FEMP.

5.2 Each department shall be responsible for establishing and administering a document system that contains the elements in Table 1 to process the documents within their organization.

5.3 A department charter shall be prepared and maintained by each department and processed as a site document per this procedure.

6.0 PREREQUISITES

Assigned SMEs and DRCs should complete an orientation class on the Site Document System as scheduled by DC.

7.0 PROCEDURE (See Site Document System Flowchart, Figure 2)

7.1 DETERMINING IF A DOCUMENT/REVISION IS REQUIRED

SITE EMPLOYEE OR USER

1. Notify supervisor or manager when a document appears to be incorrect or when a new document is needed.

DEPARTMENT MANAGER (OR DESIGNEE)

2. Determine whether a new document or revision is required based on the criteria provided in Table 2.

3. Assign an SME per SSOP-0014 to conduct research and verify whether the revision or new document is required.

   NOTE: The SME is required to complete an orientation class on the Site Document System as scheduled by DC.

7.1 DETERMINING IF A DOCUMENT/REVISION IS REQUIRED (cont.)

SME

4. Using the Site Document Index and department document indexes, determine whether a document exists for the activity. Contact DC and applicable department document program representatives to ensure a similar document is not in process.

   a. If a site document exists and requires updating, proceed to 7.11 to initiate a revision.

   b. If a department document exists for the activity, notify the department manager and determine whether a site document may be needed.

   c. If a document does not exist for the subject, proceed to 7.2 to initiate a new document.

7.2 INITIATING A NEW DOCUMENT

SME

1. Notify the department manager that a new document is required.

DEPARTMENT MANAGER (OR DESIGNEE)

2. Review the SME's justification for the new document and assign the task to the SME if warranted.

7.3 DEVELOPING A NEW DOCUMENT

SME

1. Prepare a document outline of the proposed activity using the applicable format (see Figures 3 through 7).

   NOTE: The Site Work Plan, Information Manual, Plan, and Safety Analysis Report have no format requirements.

   a. If the document to be written is to provide instruction (an SSOP or SWP), prepare a flowchart detailing each step in the process.

   NOTE: A task team may be required to perform an early analysis for the development of the document.

7.3 DEVELOPING A NEW DOCUMENT (cont.)

SME

2. Determine whether the document required is a site or department document per the definitions provided in 3.0. For assistance, contact DC.

   a. If a department document is needed, proceed per the applicable department procedure for the department document program.

   b. If a site document is needed, proceed to Section 7.3, Step 3.

DC AND SME

3. Determine the specific type of site document required according to the definitions in 3.0 (see FEMP document hierarchy, Figure 1).

DC TRACKING AND SME

4. Select the applicable milestones on the Milestone Chart (see Figure 8) and calculate a document completion date.

   NOTE: The milestone chart will allow DC, along with the SME, to establish a schedule for the document based on document type, size, and typical task/milestone durations.

SME

5. Complete all applicable sections of the Site Document Request (SDR), Form FS-F-3523 (see Figure 9), except for obtaining the department manager's signature. Transmit the SDR form, document outline, and flowchart (as applicable) to DC.

   a. To determine the applicable FEMP reviewers and required approvals, refer to Figures 10 and 11.

      NOTE: DC will assist with the determination of the required reviewers as required.

   b. Add off-site reviews to the SDR review list, as applicable.

   c. Send a copy of a request for a new document to Centralized Training for training analysis.

7.3 DEVELOPING A NEW DOCUMENT (cont.)

DC TRACKING

6. Assign a number and a technical writer (determined by DC Manager) to the SDR and give a copy of the outline to the Editor for review.

7. Throughout the preparation process of the document, record the actual number of work days for the completion of each milestone on the Milestone Chart.

SME AND TECHNICAL WRITER

8. Using the outline, develop the draft with the User and transmit to DC word processing by disk or hard copy.

   NOTE: The SME will arrange for User support.

DC TRACKING

9. When the draft is completed, transmit the SDR with draft to the department manager (who owns the document) for signature.

DEPARTMENT MANAGER (OR DESIGNEE)

10. Read the draft for purpose and site compliance.

11. Sign the SDR for draft acceptability and return to DC.

DC TRACKING

12. When the SDR is signed by the department manager, transmit draft to the Editor.

EDITOR

13. Critique document for user-friendliness and clarity and return to DC Tracking.

DC TRACKING

14. Record completion of critique from editor and return document to the Technical Writer.

7.3 DEVELOPING A NEW DOCUMENT (cont.)

TECHNICAL WRITER

15. Review editor's critique and resolve comments with SME and the User, if required. Submit marked draft to word processing for revision, as applicable.

7.4 VALIDATION

TECHNICAL WRITER

1. When word processing is complete, schedule validation process with the SME and User. Obtain action memo from DC Tracking for validation process.

SME AND USER

2. Perform a "walk through" or "table top review" of the document for validation with applicable personnel.

   NOTE: The validation process shall include independent verification with users who have not participated in the development of the document.

   a. If the document is valid, sign the action memo and return to DC Tracking.

   b. If the document is not valid, resolve problems/comments and incorporate as necessary into the document. Sign action memo for validation when resolution process is complete.

7.5 REVIEW

NOTE: Each department shall establish and implement the review cycle controls/responsibilities in Table 3.

DC TRACKING

1. Record receipt of action memo for validation and prepare document for review process as follows:

   NOTE: A meeting may be held to expedite the review process.

   a. Verify the departments designated as reviewers are in accordance with the Document Review Matrix (see Figure 10).

7.5 REVIEW (cont.)

DC TRACKING

b. Prepare action memos for review process using review time designated in Figure 10 and deliver to the applicable Document Review Coordinators. Send the document to offsite reviewer(s) (DOE, EPA, and non-WEMCO organizations) if applicable.

DRC

2. Route review copies to applicable personnel within the department as determined by management.

3. Track review copies through review period.

REVIEWER

4. Review the document for specific area of responsibility per Reviewer Guidelines (refer to Table 4).

5. Write comments on the Document Review Comment Sheet (see Figure 12).

6. Mark comments as significant only when based on technical inaccuracies, noncompliance, or inconsistencies with established requirements, laws, regulations, and/or procedures.

7. Return document within the designated review time to the DRC.

DRC

8. Log receipt of reviewed draft document and transmit to DC. If a review is not completed within the review period, notify department manager for corrective action.

DC TRACKING

9. Record receipt of each review and immediately upon receipt of any comments transmit to the SME for resolution.

10. At the review due date, prepare an action memo signifying that the review phase is complete and that comments received require resolution by the SME.

7.5 REVIEW (cont.)

DC TRACKING

a. If a department has not returned their review by the due date, contact the applicable DRC of that department to discuss the delinquent review.

<u>NOTE</u>: Typically review comments received past the review due date will be addressed and incorporated, as applicable, in the next revision of the document.

DRC

11. Log receipt of action memo and transmit to SME.

12. Monitor comment resolution progress. If the action memo is not returned by SME in time to meet DC due date, notify department manager.

7.6 COMMENT RESOLUTION

SME AND TECHNICAL WRITER

1. Resolve comments and record on the comment sheet (Figure 12) how each significant comment was resolved.

2. Ensure comments marked as SRC (Significant Review Comment) are significant per Section 7.5, Step 6. If the comments appear to not be significant, verify through the DC Manager and delete SRC designation, as applicable.

TECHNICAL WRITER

3. Incorporate the comment resolutions on a copy of the document and submit to word processing.

SME

4. For SRCs, discuss comment resolution with appropriate reviewer.

a. If the reviewer agrees that the comments have been resolved satisfactorily, obtain concurrence signature.

<u>NOTE</u>: A signature is not required for comments incorporated verbatim as stated on the comment sheet.

7.6 COMMENT RESOLUTION (cont.)

SME

b. If the reviewer does not concur with resolution, transmit comment and resolution to the reviewer's supervisor and the SME's supervisor for resolution.

5. After SRCs are resolved, contact other reviewers of departments that may be affected by the change to ensure the resolution is acceptable.

   NOTE: SME will determine which department may be affected.

SME AND DC MANAGER

6. If a department does not agree with the resolution to an SRC made by another department, convene a meeting of the departments to negotiate an acceptable solution.

SME

7. Sign the action memo for completing resolution of the comments and obtaining SRC signatures. Return the action memo with completed comment sheets and document to the DRC.

DRC

8. Record receipt of action memo for comment resolution. Ensure all comments have been resolved on the comment sheet and the action memo has been signed by the SME.

9. Return action memo to DC Tracking.

DC TRACKING

10. Record receipt of action memo for comment resolution and maintain action memo on file.

TECHNICAL WRITER

11. When comments have been incorporated by word processing and the signed action memo has been returned for comment resolution, give the document to the Editor via the DC Tracker.

7.6 COMMENT RESOLUTION (cont.)

EDITOR

12. Complete final edit of the document for typographical and grammatical error. Return document to the Technical Writer via the DC Tracker.

TECHNICAL WRITER

13. Incorporate any editorial changes through word processing and give to DC Tracking for approval routing.

7.7 APPROVAL

DC TRACKING

1. Prepare action memos for approval per SDR and deliver to applicable department manager(s).

DEPARTMENT MANAGER (OR DESIGNEE)

2. Ensure document meets site activity requirements.

3. Sign and date approval record signifying the document is still in compliance with site requirements and return to DC.

DC TRACKING

4. Record receipt of each action memo and ensure each approval record has been signed.

   a. If the document is not approved, contact SME and Technical Writer.

SME AND TECHNICAL WRITER

   b. Resolve department manager's comments/concerns and return to applicable department manager for approval (through DC Tracking).

7.8 AUTHORIZATION

DC TRACKING

1. When all the approval signatures have been obtained, add the effective date to the document and deliver document to President for authorization. Include information, as required, to advise President of departments that did not complete the review/approval cycle.

   NOTE: The effective date shall be 10 working days from the date the document is authorized to ensure proper distribution.

PRESIDENT

2. Evaluate impact of document to ensure document meets site activity requirements and can be implemented satisfactorily. Consult cognizant department manager as needed.

3. Sign the document for authorization and return to DC.

   NOTE: A commitment shall be considered closed at the time of document authorization.

   NOTE: Training may be initiated upon authorization per TR-SP-6001.

7.9 DISTRIBUTION

DC

1. After receipt of the authorized document, prepare for distribution.

2. Complete reproduction and controlled distribution of the document prior to the effective date.

7.10 IMPLEMENTATION AND USE

MANAGERS AND SUPERVISORS

NOTE: Every manager/supervisor shall receive and maintain controlled copies of all site documents.

1. Upon receipt of a document, read for awareness of the content and sign the acknowledgement on the distribution sheet (see Figure 13).

7.10 IMPLEMENTATION AND USE (cont.)

MANAGERS AND SUPERVISORS

2. Determine if the content is applicable to your organization.

   a. If the document is applicable to your organization, ensure all personnel are made aware of the document content.

      NOTE: Training shall be initiated as determined by the responsible department per TR-SP-6001.

   b. If applicable, maintain document in the organization's Required Reading File in accordance with Westinghouse Conduct of Operations Manual, dated 7-1-91.

   c. If the document is not applicable to your organization, indicate on the distribution sheet.

3. Return distribution sheet to DC Tracking.

DC TRACKING

4. Retain distribution sheets on file.

MANAGERS AND SUPERVISORS

5. Conduct periodic checks of document users to ensure activities are performed in accordance with issued procedures.

7.11 REVISION

NOTE: An urgent change to a document shall be completed per Section 7.12.

SME

1. Determine whether the revision is major or minor based on the definitions listed in Section 3.0.

   a. If the revision is major, write a summary of the revision, proceed to Section 7.3, Step 1 of this procedure and continue processing of the revision.

   b. If the revision is minor, proceed to Section 7.11, Step 2.

7.11 REVISION (cont.)

SME

2. Mark the changes on a current copy of the document.

3. Complete an SDR form (see Figure 9) and submit to DC.

   NOTE: The department manager's signature is not required for a minor revision.

DC TRACKING

4. Assign a number and a technical writer to the SDR.

TECHNICAL WRITER

5. Review revision, rewrite as necessary, and submit to word processing.

   NOTE: Changes shall be identified by shaded text.

6. When the word processing has been completed, submit revised document pages to DC Tracking to prepare for SME review.

DC TRACKING

7. Verify reviewers on the SDR in accordance with the Site Document Review Matrix (see Figure 10).

8. Prepare action memo to SME, attach revised pages, and deliver to SME.

SME

9. Review minor revision for accuracy.

   a. If the revision is accurate, sign the action memo to route the document for review.

   b. If the revision is not accurate, mark changes on the document copy and return to DC/Technical Writer for correction.

7.11 REVISION (cont.)

DC TRACKING

10. When the revision has been approved by the SME, prepare action memos for document review and deliver to the applicable DRCs.

DRC

11. Proceed to Section 7.5, Step 2 and continue processing of the minor revision through Section 7.10, Step 5.

7.12 URGENT CHANGE

<u>NOTE</u>: A Site Document Change (SDC) form is used to issue an urgent change and may only revise less than 20% of the document text.

<u>NOTE</u>: The SDC, if approved, will normally be processed in one to three days.

SME

1. Mark change on current copy of document and submit to DC to initiate an SDC.

DC TRACKING AND SME

2. Determine reviewers per the Site Document Review Matrix (see Figure 10).

DC TRACKING

3. Assign an SDC number to the change and a technical writer to write the SDC.

TECHNICAL WRITER

4. Develop SDC (see Figure 14) with SME as necessary and obtain SME concurrence to route for review.

   a. If the change will be on-going, mark the "Revise Affected Procedure" box in Item 7 of the SDC form.

   b. If the change is a one-time deviation, indicate as "No Procedure Action" in Item 7 of the SDC form.

7.12 URGENT CHANGE (cont.)

TECHNICAL WRITER

5. Submit SDC to DC Tracking to be routed for review and approval.

DC TRACKING

6. Prepare document with action memos for SDC to be routed for review and approval.

SME OR DC

7. Deliver action memos to applicable department managers. If the department manager is not available, deliver SDC review and approval to DRC.

DEPARTMENT MANAGER (OR DESIGNEE)

8. Review SDC against current document per Reviewer Guidelines (refer to Table 4), record any comments on review comment sheet, and return to DC within one work day. If no comments are made, sign the SDC indicating approval.

DC TRACKING

9. Record receipt of each action memo. If the SDC is returned with comments, notify SME to complete resolution of comments and then obtain approval signature.

10. Upon approval, add the effective date and the expiration date. Complete controlled distribution of the SDC for an effective period of six months.

    NOTE: The SDC shall be issued on blue paper.

11. During the six month period, revise the affected document to incorporate the SDC.

    NOTE: The SDC may be cancelled per this procedure upon request by the SME.

7.13 CANCELLATION

DC

1. For a site document that has been superseded, indicate document cancellation on the filing instruction sheet when the corresponding replacement document is issued.

2. For a department document superseded by a site document, contact the applicable department to initiate cancellation of the document.

SME

3. To cancel a document/SDC due to a cease in activity, complete an SDR form and transmit to DC.

DC

4. Route document for review of the cancellation to IRS&T, EC, and the department manager responsible for the document.

   a. If comments are received, notify SME to resolve comments.

5. After comments are resolved or if no comments are received, prepare cancellation notice and transmit to applicable personnel per controlled distribution.

7.14 DOCUMENT CONTROL AND SYSTEM SUPPORT

DC

1. Set up and maintain site document stations containing all the current site documents. Refer to Table 5 for a list of established and future stations.

2. Conduct quarterly assessments of selected site document volumes in accordance with applicable department procedure to ensure the documents are current.

3. Issue a Site Document Index monthly.

4. Establish and implement a program to annually review site documents for content accuracy.

5. Maintain the review, approval, authorization, and control records of current site documents.

7.14 DOCUMENT CONTROL AND SYSTEM SUPPORT (cont.)

DC

6. Provide non-controlled copies of site documents to FEMP personnel as requested.

7. Establish and maintain a request system for subcontractors who require controlled or non-controlled site/department document copies.

   NOTE: Each department shall control the documents required from their department and transmit to the applicable subcontractor.

8. Maintain cancelled site documents as records.

8.0 APPLICABLE DOCUMENTS

8.1 DRIVERS

- DOE 5480.19, "Conduct of Operations Requirements for DOE Facilities"
- RM-0012, "Quality Assurance Program Description"

8.2 REFERENCES

- RM-0012, "Quality Assurance Program Description"
- Westinghouse Conduct of Operations Manual

TABLE 1
DEPARTMENT DOCUMENT PROGRAM ELEMENTS[1]

1. Initiation and development of a new document or revision to an existing document
2. Identification of format for each type of document
3. Review and approval process
4. Identification of documents
5. Process to issue urgent changes
6. Identification of required reviews and approvals
7. Cancellation of documents
8. Issuing authority
9. Document control (including periodic review and controlled distribution)
10. Record maintenance
11. Index of department documents
12. Meets requirements of RM-0012, "QA Program Description"

(1) *This table identifies the basic elements of a department document program. All departments shall ensure their program for processing department procedures contains these elements.*

TABLE 2
CRITERIA FOR INITIATING A DOCUMENT[1]

Repetitive Task
Impact on site operations • Environment, safety, and health • Quality assurance • Monetary • Public relations/legal implication
Requirements of a driver
Result of an audit
Change in activity

[1] A document shall be required based on one or more of the items in Table 2.

TABLE 3
REVIEW CYCLE CONTROLS/RESPONSIBILITIES

Department Manager • Establish a Document Review Coordinator (DRC) to track reviews within the department. • Ensure reviewers are familiar with Section 7.5 of this procedure. • Ensure documents are reviewed in the designated review time.
Documentation Control • Establish and maintain a followup system to monitor late reviews which includes notification to departments of late reviews.

TABLE 4
REVIEWER GUIDELINES

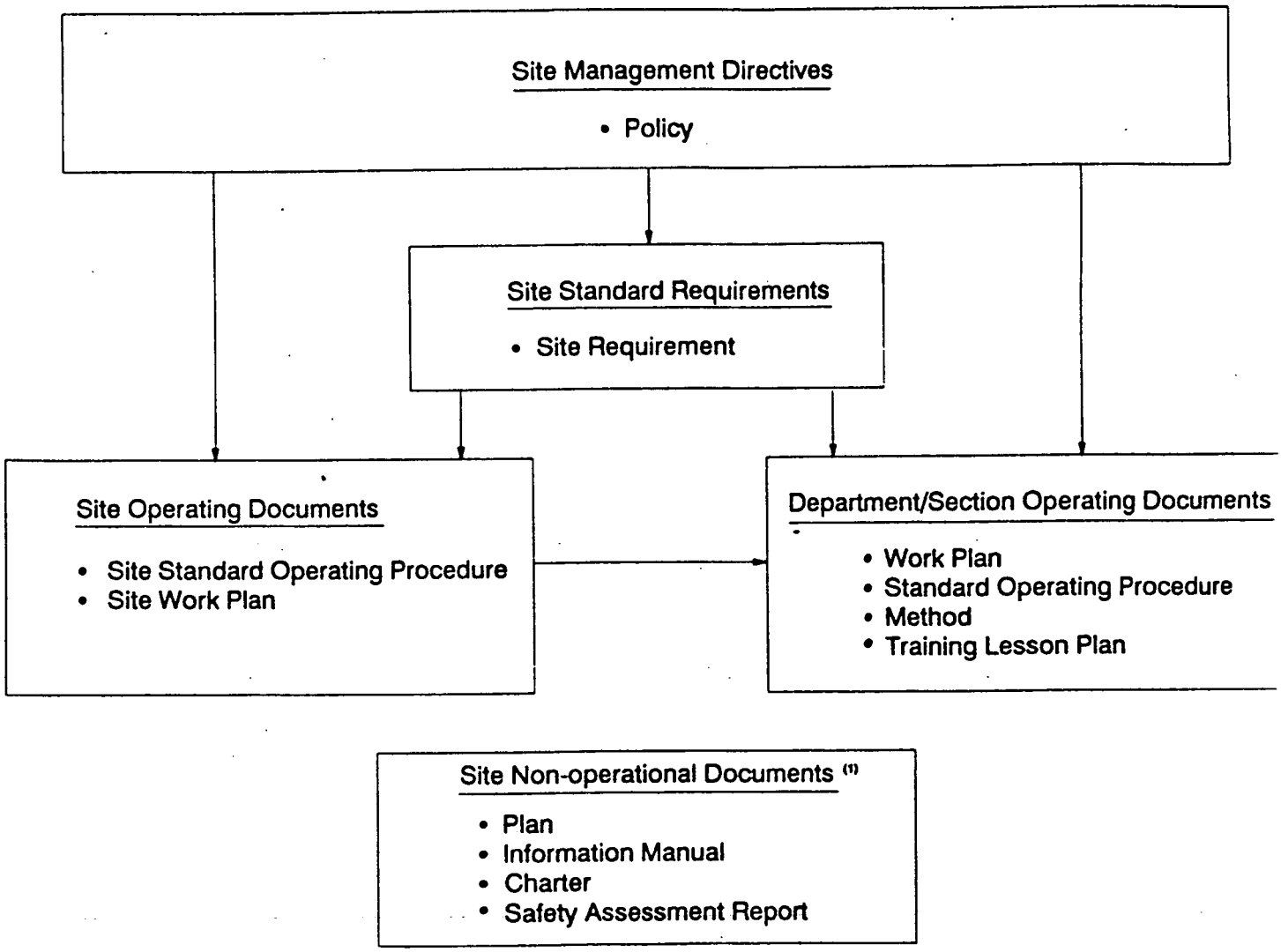
1.	Review for area of responsibility.
2.	Direct comments to the actions within the scope of the procedure. Modification of equipment or new equipment development should not be addressed in the review. Contact the SME and/or the owner of the procedure.
3.	Comment only on the Document Review Comment Sheet. Make a statement. Do not write questions. If necessary to resolve a conflict, call the SME indicated on the document.
4.	Indicate comments as "significant" if the change indicated is required to meet WEMCO policies and/or established regulations applicable to the FEMP operation. A comment which is a suggestion, concern, punctuation, grammar, spelling, organization title, or does not impact one or more of the following areas: safety, DOE requirement, FEMP commitment, quality, compliance, technical content, or scope of procedure shall not be considered significant.
5.	If the technical or administrative accuracy of the document is questionable, compare document to source documents and/or contact the SME.
6.	If material is technically correct, do not change because of personal opinion.
7.	For questions regarding format, contact Documentation Control, X-6545.

TABLE 5
SITE DOCUMENT STATIONS

EXISTING SITE DOCUMENT STATIONS:	SITE STATIONS TO BE ESTABLISHED:
1) N7-0001 - T-24, North 7 Plex	1) T-43, East Trailer
2) S&H-0001 - S&H Bldg. 2nd Floor	2) T-44, West Trailer
	3) T-25, South 7 Plex
	4) Analytical Lab Bldg - North, 2nd Floor
	5) Analytical Lab Building - South
	6) Refinery - Plant 2/3
	7) Metals Plant - Plant 6
	8) Safety & Health - 1st Floor
	9) Safety & Health - Communication Center
	10) Decontamination Bldg (Bldg 69)
	11) T-23, 10 Plex
	12) Administration Bldg. - 1st Floor
	13) Administration Bldg. - 2nd Floor
	14) T-16, East Trailer Area, Conference Room, South end
	15) T-76, Library

WESTINGHOUSE ENVIRONMENTAL MANAGEMENT COMPANY OF OHIO		SITE STANDARD OPERATING PROCEDURE Page 30 of 44
Title: FEMP SITE DOCUMENT SYSTEM		DOCUMENT NO: SSOP-0103 REVISION NO. 0
Authorization: H. F. Daugherty, President	Replaces: PP-0103, Dated 08-28-91, Rev. 0	Effective Date: 10-14-92

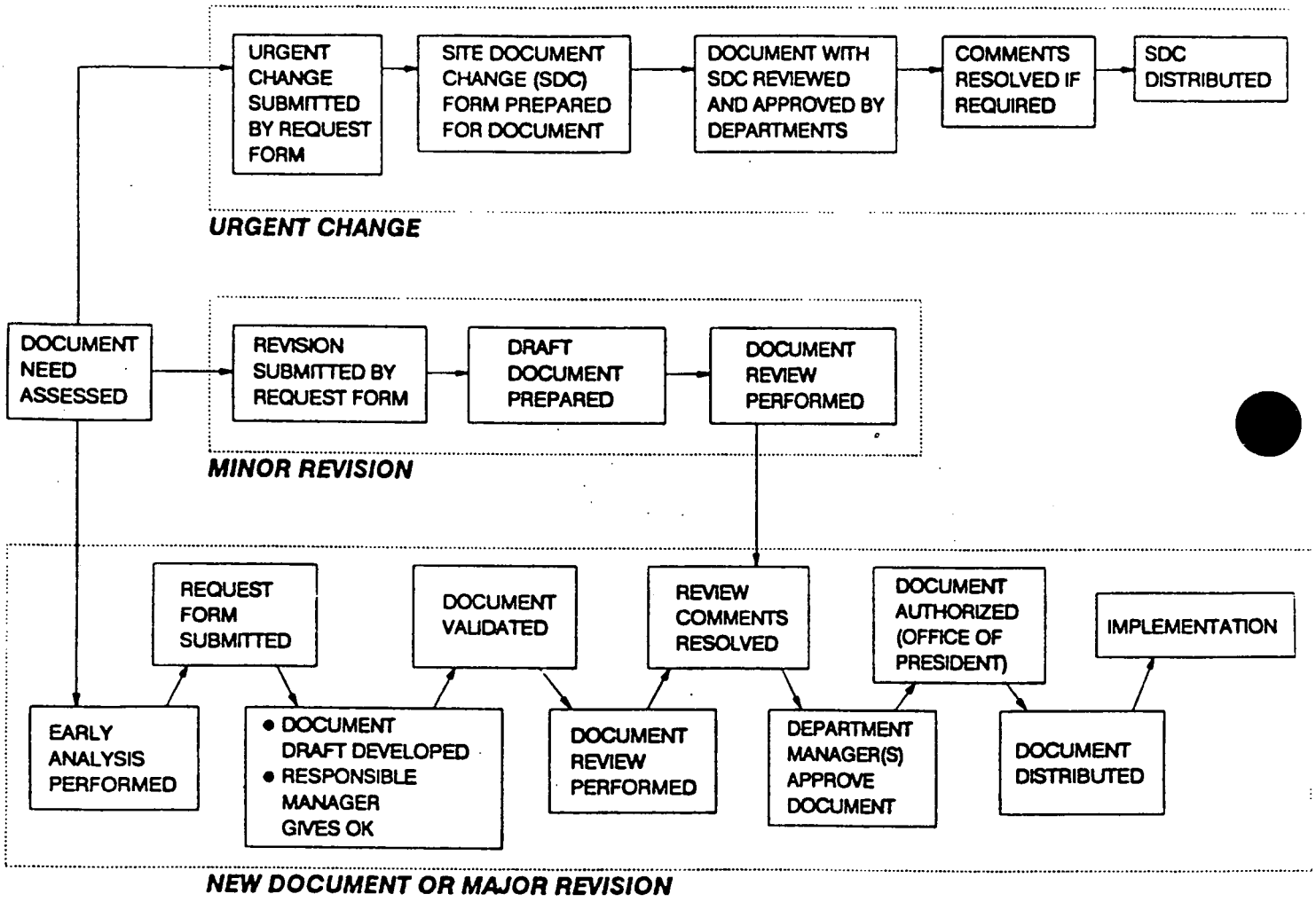
FEMP DOCUMENT HIERARCHY



(1) *Site Non-Operational documents may or may not be developed based on a hierarchial driver. It is possible that there will be a need for one of these documents without being driven by policy, requirement, or other documents.*

Figure 1 - FEMP Document Hierarchy

SITE DOCUMENT PROCESS FLOWCHART



NOTE: A detailed flowchart (Process Map) can be obtained from Document Control

Figure 2 - Process Flow

POLICY FORMAT

1.0 OBJECTIVE

State the general intent of the policy and the corporate directive/ regulation that requires generating this policy (the driver). A summary of the policy.

2.0 SCOPE

Specify all organizations or individuals who will be governed by this policy.

3.0 DEFINITIONS

This section shall include those terms and statements contained in the body of the document which require definition for uniform understanding.

4.0 ELEMENTS

Detail the several components of the policy (as applicable), using subheads to identify each main concept or paragraph.

5.0 IMPLEMENTATION

Specify who is responsible for the implementation of the policy, and the type of document(s) to be written to put the policy into effect.

Figure 3 - Policy Format

SITE REQUIREMENT FORMAT

1.0 INTRODUCTION

State the purpose of the site requirement and the driver that requires the document.

2.0 SCOPE

Specify the activity/function applicable to the site requirement and the affected organizations or personnel.

3.0 DEFINITIONS

This section shall include those terms and statements contained in the body of the document which require definition for uniform understanding.

4.0 STANDARDS

Detail the requirements of the document subject.

5.0 IMPLEMENTATION

Specify how the standards will be implemented at the FEMP, including who is responsible for the implementation of the site requirement and the type of document(s) to be written to place the site requirement into effect.

Figure 4 - Site Requirement Format

DEPARTMENT/ORGANIZATION CHARTER FORMAT

1.0 PURPOSE

Identify the overall function of the organization.

2.0 ORGANIZATION

List subgroups and functions within the organization to describe purpose and goals.

3.0 RESPONSIBILITIES

List specific responsibilities of organization. If responsibilities are shared with other organizations, ensure shared organizations agree with established responsibilities.

4.0 APPLICABLE DOCUMENTS

Include in this section the specific documents that are applicable to the organization. If no documents exist, state "NONE".

4.1 Drivers - Administrative requirements creating need for the charter.

4.2 Reference Documents - Documents required to complete actions or portions of actions identified in the charter. Reference only documents issued through the Site Document System. Department and Library Documents are not acceptable.

Figure 5 - Department/Organization Charter Format

MEMBERSHIP/COMMITTEE CHARTER FORMAT

1.0 PURPOSE

Develop a statement of the purpose for the committee, council, or board.

2.0 MEMBERSHIP

List by title those individuals who serve as members and describe briefly how and by whom members are chosen.

3.0 RESPONSIBILITIES

Include the responsibilities of the committee, council, or board, and, if appropriate, the unique responsibilities of the members. State the authority of the committee, council or board. Do not include responsibilities that are standard for any organization, such as the chairperson "chairs", the committee or the members who participate in the meetings.

4.0 APPLICABLE DOCUMENTS

Include in this section the specific documents that are applicable to the particular committee, council, or board. If no documents exist, state "NONE".

4.1 Drivers - Administrative requirements creating need for the charter.

4.2 Reference Documents - Documents required to complete actions or portions of actions identified in the charter. Reference only documents issued through the Site Document System. Department and Library Documents are not acceptable.

Figure 6 - Membership/Committee Charter Format

SITE STANDARD OPERATING PROCEDURE (SSOP) FORMAT

1.0 PURPOSE

This section shall give a clear, concise statement explaining the intent of the procedure.

2.0 SCOPE

This section should establish the limits of the procedure. The activity/function applicable to the procedure and the affected organizations should be specified.

3.0 DEFINITIONS

This section shall include those terms and statements contained in the body of the document which require definition for uniform understanding.

4.0 RESPONSIBILITIES

This section shall specify the responsibility and authority of the persons and/or organizations involved in the activity for which the procedure is written.

5.0 GENERAL

Include explanatory information that is not specific to the procedure section but is necessary for the clarity and understanding of the document. If there are no general items, indicate by "NONE".

6.0 PREREQUISITES

This section should discuss requirements applicable to the performance of the procedure. These requirements should include Industrial Health & Safety, Personnel, and Tool requirements.

Figure 7 - Site Standard Operating Procedure Format
(Sheet 1 of 2)

SITE STANDARD OPERATING PROCEDURE (SSOP) FORMAT

7.0 PROCEDURE

This section shall contain in detail all steps required to accomplish the activity. Who is to accomplish each step and precise order of steps must be shown. Subsections should show a breakdown of the major activities associated with accomplishing the overall task. The title of the employee or the group responsible for accomplishing accompanying steps will be shown just prior to those steps.

Figures, tables, and guides should be incorporated within the text as close to their reference in the text as possible.

WARNINGS will be used only for conditions that will cause personnel injury. CAUTIONS will be included in the procedure text when a condition will cause equipment/material damage. NOTES will be incorporated in the text of the procedure in order to clearly define a condition or step of a procedure or present information that may be helpful in completing a task.

8.0 APPLICABLE DOCUMENTS

Documents that are "drivers" or "reference" documents should be listed. Drivers are administrative requirements creating a need for the document. References are documents required to complete actions or portions of actions identified in the document. Reference only documents issued through the Site Documentation System.

Figure 7 - Site Standard Operating Procedure Format
(Sheet 2 of 2)

SITE PROCEDURE MILESTONE CHART

PROCESS STEP	RESPONSIBILITY	TOTAL NUMBER OF PAGES								ESTIMATED DATE	COMPLETION DATE
		5	10	15	20	25	30	35	40		
		ACTUAL DAYS / STD DAYS	ACTUAL DAYS / STD DAYS	ACTUAL DAYS / STD DAYS	ACTUAL DAYS / STD DAYS	ACTUAL DAYS / STD DAYS	ACTUAL DAYS / STD DAYS	ACTUAL DAYS / STD DAYS	ACTUAL DAYS / STD DAYS		
DRAFT DOCUMENT	SME/ TECHNICAL WRITER/ USER										
OBTAIN DEPT MANAGER SIGNATURE	SME										
CRITIQUE DOCUMENT	EDITOR										
CRITIQUE RESOLUTION	TECHNICAL WRITER & SME										
VALIDATION	USER & SME										
REVIEW	DEPARTMENT MANAGERS										
REVIEW COMMENT RESOLUTION	SME/ TECHNICAL WRITER										
EDIT	EDITOR										
APPROVAL	APPLICABLE DEPARTMENT MANAGERS										
AUTHORIZATION	PRESIDENT										
DISTRIBUTE	DOCUMENT CONTROL TRACKING										
	TOTAL ACTUAL DAYS / TOTAL STANDARD DAYS										

Figure 8 - Milestone Chart

FEMP SITE DOCUMENT REQUEST

DOCUMENT BINDING	
☐ LOOSE LEAF	☐ BOUND

DOCUMENT REQUEST TYPE
☐ NEW
☐ MAJOR REVISION
☐ SITE DOCUMENT CHANGE (SDC)
☐ MINOR REVISION (A change consisting of <20% of the document text)
☐ CANCELLATION
CHARGE NO.:

THIS BLOCK FOR DC USE ONLY			
REQUEST NO.:	REQUEST DATE:	EFFECTIVE DATE:	PRIORITY NUMBER:
ASSIGNED TECH WRITER:			EXT:

DOCUMENT TYPE			
☐	CHARTER (CH)	☐	SITE STANDARD OPERATING PROCEDURE (SSOP)
☐	POLICY (PO)	☐	SITE REQUIREMENT (RQ)
☐	OTHER:		

NOTE: REQUEST WILL NOT BE PROCESSED WITHOUT DEPARTMENT MANAGER SIGNATURE
* DEPARTMENT MANAGER'S SIGNATURE IS NOT REQUIRED FOR MINOR REVISIONS

SUBJECT MATTER EXPERT (SME):	SME EXT.	SME ORGANIZATION:
*DEPARTMENT MANAGER SIGNATURE:	DEPARTMENT MANAGER ORGANIZATION:	DATE:

DOCUMENT NUMBER:	EFFECTIVE DATE:	REVISION NUMBER:
DOCUMENT TITLE:		
SUPERSEDES:	DATE:	REVISION NUMBER:
DRIVER(S):		

REQUIRED DEPARTMENT MANAGER REVIEWS		REQUIRED DEPARTMENT MANAGER APPROVALS

GENERAL COMMENTS/INFORMATION	
COMMITMENT NUMBER:	COMMITMENT DATE:

FS-F-3523 (REV. 5/18/92)

Figure 9 - SITE DOCUMENT REQUEST (SDR)
FORM FS-F-3523

SITE DOCUMENT REVIEW MATRIX

DOCUMENT TYPE	REQUIRED REVIEWS	REVIEW TIME			
		New Document/ Major Revision	*Minor Revision*	*SDC*	*Cancellation*
Policy	Responsible Department(s)[1], EC, DC[2]	5 days	3 days	1 day	5 days
Charter	Responsible Departments[1], QA, DC[2]	5 days	3 days	1 day	5 days
Information Manual	Responsible Departments[1], DC[2]	10 days	5 days	3 days	5 days
Plan	Responsible Departments[1], DC[2]	10 days	5 days	3 days	5 days
Safety Assessment Report	Responsible Departments[1], DC[2], IRS&T, EC	10 days	5 days	3 days	5 days
Site Requirement	EC, IRS&T, Responsible Departments[1], DC[2]	10 days	5 days	3 days	5 days
Site Standard Operating Procedure	EC, IRS&T, Responsible Departments[1], DC[2]	10 days	5 days	3 days	5 days
Site Work Plan	EC, IRS&T, Responsible Departments[1], DC[2]	10 days	5 days	3 days	5 days

[1] Responsible Department(s) - The departments which are knowledgeable on the document subject, will contribute to the accuracy of the document content, or are responsible for actions within the document. The SME and DC will determine the responsible departments.

[2] The DC Manager or designee shall ensure the document communicates the activity or subject effectively.

Figure 10 - Site Document Review Matrix

SITE DOCUMENT APPROVAL & AUTHORIZATION MATRIX

DOCUMENT TYPE	*APPROVALS REQUIRED*	*AUTHORIZATION REQUIRED*	*APPROVAL TIME*
Policy	Responsible Department Manager	President	3 days
Charter	Responsible Department Manager	President	3 days
Safety Assessment Report	Responsible Department Manager	President	3 days
Site Requirement	Responsible Department Manager, IRS&T, EC	President	3 days
Site Standard Operating Procedure	Responsible Department Manager, IRS&T, EC	President	3 days
Site Work Plan	Responsible Department Manager, IRS&T, EC	President	3 days
Plan	Responsible Department Manager	President	3 days
Information Manual	Responsible Department Manager	President	3 days

Figure 11 - Site Document Approval and Authorization Matrix

WESTINGHOUSE ENVIRONMENTAL MANAGEMENT COMPANY OF OHIO		SITE STANDARD OPERATING PROCEDURE Page 42 of 44
Title: FEMP SITE DOCUMENT SYSTEM		DOCUMENT NO: SSOP-0103 REVISION NO. 0
Authorization: H. F. Daugherty, President	Replaces: PP-0103, Dated 08-28-91, Rev. 0	Effective Date: 10-14-92

DOCUMENT REVIEW COMMENT SHEET

SME/OWNER: X-	REVIEWING DEPARTMENT:	DATE:
DOCUMENT NO. AND TITLE		COMMENTS DUE BY:
REQUEST NO.		

ITEM NO.	REVIEWER NAME	PAGE NO./ STEP	COMMENT	SRC ✓	COMMENT RESOLUTION

SIGNIFICANT REVIEW COMMENT RESOLUTION APPROVAL SIGNATURE: _____ DATE: _____

Figure 12 - Document Review Comment Sheet

SITE DOCUMENT SYSTEM **SITE DISTRIBUTION**

Date: September 30, 1992

	DOCUMENT NO.	EFFECTIVE DATE	REVISION NO.
Transmittal of:	PP-0709	09-29-92	0

FILING INSTRUCTIONS

|X| *NEW DOCUMENT* - File the attached document in the applicable section of the Site Document Record Book.

|X| *CANCELLATION* - Remove and discard FMPC-709. (PP-0709 supersedes FMPC-709.)

CONFIRMATION RECEIPT SIGNATURE: _____

DATE: _____

CONTROL NO. _____

Return to: Laura Patrick, Documentation Control (Mail Stop 71-5) by October 16, 1992.

MANAGEMENT ACKNOWLEDGEMENT OF DOCUMENT CONTENT

I have read and am aware of the content of this document.

MANAGER/SUPERVISOR:

Print Name	Signature	Date

Review the attached document for applicability to your organization. If this document applies to personnel in your organization, communicate the document to personnel and maintain document in Reading File, as applicable.

Figure 13 - Distribution Sheet

WESTINGHOUSE ENVIRONMENTAL MANAGEMENT COMPANY OF OHIO		SITE STANDARD OPERATING PROCEDURE Page 44 of 44
Title: FEMP SITE DOCUMENT SYSTEM		DOCUMENT NO: SSOP-0103 REVISION NO. 0
Authorization: H. F. Daugherty, President	Replaces: PP-0103, Dated 08-28-91, Rev. 0	Effective Date: 10-14-92

CONTROL NO.

Page 1 of 1

FEMP
SITE DOCUMENT SYSTEM

SDC No.	SC92-024
Effective Date:	06-10-92
Expiration Date:	12-10-92

SITE DOCUMENT CHANGE

(For Question Contact SME J. Ogg X-6324)

1. AFFECTED DOCUMENT NUMBER SSOP-0060	2. AFFECTED DOCUMENT PAGE NUMBER 16

3. TITLE OR SUBJECT:
Packaging and Loading Radioactive Material for Offsite Shipment

4. ACTIVITY AND AREA AFFECTED:
Packaging and Loading/Site Services

5. APPROVAL SIGNATURE:

S. J. Dechter	FOR STD Department	6/10/92 Date

6. CHANGE:

1) Step 7.9.29 is revised to read as follows:

7.9.29 Affix placards, provided by Traffic, on both sides and ends of gondola exterior.

7. DOCUMENTATION CONTROL REQUIRED DOCUMENT ACTION

[ ] No Procedure Action

[X] Revise affected procedure/specification per this document.

FILING INSTRUCTIONS: File facing page 16, Document No. SSOP-0060 (Effective Date: 06-01-92, Revision No. 1)

Figure 14 - Example of Site Document Change

SDI-100

Fernald Environmental
FERMCO
Restoration Management Corporation

SITE DOCUMENT INDEX

FERNALD ENVIRONMENTAL RESTORATION MANAGEMENT CORPORATION
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

MAY 1, 1993

(Supersedes Index Dated April 1, 1993)

0 63

4552-

SITE DOCUMENT INDEX
May 1, 1993

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	Manuals	2C-1
	Plans	2D-1
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	Site Standard Operating Procedures	2F-1
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45 52-

SITE DOCUMENT INDEX
May 1, 1993

INTRODUCTION

The Site Document Index is a multiple listing of current site documents. The index is divided into three sections.

Sections 1 and 2 provide two different presentations of the current site documents. Section 1 is a list of the site documents sorted alphanumerically. Section 2 is a list of the site documents sectioned by document type and sorted numerically. Section 3 is a list of the current Site Document Changes (SDC).

The index is distributed monthly. As documents are issued, revised, or cancelled, it is suggested that a manual update be made in the index until the issuance of a new index.

Site Document Stations are being established to provide a reference area for site documents at central locations for employee accessibility. Several stations are in place and are listed on the following page.

Direct questions pertaining to the index to Forms & Procedures Development, 648-6441.

0 0 8 9

4 5 5 2

SITE DOCUMENT INDEX
May 1, 1993

LIST OF SITE DOCUMENT STATIONS

NUMBER	LOCATION
SDS-0001	Seven Plex North (44D) T-24 Center Library
SDS-0002	West Trailer T-44 (DOE)
SDS-0003	Springdale Center 3rd floor QA Library, Cube 008
SDS-0004	Ten-Plex (T-81)

0 66

F 4552-

SECTION 1

ALPHANUMERIC LISTING

- 4552-

0 67

DOCUMENT.NO	TYPE OF DOCUMENT	TITLE	EFFECTIVE DATE	REV. NO.	SME	DOC.OWNER	SUPERSEDES	EXPIRATION DATE
CH-0203	SITE-CH	ALARA COMMITTEE CHARTER	08/19/92	0	CALHOUN		CH-FMPC-0203	
CH-0210	SITE-CH	BEST MANAGEMENT PRACTICES COMMITTEE FOR CLEAN WATER	05/26/92	0	BECKMAN	DUBOIS	FMPC-0210	
CH-0220	SITE-CH	CONTROLLER DEPARTMENT CHARTER	06/05/92	0	REED	FRASER	CH-FMPC-0220	
CH-0221	SITE-CH	HUMAN RESOURCES CHARTER	10/27/92	1	CRISLER	ZOBRIST	CH-0221	
CH-0222	SITE-CH	OFFICE OF COUNSEL CHARTER	11/02/92	0	GREULICH	CURTIS	CH-FMPC-222	
CH-0230	SITE-CH	INDUSTRIAL, RADIOLOGICAL SAFETY, AND TRAINING DEPARTMENT CHARTER	08/19/92	0	GABBARD	PAINE	CH-FMPC-0230	
CH-0233	SITE-CH	TRANSPORTATION SAFETY COMMITTEE CHARTER	06/05/92	0	MCGROGAN	LONG	FMPC-0233	
CH-0235	SITE-CH	OPERATIONAL EXCELLENCE BOARD CHARTER	10/09/91	0	EMMERT	LONG	FMPC-0235	
CH-2000	SITE-CH	COMMUNICATIONS DEPARTMENT CHARTER	05/05/92	0	JACKSON	HOOPES	CH-FMPC-2000	
CH-2005	SITE-CH	ASBESTOS MANAGEMENT COMMITTEE CHARTER	04/20/92	0	MCCULLOUGH	PAINE	NONE	
CH-2007	SITE-CH	FERNALD ENVIRONMENTAL MANAGEMENT PROJECT (FEMP) LEVEL 3 AND LEVEL 2 CHANGE CONTROL BOARDS	05/13/92	1	ALDRICH	FRASER	NONE	
CH-2008	SITE-CH	RESOURSE PLANNING, SCHEDULING, AND INTEGRATION	03/02/92	0	DEN HERDER	COSSEL	CH-2003	
CH-2010	SITE-CH	ENVIRONMENTAL MANAGEMENT DEPARTMENT CHARTER	10/02/92	0	RITCHIE		NONE	
CH-2012	SITE-CH	ENVIRONMENTAL RESTORATION DEPARTMENT CHARTER	08/31/92	0	WAGNER	HOPPER	NONE	
CH-2013	SITE-CH	INTERNAL AUDIT ORGANIZATION CHARTER	09/04/92	0	BURNS	BURNS	NONE	
CH-2015	SITE-CH	QUALITY ASSURANCE (QA) DIVISION CHARTER	04/01/93	0	FONKE	ABERNATHY	CH-0226 CH-2006	
CH-FMPC-0209	SITE-CH	INDEPENDENT SAFETY REVIEW COMMITTEE CHARTER	01/31/91	0	BOGAR		FMPC-0209	
CH-FMPC-0215	SITE-CH	SITE SERVICES DEPARTMENT CHARTER	07/05/91	0	EMMERT	LONG	FMPC-0215	
ED-0001	SITE-SSOP	EVENT NOTIFICATION AND REPORTING	08/14/92	1	DULEY	PAINE	ED-0001	
FD-1003	SITE-PL	NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) COMPLIANCE PLAN	10/04/91	0	RATHGENS		FMPC-2208	
FMPC-0101	SITE-PP	WMCO MANAGEMENT PHILOSOPHY	01/12/90	1	DEN HERDER	COSSEL	NONE	

DOCUMENT.NO	TYPE OF DOCUMENT	TITLE	EFFECTIVE. DATE	REV. NO.	SME	DOC.OWNER	SUPERSEDES	EXPIRATION DATE
		FEATURES FOR SAFETY, AND OSR-AFFECTED PROCEDURES						
FMPC-0516	SITE-PP	CONTROL OF PERMITS FOR ACCOMPLISHING HAZARDOUS WORK	04/23/91	2	FLEMING	PAINE	NONE	
FMPC-0517	SITE-PP	NUCLEAR CRITICALITY SAFETY	05/01/89	0	BOGAR	PAINE	NONE	
FMPC-0519	SITE-PP	MANAGEMENT OF HAZARDOUS WASTE	07/28/89	0	COYLE	PAINE	NONE	
FMPC-0603	SITE-PP	REQUESTING INFORMATION SYSTEMS SERVICES	11/21/89	0	REED	FRASER	NONE	
FMPC-0604	SITE-PP	PROTECTION OF SENSITIVE UNCLASSIFIED INFORMATION	10/15/87	0	REED	FRASER	NONE	
FMPC-0605	SITE-PP	DOE DIRECTIVES ADMINISTRATION	11/30/89	1	AMAN	COSSEL	NONE	
FMPC-0608	SITE-PP	PREPARATION AND RELEASE OF TECHNICAL INFORMATION	03/08/90	3	NEYER		NONE	
FMPC-0611	SITE-PP	CONTROL OF FORMS	02/07/90	1	MOHR	ZOBRIST	NONE	
FMPC-0614	SITE-PP	UNCLASSIFIED COMPUTER SECURITY PROGRAM	04/23/90	0	REED	FRASER	NONE	
FMPC-0702	SITE-PP	DEVELOPMENT AND CONTROL OF DESIGN	03/05/90	1	SIMI	CAMPBELL	NONE	
FMPC-0705	SITE-PP	OPERATIONAL READINESS PROCESS	01/21/92	3	DECHTER	LONG	NONE	
FMPC-0708	SITE-PP	PERSONNEL CERTIFICATION	12/15/89	2	HOFFMAN	ZOBRIST	NONE	
FMPC-0718	SITE-PP	MEASURING AND TEST EQUIPMENT CALIBRATION AND CONTROL	01/12/90	2	DECHTER	LONG	NONE	
FMPC-2040	SITE-PL	FMPC WASTE MANAGEMENT PLAN	12/31/86	1	HEISLER		NONE	
FMPC-2055	SITE-RM	CLASSIFICATION GUIDE FOR THE FMPC	09/23/86	0	NEYER		NONE	
FMPC-2066	SITE-RM	T-HOPPER SHIPPING CONTAINER HANDLING PROCEDURES AND CONTAINER CRITERIA	08/31/87	0	GARDNER	LONG	NONE	
FMPC-2070	SITE-IM	STYLE AND FORMAT GUIDE FOR SCIENTIFIC AND TECHNICAL REPORTS, CORRESPONDENCE AND OTHER PRESENTATIONS	06/01/90	1	BECKMAN	COSSEL	NONE	
FMPC-2081	SITE-IM	SUPERVISOR'S EMPLOYEE RELATIONS MANUAL	06/01/87	0	CRISLER	ZOBRIST	NONE	
FMPC-2092	SITE-RM	FMPC WELDING PROGRAM	05/01/88	0	ROMINE	LONG	NONE	
FMPC-2100	SITE-RM	OPERATIONAL SAFETY REQUIREMENTS FOR THE SOUTH AMMONIA STORAGE FACILITY	11/01/87	0	GARDNER	LONG	NONE	
FMPC-2112	SITE-IM	FMPC NUCLEAR CRITICALITY SAFETY GUIDE	09/01/89	0	BOGAR		NLCO-1178	

DOCUMENT.NO	TYPE OF DOCUMENT	TITLE	EFFECTIVE DATE	REV. NO.	SME	DOC.OWNER	SUPERSEDES	EXPIRATION DATE
		(SPCC) PLAN						
PL-3007	SITE-PL	NPDES PERMIT COMPLIANCE PLAN	09/10/91	0	JOHNSTON	DUBOIS	NONE	
PL-3008	SITE-PL	RADIONUCLIDE AIR EMISSIONS QUALITY ASSURANCE PROJECT PLAN (RAEQAPJP)	05/26/92	1	PALMER	PAINE	NONE	
PL-3010	SITE-PL	FY-1992 ENVIRONMENTAL RESTORATION AND WASTE MANAGEMENT SITE SPECIFIC PLAN	09/11/91	0	MCDONALD	COSSEL	NONE	
PL-3017	SITE-PL	A TACTICAL PLAN FOR EMPLOYEE TRAINING	10/16/92	0	DAWKINS	ZOBRIST	NONE	
PL-3018	SITE-PL	FEMP ASBESTOS MANAGEMENT PLAN	09/30/92	0	MCCULLOUGH	PAINE	PL-FMPC-3002	
PL-3020	SITE-PL	FEMP EMERGENCY PLAN	03/22/93	0	SCHOLZ	PAINE	PL-3020I.1	
PL-3024	SITE-PL	MANAGEMENT PLAN (DRAFT)	12/18/92	0	COSSEL	COSSEL	NONE	
PL-FMPC-3001	SITE-PL	LABORATORY CHEMICAL HYGIENE PLAN	01/15/91	0	MENGEL	PAINE	NONE	
PL-FMPC-3006	SITE-PL	MATERIALS CONTROL AND ACCOUNTABILITY PLAN	06/18/91	1	DITTMER	FRASER	FMPC-2115	
PL-FMPC-3009	SITE-PL	WASTE MINIMIZATION & POLLUTION PREVENTION AWARENESS PLAN	04/30/91	0	ALLMON	LONG	FMPC-2205	
PO-0124	SITE-PO	EQUAL EMPLOYMENT OPPORTUNITY	10/29/92	0	SULLIVAN	ZOBRIST	FMPC-0124	
PO-0712	SITE-PP	RISK ASSESSMENT AND MANAGEMENT (RAM) SYSTEM POLICY	01/25/92	0	WERNER	DUBOIS	IN-6034	
PO-1003	SITE-PO	ASBESTOS CONTROL POLICY	08/20/92	0	BEIRNE	PAINE	NONE	
PO-FMPC-1001	SITE-PO	CONDUCT OF OPERATIONS POLICY	08/24/90	0	DECHTER	LONG	NONE	
PP-0309	SITE-PP	MANAGEMENT OF WEMCO SITE PRECIOUS METALS	05/19/92	0	TAYLOR	FRASER	FMPC-0309	
PP-0310	SITE-PP	PERSONAL COMPUTER PROCUREMENT	09/12/91	0	GIBSON	FRASER	NONE	
PP-0314	SITE-PP	PACKAGING, ON-SITE MOVEMENT AND OFF-SITE SHIPMENT OF MATERIAL	12/20/91	0	MCGROGAN	LONG	FMPC-0314	
PP-0408	SITE-PP	TRAVEL AND SEMINAR AUTHORIZATION AND REPORTING	02/03/92	0	CALDWELL	FRASER	IN-6037	
PP-0518	SITE-PP	NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) PROGRAM	10/01/91	0	RATHGENS	FARMER	FMPC-0518	

DOCUMENT.NO.	TYPE OF DOCUMENT	TITLE	EFFECTIVE DATE	REV. NO.	SME	DOC.OWNER	SUPERSEDES	EXPIRATION DATE
RM-0006	SITE-RM	INDUSTRIAL SAFETY	09/04/92	1	CONNELL	PAINE	RM-0006	
RM-0007	SITE-RM	FEMP RESPIRATORY PROTECTION REQUIREMENTS MANUAL	09/01/92	0	MENGEL	PAINE	FMPC-2152	
RM-0009	SITE-RM	RADIOLOGICAL CONTROLS	05/13/92	0	ROGERS	PAINE	RM-0009I	
RM-0011	SITE-RM	CONTROL OF OCCUPATIONAL EXPOSURE OF BLOODBORNE PATHOGENS	05/27/92	0	CLARK	PAINE	NONE	
RM-0012	SITE-RM	QUALITY ASSURANCE PROGRAM DESCRIPTION	04/30/93	2	TURNER	ABERNATHY	RM-0012	
RM-0013	SITE-RM	FIRE PROTECTION REQUIREMENTS MANUAL	10/27/92	0	CONNELL	PAINE		
RM-2086	SITE-RM	CHEMICAL HAZARD COMMUNICATION PROGRAM	07/10/92	0	KRUCHAN	PAINE	NONE	
RM-FMPC-0001	SITE-RM	FMPC GENERAL DESIGN CRITERIA MANUAL	09/28/90	0	SIMI	CAMPBELL	FMPC-2069	
RM-FMPC-0002	SITE-RM	CENTRALIZED TRAINING PROGRAM MANUAL	01/29/91	0	JOHNSON	ZOBRIST	NONE	
SM-0001	SITE-SM	RISK ASSESSMENT AND MANAGEMENT (RAM) SYSTEM MANUAL	01/25/92	0	WERNER	DUBOIS	IN-6035 IN-6036	
SSOP-0002	SITE-SSOP	COMPLETING THE MATERIAL EVALUATION FORM	10/22/91	3	HAMBLIN	PAINE	NONE	
SSOP-0003	SITE-SSOP	RECEIVING, ON-SITE MOVEMENT AND OFF-SITE SHIPMENT OF NON-RADIOACTIVE HAZARDOUS MATERIAL	04/30/92	1	STAPLETON	LONG	NONE	
SSOP-0005	SITE-SSOP	CLEARANCE DOCUMENT PREPARATION FOR ACQUISITION PLAN CHANGE	10/09/92	1	GIBSON	FRASER	SSOP-0005	
SSOP-0006	SITE-SSOP	PREPARING AN ACQUISITION PLAN FOR COMPUTER-RELATED PURCHASES	10/09/92	1	GIBSON	FRASER	SSOP-0006	
SSOP-0007	SITE-SSOP	OBTAINING SIGNATURE AUTHORIZATION FOR THE APPROVAL OF DISBURSEMENTS	08/14/92	1	TAYLOR	FRASER	SSOP-0007	
SSOP-0008	SITE-SSOP	PREPARING AND TRANSFERRING UNCHARACTERIZED WASTE TO THE CONTROLLED HOLDING AREA	01/13/92	1	OGG	LONG	NONE	
SSOP-0011	SITE-SSOP	QUALIFICATION OF HEPA FILTER TEST PERSONNEL	08/28/91	0	PALMER	LONG	NONE	
SSOP-0013	SITE-SSOP	DOCUMENTATION OF EXCEPTION TO TRAINING	09/20/91	0	WERNER	ZOBRIST	NONE	

DOCUMENT.NO	TYPE OF DOCUMENT	TITLE	EFFECTIVE DATE	REV. NO.	SME	DOC.OWNER	SUPERSEDES	EXPIRATION DATE
SSOP-0053	SITE-SSOP	SNOW AND ICE REMOVAL	04/19/93	1	PENNIX	LONG	SSOP-0053	
SSOP-0055	SITE-SSOP	ESTABLISHMENT AND MAINTENANCE OF FEMP ADMINISTRATIVE RECORD	06/26/92	0	WALTERS	CLAUSS	NONE	
SSOP-0057	SITE-SSOP	RELEASE OF INFORMATION TO THE PUBLIC CONCERNING EMERGENCY AND NON-ROUTING EVENTS	07/20/92	0	WALKER	HOOPES	NONE	
SSOP-0058	SITE-SSOP	PERFORMING TYPE A, B, AND C INVESTIGATIONS	07/10/92	0	LEIST	PAINE	PP-FMPC-5007	
SSOP-0059	SITE-SSOP	CONTROL AND TRACKING OF CHEMICAL SUBSTANCES	05/26/92	0	OGG	LONG	NONE	
SSOP-0060	SITE-SSOP	PACKAGING AND LOADING RADIOACTIVE MATERIAL FOR OFFSITE SHIPMENT	03/01/93	3	OGG	LONG	SSOP-0060	
SSOP-0061	SITE-SSOP	FEMP WORK REQUEST/ORDER PROCEDURE	09/17/92	0	MILLER	LONG	FMPC-715	
SSOP-0067	SITE-SSOP	SPILL INCIDENT REPORTING AND CLEAN-UP	11/20/92	0	PONKE	PAINE	FMPC-0503	
SSOP-0068	SITE-SSOP	INSPECTION OF PROCURED MATERIAL, EQUIPMENT, WORK IN PROCESS AND COMPLETED ITEMS	08/31/92	0	PONKE	ABERNATHY	FMPC-0717	
SSOP-0069	SITE-SSOP	FREON MANAGEMENT	07/09/92	0	BATCHELOR	LONG	NONE	
SSOP-0075	SITE-SSOP	PACKAGING LOW LEVEL RADIOACTIVE WASTE (LLRW) IN DRUMS FOR OFFSITE SHIPMENT	12/14/92	0	HUNDLEY	LONG	SSOP-0024	
SSOP-0076	SITE-SSOP	REVIEWING THE FERNALD SITE ENVIRONMENTAL MONITORING PROGRAM	11/06/92	0	SNYDER	PAINE	NONE	
SSOP-0077	SITE-SSOP	BUILDING EMERGENCY PROCEDURE	09/30/92	0	DULEY	PAINE	NONE	
SSOP-0078	SITE-SSOP	PACKAGING LOW LEVEL RADIOACTIVE WASTE (LLRW) INTO ISO CONTAINERS FOR OFFSITE SHIPMENT	12/14/92	0	HUNDLEY	LONG	SSOP-0024	
SSOP-0079	SITE-SSOP	PACKAGING LOW-LEVEL RADIOACTIVE WASTE (LLRW) IN METAL BOXES FOR OFFSITE SHIPMENT	12/14/92	0	HUNDLEY	LONG	SSOP-0024	
SSOP-0081	SITE-SSOP	RADIOLOGICALLY NON-CONTAMINATED ASBESTOS CONTAINING MATERIAL WASTE (ACM) DISPOSITION	09/03/92	0	JOHNS	PAINE	NONE	

SECTION 2

DOCUMENT TYPE LISTING

- Charters
- Interims
- Manuals
- Plans
- Policies And Procedures
- Site Standard Operating Procedures

C H A R T E R S

DOCUMENT.NO.	TITLE	EFFECTIVE DATE	REV. NO.	SME	DOC.OWNER	SUPERSEDES
CH-0203	ALARA COMMITTEE CHARTER	08/19/92	0	CALHOUN		CH-FMPC-0203
FMPC-0208	SUBCONTRACT REVIEW COMMITTEE CHARTER	08/14/89	1	REED	FRASER	NONE
CH-FMPC-0209	INDEPENDENT SAFETY REVIEW COMMITTEE CHARTER	01/31/91	0	BOGAR		FMPC-0209
CH-0210	BEST MANAGEMENT PRACTICES COMMITTEE FOR CLEAN WATER	05/26/92	0	BECKMAN	DUBOIS	FMPC-0210
FMPC-0211	PATENT REVIEW COMMITTEE CHARTER	07/19/90	1	GALPER		NONE
FMPC-0212	ENVIRONMENTAL COUNCIL CHARTER	11/03/89	0	FARMER	PAINE	NONE
CH-FMPC-0215	SITE SERVICES DEPARTMENT CHARTER	07/05/91	0	EMMERT	LONG	FMPC-0215
CH-0220	CONTROLLER DEPARTMENT CHARTER	06/05/92	0	REED	FRASER	CH-FMPC-0220
CH-0221	HUMAN RESOURCES CHARTER	10/27/92	1	CRISLER	ZOBRIST	CH-0221
CH-0222	OFFICE OF COUNSEL CHARTER	11/02/92	0	GREULICH	CURTIS	CH-FMPC-222
FMPC-0223	SITE REMEDIATION DEPARTMENT CHARTER	07/29/88	0	FARMER	PAINE	NONE
CH-0230	INDUSTRIAL, RADIOLOGICAL SAFETY, AND TRAINING DEPARTMENT CHARTER	08/19/92	0	GABBARD	PAINE	CH-FMPC-0230
FMPC-0231	COMPUTER SYSTEMS STEERING COMMITTEE CHARTER	04/12/90	0	REED	FRASER	NONE
FMPC-0232	WMCO TOTAL QUALITY COUNCIL CHARTER	02/12/90	0	MOHR		NONE
CH-0233	TRANSPORTATION SAFETY COMMITTEE CHARTER	06/05/92	0	MCGROGAN	LONG	FMPC-0233
FMPC-0234	READINESS REVIEW BOARD CHARTER	08/03/90	0	HUEY	COSSEL	NONE
CH-0235	OPERATIONAL EXCELLENCE BOARD CHARTER	10/09/91	0	EMMERT	LONG	FMPC-0235
CH-2000	COMMUNICATIONS DEPARTMENT CHARTER	05/05/92	0	JACKSON	HOOPES	CH-FMPC-2000
CH-2005	ASBESTOS MANAGEMENT COMMITTEE CHARTER	04/20/92	0	MCCULLOUGH	PAINE	NONE
CH-2007	FERNALD ENVIRONMENTAL MANAGEMENT PROJECT (FEMP) LEVEL 3 AND LEVEL 2 CHANGE CONTROL BOARDS	05/13/92	1	ALDRICH	FRASER	NONE

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I N T E R I M S

DOCUMENT.NO	TITLE	EFFECTIVE. DATE	EXPIRATION DATE	SME	DOC.OWNER	SUPERSEDES

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MANUALS

DOCUMENT.NO.	TITLE	EFFECTIVE DATE	REV. NO.	SME	DOC.OWNER	SUPERSEDES
SM-0001	RISK ASSESSMENT AND MANAGEMENT (RAM) SYSTEM MANUAL	01/25/92	0	WERNER	DUBOIS	IN-6035 IN-6036
RM-FMPC-0001	FMPC GENERAL DESIGN CRITERIA MANUAL	09/28/90	0	SIMI	CAMPBELL	FMPC-2069
RM-FMPC-0002	CENTRALIZED TRAINING PROGRAM MANUAL	01/29/91	0	JOHNSON	ZOBRIST	NONE
OM-0003	TEST AUTHORIZATION	04/03/92	0	VOYLES	CAMPBELL	FMPC-2181
RM-0003	UNCLASSIFIED COMPUTER SECURITY PROGRAM MANUAL	10/09/91	0	GIBSON	FRASER	IN-RM-FMPC-0003
OM-0004	JOINT PUBLIC INFORMATION CENTER	08/14/92	0	KELLEY	PAINE	NONE
RM-0004	TECHNICAL SUPPORT STAFF SELECTION, TRAINING, AND QUALIFICATION PROGRAM	02/07/92	0	WERNER		NONE
OM-0005	ASBESTOS OPERATIONS AND MAINTENANCE WORK PRACTICES	08/01/92	0	MCCULLOUGH	PAINE	OM-0005I
RM-0005	FEMP LOT MARKING AND COLOR CODING SYSTEM	06/05/92	2	DUNAWAY	FRASER	NONE
RM-0006	INDUSTRIAL SAFETY	09/04/92	1	CONNELL	PAINE	RM-0006
RM-0007	FEMP RESPIRATORY PROTECTION REQUIREMENTS MANUAL	09/01/92	0	MENGEL	PAINE	FMPC-2152
RM-0009	RADIOLOGICAL CONTROLS	05/13/92	0	ROGERS	PAINE	RM-0009I
RM-0011	CONTROL OF OCCUPATIONAL EXPOSURE OF BLOODBORNE PATHOGENS	05/27/92	0	CLARK	PAINE	NONE
RM-0012	QUALITY ASSURANCE PROGRAM DESCRIPTION	04/30/93	2	TURNER	ABERNATHY	RM-0012
RM-0013	FIRE PROTECTION REQUIREMENTS MANUAL	10/27/92	0	CONNELL	PAINE	
FMPC-2055	CLASSIFICATION GUIDE FOR THE FMPC	09/23/86	0	NEYER		NONE
FMPC-2066	T-HOPPER SHIPPING CONTAINER HANDLING PROCEDURES AND CONTAINER CRITERIA	08/31/87	0	GARDNER	LONG	NONE
FMPC-2070	STYLE AND FORMAT GUIDE FOR SCIENTIFIC AND TECHNICAL REPORTS, CORRESPONDENCE AND OTHER	06/01/90	1	BECKMAN	COSSEL	NONE

P L A N S

DOCUMENT.NO.	TITLE	EFFECTIVE. DATE	REV. NO.	SME	DOC.OWNER	SUPERSEDES
PL-1002	FERNALD SITE ENVIRONMENTAL MONITORING PLAN	11/06/92	0	SNYDER	PAINE	NONE
FD-1003	NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) COMPLIANCE PLAN	10/04/91	0	RATHGENS		FMPC-2208
FMPC-2040	FMPC WASTE MANAGEMENT PLAN	12/31/86	1	HEISLER		NONE
FMPC-2133	FMPC WASTE MINIMIZATION PLAN	07/22/88	0	FARMER	PAINE	NONE
FMPC-2175	ABANDONED-IN-PLACE (AIP) EQUIPMENT PROGRAM WORK PLAN	06/01/89	0	DEN HERDER		NONE
FMPC-2185	SAMPLING PLAN FOR DRUMMED WASTE AT THE FMPC	10/01/89	0	ANGERT	PAINE	NONE
PL-2194	FERMCO SPILL PREVENTION CONTROL AND COUNTERMEASURE (SPCC) PLAN	04/30/93	0	MERCADAL	PAINE	FMPC-2194
FMPC-2214	ENVIRONMENTAL RESTORATION AND WASTE MANAGEMENT SITE SPECIFIC PLAN	07/01/90	0	JOHNSON	COSSEL	NONE
PL-FMPC-3001	LABORATORY CHEMICAL HYGIENE PLAN	01/15/91	0	MENGEL	PAINE	NONE
PL-FMPC-3006	MATERIALS CONTROL AND ACCOUNTABILITY PLAN	06/18/91	1	DITTMER	FRASER	FMPC-2115
PL-3007	NPDES PERMIT COMPLIANCE PLAN	09/10/91	0	JOHNSTON	DUBOIS	NONE
PL-3008	RADIONUCLIDE AIR EMISSIONS QUALITY ASSURANCE PROJECT PLAN (RAEQAPJP)	05/26/92	1	PALMER	PAINE	NONE
PL-FMPC-3009	WASTE MINIMIZATION & POLLUTION PREVENTION AWARENESS PLAN	04/30/91	0	ALLMON	LONG	FMPC-2205
PL-3010	FY-1992 ENVIRONMENTAL RESTORATION AND WASTE MANAGEMENT SITE SPECIFIC PLAN	09/11/91	0	MCDONALD	COSSEL	NONE
PL-3017	A TACTICAL PLAN FOR EMPLOYEE TRAINING	10/16/92	0	DAWKINS	ZOBRIST	NONE
PL-3018	FEMP ASBESTOS MANAGEMENT PLAN	09/30/92	0	MCCULLOUGH	PAINE	PL-FMPC-3002

POLICIES AND PROCEDURES

DOCUMENT.NO.	TITLE	EFFECTIVE. DATE	REV. NO.	SME	DOC.OWNER	SUPERSEDES
FMPC-0101	WMCO MANAGEMENT PHILOSOPHY	01/12/90	1	DEN HERDER	COSSEL	NONE
FMPC-0102	TRAINING	01/16/91	1	POLUS	ZOBRIST	NONE
FMPC-0106	EMPLOYMENT AND INDOCTRINATION OF NEW PERSONNEL	04/04/88	0	CRISLER	ZOBRIST	NONE
FMPC-0110	DRUG-FREE WORKPLACE/SUBSTANCE ABUSE	08/18/89	1	CRISLER	ZOBRIST	NONE
FMPC-0113	WORKERS' COMPENSATION CLAIMS	12/16/88	0	CRISLER	ZOBRIST	NONE
FMPC-0122	OPEN COMMUNICATION OF EMPLOYEE CONCERNS	02/26/90	1	CRISLER	ZOBRIST	NONE
PP-FMPC-0123	SMOKING RESTRICTIONS AND CONTROL	03/28/91	0	SASKOWSKY	ZOBRIST	FMPC-0123
PO-0124	EQUAL EMPLOYMENT OPPORTUNITY	10/29/92	0	SULLIVAN	ZOBRIST	FMPC-0124
FMPC-0302	REQUEST FOR PURCHASE	10/30/92	4	HESTER	FRASER	FMPC-0302
FMPC-0303	MANAGEMENT OF GOVERNMENT PROPERTY	02/15/89	0	REED	FRASER	NONE
FMPC-0304	HANDLING OF CONTROLLED SUBSTANCES AND SELECTED CHEMICALS	10/19/88	0	CRISLER	ZOBRIST	NONE
FMPC-0306	CONTRACT ADMINISTRATION	02/01/88	0	REED	FRASER	NONE
FMPC-0307	CONTROL AND ACCOUNTABILITY OF NUCLEAR MATERIALS	12/19/91	4	REED	FRASER	NONE
PP-0309	MANAGEMENT OF WEMCO SITE PRECIOUS METALS	05/19/92	0	TAYLOR	FRASER	FMPC-0309
PP-0310	PERSONAL COMPUTER PROCUREMENT	09/12/91	0	GIBSON	FRASER	NONE
PP-0314	PACKAGING, ON-SITE MOVEMENT AND OFF-SITE SHIPMENT OF MATERIAL	12/20/91	0	MCGROGAN	LONG	FMPC-0314
FMPC-0316	8 (A) VENDOR PROGRAM	06/04/90	2	REED	FRASER	NONE
FMPC-0319	MATERIAL COMPATIBILITY PRACTICES	01/26/90	0	FLEMING	PAINE	NONE
FMPC-0402	FOREIGN TRAVEL	07/26/90	0	REED	FRASER	NONE
PP-0408	TRAVEL AND SEMINAR AUTHORIZATION AND REPORTING	02/03/92	0	CALDWELL	FRASER	IN-6037
FMPC-0412	MANAGEMENT CONTROL SYSTEM POLICY	12/02/88	0	REED	FRASER	NONE

POLICIES AND PROCEDURES

DOCUMENT.NO.	TITLE	EFFECTIVE. DATE	REV. NO.	SME	DOC.OWNER	SUPERSEDES
FMPC-0718	MEASURING AND TEST EQUIPMENT CALIBRATION AND CONTROL	01/12/90	2	DECHTER	LONG	NONE
PP-FMPC-0719	ENERGY CONTROL (LOCKOUT AND TAGOUT)	02/15/91	0	MILLER	LONG	FMPC-0719
PP-0721	TEST AUTHORIZATION	04/06/92	0	VOYLES	CAMPBELL	FMPC-0721
PP-0722	REQUESTING ENGINEERING SERVICES	11/06/91	0	SIMI	CAMPBELL	FMPC-0722
PO-FMPC-1001	CONDUCT OF OPERATIONS POLICY	08/24/90	0	DECHTER	LONG	NONE
PO-1003	ASBESTOS CONTROL POLICY	08/20/92	0	BEIRNE	PAINE	NONE
PP-FMPC-5004	RESPONSE TO PUBLIC INFORMATION REQUESTS	11/16/90	0	WALKER	HOOPES	FMPC-0618
PP-5009	BUSINESS MEETING/TRAINING ARRANGEMENTS AND EXPENDITURES	11/04/91	1	TAYLOR	ZOBRIST	PP-5009
PP-FMPC-5010	MANAGEMENT OF LOW-LEVEL WASTE (LLW)	12/26/90	0	ALLMON	LONG	NONE
PP-FMPC-5012	MANAGEMENT OF TELECOMMUNICATIONS EQUIPMENT AND SERVICES	01/31/91	0	GIBSON	FRASER	NONE
PP-FMPC-5013	ACQUISITION OF AUTOMATED DATA PROCESSING EQUIPMENT, SOFTWARE, AND SERVICE	04/16/91	0	GIBSON	FRASER	NONE
PP-FMPC-5014	MANAGEMENT INSPECTION OF FACILITIES PROGRAM (MIFP)	03/26/91	0	LEIST	ABERNATHY	NONE
PP-5023	FIRE PROTECTION POLICY	09/20/91	0	STEMEN	PAINE	NONE
PP-5025	MEMBERSHIPS IN TECHNICAL, PROFESSIONAL, BUSINESS, OR TRADE ORGANIZATIONS	10/08/91	0	CALDWELL	ZOBRIST	NONE
PP-5030	CHANGE PROPOSAL PROCEDURE	10/29/91	0	ALDRICH	CLAUSS	NONE
PP-5031	NUCLEAR MATERIALS DISPOSITION ORDER MANAGEMENT SYSTEM	10/29/91	0	DUNAWAY	LONG	IN-6009
PP-5034	COST REDUCTION PROGRAM	03/16/92	0	GRUMSKI	ABERNATHY	IN-6011

S I T E - S T A N D A R D - O P E R A T I N G - P R O C E D U R E S

DOCUMENT.NO.	TITLE	EFFECTIVE DATE	REV. NO.	SME	DOC.OWNER	SUPERSEDES
ED-0001	EVENT NOTIFICATION AND REPORTING	08/14/92	1	DULEY	PAINE	ED-0001
SSOP-0002	COMPLETING THE MATERIAL EVALUATION FORM	10/22/91	3	HAMBLIN	PAINE	NONE
SSOP-0003	RECEIVING, ON-SITE MOVEMENT AND OFF-SITE SHIPMENT OF NON-RADIOACTIVE HAZARDOUS MATERIAL	04/30/92	1	STAPLETON	LONG	NONE
SSOP-0005	CLEARANCE DOCUMENT PREPARATION FOR ACQUISITION PLAN CHANGE	10/09/92	1	GIBSON	FRASER	SSOP-0005
SSOP-0006	PREPARING AN ACQUISITION PLAN FOR COMPUTER-RELATED PURCHASES	10/09/92	1	GIBSON	FRASER	SSOP-0006
SSOP-0007	OBTAINING SIGNATURE AUTHORIZATION FOR THE APPROVAL OF DISBURSEMENTS	08/14/92	1	TAYLOR	FRASER	SSOP-0007
SSOP-0008	PREPARING AND TRANSFERRING UNCHARACTERIZED WASTE TO THE CONTROLLED HOLDING AREA	01/13/92	1	OGG	LONG	NONE
SSOP-0011	QUALIFICATION OF HEPA FILTER TEST PERSONNEL	08/28/91	0	PALMER	LONG	NONE
SSOP-0013	DOCUMENTATION OF EXCEPTION TO TRAINING	09/20/91	0	WERNER	ZOBRIST	NONE
SSOP-0014	DOCUMENTATION OF A SUBJECT MATTER EXPERT (SME)	06/03/91	0	WERNER	ZOBRIST	NONE
SSOP-0018	PROCESSING THE SITE-WIDE ANALYSIS REQUEST/CUSTODY RECORD FOR SAMPLE CONTROL	05/07/92	1	MADARIS	LONG	NONE
SSOP-0022	QUALIFICATION PROGRAM TRAINING COMPLETION DOCUMENTATION	01/24/92	0	WERNER	ZOBRIST	NONE
SSOP-0023	DEVIATION AND CORRECTIVE ACTION REPORTING	06/25/92	2	MALONE	ABERNATHY	PP-FMPC-0706
SSOP-0027	CONTROL OF BOX-TYPE CONTAINERS	02/07/92	0	DUNBAR	LONG	NONE
SSOP-0028	CONTROLLING PORTABLE VENTILATION DEVICES AND VACUUM CLEANERS	12/20/91	0	GRIFFITH	LONG	NONE
SSOP-0030	ACQUISITION OF PERSONAL COMPUTERS, PERIPHERAL	09/12/91	0	GIBSON	FRASER	FMPC-0310

S I T E - S T A N D A R D - O P E R A T I N G - P R O C E D U R E S

DOCUMENT NO.	TITLE	EFFECTIVE DATE	REV. NO.	SME	DOC. OWNER	SUPERSEDES
SSOP-0060	PACKAGING AND LOADING RADIOACTIVE MATERIAL FOR OFFSITE SHIPMENT	03/01/93	3	OGG	LONG	SSOP-0060
SSOP-0061	FEMP WORK REQUEST/ORDER PROCEDURE	09/17/92	0	MILLER	LONG	FMPC-715
SSOP-0067	SPILL INCIDENT REPORTING AND CLEAN-UP	11/20/92	0	PONKE	PAINE	FMPC-0503
SSOP-0068	INSPECTION OF PROCURED MATERIAL, EQUIPMENT, WORK IN PROCESS AND COMPLETED ITEMS	08/31/92	0	PONKE	ABERNATHY	FMPC-0717
SSOP-0069	FREON MANAGEMENT	07/09/92	0	BATCHELOR	LONG	NONE
SSOP-0075	PACKAGING LOW LEVEL RADIOACTIVE WASTE (LLRW) IN DRUMS FOR OFFSITE SHIPMENT	12/14/92	0	HUNDLEY	LONG	SSOP-0024
SSOP-0076	REVIEWING THE FERNALD SITE ENVIRONMENTAL MONITORING PROGRAM	11/06/92	0	SNYDER	PAINE	NONE
SSOP-0077	BUILDING EMERGENCY PROCEDURE	09/30/92	0	DULEY	PAINE	NONE
SSOP-0078	PACKAGING LOW LEVEL RADIOACTIVE WASTE (LLRW) INTO ISO CONTAINERS FOR OFFSITE SHIPMENT	12/14/92	0	HUNDLEY	LONG	SSOP-0024
SSOP-0079	PACKAGING LOW-LEVEL RADIOACTIVE WASTE (LLRW) IN METAL BOXES FOR OFFSITE SHIPMENT	12/14/92	0	HUNDLEY	LONG	SSOP-0024
SSOP-0081	RADIOLOGICALLY NON-CONTAMINATED ASBESTOS CONTAINING MATERIAL WASTE (ACM) DISPOSITION	09/03/92	0	JOHNS	PAINE	NONE
SSOP-0082	QUALITY IMPROVEMENT	10/30/92	0	LAMBERT	ABERNATHY	NONE
SSOP-0086	PERFORMING PERSONNEL MONITORING	04/08/93	0	ARP	PAINE	NONE
SSOP-0088	FERNALD ENVIRONMENTAL MANAGEMENT PROJECT (FEMP) OFFSITE EMERGENCY WARNING SYSTEM	11/30/92	0	DULEY	PAINE	SSOP-0088I
SSOP-0089	PERSONNEL ACCOUNTABILITY	04/19/93	0	SCHOLZ	PAINE	SSOP-0089I
SSOP-0100	READINESS REVIEW PROCESS	01/15/93	0	KILBERG	COSSEL	NONE

SECTION 3

SITE DOCUMENT CHANGES (SDC)

SITE DOCUMENT CHANGES

SDC NO.	AFFECTED DOCUMENT	AFFECTED DOCUMENT TITLE	EFFECTIVE DATE	EXPIRATION DATE	SME	DOC.OWNER
SC92-035	SSOP-0077	BUILDING EMERENCY PROCEDURE	11/02/92	05/03/93	HESTER	HINNEFELD
SC92-036	IM-7006	INCIDENT BUILDING EVACUATION MANUAL	03/01/93	08/02/93	DULEY	PAINE
SC92-037	IM-7006	INCIDENT BUILDING EVACUATION MANUAL	03/01/93	08/02/93	DULEY	PAINE
SC92-038	IM-7006	INCIDENT BUILDING EVACUATION MANUAL	03/01/93	08/02/93	DULEY	PAINE
SC92-039	IM-7006	INCIDENT BUILDING EVACUATION MANUAL	03/01/93	08/02/93	DULEY	PAINE
SC92-040	SSOP-0088	FERNALD ENVIRONMENTAL MANAGEMENNT PROJECT (FEMP) OFFSITE EMERGENCY WARNING SYSTEM	01/11/93	07/12/93	DULEY	PAINE
SC92-041	SSOP-0088	FERNALD ENVIRONMENTAL MANAGEMENNT PROJECT (FEMP) OFFSITE EMERGENCY WARNING SYSTEM	01/11/93	07/12/93	DULEY	PAINE
SC92-042	SSOP-0088	FERNALD ENVIRONMENTAL MANAGEMENNT PROJECT (FEMP) OFFSITE EMERGENCY WARNING SYSTEM	01/11/93	07/12/93	DULEY	PAINE
SC92-043	SSOP-0088	FERNALD ENVIRONMENTAL MANAGEMENNT PROJECT (FEMP) OFFSITE EMERGENCY WARNING SYSTEM	01/11/93	07/12/93	DULEY	PAINE
SC92-044	SSOP-0088	FERNALD ENVIRONMENTAL MANAGEMENNT PROJECT (FEMP) OFFSITE EMERGENCY WARNING SYSTEM	01/11/93	07/12/93	DULEY	PAINE
SC93-006	SSOP-0078	PACKAGING LLRW INTO ISO CONTAINERS FOR OFFSITE SHIPMENT	04/05/93	10/05/93	HUNDLEY	LONG
SC93-008	SSOP-0060	PACKAGING AND LOADING RADIOACTIVE MATERIAL FOR OFFSITE SHIPMENT	03/10/93	09/10/93	OGG	KING
SC93-009	SSOP-0060	PACKAGING AND LOADING RADIOACTIVE MATERIAL FOR OFFSITE SHIPMENT	03/10/93	09/10/93	OGG	KING
SC93-010	SSOP-0060	PACKAGING AND LOADING RADIOACTIVE MATERIAL FOR OFFSITE SHIPMENT	03/10/93	09/10/93	OGG	KING

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REMEDIATION SUPPORT OPERATIONS DOCUMENT PROGRAM INDEX

FERNALD ENVIRONMENTAL RESTORATION MANAGEMENT CORPORATION

MAY 1993

Fernald Environmental
FERMCO
Restoration Management Corporation

NON-CONTROLLED COPY

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

MAY 1, 1993

Supersedes Index Dated April 1, 1993

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REMEDIATION SUPPORT OPERATIONS DIVISION
DOCUMENT PROGRAM INDEX

May 1, 1993

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2	CIO List	2-1 through 2-20

REMEDIATION SUPPORT OPERATIONS DIVISION
DOCUMENT PROGRAM INDEX

May 1, 1993

INTRODUCTION

Information and dates listed in the Document Index are current as of May 1, 1993. It is suggested that the user of this index enter changes manually as new, reissued, or revised procedures are transmitted.

TYPE OF DOCUMENT

DEPT	-	Administrative Documents
DIV	-	Division Documents
MANUAL	-	Applicable Subject
METH	-	Method
MS	-	Manufacturing Specification
PLAN	-	Applicable Subject
PS	-	Product Specification
PSS	-	Material Specification
SECT	-	Section Documents
SOP	-	Standard Operating Procedure

Lists of canceled documents, expired or canceled CIOs, and documents with a status of "ON HOLD" are no longer included in the RSO Document Program Index. Lists of canceled documents, or expired or canceled CIOs are available from Procedure Administration, Extensions 8461/6126.

The RSO Document Program Index is issued once a month.

An index of Quality Assurance Analyses and Quality Assurance Plans are available for the year 1987 and earlier. For information call Extensions 8461/6126.

Questions pertaining to the Document Index may be directed to Procedure Administration, Extensions 8461/6126.

DOCUMENT LIST

REMEDIATION SUPPORT OPERATIONS
PROGRAM INDEX

DOCUMENT.NO.	TYPE OF DOCUMENT	TITLE	DOC.OWNER	PTR LAST.NAME	ISSUE DATE	REV. NO.	REVISION DATE	SUPERSEDES
01-107	SOP	OPERATION OF GENIE LIFT MODEL PL36PDC	GARDNER	ROMINE	09/09/87			04-C-911
01-108	SOP	OPERATION OF ANTHES MODEL RZ-40 ROTO-ZOOM AERIAL LIFT	GARDNER	ROMINE	12/22/87			04-C-912
01-BE-410-02	MS	DRUM PAINTING AND DRYING	GARDNER	LENARDUZZI	04/18/89			NONE
01-C-101	SOP	SAMPLING RESIDUE AND WASTE MATERIALS	GARDNER	HEY	06/16/89	2	03/11/91	NONE
01-C-304	SOP	REROLLING 30 GALLON DRUMS AND EXPANDING 55 GALLON DRUMS	GARDNER	LENARDUZZI	01/11/89			NONE
01-C-305	SOP	BALING SCRAP METAL DRUMS	GARDNER	HUNDLEY	03/22/90	0		NONE
01-C-306	SOP	CRUSHING SCRAP DRUMS	GARDNER	HUNDLEY	09/26/89	0		NONE
01-C-602	SOP	LOW LEVEL RADIOACTIVE WASTE (L-LRW) SHIPMENT PREPARATION	BURNS	HURST	11/12/91	2	07/30/92	NONE
01-C-604	SOP	INSPECTION AND EVALUATION OF CONTAINERIZED LOW LEVEL RADIOACTIVE WASTE (LLRW)	BURNS	ROWE	12/05/91	2	02/05/93	NONE
01-C-606	SOP	HAZARDOUS WASTE SHIPMENT PREPARATION	VARCHOL	WITZEMAN	06/14/89			NONE
01-C-608	SOP	STORAGE OF RADIOACTIVE MATERIAL	BURNS	ROWE	08/13/90	2	03/12/93	NONE
01-C-609	SOP	PLANT 1 STORAGE INSPECTION	BURNS	ROWE	06/12/90	0		NONE
01-C-701	SOP	PLANT 1 DUST COLLECTORS	BURNS	PALMER	05/24/89			NONE
01-C-803	SOP	PREPARATION OF ENRICHED URANIUM(<20% U235) FOR OFFSITE SHIPMENT	BURNS	ROWE	07/20/88			NONE
01-C-902	SOP	DISPOSAL OF PLANT 1 EFFLUENT	BURNS	GLASSMEYER	09/14/90	0		NONE
01-C-905	SOP	PRODUCTION NUCLEAR MATERIALS(NM) RECEIVING, STORING, AND HANDLING	BURNS	ROWE	09/01/88			NONE
01-C-915	SOP	CLEANING OF CONTAMINATED METAL AND EQUIPMENT	GARDNER	HUNDLEY	12/28/87	2	05/05/92	NONE
01-C-916	SOP	PLANT 1 HOISTS AND CRANES	BURNS	ROMINE	05/09/88			NONE
01-C-918	SOP	THORIUM OVERPACKING	GARDNER	ROWE	12/05/89	2	08/10/90	NONE
02-C-420	SOP	SAMPLING UNH TANKS	GARDNER	GLASSMEYER	07/14/92	0		NONE
02-C-601	SOP	REFINERY SUMP	GARDNER	GLASSMEYER	04/10/91	0		NONE
02-C-910	SOP	INSPECTING REFINERY CONTROL FLOOR AREAS AND SUMPS AND OPERATING MANUAL SUMP PUMPS	GARDNER	GLASSMEYER	01/31/92	0		NONE
02-C-914	SOP	PREVENTING URANIUM LOSSES THROUGH THE STORM SEWER TO THE ENVIRONMENT (RESPONDING TO PH ALARMS)	GARDNER	GLASSMEYER	02/01/89			NONE
02-C-923	SOP	TRASH BALER OPERATION	GARDNER	GLASSMEYER	10/14/91	1	07/01/92	NONE
02-C-924	SOP	PLANT 2/3 HOISTS AND CRANES	GARDNER	HUEY	04/26/93	0		NONE
04-C-810	SOP	LOADING DHF DUMPSTER AT THE TANK FARM	GARDNER	GLASSMEYER	09/20/91	0		NONE
04-C-900	SOP	TANK FARM SUMP	GARDNER	GLASSMEYER	12/02/89	0		NONE
04-C-905	SOP	INSPECTING PLANT 4 FLOOR CONTROL AREAS AND SUMPS	GARDNER	GLASSMEYER	06/27/90	0		NONE

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DOCUMENT.NO.	TYPE OF DOCUMENT	TITLE	DOC.OWNER	PTR LAST.NAME	ISSUE DATE	REV. NO.	REVISION DATE	SUPERSEDES
04-C-906	SOP	INSPECTING AND SHIPPING U03 T-HOPPERS	GARDNER	GLASSMEYER	12/07/88			NONE
04-C-910	SOP	PLANT 4 HOISTS AND CRANES	GARDNER	ROMINE	07/15/88			NONE
05-C-106	SOP	COLLECTION AND DISPOSAL OF REDUCTION AREA RESIDUES	GARDNER	HUNDLEY	09/20/89	1	02/22/93	NONE
05-C-209	SOP	COLLECTION AND DISPOSITION OF RESIDUES IN THE REMELT AREA	GARDNER	HUNDLEY	07/25/89	1	02/27/93	NONE
05-C-703	SOP	PLANT 5 CARTRIDGE FILTER DUST COLLECTION SYSTEM	GARDNER	PALMER	04/10/89			NONE
05-C-901	SOP	INSPECTING FLOOR CONTROL AREA AND SUMPS DAILY AND QUARTERLY	GARDNER	GLASSMEYER	11/19/90	1	02/07/93	NONE
05-C-903	SOP	SUMP SYSTEM	GARDNER	GLASSMEYER	12/19/79		06/04/84	NONE
05-C-910	SOP	PLANT 5 HOISTS AND CRANES	GARDNER	ROMINE	11/23/88			NONE
06-BN/E-430-01	MS	WATER TREATMENT	GARDNER	KRUPA	09/26/79		05/25/87	NONE
06-C-301	SOP	WATER TREATMENT	GARDNER	GLASSMEYER	07/24/92	0		NONE
06-C-906	SOP	PLANT 6 HOISTS AND CRANES	GARDNER	ROMINE	10/13/88			NONE
06-C-910	SOP	INSPECTING PLANT 6 FLOOR CONTROL AREAS, TRENCHES, AND SUMPS DAILY AND QUARTERLY	GARDNER	GLASSMEYER	08/27/92	0		NONE
06-C-911	SOP	PLANT 6 PERCHED GROUNDWATER EXTRACTION REMOVAL SYSTEM OPERATING PROCEDURE	GARDNER	HALLER	02/14/92	0		NONE
08-BN/E-490-02	MS	DISPOSAL OF WASTE FILTRATE AND EFFLUENTS	GARDNER	GLASSMEYER	02/25/92	0		NONE
08-C-104	SOP	MAKEUP OF PRECOAT SLURRY AND PRECOATING ROTARY VACUUM FILTERS	GARDNER	GLASSMEYER	10/06/92	0		
08-C-114	SOP	FILTRATION OF RAFFINATES	GARDNER	GLASSMEYER	03/10/86		01/27/88	NONE
08-C-115	SOP	LARGE EIMCO FILTER OPERATION	GARDNER	GLASSMEYER	11/03/92	0		NONE
08-C-200	SOP	PLANT 8 PERCHED GROUNDWATER VOLATILE ORGANIC COMPOUND (VOC) TREATMENT SYSTEM	GARDNER	SCHMIDT	04/14/93	0		08-C-117
08-C-213	SOP	NORMAL OPERATING AND OPERATIONAL SAFETY REQUIREMENTS (OSR) LOGS ROTARY KILN FACILITY	GARDNER	GLASSMEYER	09/22/92	0		
08-C-600	SOP	SEWAGE SLUDGE TREATMENT AND FILTRATION	GARDNER	GLASSMEYER	09/30/92	0		NONE
08-C-605	SOP	EIMCO FILTER OPERATION	GARDNER	GLASSMEYER	09/01/92	0		NONE
08-C-606	SOP	PLANT 8 PERCHED GROUNDWATER EXTRACTION SYSTEM	GARDNER	SCHMIDT	03/09/93	0		NONE
08-C-701	SOP	PLANT 8 BAGHOUSE DUST COLLECTOR OPERATION	GARDNER	PALMER	08/22/90	0		NONE
08-C-913	SOP	INSPECTING PLANT 8 FLOOR CONTROL AREAS AND SUMPS	GARDNER	GLASSMEYER	11/15/91	0		NONE
09-C-902	SOP	SOUTHEAST PAD SUMP AND FILTER AND NORTHWEST PAD SUMP	GARDNER	GLASSMEYER	06/18/68		05/07/87	NONE
09-C-905	SOP	INSPECTING PLANT 9 FLOOR CONTROL AREAS AND SUMPS DAILY AND QUARTERLY	GARDNER	GLASSMEYER	02/18/81		03/20/84	NONE
09-C-910	SOP	PLANT 9 HOISTS AND CRANES	GARDNER	ROMINE	06/01/89			NONE

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DOCUMENT.NO.	TYPE OF DOCUMENT	TITLE	DOC.OWNER	PTR LAST.NAME	ISSUE DATE	REV. NO.	REVISION DATE	SUPERSEDES
09-C-911	SOP	PLANT 9 PERCHED GROUNDWATER EXTRACTION SYSTEM	GARDNER	SCHMIDT	03/09/93	0		NONE
10-C-103	SOP	LABORATORY BUILDING NUCLEAR MATERIALS INVENTORY	MILLER	BURK	12/05/89	0		NONE
1001	METH	THE DETERMINATION OF OIL AND GREASE IN WATER AND WASTES USING THE PARTITION-GRAVIMETRIC METHOD	NEYER	ANGERT	08/14/91	0		NONE
1003	METH	DETERMINATION OF ASH CONTENT IN OILS USING THE GRAVIMETRIC METHOD	NEYER	ANGERT	09/23/86			NONE
1004	METH	APPARENT DENSITY	NEYER	ANGERT	10/14/86			NONE
1005	METH	DETERMINATION OF SPECIFIC GRAVITY GRAVIMETRIC METHOD	NEYER	ANGERT	01/12/87			NONE
1006	METH	DETERMINATION OF VISCOSITY, BROOKFIELD VISCOMETER METHOD	NEYER	ANGERT	06/01/88			NONE
1010	METH	THE SAMPLE PREPARATION PROCEDURE FOR THE DETERMINATION OF URANIUM IN WET RESIDUE TYPE SAMPLES	NEYER	ANGERT	09/25/89	1	06/18/91	NONE
1026	METH	GRAPHITE FURNACE ATOMIC ABSORPTION METHOD FOR THE DETERMINATION OF HEXAVALENT CHROMIUM IN NPDES WATER SAMPLES	NEYER	BOWMAN	04/16/87	1	11/03/92	NONE
1039	METH	THE DETERMINATION OF URANIUM BY FERROUS REDUCTION, TITRIMETRIC, POTENTIOMETRIC ENDPOINT METHOD	NEYER	ANGERT	09/18/89			NONE
1041	METH	THE DETERMINATION OF MOISTURE IN POWDERS, GRAVIMETRIC METHOD	NEYER	ANGERT	01/11/88			NONE
1042	METH	SAMPLE PREPARATION PROCEDURE FOR THE DETERMINATION OF URANIUM IN DRY RESIDUE TYPE SAMPLES	NEYER	ANGERT	07/23/87	1	06/18/91	NONE
1054	METH	EXTRACTION PROCEDURE TOXICITY	NEYER	BOWMAN	05/19/88			NONE
1062	METH	THE DETERMINATION OF CHROMIUM, COPPER, IRON, AND NICKEL IN URANIUM TETRAFLUORIDE BY FLAME ATOMIC ABSORPTION SPECTROPHOTOMETRY	NEYER	ANGERT	08/08/88			NONE
1080	METH	THE COLORIMETRIC DETERMINATION OF THORIUM IN URANIUM-BASE MATERIALS (TTA EXTRACTION-COLORIMETRIC THORIN METHOD)	NEYER	ANGERT	09/26/89			NONE
11-C-217	SOP	OPERATION OF PILOT PLANT SUMP SYSTEM	GARDNER	GLASSMEYER	06/20/73		01/07/87	NONE
11-C-238	SOP	PILOT PLANT DUST COLLECTORS	GARDNER	PALMER	10/11/89	0		NONE
11-C-243	SOP	INSPECTING PILOT PLANT FLOOR CONTROL AREAS AND SUMPS DAILY AND QUARTERLY	GARDNER	GLASSMEYER	04/08/92	0		NONE
11-C-901	SOP	PILOT PLANT HOIST AND CRANES	GARDNER	ROMINE	08/16/89	0		NONE
1250	METH	CLP/ACID DIGESTION OF SOIL AND SEDIMENT SAMPLES FOR METALS ANALYSES	NEYER	BOWMAN	10/28/91	0		NONE
1251	METH	CLP/ACID DIGESTION OF WATER SAMPLES FOR METAL ANALYSIS	NEYER	BOWMAN	10/28/91	0		NONE
20-C-001	SOP	CHANGES TO FORM ENTRIES	GARDNER	GLASSMEYER	08/17/90	0		NONE

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20-C-003	SOP	ULTRASONIC TESTING OF DEPLETED URANIUM MARK 31 INNER AND OUTER CORES	GARDNER	HUNDLEY	10/06/92	0		NONE
20-C-004	SOP	PACKAGING OF DEPLETED URANIUM FOUR INCH THICK FLAT BILLETS	GARDNER	HUNDLEY	10/27/92	0		NONE
20-C-005	SOP	PACKAGING DEPLETED URANIUM DERBIES FOR OFF-SITE SHIPMENT	GARDNER	HUNDLEY	10/01/92	0		NONE
20-C-006	SOP	INSPECTION AND DISPOSITION OF DEPLETED AND NORMAL URANIUM DERBIES FOR OFF-SITE SHIPMENT	GARDNER	HUNDLEY	09/14/92	0		NONE
20-C-007	SOP	PACKAGING DEPLETED URANIUM TWO-INCH THICK FLAT BILLETS	GARDNER	HUNDLEY	09/14/92	0		NONE
20-C-008	SOP	PACKAGING OF DEPLETED URANIUM MARK 31 INGOTS AND CORES	GARDNER	HUNDLEY	09/14/92	0		NONE
20-C-010	SOP	ESTABLISHMENT OF AN ENGINEERING CONTROL AREA (ECA) FOR DISPOSITION OF SAMPLE RESIDUES	BURNS	ECKSTEIN	11/06/92	0		NONE
20-C-011	SOP	PHYSICAL INVENTORY OF NUCLEAR MATERIALS	GARDNER	DUNAWAY	04/01/93	0		C92-164
20-C-014	SOP	WET AND DRY SYSTEMS CLEAN-OUT	GARDNER	EVANS	02/18/93	0		NONE
20-C-100	SOP	MOVING AND STORING DEPLETED, NORMAL, AND ENRICHED URANIUM MATERIALS <20% AND THORIUM METAL AND MATERIALS	GARDNER	MOODY	02/16/93	0		20-C-101 20-C-102
20-C-104	SOP	OPERATION OF ALLEGANY TECHNOLOY ELECTRONIC PORTABLE HANGING SCALE MODEL CM30K	GARDNER	HUEY	04/26/93	0		NONE
20-C-201	SOP	UNSCHEDULED OR EMERGENCY NUCLEAR MATERIAL INVENTORY	GARDNER	KNUE	08/20/90	0		NONE
20-C-500	SOP	INSPECTING RCRA WASTE LOAD/UNLOAD AND STAGING AREAS	GARDNER	GLASSMEYER	04/14/92	0		NONE
20-C-501	SOP	BOILER PLANT ASH LOADING AND TRANSPORTING FOR OFF-SITE DISPOSAL	GARDNER	HUNDLEY	10/01/92	0		
20-C-505	SOP	PLANT 2/3 AND PLANT 8 PERCHED GROUNDWATER EXTRACTION SYSTEM	GARDNER	HALLER	02/05/92	0		C91-071
20-C-506	SOP	PLANT 2/3 PERCHED GROUNDWATER EXTRACTION SYSTEM	GARDNER	SCHMIDT	04/06/93	0		NONE
20-C-510	SOP	REMOVAL, TRANSPORT, AND STORAGE OF DECANT SUMP LIQUID FROM K-65 SILOS 1 AND 2	PENNINGTON	HENSLEY	01/04/93	0		NONE
20-C-600	SOP	OVERPACKING DEFECTIVE CONTAINERS	GARDNER	HUNDLEY	03/06/91	1		01-C-804
20-C-602	SOP	INSPECTION AND OPERATION OF NILFISK PORTABLE VACUUM UNITS	GARDNER	PALMER	07/09/90	1	01/24/93	NONE
20-C-603	SOP	REMOVAL AND REPLACEMENT OF NILFISK PORTABLE VACUUM UNIT FILTERS AND DUST BAG	GARDNER	PALMER	06/15/88			NONE
20-C-604	SOP	CONTROL AND UTILIZATION OF CONTAMINATED TRASH DUMPSTERS	GARDNER	HUNDLEY	05/24/88	3	12/08/92	NONE
20-C-606	SOP	HAZARDOUS MATERIAL SPILL CLEAN-UP	BURNS	ECKSTEIN	10/12/89	0		NONE
20-C-607	SOP	SEGREGATION OF WOODEN PALLETS	BURNS	ECKSTEIN	10/10/91	0		01-104
20-C-609	SOP	INSPECTION OF SAFETY BELTS, HARNESSES, AND LANYARDS	GARDNER	LENARDUZZI	01/16/91	0		01-102

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20-C-610	SOP	BIRD CARCASS AND DROPPING REMOVAL	GARDNER	HUNDLEY	10/27/89	0		NONE
20-C-611	SOP	ASSEMBLY/DISASSEMBLY OF SCAFFOLDING	GARDNER	HUNDLEY	02/15/91	0		01-101
20-C-612	SOP	INDUSTRIAL CLEANING	GARDNER	HUNDLEY	01/06/93	0		01-103
20-C-613	SOP	EMPTYING LIQUID HAZARDOUS WASTE STORAGE CONTAINERS	BURNS	BENSON	03/09/90	1	03/11/91	NONE
20-C-614	SOP	OPERATION OF GENIE LIFT MODEL PL36PDC	GARDNER	ROMINE	09/21/92	0		01-107
20-C-616	SOP	INSPECTION OF HAZARDOUS WASTE MANAGEMENT UNITS	BURNS	PARMER	12/15/92	1	02/07/93	NONE
20-C-619	SOP	PACKAGING SOIL BORING MATERIAL FOR TRANSFER TO THE 90-DAY STORAGE AREA	BURNS	ECKSTEIN	09/26/91	0		NONE
20-C-620	SOP	90-DAY STORAGE AREA	BURNS	ECKSTEIN	09/20/91	0		NONE
20-C-625	SOP	EVALUATING LOW LEVEL RADIOACTIVE WASTE (LLRW) BULK WASTE STREAMS FOR SHIPMENT	BURNS	ROWE	11/05/92	0		NONE
20-C-630	SOP	RECEIPT INSPECTION, STORAGE, AND STORAGE INSPECTION OF HAZARDOUS WASTE	BURNS	HONIGFORD	06/05/92	1	03/28/93	01-C-605
20-C-700	SOP	NORCLEAN PORTABLE VACUUM OPERATION	GARDNER	PALMER	05/30/91	0		NONE
20-C-701	SOP	OPERATION OF SPENCER AND HOFFMAN PORTABLE DUST COLLECTORS	GARDNER	LENARDUZZI	07/05/89	2	12/14/92	NONE
20-C-704	SOP	CHANGING HEPA FILTERS AND PREFILTERS	GARDNER	PALMER	03/17/89	2	02/19/93	NONE
20-C-705	SOP	CHANGING DUST COLLECTOR MODULE AND SECONDARY SEPARATOR CARTRIDGE FILTERS	GARDNER	PALMER	09/24/90	1	02/03/93	NONE
20-C-707	SOP	DOP TESTING OF IN-PLACE HEPA FILTERS	GARDNER	PALMER	05/07/90	1	12/10/92	NONE
20-C-708	SOP	INSPECTING AND TROUBLESHOOTING BAGHOUSE TYPE DUST COLLECTORS AND PRECIPITRONS	GARDNER	PALMER	02/16/90	1	04/22/91	NONE
20-C-709	SOP	BAGHOUSE TYPE DUST COLLECTOR REMOVAL/REPLACEMENT	GARDNER	LENARDUZZI	02/16/90	1	12/21/92	NONE
20-C-711	SOP	HAKO "MINUTEMAN" PORTABLE VACUUM CLEANER OPERATION	GARDNER	PALMER	10/29/90	0	12/07/92	NONE
20-C-801	SOP	STORAGE OF ENRICHED MATERIAL	BURNS	ECKSTEIN	06/02/90	2	11/13/91	NONE
20-C-805	SOP	SAMPLING DRUMMED WASTE FOR HAZARD IDENTIFICATION	GARDNER	PARMER	04/10/92	0		NONE
20-C-807	SOP	INSPECTION OF PLANT 2/3 (REFINERY) AND PLANT 8 SAFETY SHOWER/EYE BUBBLER STATIONS	GARDNER	GLASSMEYER	01/06/93	0		08-C-915 02-C-918
20-C-810	SOP	DISPOSITION OF SAMPLE RESIDUES	BURNS	ECKSTEIN	07/01/92	0		NONE
20-C-902	SOP	LIQUID PROPANE GAS (LPG) POWERED HANDSTACKERS AND TUGGERS	GARDNER	HUNDLEY	05/29/90	0		NONE
20-C-903	SOP	GUIDELINES FOR THE PREVENTION OF URANIUM METAL FIRES	GARDNER	GLASSMEYER	03/10/88	0		NONE
20-C-904	SOP	GENERAL NUCLEAR SAFETY REQUIREMENTS	GARDNER	GLASSMEYER	11/17/88	1		NONE
20-C-908	SOP	RCRA WAREHOUSE PORTABLE CRANE OPERATION	BURNS	ROMINE	07/09/90	1	03/09/93	NONE

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20-C-909	SOP	PORTABLE VENTILATION UNIT OPERATION	GARDNER	PALMER	06/06/91	0		NONE
20-C-910	SOP	VENTING POTENTIALLY EXPLOSIVE DRUMS	GARDNER	GLASSMEYER	04/08/92	0		NONE
20-C-912	SOP	CHECKING SCALE OPERATION	GARDNER	ROMINE	09/01/91	0		01-C-904 02-C-909 04-C-901 05-C-902 08-C-905 09-C-904 11-C-230
20-C-916	SOP	CLEANING SUMP SYSTEMS	GARDNER	GLASSMEYER	07/09/92	0		NONE
20-C-917	SOP	HYDROGEN MONITORING AND REMOVING NUCFIL VENT PLUGS FROM DRUMS	GARDNER	GLASSMEYER	08/04/92	2	09/11/92	NONE
20-C-918	SOP	PREPARATION FOR AND MOVEMENT OF UNVENTED DRUMS	GARDNER	GLASSMEYER	12/15/92	0		NONE
20-PS-300-03	PSS	SODA ASH (COMMERCIAL GRADE)	GARDNER	GLASSMEYER	03/04/93	0		NONE
20-PS-300-05	PSS	MAGNESIUM OXIDE (MGO)	GARDNER	PATTON	07/10/89	0		NONE
20-PS-300-10	PSS	AQUEOUS SODIUM HYDROXIDE (COMMERCIAL GRADE)	GARDNER	PATTON	04/12/93	0		NONE
20-PS-300-19	PSS	FILTER AID	GARDNER	GLASSMEYER	04/26/93	0		NONE
20-PS-300-20	PSS	HYDRATED LIME (COMMERCIAL GRADE)	GARDNER	PATTON	07/06/89	0		NONE
20-PS-300-21	PSS	BULK QUICK LIME	GARDNER	PATTON	06/16/89	0		NONE
20-PS-300-22	PSS	FLAKE CAUSTIC SODA (TECHNICAL GRADE)	GARDNER	GLASSMEYER	03/04/93	0		NONE
20-PS-400-05	PSS	CANTON FLANNEL FILTER BAGS FOR HOFFMAN DUST COLLECTORS	GARDNER	PALMER	11/16/89	0		NONE
20-PS-400-20	PSS	WOOL/NYLON FILTER BAGS FOR THE UNITED CONVEYOR DUST COLLECTOR	PENNINGTON	PALMER	03/19/93	0		NONE
20-PS-400-25	PSS	VENDOR SPECIFICATION AND CERTIFICATION REQUIREMENTS FOR POLYPROPYLENE FELT FITER BAGS - HOFFMAN PORTABLE VACUUM UNITS	GARDNER	PALMER	10/27/87			NONE
20-PS-400-29	PSS	HEPA FILTER ELEMENTS FOR GENERAL DYNAMICS PORTABLE HEPA FILTRATION DEVICE	GARDNER	PALMER	03/18/91	0		NONE
20-PS-400-30	PSS	HEPA FILTER ELEMENTS FOR BARTLETT PORTABLE VENTILATION DEVICES	GARDNER	PALMER	05/23/91	0		NONE
2002	METH	GAS CHROMATOGRAPHIC DETERMINATION OF METHANOL IN BIODENITRIFICATION PROCESS LIQUORS	NEYER	CURRY	09/26/89			NONE
2050	METH	ZERO-HEADSPACE EXTRACTION (ZHE) FOR VOLATILE ORGANIC	NEYER	BOWN	02/11/91	0		NONE

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		COMPOUNDS						
256-S-0001	SOP	CLP PESTICIDE/PCB SOIL EXTRACTION	NEYER	BOWN	02/25/93	0		9037
256-S-0004	SOP	MEDIUM LEVEL PESTICIDE/PCB SOIL EXTRACTION	NEYER	BOWN	03/12/93	0		9035
256-S-0005	SOP	CLP PESTICIDE/PCB WATER EXTRACTION	NEYER	BOWN	02/25/93	1		9041
256-S-0006	METH	QUALITATIVE AND SEMI-QUANTITATIVE IDENTIFICATION OF ALPHA AND GAMMA EMITTING RADIONUCLIDES IN VARIOUS MATRICES	NEYER	HUMPHREY	03/11/93	0		4023
256-S-0007	METH	ANALYSIS OF WATER AND WASTEWATER FOR TOTAL ORGANIC CARBON	NEYER	CURRY	03/17/93	0		
256-S-0008	SOP	PESTICIDE/PCB WATER EXTRACTION	NEYER	BOWN	03/23/93	0		9047
256-S-0009	SOP	CLP SEMIVOLATILE WATER EXTRACTION	NEYER	BOWN	02/25/93	0		9042
256-S-0011	METH	GENERAL METHOD FOR THE DETERMINATION OF WATER (WEIGHT LOSS AT 110OC), GRAVIMETRIC METHOD	NEYER	ANGERT	04/12/93	0		C92-173
256-S-0065	SOP	LOW LEVEL SEMIVOLATILE AND PESTICIDE/PCB SOIL EXTRACTION	NEYER	BOWN	03/26/93	0		9010
257-D-0001	DEPT	ANALYTICAL LABORATORY SERVICES DOCUMENT PROCESSING AND IMPLEMENTATION	SUTTON	MILLER	02/16/93	0		PO-S-08-001
3001	METH	THE DETERMINATION OF AMMONIA-NITROGEN IN WASTEWATER USING THE POTENTIONMETRIC AMMONIA SENSING ELECTRODE METHOD	NEYER	ANGERT	10/20/86			NONE
3002	METH	THE COLORIMETRIC (BRPADAP) DETERMINATION OF URANIUM USING AN AUTOANALYZER	NEYER	ANGERT	08/22/89	1	06/18/91	NONE
3003	METH	GRAVIMETRIC DETERMINATION OF NON-VOLATILE PARTICULATES ON STACK FILTERS (INCLUDING SAMPLES PREPARATION FOR A TOTAL URANIUM DETERMINATION)	NEYER	ANGERT	05/17/85	1	06/18/91	NONE
3012	METH	THE DETERMINATION OF URANIUM BY THE VOLUMETRIC FERROUS SULFATE REDUCTION METHOD	NEYER	ANGERT	05/13/88			NONE
3017	METH	DETERMINATION OF ACID CONCENTRATION IN SOLUTIONS CONTAINING URANYL IONS USING THE VOLUMETRIC METHOD	NEYER	ANGERT	09/17/86			NONE
3018	METH	GENERAL METHOD FOR THE DETERMINATION OF ACID CONCENTRATION, VOLUMETERIC METHOD	NEYER	ANGERT	01/12/87			NONE
3024	METH	GENERAL METHOD FOR THE DETERMINATION OF ALKALI CONCENTRATION, VOLUMETRIC METHOD	NEYER	ANGERT	02/23/87			NONE
3029	METH	DETERMINATION OF FLASH AND FIRE POINT BY THE CLEVELAND OPEN CUP PROCEDURE	NEYER	ANGERT	05/20/87			NONE
3033	METH	DETERMINATION OF PH USING AN ACCUMENT 915 PH METER	NEYER	ANGERT	08/22/89			NONE
3043	METH	THE DETERMINATION OF SPECIFIC GRAVITY USING A METTLER/PAAR	NEYER	ANGERT	08/11/87			NONE

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		DENSITY METER, MODEL DMA-46						
3051	METH	THE SIMULTANEOUS DETERMINATION OF NITRATE, NITRATE, AND PHOSPHATE IN WATER BY AN AUTOMATED CONTINUOUS FLOW ANALYZER	NEYER	ANGERT	06/07/88			NONE
3059	METH	AUTOMATED COLORIMETRIC DETERMINATION OF THORIUM IN LIQUID AND SOLID WASTE	NEYER	ANGERT	04/06/89	1	06/18/91	NONE
3062	METH	DETERMINATION OF TRACE URANIUM BY KINETIC PHOSPHORESCENCE ANALYSIS	NEYER	ANGERT	08/30/89			NONE
3063	METH	THE SEPARATION OF THORIUM FROM URANIUM USING TTA-XYLENE	NEYER	ANGERT	10/06/89			NONE
3064	METH	DETERMINATION OF FLASH POINT BY PENSKY - MARTENS CLOSED TESTER	NEYER	ANGERT	12/12/89			NONE
4002	METH	THE RADIOMETRIC DETERMINATION OF RADIUM-226 AND RADIUM-228 IN VARIOUS MATRICES	NEYER	HUMPHREY	11/14/91	0		NONE
4003	METH	RADIOMETRIC PROCEDURE FOR THE DETERMINATION OF NEPTUNIUM-237	NEYER	HUMPHREY	12/16/86		09/26/89	NONE
4004	METH	ALPHA SPECTROMETER OPERATING PROCEDURE UTILIZING SILICON SURFACE BARRIER DETECTORS	NEYER	HUMPHREY	02/07/87		09/26/89	NONE
4005	METH	RADIOMETRIC PROCEDURE FOR THE DETERMINATION OF URANIUM-233 IN THORIUM	NEYER	HUMPHREY	01/14/87			NONE
4006	METH	RADIOMETRIC PROCEDURE FOR THE DETERMINATION OF CESIUM-137	NEYER	HUMPHREY	09/25/89			NONE
4007	METH	RADIOMETRIC PROCEDURE FOR THE DETERMINATION OF TECHNETIUM-99	NEYER	HUMPHREY	03/25/91	0		NONE
4010	METH	THE RADIOMETRIC DETERMINATION OF THORIUM-230 IN THORIUM MATRICES	NEYER	HUMPHREY	01/14/87		09/26/89	NONE
4011	METH	RADIOMETRIC DETERMINATION OF URANIUM-232 IN URANIUM BEARING MATERIALS	NEYER	HUMPHREY	01/14/87		09/26/89	NONE
4012	METH	OPERATING PROCEDURE FOR THE AUTOMATIC LOW BACKGROUND ALPHA/BETA PROPORTIONAL COUNTER	NEYER	HUMPHREY	09/26/89			NONE
4013	METH	RADIOMETRIC SCREENING METHOD FOR DETERMINING TOTAL RADIOACTIVITY IN VARIOUS MATRICES	NEYER	HUMPHREY	06/10/91	0		NONE
4015	METH	THE RADIOMETRIC DETERMINATION OF BETA ACTIVITY IN RECYCLED MATERIALS	NEYER	HUMPHREY	01/16/87			NONE
4016	METH	THE RADIOMETRIC DETERMINATION OF GAMMA ACTIVITY IN RECYCLED MATERIALS	NEYER	HUMPHREY	01/16/87			NONE
4020	METH	OPERATING PROCEDURE FOR THE MANUAL LOW BACKGROUND ALPHA/BETA PROPORTIONAL COUNTERS	NEYER	HUMPHREY	03/09/87			NONE

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4022	METH	THE RADIOMETRIC DETERMINATION OF TH-234 AND PA-234M IN EFFLUENTS	NEYER	HUMPHREY	12/07/88			NONE
43-BE-410-02	MS	BIODENITRIFICATION FACILITY OPERATION	PENNINGTON	LESLIE	08/04/92	0		NONE
43-C-100	SOP	CLEANING GLASS AND PLASTIC LABORATORY WARE	PENNINGTON	PENNINGTON	09/22/92	0		NONE
43-C-101	SOP	STORING AND HANDLING CHEMICALS	PENNINGTON	PENNINGTON	11/12/92	0		NONE
43-C-301	SOP	WATER TREATMENT PLANT OPERATION	PENNINGTON	HALCOMB	06/17/91	1	03/19/92	NONE
43-C-303	SOP	COOLING WATER TOWER	PENNINGTON	HALCOMB	12/04/89	0		NONE
43-C-304	SOP	GRAVER WATER SOFTENERS	PENNINGTON	HALCOMB	05/11/92	0		NONE
43-C-305	SOP	WATER PLANT LABORATORY PROCEDURES	PENNINGTON	HALCOMB	03/18/87	0		NONE
43-C-306	SOP	STORM SEWER LIFT STATION	PENNINGTON	HALCOMB	03/06/91	0		NONE
43-C-308	SOP	RESPONDING TO INDICATIONS OF OUT-OF-SPECIFICATION EXCURSIONS OF STORM SEWER WATER QUALITY	PENNINGTON	HALCOMB	06/10/88	0		NONE
43-C-310	SOP	SAMPLING DRINKING WATER FOR TOTAL COLIFORM DETERMINATION	PENNINGTON	PENNINGTON	05/03/91	1	12/10/92	NONE
43-C-311	SOP	WATER PLANT BLOWDOWN OPERATION	PENNINGTON	HALCOMB	02/13/90	0		NONE
43-C-313	SOP	STORMWATER RETENTION/EMERGENCY SPILL CONTAINMENT BASIN SLUDGE REMOVAL	PENNINGTON	HALCOMB	12/17/90	0		NONE
43-C-314	SOP	STORMWATER RETENTION/EMERGENCY SPILL CONTAINMENT BASIN SAMPLING	PENNINGTON	HALCOMB	08/13/90	0		NONE
43-C-315	SOP	BIODENITRIFICATION FACILITY ROUTINE CHECKS	PENNINGTON	KIMBROUGH	04/28/93	0		NONE
43-C-316	SOP	BIODENITRIFICATION FACILITY CORRECTIVE RESPONSES	PENNINGTON	LESLIE	08/02/90	0		NONE
43-C-318	SOP	SURGE LAGOON UNDERDRAIN SYSTEM	PENNINGTON	LESLIE	02/14/89			NONE
43-C-319	SOP	SURGE LAGOON INSPECTION	PENNINGTON	LESLIE	08/06/90	1	02/19/93	NONE
43-C-320	SOP	BIODENITRIFICATION FACILITY NORMAL OPERATIONS	PENNINGTON	LESLIE	08/01/90	0		NONE
43-C-321	SOP	OPERATION OF CALCIUM REMOVAL SYSTEM	PENNINGTON	LESLIE	10/30/86			NONE
43-C-322	SOP	FILLING THE METHANOL STORAGE TANK	PENNINGTON	LESLIE	04/06/93	0		NONE
43-C-323	SOP	WATER PLANT TEMPORARY TANKS	PENNINGTON	LESLIE	04/07/89			NONE
43-C-324	SOP	SAMPLING FMPC WATER SUPPLIES	PENNINGTON	LESLIE	08/13/92	0		NONE
43-C-325	SOP	BIODENITRIFICATION HIGH NITRATE TANK	PENNINGTON	HENSLEY	04/28/93	0		NONE
43-C-326	SOP	STORMWATER RETENTION BASIN CONTROL SYSTEM OPERATION	PENNINGTON	LESLIE	05/30/91	1	06/03/92	NONE
43-C-327	SOP	EFFLUENT TREATMENT SYSTEM NORMAL	PENNINGTON	LESLIE	03/23/93	0		NONE
43-C-329	SOP	BIODENITRIFICATION FACILITY AND EFFLUENT TREATMENT EMERGENCIES	PENNINGTON	LESLIE	08/15/90	0		NONE
43-C-330	SOP	MEDRO WATER SOFTENER OPERATION	PENNINGTON	HALCOMB	05/05/92	0		NONE

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DOCUMENT.NO.....	TYPE OF... DOCUMENT	TITLE.....	DOC.OWNER..	PTR..... LAST.NAME	ISSUE... DATE	REV. NO.	REVISION.. DATE	SUPERSEDES.....
43-C-332	SOP	OPERATION OF THE HACH DR/3000 SPECTROPHOTOMETER	PENNINGTON	PENNINGTON	01/21/92	0		NONE
43-C-334	SOP	OPERATION OF THE HACH DR/2000 SPECTROPHOTOMETER	PENNINGTON	PENNINGTON	05/28/92	0		NONE
43-C-335	SOP	INTERIM ADVANCED WASTE WATER TREATMENT (STORMWATER RETENTION BASIN SYSTEM OPERATION)	PENNINGTON	LESLIE	06/19/92	1	03/12/93	NONE
43-C-336	SOP	INTERIM ADVANCED WASTEWATER TREATMENT - BIODENITRIFICATION EFFLUENT TREATMENT SYSTEM OPERATION	PENNINGTON	LESLIE	07/06/92	0		NONE
43-C-337	SOP	WASTE PIT AREA STORMWATER RUNOFF CONTROL SYSTEM (WPASRC) OPERATION	PENNINGTON	WADE	07/30/92	0		NONE
43-C-338	SOP	OPERATION, INSPECTION AND TEST OF K-65 SILOS NO. 1 AND NO. 2 EMERGENCY POWER SUPPLY (EPS) GENERATOR	PENNINGTON	PENNINGTON	11/04/92	0		NONE
43-C-339	SOP	OFF-NORMAL OPERATION (LOW TRAILER EFFLUENT PH) OF THE INTERIM ADVANCED WASTE WATER TREATMENT (STORMWATER RENTION BASIN) FACILITY	PENNINGTON	KNEIP	08/11/92	0		NONE
43-C-400	SOP	BOILER WATER AND FEED WATER TESTING	PENNINGTON	NABER	01/11/91	1	02/19/93	NONE
43-C-401	SOP	COAL HANDLING EQUIPMENT OPERATION	PENNINGTON	NABER	11/04/92	1	03/12/93	NONE
43-C-402	SOP	OPERATION OF STEAM GENERATING EQUIPMENT	PENNINGTON	PENNINGTON	04/24/91	4	03/05/93	NONE
43-C-403	SOP	BOILER COMBUSTION CONTROL	PENNINGTON	NABER	02/09/91	0		NONE
43-C-404	SOP	DEAERATING FEEDWATER HEATER SYSTEM	PENNINGTON	NABER	01/08/91	0		NONE
43-C-405	SOP	BLOWING SOOT ON RILEY BOILERS	PENNINGTON	NABER	04/15/93	0		NONE
43-C-406	SOP	ASH HANDLING SYSTEM	PENNINGTON	NABER	01/07/91	0		NONE
43-C-407	SOP	AIR COMPRESSORS	PENNINGTON	STRAUTMAN	04/28/93	0		NONE
43-C-408	SOP	COALYARD BULLDOZER AND ENDLOADER OPERATION	PENNINGTON	NABER	04/28/93	0		NONE
43-C-410	SOP	RECEIPT, SAMPLING, AND STORING COAL	PENNINGTON	NABER	10/12/90	0		NONE
43-C-411	SOP	POWER PLANT ELECTROSTATIC PRECIPITATOR	PENNINGTON	NABER	04/04/91	1	02/04/93	NONE
43-C-412	SOP	MANAGEMENT OF THE WATER COVER FOR WASTE PIT 6	PENNINGTON	NABER	08/08/91	0		NONE
43-C-413	SOP	HANDLING WASTE MATERIALS WITH THE INDUSTRIAL VACUUM LADER TRUCK (SUPERSUCKER)	PENNINGTON	HENSLEY	11/09/92	0		NONE
43-C-414	SOP	INDUSTRIAL VACUUM LOADER TRUCK (SUPERSUCKER) OPERATION	PENNINGTON	HENSLEY	11/09/92	0		NONE
43-C-415	SOP	COAL PILE RUNOFF CONTROL FACILITY OPERATION	PENNINGTON	PENNINGTON	07/16/92	0		NONE
43-C-417	SOP	OPERATION OF 350 HP SUPERIOR STEAM BOILER	PENNINGTON	PENNINGTON	07/30/92	0		NONE
43-C-418	SOP	OPERATION OF MODEL NOS-2A-67 WATERTUBE BOILER	PENNINGTON	PENNINGTON	07/30/92	0		NONE
43-C-419	SOP	ION EXCHANGE RESIN SLUICING AND ADDITION FOR THE INTERIM ADVANCED WASTEWATER TREATMENT BIODENITRIFICATION EFFLUENT	PENNINGTON	LESLIE	01/27/93	0		NONE

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DOCUMENT.NO.	TYPE OF DOCUMENT	TITLE	DOC.OWNER	PTR LAST.NAME	ISSUE DATE	REV. NO.	REVISION DATE	SUPERSEDES
		TREATMENT SYSTEM						
43-C-420	SOP	ION EXCHANGE RESIN DEWATERING AND DRUMMING	PENNINGTON	LESLIE	01/04/93	0		NONE
43-C-421	SOP	ION EXCHANGE RESIN SLUICING AND ADDITION FOR THE INTERIM ADVANCED WASTE WATER TREATMENT (STORMWATER RETENTION BASIN) SYSTEM	PENNINGTON	HENSLEY	01/04/93	0		NONE
43-C-501	SOP	SANITARY SEWAGE TREATMENT PLANT OPERATION	PENNINGTON	HALCOMB	05/30/91	0		NONE
43-C-601	SOP	INSPECTION/OPERATION OF SURFACE IMPOUNDMENTS	PENNINGTON	HENSLEY	07/30/92	0		NONE
43-C-701	SOP	GENERAL SUMP	PENNINGTON	HALCOMB	02/20/90	1	04/29/92	NONE
43-C-702	SOP	BULK LIME HANDLING SYSTEM	PENNINGTON	HALCOMB	03/04/91	1	02/19/93	NONE
43-C-704	SOP	LIME SLAKER OPERATION	PENNINGTON	HALCOMB	04/08/92	0		NONE
43-C-705	SOP	LIME SLURRY DISTRIBUTION	PENNINGTON	PENNINGTON	04/22/92	0		NONE
43-C-801	SOP	UTILITIES ENGINEER - GENERAL	PENNINGTON	PENNINGTON	08/30/92	0		NONE
43-C-802	SOP	EMERGENCY POWER SYSTEM	PENNINGTON	PENNINGTON	07/11/90	0		NONE
43-C-804	SOP	NATURAL GAS METERING STATION AND DISTRIBUTION SYSTEM	PENNINGTON	PENNINGTON	03/08/91	0		NONE
43-C-805	SOP	TESTING FIRE PUMPS	PENNINGTON	PENNINGTON	02/12/91	1	02/19/93	NONE
43-C-806	SOP	WINTER OPERATION OF THE FIRE PROTECTION WATER STORAGE SYSTEM	PENNINGTON	PENNINGTON	07/16/91	0		NONE
43-C-902	SOP	OPERATION, INSPECTION, AND TEST OF THE EMERGENCY OPERATIONS CENTER GENERATOR	PENNINGTON	PENNINGTON	12/07/88	1	02/19/93	NONE
43-C-910	SOP	UTILITIES HOISTS AND CRANES	PENNINGTON	PENNINGTON	04/28/93	0		NONE
43-C-911	SOP	INVINCIBLE PORTABLE DUST COLLECTOR OPERATION	PENNINGTON	PALMER	10/10/89	1	12/28/89	20-C-703
43-M-1001	METH	DISSOLVED OXYGEN (DO) AZIDE MODIFICATION OF WINKLER METHOD	PENNINGTON	HUDSON	12/17/90	0		NONE
43-M-1002	METH	DISSOLVED OXYGEN (DO) MEMBRANE ELECTRODE METHOD	PENNINGTON	HUDSON	04/19/93	0		NONE
43-M-1003	METH	DPD METHOD FOR FREE AND TOTAL CHLORINE TEST	PENNINGTON	HUDSON	11/28/90	0		NONE
43-M-1004	METH	TOTAL COLIFORM TESTING BY MEMBRANE FILTER METHOD	PENNINGTON	PENNINGTON	03/18/91	0		NONE
43-M-1005	METH	FECAL COLIFORM TESTING OF WATER BY MEMBRANE FILTER METHOD	PENNINGTON	HUDSON	05/01/91	0		NONE
43-M-1006	METH	BRPADAP TEST FOR SOLUBLE URANIUM BY SPECTROPHOTOMETER	PENNINGTON	PENNINGTON	05/28/92			NONE
43-M-1007	METH	ALKALINITY (TOTAL AND PHENOLPHALEIN) TESTING OF WATER	PENNINGTON	PENNINGTON	04/10/91	1	05/28/92	NONE
43-M-1008	METH	TOTAL HARDNESS TESTING OF WATER BY EDTA TITRIMETRIC METHOD	PENNINGTON	PENNINGTON	04/10/91	0		NONE
43-M-1009	METH	TOTAL PHOSPHORUS TESTING OF WATER BY ASCORBIC ACID METHOD WITH PERSULFATE PREDIGESTION	PENNINGTON	PENNINGTON	05/28/92			NONE
43-M-1010	METH	STABILITY TEST OF WATER BY SATURATION WITH CALCIUM CARBONATE	PENNINGTON	PENNINGTON	06/04/91	0		NONE
43-M-1011	METH	PH (HYDROGEN ION) TESTING OF WATER BY ELECTROMETRIC METHOD	PENNINGTON	PENNINGTON	10/25/91	0		NONE
43-M-1012	METH	CONDUCTIVITY/RESISTIVITY TESTING OF WATER BY ELECTROMETERIC	PENNINGTON	PENNINGTON	07/22/91	0		NONE

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DOCUMENT.NO.	TYPE OF DOCUMENT	TITLE	DOC.OWNER	PTR LAST.NAME	ISSUE DATE	REV. NO.	REVISION DATE	SUPERSEDES
		METHOD						
43-M-1013	METH	SPECTROPHOTOMETRIC TEST FOR NITRATES IN WATER USING MODIFIED CADMIUM REDUCTION METHOD	PENNINGTON	PENNINGTON	10/01/92	0		NONE
43-M-1014	METH	TOTAL SUSPENDED (NON-FILTERABLE) SOLIDS IN WATER	PENNINGTON	PENNINGTON	10/09/91	0		NONE
43-M-1015	METH	TOTAL DISSOLVED (FILTERABLE) SOLIDS IN WATER	PENNINGTON	PENNINGTON	10/09/91	0		NONE
43-M-1016	METH	IGNITION TEST FOR VOLATILE AND FIXED SOLIDS IN WATER	PENNINGTON	PENNINGTON	10/09/91	0		NONE
43-M-1017	METH	TOTAL SOLIDS IN WATER	PENNINGTON	PENNINGTON	10/17/91	0		NONE
43-M-1018	METH	VOLUMETRIC MEASUREMENT OF SETTLEABLE SOLIDS IN WATER	PENNINGTON	PENNINGTON	10/09/91	0		NONE
43-M-1021	METH	BICINCHONINATE METHOD FOR TESTING COPPER IN WATER BY SPECTROPHOTOMETER	PENNINGTON	PENNINGTON	06/04/92	2	11/05/92	NONE
43-M-1022	METH	QUALITY TESTING OF REAGENT-GRADE WATER	PENNINGTON	PENNINGTON	11/04/92	0		NONE
43-M-1023	METH	BIOCHEMICAL OXYGEN DEMAND (BOD) AND CARBONACEOUS BIOCHEMICAL OXYGEN DEMAND (CBOD)	PENNINGTON	PENNINGTON	11/04/92	0		43-M-1000
46-C-101	SOP	LAUNDRY OPERATION	TOWNSEND	PENNIX	02/09/91	0		NONE
46-C-201	SOP	DISPOSAL OF NON-PROCESS AREA TRASH	TOWNSEND	DUNBAR	04/08/92	0		NONE
46-C-301	SOP	CLEANING, INSPECTING AND RECONDITIONING RESPIRATORS	TOWNSEND	PENNIX	06/09/92	0		NONE
50-C-101	SOP	PREPARATION AND OFFSITE SHIPMENT OF URANIUM HEXAFLUORIDE LABORATORY CALIBRATION STANDARDS CYLINDERS	GILBERT	STAPLETON	07/30/92	1	03/04/93	NONE
50-C-105	SOP	RECEIPT OF MIXED/LOW LEVEL WASTE	GILBERT	GILBERT	10/01/92	0		50-C-100
50-C-106	SOP	ACM WASTE SHIPMENT RECORD PREPARATION	GILBERT	STAPLETON	04/12/93	0		NONE
50-C-110	SOP	RECEIVING RADIOACTIVE AND NON-RADIOACTIVE HAZARDOUS MATERIAL	GILBERT	STAPLETON	01/13/93	0		NONE
52-S-0008	SOP	HANDLING AND STORING CHEMICALS	MILLER	MILLER	03/23/93	0		9112
6006	METH	THE THERMAL MASS SPECTROMETRIC ANALYSES OF ENVIRONMENTAL SAMPLES FOR URANIUM ISOTOPES	NEYER	HELLMANN	11/20/90	0		NONE
65-C-105	SOP	PREPARATION OF SILO SAMPLES FOR LONG TERM STORAGE	GARDNER	GLASSMEYER	11/08/89	1	12/03/90	NONE
65-C-106	SOP	SILO WASTE HANDLING	GARDNER	GLASSMEYER	11/09/89	0		NONE
65-C-201	SOP	K65 SILO NUMBERS 1 AND 2 AREA EMERGENCIES	GARDNER	LENARDUZZI	09/10/90	1	05/13/91	65-C-107
66-C-101	SOP	OPERATION OF K65 RADON TREATMENT SYSTEM	GARDNER	SHANKS	07/03/91	1	12/09/92	NONE
66-C-909	SOP	RADON TREATMENT SYSTEM EMERGENCIES	GARDNER	LENARDUZZI	09/11/90	0	05/13/91	NONE
7000	METH	THE DETERMINATION OF FREE ACID IN URANYL NITRATE SOLUTIONS (SPOT TEST METHOD FOR IN PLANT USE)	NEYER	ANGERT	03/04/87			NONE
7004	METH	QUANTITATIVE ANALYSIS OF URANIUM AND THORIUM IN CONCENTATE SAMPLES BY ENERGY DISPERSIVE X-RAY FLOURESCENCE (EDXRF)	NEYER	BOLIN	11/30/90	0		NONE

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		SPECTROSCOPY						
776-V-P001	DIV	ANALYTICAL LABORATORY SERVICES LONG RANGE MANAGEMENT PLAN	LONG	SUTTON	03/10/93	0		NONE
9000	SOP	OPERATION OF THE GAS CHROMATOGRAPH/MASS SPECTROMETER DETECTOR INSTRUMENT	NEYER	CURRY	02/26/91	0		NONE
9001	METH	GAS CHROMATOGRAPHY/MASS SPECTROMETRY FOR SEMI-VOLATILE ORGANICS:CAPILLARY COLUMN TECHNIQUE	NEYER	CURRY	02/25/91	0		NONE
9002	METH	GAS CHROMATOGRAPHY/MASS SPECTROMETRY FOR VOLATILE ORGANICS:CAPILLARY COLUMN TECHNIQUE	NEYER	CURRY	02/25/91	0		NONE
9006	METH	OPERATION OF LEEMAN PS3000 SERIES ICP	NEYER	BOWMAN	12/30/92	0		NONE
9007	SOP	LOGKEEPING	NEYER	ANGERT	10/28/91	1	07/20/92	NONE
9008	SOP	REFRIGERATION REQUIREMENTS FOR ENVIRONMENTAL SAMPLES AND STANDARDS	NEYER	ANGERT	04/03/91	0		NONE
9009	METH	TOXICITY CHARACTERISTICS LEACHING PROCEDURE FOR ORGANIC ANALYTES	NEYER	BOWN	10/07/91	0		NONE
9011	METH	QUANTITATIVE ANALYSIS OF URANIUM AND THORIUM SAMPLES IN SOIL SAMPLES BY ENERGY DISPERSIVE FLOURESCENCE (EDXRF) SPECTROSCOPY	NEYER	BOLIN	04/17/91	0		NONE
9012	METH	TOXICITY CHARACTERISTICS LEACHING PROCEDURE (TCLP) FOR METALLIC ANALYTES	NEYER	BOWMAN	04/03/91	1		NONE
9013	METH	DETERMINATION OF PH USING AN ACCUMET 950 SELECTIVE ION ANALYZER FOR NPDES SAMPLES	NEYER	ANGERT	08/06/92	0		NONE
9015	METH	SW846:6010/THE DETERMINATION OF CALCIUM, MAGNESIUM, POTASSIUM, AND SODIUM BY LEEMAN PLASMA SPEC III ICP	NEYER	BOWMAN	12/23/92	0		NONE
9016	METH	SW846:6010/THE DETERMINATION OF LEAD BY LEEMAN PLASMA SPEC III ICP	NEYER	BOWMAN	02/12/93	0		NONE
9017	METH	SW846:6010/THE DETERMINATION OF METALS BY LEEMAN PLASMA SPEC III ICP (SIMULTANEOUS OPERATION)	NEYER	BOWMAN	08/13/92	0		NONE
9019	METH	CLP 272.2/GFAA METHOD FOR THE DETERMINATION OF SILVER	NEYER	BOWMAN	06/10/92	0		NONE
9020	METH	CLP 239.2/GFAA METHOD FOR THE DETERMINATION OF LEAD	NEYER	BOWMAN	06/10/92	0		NONE
9021	METH	CLP 218.2/GFAA METHOD FOR THE DETERMINATION OF CHROMIUM	NEYER	BOWMAN	06/08/92	0		NONE
9022	METH	CLP 270.2/GFAA METHOD FOR THE DETERMINATION OF SELENIUM	NEYER	BOWMAN	06/04/92	1	01/12/93	NONE
9023	METH	MICROWAVE SAMPLE PREPARATION PROCEDURES	NEYER	DANAHY	11/14/91	0		NONE
9024	METH	CLP 213.2/GFAA METHOD FOR THE DETERMINATION OF CADMIUM	NEYER	MADSEN	06/10/92	0		NONE

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9025	METH	QUALITATIVE ANALYSIS OF SAMPLES BY ENERGY DISPERSIVE X-RAY FLOURESCENCE (EDXRF)	NEYER	BOLIN	05/03/91	0		NONE
9028	METH	CLP 210.2/GFAA METHOD FOR THE DETERMINATION OF BERYLLIUM	NEYER	BOWMAN	06/10/92	0		NONE
9029	SOP	CLP MEDIUM LEVEL SEMIVOLATILE SOIL EXTRACTION	NEYER	BOWN	06/10/91	0		NONE
9030	SOP	ANALYTICAL LABORATORIES SHIFT TURNOVER	MILLER	BURK	09/25/91	0		NONE
9031	SOP	MANAGEMENT AND REPORTING OF ANALYTICAL LABORATORY RESULTS	MILLER	ARICO	08/14/91	0		NONE
9032	METH	CLP 200.7/THE DETERMINATION OF METALS BY LEEMAN PS3000 ICP (SIMULTANEOUS OPERATION)	NEYER	BOWMAN	12/29/92	0		NONE
9034	SOP	SEMIVOLATILE WATER EXTRACTION	NEYER	BOWN	06/10/91	0		NONE
9038	METH	CLP 206.2/GFAA METHOD FOR THE DETERMINATION OF ARSENIC	NEYER	BOWMAN	06/10/92	0		NONE
9039	METH	CLP 279.2/GFAA METHOD FOR THE DETERMINATION OF THALLIUM	NEYER	BOWMAN	07/08/91	1	06/03/92	NONE
9040	METH	CLP 204.2/GFAA METHOD FOR THE DETERMINATION OF ANTIMONY	NEYER	BOWMAN	06/10/92	0		NONE
9043	METH	SW846:6010/THE DETERMINATION OF METALS BY LEEMAN PS3000 ICP (SIMULTANEOUS OPERATIONS)	NEYER	BOWMAN	12/30/92	0		NONE
9045	SOP	OPERATION OF THE PERKIN-ELMER 5100 ZEEMAN SERIES, FURNACE TECHNIQUE	NEYER	BOWMAN	11/03/92	0		NONE
9046	SOP	CLP LOW LEVEL SEMIVOLATILE SOIL EXTRACTION	NEYER	BOWN	07/08/91	1	02/15/93	NONE
9048	METH	ISOTOPIC ANALYSIS OF THORIUM AND URANIUM IN VARIOUS MATRICES	NEYER	HUMPHREY	07/10/91			4024
9050	SOP	OPERATOR AID POSTING	NEYER	CURRY	10/02/91	0		NONE
9051	METH	SW846:3010,3020/ACID DIGESTION OF AQUEOUS SAMPLES AND EXTRACTS FOR TOTAL METALS ANALYSIS	NEYER	BOWMAN	12/15/92	0		NONE
9052	METH	SW846:3050/ACID DIGESTION OF SOILS, SEDIMENTS, AND SLUDGES FOR TOTAL METAL ANALYSES	NEYER	BOWMAN	11/09/92	0		NONE
9055	METH	SW846:3015,3051/MICROWAVE ASSISTED ACID DIGESTION OF AQUEOUS SAMPLES, EXTRACTS, SEDIMENTS, SLUDGES, SOILS, AND OILS	NEYER	BOWMAN	12/07/92	0		NONE
9056	METH	SW846:7470,7471/COLD VAPOR TECHNIQUE FOR DETERMINATION OF MERCURY UTILIZING THE MERCURY ANALYZER SYSTEM	NEYER	BOWMAN	09/28/92	0		NONE
9057	METH	CLP 245.1,245.5/COLD VAPOR TECHNIQUE FOR DETERMINATION OF MERCURY UTILIZING THE MERCURY ANALYZER SYSTEM	NEYER	BOWMAN	09/28/92	0		NONE
9058	SOP	CLP PROTOCOL FOR INORGANIC ANALYSIS OF METALLIC ANALYTES	NEYER	BOWMAN	07/18/91	0		NONE
9059	METH	DETERMINATION OF ASBESTOS TYPE IN BULK MATERIALS/POLARIZED LIGHT MICROSCOPY	NEYER	ANDERSON	07/18/91	0		NONE
9060	METH	PERCENT SOLIDS DETERMINATION	NEYER	BOWMAN	06/22/92	1		NONE

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DOCUMENT.NO.	TYPE OF DOCUMENT	TITLE	DOC.OWNER	PTR LAST.NAME	ISSUE DATE	REV. NO.	REVISION DATE	SUPERSEDES
9061	SOP	SW846 AND NPDES PROTOCOL FOR INORGANIC ANALYSIS OF METALLIC ANALYTES	NEYER	BOWMAN	12/15/92	0		NONE
9062	SOP	CARCINOGEN CONTROL FOR THE ANALYTICAL LABORATORIES	MILLER	BURK	12/22/92	0		NONE
9063	METH	DETERMINATION OF TOTAL ORGANIC HALIDES (TOX) IN WATER SAMPLES	NEYER	BOWN	01/13/93	0		NONE
9064	METH	SW846:9095 PAINT FILTER LIQUIDS TEST	NEYER	ANGERT	12/29/92	0		1096
9065	METH	CLP/MICROWAVE DIGESTION PROCEDURE	NEYER	BOWMAN	08/14/91	0		NONE
9066	METH	DETERMINATION OF FLASH POINT BY AUTOMATED PENSKY-MARTENS CLOSED TESTER	NEYER	ANGERT	08/14/91	0		NONE
9068	SOP	OPERATION OF LEEMAN PLASMA SPEC III ICP	NEYER	BOWMAN	08/14/91	0		NONE
9069	METH	CLP 200.7/THE DETERMINATION OF LEAD BY LEEMAN PLASMA SPEC III ICP	NEYER	BOWMAN	08/14/91	0		NONE
9070	METH	CLP 200.71/THE DETERMINATION OF CALCIUM, MAGNESIUM, POTASSIUM, AND SODIUM BY LEEMAN PLASMA SPEC III ICP	NEYER	BOWMAN	08/14/91	0		NONE
9071	METH	CLP 200.7/THE DETERMINATION OF METALS BY LEEMAN PLASMA SPEC III ICP (SIMULTANEOUS OPERATION)	NEYER	BOWMAN	08/14/91	0		NONE
9072	SOP	REMOVAL AND DISPOSITION OF NON-RADIOACTIVE UNUSED CHEMICALS	MILLER	BURK	07/07/92	0		ANL-01-0045
9073	METH	SW846:7131/GFAA METHOD FOR THE DETERMINATION OF CADMIUM	NEYER	BOWMAN	09/28/92	0		NONE
9074	METH	SW846:7060/GFAA METHOD FOR THE DETERMINATION OF ARSENIC	NEYER	BOWMAN	12/15/92	0		NONE
9075	METH	SW846:7041/GFAA METHOD FOR THE DETERMINATION OF ANTIMONY	NEYER	BOWMAN	06/22/92	0		NONE
9076	METH	SW846:7841/GFAA METHOD FOR THE DETERMINATION OF THALLIUM	NEYER	BOWMAN	12/15/92	0		NONE
9077	METH	SW846:7091/GFAA METHOD FOR THE DETERMINATION OF BERYLLIUM	NEYER	BOWMAN	09/21/92	0		NONE
9078	METH	SW846:7740/GFAA METHOD FOR THE DETERMINATION OF SELENIUM	NEYER	BOWMAN	12/15/92	0		NONE
9079	METH	SW846:7421/GFAA METHOD FOR THE DETERMINATION OF LEAD	NEYER	BOWMAN	12/15/92	0		NONE
9080	METH	SW846:7761/GFAA METHOD FOR THE DETERMINATION OF SILVER	NEYER	BOWMAN	12/21/92	0		NONE
9081	METH	SW846:7191/GFAA METHOD FOR THE DETERMINATION OF CHROMIUM	NEYER	BOWMAN	06/22/92	0		NONE
9082	SOP	ADMINISTRATIVE REQUIREMENTS FOR REPAIR, CALIBRATION, AND PREVENTATIVE MAINTENANCE OF INSTRUMENTS AND EQUIPMENT IN THE ANALYTICAL LABORATORIES	NEYER	DANAHY	09/15/92	0		NONE
9085	METH	CALIBRATION OF ALPHA AND BETA CHECK SOURCES	NEYER	DANAHY	04/22/92	1	07/15/92	NONE
9086	METH	RADIOCHEMICAL DETERMINATION OF GROSS ALPHA PARTICLE ACTIVITY IN WATER	NEYER	DANAHY	04/02/92	0		NONE
9087	METH	RADIOCHEMICAL DETERMINATION OF GROSS BETA PARTICLE ACTIVITY	NEYER	DANAHY	04/02/92	0		NONE

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DOCUMENT.NO.	TYPE OF DOCUMENT	TITLE	DOC.OWNER	PTR LAST.NAME	ISSUE DATE	REV. NO.	REVISION DATE	SUPERSEDES
		IN WATER - BIOASSAY LABORATORY						
9092	METH	RADIOCHEMICAL DETERMINATION OF RADIUM IN ENVIRONMENTAL WATER SAMPLES	NEYER	DANAHY	04/22/92	1	07/15/92	NONE
9093	METH	GRAVIMETRIC DETERMINATION OF AIRBORNE PARTICLES	NEYER	DANAHY	12/29/92	0		NONE
9094	METH	EPA/160.2 DETERMINATION OF NON-FILTERABLE RESIDUE IN WATER, GRAVIMETRIC METHOD (TOTAL SUSPENDED SOLIDS)	NEYER	ANGERT	12/21/92	0		NONE
9095	METH	CONDUCTIVITY OF WATER	NEYER	BOWMAN	06/10/92	0		NONE
9096	METH	DETERMINATION OF PURGEABLE ORGANIC HALIDES (POX) IN WATER SAMPLES	NEYER	BOWN	01/13/93	0		NONE
9098	SOP	DISPOSAL OF RADIOACTIVE LABORATORY SOLID WASTES	MILLER	BURK	08/03/92	0		NONE
9100	METH	QUANTITATIVE ANALYSIS OF LOW LEVEL GAS BY QUADRUPOLE MASS SPECTROMETRY	NEYER	HELLMANN	11/09/92	0		9014
9103	METH	SW846:7470,7471/COLD VAPOR TECHNIQUE FOR THE DETERMINATION OF MERCURY IN LIQUID, SOIL, AND SEDIMENT SAMPLES USING THE LEEMAN PS200 AUTOMATED MERCURY ANALYZER	NEYER	BOWMAN	12/29/92	0		NONE
9104	SOP	OPERATION OF THE LIQUID NITROGEN WITHDRAWAL FACILITY NO. 2	NEYER	HELLMANN	09/21/92	0		NONE
9106	METH	DETERMINATION OF URANIUM IN URINE: FLUOROMETRIC FUSION METHOD	NEYER	DANAHY	12/15/92	0		NONE
9108	SOP	OPERATION OF THE ANALYTICAL LABORATORY MEPA/HEPA DUST FILTER	NEYER	HELLMANN	11/09/92	0		NONE
9109	METH	DETERMINATION OF GROSS ALPHA AND GROSS BETA RADIOACTIVE PARTICLES ACTIVITIES IN SURFACE AND GROUND WATER BY PROPORTIONAL ALPHA AND BETA COUNTING	NEYER	DANAHY	07/23/92	0		NONE
9110	SOP	COLLIMATOR CLEANING AND MAINTENANCE FOR THE THERMAL MASS SPECTROMETER	NEYER	HELLMANN	06/26/92	0		NONE
9111	SOP	PREPARATION OF RADIOACTIVE LABORATORY LIQUID WASTES FOR DISPOSAL	MILLER	BURK	06/26/92	0		ANL-01-0015
9113	SOP	QUALITY CONTROL OF RADIOACTIVITY COUNTING SYSTEMS	NEYER	DANAHY	07/07/92	0		NONE
9114	SOP	LABORATORY BUILDING EMERGENCIES	MILLER	STAMPER	04/21/92	1	02/21/93	ANL-15-0062
9115	METH	URANIUM ISOLATION AND PURIFICATION FROM VARIOUS MATRICES FOR SUBSEQUENT URANIUM ISOTOPIC ANALYSIS	NEYER	HUMPHREY	11/04/92	0		METH 4018
9117	METH	EPA/160.2: DETERMINATION OF NON-FILTERABLE RESIDUE IN OIL, GRAVIMETRIC METHOD (TOTAL SUSPENDED SOLIDS)	NEYER	ANGERT	01/26/93	0		1015
9127	SOP	LABORATORY PROCEDURE FOR CLEANING GLASSWARE	NEYER	ANGERT	12/21/92	0		NONE

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DOCUMENT.NO.	TYPE OF DOCUMENT	TITLE	DOC.OWNER	PTR LAST.NAME	ISSUE DATE	REV. NO.	REVISION DATE	SUPERSEDES
9128	METH	RADIOMETRIC PROCEDURE FOR THE DETERMINATION OF PLUTONIUM	NEYER	HUMPHREY	11/30/92	0		4019
9136	METH	DETERMINATION OF URANIUM IN WATER: UA-3 LASER INDUCED PHOSPHORESCENCE METHOD	NEYER	DANAHY	02/12/93	0		NONE
9145	METH	DETERMINATION OF FLUORIDE IN WASTEWATER, INCLUDING NPDES SAMPLES USING POTENTIOMETRIC, ION SELECTIVE ELECTRODE METHOD	NEYER	ANGERT	01/06/93	0		3039
9158	METH	DETERMINATION OF PARTICLE-SIZE IN SOILS, SIEVE METHOD	NEYER	MILLER	02/15/93	0		C92-151
ANL-01-0017	SOP	PREPARATION OF REAGENTS AND STANDARDS	NEYER	MAPLE	10/13/89			NONE
ANL-01-0035	SOP	USING ANALIS	MILLER	ARICO	06/30/88			NONE
ANL-01-0049	SOP	CHAIN OF CUSTODY FOR ENVIRONMENTAL SAMPLES	SUTTON	KELLY	09/05/89			NONE
ANL-01-0053	SOP	MANAGING HAZARDOUS WASTE SATELLITE ACCUMULATION AREAS IN ANALYTICAL LABORATORIES	MILLER	BURK	01/19/93	0		NONE
ANL-01-0054	SOP	TRAINING AND QUALIFICATIONS OF ANALYSTS WITHIN THE WMCO ANALYTICAL LABORATORIES	MILLER	ARICO	03/27/90	0		NONE
ANL-01-0055	SOP	OPERATION OF LABCONOCO GLOVE BOX	NEYER	HUMPHREY	11/19/90	0		NONE
ANL-01-0060	SOP	INSPECTION AND LABELING OF COMPRESSED GASES IN THE ANALYTICAL LABORATORIES	MILLER	DEES	01/22/91	1	05/26/92	NONE
ANL-10-0001	SOP	STATISTICAL TEST FOR DETERMINING OUTLYING OBSERVATIONS	NEYER	ANGERT	09/15/86			NONE
ANL-10-0016	SOP	RECEIVING AND DELIVERING NPDES SAMPLES	HILBERT	FROST	01/26/88		09/18/89	NONE
ANL-10-0034	SOP	PREPARATION, DOCUMENTATION, AND DELIVERY OF QUALITY CONTROL SAMPLES	NEYER	MAPLE	09/25/91	0		NONE
ANL-15-0058	SOP	OPERATOR SCALE CHECKING IN THE LABORATORY	MILLER	BURK	03/26/90	0		10-C-104
ANL-22-0043	SOP	THE PREPARATION, STORAGE, AND DOCUMENTATION OF MONTHLY AND YEARLY STACK FILTER COMPOSITE SAMPLES	NEYER	ANGERT	10/13/89			NONE
ANL-23-0029	SOP	MAINTENANCE OF DRY GAS PURGE FOURIER TRANSFORM INFRA RED (FTIR) SPECTROMETER	NEYER	DANAHY	07/13/87			NONE
ANL-31-0032	SOP	OPERATION OF THE LIQUID NITROGEN WITHDRAWAL FACILITY	NEYER	HELLMANN	08/12/87			NONE
ANL-33-0028	SOP	RADIOMETRIC RECORDS AND SAMPLE HANDLING	NEYER	HUMPHREY	06/10/91	0		NONE
ANL-33-0044	SOP	URANIUM ACTIVITY CALCULATIONS FOR VARIOUS MATRICES	NEYER	HUMPHREY	04/04/91	0		NONE
ANL-40-0051	SOP	RECEIVING AND PREPARING SOIL SAMPLES	HILBERT	FROST	09/18/89			NONE
ANL-40-0052	SOP	PREPARATION OF GENERAL SUMP LIQUOR BIWEEKLY COMPOSITE SAMPLE FOR RADIUM-226 AND RADIUM-228	HILBERT	FROST	09/05/89			NONE
ANL-45-0061	SOP	OPERATION OF NUCLEAR MEASUREMENTS CORPORATION (NMC) MODEL PC-5 PROPORTIONAL COUNTERS	NEYER	DANAHY	04/02/92	0		NONE

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DOCUMENT.NO.....	TYPE OF... DOCUMENT	TITLE.....	DOC.OWNER..	PTR..... LAST.NAME	ISSUE... DATE	REV. NO.	REVISION.. DATE	SUPERSEDES.....
		COUNTER - CHEMISTRY LABORATORY APPLICATIONS						
OSH-P-34-019	SOP	FISSION FOIL COUNTING PROCEDURES FOR NUCLEAR ACCIDENT DOSIMETERS AND PERSONNEL ACCIDENT DOSIMETERS	MEYER	CORLEANCA	04/27/89	0		NONE
OSH-P-34-020	SOP	CALIBRATION AND OPERATIONAL VERIFICATION OF THE CANBERRA SERIES 35 PLUS MULTICHANNEL ANALYZER - SODIUM IONIDE DETECTOR SYSTEM	MEYER	CORLEANCA	04/27/89	0		NONE
PO-D-002	DIV	INITIATION, PROCESS, AND ISSUE OF A PROCEDURE	LONG	WEICHOLD	05/01/92	0		NONE
PO-D-003	DIV	INITIATION, PROCESS, AND ISSUE OF A CHANGE IN OPERATION (CIO)	LONG	WEICHOLD	05/01/92	0		NONE
PO-D-004	DIV	DOCUMENT FORMAT	LONG	WEICHOLD	05/01/92	0		NONE
PO-D-006	DIV	CALCULATION OF DRUM EQUIVALENTS FOR FMPC WASTE VOLUMES	LONG	WEICHOLD	02/17/88	0		NONE
PO-D-007	DIV	DOCUMENT PERIODIC REVIEW PROGRAM	LONG	WEICHOLD	05/01/92	0		NONE
PO-D-008	DIV	OPERATIONS PROJECTS WORK PROGRAM	LONG	WEICHOLD	12/21/88	0		NONE
PO-D-009	DIV	OPERATOR ACKNOWLEDGEMENT OF DOCUMENT/ISSUE CHANGES	LONG	WEICHOLD	05/01/92	0		NONE
PO-D-011	DIV	DOCUMENT INCORPORATION OF SAFETY RELATED INFORMATION	LONG	WEICHOLD	05/01/92	0		NONE
PO-D-012	DIV	FACILITY/PROCESS STARTUP	LONG	GLASSMEYER	12/17/90	0		NONE
PO-D-013	DIV	SAFETY AND HOUSEKEEPING	LONG	GLASSMEYER	09/15/89	1	05/10/91	NONE
PO-D-014	DIV	OPERATIONS ORGANIZATIONS AND RESPONSIBILITIES	LONG	CULLEN	08/24/90	0		NONE
PO-D-015	DIV	SHIFT ROUTINES AND OPERATING PRACTICES	LONG	CULLEN	08/24/90	0		NONE
PO-D-016	DIV	COMMUNICATIONS	LONG	CULLEN	08/24/90	0		NONE
PO-D-017	DIV	INVESTIGATION OF ABNORMAL EVENTS	LONG	CULLEN	08/24/90	0		NONE
PO-D-018	DIV	NOTIFICATIONS - REPORTING OF NON-ROUTINE EVENTS	LONG	CULLEN	08/24/90	0		NONE
PO-D-019	DIV	EQUIPMENT STATUS AND CONTROL	LONG	CULLEN	08/24/90	0		NONE
PO-D-020	DIV	INDEPENDENT VERIFICATION	LONG	CULLEN	08/24/90	0		NONE
PO-D-021	DIV	LOGKEEPING	LONG	CULLEN	08/24/90	0		NONE
PO-D-022	DIV	SHIFT TURNOVER	LONG	CULLEN	08/24/90	0		NONE
PO-D-023	DIV	SHIFT ORDERS	LONG	CULLEN	08/24/90	0		NONE
PO-D-024	DIV	CONTROL OF OPERATOR AIDS	LONG	CULLEN	08/24/90	0		NONE
PO-D-025	DIV	EQUIPMENT LABELING	LONG	CULLEN	08/24/90	0		NONE
PO-D-026	DIV	SITE SERVICES DOCUMENT PROGRAM	LONG	WEICHOLD	05/01/92	0		PO-D-001
PO-D-027	DIV	SITE SERVICES LESSONS LEARNED PROGRAM	LONG	LANG	05/22/92	0		NONE
PO-D-028	DIV	PREPARATION AND IMPLEMENTATION OF WORK PACKAGE	LONG	GLASSMEYER	12/30/91	0		NONE
PO-D-030	DIV	SITE SERVICES FACILITIES EVALUATIONS	LONG	WEICHOLD	09/28/92	0		PO-D-029

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DOCUMENT.NO	TYPE OF DOCUMENT	TITLE	DOC.OWNER	PTR LAST.NAME	ISSUE DATE	REV. NO.	REVISION DATE	SUPERSEDES
PO-D-014	DIV	OPERATIONS ORGANIZATIONS AND RESPONSIBILITIES	LONG	CULLEN	08/24/90	0		NONE
PO-D-015	DIV	SHIFT ROUTINES AND OPERATING PRACTICES	LONG	CULLEN	08/24/90	0		NONE
PO-D-016	DIV	COMMUNICATIONS	LONG	CULLEN	08/24/90	0		NONE
PO-D-017	DIV	INVESTIGATION OF ABNORMAL EVENTS	LONG	CULLEN	08/24/90	0		NONE
PO-D-018	DIV	NOTIFICATIONS - REPORTING OF NON-ROUTINE EVENTS	LONG	CULLEN	08/24/90	0		NONE
PO-D-019	DIV	EQUIPMENT STATUS AND CONTROL	LONG	CULLEN	08/24/90	0		NONE
PO-D-020	DIV	INDEPENDENT VERIFICATION	LONG	CULLEN	08/24/90	0		NONE
PO-D-021	DIV	LOGKEEPING	LONG	CULLEN	08/24/90	0		NONE
PO-D-022	DIV	SHIFT TURNOVER	LONG	CULLEN	08/24/90	0		NONE
PO-D-023	DIV	SHIFT ORDERS	LONG	CULLEN	08/24/90	0		NONE
PO-D-024	DIV	CONTROL OF OPERATOR AIDS	LONG	CULLEN	08/24/90	0		NONE
PO-D-025	DIV	EQUIPMENT LABELING	LONG	CULLEN	08/24/90	0		NONE
PO-D-026	DIV	SITE SERVICES DOCUMENT PROGRAM	LONG	WEICHOLD	05/01/92	0		PO-D-001
PO-D-027	DIV	SITE SERVICES LESSONS LEARNED PROGRAM	LONG	LANG	05/22/92	0		NONE
PO-D-028	DIV	PREPARATION AND IMPLEMENTATION OF WORK PACKAGE	LONG	GLASSMEYER	12/30/91	0		NONE
PO-D-030	DIV	SITE SERVICES FACILITIES EVALUATIONS	LONG	WEICHOLD	09/28/92	0		PO-D-029
PO-D-031	DIV	INTERNAL EVALUATION PROGRAM	LONG	WEICHOLD	09/30/92	0		NONE
PO-D-032	DIV	REQUIRED READING	LONG	EMMERT	10/02/92	0		NONE
PO-D-035	DIV	SHIPMENT OF LOW LEVEL RADIOACTIVE WASTE (LLRW) REQUIREMENTS	LONG	GILBERT	02/28/92	0		NONE
PO-S-01-001	SECT	STORAGE AND HANDLING OF EMPTY LOW LEVEL RADIOACTIVE WASTE CONTAINERS	BURNS	ECKSTEIN	09/30/87	0		NONE
PO-S-01-002	SECT	INTERNAL AUDIT PROGRAM	GARDNER	GLASSMEYER	09/29/87	0		NONE
PO-S-01-003	SECT	INTERNAL INSPECTION	GARDNER	GLASSMEYER	09/20/87	0		NONE
PO-S-01-004	SECT	COAL BUNKER FIRE CASUALTY	PENNINGTON	NABER	03/19/93	0		43-C-416
PO-S-03-001	SECT	REAL PROPERTY FACILITIES INSPECTION	TOWNSEND	PLATANIA	11/04/88	0		NONE
PO-S-04-001	SECT	EMISSION CONTROL ACTION PROGRAM AIR POLLUTION EMERGENCY EPISODES	PENNINGTON	NABER	04/26/93	0		NONE
PO-S-04-002	SECT	CONTROLLING FOODSTUFFS IN THE BOILER/WATER TREATMENT PLANTS	PENNINGTON	PENNINGTON	04/14/92	0		NONE
PO-S-04-003	SECT	VIOLATION OPACITY REPORTING	PENNINGTON	NABER	01/31/92	0		NONE
PO-S-06-001	SECT	MOVEMENT OF HAZARDOUS WASTE	GILBERT	DUNBAR	07/21/89	3	01/09/91	NONE
PO-S-06-002	SECT	PREPARING "UNIFORM HAZARDOUS WASTE MANIFEST"	VARCHOL	STAPLETON	01/29/90	0		NONE
SAM-SS-001	SOP	PROCESSING SAMPLES THROUGH THE PROCESSING LAB	HILBERT	HILBERT	12/01/92	0		
SAM-SS-002	SOP	SHIPPING SAMPLES TO OFF-SITE LABORATORIES	HILBERT	HILBERT	12/01/92	0		

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DOCUMENT.NO	TYPE OF DOCUMENT	TITLE	DOC.OWNER	PTR LAST.NAME	ISSUE DATE	REV. NO.	REVISION DATE	SUPERSEDES
SAP-P-34-021	SOP	REUSE OF LABORATORY CHEMICAL CONTAINERS	NEYER	HAYES	09/14/89	0		NONE

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CIO LIST

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CIO.NO.	DOCUMENT AFFECTED	TITLE	DOC.OWNER	ASSIGNED.PA	EFFECTIVE DATE	EXPIRATION DATE
C92-159	20-C-910	VENTING POTENTIALLY EXPLOSIVE DRUMS	GARDNER	FLASTER	11/20/92	05/20/93
C92-160	20-C-805	SAMPLING DRUMMED WASTE FOR HAZARD IDENTIFICATION	GARDNER	KLAG	02/25/93	08/25/93
C92-161	20-C-805	SAMPLING DRUMMED WASTE FOR HAZARD IDENTIFICATION	GARDNER	KLAG	10/15/92	04/15/93
C92-162	20-C-805	SAMPLING DRUMMED WASTE FOR HAZARD IDENTIFICATION	GARDNER	KLAG	11/10/92	05/10/93
C92-170	PO-D-003	INITIATION, PROCESS, AND ISSUE OF A CHANGE IN OPERATION (CIO)	LONG	WEICHOLD	10/26/92	04/26/93
C92-171	PO-D-003	INITIATION, PROCESS, AND ISSUE OF A CHANGE IN OPERATION (CIO)	LONG	WEICHOLD	10/26/92	04/26/93
C92-172	N/A	HANDLING AND STORING ETHERS AND OTHER PEROXIDIZABLE CHEMICALS	NEYER	BAKER	10/28/92	04/28/93
C92-174	08-C-605	EIMCO FILTER OPERATIONS	GARDNER	KLAG	02/09/93	08/09/93
C92-175	43-C-415	COAL PILE RUNOFF CONTROL FACILITY OPERATION	PENNINGTON	ELIOT	04/01/93	10/01/93
C92-178	N/A	DETERMINATION OF SOLUBLE URANIUM IN WATER: KPA-11 KINETIC PHOSPHORESCENCE ANALYSIS	NEYER	BAKER	12/21/92	06/21/93
C93-001	20-C-501	BOILER PLANT ASH LOADING AND TRANSPORTING FOR OFF-SITE DISPOSAL	GARDNER	KLAG	03/12/93	09/12/93
C93-002	9106	DETERMINATION OF URANIUM IN URINE FLUOROMETRIC FUSION METHOD	NEYER	DICENSO	01/18/93	07/18/93
C93-003	9106	DETERMINATION OF URANIUM IN URINE FLUOROMETRIC FUSION METHOD	NEYER	DICENSO	01/18/93	07/18/93
C93-004	20-C-616	INSPECTION OF HAZARDOUS WASTE MANAGEMENT UNITS	GARDNER	FLASTER	03/16/93	09/16/93
C93-005	N/A	UNH BLENDING AND NEUTRALIZATION	GARDNER	KLAG	03/12/93	09/12/93
C93-009	08-C-115	LARGE EIMCO FILTER OPERATION	GARDNER	KLAG	03/12/93	09/12/93
C93-014	01-107	OPERATION OF GENIE LIFT MODEL PL36PDC	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-015	01-108	OPERATION OF ANTHES MODEL RZ-40 ROTO-ZOOM AERIAL LIFT	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-016	01-BE-410-02	DRUM PAINTING AND DRYING	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-017	01-C-101	SAMPLING RESIDUE AND WASTE MATERIALS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-018	01-C-301	DRUM CLEANING AND DECONTAMINATION	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-019	01-C-302	DRUM PAINTING AND DRYING	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-020	01-C-304	REROLLING 30 GALLON DRUMS AND EXPANDING 55 GALLON DRUMS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-021	01-C-305	BAILING SCRAP METAL DRUMS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-022	01-C-306	CRUSHING SCRAP DRUMS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-023	01-C-602	LOW LEVEL RADIOACTIVE WASTE (LLRW) SHIPMENT PREPARATION	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-024	01-C-604	INSPECTION AND EVALUATION OF CONTAINERIZED LOW LEVEL RADIOACTIVE WASTE (LLRW)	GARDNER	WEICHOLD	02/08/93	08/09/93

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CIO.NO.	DOCUMENT AFFECTED	TITLE	DOC.OWNER	ASSIGNED.PA	EFFECTIVE DATE	EXPIRATION DATE
C93-025	01-C-606	HAZARDOUS WASTE SHIPMENT PREPARATION	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-026	01-C-609	PLANT 1 STORAGE INSPECTION	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-027	01-C-701	PLANT 1 DUST COLLECTORS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-028	01-C-701	PLANT 1 DUST COLLECTORS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-029	01-C-902	DISPOSAL OF PLANT 1 EFFLUENT	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-030	01-C-905	PRODUCTION NUCLEAR MATERIAL (NM) RECEIVING, STORING, AND HANDLING	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-031	01-C-911	PLANT 1 EMERGENCIES	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-032	01-C-916	PLANT 1 HOISTS AND CRANES	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-033	01-C-917	DECONTAMINATION BUILDING 69 CRANE	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-034	01-C-918	THORIUM OVERPACKING	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-035	02-BN/E-410-02	DISSOLUTION OF URANIUM METAL IN THE METAL DISSOLVER	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-036	02-C-420	SAMPLING UNH TANKS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-037	02-C-601	REFINERY SUMP	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-038	02-C-904	REFINERY NM INVENTORY	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-039	02-C-910	INSPECTING REFINERY CONTROL FLOOR AREAS AND SUMPS AND OPERATING MANUAL SUMP PUMPS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-040	02-C-914	PREVENTING URANIUM LOSSES THROUGH THE STORM SEWER TO THE ENVIRONMENT (RESPONDING TO PH ALARMS)	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-041	02-C-916	REFINERY EMERGENCIES	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-042	02-C-923	TRASH BAILER OPERATION	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-043	02-C-924	PLANT 2/3 HOISTS AND CRANES	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-044	04-C-701	PLANT 4 DUST COLLECTORS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-045	04-C-804	MOBILE HOPPER DISCHARGE STATION OPERATION AND PACKAGING DEPLETED UF4	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-046	04-C-810	LOADING DHF DUMPSTER AT THE TANK FARM	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-047	04-C-900	TANK FARM SUMP	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-048	04-C-905	INSPECTING PLANT 4 FLOOR CONTROL AREAS AND SUMPS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-049	04-C-906	INSPECTNG AND SHIPPING UO3 T-HOPPERS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-050	04-C-909	PLANT 4 EMERGENCIES	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-051	04-C-910	PLANT 4 HOISTS AND CRANES	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-052	05-C-106	COLLECTION AND DISPOSAL OF REDUCTION AREA RESIDUES	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-053	05-C-209	COLLECTION AND DISPOSITION OF RESIDUES IN THE REMELT AREA	GARDNER	WEICHOLD	02/08/93	08/09/93

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C93-054	05-C-701	OPERATION OF PLANT 5 BAGHOUSE TYPE DUST COLLECTORS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-055	05-C-703	PLANT 5 CARTRIDGE FILTER DUST COLLECTION SYSTEM	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-056	05-C-901	INSPECTING FLOOR CONTROL AREA AND SUMPS DAILY AND QUARTERLY	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-057	05-C-903	SUMP SYSTEM	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-058	05-C-909	PLANT 5 EMERGENCIES	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-059	05-C-910	PLANT 5 HOISTS AND CRANES	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-060	06-BN/E-430-01	WATER TREATMENT	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-061	06-C-301	WATER TREATMENT	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-062	06-C-701	OPERATION OF PLANT 6 DUST COLLECTION EQUIPMENT	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-063	06-C-906	PLANT 6 HOISTS AND CRANES	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-064	06-C-909	PLANT 6 EMERGENCIES	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-065	06-C-910	INSPECTING PLANT 6 FLOOR CONTROL AREAS, TRENCHES, AND SUMPS DAILY AND QUARTERLY	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-066	06-C-911	PLANT 6 PERCHED GROUNDWATER EXTRACTION REMOVAL SYSTEM OPERATING PROCEDURE	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-067	08-BE-420-01	ROTEX SCREENING ENRICHED MATERIALS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-068	08-BN/E-490-02	DISPOSAL OF WASTE FILTRATE AND EFFLUENTS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-069	08-C-114	FILTRATION OF RAFFINATES	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-070	08-C-115	LARGE EIMCO FILTER OPERATION	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-073	08-C-201	ROTEX SCREENING	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-074	08-C-213	NORMAL OPERATING & OPERATIONAL SAFETY REQUIREMENTS (OSR) LOGS ROTARY KILN FACILITY	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-075	08-C-600	SEWAGE SLUDGE TREATMENT AND FILTRATION	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-076	08-C-605	EIMCO FILTER OPERATION	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-077	08-C-701	PLANT 8 BAGHOUSE DUST COLLECTOR OPERATION	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-079	08-C-913	INSPECTING PLANT 8 FLOOR CONTROL AREAS AND SUMPS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-080	08-C-914	PLANT 8 EMERGENCIES	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-082	09-BE-490-01	MANUFACTURING SPECIFICATION PROCESSING WASTES IN SUMP	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-083	09-C-701	PLANT 9 MACHINING AREA DUST COLLECTOR PRECIPITATION OPERATION	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-084	09-C-902	SOUTHEAST PAD SUMP AND FILTER AND NORTHWEST PAD SUMP	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-085	09-C-905	INSPECTING PLANT 9 FLOOR CONTROL AREAS AND SUMPS DAILY AND QUARTERLY	GARDNER	WEICHOLD	02/08/93	08/09/93

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C93-086	09-C-909	PLANT 9 EMERGENCIES	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-087	09-C-910	PLANT 9 HOISTS AND CRANES	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-088	09-C-911	PLANT 9 PERCHED GROUNDWATER EXTRACTION SYSTEM	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-089	10-C-103	LABORATORY BUILDING NUCLEAR MATERIALS INVENTORY	NEYER	WEICHOLD	02/08/93	08/09/93
C93-090	10-C-701	LABORATORY DUST COLLECTOR	NEYER	WEICHOLD	02/08/93	08/09/93
C93-091	1001	THE DETERMINATION OF OIL AND GREASE IN WATER AND WASTES USING THE PARTITION-GRAVIMETRIC METHOD	NEYER	WEICHOLD	02/08/93	08/09/93
C93-092	1003	DETERMINATION OF ASH CONTENT IN OILS USING THE GRAVIMETRIC METHOD	NEYER	WEICHOLD	02/08/93	08/09/93
C93-093	1004	APPARENT DENSITY	NEYER	WEICHOLD	02/08/93	08/09/93
C93-094	1005	DETERMINATION OF SPECIFIC GRAVITY GRAVIMETRIC METHOD	NEYER	WEICHOLD	02/08/93	08/09/93
C93-095	1006	DETERMINATION OF VISCOSITY, BROOKFIELD VISCOMETER METHOD	NEYER	WEICHOLD	02/08/93	08/09/93
C93-096	1010	THE SAMPLE PREPARATION PROCEDURE FOR THE DETERMINATION OF URANIUM IN WET RESIDUE TYPE SAMPLES	NEYER	WEICHOLD	02/08/93	08/09/93
C93-097	1026	GFAA METHOD FOR THE DETERMINATION OF HEXAVALENT CHROMIUM IN NPDES WATER SAMPLES	NEYER	WEICHOLD	02/08/93	08/09/93
C93-098	1039	THE DETERMINATION OF URANIUM BY FERROUS REDUCTION, TITRIMETRIC, POTENTIOMETRIC ENDPOINT METHOD	NEYER	WEICHOLD	02/08/93	08/09/93
C93-099	1041	THE DETERMINATION OF MOISTURE IN POWDERS, GRAVIMETRIC METHOD	NEYER	WEICHOLD	02/08/93	08/09/93
C93-100	1042	SAMPLE PREPARATION PROCEDURE FOR THE DETERMINATION OF URANIUM IN DRY RESIDUE TYPE SAMPLES	NEYER	WEICHOLD	02/08/93	08/09/93
C93-101	1054	EXTRACTION PROCEDURE TOXICITY	NEYER	WEICHOLD	02/08/93	08/09/93
C93-102	1057	GFAA METHOD FOR THE DETERMINATION OF BARIUM	NEYER	WEICHOLD	02/08/93	08/09/93
C93-103	1058	GFAA METHOD FOR THE DETERMINATION OF CADIUM	NEYER	WEICHOLD	02/08/93	08/09/93
C93-104	1062	THE DETERMINATION OF CHROMIUM, COPPER, IRON, AND NICKLE IN URANIUM TETAFLUORIDE BY FLAME ATOMIC ABSORPTION SEPCTROPHOTOMETRY	NEYER	WEICHOLD	02/08/93	08/09/93
C93-105	1080	THE COLORIMETRIC DETERMINATION OF THORIUM IN URANIUM-BASE MATERIALS (TTA EXTRACTION-COLORIMETRIC THORIUM) METHOD	NEYER	WEICHOLD	02/08/93	08/09/93
C93-106	11-C-217	OPERATION OF PILOT PLANT SUMP SYSTEM	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-107	11-C-238	PILOT PLANT DUST COLLECTORS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-108	11-C-240	PILOT PLANT EMERGENCIES	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-109	11-C-243	INSPECTING PILOT PLANT FLOOR CONTROL AREAS AND SUMPS DAILY	GARDNER	WEICHOLD	02/08/93	08/09/93

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		AND QUARTERLY				
C93-110	11-C-254	DCS ROOM FIRE/SMOKE DETECTOR SYSTEM	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-111	11-C-901	PILOT PLANT HOISTS AND CRANES	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-112	1250	CLP/ACID DIGESTION OF SOIL AND SEDIMENT SAMPLES FOR METALS ANALYSES	NEYER	WEICHOLD	02/08/93	08/09/93
C93-113	1251	CLP/ACID DIGESTION OF WATER SAMPLES FOR METAL ANALYSIS	NEYER	WEICHOLD	02/08/93	08/09/93
C93-114	20-C-001	CHANGES TO FORM ENTRIES	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-115	20-C-003	ULTRASONIC TESTING OF DEPLETED URANIUM MARK 31 INNER AND OUTER CORES	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-116	20-C-004	PACKAGING OF DEPLETED URANIUM FOUR INCH THICK FLAT BILLETS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-117	20-C-005	PACKAGING DEPLETED URANIUM DERBIES FOR OFF-SITE SHIPMENT	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-118	20-C-006	INSPECTION ADN DISPOSITION OF DEPLETED AND NORMAL URANIUM DERBIES FOR OFF-SITE SHIPMENT	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-119	20-C-007	PACKAGING DEPLETED URANIUM TWO-INCH THICK FLAT BILLETS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-120	20-C-008	PACKAGING OF DEPLETED URANIUM MARK 31 INGOTS AND CORES	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-121	20-C-010	ESTABLISHMENT OF AN ENGINEERING CONTROL AREA (ECA) FOR DISPOSITION OF SAMPLE RESIDUES	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-122	20-C-101	MOVING AND STORING NUCLEAR MATERIALS ONSITE AT THE FMPC	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-123	20-C-102	NUCLEAR SAFETY FOR RECEIVING, STORING, REPACKAGING AND MOVING ENRICHED URANIUM MATERIALS <20% 235U FROM OFF-SITE	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-124	20-C-104	OPERATION OF ALLEGANY TECHNOLOGY ELECTRONIC PORTABLE HANGING SCALE MODEL CM30K	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-125	20-C-201	UNSCHEDULED OR EMERGENCY NUCLEAR MATERIAL INVENTORY	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-126	20-C-500	INSPECTING RCRA WASTE LOAD/UNLOAD AND STAGING AREAS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-127	20-C-501	BOILER PLANT ASH LOADING AND TRANSPORTING FOR OFF-SITE DISPOSAL	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-128	20-C-505	PLANT 2/3 AND PLANT 8 PERCHED GROUNDWATER EXTRACTION SYSTEM	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-129	20-C-600	OVERPACKING DEFECTIVE CONTAINERS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-130	20-C-602	INSPECTION AND OPERATION OF NILFISK PORTABLE VACUUM UNITS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-131	20-C-603	REMOVAL AND REPLACEMENT OF NILFISK PORTABLE VACUUM UNIT FILTERS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-132	20-C-604	CONTROL AND UTILIZATION OF CONTAMINATED TRASH DUMPSTERS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-133	20-C-606	HAZARDOUS MATERIAL SPILL CLEAN-UP	GARDNER	WEICHOLD	02/08/93	08/09/93

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C93-134	20-C-607	SEGREGATION OF WOODEN PALLETS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-135	20-C-609	INSPECTION OF SAFETY BELTS, HARNESSES, AND LANYARDS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-136	20-C-610	BIRD CARCASS AND DROPPING REMOVAL	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-137	20-C-611	ASSEMBLY/DISASSEMBLY OF SCAFFOLDING	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-138	20-C-613	EMPTYING LIQUID HAZARDOUS WASTE STORAGE CONTAINERS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-139	20-C-614	OPERATION OF GENIE LIFT MODEL PL36PDC	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-140	20-C-615	CONTROLLED HOLDING AREA	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-141	20-C-619	PACKAGING SOIL BORING MATERIAL FOR TRANSFER TO THE 90-DAY STORAGE AREA	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-142	20-C-620	90-DAY STORAGE AREA	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-143	20-C-625	EVALUATING LOW LEVEL RADIOACTIVE WASTE (LLRW) BULK WASTE STREAMS FOR SHIPMENT	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-144	20-C-630	RECEIPT INSPECTION, STORAGE, AND STORAGE INSPECTION OF HAZARDOUS WASTE	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-145	20-C-700	NORCLEAN PORTABLE VACUUM OPERATION	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-146	20-C-701	OPERATION OF SPENCER AND HOFFMAN PORTABLE DUST COLLECTORS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-147	20-C-704	CHANGING HEPA FILTERS AND PREFILTERS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-148	20-C-705	CHANGING DUST COLLECTOR MODULE AND SECONDARY SEPARATOR CARTRIDGE FILTERS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-149	20-C-707	DOP TESTING OF IN-PLACE HEPA FILTERS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-150	20-C-708	INSPECTING AND TROUBLESHOOTING BAGHOUSE TYPE DUST COLLECTORS AND PRECIPITRONS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-151	20-C-709	BAGHOUSE TYPE DUST COLLECTOR REMOVAL/REPLACEMENT	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-152	20-C-711	HAKO "MINUTEMAN" PORTABLE VACUUM CLEANER OPERATION	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-153	20-C-801	STORAGE OF ENRICHED MATERIAL	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-154	20-C-805	SAMPLING DRUMMED WASTE FOR HAZARD IDENTIFICATION	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-155	20-C-810	DISPOSITION OF SAMPLE RESIDUES	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-156	20-C-902	LIQUID PROPANE GAS (LPG) POWERED HANDSTACKERS AND TUGGERS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-157	20-C-903	GUIDELINES FOR THE PREVENTION OF URANIUM METAL FIRES	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-158	20-C-904	GENERAL NUCLEAR SAFETY REQUIREMENTS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-159	20-C-905	VENTILATION FLOW INDICATORS (VFI)	GARDNER		02/08/93	08/09/93
C93-160	20-C-908	RCRA WAREHOUSE PORTABLE CRANE OPERATION	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-161	20-C-909	PORTABLE VENTILATION UNIT OPERATION	GARDNER	WEICHOLD	02/08/93	08/09/93

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C93-162	20-C-910	VENTING POTENTIALLY EXPLOSIVE DRUMS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-163	20-C-912	CHECKING SCALE OPERATION	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-164	20-C-916	CLEANING SUMP SYSTEMS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-165	20-C-917	HYDROGEN MONITORING AND REMOVING PLUGS FROM DRUMS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-166	20-PS-300-01	NITRIC ACID (COMMERCIAL GRADE)	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-167	20-PS-300-03	SODA ASH (COMMERCIAL GRADE)	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-168	20-PS-300-05	MAGNESIUM OXIDE (MGO)	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-169	20-PS-300-10	AQUEOUS SODIUM HYDROXIDE (COMMERCIAL GRADE)	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-170	20-PS-300-11	MAGNESIUM (GROUND)	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-171	20-PS-300-18	HYDROCHLORIC ACID (SUB-COMMERCIAL GRADE)	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-172	20-PS-300-19	FILTER AID	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-173	20-PS-300-20	HYDRATED LIME (COMMERCIAL GRADE)	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-174	20-PS-300-21	BULK QUICK LIME	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-175	20-PS-300-22	FLAKE CAUSTIC SODA (TECHNICAL GRADE)	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-176	20-PS-300-29	SODIUM CARBOXYMETHYL CELLULOSE (CMC)	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-177	20-PS-400-01	CROSS REFERENCE LIST OF DUST COLLECTOR FILTER BAGS IDENTIFICATION/STORES NUMBERS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-178	20-PS-400-04	WOOL FELT FILTER BAGS FOR MICRO-PULSAIRE DUST COLLECTORS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-179	20-PS-400-05	CANTON FLANNEL BAGS FOR HOFFMAN DUST COLLECTORS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-180	20-PS-400-06	FELT FILTER BAGS FOR TURNER-HAWS DUST COLLECTORS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-181	20-PS-400-07	POLYESTER FELT, PTFE MEMBRANE LAMINATED FILTER BAGS FOR DAY DUST COLLECTORS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-183	20-PS-400-20	WOOL/NYLON FILTER BAGS FOR THE UNITED CONVEYOR DUST COLLECTOR	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-184	20-PS-400-23	POLYESTER DUST FILTER BAGS FOR GENERAL RESOURCE COLLECTORS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-185	20-PS-400-25	VENDOR SPECIFICATION AND CERTIFICATION REQUIREMENTS FOR POLYPROPYLENE FELT FILTER BAGS - HOFFMAN PORTABLE VACUUM UNITS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-186	20-PS-400-29	HEPA FILTER ELEMENTS FOR GENERAL DYNAMICS PORTABLE HEPA FILTERATION DEVICE	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-187	20-PS-400-30	HEPA FILTER ELEMENTS FOR BARTLETT PORTABLE VENTILATION DEVICES	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-188	2002	GAS CHROMATOGRAPHIC DETERMINATION OF METHANOL IN	NEYER	WEICHOLD	02/08/93	08/09/93

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CIO.NO.	DOCUMENT AFFECTED	TITLE	DOC.OWNER	ASSIGNED.PA	EFFECTIVE DATE	EXPIRATION DATE
		BIODENITRIFICATION PROCESS LIQUORS				
C93-189	2050	ZERO-HEADSPACE EXTRACTION (ZHE) FOR VOLATILE ORGANIC COMPOUNDS	NEYER	WEICHOLD	02/08/93	08/09/93
C93-190	3001	THE DETERMINATION OF AMMONIA-NITROGEN IN WASTEWATER USING THE POTENTIONMETRIC AMMONIA SENSING ELECTRODE METHOD	NEYER	WEICHOLD	02/08/93	08/09/93
C93-191	3002	THE COLORIMETRIC (BRPADAP) DETERMINATION OF URANIUM USING AN AUTOANALYZER	NEYER	WEICHOLD	02/08/93	08/09/93
C93-192	3003	GRAVIMETRIC DETERMINATION OF NON-VOLATILE PARTICULATES ON STACK FILTERS (INCLUDING SAMPLES PREPARATION FOR A TOTAL URANIUM DETERMINATION)	NEYER	WEICHOLD	02/08/93	08/09/93
C93-193	3012	THE DETERMINATION OF URANIUM BY THE VOLMETRIC FERROUS SULFATE REDUCTION METHOD	NEYER	WEICHOLD	02/08/93	08/09/93
C93-194	3017	DETERMINATION OF ACID CONCENTRATION IN SOLUTIONS CONTAINING URANYL IONS USING THE VOLUMETRIC METHOD	NEYER	WEICHOLD	02/08/93	08/09/93
C93-195	3018	GENERAL METHOD FOR THE DETERMINATION OF ACID CONCENTRATION, VOLUMETRIC METHOD	NEYER	WEICHOLD	02/08/93	08/09/93
C93-196	3024	GENERAL METHOD FOR THE DETERMINATION OF ALKALI CONCENTRATION, VOLUMETRIC METHOD	NEYER	WEICHOLD	02/08/93	08/09/93
C93-197	3029	DETERMINATION OF FLASH AND FIRE POINT BY THE CLEVELAND OPEN CUP PROCEDURE	NEYER	WEICHOLD	02/08/93	08/09/93
C93-198	3033	DETERMINATION OF PH USING AN ACCUMENT 915 PH METER	NEYER	WEICHOLD	02/08/93	08/09/93
C93-199	3039	DETERMINATION OF FLUORIDE IN WASTEWATER USING POTENTIOMETRIC, ION-SELECTIVE ELECTRODE METHOD	NEYER	WEICHOLD	02/08/93	08/09/93
C93-200	3043	THE DETERMINATION OF SPECIFIC GRAVITY USING A METTLER/PAAR DENSITY METER, MODEL DMA-46	NEYER	WEICHOLD	02/08/93	08/09/93
C93-201	3051	THE SIMULTANEOUS DETERMINATION OF NITRATE, NITRATE, AND PHOSPHATE IN WATER BY AN AUTOMATED CONTINUOUS FLOW ANALYZER	NEYER	WEICHOLD	02/08/93	08/09/93
C93-202	3059	AUTOMATED COLORIMETRIC DETERMINATION OF THORIUM IN LIQUID AND SOLID WASTE	NEYER	WEICHOLD	02/08/93	08/09/93
C93-203	3062	DETERMINATION OF TRACE URANIUM BY KINETIC PHOSPHORESCENCE ANALYSIS	NEYER	WEICHOLD	02/08/93	08/09/93
C93-204	3063	THE SEPARATION OF THORIUM FROM URANIUM USING TTA-XYLENE	NEYER	WEICHOLD	02/08/93	08/09/93
C93-205	3064	DETERMINATION OF FLASH POINT BY PENSKY-MARTENS CLOSED TESTER	NEYER	WEICHOLD	02/08/93	08/09/93

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CIO.NO	DOCUMENT AFFECTED	TITLE	DOC.OWNER	ASSIGNED.PA	EFFECTIVE DATE	EXPIRATION DATE
C93-206	4002	THE RADIOMETRIC DETERMINATION OF RADIUM-226 AND RADIUM-228 IN VARIOUS MATRICES	NEYER	WEICHOLD	02/08/93	08/09/93
C93-207	4003	RADIOMETRIC PROCEDURE FOR THE DETERMINATION OF NEPTUNIUM-237	NEYER	WEICHOLD	02/08/93	08/09/93
C93-208	4004	ALPHA SPECTROMETER OPERATING PROCEDURE UTILIZING SILICON SURFACE BARRIER DETECTORS	NEYER	WEICHOLD	02/08/93	08/09/93
C93-209	4005	RADIOMETRIC PROCEDURE FOR THE DETERMINATION OF URANIUM-233 IN THORIUM	NEYER	WEICHOLD	02/08/93	08/09/93
C93-210	4006	RADIOMETRIC PROCEDURE FOR THE DETERMINATION OF CESIUM-137	NEYER	WEICHOLD	02/08/93	08/09/93
C93-211	4007	RADIOMETRIC PROCEDURE FOR THE DETERMINATION OF TECHNETIUM-99	NEYER	WEICHOLD	02/08/93	08/09/93
C93-212	4008	THE RADIOMETRIC DETERMINATION OF TOTAL BETA ACTIVITY	NEYER	WEICHOLD	02/08/93	08/09/93
C93-213	4010	THE RADIOMETRIC DETERMINATION OF THORIUM-230 IN THORIUM MATRICES	NEYER	WEICHOLD	02/08/93	08/09/93
C93-214	4011	RADIOMETRIC DETERMINATION OF URANIU-232 IN URANIUM BEARING MATERIALS	NEYER	WEICHOLD	02/08/93	08/09/93
C93-215	4013	RADIOMETRIC SCREENING METHOD FOR DETERMINING TOTAL RADIOACTIVITY IN VARIOUS MATRICES	NEYER	WEICHOLD	02/08/93	08/09/93
C93-216	4015	THE RADIOMETRIC DETERMINATION OF BETA ACTIVITY IN RECYCLED MATERIALS	NEYER	WEICHOLD	02/08/93	08/09/93
C93-217	4016	THE RADIOMETRIC DETERMINATION OF GAMMA ACTIVITY IN RECYCLED MATERIALS	NEYER	WEICHOLD	02/08/93	08/09/93
C93-218	4020	OPERATING PROCEDURE FOR THE MANUAL LOW BACKGROUND ALPHA/BETA PROPORTIONAL COUNTERS	NEYER	WEICHOLD	02/08/93	08/09/93
C93-219	4022	THE RADIOMETRIC DETERMINATION OF TH-234 AND PA-234M IN EFFLUENTS	NEYER	WEICHOLD	02/08/93	08/09/93
C93-220	4023	QUALATIVE AND SEMI-QUANTITATIVE IDENTIFICATION OF ALPHA AND GAMMA RADIONUCLIDES EMMITTING IN VARIOUS MATRICES	NEYER	WEICHOLD	02/08/93	08/09/93
C93-221	43-BE-410-02	BIODENTRIFICATION FACILITY OPERATION	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-222	43-C-100	CLEANING GLASS AND PLASTIC LABORATORY WARE	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-223	43-C-101	STORING AND HANDLING CHEMICALS	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-224	43-C-301	WATER TREATMENT PLANT OPERATION	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-225	43-C-303	COOLING WATER TOWER	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-226	43-C-304	GRAVER WATER SOFTENERS	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-227	4012	OPERATING PROCEDURE FOR THE AUTOMATED LOW BACKGROUND	NEYER	WEICHOLD	02/08/93	08/09/93

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CIO.NO	DOCUMENT AFFECTED	TITLE	DOC.OWNER	ASSIGNED.PA	EFFECTIVE DATE	EXPIRATION DATE
		ALPHA/BETA PROPORTIONAL COUNTER				
C93-228	43-C-305	WATER PLANT LABORATORY PROCEDURES	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-229	43-C-306	STORM SEWER LIFT STATION	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-230	43-C-308	RESPONDING TO INDICATIONS OF OUT-OF-SPECIFICATION EXCURSIONS OF STORM SEWER WATER QUALITY	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-231	43-C-310	SAMPLING DRINKING WATER FOR TOTAL COLIFORM DETERMINATION	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-232	43-C-311	WATER PLANT BLOWDOWN OPERATION	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-233	43-C-313	STORMWATER RETENTION/EMERGENCY SPILL CONTAINMENT BASIN SLUDGE REMOVAL	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-234	43-C-314	STORMWATER RETENTION/EMERGENCY SPILL CONTAINMENT BASIN SAMPLING	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-235	43-C-315	BIODENTRIFICATION FACILITY ROUTINE CHECKS	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-236	43-C-316	BIODENTRIFICATION FACILITY CORRECTIVE RESPONSES	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-237	43-C-318	SURGE LAGOON UNDERDRAIN SYSTEM	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-238	43-C-319	SURGE LAGOON INSPECTION	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-239	43-C-320	BIODENTRIFICATION FACILITY NORMAL OPERATIONS	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-240	43-C-321	OPERATION OF CALCIUM REMOVAL SYSTEM	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-241	43-C-322	FILLING METHANOL STORAGE TANK	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-242	43-C-323	WATER PLANT TEMPORARY TANKS	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-243	43-C-324	SAMPLING FMPC WATER SUPPLIES	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-244	43-C-325	BIODENTRIFICATION HIGH NITRATE TANK	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-245	43-C-326	STORMWATER RETENTION BASIN CONTROL SYSTEM OPERATION	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-246	43-C-327	EFFLUENT TREATMENT SYSTEM NORMAL	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-247	43-C-329	BIODENTRIFICATION ETS EMERGENCIES	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-248	43-C-330	MEDRO WATER SOFTENER OPERATION	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-249	43-C-332	OPERATION OF THE HACH DR/3000 SPECTROPHOTOMETER	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-250	43-C-334	OPERATION OF THE HACH DR/2000 SPECTROPHOTOMETER	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-251	43-C-335	INTERIM ADVANCED WASTE WATER TREATMENT (STORMWATER RETENTION BASIN SYSTEM OPERATION)	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-252	43-C-336	INTERIM ADVANCED WASTE WATER TREATMENT - BIODENTRIFICATION EFFLUENT TREATMENT SYSTEM OPERATION	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-253	43-C-337	WASTE PIT AREA STORMWATER RUNOFF CONTROL SYSTEM (WPASRC) OPERATION	PENNINGTON	WEICHOLD	02/08/93	08/09/93

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C93-254	43-C-338	OPERATION, INSPECTION AND TEST OF K-65 SILOS NO. 1 AND NO. 2 EMERGENCY POWER SUPPLY (EPS) GENERATOR	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-255	43-C-339	OFF-NORMAL OPERATION (LOW TRAILER EFFLUENT PH) OF THE INTERIM ADVANCED WASTE WATER TREATMENT (STORMWATER RETENTION BASIN) FACILITY	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-256	43-C-400	BOILER WATER AND FEED WATER TESTING	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-257	43-C-401	COAL HANDLING EQUIPMENT OPERATION	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-258	43-C-402	OPERATING OF STEAM GENERATING EQUIPMENT	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-259	43-C-403	BOILER COMBUSTION CONTROL	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-260	43-C-404	DEAERATING FEEDWATER HEATER SYSTEM	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-261	43-C-405	BLOWING SOOT ON RILEY BOILERS	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-262	43-C-406	ASH HANDLING SYSTEM	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-263	43-C-407	AIR COMPRESSORS	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-264	43-C-408	BULLDOZER OPERATION	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-265	43-C-409	OPERATION OF PORTABLE AIR COMPRESSORS	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-266	43-C-410	RECEIPT, SAMPLING, AND STORING COAL	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-267	43-C-411	POWER PLANT ELECTROSTATIC PRECIPITATOR	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-268	43-C-412	MANAGEMENT OF THE WATER COVER FOR WASTE PIT 6	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-269	43-C-413	HANDLING WASTE MATERIALS WITH THE INDUSTRIAL VACUUM LADER TRUCK (SUPERSUCKER)	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-270	43-C-414	INDUSTRIAL VACUUM LOADER TRUCK (SUPERSUCKER) OPERATION	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-271	43-C-415	COAL PILE RUNOFF CONTROL FACILITY OPERATION	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-273	43-C-417	OPERATION OF 350 HP SUPERIOR STEAM BOILER	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-274	43-C-418	OPERATION OF MODEL NOS-2A-67 WATERTUBE BOILER	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-275	43-C-501	SANITARY SEWAGE TREATMENT PLANT OPERATION	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-276	43-C-601	INSPECTION/OPERATION OF SURFACE IMPOUNDMENTS	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-277	43-C-701	GENERAL SUMP	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-278	43-C-702	BULK LIME HANDLING SYSTEM	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-279	43-C-704	LIME SLAKER OPERATION	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-280	43-C-705	LIME SLURRY DISTRIBUTION	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-281	43-C-801	UTILITIES ENGINEER - GENERAL	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-282	43-C-802	EMERGENCY POWER SYSTEM	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-283	43-C-804	NATURAL GAS METERING STATION AND DISTRIBUTION SYSTEM	PENNINGTON	WEICHOLD	02/08/93	08/09/93

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C93-284	43-C-805	TESTING FIRE PUMPS	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-285	43-C-806	WINTER OPERATION OF THE FIRE PROTECTION WATER STORAGE SYSTEM	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-286	43-C-901	POWER AND WATER PLANT EMERGENCIES	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-287	43-C-902	OPERATION, INSPECTION, AND TEST OF THE EMERGENCY OPERATION CENTER GENERATOR	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-288	43-C-910	UTILITIES HOISTS AND CRANES	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-289	43-C-911	INVINCIBLE PORTABLE DUST COLLECTOR OPERATION	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-290	43-M-1001	DISSOLVED OXYGEN (DO) AZIDE MODIFICATION OF WINKLER METHOD	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-291	43-M-1002	DISSOLVED OXYGEN (DO) MEMBRANE ELECTRODE METHOD	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-292	43-M-1003	DPD METHOD FOR FREE AND TOTAL CHLORINE TEST	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-293	43-M-1004	TOTAL COLIFORM TESTING BY MEMBRANE FILTER METHOD	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-294	43-M-1005	FECAL COLIFORM TESTING OF WATER BY MEMBRANE FILTER METHOD	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-295	43-M-1006	BRPADAP TEST FOR SOLUBLE URANIUM BY SPECTROPHOTOMETER	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-296	43-M-1007	ALKALINITY (TOTAL AND PHENOLPHALEIN) TESTING OF WATER	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-297	43-M-1008	TOTAL HARDNESS TESTING OF WATER BY EDTA TITRIMETRIC METHOD	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-298	43-M-1009	TOTAL PHOSPHORUS TESTING OF WATER BY ASCORBIC ACID METHOD WITH PERSULFATE	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-299	43-M-1010	STABILITY TEST OF WATER BY SATURATION WITH CALCIUM CARBONATE	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-300	43-M-1011	PH (HYDROGEN ION) TESTING OF WATER BY ELETROMETRIC METHOD	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-301	43-M-1012	CONDUCTIVITY/RESISTIVITY TESTING OF WATER BY ELECTROMETRIC METHOD	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-302	43-M-1013	SPECTROPHOTOMETRIC TEST FOR NITRATES IN WATER USING MODIFIED CADMIUM REDUCTION METHOD	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-303	43-M-1014	TOTAL SUSPENDED (NON-FILETERABLE) SOLIDS IN WATER	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-304	43-M-1015	TOTAL DISSOLVED (FILTERABLE) SOLIDS IN WATER	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-305	43-M-1016	IGNITION TEST FOR VOLATILE AND FIXED SOLIDS IN WATER	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-306	43-M-1017	TOTAL SOLIDS IN WATER	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-307	43-M-1018	VOLUMETRIC MEASUREMENT OF SETTLEABLE SOLIDS IN WATER	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-308	43-M-1021	BICINCHONINATE METHOD FOR TESTING COPPER IN WATER BY SPECTROPHOTOMETER	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-309	43-M-1022	QUALITY TESTING OF REAGENT GRADE WATER	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-310	43-M-1023	BIOCHEMICAL OXYGEN DEMAND (BOD) AND CARBONACEOUS OXYGEN DEMAND (CBOD)	PENNINGTON	WEICHOLD	02/08/93	08/09/93

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C93-311	46-C-101	LAUNDRY OPERATION	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-312	46-C-201	DISPOSAL OF NON-PROCESS AREA TRASH	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-313	46-C-301	CLEANING, INSPECTING, AND RECONDITIONING RESPIRATORS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-314	46-C-907	SERVICE BUILDING EMERGENCIES	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-315	50-C-101	PREPARATION AND OFFSITE SHIPMENT OF URANIUM HEXAFLUORIDE LABORATORY CALIBRATION STANDARDS CYLINDERS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-316	50-C-105	RECEIPT OF MIXED/LOW LEVEL WASTE	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-317	6006	THE THERMAL MASS SPECTROMETRIC ANALYSES OF ENVIRONMENTAL SAMPLES FOR URANIUM ISOTOPES	NEYER	WEICHOLD	02/08/93	08/09/93
C93-318	65-C-105	PREPARATION OF SILO SAMPLES FOR LONG TERM STORAGE	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-319	65-C-106	SILO WASTE HANDLING	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-320	65-C-201	K65 SILO NUMBERS 1 AND 2 AREA EMERGENCIES	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-321	66-C-101	OPERATION OF K65 RADON TREATMENT SYSTEM	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-322	66-C-909	RADON TREATMENT SYSTEM EMERGENCIES	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-323	7000	THE DETERMINATION OF FREE ACID IN URANYL NITRATE SOLUTIONS (SPOT TEST METHOD FOR THE PLANT USE)	NEYER	WEICHOLD	02/08/93	08/09/93
C93-324	7004	QUANTATIVE ANALYSIS OF URANIUM AND THORIUM IN CONCENTRATE SAMPLES BY ENERGY DISPERSIVE X-RAY FLOURESCENE (EDXRF) SPECTROSCOPY	NEYER	WEICHOLD	02/08/93	08/09/93
C93-325	9000	OPERATION OF THE CHROMATOGRAPH/MASS SPECTROMETER DETECTOR INSTRUMENT	NEYER	WEICHOLD	02/08/93	08/09/93
C93-326	9001	GAS CHROMATOGRAPHY/MASS SPECTROMETRY FOR SEMI-VOLATILE ORGANICS: CAPILLARY COLUMN TECHNIQUE	NEYER	WEICHOLD	02/08/93	08/09/93
C93-327	9002	GAS CHROMATOGRAPHY/MASS SPECTROMETRY FOR VOLATILE ORGANICS: CAPILLARY COLUMN TECHNIQUE	NEYER	WEICHOLD	02/08/93	08/09/93
C93-328	9007	LOGKEEPING	NEYER	WEICHOLD	02/08/93	08/09/93
C93-329	9008	REFRIGERATION REQUIREMENTS FOR ENVIRONMENTAL SAMPLES AND STANDARDS	NEYER	WEICHOLD	02/08/93	08/09/93
C93-330	9009	TOXICITY CHARACTERISTICS LEACHING PROCEDURE FOR ORGANIC ANALYTES	NEYER	WEICHOLD	02/08/93	08/09/93
C93-331	9010	LOW LEVEL SEMIVOLATILE AND PESTICIDE/PCB SOIL EXTRACTION	NEYER	WEICHOLD	02/08/93	08/09/93
C93-332	9011	QUANTITATIVE ANALYSIS OF URANIUM AND THORIUM SAMPLES IN SOIL SAMPLES BY ENERGY DISPERSIVE FLOURESCENCE (EDXRF)	NEYER	WEICHOLD	02/08/93	08/09/93

CIO.NO.	DOCUMENT AFFECTED	TITLE	DOC.OWNER	ASSIGNED.PA	EFFECTIVE DATE	EXPIRATION DATE
		SPECTROSCOPY				
C93-333	9012	TOXICITY CHARACTERISTICS LEACHING PROCEDURE (TCLP) FOR METALLIC ANALYTES	NEYER	WEICHOLD	02/08/93	08/09/93
C93-334	9013	DETERMINATION OF PH USING A ACCUMET 950 SELECTIVE ION ANALYZER FOR NPDES SAMPLES	NEYER	WEICHOLD	02/08/93	08/09/93
C93-335	9017	SW846:6010/THE DETERMINATION OF METALS BY LEEMAN PLASMA SPEC III ICP (SIMULTANEOUS OPERATION)	NEYER	WEICHOLD	02/08/93	08/09/93
C93-336	9019	CLP:272.2/GFAA METHOD FOR THE DETERMINATION OF SILVER	NEYER	WEICHOLD	02/08/93	08/09/93
C93-337	9020	CLP:239.2/GFAA METHOD FOR THE DETERMINATION OF LEAD	NEYER	WEICHOLD	02/08/93	08/09/93
C93-338	9021	CLP:218.2/GFAA METHOD FOR THE DETERMINATION OF CHROMIUM	NEYER	WEICHOLD	02/08/93	08/09/93
C93-339	9022	CLP:270.2/GFAA METHOD FOR THE DETERMINATION OF SELENIUM	NEYER	WEICHOLD	02/08/93	08/09/93
C93-340	9023	MICROWAVE SAMPLE PREPARATION PROCEDURES	NEYER	WEICHOLD	02/08/93	08/09/93
C93-341	9024	CLP:213.2/GFAA METHOD FOR THE DETERMINATION OF CADMIUM	NEYER	WEICHOLD	02/08/93	08/09/93
C93-342	9025	QUANTATIVE ANALYSIS OF SAMPLES BY ENERGY DISPERSIVE X-RAY FLUORSCENCE (EDXRF)	NEYER	WEICHOLD	02/08/93	08/09/93
C93-343	9028	CLP:210.2/GFAA METHOD FOR THE DETERMINATION OF BERYLLIUM	NEYER	WEICHOLD	02/08/93	08/09/93
C93-344	9029	CLP MEDIUM LEVEL SEMIVOLATILE SOIL EXTRACTION	NEYER	WEICHOLD	02/08/93	08/09/93
C93-345	9030	ANALYTICAL LABORATORIES SHIFT TURNOVER	NEYER	WEICHOLD	02/08/93	08/09/93
C93-346	9031	MANAGEMENT AND REPORTING OF ANALYTICAL LABORATORY RESULTS	NEYER	WEICHOLD	02/08/93	08/09/93
C93-347	9034	SEMIVOLATILE WATER EXTRACTION	NEYER	WEICHOLD	02/08/93	08/09/93
C93-348	9035	MEDIUM LEVEL PESTICIDE/PCB SOIL EXTRACTION	NEYER	WEICHOLD	02/08/93	08/09/93
C93-349	9037	CLP PESTICIDE/PCB SOIL EXTRACTION	NEYER	WEICHOLD	02/08/93	08/09/93
C93-350	9038	CLP 206.2/GFAA METHOD FOR THE DETERMINATION OF ARSENIC	NEYER	WEICHOLD	02/08/93	08/09/93
C93-351	9039	CLP:279.2/GFAA METHOD FOR THE DETERMINATION OF THALLIUM	NEYER	WEICHOLD	02/08/93	08/09/93
C93-352	9040	CLP:204.2/GFAA METHOD FOR THE DETERMINATION OF AUTIMONY	NEYER	WEICHOLD	02/08/93	08/09/93
C93-353	9041	CLP PESTICIDE/PCB WATER EXTRACTION	NEYER	WEICHOLD	02/08/93	08/09/93
C93-354	9042	CLP SEMIVOLATILE WATER EXTRACTION	NEYER	WEICHOLD	02/08/93	08/09/93
C93-355	9045	OPERATION OF THE PERKIN-ELMER 5100 ZEEMAN SERIES, FURANCE TECHNIQUE	NEYER	WEICHOLD	02/08/93	08/09/93
C93-356	9046	CLP LOW LEVEL SEMIVOLATILE SOIL EXTRACTION	NEYER	WEICHOLD	02/08/93	08/09/93
C93-357	9047	PESTICIDE/PCB WATER EXTRACTION	NEYER	WEICHOLD	02/08/93	08/09/93
C93-358	9048	ISOTOPIC ANALYSIS OF THORIUM AND URANIUM IN VARIOUS MATRICES	NEYER	WEICHOLD	02/08/93	08/09/93
C93-359	9050	OPERATOR AID POSTING	NEYER	WEICHOLD	02/08/93	08/09/93

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CIO.NO.	DOCUMENT AFFECTED	TITLE	DOC.OWNER	ASSIGNED.PA	EFFECTIVE DATE	EXPIRATION DATE
C93-360	9052	SW-846:3050/ACID DIGESTION OF SOILS, SEDIMENTS, AND SLUDGES FOR TOTAL METAL ANALYSES	NEYER	WEICHOLD	02/08/93	08/09/93
C93-361	9056	SW-846:7470, 7471/COLD VAPOR TECHNIQUE FOR DETERMINATION OF MERCURY UTILIZING THE MERCURY ANALYZER SYSTEM	NEYER	WEICHOLD	02/08/93	08/09/93
C93-362	9057	CLP:245.1, 245.5/COLD VAPOR TECHNIQUE FOR DETERMINATION OF MERCURY UTILIZING THE MERCURY ANALYZER SYSTEM	NEYER	WEICHOLD	02/08/93	08/09/93
C93-363	9058	CLP PROTOCOL FOR INORGANIC ANALYSIS OF METALLICA ANALYTES	NEYER	WEICHOLD	02/08/93	08/09/93
C93-364	9059	DETERMINATION OF ABESTOS TYPE IN BULK MATERIALS/POLARIZED LIGHT MICROSCOPY	NEYER	WEICHOLD	02/08/93	08/09/93
C93-365	9060	PERCENT SOLIDS DETERMINATION	NEYER	WEICHOLD	02/08/93	08/09/93
C93-366	9065	CLP/MICROWAVE DIGESTION PROCEDURE	NEYER	WEICHOLD	02/08/93	08/09/93
C93-367	9066	DETERMINATION OF FLASH POINT BY AUTOMATED PENSKY-MARTENS CLOSED TESTER	NEYER	WEICHOLD	02/08/93	08/09/93
C93-368	9068	OPERATION OF LEEMAN PLASMA SPEC III ICP	NEYER	WEICHOLD	02/08/93	08/09/93
C93-369	9069	CLP:200.7/THE DETERMINATION OF LEAD BY LEEMAN PLASMA SPEC III ICP	NEYER	WEICHOLD	02/08/93	08/09/93
C93-370	9070	CLP:200.7/THE DETERMINATION OF CALCIUM, MAGNESIUM, POTASSIUM, AND SODIUM BY LEEMAN PLASMA SPEC III ICP	NEYER	WEICHOLD	02/08/93	08/09/93
C93-371	9071	CLP:200.7/THE DETERMINATION OF METALS BY LEEMAN PLASMA SPEC III ICP (SIMULTANEOUS OPERATION)	NEYER	WEICHOLD	02/08/93	08/09/93
C93-372	9072	REMOVAL AND DISPOSITION OF NON-RADIOACTIVE UNUSED CHEMICALS	NEYER	WEICHOLD	02/08/93	08/09/93
C93-373	9073	SW-846:7131/GFAA METHOD FOR THE DETERMINATION OF CADMIUM	NEYER	WEICHOLD	02/08/93	08/09/93
C93-374	9075	SW846:7041/GFAA METHOD FOR THE DETERMINATION OF ANTIMONY	NEYER	WEICHOLD	02/08/93	08/09/93
C93-375	9077	SW:846:7091/GFAA METHOD FOR THE DETERMINATION OF BERYLLIUM	NEYER	WEICHOLD	02/08/93	08/09/93
C93-376	9081	SW:846:7191/GFAA METHOD FOR THE DETERMINATION OF CHROMIUM	NEYER	WEICHOLD	02/08/93	08/09/93
C93-377	9082	ADMINISTRATIVE REQUIREMENTS FOR REPAIR, CALIBRATION, AND PREVENTATIVE MAINTENANCE OF INSTRUMENTS AND EQUIPMENT IN THE ANALYTICAL LABORATORIES	NEYER	WEICHOLD	02/08/93	08/09/93
C93-378	9085	CALIBRATION OF ALPHA AND BETA CHECK SOURCES	NEYER	WEICHOLD	02/08/93	08/09/93
C93-379	9086	RADIOCHEMICAL DETERMINATION OF GROSS ALPHA PARTICLE ACTIVITY IN WATER	NEYER	WEICHOLD	02/08/93	08/09/93
C93-380	9087	RADIOCHEMICAL DETERMINATION OF GROSS BETA PARTICLE ACTIVITY IN WATER - BIOASSAY LABORATORY	NEYER	WEICHOLD	02/08/93	08/09/93

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CIO.NO.	DOCUMENT AFFECTED	TITLE	DOC.OWNER	ASSIGNED.PA	EFFECTIVE DATE	EXPIRATION DATE
C93-381	9092	RADIOCHEMICAL DETERMINATION OF RADIUM IN ENVIRONMENTAL WATER SAMPLES	NEYER	WEICHOLD	02/08/93	08/09/93
C93-382	9095	CONDUCTIVITY OF WATER	NEYER	WEICHOLD	02/08/93	08/09/93
C93-383	9098	DISPOSAL OF RADIOACTIVE LABORATORY SOLID WASTES	NEYER	WEICHOLD	02/08/93	08/09/93
C93-384	9100	QUANTATIVE ANALYSIS OF LOW LEVEL GAS BY QUADRUPOLE MASS SPECTROMETRY	NEYER	WEICHOLD	02/08/93	08/09/93
C93-385	9104	OPERATION OF THE LIQUID NITROGEN WITHDRAWAL FACILITY NO. 2	NEYER	WEICHOLD	02/08/93	08/09/93
C93-386	9108	OPERATION OF THE ANALYTICAL LABORATORY MEPA/HEPA DUST FILTER	NEYER	WEICHOLD	02/08/93	08/09/93
C93-387	9109	DETERMINATION OF GROSS ALPHA AND GROSS BETA RADIOACTIVE PARTICLES ACTIVITIES IN SURFACE AND GROUND WATER BY PROPORTIONAL ALPHA AND BETA COUNTING	NEYER	WEICHOLD	02/08/93	08/09/93
C93-388	9110	COLLIMATOR CLEANING AND MAINTENANCE FOR THE THERMAL MASS SPECTROMETER	NEYER	WEICHOLD	02/08/93	08/09/93
C93-389	9111	PREPARATION OF RADIOACTIVE LABORATORY LIQUID WASTE FOR DISPOSAL	NEYER	WEICHOLD	02/08/93	08/09/93
C93-390	9112	HANDLING AND STORING CHEMICALS	NEYER	WEICHOLD	02/08/93	08/09/93
C93-391	9113	QUALITY CONTROL OF RADIOACTIVE COUNTING SYSTEMS	NEYER	WEICHOLD	02/08/93	08/09/93
C93-392	9114	LABORATORY BUILDING EMERGENCIES	NEYER	WEICHOLD	02/08/93	08/09/93
C93-393	9115	URANIUM ISOLATION AND PURIFICATION FROM VARIOUS MATRICES FOR SUBSEQUENT URANIUM ISOTOPES ANALYSIS	NEYER	WEICHOLD	02/08/93	08/09/93
C93-394	9128	RADIOMETRIC PROCEDURE FOR THE DETERMINATION OF PLUTONIUM	NEYER	WEICHOLD	02/08/93	08/09/93
C93-395	ANL-01-0017	PREPARATION OF REAGENTS AND STANDARDS	NEYER	WEICHOLD	02/08/93	08/09/93
C93-396	ANL-01-0035	USING ANALIS	NEYER	WEICHOLD	02/08/93	08/09/93
C93-397	ANL-01-0049	CHAIN OF CUSTODY FOR ENVIRONMENTAL SAMPLES	NEYER	WEICHOLD	02/08/93	08/09/93
C93-398	ANL-01-0053	MANAGING HAZARDOUS WASTE SATELLITE ACCUMULATION AREAS IN ANALYTICAL LABORATORIES	NEYER	WEICHOLD	02/08/93	08/09/93
C93-399	ANL-01-0054	TRAINING AND QUALIFICATIONS OF ANALYSIS WITHIN THE WMCO ANALYTICAL LABORATORIES	NEYER	WEICHOLD	02/08/93	08/09/93
C93-400	ANL-01-0055	OPERATION OF LABCONOCO GLOVE BOX	NEYER	WEICHOLD	02/08/93	08/09/93
C93-401	ANL-01-0060	INSPECTION AND LABELING OF COMPRESSED GASES IN THE ANALYTICAL LABORATORIES	NEYER	WEICHOLD	02/08/93	08/09/93
C93-402	ANL-10-0001	STATISTICAL TEST FOR DETERMINING OUTLYING OBSERVATIONS	NEYER	WEICHOLD	02/08/93	08/09/93
C93-403	ANL-10-0016	RECEIVING AND DELIVERING NPDES SAMPLES	NEYER	WEICHOLD	02/08/93	08/09/93

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C93-404	ANL-10-0034	PREPARATION, DOCUMENTATION, AND DELIVERY OF QUALITY CONTROL SAMPLES	NEYER	WEICHOLD	02/08/93	08/09/93
C93-405	ANL-15-0048	OPERATOR SCALE CHECKING IN THE LABORATORY	NEYER	WEICHOLD	02/08/93	08/09/93
C93-406	ANL-22-0043	THE PREPARATIONS, STORAGE, AND DOCUMENTATION OF MONTHLY AND YEARLY STACK FILTER COMPOSITE SAMPLES	NEYER	WEICHOLD	02/08/93	08/09/93
C93-407	ANL-23-0029	MAINTENANCE OF DRY GAS PURGE FOURIER TRANSFORM INFRA RED (FTIR) SPECTROMETER	NEYER	WEICHOLD	02/08/93	08/09/93
C93-408	ANL-31-0032	OPERATION OF THE LIQUID NITROGEN WITHDRAWAL FACILITY	NEYER	WEICHOLD	02/08/93	08/09/93
C93-409	ANL-33-0028	RADIOMETRIC RECORDS AND SAMPLE HANDLING	NEYER	WEICHOLD	02/08/93	08/09/93
C93-410	ANL-33-0044	URANIUM ACTIVITY CALCULATIONS FOR VARIOUS MATRICES	NEYER	WEICHOLD	02/08/93	08/09/93
C93-411	ANL-40-0051	RECEIVING AND PREPARING SOIL SAMPLES	NEYER	WEICHOLD	02/08/93	08/09/93
C93-412	ANL-40-0052	PREPARATION OF GENERAL SUMP LIQUOR BIWEEKLY COMPOSITE SAMPLE FOR RADIUM-226 AND RADIUM-228	NEYER	WEICHOLD	02/08/93	08/09/93
C93-413	ANL-45-0061	OPERATION OF NUCLEAR MEASUREMENTS CORPORATION (NMC) MODEL PC-5 PROPORTIONAL COUNTERS	NEYER	WEICHOLD	02/08/93	08/09/93
C93-414	ANL-M-100	LABORATORY BUILDING RADIATION CONTROL MANUAL	NEYER	WEICHOLD	02/08/93	08/09/93
C93-415	ANL-SP-1001	ANALYTICAL LABORATORY QUALITY ASSURANCE PLAN	NEYER	WEICHOLD	02/08/93	08/09/93
C93-417	DPL-1000	WATER TREATMENT PLANT LABORATORY QUALITY ASSURANCE PLAN	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-418	ESH-P-34-001	DETERMINING OF PH VALUE OF WATER USING AN ORION MODEL 611 METER	NEYER	WEICHOLD	02/08/93	08/09/93
C93-419	ESH-P-34-004	DETERMINATION OF URANIUM IN WATER: FLUOROMETRIC FUSION METHOD	NEYER	WEICHOLD	02/08/93	08/09/93
C93-420	M-100	STANDARD FOR CONDUCT OF OPERATIONS AT THE FEED MATERIALS PRODUCTION CENTER	LONG	WEICHOLD	02/08/93	08/09/93
C93-421	M-101	STANDARD FOR CONDUCT OF OPERATIONS AT THE FEED MATERIALS PRODUCTION CENTER FACILITY ASSESSMENT RECORDS	LONG	WEICHOLD	02/08/93	08/09/93
C93-422	M-102	SITE SERVICES TRANSPORTATION REQUIREMENTS MANUAL	LONG	WEICHOLD	02/08/93	08/09/93
C93-423	OSH-P-34-003	DETERMINATION OF URANIUM IN URINE: FLUOROMETRIC FUSION METHOD	NEYER	WEICHOLD	02/08/93	08/09/93
C93-424	OSH-P-34-006	OPERATION OF TENNELEC LB-1000 MANUAL ALPHA/BETA PROPORTIONAL COUNTER-CHEMISTRY LABORATORY APPLICATIONS	NEYER	WEICHOLD	02/08/93	08/09/93
C93-425	OSH-P-34-019	FISSION FOIL COUNTING PROCEDURES FOR NUCLEAR ACCIDNET DOSIMETERS AND PERSONNEL ACCIDENT DOSIMETERS	NEYER	WEICHOLD	02/08/93	08/09/93

CIO.NO.	DOCUMENT AFFECTED	TITLE	DOC.OWNER	ASSIGNED.PA	EFFECTIVE DATE	EXPIRATION DATE
C93-426	OSH-P-34-020	CALIBRATION AND OPERATIONAL VERIFICATION OF THE CANBERRY SERIES 35 PLUS MULTICHANNEL ANALYZER - SODIUM DETECTOR SYSTEM	NEVER	WEICHOLD	02/08/93	08/09/93
C93-427	PO-D-002	INITIATION, PROCESS, AND ISSUE OF A PROCEDURE	LONG	WEICHOLD	02/08/93	08/09/93
C93-428	PO-D-003	INITIATION, PROCESS, AND ISSUE OF A CHANGE IN OPERATION (CIO)	LONG	WEICHOLD	02/08/93	08/09/93
C93-429	PO-D-004	DOCUMENT FORMAT	LONG	WEICHOLD	02/08/93	08/09/93
C93-430	PO-D-006	CALCULATION OF DRUM EQUIVALENTS FOR FMPC WASTE VOLUMES	LONG	WEICHOLD	02/08/93	08/09/93
C93-431	PO-D-007	DOCUMENT PERIODIC REVIEW PROGRAM	LONG	WEICHOLD	02/08/93	08/09/93
C93-432	PO-D-008	OPERATIONS PROJECTS WORK PROGRAM	LONG	WEICHOLD	02/08/93	08/09/93
C93-433	PO-D-009	OPERATOR ACKNOWLEDGEMENT OF PROCEDURE CHANGES	LONG	WEICHOLD	02/08/93	08/09/93
C93-434	PO-D-011	DOCUMENT INCORPORATION OF SAFETY RELATED INFORMATION	LONG	WEICHOLD	02/08/93	08/09/93
C93-435	PO-D-012	FACILITY/PROCESS STARTUP	LONG	WEICHOLD	02/08/93	08/09/93
C93-436	PO-D-013	SAFETY AND HOUSEKEEPING	LONG	WEICHOLD	02/08/93	08/09/93
C93-437	PO-D-014	OPERATIONS ORGANIZATIONS AND RESPONSIBILITIES	LONG	WEICHOLD	02/08/93	08/09/93
C93-438	PO-D-015	SHIFT PRACTICES AND OPERATING PRACTICES	LONG	WEICHOLD	02/08/93	08/09/93
C93-439	PO-D-016	COMMUNICATIONS	LONG	WEICHOLD	02/08/93	08/09/93
C93-440	PO-D-017	INVESTIGATION OF ABNORMAL EVENTS	LONG	WEICHOLD	02/08/93	08/09/93
C93-441	PO-S-018	NOTIFICATIONS - REPORTING OF NON-ROUTINE EVENTS	LONG	WEICHOLD	02/08/93	08/09/93
C93-442	PO-D-019	EQUIPMENT STATUS AND CONTROL	LONG	WEICHOLD	02/08/93	08/09/93
C93-443	PO-D-020	INDEPENDENT VERIFICATION	LONG	WEICHOLD	02/08/93	08/09/93
C93-444	PO-D-021	LOGKEEPING	LONG	WEICHOLD	02/08/93	08/09/93
C93-445	PO-D-022	SHIFT TURNOVER	LONG	WEICHOLD	02/08/93	08/09/93
C93-446	PO-D-023	SHIFT ORDERS			02/08/93	08/09/93
C93-447	PO-D-024	CONTROL OF OPERATOR AIDS	LONG	WEICHOLD	02/08/93	08/09/93
C93-448	PO-D-025	EQUIPMENT LABELING	LONG	WEICHOLD	02/08/93	08/09/93
C93-449	PO-D-026	SITE SERVICES DOCUMENT PROGRAM	LONG	WEICHOLD	02/08/93	08/09/93
C93-450	PO-D-027	SITE SERVICES LESSONS LEARNED PROGRAM	LONG	WEICHOLD	02/08/93	08/09/93
C93-451	PO-D-028	PREPARATION AND IMPLEMENTATION OF WORK PACKAGE	LONG	WEICHOLD	02/08/93	08/09/93
C93-452	PO-D-030	SITE SERVICE FACILITIES EVALUATIONS	LONG	WEICHOLD	02/08/93	08/09/93
C93-453	PO-D-031	INTERNAL EVALUATION PROGRAM	LONG	WEICHOLD	02/08/93	08/09/93
C93-454	PO-D-032	REQUIRED READING	LONG	WEICHOLD	02/08/93	08/09/93
C93-455	PO-D-035	SHIPMENT OF LOW LEVEL RADIOACTIVE WASTE (LLRW) REQUIREMENTS	LONG	WEICHOLD	02/08/93	08/09/93

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CIO.NO.	DOCUMENT AFFECTED	TITLE	DOC.OWNER	ASSIGNED.PA	EFFECTIVE DATE	EXPIRATION DATE
C93-456	PO-S-01-001	STORAGE AND HANDLING OF EMPTY LOW LEVEL RADIOACTIVE WASTE CONTAINERS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-457	PO-S-01-002	INTERNAL AUDIT PROGRAM	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-458	PO-S-01-003	INTERNAL INSPECTION	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-459	PO-S-03-001	REAL PROPERTIES INSPECTIONS	TOWNSEND	WEICHOLD	02/08/93	08/09/93
C93-460	PO-S-04-001	EMISSION CONTROL ACTION PROGRAM AIR POLLUTION EMERGENCY EPISODES	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-461	PO-S-04-002	CONTROLLING FOODSTUFFS IN THE BOILER/WATER TREATMENT PLANTS	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-462	PO-S-04-003	VIOLATION OPACITY REPORTING	PENNINGTON	WEICHOLD	02/08/93	08/09/93
C93-463	PO-S-06-001	MOVEMENT OF HAZARDOUS WASTE	GILBERT	WEICHOLD	02/08/93	08/09/93
C93-464	PO-S-06-002	PREPARING "UNIFORM HAZARDOUS WASTE MANIFEST"	VARCHOL	WEICHOLD	02/08/93	08/09/93
C93-465	PO-S-08-001	ANALYTICAL DOCUMENT PROCESSING	NEYER	WEICHOLD	02/08/93	08/09/93
C93-466	RE-S-01-001	OPERATION OF RADON TREATMENT SYSTEM	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-467	RE-S-01-002	RADON MONITORING AND SAMPLING CHECKLIST FOR K-65 SILOS	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-468	SAP-P-34-021	REUSE OF LABORATORY CHEMICAL CONTAINERS	NEYER	WEICHOLD	02/08/93	08/09/93
C93-469	01-C-915	CLEANING CONTAMINATED METAL AND EQUIPMENT	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-470	01-C-608	STORAGE OF RADIOACTIVE MATERIAL	GARDNER	WEICHOLD	02/08/93	08/09/93
C93-471	43-C-324	SAMPLING AND ANALYZING FEMP WATER SUPPLIES	PENNINGTON	FLASTER	04/28/93	10/28/93
C93-472	43-C-324	SAMPLING AND ANALYZING FEMP WATER SUPPLIES	PENNINGTON	FLASTER	04/28/93	10/28/93
C93-473	43-C-324	SAMPLING AND ANALYZING FEMP WATER SUPPLIES	PENNINGTON	FLASTER	04/28/93	10/28/93
C93-474	43-C-420	ION EXCHANGE RESIN DEWATERING AND DRUMMING	PENNINGTON	KLAG	04/28/93	10/28/93
C93-477	N/A	TREATING SUMP WATER IN PLANT 8 WITH TRU/CLEAR	GARDNER	GARDNER	04/26/93	10/26/93
C93-478	43-C-402	OPERATION OF STEAM GENERATING EQUIPMENT	PENNINGTON	ELIOT	04/28/93	10/28/93
C93-479	20-C-805	SAMPLING DRUMMED WASTE FOR HAZARD IDENTIFICATION	GARDNER	KLAG	04/01/93	10/01/93
C93-480	3051	THE SIMULTANEOUS DETERMINATION OF NITRATE, NITRITE, AND PHOSPHATE IN WATER BY AN AUTOMATED CONTINUOUS FLOW ANALYZER	NEYER	MILLER	02/26/93	08/26/93
C93-481	3051	THE SIMULTANEOUS DETERMINATION OF NITRATE, NITRITE, AND PHOSPHATE IN WATER BY AN AUTOMATED CONTINUOUS FLOW ANALYZER	NEYER	MILLER	02/26/93	08/26/93
C93-482	3051	THE SIMULTANEOUS DETERMINATION OF NITRATE, NITRITE, AND PHOSPHATE IN WATER BY AN AUTOMATED CONTINUOUS FLOW ANALYZER	NEYER	MILLER	02/26/93	08/26/93
C93-492	N/A	DETERMINATION OF SOLUBLE URANIUM IN URINE BY KINETIC PHOSPHORESCENCE ANALYSIS	NEYER	BAKER	03/02/93	09/02/93
C93-493	9013	DETERMINATION OF PH USING AN ACCUMET 950 SELECTIVE ION	NEYER	BAKER	03/17/93	09/17/93

REMEDIATION SUPPORT OPERATIONS
PROGRAM INDEX

CIO.NO.	DOCUMENT AFFECTED	TITLE	DOC.OWNER	ASSIGNED.PA	EFFECTIVE DATE	EXPIRATION DATE
		ANALYZER FOR NPDES SAMPLES				
C93-494	9013	DETERMINATION OF PH USING AN ACCUMET 950 SELECTIVE ION ANALYZER FOR NPDES SAMPLES	NEYER	BAKER	03/17/93	09/17/93
C93-495	43-C-338	OPERATION, INSPECTION, AND TEST OF K-65 SILOS NO. 1 AND NO. 2 EMERGENCY POWER SUPPLY (EPS) GENERATOR	PENNINGTON	KLAG	04/28/93	10/28/93
C93-498	M-102	SITE SERVICES TRANSPORTATION REQUIREMENTS MANUAL	GILBERT	WEICHOLD	03/12/93	09/12/93
C93-502	SAP-P-34-021	REUSE OF LABORATORY CHEMICAL CONTAINERS	NEYER	BAKER	04/14/93	10/14/93
C93-503	SAP-P-34-021	REUSE OF LABORATORY CHEMICAL CONTAINERS	NEYER	BAKER	04/14/93	10/14/93
C93-504	SAP-P-34-021	REUSE OF LABORATORY CHEMICAL CONTAINERS	NEYER	BAKER	04/14/93	10/14/93
C93-505	6006	THE THERMAL MASS SPECTROMETRIC ANALYSIS OF ENVIRONMENTAL SAMPLES FOR URANIUM ISOTOPES	NEYER	BAKER	04/14/93	10/14/93
C93-506	6006	THE THERMAL MASS SPECTROMETRIC ANALYSIS OF ENVIRONMENTAL SAMPLES FOR URANIUM ISOTOPES	NEYER	BAKER	04/14/93	10/14/93
C93-507	6006	THE THERMAL MASS SPECTROMETRIC ANALYSIS OF ENVIRONMENTAL SAMPLES FOR URANIUM ISOTOPES	NEYER	BAKER	04/14/93	10/14/93
C93-508	6006	THE THERMAL MASS SPECTROMETRIC ANALYSIS OF ENVIRONMENTAL SAMPLES FOR URANIUM ISOTOPES	NEYER	BAKER	04/14/93	10/14/93
C93-509	6006	THE THERMAL MASS SPECTROMETRIC ANALYSIS OF ENVIRONMENTAL SAMPLES FOR URANIUM ISOTOPES	NEYER	BAKER	04/14/93	10/14/93
C93-510	6006	THE THERMAL MASS SPECTROMETRIC ANALYSIS OF ENVIRONMENTAL SAMPLES FOR URANIUM ISOTOPES	NEYER	BAKER	04/14/93	10/14/93
C93-511	6006	THE THERMAL MASS SPECTROMETRIC ANALYSIS OF ENVIRONMENTAL SAMPLES FOR URANIUM ISOTOPES	NEYER	BAKER	04/14/93	10/14/93
C93-512	9058	CPL PROTOCOL FOR INORGANIC ANALYSIS OF METALLIC ANALYTES	NEYER	BAKER	04/14/93	10/14/93
C93-513	3001	THE DETERMINATION OF AMMONIA-NITROGEN IN WASTEWATER USING THE POTENTIOMETRIC AMMONIA SENSING ELECTRODE METHOD	NEYER	BAKER	04/01/93	10/01/93
C93-514	3001	THE DETERMINATION OF AMMONIA-NITROGEN IN WASTEWATER USING THE POTENTIOMETRIC AMMONIA SENSING ELECTRODE METHOD	NEYER	BAKER	04/01/93	10/01/93
C93-515	3001	THE DETERMINATION OF AMMONIA-NITROGEN IN WASTEWATER USING THE POTENTIOMETRIC AMMONIA SENSING ELECTRODE METHOD	NEYER	BAKER	04/01/93	10/01/93
C93-516	3001	THE DETERMINATION OF AMMONIA-NITROGEN IN WASTEWATER USING THE POTENTIOMETRIC AMMONIA SENSING ELECTRODE METHOD	NEYER	BAKER	03/30/93	09/30/93
C93-519	9098	PREPARATION OF RADIOACTIVE LABORATORY SOLID WASTES	NEYER	BAKER	04/22/93	10/22/93

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WESTINGHOUSE ENVIRONMENTAL MANAGEMENT COMPANY OF OHIO SITE DOCUMENT PROGRAM		SITE STANDARD OPERATING PROCEDURE Page 1 of 24
Title: DEVIATION AND CORRECTIVE ACTION REPORTING		DOCUMENT NO: SSOP-0023 REVISION NO. 2
Authorization: H. F. Daugherty, President	Supersedes: None	Effective Date: 06-25-92

1.0 PURPOSE

To describe the process for the identification, response, evaluation and resolution of deviations and corrective actions required at the Fernald Environmental Management Project (FEMP).

2.0 SCOPE

This procedure identifies the assigned responsibilities and required actions for identifying, documenting, responding and evaluating deviations and corrective actions observed during audits, reviews, surveillances, inspections or tests performed at the FEMP by internal and external organizations. It also covers the evaluation of supplier-proposed disposition and corrective action plans.

3.0 DEFINITIONS

Condition Adverse to Quality (CAQ) - An all-inclusive term used in reference to any of the following: failures, malfunctions, deficiencies, defective items, violations of regulatory requirements or nonconformances.

Corrective Action - Measures taken to rectify significant conditions adverse to quality or violations of regulatory requirements and, where necessary, to preclude repetition.

Corrective Action Report (CAR) (See Figure 1) - A form used to document the corrective action process for significant conditions adverse to quality or violation of regulatory requirements discovered during audits, reviews, surveillances, inspections or tests performed by internal or external organizations. This form can be either the CAR form shown in Figure 1 or a computer generated form which contains the same information. This report is used to identify and resolve recurring problems, programmatic deviations and significant conditions adverse to quality.

Deviation - As used in this procedure, "deviation" means a departure from a specified requirement discovered during an audit, review, surveillance, inspection or test. A deviation can be a condition in which characteristics of an item or service do not conform to prescribed limits, a required document is not available or is inadequate, a regulatory requirement was violated, or a procedure does not yield the desired results. These conditions can occur at any point in the fabrication, handling, shipment, storage, installation, or operation of an item; the performance of a service; or the execution of quality assurance activities.

3.0 DEFINITIONS (cont.)

Deviation Report (DR) (See Figure 2) - A form used to document the disposition, verification and closure of deviations. This form can be either the DR form shown in Figure 2 or a computer generated form which contains the same information. This report is used to identify and resolve a specific deviation.

Disposition - The action necessary to correct or resolve a specific deviation.

Priority Level - As used in this procedure, "Priority Level" is the rank or the seriousness of an observed condition. Priority levels are used to ensure that corrective action of the more serious conditions are implemented first.

Requisitioner - The individual who authorizes and/or initiates a purchase request.

Root Cause - The most basic reason for an effect, which, if corrected, will prevent recurrence of that effect. The correction must be achievable by WEMCO and it cannot interfere with WEMCO's goals and objectives. Most negative effects of interest will have a root cause that falls into one of three categories: Personnel Error, Procedural Error, or Equipment Failure.

Senior Management - Management reporting directly to the President of WEMCO.

Significant Condition Adverse to Quality (SCAQ) - A condition which, if uncorrected, could have an impact on safety of employees and general public or operability, or violate a regulatory requirement.

4.0 RESPONSIBILITIES

4.1 WEMCO Personnel/Preparer

- Notify Environmental Compliance and Quality Assurance (EC&QA) of deviations by completing sections 1 and 2, as appropriate, of the Deviation Report (DR) form Figure 2.

4.2 Environmental Compliance and Quality Assurance (EC&QA)

- Evaluates deviations to see if a Deviation Report will be issued.
- Identifies, documents, and requests disposition of deviations on a DR form.

4.0 RESPONSIBILITIES (cont.)

- Evaluates proposed disposition for DRs.
- Verifies that disposition actions are complete and acceptable, and closes DRs.
- Evaluates Deviation Reports for issue of Corrective Action Reports (CARs), Figure 1.
- Accepts the proposed corrective action for CARs.
- Performs verification of corrective action and closes out CARs.
- Performs trend analysis of Deviation Reports.

4.3 Self-Assessment

- Performs trend analysis of Corrective Action Reports (CARs) and issues a CAR for identified adverse trends.

4.4 Commitment Control

- Provides sequential numbers for Corrective Action Reports.
- Maintains the central data base for tracking the status of corrective actions.
- Issues status reports on corrective actions.
- Retains official records and files related to the documentation of Corrective Action Reports.

4.5 Senior Manager/Activity Manager/Cognizant Engineer

- Evaluates and determines the root cause for each deviation reported on a Corrective Action Report.
- Responds to DRs and CARs by completing section 3 of the DR and/or CAR form.
- Proposes and accomplishes disposition for Deviation Reports and corrective action for Corrective Action Reports.
- Notifies EC&QA when disposition action and/or corrective action is complete.

4.0 RESPONSIBILITIES (cont.)

- Approves Supplier Disposition Requests.

4.6 Procurement

- Coordinates Supplier Disposition Requests for disposition/corrective action approval.

4.7 Evaluator

- Initiates a DR or CAR form and signs off in section 2 of the appropriate form.
- Evaluates the responses to the DR or CAR and signs off in section 4 of the appropriate form.
- Verifies the completion of disposition action or corrective action and signs off in section 6 of the appropriate form.

4.8 Administrator of Deviations (EC&QA)

- Provides sequential numbers for Deviation Reports.
- Maintains the central data base for tracking the status of Deviation Reports.
- Issues status reports on deviations.
- Retains official records and files related to the documentation of deviations issued.
- Reviews completed Deviation Reports and stamps them as validated QA records.
- Performs trend analysis of Deviation Reports.

5.0 GENERAL

5.1 Deviations may or may not be a significant condition adverse to quality. The effect on the quality of the item or service involved depends on the severity of the condition. Those deviations determined to be significant conditions adverse to quality require corrective action in accordance with this procedure. Corrective Action Reports shall be evaluated for root cause determinations.

5.0 GENERAL (cont.)

5.2 Repetitive non-significant conditions adverse to quality noted over a short period of time require corrective action in accordance with the requirements of this procedure.

5.3 A trend analysis of DRs and CARs is performed to identify chronic problem areas. Results of this trend analysis are reported in a letter and a CAR is issued for any adverse trends identified in the letter. The CAR is issued to the responsible manager who determines the root cause of the adverse trend and develops corrective actions.

5.4 All personnel issuing Deviation Reports or Corrective Action Reports shall have training or orientation on the WEMCO deviation and corrective action system prior to issuing a DR or CAR.

6.0 INDUSTRIAL HEALTH AND SAFETY REQUIREMENTS

None

7.0 PROCEDURE

7.1 Deviation Reports

WEMCO PERSONNEL/PREPARER

7.1.1 Evaluate deviations in accordance with the Priority Levels identified in Table 1.

7.1.2 Identify and document deviations in sections 1 and 2 of the Deviation Report (DR) form (see Figure 2).

NOTE: For Priority Level 3, issue a letter or other report describing the condition observed to responsible individuals.

7.1.3 Sign and date the "Prepared By" block in section 2.

7.1.4 Forward the DR to Environmental Compliance and Quality Assurance (EC&QA), Administrator of Deviations.

ADMINISTRATOR OF DEVIATIONS

7.1.5 Forward DR to the appropriate EC&QA section for evaluation.

7.0 PROCEDURE (cont.)

EC&QA EVALUATOR

7.1.6 Evaluate the deviation for significant and actual violation of requirement/specifications.

7.1.6.1 If a deviation exists, assure a clear description of the deviation is provided.

7.1.6.2 If an actual DR is not required, notify the preparer that a DR is not required.

7.1.7 Verbally notify the senior manager/activity manager/cognizant engineer of the deviation in a timely manner.

7.1.8 Evaluate deviations for Significant Conditions Adverse to Quality (SCAQ) and check the appropriate block in section 2 of the DR form.

NOTE: See Figure 4 for criteria and examples for determining the need for a Corrective Action Report.

7.1.8.1 For those deviations determined to be SCAQ, complete a Corrective Action Report in accordance with section 7.2

7.1.9 Sign and date the "Evaluator" block in section 2.

7.1.10 Ensure a Quality Nonconformance Tag, Form FS-F-2708 (see Figure 3) is attached to a nonconforming item (hardware or material), where practical.

NOTE: Quality Nonconformance Tags shall be removed only after completion of the disposition action identified on the DR.

7.1.10.1 If not practical to affix Nonconformance Tag, ensure other precautions are taken to preclude inadvertent use or further processing.

7.1.11 Obtain and enter a DR number from the computer DR data base or from the Administrator of Deviations on the DR form.

NOTE: The unique number is composed of the last two digits of the current year, a three digit number, and the letters DR after the number (Example 92-001 DR).

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7.0 PROCEDURE (cont.)

EC&QA EVALUATOR

7.1.12 Issue the DR to the senior manager/activity manager/cognizant engineer of the organization responsible for the item or activity in which the deviation was discovered and forward a copy to the EC&QA Administrator of Deviations and the preparer.

ADMINISTRATOR OF DEVIATIONS

7.1.13 Enter the following data into the data base: DR number, date of discovery, responsible organization representative, provide disposition by, description of the deviation, evaluator's name, date evaluator signed (date issued), description of required action to be completed (such as response required) and department issuing DR.

SENIOR MANAGER/ACTIVITY MANAGERS/COGNIZANT ENGINEER

7.1.14 Separate hardware items in designated hold areas or implement other precautions to stop inadvertent use, as appropriate.

7.1.15 Evaluate deviations for reportability under the Event Notification and Reporting system (ED-0001) and Occurrence Reports system (PR-FMPC-4006).

7.1.16 When an Occurrence Report (OR) is required, enter this as the proposed disposition and the DR will be closed out based upon the issue of an OR.

7.1.17 Enter the proposed disposition by checking the appropriate block in section 3 of the DR. Disposition involves the following:

7.1.17.1 Accept-as-is - item is acceptable for use when supported with technical justification.

7.1.17.2 Rework - item needs further processing to conform to specified requirements.

7.1.17.3 Repair - item needs processing to become acceptable for use but does not conform to specified requirements.

7.1.17.4 Reject - a decision that a nonconforming item cannot be accepted-as-is, reworked, or repaired. Rejected items shall be scrapped, identified, and altered so as to be inapplicable for their original use, or returned to the supplier, as appropriate.

7.0 PROCEDURE (cont.)

SENIOR MANAGER/ACTIVITY MANAGERS/COGNIZANT ENGINEER

7.1.17.5 Other - describe in space provided on DR form the specific actions taken or to be taken such as revise procedure, develop procedure, provide training, etc.

NOTE: For non-hardware deviations check the "Other" block and enter the disposition in the space provided.

7.1.18 Enter the scheduled completion date in section 3.

7.1.19 Provide a technical justification for items which are labeled "Accept-As-Is" or "Repair".

NOTE: This justification must identify specific engineering calculations or higher tier documents which provide evidence that the item will function reliably and safely even though it does not conform to the original requirement. An unsupported belief, opinion, or recommendation is not an acceptable technical justification.

NOTE: When "accept-as-is" or "repair" are used for the disposition, configuration control records shall be updated to reflect changes.

7.1.20 Sign and date the Responsible Organization Representative block, and return the original DR with the disposition to the Evaluator within the requested time frame.

EC&QA EVALUATOR

7.1.21 Evaluate proposed disposition action(s), with the assistance of the preparer, as necessary, and notify the senior manager/activity manager/cognizant engineer of the responsible organization of the results.

7.1.22 Sign the "Evaluation of Disposition" section, after acceptable response is obtained, and forward original to responsible organization with a copy to the Administrator of Deviations.

ADMINISTRATOR OF DEVIATIONS

7.1.23 Enter the following data into the data base: Date response provided, date for completion of disposition, description of action to be completed and date response was approved by evaluator.

7.0 PROCEDURE (cont.)

SENIOR MANAGER/ACTIVITY MANAGERS/COGNIZANT ENGINEER

7.1.24 Complete disposition action(s) as scheduled.

7.1.25 Sign and date section 5 when disposition action(s) is complete and forward the DR to the evaluator.

EC&QA EVALUATOR

7.1.26 Monitor accomplishment of disposition action(s) and verify completeness and acceptability.

7.1.27 Close DR by signing the "Verification of Disposition Action Completion" section of the DR form. Notify the activity/cognizant engineer of the organization responsible for disposition action, of closure.

7.1.28 Ensure Nonconformance tags are removed and release any hardware items from hold status.

7.1.29 Forward original completed DR to the Administrator of Deviations.

ADMINISTRATOR OF DEVIATIONS

7.1.30 Enter the date of completion of Disposition into the tracking data base.

7.1.31 Review the completed DR form and validate the form by stamping it as a record copy.

NOTE: If the form is not correct, contact evaluator and have it corrected.

7.1.32 Maintain the official record copy of all deviation reports.

7.2 Corrective Action Reports

EVALUATOR

7.2.1 Evaluate deviations for Significant Conditions Adverse to Quality (SCAQ).

NOTE: See Figure 4 for criteria and examples for determining the need for a Corrective Action Report.

7.0 PROCEDURE (cont.)

EVALUATOR

7.2.2 Evaluate the need to issue the CAR to Senior Management in accordance with Figure 4.

NOTE: A Deviation Report is not required in order to issue a CAR.

7.2.3 When a CAR is required, obtain a CAR number from Commitment Control.

NOTE: The unique number is composed of the last two digits of the current year, a three digit number and the letters CAR (Example 92-001 CAR).

COMMITMENT CONTROL

7.2.4 Provide a CAR number from the computer data base for corrective action reports and enter the appropriate data into the commitment tracking system.

7.2.5 Prepare commitment planning form and notify evaluator.

EVALUATOR

7.2.6 Provide timely notification of deviations to affected senior manager/activity manager/cognizant engineer.

7.2.7 Identify and document the request for corrective actions in sections 1 and 2 of the CAR form Figure 1.

7.2.8 Obtain the concurrence of the Evaluator's manager.

7.2.9 Issue the Corrective Action Report along with commitment planning form to the senior manager/activity manager/cognizant of the organization responsible for the deviation, with a copy to Commitment Control.

COMMITMENT CONTROL

7.2.10 Enter the appropriate data into the commitment tracking system.

SENIOR MANAGER/ACTIVITY MANAGER/COGNIZANT ENGINEER

7.2.11 Evaluate deviations for reportability under the Event Notification and Reporting system (ED-0001) and Occurrence Reports system (PR-FMPC-4006).

7.0 PROCEDURE (cont.)

SENIOR MANAGER/ACTIVITY MANAGER/COGNIZANT ENGINEER

7.2.12 When an Occurrence Report (OR) is required, enter this as the corrective action and the CAR will be closed out based upon the issue of an OR.

7.2.13 Determine the underlying (root) cause of the problem and document it in Section 3A of the CAR form.

7.2.14 If necessary, perform an investigation to determine if any similar work is affected by the problem and, if so, identify the action taken/proposed and the schedule to correct it in Section 3B of the CAR form.

7.2.15 Describe in section 3C of the CAR form the action taken/proposed to correct the root cause and to prevent recurrence of the problem. Enter the scheduled completion date for corrective action in Section 3D.

7.2.16 Provide response to the Evaluator within the time frame requested.

EVALUATOR

7.2.17 Evaluate proposed corrective action(s), if acceptable, sign block 4 of CAR form and obtain evaluating manager's approval.

7.2.18 Forward the original CAR to the senior manager/activity manager/ cognizant engineer of the responsible organization indicating the results of the evaluation and forward a copy to Commitment Control.

COMMITMENT CONTROL

7.2.19 Enter the appropriate data into the commitment tracking system.

SENIOR MANAGER/ACTIVITY MANAGER/COGNIZANT ENGINEER

7.2.20 Complete corrective action(s) as scheduled.

7.2.21 Sign and date section 5 when corrective action(s) is complete and forward the CAR to the evaluator.

EVALUATOR

7.2.22 Monitor accomplishment of corrective action(s) and verify completeness and acceptability.

7.0 PROCEDURE (cont.)

EVALUATOR

7.2.23 Verify completion of corrective action and close CAR by signing section 6 of the CAR form.

7.2.24 Notify the senior manager/activity manager/cognizant engineer of the organization responsible for corrective action, of closure.

7.2.25 Forward the original completed CAR to Commitment Control.

COMMITMENT CONTROL

7.2.26 Enter the appropriate data into the commitment tracking system.

7.2.27 Maintain the official record copy of Corrective Action Reports.

7.3 External Findings/Deviations

EC&QA

7.3.1 Receive external findings from external organizations (such as Tiger Teams, Technical Safety Appraisal, etc.).

7.3.2 Process the finding in accordance with 7.2.

7.4 Supplier Request for Disposition/Corrective Action Approval

BUYER

7.4.1 Receive Supplier Disposition Requests (SDR) (see Figure 5), with proposed dispositions.

7.4.2 Forward the SDR with proposed disposition to requisitioning department and send a copy to Environmental Compliance and Quality Assurance for review and concurrence.

REQUISITIONER

7.4.3 Evaluate the supplier's proposed disposition, obtain concurrence from Environmental Compliance and Quality Assurance concerning its acceptability and if appropriate, approve the disposition action in an approval memorandum.

NOTE: If disposition action is unacceptable, the Requisitioner initiates correspondence through the Buyer back to the supplier until resolution is reached.

7.0 PROCEDURE (cont.)

REQUISITIONER

7.4.4 Forward the approval memorandum and supporting documentation to the Buyer.

BUYER

7.4.5 Issue disposition approval memorandum to supplier.

7.4.6 File a copy of disposition approval memorandum, completed SDR and supporting documentation in the purchase order file.

7.5 Trend Analysis

SELF-ASSESSMENT

7.5.1 Maintain a trend analysis program for Corrective Action Reports.

7.5.2 Issue a Corrective Action Report for identified trends in accordance with 7.2.

ADMINISTRATOR OF DEVIATIONS

7.5.3 Maintain a trend analysis program for Deviation Reports.

7.5.4 Issue a Corrective Action Report for identified trends in accordance with 7.2.

7.6 Tracking of Deviations

COMMITMENT CONTROL

7.6.1 Maintain a computer tracking/history system on open and closed Corrective Action Reports.

7.6.2 Provide status reports on the status of Corrective Action Reports.

ADMINISTRATOR OF DEVIATIONS

7.6.3 Maintain a computer tracking/history system on open and closed Deviation Reports.

7.6.4 Provide reports on the status of Deviation Reports.

8.0 APPLICABLE DOCUMENTS

8.1 Drivers

- RM-0012, "Quality Assurance Program Description"

8.2 Reference Documents

- PR-FMPC-4006, Occurrence Reports (OR)
- ED-0001, "Event Notification and Reporting"

9.0 APPLICABLE FORMS

- Form FS-F-2909 Deviation Report (DR)
- Form FS-F-2708, Quality Nonconformance Tag
- Form FS-F-2909-1, Corrective Action Report (CAR)
- Form FS-F-2642, Supplier Disposition Request

10.0 FIGURES

- Figure 1 - Corrective Action Report Form (CAR)
- Figure 2 - Deviation Report (DR)
- Figure 3 - Quality Nonconformance Tag
- Figure 4 - Criteria for Determining If a Corrective Action Report Is Required and Criteria for Determining If a Corrective Action Report Is Required To Be Issued To Senior Management
- Figure 5 - Supplier Disposition Request (SDR)

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TABLE 1

Priority Levels	DR REQUIRED
Priority Level 1 - A situation which poses a imminent threat to safety, health or the environment or which warrants immediate corrective action due to major or significant non-compliance, or to avoid an enforcement action by state or federal agencies or the DOE, or to avoid possible disruption of a vital site program.	YES
Priority Level 2 - A situation or non-compliance issue which by itself does not pose an imminent threat to safety, health or the environment but could pose an imminent threat at a future date (i.e. under different conditions).	YES
Priority Level 3 - A situation which does not pose a significant threat to safety, health or the environment, or risk of programmatic impact; which can be corrected immediately by personnel in the work area or can be scheduled for routine correction; are Best Management Practices,or housekeeping issues that do not warrant a priority level 1 or 2.	NO

Fernald Site
CORRECTIVE ACTION REPORT

CAR NUMBER REVISION

SECTION 1

DATE DISCOVERED RESPONSIBLE ORGANIZATION

RESPONSIBLE ORGANIZATION REPRESENTATIVE

ACTIVITY LOCATION

SECTION 2

REQUIREMENTS

DEVIATION

VERBALLY NOTIFIED MANAGEMENT EVALUATOR DATE

PROVIDE DISPOSITION BY EVALUATING MANAGER DATE

SECTION 3 - Response to the Request for Corrective Action

A. REASON FOR THE DEVIATION (ROOT CAUSE)

B. ACTION TAKEN/PROPOSED TO INVESTIGATE AND CORRECT SIMILAR WORK

C. ACTION TAKEN TO PREVENT RECURRENCE

D. DATE(S) ACTION(S) WILL BE COMPLETE

RESPONSIBLE ORGANIZATION REPRESENTATIVE DATE

SECTION 4 - Evaluation of Corrective Action Reponse

EVALUATOR DATE

EVALUATING MANAGER DATE

SECTION 5 - Completion of Corrective Action

RESPONSIBLE ORGANIZATION REPRESENTATIVE DATE

SECTION 6 - Verification of Corrective Action Completion

EVALUATOR DATE

VERIFICATION ACTION

FS-F-2909-1 (REV 5-7-92)

CORRECTIVE ACTION REPORT
Form FS-F-2909-1
Figure 1 (Sheet 1 of 2)

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Authorization: H. F. Daugherty, President	Supersedes: None	Effective Date: 06-25-92

CORRECTIVE ACTION REPORT (CAR) - INSTRUCTIONS

EVALUATOR - COMPLETE SECTION 1 AND 2 AS FOLLOWS	
ITEM	INSTRUCTIONS
DATE OF DISCOVERY	Enter date that corrective action was discovered to be required.
RESPONSIBLE ORGANIZATION	Enter the organization responsible for the item or activity in which a corrective action is required.
RESPONSIBLE ORGANIZATION'S REPRESENTATIVE	Enter name of the representative responsible for corrective action.
ACTIVITY	Enter activity performed (Example Audit 189-1)
LOCATION	Location of the activity (Example Plant 6)
REQUIREMENTS	Identify the procedure, instruction, standard, or code which establishes the acceptance criteria for the activity or item being evaluated.
DEVIATION	Fully describe the deviation as it relates to the requirements.
VERBALLY NOTIFIED MANAGEMENT	List the date that the responsible organization's management was verbally notified of the potential deviation.
CAR NO.	Obtain and enter on the CAR Form a CAR Number from Commitment Control
REVISION	Enter the current revision number 0, 1, etc
PROVIDE DISPOSITION BY DATE	Request the organization deemed responsible to provide dispositioning action by a certain date outlining steps taken or planned to correct immediate problem.
EVALUATOR	Sign and date Section 2 of the CAR form
EVALUATING MANAGER	Obtain the concurrence of the Evaluator's Manager.

RESPONSIBLE ORGANIZATION REPRESENTATIVE - COMPLETION OF DISPOSITION ACTION SECTION 3	
A. REASON FOR THE DEVIATION (ROOT CAUSE)	Determine the underlying (root) cause of the problem and document it in Section 3A of the CAR form.
B. ACTION TAKEN/PROPOSED TO INVESTIGATE AND CORRECT SIMILAR WORK	If necessary, perform an investigation to determine if any similar work is affected by the problem and, if so, identify the action taken/proposed and the schedule to correct it in Section 3B of the CAR form.
C. ACTION TAKEN TO PREVENT RECURRENCE	Describe action taken/proposed to correct the root cause and to prevent recurrence of the problem in Section 3C of the CAR form.
D. DATE(S) ACTION(S) WILL BE COMPLETE	Enter the scheduled completion date for corrective action in Section 3D.

EVALUATOR - COMPLETION OF THE EVALUATION OF CORRECTIVE ACTION RESPONSE SECTION 4
Receive and evaluate the proposed corrective action to determine its adequacy for solving the specific problem identified in the deviation report.
Document acceptance of the proposed corrective action in Block 4 by signature and date.
Notify the organization responsible for corrective action of the rejection of the proposed corrective action and coordinate with the organization to obtain a revised response.

RESPONSIBLE ORGANIZATION REPRESENTATIVE - COMPLETION OF CORRECTIVE ACTION SECTION 5
Completes corrective action sign Block 5 and forward to evaluator.

EVALUATOR - COMPLETION OF THE VERIFICATION AND CLOSURE OF DISPOSITION ACTION SECTION 6
Monitor the corrective action and verify that the actions taken to correct the deviation have been completed satisfactorily.
Approve acceptance of verified corrective action in Section 6 by signature and date. Enter the verification action performed.
Ensure the removal of nonconforming item tag(s) only after verifying satisfactory completion of all dispositioning actions.
Forward the closed out corrective action report (CAR) to the Commitment Control with a copy to responsible organization management

FS-F-2909-1 (REV 5/7/92)

CORRECTIVE ACTION REPORT (CAR) - INSTRUCTIONS
Form FS-F-2909-1
Figure 1 (Sheet 2 of 2)

Fernald Site
DEVIATION REPORT

DR NUMBER	REVISION

SECTION 1

DATE DISCOVERED	RESPONSIBLE ORGANIZATION
RESPONSIBLE ORGANIZATION REPRESENTATIVE	
ACTIVITY	LOCATION

SECTION 2

REQUIREMENTS

DEVIATION

VERBALLY NOTIFIED MANAGEMENT	PREPARED BY	DATE
PROVIDE DISPOSITION BY	CORRECTIVE ACTION REPORT REQUIRED? ☐ YES ☐ NO	
EVALUATOR		DATE

SECTION 3 - Response to the Request for Disposition

DISPOSITION ☐ Accept-As-Is ☐ Rework ☐ Repair ☐ Reject ☐ Other

ACCEPT-AS-IS/REPAIR JUSTIFICATION

SCHEDULED COMPLETION DATE(S)

RESPONSIBLE ORGANIZATION REPRESENTATIVE	DATE

SECTION 4 - Evaluation of Disposition Response

EVALUATOR	DATE

SECTION 5 - Completion of Disposition Action

RESPONSIBLE ORGANIZATION REPRESENTATIVE	DATE

SECTION 6 - Verification of Disposition Action Completion

EVALUATOR	DATE
VERIFICATION ACTION	

FS-F-2909 (REV 5/7/92)

DEVIATION REPORT
Form FS-F-2909
Figure 2 (Sheet 1 of 2)

WESTINGHOUSE ENVIRONMENTAL MANAGEMENT COMPANY OF OHIO SITE DOCUMENT PROGRAM		SITE STANDARD OPERATING PROCEDURE Page 19 of 24
Title: DEVIATION AND CORRECTIVE ACTION REPORTING		DOCUMENT NO: SSOP-0023 REVISION NO. 2
Authorization: H. F. Daugherty, President	Supersedes: None	Effective Date: 06-25-92

DEVIATION REPORT (DR) - INSTRUCTIONS

PREPARER - COMPLETE SECTION 1 AND 2 AS FOLLOWS	
ITEM	INSTRUCTIONS
DATE OF DISCOVERY	Enter date that deviation was discovered.
RESPONSIBLE ORGANIZATION	Enter the organization responsible for the item or activity in which a deviation is discovered.
RESPONSIBLE ORGANIZATION'S REPRESENTATIVE	Enter name of the representative responsible for disposition/corrective action.
ACTIVITY	Enter activity performed. (Example Audit 189-1)
LOCATION	Location of the activity (Example Plant 6)
REQUIREMENTS	Identify the procedure, instruction, standard, or code which establishes the acceptance criteria for the activity or item being evaluated.
DEVIATION	Fully describe the deviation as it relates to the requirements.
VERBALLY NOTIFIED MANAGEMENT	List the date that the responsible organization's management was verbally notified of the deviation.
PREPARED BY	The preparer signs and dates for Section 2.

EVALUATOR - COMPLETE SECTION 2 AND HEADING AS FOLLOWS	
IS CORRECTIVE ACTION REPORT REQUIRED	Evaluate deviation for issue of a Corrective Action Report. Check "Yes" if required, or "No" if not required.
DR NO.	Obtain and enter on the DR Form a DR Number from the Computer DR Data Base or from the Administrator of Deviations.
REVISION	Enter the current revision number 0, 1, etc.
PROVIDE DISPOSITION BY DATE	Request the organization deemed responsible to provide dispositioning action by a certain date outlining steps taken or planned to correct immediate problem.
EVALUATOR	Sign and date Section 2 of the DR form.

RESPONSIBLE ORGANIZATION REPRESENTATIVE - COMPLETION OF DISPOSITION ACTION SECTION 3	
DISPOSITION	Check the appropriate block for Accept-as-is, Rework, Repair, Reject or Other and indicate the appropriate disposition in the space provided. If disposition is Accept-as-is or Repair, provide a technical justification. Enter the date that disposition action will be completed.

EVALUATOR - COMPLETION OF THE RECEIPT AND EVALUATION OF PROPOSED DISPOSITIONS SECTION 4
Receive and evaluate the proposed disposition action to determine its adequacy for solving the specific problem identified in the deviation report.
Document acceptance of the proposed disposition in Block 4 by signature and date.
Notify the organization responsible for disposition action of the rejection of the proposed disposition action and coordinate with the organization to obtain a revised response.

RESPONSIBLE ORGANIZATION REPRESENTATIVE - COMPLETION OF DISPOSITION ACTION SECTION 5
Complete disposition action sign Block 5 and forward to evaluator.

EVALUATOR - COMPLETION OF THE VERIFICATION AND CLOSURE OF DISPOSITION ACTION SECTION 6
Monitor the disposition and verify that the actions taken to correct the deviation have been completed satisfactorily.
Approve acceptance of verified disposition in Section 6 by signature and date. Enter the verification action performed.
Ensure the removal of nonconforming item tag(s) only after verifying satisfactory completion of all dispositioning actions.
Forward the closed out deviation report (DR) to the Administrator of Deviations with a copy to responsible organization management.

FS-F-2909 (REV 9/7/92)

DEVIATION (DR) REPORT - INSTRUCTIONS
Form FS-F-2909
Figure 2 (Sheet 2 of 2)

QUALITY NONCONFORMANCE

P.O./SHIPMENT/LOT/PACKAGE/CONTAINER I.D. No.: _____

RECEIVING REPORT NO.: _____ INSPECTION REPORT NO.: _____

DESCRIPTION OF NONCONFORMANCE: _____

_____

_____

NAME: _____ BADGE No.: _____ PHONE No.: _____

TO BE REMOVED BY AUTHORIZED PERSONNEL ONLY

FS-F-2708 (REV. 10/10/91)

QUALITY NONCONFORMANCE

P.O./SHIPMENT/LOT/PACKAGE/CONTAINER I.D. No.: _____

RECEIVING REPORT NO.: _____ INSPECTION REPORT NO.: _____

DESCRIPTION OF NONCONFORMANCE: _____

_____

_____

NAME: _____ BADGE No.: _____ PHONE No.: _____

TO BE REMOVED BY AUTHORIZED PERSONNEL ONLY

FS-F-2708 (REV. 10/10/91)

QUALITY NONCONFORMANCE
FORM FS-F-2708
Figure 3

CRITERIA FOR DETERMINING IF A CORRECTIVE ACTION REPORT IS REQUIRED

A Corrective Action Report shall be issued for deviations with:

- o Significant Conditions Adverse to Quality - Deviations which have, or may have, serious effect on safety, health, operability, environment or reliability.
- o Quantity/Frequency - Repetitive deviations or similar deviations resulting from activities or conditions which are common to the deviations.
- o Ineffective Implementation of Dispositions - Deviations which have not been properly or promptly dispositioned or resolved and which, if uncorrected, could result in other deviations or significant conditions adverse to quality.

The following are examples of significant conditions adverse to quality and shall be processed in accordance with this procedure:

- o Approved and released documents such as design documents, procurement documents, procedures, instructions, reports, and data found to contain significant errors or to be inadequate for their intended function.
- o In-process checks that indicate process or test limits may be exceeded and may have serious effect on safety, operability, or reliability.
- o Out-of-calibration standards or instruments used to verify process limits and may have serious effect on safety, operability, or reliability.
- o Significant adverse trend analysis results.

CRITERIA FOR DETERMINING IF A CORRECTIVE ACTION REPORT IS REQUIRED TO BE ISSUED TO SENIOR MANAGEMENT

An evaluation shall be performed of each CAR for issue to Senior Management. If the CAR meets the following criteria, it shall be issued to Senior Management:

a) Significant and repetitive trends in deviation documents, audit/surveillance findings, and other inspections for which corrective action measures have proven ineffective or inadequate.
b) Delinquent Corrective Action that cannot be resolved at a lower level of management.
c) Significant conditions adverse to quality which require more than a routine evaluation, analysis and corrective action.

CRITERIA FOR DETERMINING IF A CORRECTIVE ACTION REPORT IS REQUIRED
Figure 4

Fernald Site
SUPPLIER DISPOSITION REQUEST

SDR SERIAL NUMBER:	SUBCONTRACT NUMBER:
TO BE COMPLETED BY SUPPLIER	
1 Waver ☐ (W) Non Conformance ☐ (N) Attn: _____ SUBCONTRACT ADMINISTRATOR	2 From: (SUPPLIER NAME & ADDRESS) _____ 3 DRAWING NUMBER & REVISION:
4 COMPONENT AND SERIAL NUMBER:	5 PART NAME AND SERIAL NUMBER:
6 DESCRIPTION OF SPECIFICATION OR DRAWING REQUIREMENTS TO BE WAIVED OR INTERPRETATION REQUIRED: (W) OR DEFICIENT CONDITION: (N)	
7 SDR'S PREVIOUSLY ISSUED ON THIS PART:	8 OTHER PARTS AFFECTED: ☐ YES ☐ SDR NO. _____ (W) ☐ NO ☐ Quantity _____ (N)
9 (A) SUPPLIER'S RECOMMENDED DISPOSITION (WAIVER. (B) JUSTIFICATION FOR WAIVER (W). (A) SUPPLIER'S RECOMMENDED DISPOSITION. (B) JUSTIFICATION. (C) CORRECTIVE ACTION BEING TAKEN TO PREVENT RECURRENCE. (N)	
10 THIS DISPOSITION WOULD AFFECT: INTERCHANGEABILITY ☐ YES ☐ NO OPERATION ☐ YES ☐ NO REPAIR PARTS ☐ YES ☐ NO	
11 LIST ATTACHMENTS:	12 SIGNATURE OF SUPPLIER'S AUTHORIZED REPRESENTATIVE: DATE:
TO BE COMPLETED BY WEMCO	
13 BASELINE ENG'R. DOCUMENTS AFFECTED (ECR REQUIRED: ☐ YES ☐ NO ☐ MAJOR SCOPE CHANGE	
14 DISPOSITION ACTION: APPROVED AS RECOMMENDED ☐ DISAPPROVED ☐ OR AS BELOW ☐	
15 THIS REQUEST AFFECTS INSPECTION OR INSTALLATION AT SITE: ☐ YES ☐ NO	
16 SIGNATURE & APPROVALS:	17 DISTRIBUTION:
ENGINEERING APPROVAL: DATE: _____ QUALITY DATE: _____ SUBCONTRACT ADMINISTRATOR/BUYER: DATE: _____ Subcontract Consideration Required ☐ Yes ☐ No DOE (AS REQUIRED): DATE:	

The supplier accepts full responsibility for the accuracy and completeness of the information above.
The issuance and acceptance of this request in no way limits or affects the warranty provisions of the order. This request shall not establish a precedent or obligation to accept similar conditions in the future.

FS-F-2642 (8/21/92)

SUPPLIER DISPOSITION REQUEST
Form FS-F-2642
Figure 5 (Sheet 1 of 2)

INSTRUCTIONS FOR PREPARATION OF SUPPLIER DISPOSITION REQUEST

- 4552-

GENERAL

It shall be the responsibility of the Supplier to initiate an SDR for each waiver or nonconforming condition and submit it to WEMCO for approval prior to implementing the supplier's recommended disposition. Attach all supplemental sheets as necessary to provide detailed explanations for those factors that cannot be fully explained in the space provided on the SDR form. Reports and dispositions via telephone or TWX are not prohibited, however, the supplier is responsible to execute an SDR on all deviations from drawing, specifications or contract requirements. Any work done before receipt of written approval of the recommended disposition shall be at the supplier's risk. Items shall not be released for shipment before approval of the recommended disposition.

The supplier shall maintain an SDR log and record a sequential, numerical identification number on each SDR submitted. the subcontract or purchase order number, and the serial number shall be entered on the top of each SDR submitted.

PROCEDURE

Supplier Responsibility

Box 1 - Record the name of the cognizant Subcontract Administrator and check Box W or N.
Box W (Waiver) shall be used to identify a design change which will produce a better or less expensive product or improve the delivery schedule, but requires waiving one or more requirements of the procurement document.
Box W shall also be checked if a clarification of specified requirements is requested.
Box N (Nonconformance) shall be used to identify a deviation from procurement document requirements which has occurred unintentionally during fabrication.

Box 2 - Record the mailing address as stated on the purchase order.

Box 3 - Record the drawing number and revision for the affected parts.

Box 4 - Record name of article as described in purchase order including serial number if applicable.

Box 5 - Record name of the affected part as shown on the drawing recorded in block 3, including serial number if applicable.

Box 6 - (W) For waiver or clarification request: Describe the problem or question, identifying specification section for which the waiver is requested.
(N) For nonconformance: Record the condition, including specification section violated.
(Both) Include sufficient detail to allow complete evaluation. Describe in detail those conditions not characterized by numerical variables.

Box 7 - List by serial number all previous SDR'Se submitted on the material defined by the information in blocks 5 and 6.

Box 8 - Evaluate and record whether other parts are influenced by the condition in block 6.
(W) For waiver or clarification request: Enter number of associated SDR.
(N) For nonconformance: Record the quantity of parts which are part of the same lot having the same attributes as described in block 6 for which disposition has not been requested.

Box 9 - Record the recommended disposition, the justification for such disposition and the corrective action to be taken to prevent recurrence (if applicable).

Box 10 - Record what effect the recommended disposition would have on interchangeability, operation and repair parts in so far as the Supplier can determine. Attach supplemental sheets explaining in detail what the effects are, if any of the blocks are checked "yes".

Box 11 - List attachments to this SDR.

Box 12 - Signature and title of the Supplier's authorized representative.

Mail to the cognizant Subcontract Administrator.

WEMCO Responsibility

Box 13 - Responsible WEMCO Engineer shall indicate if Baseline Engineering Documents are affected. If an Engineering Change Request is required, process and obtain required reviews and approvals prior to obtaining the required signatures in Box 16.

Box 14 - The WEMCO Engineer shall record the disposition action after coordination with Quality and Procurement. Reason for disapproval shall be stated.

Box 15 - The WEMCO Engineer shall check the appropriate box after coordination with Quality. The affected superintendent or manager shall be notified immediately.

Box 16 - The representatives of Engineering, Quality and Subcontracts will endorse the disposition by their signature.

Box 17 - Distribute copies of completed form to signers and receiving inspection.

NOTE: The Subcontract Administrator will record in the SDR log the date of transmittal to the disposition to the supplier.

FS-F-2642 (6/31/82)

INSTRUCTION FOR PREPARATION OF SUPPLIER DISPOSITION REQUEST
Form FS-F-2642
Figure 5 (Sheet 2 of 2)

RECORD OF ISSUE/REVISIONS

DATE	REV. NO	DESCRIPTION AND AUTHORITY
06-27-91	0	Issued to identify the assigned responsibilities and required actions for identifying, documenting, and providing dispositions for deviations and corrective actions observed during audits, reviews, initiated by M. A. Malone per Request No. P91-220.
02-04-92	1	Incorporation of temporary revisions T91-021 thru T91-025 per Request Nos. S92-012 thru S92-016, initiated by M. Malone.
06-25-92	2	Revision to SSOP-0023, per Request No. S92-048, initiated by M. Malone.

CIO NO. C93-024

Effective Date: 02-08-93

Expiration Date: 08-09-93

4552-

CHANGE IN OPERATION

REMEDIATION SUPPORT OPERATIONS DOCUMENT PROGRAM

(As identified in Figure 1) DOCUMENT NO.:	AFFECTED DOCUMENT PAGE NO.: 1	ISSUE DATE: (As listed in Figure 1)

TITLE: As identified in Figure 1.

AUTHORIZATION: Per LTR No. M:RSO:93-096, Dated 01-12-93, Nelson K. Weichold to James A. Long

CHANGE:

1) The identified document (See Figure 1) in the Site Services Document Program is now identified as a Fernald Environmental Restoration Management Corporation (FERMCO) Remediation Support Operation (RSO) Division document, for use in the RSO Division by the applicable RSO Department.

NOTE: The document identified in Figure 1 may not reflect the current FERMCO organizational structure.

1-C-604

NON-CONTROLLED COPY

Document No.	Title	Issue Date	Revision No.	Revision Date
01-107	OPERATION OF GENIE LIFT MODEL PL36/PDC	09/09/87		
01-108	OPERATION OF ARTHES MODEL RZ-60 BOTO-ZOOM AERIAL LIFT	12/22/87		
01-DE-410-02	DRUM PAINTING AND DRYING	04/10/89		
01-C-101	SAMPLING RESIDUE AND WASTE MATERIALS	06/16/89	2	03/11/91
01-C-301	DRUM CLEANING AND DECONTAMINATION	02/20/90	0	
01-C-302	DRUM PAINTING AND DRYING	01/15/90		
01-C-304	REROLLING 30 GALLON DRUMS AND EXPANDING 55 GALLON DRUMS	01/11/89		
01-C-305	BALING SCRAP METAL DRUMS	03/22/90	0	
01-C-306	CRUSHING SCRAP DRUMS	09/26/89	0	
01-C-602	LOW LEVEL RADIOACTIVE WASTE (LLRW) SHIPMENT PREPARATION	11/12/91	2	07/30/92
01-C-604	INSPECTION AND EVALUATION OF CONTAINERIZED LOW LEVEL RADIOACTIVE WASTE (LLRW)	12/05/91	0	12/08/92
01-C-606	HAZARDOUS WASTE SHIPMENT PREPARATION	06/14/89		
01-C-608	STORAGE OF RADIOACTIVE MATERIAL	08/13/90	0	12/09/92
01-C-609	PLANT 1 STORAGE INSPECTION	06/12/90	0	
01-C-701	PLANT 1 DUST COLLECTORS	05/24/89		
01-C-803	PREPARATION OF ENRICHED URANIUM(<20% U235) FOR OFFSITE SHIPMENT	07/20/88		
01-C-902	DISPOSAL OF PLANT 1 EFFLUENT	09/14/90	0	
01-C-905	PRODUCTION NUCLEAR MATERIALS(NM) RECEIVING, STORING, AND HANDLING	09/01/88		
01-C-911	PLANT 1 EMERGENCIES	07/05/91	0	
01-C-915	CLEANING OF CONTAMINATED METAL AND EQUIPMENT	12/23/87	2	05/05/92

0154

DOCUMENT IDENTIFICATION
Figure 1

Fernald Environmental Management Project Fernald Environmental Restoration Management Corp. REMEDIATION SUPPORT OPERATIONS DOCUMENT PROGRAM		Page 1 of 10 Revision No. 2 Revision Date: 02-05-93
REMEDIATION SUPPORT OPERATIONS PROCEDURE	INSPECTION AND EVALUATION OF CONTAINERIZED LOW-LEVEL RADIOACTIVE WASTE (LLRW)	SOP 1-C-604 Area: As Applicable
(Signature On File) Authorization: R.L. Gardner Facilities & Waste Operations Mgr.	Supersedes: 1-C-604 Dated: 09-07-89	Issue Date: 12-05-91

1.0 PURPOSE

The purpose of this document is to provide the procedure for inspecting and evaluating containerized low-level radioactive waste (LLRW) designated for shipment offsite.

2.0 APPLICABILITY

This procedure is applicable to LLRW storage areas and LLRW designated for the Plant 1 sampling line.

3.0 RESPONSIBILITIES

3.1 The Supervisor shall be responsible for the following:

3.1.1 Designating the material to be inspected or sampled.

3.1.2 Supplying the packaging materials.

3.1.3 Coordinating and notifying supporting organizations when assistance is required.

3.1.4 Ensuring that packaged material is labeled in accordance with the FEMP Lot Marking and Color-Coding System.

3.1.5 Designating holding areas as specified by this SOP.

3.1.6 Contacting Industrial Hygiene to determine the appropriate respiratory protection for the processing performed.

3.1.7 Issuing the required respiratory protection to operators.

3.1.8 Ensuring that personnel are qualified per the established training requirements identified by the Division Manager.

3.1.9 Obtaining and posting a "Radiation Work Permit" (RWP) when required.

3.1.10 Reviewing applicable Material Safety Data Sheets (MSDS) with operators.

3.2 Materials Control and Accountability shall be responsible for maintaining and reconciling the inventory records of Plant 1 nuclear waste materials.

3.3 Operators shall be responsible for complying with this SOP.

3.0 RESPONSIBILITIES (cont.)

3.4 Radiological Safety shall be responsible for issuing a "Radiation Work Permit" (RWP) and ensuring radiological safety requirements are met when a container is opened.

4.0 DEFINITIONS

4.1 Deteriorated Container - A container having rust, holes, or dents which could jeopardize the integrity of the container.

4.2 Net Weight - Gross weight minus the tare weight of the container.

4.3 Overpack - A container enclosing one or more smaller containers.

4.4 Respirable Fines - Particulates and vapors capable of being inhaled.

4.5 Resource Conservation and Recovery Act (RCRA) - The Congressional Act which established safe and environmentally acceptable management practices for specific wastes. RCRA requires strict "cradle to grave" control and proper management of hazardous wastes.

4.6 Toxicity Characteristic Leaching Procedure (TCLP) - A RCRA term referring to a method for determining the hazardous properties of waste extract.

5.0 APPLICABLE DOCUMENTS

5.1 Drivers

R 5.1.1 10 CFR 71 series, "Packaging and Transporting of Radioactive Material"

R 5.1.2 40 CFR 261 series, "Identification and Listing of Hazardous Wastes"

R 5.1.3 40 CFR 265 series, "Interim Status Standards for Owners and Operators of Hazardous Waste TSD Facilities"

R 5.1.4 49 CFR 171-173, "General Information, Regulations, and Definitions -
R Shippers General Requirements For Shipment and Packagings"

R 5.1.5 OAC 3745-54 series, "New Facility Standards

R 5.1.6 OAC 3745-65 series, "Interim Facility Standards"

R 5.1.7 DOE 5400 series, "Environmental Safety and Health"

R 5.1.8 DOE 5820.2A, "Radioactive Waste Management"

5.1.9 PO-D-026, "Site Services Document Program"

5.1.10 FEMP Conduct of Operations Manual

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5.2 References

5.2.1 SOP 20-C-902, "Liquid Propane Gas (LPG) Powered Handstackers and Tuggers"

5.2.2 SOP 1-C-916, "Plant 1 Hoists and Cranes"

5.2.3 SOP 20-C-912, "Checking Scale Operation"

5.2.4 SOP 1-C-101, "Sampling Residue and Waste Materials"

5.2.5 SOP 20-C-600, "Overpacking Deteriorated Containers"

5.2.6 SOP 1-C-602, "Low Level Radioactive Waste (LLRW) Shipment Preparation"

5.2.7 SOP 20-C-615, "Controlled Holding Area"

5.2.8 SOP 20-C-905," Ventilation Flow Indicators"

5.2.9 SSOP-0024, "Packaging Low Level Radioactive Waste (LLRW) for Offsite Disposal"

5.2.10 RM-0005, "FEMP Lot Marking and Color Coding System"

6.0 INDUSTRIAL HEALTH AND SAFETY REQUIREMENTS

6.1 A defined safety system is not involved.

6.2 Safety glasses with side shields shall be worn unless other eye protection is specified by the supervisor, ES&H, or posted signs.

R 6.3 A two-way communications device and emergency response equipment shall be
R available to personnel performing this procedure.

6.4 Respiratory protection issued by the supervisor shall be worn when required.

6.5 Leather-palm gloves shall be worn over plastic gloves with cotton inserts while handling drums/containers, operating equipment, and when handling rough, sharp-edge, or contaminated material.

6.6 HEPA type filer vacuum cleaners or an ES&H approved vacuum system with a current DOP test label properly affixed to vacuum shall be used for cleaning.

6.7 Face shields with chemical cover goggles shall be worn when removing lids or bungs on containers filled with liquids or during operations where a liquid splash could occur.

6.8 Radiological Safety shall be provided with a detailed work scope before opening any container so that radiological safety requirements can be specified in an RWP.

6.9 A rubber apron shall be worn if there is a possibility of being splashed with a chemical that could cause injury to the skin.

6.0 INDUSTRIAL HEALTH AND SAFETY REQUIREMENTS (cont.)

6.10 Operators shall have reviewed and be familiar with the MSDSs for hazardous materials/equipment that may be used or encountered.

6.11 In case of contact with a chemical, contaminated clothing shall be removed immediately and the affected body area flushed a minimum of 15 minutes with water in an eye bubbler/safety shower. Injured personnel shall report to Medical.

6.12 Any circumstance which could have resulted in an intake of radioactive materials by inhalation, ingestion, or absorption shall immediately be reported to a Supervisor. The Supervisor shall immediately report the circumstance of possible radioactive materials intake to ES&H Radiological Control Department for evaluation. When the suspect isotope is uranium, the involved personnel shall report to the Urine Sampling Station at the end of their shift to complete an Incident Investigation Report (IIR) (Form No. FMPC-ES&H-1458), and submit an incident urine sample. The involved personnel shall also report to the Urine Sampling Station at the start of their next shift to submit a follow up urine sample. When the suspect isotope is other than uranium, the involved personnel shall report to the Dosimetry Section of the Radiological Control Department for further determination of actions. Employees are responsible for complying with additional requirements as specified by the Radiological Control Section.

6.13 Any situation which could have resulted in the inhalation, ingestion, or absorption of a hazardous material shall immediately be reported to a Supervisor or to the Assistant Emergency Duty Officer (AEDO), who will immediately report the circumstances to Medical and Industrial Hygiene. The involved personnel shall be directed by the Supervisor or AEDO as to when and where to report for medical evaluation, completion of an Incident Investigation Report (IIR) (Form No. FMPC-ES&H-1458), and submitting bioassay samples (e.g. blood, urine). Employees are responsible for complying with any additional requirements as specified by ES&H.

7.0 GENERAL

7.1 Warnings, Cautions, and Notes precede the Step or Item to which they apply.

8.0 PROCEDURE

8.1 Inspecting and Evaluating Drummed Residues at the Plant 1 Sample Line

8.1.1 Initiate a Material Evaluation Form (MEF) per SSOP-0002.

NOTE: The supervisor shall obtain a Radiation Work Permit to establish radiological controls.

8.1.2 Notify the supervisor that drums are ready for inspection.

8.1.3 Check drum for deterioration.

8.0 PROCEDURE (cont.)

8.1.3.1 If drum is deteriorated, place drum in an overpack per SOP 20-C-600.

8.1.3.2 If overpacking is not feasible, position a GRIFLON bag, or equivalent, over the drum.

8.1.3.3 Fasten the bag.

8.1.3.4 Move deteriorated drums to a staging area near Plant 1 sample line.

8.1.4 Using the scale specified by the supervisor, perform a scale check per SOP 20-C-912.

NOTE: The supervisor shall specify an ES&H approved barrel grab/lifting device to be used.

8.1.5 Inspect the barrel grab for damage.

CAUTION

Do not use a damaged barrel grab.

8.1.5.1 If the barrel grab is damaged, notify supervisor.

8.1.6 Inspect forklift (used with barrel grab) per SOP 20-C-902.

8.1.7 Using barrel grab attached to forklift, move the drum onto the scale.

8.1.8 Obtain the gross weight of the drum.

WARNING

Maximum weight of drums shall be 700 pounds for a 30 gallon overpack; 1,200 pounds for 55 gallon overpacks, 55 gallon singlepack, and 85 gallon overpacks. Maximum weight of 85 gallon singlepacks shall be 1,000 pounds.

8.1.8.1 If drum weight exceeds maximum weight, remove material until weight requirement is met.

8.1.8.2 Place the removed material in a designated/labeled container.

8.1.9 Using the barrel grab, move drum from scale to ventilated sampling station.

8.1.10 Check the Ventilation Flow Indicator (VFI) per SOP 20-C-905 to ensure the sampling station ventilation system is in operation.

8.0 PROCEDURE (cont.)

> **WARNING**
>
> **Sampling station shall not be operated if the VFI readin- .ess than the posted pressure.**

8.1.10.1 If the VFI indicates low pressure, notify the supervisor.

> **WARNING**
>
> **Bung(s) and lid(s) shall be removed slowly to release possible pressure.**

8.1.11 Slowly remove lock ring and lid from the drum.

8.1.12 Obtain sample of material per SOP 1-C-101 for a RCRA/Non-RCRA determination and analysis to determine major radionuclides and other suspected nuclides.

8.1.13 Visually inspect drum per the "Package Physical Certification" section of the "Item Production/Certification/Identification" (65 card), Form FMPC-CONT-1945-XX (See Figure 1).

8.1.14 Indicate inspection condition on card.

8.1.15 If liquid is observed, proceed as follows:

8.1.15.1 If 1/2 inch or more of free standing liquid is present on the top of the material, move the drum to the designated holding area for additional processing.

NOTE 1: The amount of absorbent material added shall be a minimum quantity of twice the calculated volume of liquid.

NOTE 2: If the material is suspected of being hazardous, absorbent shall not be added until material has been characterized.

8.1.15.2 If less than 1/2 inch of free standing liquid is present on the top of the material, add uncalcined diatomaceous earth to absorb the liquid.

8.1.16 If material is dry, loose, and respirable, request analysis for particulate size.

8.1.16.1 Notify the supervisor.

8.1.17 When the visual inspection and sampling operation are completed, install lock ring and lid on drum.

8.1.18 Place the drum in the designated holding area as directed by supervision until the RCRA determination and analysis results are received.

8.0 PROCEDURE (cont.)

8.1.18.1 If the analysis results identify material as RCRA, complete the required forms.

8.1.18.2 Package the material per SOP 20-C-615.

8.1.19 If the material is non-RCRA, complete the 65 card per analysis results.

8.1.20 Forward a copy of the analysis result to F & WO.

8.1.21 Install a seal on the level ring.

8.1.21.1 Record the seal number on the 65 card.

8.1.22 Place drum in the applicable overpack per SOP 20-C-600.

8.2 Inspecting and Evaluating Containerized LLRW at Storage Areas

8.2.1 Check that a "Radiation Work Permit" is posted.

8.2.1.1 If not, notify the supervisor.

8.2.2 Place container in designated inspection area.

NOTE: The supervisor shall contact ES&H and request an inspection for organic vapor to ensure respiratory protection is adequate.

8.2.3 If the container lid is to be removed outside of ventilated enclosed area, notify the supervisor.

8.2.4 Remove the lid from the container.

8.2.5 Obtain a sample of material per SOP 1-C-101.

8.2.6 Send the sample to the laboratory for RCRA determination (TCLP) and analysis to detect major radionuclides.

8.2.7 Visually inspect container per the "Package Physical Certification" section of the "Item Production/Certification/Identification" card, form FMPC-CONT-1945-XX.

8.2.8 Indicate inspection condition on card.

8.2.9 If water is present, proceed as follows:

8.2.9.1 If 1/2 inch or more of free standing liquid is present on the top of the material, move the drum to the designated holding area for additional processing.

8.0 PROCEDURE (cont.)

NOTE 1: If material is suspected of being hazardous, absorbent shall not be added until material has been characterized.

NOTE 2: The amount of absorbent material added shall be a minimum quarterly of twice the calculated volume of liquid.

8.2.9.2 If less than 1/2 inch of free standing liquid is present on the top of the material, add uncalcined diatomaceous earth to absorb the liquid.

8.2.10 If material is dry, loose, and respirable, proceed as follows:

8.2.10.1 Request analysis for particulate size.

8.2.10.2 Notify supervisor.

8.2.10.3 If an excessive void space is present, add additional material per SSOP-0024.

8.2.11 When inspection and sampling are complete, lid the container per SOP 1-C-602.

8.2.12 Place container in designated holding area as directed by supervision until analysis results are received.

8.2.12.1 If the analysis results identify material as RCRA, complete the required forms.

8.2.12.2 Package the material per SOP 20-C-615.

8.2.13 If RCRA determination is negative, complete the "Item Production/Certification/Identification: card, Form FMPC-CONT-1945-XX (See Figure 1) per analysis results.

8.2.14 Send a copy the analysis to F & WO.

8.2.15 Move container to a designated holding area for shipment preparation.

9.0 APPLICABLE FORMS

9.1 FMPC-CONT-1945-XX, "Item Production/Certification/Identification"

4552-

CARD XX ITEM PRODUCTION/CERTIFICATION/IDENTIFICATION

P. O. NO.	SOURCE	CLASS	MATERIAL TYPE	LOT SEQUENCE NO.	DATE MO	DAY	YEAR	SHIFT	BADGE NO.	PACKAGE NO.

SEAL NUMBER	SEAL DATE MONTH	DAY	YEAR

WASTE DESCRIPTION AND COMMENTS

PACKAGE TYPE	
PACKAGE SIZE	

PACKAGE PHYSICAL CERTIFICATION	YES	NO
EMPTY CONTAINER AT START		
RUST HOLES OR DENTS		
MATERIAL IS AS CODED		
PROHIBITED MATERIALS		
LIQUIDS IN CONTAINER		
MINIMUM OF VOID SPACE		
PACKAGE SECURED		
DRAIN PLUG SECURED		

PLANT	PROD. MBA
PLANT TO	MBA TO

GROSS WEIGHT
TARE WEIGHT
NET WEIGHT

GENERATOR SIGNATURE

SUPERVISOR SIGNATURE DATE

FMPC-CONT-1945-XX (REV 12/88)

ITEM PRODUCTION/CERTIFICATION/IDENTIFICATION
FMPC-CONT-1945-XX
Figure 1

RECORD OF ISSUE/REVISIONS

DATE	REV. NO.	DESCRIPTION AND AUTHORITY
09-07-89	0	Procedure required to replace CIO C88-175 per Request No. P89-097.
12-05-91	0	Reissued to include sampling requirements for RCRA determination and change applicability to low-level radioactive waste per Request No. P89-461, initiated by K. Dunbar.
12-08-92	1	Revised to incorporate CIO C92-108 (P92-285) and update to current procedure program requirements.
02-05-93	2	Revised to incorporate C92-109 per Request P92-235.

CIO NO. C93-017

Effective Date: 02-08-93

Expiration Date: 08-09-93

CHANGE IN OPERATION
REMEDIATION SUPPORT OPERATIONS DOCUMENT PROGRAM

(As identified in Figure 1) DOCUMENT NO.:	AFFECTED DOCUMENT PAGE NO.: 1	ISSUE DATE: (As listed in Figure 1)

TITLE: As identified in Figure 1.

AUTHORIZATION: Per LTR No. M:RSO:93-096, Dated 01-12-93, Nelson K. Weichold to James A. Long

CHANGE:

1) The identified document (See Figure 1) in the Site Services Document Program is now identified as a Fernald Environmental Restoration Management Corporation (FERMCO) Remediation Support Operation (RSO) Division document, for use in the RSO Division by the applicable RSO Department.

NOTE: The document identified in Figure 1 may not reflect the current FERMCO organizational structure.

NON-CONTROLLED COPY

Document No.	Title	Issue Date	Revision No.	Revision Date
01-107	OPERATION OF GENIE LIFT MODEL PL36PDC	09/09/87		
01-108	OPERATION OF AMTRES MODEL B2-40 ROTO-ZOOM AERIAL LIFT	12/22/87		
01-BE-410-02	DRUM PAINTING AND DRYING	04/18/89		
01-C-101	SAMPLING RESIDUE AND WASTE MATERIALS	06/16/89	2	03/11/91
01-C-301	DRUM CLEANING AND DECONTAMINATION	02/20/90	0	
01-C-302	DRUM PAINTING AND DRYING	01/15/90		
01-C-304	REROLLING 30 GALLON DRUMS AND EXPANDING 55 GALLON DRUMS	01/11/89		
01-C-305	BALING SCRAP METAL DRUMS	03/22/90	0	
01-C-306	CRUSHING SCRAP DRUMS	09/26/89	0	
01-C-602	LOW LEVEL RADIOACTIVE WASTE (L-LRW) SHIPMENT PREPARATION	11/12/91	2	07/30/92
01-C-604	INSPECTION AND EVALUATION OF CONTAINERIZED LOW LEVEL RADIOACTIVE WASTE (LLRW)	12/05/91	0	12/08/92
01-C-606	HAZARDOUS WASTE SHIPMENT PREPARATION	06/14/89		
01-C-608	STORAGE OF RADIOACTIVE MATERIAL	08/13/90	0	12/09/92
01-C-609	PLANT 1 STORAGE INSPECTION	06/12/90	0	
01-C-701	PLANT 1 DUST COLLECTORS	05/24/89		
01-C-803	PREPARATION OF ENRICHED URANIUM(<20% U235) FOR OFFSITE SHIPMENT	07/20/88		
01-C-902	DISPOSAL OF PLANT 1 EFFLUENT	09/14/90	0	
01-C-905	PRODUCTION NUCLEAR MATERIALS(NM) RECEIVING, STORING, AND HANDLING	09/01/88		
01-C-911	PLANT 1 EMERGENCIES	07/05/91	0	
01-C-915	CLEANING OF CONTAMINATED METAL AND EQUIPMENT	12/28/87	2	05/05/92

DOCUMENT IDENTIFICATION
Figure 1

CIO NO. C93-479 4552

Effective Date: 04-01-93

Expiration Date: 10-01-93

CHANGE IN OPERATION
REMEDIATION SUPPORT OPERATIONS DOCUMENT PROGRAM

DOCUMENT NO.: 20-C-805	AFFECTED DOCUMENT PAGE NO.: 4	AREA AFFECTED: Drum Sampling
DIVISION: RSO	DEPARTMENT: MO	SECTION: F&WO

TITLE: Sampling Drummed Waste for Hazard Identification

AUTHORIZATION: (Signature on File)
R.L. Gardner, Facilities & Waste Operations Manager

CHANGE:

1) A new Step 6.13A is added as follows:

6.13A Personnel sampling miscellaneous material (MTC 137) or a material whose appearance does not match the material type shall wear an airline respirator.

FILING INSTRUCTIONS: File facing page 4 of SOP 20-C-805 (Issue Date: 04-10-92, Rev. No. 0)

DOCUMENT PTR: J. Hey

CIO NO. C92-162 4552-

Effective Date: 11-10-92

Expiration Date: 05-10-93

CHANGE IN OPERATION

SITE SERVICES DEPARTMENT

DOCUMENT NO.: SOP 20-C-805	AFFECTED DOCUMENT PAGE NO.: 12	DEPARTMENT: Site Services

TITLE: Sampling Drummed Waste For Hazard Identification

AUTHORIZATION: (Signature on File)
R. L. Gardner, Facilities & Warehousing Manager

CHANGE:

1) Step 7.3.12 is revised as follows:

7.3.12 Complete a "Site-Wide Analysis Request/Custody Record," Form FS-F-3361 (See Figure 3).

FILING INSTRUCTIONS: File facing page 12 of SOP
(Issue Date: 04-10-92, Rev. 0)

DOCUMENT PTR:
J. HEY

CIO NO. C92-161

Effective Date: 10-15-92

Expiration Date: 04-15-93

- 4552 -

CHANGE IN OPERATION

SITE SERVICES DEPARTMENT

DOCUMENT NO.: 20-C-805	AFFECTED DOCUMENT PAGE NO.: 17	DEPARTMENT: Site Services

TITLE: Sampling Drummed Waste For Hazard Identification

AUTHORIZATION: (Signature on File)
R.L. Gardner, Manager Facilities & Warehousing

CHANGE:

1) Item 8.3 is revised as follows:

8.3 FS-F-3361, "Site-Wide Analysis Request/Custody Record"

FILING INSTRUCTIONS: File facing page 17 of SOP 20-C-805 (Issue Date: 04-10-92, Rev. No. 0)	DOCUMENT PTR: J. Hey

CIO NO. C92-160

Effective Date: 02-25-93

Expiration Date: 08-25-93

- 4552-

CHANGE IN OPERATION

REMEDIATION SUPPORT OPERATIONS DOCUMENT PROGRAM

DOCUMENT NO.: 20-C-805	AFFECTED DOCUMENT PAGE NO.: 20	AREA AFFECTED: As Applicable
DIVISION: RSO	DEPARTMENT: RSO/OP	SECTION: FW

TITLE: Sampling Drummed Waste for Hazard Identification•

AUTHORIZATION: (Signature On File) R. L. Gardner, Facilities and Waste Operations Manager

CHANGE:

1) Figure 3 is revised as follows:

FILING INSTRUCTIONS: File facing page 20 of SOP 20-C-805 (Issue Date: 04-10-92, Rev. No. 0)	DOCUMENT PTR: J. Hey 0170

FERNALD SITE
SITE SERVICES - ANALYTICAL
SITE-WIDE ANALYSIS REQUEST/CUSTODY RECORD

Form Number: ____ - ____ - ____
Page ____ of ____

PROJECT:
☐ PLAN NO.: OR ☐ PROJECT NO.:
PROJECT MANAGER/ENGINEER:

FOR SAMPLE RELATED PROBLEMS, CONTACT:
ORGANIZATION:
NAME: PHONE:

SAMPLER: PHONE:
CHARGE NUMBER: LOT MARKING CODE:
SAMPLER SIGNATURE(S):
SEND RESULTS TO:

SAMPLER REMARKS:

CHECK FOR: ☐ S R LAB ☐ SIO LAB ☐ WTP LAB

SAMPLE SOURCE, DESCRIPTION/IDENTIFICATION, ANALYSIS REGIMEN

ITEM NO.	SAMPLE NUMBER	CUSTOMER NUMBER	SAMPLE POINT	MATRIX CODE	COLLECTED DATE	COLLECTED TIME	CONTAINER/ VOLUME	COMPOSITE	GRAB	NO. OF CONTAINERS	ANALYTES CODE - (UNITS CODE)	REMARKS
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												

ITEM/REASON	RELINQUISHED BY	RECEIVED BY	DATE	TIME	ITEM/REASON	RELINQUISHED BY	RECEIVED BY	DATE	TIME

NO.	DISTRIBUTION OF COPIES
	LABORATORY
2	REQUESTER
3	SAMPLER

FS-F-3361 (REV. 12/17/91)

0171

SITE-WIDE ANALYSIS REQUEST/CUSTODY RECORD
FS-F-3361
Figure 3

4552-

CIO NO. C93-129

Effective Date: 02-08-93

Expiration Date: 08-09-93

CHANGE IN OPERATION
REMEDIATION SUPPORT OPERATIONS DOCUMENT PROGRAM

(As identified in Figure 1) DOCUMENT NO.:	AFFECTED DOCUMENT PAGE NO.: 1	ISSUE DATE: (As listed in Figure 1)

TITLE: As identified in Figure 1.

AUTHORIZATION: Per LTR No. M:RSO:93-096, Dated 01-12-93, Nelson K. Weichold to James A. Long

CHANGE:

1) The identified document (See Figure 1) in the Site Services Document Program is now identified as a Fernald Environmental Restoration Management Corporation (FERMCO) Remediation Support Operation (RSO) Division document, for use in the RSO Division by the applicable RSO Department.

   NOTE: The document identified in Figure 1 may not reflect the current FERMCO organizational structure.

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Document No.	Title	Issue Date	Revision No.	Revision Date
11-C-001	PILOT PLANT HOIST AND CRANES	08/16/89	0	
1250	CLP/ACID DIGESTION OF SOIL AND SEDIMENT SAMPLES FOR METALS ANALYSES	10/28/91	0	
1251	CLP/ACID DIGESTION OF WATER SAMPLES FOR METAL ANALYSIS	10/28/91	0	
20-C-001	CHANGES TO FORM ENTRIES	08/17/90	0	
20-C-003	ULTRASONIC TESTING OF DEPLETED URANIUM MARK 31 INNER AND OUTER CORES	10/06/92	0	
20-C-004	PACKAGING OF DEPLETED URANIUM FOUR INCH THICK FLAT BILLETS	10/27/92	0	
20-C-005	PACKAGING DEPLETED URANIUM DERBIES FOR OFF-SITE SHIPMENT	10/01/92	0	
20-C-006	INSPECTION AND DISPOSITION OF DEPLETED AND NORMAL URANIUM DERBIES FOR OFF-SITE SHIPMENT	09/14/92	0	
20-C-007	PACKAGING DEPLETED URANIUM TWO-INCH THICK FLAT BILLETS	09/14/92	0	
20-C-008	PACKAGING OF DEPLETED URANIUM MARK 31 INGOTS AND CORES	09/14/92	0	
20-C-010	ESTABLISHMENT OF AN ENGINEERING CONTROL AREA (ECA) FOR DISPOSITION OF SAMPLE RESIDUES	11/06/92	0	
20-C-101	MOVING AND STORING NUCLEAR MATERIALS* ONSITE AT THE FMPC	09/19/75		10/15/82
20-C-102	NUCLEAR SAFETY FOR RECEIVING, STORING, REPACKAGING AND MOVING ENRICHED URANIUM MATERIALS <20% 235U FROM OFFSITE	01/30/76	1	07/23/85
20-C-104	OPERATION OF ALLEGANY TECHNOLOY ELECTRONIC PORTABLE HANGING SCALE MODEL CH30K	11/22/89	0	
20-C-201	UNSCHEDULED OR EMERGENCY NUCLEAR MATERIAL INVENTORY	08/20/90	0	
20-C-500	INSPECTING RCRA WASTE LOAD/UNLOAD AND STAGING AREAS	04/14/92	0	
20-C-501	BOILER PLANT ASH LOADING AND TRANSPORTING FOR OFF-SITE DISPOSAL	10/01/92	0	
20-C-505	PLANT 2/3 AND PLANT 8 PERCHED GROUNDWATER EXTRACTION SYSTEM	02/05/92	0	
20-C-600	OVERPACKING DEFECTIVE CONTAINERS	03/06/91	1	

CONTROL NO. 4552

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REQUIREMENTS MANUAL

RM-0005
Issue Date: 05-05-93
Revision No. 3

FEMP

LOT MARKING

AND

COLOR CODING SYSTEM

AUTHORIZED BY: _____ 7/8/93
N. C. Kaufman, President — Date

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

Fernald Environmental Restoration Management Corporation
P. O. BOX 398704
CINCINNATI, OHIO 45239-8704

RECORD OF ISSUE/REVISIONS

DATE	REV. NO	DESCRIPTION AND AUTHORITY
08-23-91	0	Original issue of RM-0005 supersedes Internal Special FMPC-2178, Dated 7/1/89.
12-27-91	1	Incorporation of T91-004, T91-005, T91-006, and T91-031 per Request No. S92-034, S92-035, S92-036, and S92-037, initiated by D. Dunaway.
06-05-92	2	Minor revision to RM-0005 updating source or origin codes in Chapter 4, per Request No. S92-076, initiated by D. Dunaway.
05-05-93	3	Minor revision adding additional information to sections 1, 3, and 4 per Request No. S93-050, initiated by D. Dunaway. This document supersedes RM-0005, dated 06/05/92, Rev. 2.

LIST OF EFFECTIVE PAGES

CHAPTER	PAGE	REV. NO	ISSUE DATE
	i through iii	3	05-05-93
	v	2	06-05-92
1	1.1	1	05-05-93
1	1.2 through 1.5	0	08-23-91
1	1.6	1	12-27-91
1	1.7 through 1.21	0	08-23-91
2	2.1 through 2.3	0	08-23-91
3	3.1 through 3.5	0	08-23-91
3	3.6	2	05-05-93
3	3.7 through 3.20	0	08-23-91
4	4.1	0	08-23-91
4	4.2	3	05-05-93
4	4.3 through 4.7	0	08-23-91
4	4.8	2	06-05-92
4	4.9 through 4.14	0	08-23-91
4	4.15	3	05-05-93
4	4.16 through 4.17	2	06-05-92
4	4.18	0	08-23-91
4	4.19	2	06-05-92
4	4.20 through 4.22	1	12-27-91

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1	Lot Marking System	1.1
2	Color Coding System	2.1
3	Material Description Codes	3.1
4	Source or Origin Codes	4.1

INTRODUCTION

R The Fernald Environmental Management Project (FEMP) Lot Marking and Color Coding
R System has been in use at the FEMP to provide a means for the control and accountability of nuclear materials. Although the FEMP is no longer a production facility, there is still a large amount of nuclear material stored at the FEMP that requires the same degree of control and accountability. The same system used for the identification of nuclear materials is now being applied to hazardous waste, i.e., Resource Conservation and Recovery Act (RCRA) and Toxic
R Substance Control Act (TSCA) waste and low-level radioactive waste in Westinghouse Environmental Management Company of Ohio (WEMCO) remediation activities. Control and accountability is required to satisfy Department of Energy (DOE) and Environmental Protection Agency (EPA) concerns. WEMCO is in
R the process of identifying all packaged materials on-site according to the Lot
R Marking and Color Coding System. This procedure is intended to provide the
R information necessary to identify any container of waste material.

* * * * * *

CHAPTER 1 Lot Marking System

The FEMP lot mark will consist of five basic elements as follows:

	Element	Thorium	Enriched, Depleted, and Normal Uranium
1.0	Production Order Number	None	4 digits
2.0	Origin or Source Code	3 digits	3 digits
3.0	Class or Enrichment Code combined with	1 digit	1 digit
4.0	Material Description Code	3 digits	3 digits
5.0	Lot or Sequence Number	4 digits	4 digits
	Total Digits	11 digits	15 digits

Elements 1.0, 2.0, 3.0, and 5.0 are alpha-numeric (contain numbers or letters or both).

Element 4.0 is numbers only.

Elements 3.0 and 4.0 will be combined into a four-character material type code.

Elements 2.0, 3.0 and 5.0 will be separated from their predecessors by hyphens or dashes.

A detailed description of the composition of each element follows:

1.0 Production Order Number (P.O.)

This designation was assigned by the Production Scheduling Section to identify certain key production activities. It usually consisted of one letter followed by three digits, e.g., A500. In the lot marking system, it is always used in identification of enriched, depleted and normal materials. Waste packaged specifically for shipment to NTS may be marked with the PO Number N003 for uranium and N004 for thorium.

CHAPTER 1 Lot Marking System (cont.)

When enriched uranium materials of irregular percent U^{235} content, for which no Production Order is applicable, are received or generated, special designations are assigned as outlined in the following paragraphs:

1.1 "S", followed by three digits indicating the shipper's percent U^{235} to two decimal places, is used to identify receipts of unusual U^{235} levels.

1.2 "S", followed by three digits, indicates the on-site producing plant's best estimate of the highest isotopic processed over a particular campaign. It is used to identify residue materials generated from the processing of materials of irregular U^{235} levels in FEMP operations. Materials containing up to 9.99 percent U^{235} will be coded as S plus the 3 digit isotopic value. Materials containing 10.00 to 19.99 percent U^{235} will be coded with only the isotopic value (4 digits).

1.3 "W", followed by three digits, indicates the on-site generating plant's best estimate of the highest isotopic associated with nonrecoverable contaminated waste material.

1.4 "X", followed by three digits, as indicated in the summary below, designating a range of percent U^{235}, will be used to identify certain residues produced from the mixing of materials of regular production but differing U^{235} levels (all numbers are inclusive):

1.4.1 X948 for 0.148 to 0.193 & 0.207 to 0.709

1.4.2 X110, X111, X118 & X119 for 0.710 to 0.712

1.4.3 X008 for 0.713 to 0.756

1.4.4 X884 for 0.757 to 0.853

1.4.5 X500 for 0.867 to 0.940

1.4.6 X888 for 0.954 to 1.243

1.4.7 X767 for 1.257 to 1.593

1.4.8 X911 for 1.607 to 2.093

1.5 "P", followed by three digits, indicates the on-site producing plant's estimate of the highest isotopic associated with uranium products or residues containing trace quantities of plutonium requiring special handling.

1.6 "R", followed by three digits, indicate the on-site producing plant's estimate of the highest isotopic associated with uranium products or residues containing RCRA mixed hazardous materials requiring special handling.

2.0 Origin or Source Code

This is a three-digit code with a block of 100 numbers assigned to each plant, as indicated in the following table. The plants are divided into sub-areas with subordinate blocks of numbers assigned to each.

FEMP Origin or Source Code

000-099	Reserved for future needs	500-599	Plant 5
		600-699	Plant 6
100-199	Plant 1	700-799	Miscellaneous facilities
200-299	Plants 2 & 3		
300-399	Pilot Plant	800-899	Plant 8
400-499	Plant 4	900-999	Plant 9

CHAPTER 1 Lot Marking System (cont.)

2.1 For example, Plant 5 is assigned 500-599 and the Reduction Area in Plant 5 is assigned 510 to 529. Within the area, each operation or piece of equipment which may generate a material for coding is assigned a source number. In the Plant 5 Metal Reduction Area, the Rockwell furnaces are assigned 516 and the breakout area dust collectors 520. The intention is to provide a flexible system which can be used to identify a particular item of equipment as a source, if this is desirable, or to allow coding by general area or by plant if this is all that is required.

2.2 A complete list describing all FEMP Source or Origin codes currently assigned will be found in Chapter 4.

2.3 Off-site origin codes used in processing receipts from other nuclear facilities are alphabetically designated using the three-letter Reporting Identification Symbol (RIS) of the shipper. See discussion on special handling of external receipts on page 1.11.

3.0 Class or Enrichment Code

This code consists of one digit or letter designating the general class or enrichment into which the material falls. Those categories currently most important in our operations have been assigned a number or letter as indicated.

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CHAPTER 1 Lot Marking System (cont.)

Class or Enrichment Codes - Alphabetic

Code	Category	Detail	%U^{235}	Additive or Alloy Level
A	Normal	Alloy		Alloy
B	Enriched	Alloy	Various	Alloy
C	Enriched		2.10	Other*
D	Depleted			Standard
E				
F				
G	Normal			Alloy 601
H	Enriched		0.947	Alloy 601
J				
K				
L	Enriched		0.947	Other*
M	Enriched		1.25	Alloy 601
N	Normal	Waste	0.710 to 0.712	None
P	Depleted	Waste	<0.710	None
Q				
R				
T	Thorium			None
U				
V	Enriched	Waste	>0.712	None
W				
X	Enriched		Other*	Other*
Y				
Z				

NOTE: Letters I, O, and S will not be used.

* Not specified. Refer to P.O. for U^{235} or additive level.

CHAPTER 1 Lot Marking System (cont.)

R

Class or Enrichment Codes - Numeric

Code	Category	Detail	$\%U^{235}$	Additive or Alloy Level
1	Normal		0.710 to 0.712	Std
2	Enriched	Recycle Tails	Various	None
3	Enriched		1.10	Std
4	Enriched		1.25	Std
5	Enriched		0.947	Std
6				
7	Enriched	Sweetener	Various	None
8	Enriched		0.86	Std
9	Enriched		2.10	Alloy 601
0	Enriched		Other*	Std

* Not specified. Refer to P.O. for U^{235} or additive level.

The use of this code in combination with the Material Description Code makes it possible to assign the same material description code to similar materials regardless of their class, enrichment or special nature.

For ready reference, a table of class codes arranged by material categories, $\%U^{235}$ and additive or alloy levels is also included below.

0184

CHAPTER 1 Lot Marking System (cont.)

Class Codes by Material Categories

Category	Detail	%U^{235}	Additive or Alloy Level				
			None	Std	601[2]	Other[2,3]	Alloy[4]
Depleted				D			
Depleted	Waste	<0.710	P				
Normal	Waste	0.710 to 0.712	N				
Enriched	Waste	>0.712	V				
Enriched		0.86		8			
Enriched		0.947		5	H	L	
Enriched		1.10		3			
Enriched		1.250		4	M		
Enriched		2.10			9	C	
Enriched	Alloy	Other[1]		0		X	B
Enriched	Recycle Tails	Various	2				
Enriched	Sweetener	Various	7				
Thorium			T				

[1] Not specified. Refer to P.O. for U^{235} or additive level.

[2] Properly applied to only material which has actually achieved this additive level; not appropriate for UO_2, UF_4, or derbies.

[3] Any additive level other than "Standard" or Alloy 601; refer to P.O. or I.P.O. (Interplant Production Order) for details.

[4] Materials, ordinarily from off-site, containing a concentration of alloying materials usually far above additive (ppm) levels.

CHAPTER 1 Lot Marking System (cont.)

4.0 Material Description Code

This is a three digit code, subdivided into residue and product categories as follows:

Low Grade Residues	000-099
High Grade Residues	100-149
Refinery Feeds	150-199
Intermediate Products	200-299
Remelt Feeds	300-399
Casting Products	400-449
Rolling and Extrusion Products	450-499
Machining Products	500-599

The intent in setting up the material descriptions was to make them general whenever possible, with the Class and Source Codes aiding in the specific identification of the material.

A complete list of all Material Description Codes currently assigned will be found in Chapter 3.

The one-digit or letter Class or Enrichment Code and the three-digit Material Description Code are combined into a four-character Material Type Code which is the basic unit of the FEMP Lot Marking system.

4.1 The low grade residue category (000-099) is intended to include all low uranium or thorium content residues and some higher grade uranium or thorium content residues which require extensive handling and processing before use as oxidation or refinery feed. In general, the low grade residues have been arranged in order of increasing quality. In other words, the lowest uranium or thorium content and lowest quality materials are designated by lower numbers and the high quality materials by higher numbers.

4.2 High grade residues (100-149) are, in general, high uranium or thorium content residues which require some processing such as screening or oxidation. They correspond in many cases to the feed for Plant 8.

4.3 Refinery feeds (150-199) are materials which were suitable for introduction into the refinery without further processing.

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CHAPTER 1 Lot Marking System (cont.)

4.4 The intermediate product category (200-299) includes products from the various processes involved in converting refinery feed to metal. It also includes recycle metal which requires some pretreatment such as sawing or pickling before remelting.

4.5 Remelt feeds (300-399) are materials ready for remelt without further treatment.

4.6 Casting products (400-449), rolling and extrusion products (450-499), and machining products (500-510) are the products from these operations.

5.0 Lot or Sequence Number

This is a four-digit number which is used to identify consecutive lots of specific material in sequence where more than one lot is produced per month. Where not more than one lot is produced per month, the lot sequence number indicates the consecutive month of production starting with January 1962 as lot 0001. October 1991 is lot 0358.

To identify the category of trash, the lot or sequence number should include the product month number (May 1989 = 329), preceded by a numeric code that represents the category of 003 material. These categories are:

1 - Glass
2 - Rubber Hose
3 - Plastic
4 - Metal
5 - Concrete, Ceramics, Soil
6 - Contaminated Burnables
7 - Oily Rags, Air Filters and Gaskets
8 - Floor Sweepings
9 - Other - Stencil type of trash on containers

CHAPTER 1 Lot Marking System (cont.)

6.0 Additional Information

6.1 Examples of Lot Marking

The preceding sections of this discussion have been generalized to explain the intent of the system. The following examples are offered to illustrate the application of the general system structure in developing lot markings to identify specific material produced at the FEMP. Marking of material received from off-site is discussed in subsequent paragraphs.

Example 1 (Normal) H110 - 263 - 1200 - 0418

H110	Applicable to P.O. H110
263	Produced in Plant 2/3 (Refinery), Denitration System North Side Packaging
1	"Normal" Uranium
200	UO_3, Product
0418	Lot Sequence Number

Example 2 (Enriched) A500 - 965 - 5069 - 0541

A500	Applicable to P.O. A500
965	Produced in Plant 9, Sump Liquor Processing Area
5	0.947% U^{235} Enriched Uranium
069	Wet Sump Cake, Non-Oily, Non-Halide
0541	Lot Sequence Number

Example 3 (Thorium) 380 - T069 - 0126

380	Produced in Pilot Plant Sump Area
T	Thorium
069	Wet Sump Cake, Non-Oily, Non-Halide
0126	Lot Sequence (Indicates June 1972)

Example 4 (Depleted) A948 - 951 - D110 - 0329

A948	Applicable to P.O. A948
951	Produced in Plant 9, LeBlond Rapid Borer
D	Depleted Uranium
110	Non-briquettable Chips and Turnings for Oxidation
0329	Lot Sequence (Indicates May 1989)

0188

CHAPTER 1 Lot Marking System (cont.)

Example 5 (Depleted) W020 - 501 - P003 - 6329

W020	Applicable to Waste (0.20% U^{235})
501	Plant 5 Maintenance
P003	Depleted Non-recoverable Trash - for storage or shipment for off-site burial
6	Contaminated Burnables
329	May 1989

6.2 Lot Marking of External Receipts

Lot marking of material received from off-site by WEMCO will conform in general to the format described in previous sections. There are, however, certain exceptions which should be noted:

6.2.1. The Source Code will be the three-letter Reporting Identification Symbol (RIS) as illustrated in the table below.

6.2.2. The Lot Sequence Number will be the DOE Form 741 number assigned by the shipper in all cases except:

FTA Extrusions - Use 0000

Example 6 (Depleted Receipt) H082 - FTA - D455 - 0000

H082	Applicable to P.O. H082
FTA	RMI Company, Inc. (Shipper)
D	Depleted Uranium
455	Mark 31 Extruded Tubes - Inner
0000	Indeterminate Lot Sequence Number

6.3 External Source or Origin Codes

The table below shows the external source or origin codes that have been used for lot marking material received from off-site.

CHAPTER 1 Lot Marking System (cont.)

SOURCE OR ORIGIN CODES FOR OFF-SITE RESIDUES AND SCRAP AT THE FEMP

SOURCE CODE	NAME OF SHIPPER	PLANT	ADDRESS
AIC	Atomics International	NA Aviation	Canoga park, California
AGT	General Electric Company	ANP Project	Cincinnati, Ohio
ALA	Sandia Corp.	Sandia Lab.	Albuquerque, New Mexico
ALD	Sandia Corp.	Sandia	Livermore, California
ALO	Dow Chemical	Rocky Flats	Golden, Colorado
ARF	Rockwell International	Rocky Flats	Golden, Colorado
ARM	IIT Research Inst.		Chicago, Illinois
ASA	Dow Chemical Company	Rocky Flats	Golden, Colorado
ATA	Mason & Hanger	Silas Mason	Burlington, Iowa
AUA	Los Alamos Nat. Lab.		Los Alamos, New Mexico
AVA	Monsanto	Mound	Miamisburg, Ohio
AVB	EG&G	Mound	Miamisburg, Ohio
AWA	Mason & Hanger	Pantex	Amarillo, Texas
AXA	General Electric Company	Neutron	St. Petersburg, Florida
AYA	Mason & Hanger		San Antonio, Texas
AZA	Mason & Hanger		Fort Campbell, Kentucky
BBA	Bridgeport Brass Company	Extrusion Plant	Ashtabula, Ohio
BMI	Battelle Memorial Inst.		Columbus, Ohio
BWD	Martin Marietta	Gaseous Diff.	Oak Ridge, Tennessee
BXA	Martin Marietta	Gaseous Diff.	Portsmouth, Ohio
BYC	Martin Marietta	Gaseous Diff.	Paducah, Kentucky
BZA	Brookhaven Laboratory		Upton, New York
CAA	USAEC	Chicago Office	Chicago, Illinois

CHAPTER 1 Lot Marking System (cont.)

SOURCE OR ORIGIN CODES FOR OFF-SITE RESIDUES AND SCRAP AT THE FEMP (cont.)

SOURCE CODE	NAME OF SHIPPER	PLANT	ADDRESS
CAE	Atomics International	NA Aviation	Canoga Park, California
CAF	Battelle Memorial Inst.		Columbus, Ohio
CAK	Ames Laboratory	Iowa State U.	Ames, Iowa
CBH	New Brunswick Laboratory	NBL	New Brunswick, New Jersey
CBJ	New Brunswick Laboratory		Argonne, Illinois
CCP	MIT		Cambridge, Mass.
CCS	Babcock and Wilcox Company	Research Cen.	Lynchburg, Virginia
CDY	Whittaker Corporation	Nuclear Metals	West Concord, Mass.
CGE	General Electric Company	ANP Project	Cincinnati, Ohio
CKY	Union Carbide	Gaseous Diff.	Paducah, Kentucky
CWA	Fermi Laboratory		Batavia, Illinois
CYT	Union Carbide	Y-12 Plant	Oak Ridge, Tennessee
CZA	Argonne National Laboratory		Argonne, Illinois
CZC	Argonne National Laboratory		Argonne, Illinois
DCC	Nuclear Fuel Services, Inc.	Davidson Chem.	Erwin, Tennessee
DYA	Sylcor Division	Sylvania EPI	Hicksville, L.I., New York
DZA	Westinghouse Savannah River Co.	Savannah River	Aiken, South Carolina
FAA	Oak Ridge Operations	USDOE	Oak Ridge, Tennessee
FAK	Middlesex Storage Plant	USAEC	New Brunswick, New Jersey
FAL	University of Virginia		Charlottesville, Virginia
FAQ	National Lead	Albany	Albany, New York
FAV	Kerr-McGee Nuclear Products		Cushing, Oklahoma
FAX	Nuclear Fuel Services, Inc.	Davidson Chem.	Erwin, Tennessee

CHAPTER 1 Lot Marking System (cont.)

SOURCE OR ORIGIN CODES FOR OFF-SITE RESIDUES AND SCRAP AT THE FEMP (cont.)

SOURCE CODE	NAME OF SHIPPER	PLANT	ADDRESS
FBA	General Electric Company	Energy Systems	Evendale, Ohio
FBB	General Electric Company	NMPO	Idaho Falls, Idaho
FBE	New Brunswick Laboratory	USAEC	New Brunswick, New Jersey
FBX	Vitro Chemical Company		Chattanooga, Tennessee
FCZ	Tenessee Nuclear Spec.		Jonesboro, Tennessee
FTA	Reactive Metals Inc.	Extrusion Plant	Ashtabula, Ohio
FUA	Reactive Metals Inc.	Extrusion Plant	Ashtabula, Ohio
FVA	National Lead of Ohio	FEMP	Cincinnati, Ohio
FVB	General Atomic	Storage Fac.	Youngsville, North Carolina
FVC	WEMCO	FEMP	Cincinnati, Ohio
FWA	Mallinckrodt Chemical Works		Weldon Spring, Missouri
FXA	Goodyear Atomic	Gaseous Diff.	Portsmouth, Ohio
FYA	Union Carbide	Gaseous Diff.	Paducah, Kentucky
FYC	Martin Marietta	Gaseous Diff.	Paducah, Kentucky
FZA	Union Carbide	Gaseous Diff.	Oak Ridge, Tennessee
FZB	Union Carbide	Y-12 Plant	Oak Ridge, Tennessee
FZC	Union Carbide	ORNL	Oak Ridge, Tennessee
FZE	Martin Marrietta	Gaseous Diff.	Oak Ridge, Tennessee
FZF	Martin Marrietta	Y-12 Plant	Oak Ridge, Tennessee
FZG	Martin Marrietta	ORNL	Oak Ridge, Tennessee
GAT	Goodyear Atomic	Gaseous Diff.	Portsmouth, Ohio
GDA	General Dynamics	General Atomic	San Diego, California
HGE	General Electric Company	Hanford	Richland, Washington

CHAPTER 1 Lot Marking System (cont.)

SOURCE OR ORIGIN CODES FOR OFF-SITE RESIDUES AND SCRAP AT THE FEMP (cont.)

SOURCE CODE	NAME OF SHIPPER	PLANT	ADDRESS
HRA	Rockwell Int.	Hanford	Richland, Washington
HUA	Westinghouse Hanford Co., HEDL	Hanford	Richland, Washington
HUD	Westinghouse Hanford Co., CPD	Hanford	Richland, Washington
HUE	Westinghouse Hanford Co., DRD	Hanford	Richland, Washington
HVA	Atlantic Richfield	Hanford	Richland, Washington
HWA	Isochem, Inc	Hanford	Richland, Washington
HXA	United Nuclear Corp. Inc.	Hanford	Richland, Washington
HYA	Battelle Memorial Inst., PNL	Hanford	Richland, Washington
HZA	General Electric Company	Hanford	Richland, Washington
JSA	Allied Chemical	Aerojet	Idaho Falls, Idaho
JSB	Aerojet Nuclear	Idaho Falls	Idaho Falls, Idaho
JSG	EG&G Idaho	Idaho Falls	Idaho Falls, Idaho
JWB	Idaho Nuclear Corp.	Idaho Falls	Idaho Falls, Idaho
JXI	Westinghouse Idaho Nuclear Co.	Idaho Falls	Idaho Falls, Idaho
KMG	Kerr-McGee Nuclear Products		
KZA	Knolls Atomic Power Laboratory		Schnectady, New York
LAB	University of California	Lawrence Lab.	Livermore, California
LAE	Atomics International		Canoga Park, California
LAL	Rockwell International		Canoga Park, California
LAQ	Bureau of Mines		Albany, Oregon
LAW	(Gulf) General Atomic		San Diego, California
LAZ	General Electric Company	Nuclear Energy	San Jose, California
LLB	Sandia Corp.	Livermore	Livermore, California

CHAPTER 1 Lot Marking System (cont.)

SOURCE OR ORIGIN CODES FOR OFF-SITE RESIDUES AND SCRAP AT THE FEMP (cont.)

SOURCE CODE	NAME OF SHIPPER	PLANT	ADDRESS
LZA	University of California	Berkeley	Berkeley, California
LZB	University of California	Livermore	Livermore, California
MAA	Worchester Polytechnic	USAEC	New York, New York
MAD	Pratt & Whitney Aircraft Div.	CANEL	Middletown, Connecticut
MAP	Aeroprojects, Inc.		West Chester, Pennsylvania
MAY	Nat. Bureau of Standards		Washington, D. C.
MBB	Reactive Metals Inc.	Extrusion Plant	Ashtabula, Ohio
MBL	Martin Marietta	Nuclear Div.	Baltimore, Maryland
MBM	MIT		Cambridge, Mass.
MBN	Nuclear Metals Inc.	Textron	West Concord, Mass.
MBP	U. of Rochester		Rochester, New York
MBR	Babcock and Wilcox Company	R&D Div.	Lynchburg, Virginia
MBT	Babcock and Wilcox Company	R&D Div.	Lynchburg, Virginia
MBU	United Nuclear Corp.	Development	White Plains, New York
MBW	Babcock and Wilcox Company		Lynchburg, Virginia
MBY	Vitro Laboratories		West Orange, New Jersey
MCW	Mallinckrodt Chemical Works	Uranium Div.	Weldon Spring, Missouri
MCY	Westinghouse Electric Co.	NES	Pittsburgh, Pennsylvania
MIO	Nuclear Metals Inc.		West Concord, Mass.
MPW	Pratt & Whitney Aircraft Div.	CANEL	Middletown, Connecticut
MSA	USAEC, NY Operations		New York, New York
NBL	New Brunswick Laboratory	USAEC	New Brunswick, New Jersey
NBX	Middlesex Storage Plant	USAEC	New Brunswick, New Jersey

CHAPTER 1 Lot Marking System (cont.)

SOURCE OR ORIGIN CODES FOR OFF-SITE RESIDUES AND SCRAP AT THE FEMP (cont.)

SOURCE CODE	NAME OF SHIPPER	PLANT	ADDRESS
NCF	National Carbon Co.	Union Carbide	Fostoria, Ohio
NLA	National Lead	Albany	Albany, New York
NMC	Martin Marietta	Nuclear Div.	Middle River, Maryland
NME	Nuclear Mat. & Equip. Corp.	NUMEC	Apollo, Pensylvania
OGE	General Electric Company	NM Propulsion	Cincinnati, Ohio
ORF	EG&G	Rocky Flats	Golden, Colorado
PAB	Duquense Light Co.	Shippingport	Shippingport, Pennsylvania
PAP	Babcock and Wilcox Company		Apollo, Pensylvania
PZA	Westinghouse Electric Co.	Bettis APL	West Mifflin, Pennsylvania
QAA	USAEC	Headquarters	Washingtion, D. C.
SAF	Mason & Hanger	Silas Mason	Fort Campbell, Kentucky
SBN	Mason & Hanger	Silas Mason	San Antonio, Texas
SBX	Monsanto	Mound	Miamisburg, Ohio
SRS	Sylcor Division	Sylvania EPI	Hicksville, L.I., New York
RBR	Brazil		
TOA	K-65, Q-11		
VAC	National Research		Cambridge, Mass.
VCC	Vitro Chemical Company		Chattanooga, Tennessee
VXB	UNC Industries (Waste)	Hanford	Richland, Washington
WCP	Combustion Engineering, Inc.	Naval Reactors	Windsor, Connecticut
WEB	Westinghouse Power Div.	Bettis APL	Pittsburg, Pennsylvania
XHP	General Atomic	Storage Fac.	Youngsville, North Carolina
YAK	Department of the Navy	NFEC	Alexandria, Virginia

CHAPTER 1 Lot Marking System (cont.)

SOURCE OR ORIGIN CODES FOR OFF-SITE RESIDUES AND SCRAP AT THE FEMP (cont.)

SOURCE CODE	NAME OF SHIPPER	PLANT	ADDRESS
YAM	Coast Guard Academy		New London, Connecticut
YAQ	National Electric Coil		Louisville, Kentucky
YDE	Nuclear Fuel Services	West Valley	West Valley, New York
YEC	Kerr-McGee	Cimarron	Crecent, Oklahoma
YEF	Smithsonian Inst.	Hist. & Tech.	Washingtion, D. C.
YJL	Colgate University		Hamilton, New York
YLE	Westinghouse	Waltz Mill	Madison, Pennsylvania
YPF	U. of Alabama at Auburn		Auburn, Alabama
YQK	GSA Stockpile		Washingtion, D. C.
YST	TNS		Jonesboro, Tennessee
YQM	Frankfork Arsenal	DOD	Philadelphia, Pennsylvania
YUD	Exxon Nuclear	Hanford	Richland, Washington
YVX	Nuclear Metals		Concord, Mass.
ZCM	Bucknell University		Lewisburg, Pennsylvania
ZCY	Carnegie-Mellon U.		Pittsburgh, Pennsylvania
ZDB	Case Western Reserve U.		Cleveland, Ohio
ZDC	Catholic University		Washingtion, D. C.
ZFZ	Fairleigh Dickenson U.		Teaneck, New Jersey
ZDP	University of Cincinnati		Cincinnati, Ohio
ZDS	Clarke College		Dubuque, Iowa
ZDT	Clarkson University		Potsdam, New York
ZEF	Combustion Engineering		Windsor, Connecticut
ZIB	Scientific Ecology		Oak Ridge, Tennessee

CHAPTER 1 Lot Marking System (cont.)

SOURCE OR ORIGIN CODES FOR OFF-SITE RESIDUES AND SCRAP AT THE FEMP (cont.)

SOURCE CODE	NAME OF SHIPPER	PLANT	ADDRESS
ZKB	Iowa State University		Ames, Iowa
ZKL	Kansas State U.		Manhattan, Kansas
ZLD	Ledoux & Co.		Teaneck, New Jersey
ZLR	Louisiana Tech. U.		Ruston, Louisiana
ZLU	University of Louisville		Louisville, Kentucky
ZMH	Manhattan College		Riverdale, Bronx, New York
ZMK	Marquette University		Milwaukee, Wisconsin
ZMR	University of Maryland		College Park, Maryland
ZND	University of Minnesota		Minneapolis, Minnesota
ZNE	3M Company		St. Paul, Minnesota
ZNG	University of Mississippi		University, Mississippi
ZNX	National Lead	Albany	Albany, New York
ZOV	Manufacturing Sciences		
ZPG	University of Nevada		Reno, Nevada
ZQC	Northeastern University		Boston, Mass.
ZQG	Northwestern University		Chicago, Illinois
ZQM	Nuclear Fuel Services, Inc.		Erwin, Tennessee
ZQN	Nuclear Mat. & Equip. Corp.	NUMEC	Apollo, Pensylvania
ZQX	Ohio University		Athens, Ohio
ZSF	Pittsburgh University		Pittsburgh, Pennsylvania
ZSK	Princeton University		Princeton, New Jersey
ZST	Chamberlain Mfg.		Waterloo, Iowa
ZVF	Syracuse University		Syracuse, New York

CHAPTER 1 Lot Marking System (cont.)

SOURCE OR ORIGIN CODES FOR OFF-SITE RESIDUES AND SCRAP AT THE FEMP (cont.)

SOURCE CODE	NAME OF SHIPPER	PLANT	ADDRESS
ZVX	Texas Tech. University		Lubbock. Texas
ZWB	Toledo University		Toledo. Ohio
ZWY	Utah State University		Logan. Utah
ZXA	Vanderbilt University		Nashville. Tennessee
ZXC	U. of Virginia		Charlottesville, Virginia
ZXF	Villanova University		Villanova, Pennsylvania
ZXH	Virginia Polytechnic Inst.		Blacksburg, Virginia
ZXZ	Washington University		St. Louis, Missouri
ZYG	West Virginia Inst. of Tech.		Montgomery, West Virginia
ZYP	Westinghouse	Atomic Power	Cheswick, Pennsylvania
ZZA	University of Wisconsin		Madison, Wisconsin
ZZM	Yale University		New Haven, Connecticut

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CHAPTER 1 Lot Marking System (cont.)

7.0 SOLVENT AND ORGANIC CHEMICALS NAMES TO BE STENCILED ON CONTAINERS

Acetone
Acetonitrile
Agitene
Benzene
n-Butyl alcohol
Carbon disulfide
Carbon tetrachloride
Chlorinated fluorocarbons
P Chlorobenzene
P Chlorodane
Chloroform
m-Cresol
o-Cresol
p-Cresol
Cresols
Cresylic Acid
(Cresols plus phenols)
Cyclohexane
Cyclohexanone
P 2, 4-D
P o-Dichlorobenzene
P 1, 4-Dichlorobenzene
1, 2-Dichloroethane
1, 1-Dichloroethylene
2, 4-Dinitrotoluene
1, 4-dioxane
P Endrin
2-Ethoxyethanol
Ethyl acetate
Ethyl benzene
1, 1, 2-Trichloro-1, 2, 2-trifluoroethane
Ethyl ether
P Heptachlor (and its hydroxide)
P Hexachlorobenzene
Hexachlorobutadiene
Hexachloroethane
Isobutanol
P Lindane
Methanol
P Methoxychlor
Methyl ethyl ketone (2-Butanone)
Methyl isobutyl ketone
Methylene chloride
Nitrobenzene
2-Nitropropane
P Pentachlorophenol
Phenol
Pyridine
Tetrachloroethylene
Toluene
P Toxaphene
P 2, 4, 5-TP acid Silvex
1, 1, 1-Trichloroethane
1, 1, 2-trichloroethane
Trichloroethylene
Trichlorofluoromethane
P 2, 4, 5-Trichlorophenol
P 2, 4, 6-Trichlorophenol
Vinyl chloride
Xylene

P = Pesticide

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CHAPTER 2 Color Coding System

In addition to the lot marking system described for identifying nuclear materials, color coding is applied as a secondary method of designating depleted, normal, and enriched uranium and thorium.

Three basic colors, black, red and white, are used for painting the body of containers in service at the FEMP.

Black drums are used for depleted uranium, normal uranium, unrestricted (for Nuclear Safety) enriched uranium compounds and residues, RCRA and TSCA waste and thorium.

All-red drums are used for enriched, restricted uranium (e.g., mass, geometry, or concentration).

White drums and white metal boxes are used for off-site shipment of low-level uranium waste; white drums are used for thorium waste.

Container identification markings required for long-term storage such as lot marks, weights, drum numbers, alloying chemical symbols and percent U^{235} are routinely applied by stencil over the basic paint colors as specified in Table I. "Markal" or equivalent type white or black paint sticks are used for applying temporary identification markings to residue and waste containers and to other specific materials in the production areas, including some off-site receipts and the reidentification of materials on the storage pad. Pre-printed identification labels that contain barcodes may also be used.

Color coding of black drums will be further implemented by application of a narrow stripe around the circumference above the gross, tare and net weight information on each container. The colors to be used for this stripe are as follows:

CHAPTER 2 Color Coding System (cont.)

Material in Black Drums	% U^{235}	Stripe Color
(a) Depleted Uranium	<0.710	Green
(b) Normal Uranium	0.710 to 0.712	Yellow
(c) Enriched Uranium - Unrestricted compounds and residues	>0.712	Red
(d) Thorium		Blue
(e) RCRA and TSCA waste		None

An exception to the container body painting and stencilling requirement is permitted for enriched oxides packaged in 6" diameter by 15" high metal cans. A narrow red-tape stripe around the periphery of the can and a printed label are applied.

It will not be necessary to apply a stripe to all drums.

Containers characterized and identified as containing RCRA and TSCA waste and which have been declared to be below the economic discard limit will have their color stripe obliterated with black paint before they are placed in storage in the RCRA warehouses.
NOTE: Drums with color stripes which are already in storage need not be changed.

Red targets or red-white cards, or yellow-white or green-white cards and pressure-sensitive tape are used to color code enriched, normal and depleted uranium metal on skids, hoppers, dollies, metal pieces not in containers, or boxes and major components of process equipment such as vessels, sumps, machinery, dust collectors, etc. An explanation of their use is detailed in procedures 20-C-101 (latest version), "SOP-Moving and Storing Nuclear Materials On-Site at the FMPC," 20-C-102, "SOP-For Receiving, Storing, Repackaging and Moving Enriched Uranium Materials $\leq$20.% U^{235} From Off-Site," and 20-C-904, "SOP-Nuclear Safety General Requirements."

Old identification markings will be obliterated with paint immediately upon emptying containers.

Off-site receipts which do not comply with FEMP color coding requirements are color coded with a band of paint around the periphery of the container - yellow for normal, red for enriched, green for depleted, and blue for thorium, as a substitute for painting the entire container. The proper color coding is applied as soon as the analytical results are received from the Laboratory.

CHAPTER 2 Color Coding System (cont.)

TABLE I

FEMP Color Code Specification
for Basic Container Paints and
Identification Markings

Type of Material	Basic Container Paint Color	Identification Markings Paint Color	Stripe Paint Color
Normal uranium	Black	White	Yellow
Enriched uranium, unrestricted	Black	White	Red
Enriched uranium mass, geometry or concentration restricted	Red	White	None
Depleted uranium	Black	White	Green
Thorium	Black	White	Blue
Thorium Waste	White	Black	Blue
Uranium Waste Shipments	White	Black	None
RCRA and TSCA Waste	Black	White	None

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CHAPTER 3 MATERIAL DESCRIPTION CODES

LOW-GRADE RESIDUES

001 DISCARD PROCESS RESIDUES, TRAILER CAKES, WASTE SLURRIES, RAFFINATES, ETC.

002 SUMP CAKE - COPPER CONTAMINATED, LOW URANIUM

003 NON-RECOVERABLE TRASH - FOR STORAGE OR SHIPMENT FOR OFF-SITE BURIAL, see p. 1.09

004 CONTAMINATED STEEL AFTER WASHING AND/OR CLEANING

005 CONTAMINATED ZIRCONIUM

006 CONTAMINATED LEATHER GLOVES FOR LAUNDRY

007 TRAILER CAKES, WASTE SLURRIES, RAFFINATES NOT MEETING DISCARD SPECIFICATION

008 GRIT BLAST RESIDUE

009 CONTAMINATED OIL - SOLUBLE; COOLANT

010 CONTAMINATED WATER, CONTAINING CHLORIDES

011 CONTAMINATED SOIL, ROCKS, SAND, BRICKS AND CERAMICS

012 CONTAMINATED WATER OR SUMP LIQUOR, NON-CHLORIDE

013 CONTAMINATED SOLVENT OR ORGANIC CHEMICAL - STENCIL TYPE OF CHEMICAL OR SOLVENT ON CONTAINER (SEE LIST OF SOLVENT AND CHEMICAL NAMES ON PAGE 1.21.)

014 GLASS AND SAMPLE BOTTLES

015 CONTAMINATED OIL, INSOLUBLE

016 CONTAMINATED COPPER - FOR DISCARD

017 CONTAMINATED GRAPHITE - UNCRUSHED BUT BROKEN INTO LARGE PIECES

CHAPTER 3 MATERIAL DESCRIPTION CODES (cont.)

LOW-GRADE RESIDUES (cont.)

018 CONTAMINATED ALUMINA-SODA LIME (HIGH Cl^-)

019 CONTAMINATED MAGNESIUM

020 CONTAMINATED MERCO-DRI AND HILCO CAKE

021 DRUM DECONTAMINATION RESIDUES; WET MGF_2

022 CONTAMINATED TBP AND/OR KEROSENE MIXTURES AND SLUDGES

023 OILY MGF_2

024 CONTAMINATED GRAPHITE - CRUSHED

025 CONTAMINATED METALLIC FILTER ELEMENTS

026 CONTAMINATED CARBON FILTER ELEMENTS

027 CONTAMINATED RAGS, PAPER AND POLYETHYLENE

028 CONTAMINATED ASBESTOS MATERIALS

029 DUST COLLECTOR BAGS

030 MAGNESIUM OXIDE AND MAGNESIUM ZIRCONATE FROM CRUCIBLE CLEANOUT

031 ROASTED MGF_2 (BLENDED WITH OTHER MATERIALS)

032 INCINERATOR ASHES - MATERIAL PASSING THROUGH GRATE OR SCREEN

033 INCINERATOR CINDERS - MATERIAL NOT PASSING THROUGH GRATE OR SCREEN

034 MGF_2 FOR MILLING OR DISCARD

035 MGF_2 OR CAF_2, GOOD LINER MATERIAL

036 MGF_2, -20 MESH, HIGH FREE METAL FOR PLANT 8 ROASTING (ENRICHED ONLY)

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CHAPTER 3 MATERIAL DESCRIPTION CODES (cont.)

LOW-GRADE RESIDUES (cont.)

037 MGF_2, GROUND

038 MGF_2, +20 MESH, LOW U CONTENT, TO BE CRUSHED

039 SLUDGES, OILY

040 SLUDGES, FOR BLENDING AND SCREENING

041 SLUDGES, OILY, FOR OXIDATION, HIGH FREE METAL

042 SLUDGES, CLEANOUT, NON-OILY, FOR ROASTING

043 SLUDGES, SOLVENT - STENCIL TYPE OF SOLVENT ON CONTAINER (SEE LIST OF SOLVENT AND ORGANIC CHEMICAL NAMES ON PAGE 1.21.)

044 SLUDGES, SALT, SOFT, CHLORIDE (FOR PLANT 8 RECOVERY)

045 SLUDGES, SALT, SOFT, NON-CHLORIDE

046 SLUDGES, NON-OILY, FOR OXIDATION INCLUDING HIGH OR LOW FREE METAL

047 SAMPLES, NON-METALLIC, MISCELLANEOUS

048 OIL BURNER ASH

049 LEAD AND LEAD-CONTAMINATED MATERIALS

050 PCB MATERIALS, BALLAST, PCB-CONTAMINATED RAGS

051 MERCURY-CONTAMINATED MATERIALS, MERCURY BATTERIES

052 BARIUM-CONTAMINATED MATERIALS

053 NON-BURNABLE METAL WITH URANIUM CONTENT

054 HIGH LEVEL CLEANING RESIDUES

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CHAPTER 3 MATERIAL DESCRIPTION CODES (cont.)

LOW-GRADE RESIDUES (cont.)

055 DEPLETED U METAL - NOT SUITABLE FOR REACTOR PRODUCT STREAMS (NOT TOP CROPS)

056 DEPLETED U INGOT CROPS (TOP CROPS) FROM PRIMARY INGOTS

057 WET CRUSHED SLAG FROM FURNACE POT BLOW-OUTS

058 CONTAMINATED CaF_2 - MgO

059 ASH FROM BURNING DUST COLLECTOR BAGS

060 FURNACE SALT, SOLIDIFIED, CHLORIDE (FOR PLANT 8 RECOVERY)

061 FURNACE SALT, SOLIDIFIED, NON-CHLORIDE

062 DUST COLLECTOR RESIDUES - HIGH FLUORIDE

063 KOH REVERSION CAKE

064 DUST COLLECTOR RESIDUES, PYROPHORIC, HIGH FLUORIDE

065 SCRAP SALTS, HIGH FLUORIDE, INCLUDING FLOOR SWEEPINGS

066 SCRAP SALTS, LOW FLUORIDE, INCLUDING FLOOR SWEEPINGS

067 WET SUMP OR FILTER CAKE, HALIDE CONTD

068 WET SUMP OR FILTER CAKE, OIL CONTD

069 WET SUMP OR FILTER CAKE, NON-OILY AND NON-HALIDE

070 ROCKWELL SPILLS

071 ROCKWELL CLEANINGS

CHAPTER 3 MATERIAL DESCRIPTION CODES (cont.)

LOW-GRADE RESIDUES (cont.)

072 U OR TH NITRATE SOLUTIONS. HIGH IMPURITY SUCH AS ZIRNLO DECOPPERING SOLUTIONS - FOR REFINERY PROCESSING

073 U OR TH CHLORIDE OR FLUORIDE SOLUTIONS. HIGH IMPURITY - SUCH AS PLANT 8 METAL DISSOLVER PRODUCT - NOT FOR REFINERY FEED

074 U OR TH SULPHATE SOLUTIONS

075 CLAD METAL FOR HNO_3 DISSOLVER

076 ZIRNLO ENDS - TO BE CLASSIFIED FOR RECOVERY

077 DRY CRUSHED SLAG FROM FURNACE POT BLOW-OUTS

078 OFF-SPEC TH OXALATE, FRENCH SOURCE

079 UNFIRED REDUCTION CHARGES PLUS MGF_2 FROM LINER CAVE-INS

080 PARTIALLY OXIDIZED METAL FOR SORTING CONTAINING METL-X

081 PARTIALLY OXIDIZED METAL FOR SORTING CONTAINING NO METL-X

082 OFF-SPEC UF_4 OR TH_4

083 U OR TH CHLORIDE SALTS, REJECT

084 BAD REDUCTION (NO DERBY)

085 U_3O_8 - ROTEXED - OTHER THAN PLANT 8'S OWN PRODUCT

086 U308 ROTEXED - PLANT 8'S OWN PRODUCT NOT MEETING REFINERY SPECIFICATIONS FOR CONTINUOUS DIGESTION

087 ROASTED SUMP CAKE - HIGH FLUORIDE - FOR MILLING

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CHAPTER 3 MATERIAL DESCRIPTION CODES (cont.)

LOW-GRADE RESIDUES (cont.)

088 UNROASTED BUT MILLED MgF_2 (BLENDED WITH OTHER MATERIALS)

089 U_3O_8 ROTEXED - FROM CONCRETED CHIPS - CALCIUM

090 THORIUM RESIDUES

091 MAGNESIUM URANATE

092 FILTERED SEWAGE

095 COLD METAL OXIDES - NON RADIUM-BEARING

096 AUSTRALIAN RADIUM CAKE

097 RADIUM-BEARING MATERIALS - SAMPLES, K-65, INCLUDING Q-11 CONTAMINATED MATERIALS

098 MATERIAL HELD FOR HISTORICAL PURPOSES

CHAPTER 3 MATERIAL DESCRIPTION CODES (cont.)

HIGH-GRADE RESIDUES

100 SCRAP U_3O_8 OR THO_2, LOW FLUORIDE

101 SCRAP U_3O_8 OR THO_2, HIGH FLUORIDE

102 SCRAP UO_2

103 INGOT CROPS (TOP CROPS) FROM PRIMARY INGOTS

104 METAL SPILLS AND EXTRUSION ENDS; METAL HIGH IN IMPURITIES AND SPILLS

105 THO_2 PRODUCED FROM UNPURIFIED HANFORD THORIUM NITRATE VIA THORIA GEL PROCESS

106 CHIPS EMBEDDED IN CONCRETE - HIGH CALCIUM

107 CHIPS AND TURNINGS CONTAMINATED WITH NON-U MATERIALS - FOR OXIDATION

108 WET PHOSPHATE CAKE

109 SAWDUST FOR OXIDATION

110 NON-BRIQUETTABLE CHIPS AND TURNINGS FOR OXIDATION

111 BRIQUETTALE CHIPS AND TURNINGS FROM STANDARD METAL

112 BRIQUETTABLE CHIPS AND TURNINGS, HIGH IMPURITIES, FOR BRIQUETTING AND DOUBLE MELTING

113 ZIRCONIUM CLAD METAL, FROM OFF-SITE, TO BE DECLAD BY ZIRNLO SYSTEM

114 ZIRNLO FEED, CLASSIFIED AND SAWED

115 WET THORIUM OXALATE CAKE

CHAPTER 3 MATERIAL DESCRIPTION CODES (cont.)

HIGH-GRADE RESIDUES (cont.)

116 WET THORIUM HYDROXIDE

117 WET AMMONIUM DIURANATE CAKE

118 HOLLOW CORES WITH BROKEN DRILLS - ALL TYPES - BITS TO BE REMOVED AND CORES PICKLED PRIOR TO REMELT

119 SOLID METAL, OTHER THAN CORES, WITH EMBEDDED STEEL

120 CHEMICAL REJECT PRIMARY INGOTS

121 U_3O_8, +8 MESH - HIGH FLUORIDE

122 U_3O_8, +8 MESH - LOW FLUORIDE

123 CALCIUM URANATE

124 ZIRNLO; PARTIALLY DECLAD FUEL ELEMENTS

125 UNRECYCLED SLAG +20 MESH, BALL MILL PRODUCT

126 OXIDES MIXED WITH ZIRCONIUM BUT CLAD WITH OTHER ELEMENTS

128 CLAD URANIUM METAL; DECLAD BY MACHINING OR CHEMICAL TREATMENT

129 DIRTY PRILL, CODE 5 DERBIES, AND PLANT 1 TITAN MILL CLEAN-OUT, HIGH U CONTENT

130 PARTIALLY OXIDIZED METAL FOR DISSOLVER

131 PARTIALLY OXIDIZED METAL OXIDATION FEED

132 DUST COLLECTOR RESIDUES, LOW FLUORIDE

CHAPTER 3 MATERIAL DESCRIPTION CODES (cont.)

HIGH-GRADE RESIDUES (cont.)

133 OXIDES CLAD OR MIXED WITH ALUMINUM

134 U_3O_8 FOR REOXIDATION

135 DUST COLLECTOR RESIDUE, HIGH FLUORIDE, GREATER THAN 20% ASSAY

136 METAL TO BE OXIDIZED

137 MISCELLANEOUS MATERIAL - RECOVERY METHOD TO BE DETERMINED (NOT FOR USE BY INDIVIDUAL PLANTS)

138 OXIDES CLAD OR MIXED WITH ANY METALLIC ELEMENT OTHER THAN ALUMINUM, ZIRCONIUM OR STAINLESS STEEL

139 URANIUM ALLOYED OR CANNED WITH ELEMENTS OTHER THAN ALUMINUM, MOLYBDENUM OR ZIRCONIUM

140 OXIDES CLAD OR MIXED WITH ZIRCONIUM

141 CLAD METAL FOR ACID DISSOLUTION - NOT FOR ZIRNLO PROCESSING

142 OXIDES CLAD OR MIXED WITH STAINLESS STEEL

143 ROASTED CALCIUM-PRECIPITATED SUMP AND FILTER CAKES

144 OFF-SITE SUMP AND FILTER CAKES AFTER ROASTING AT FEMP

145 ROASTED AMMONIUM-PRECIPITATED SUMP AND FILTER CAKES

146 ROASTED MAGNESIUM-PRECIPITATED SUMP AND FILTER CAKES

CHAPTER 3 MATERIAL DESCRIPTION CODES (cont.)

REFINERY FEEDS

150 URANYL OR THORIUM NITRATE SOLUTION

151 OFF-SPEC THO_2, FRENCH SOURCE

152 U_3O_8 ROTEXED PLANT 8 FURNACE PRODUCT

153 -8 MESH PRODUCT FROM OXIDIZING +8 METAL

154 U_3O_8 ROTEXED PLANT 8 FURNACE PRODUCT

155 U_3O_8 -8 MESH FROM ROTEXING OF OTHER THAN PLANT 8'S OWN PRODUCTS - LOW FLUORIDE

156 MILLED UO_2

157 REJECT UO_3

158 PHOSPHATE ASH

159 ROASTED, MILLED AND/OR SCREENED CALCIUM-PRECIPITATED SUMP AND FILTER CAKES

160 IMPURE URANYL OR THORIUM NITRATE - SOLID

161 URANIUM CARBIDE, UC

162 OFF-SITE SUMP AND FILTER CAKES AFTER ROASTING, MILLING, AND/OR SCREENING AT FEMP

163 ROASTED, MILLED AND/OR SCREENED AMMONIUM-PRECIPITATED SUMP AND FILTER CAKES

164 ROASTED, MILLED AND/OR SCREENED MAGNESIUM-PRECIPITATED SUMP AND FILTER CAKES

165 U_3O_8 - NOT REQUIRING RE-OXIDATION

166 UO_2 (OR THO_2) PELLETS - REFINERY FEED

CHAPTER 3 MATERIAL DESCRIPTION CODES (cont.)

REFINERY FEEDS (cont.)

167 UO_2 (OR THO_2) POWDER - REFINERY FEED

168 CRUSHED FURNACE SALTS AND SLUDGES
NON-CHLORINE

169 ROASTED FURNACE SALTS AND SLUDGES
NON-CHLORINE

170 ORE CONCENTRATE - MISCELLANEOUS

190 U_3O_8 FOR RE-OXIDATION

191 RE-OXIDIZED ENRICHED CALCINER U_3O_8 FOR
SCREENING AND MILLING

192 OXIDE FOR SCREENING AND MILLING

CHAPTER 3 MATERIAL DESCRIPTION CODES (cont.)

INTERMEDIATE PRODUCTS

200 UO_3 PRODUCT

201 UO_3 REACTOR RECYCLE TAILS

202 UO_2 OR THO_2 PRODUCT

203 UF_6, URANIUM HEXAFLUORIDE

204 PURIFIED URANYL OR THORIUM NITRATE SOLUTION

205 THO_2 PRODUCED FROM SOL-GEL PROCESS

206 BLENDED UF_4 OR TH_4 CHARGE

207 PURIFIED URANYL OR THORIUM NITRATE SOLID

209 URANIUM OR THORIUM TETRACHLORIDE

210 UF_4 OR TH_4

211 UF_4 FROM PILOT PLANT UF_6

212 UF_4 FROM HANFORD UO_3

214 U_3O_8 FROM RECYCLE UO_3 (ROR PROCESS)

215 THORIUM HYDROXIDE, DRY

216 CHARGED UF_4 POTS, WIP

218 CLEAN PRILL FOR DOUBLE MELTING

219 METAL FROM SPILLS FOR DOUBLE MELTING

220 CODE 2 DERBIES FOR DOUBLE MELTING OR SHOT CLEANING

221 SOLID METAL FOR PICKLING PRIOR TO REMELT DOES NOT REQUIRE BLENDING (<12")

CHAPTER 3 MATERIAL DESCRIPTION CODES (cont.)

INTERMEDIATE PRODUCTS (cont.)

222 SOLID METAL - INCLUDES PHYSICAL BUT NOT CHEMICAL REJECT INGOTS; TO BE SAWED OR CRUSHED AND PICKLED PRIOR TO REMELT (≥12")

223 SOLID METAL TO BE SAWED, SHEARED, OR CRUSHED, BUT NOT PICKLED PRIOR TO REMELT

224 SOLID METAL, NOT PICKLED, OTHER THAN SPILLS AND TOP CROPS, FOR DOUBLE MELT

225 SR STANDARD METAL TO BE SAWED AND PICKLED PRIOR TO REMELT

227 METAL SAMPLES FOR DOUBLE MELTING

228 SOLID METAL TO BE PICKLED

229 FIRST GENERATION TOP CROPS FROM PRODUCT INGOTS - FOR PRIMARY INGOT REMELT CHARGES

230 SAWED SECTIONS, REQUIRING PICKLING, FROM PRIMARY INGOTS CONTAINING FIRST GENERATION TOP CROPS

231 SAWED SECTIONS, REQUIRING PICKLING, FROM PRIMARY INGOTS CONTAINING NO TOP CROP METAL

232 PICKLED METAL FOR DOUBLE MELTING - OTHER THAN FIRST GENERATION TOP CROPS

233 CLASSIFIED SHAPES FOR DOUBLE MELTING

234 PHYSICAL REJECT BILLETS TO BE SAWED PRIOR TO REMELT

235 TUBULAR ELEMENTS TO BE CRUSHED

236 EXTRUSION BUTTS TO BE PICKLED

237 PARTIALLY DECLAD METAL, OTHER THAN ZIRNLO, FOR DOUBLE MELTING

CHAPTER 3 MATERIAL DESCRIPTION CODES (cont.)

INTERMEDIATE PRODUCTS (cont.)

238 SOLID METAL FOR PICKLING AND DOUBLE MELTING, OTHER THAN FIRST GENERATION TOP CROPS

239 CHEMICAL REJECT SAWED REMELT METAL - TO BE CAUSTIC LEACHED AND PICKLED

240 DOUBLE MELT INGOTS TO BE SAWED AND PICKLED PRIOR TO REMELT

241 DOUBLE MELT INGOTS TO BE SAWED, BUT NOT PICKLED, PRIOR TO REMELT

242 CHEMICAL REJECT INGOTS (AND OTHER CHEMICAL REJECT MATERIAL) TO BE SAWED AND PICKLED, OR TO BE ROLLED, SHEARED AND PICKLED, PRIOR TO REMELT

243 CHEMICAL REJECT SOLID METAL TO BE SAWED, BUT NOT PICKLED PRIOR TO REMELT

244 CHEMICAL REJECT DOUBLE MELT INGOTS FROM DOUBLE MELTING TO BE SAWED AND PICKLED

245 CHEMICAL REJECT DOUBLE MELT SOLID METAL TO BE SAWED, BUT NOT PICKLED, PRIOR TO REMELT

246 INGOTS FROM OFF-SITE TO BE REWORKED

251 CHEMICAL REJECT SOLID METAL FOR PICKLING PRIOR TO REMELT

252 BRIQUETTES HIGH IN IMPURITIES FOR DOUBLE MELITNG

254 CODE 4 OR BOTTOM BURNOUT DERBIES FOR DOUBLE MELTING

260 TOP CROP FROM PRODUCT 4A FLAT BILLETS (SECOND GENERATION)

CHAPTER 3 MATERIAL DESCRIPTION CODES (cont.)

INTERMEDIATE PRODUCTS (cont.)

261 PHYSICAL SCRAP FROM RECYCLE 4A FLAT BILLETS
(SECOND GENERATION)

262 CHEMICAL SCRAP FROM RECYCLE 4A FLAT BILLETS
(SECOND GENERATION)

263 OFF-SITE 4A SCRAP RETURNS
(SECOND GENERATION)

CHAPTER 3 MATERIAL DESCRIPTION CODES (cont.)

REMELT FEEDS

300 DERBIES, CODE 1 AND CODE 3

302 BRIQUETTES

303 CHIPS-CLEANED NON-BRIQUETTABLE-SUITABLE FOR CASTING

304 SOLID REMELT METAL - LOW IMPURITIES - DOES NOT REQUIRE BLENDING OR PICKLING - NOT FROM DOUBLE MELTS

305 PICKLED ARF REMELT METAL

306 EXPERIMENTAL SHAPES - INCLUDING CLASSIFIED SHAPES NOT TO BE CRUSHED

307 ZIRNLO PRODUCT

308 INGOT CROPS AND DUDS

310 PICKLED CROPS FROM SR METAL

311 SR STANDARD SOLID METAL - FOR REMELT

313 PICKLED CROPS FROM HW METAL

314 PICKLED PRIMARY INGOT SECTIONS CONTAINING FIRST GENERATION TOP CROPS

315 PICKLED PRIMARY INGOT SECTIONS CONTAINING NO TOP CROP METAL

316 PICKLED Ti ALLOY REMELT SCRAP - DOES NOT REQUIRE BLENDING (NOT DERIVED FROM PRIMARY INGOTS)

322 CHEMICAL REJECT SOLID REMELT METAL - DOES NOT REQUIRE PICKLING

323 REJECT ELEMENTS - OUTER

324 REJECT ELEMENTS - INNER

CHAPTER 3 MATERIAL DESCRIPTION CODES (cont.)

REMELT FEEDS (cont.)

325 REJECT CORES

326 REJECT BILLETS, INCLUDING SAWED BILLET SECTIONS

327 PICKLED REJECT BILLETS OR BILLET SECTIONS

330 PRIMARY INGOT SECTIONS, NOT PICKLED, CONTAINING FIRST GENERATION TOP CROPS

331 PRIMARY INGOT SECTIONS, NOT PICKLED, CONTAINING NO TOP CROP METAL

333 PICKLED CHEMICAL REJECT CROPS

334 PICKLED CHEMICAL REJECT CROPS FROM DOUBLE MELT INGOTS

335 CRUSHED TUBULAR ELEMENTS

336 PICKLED EXTRUSION BUTTS

337 DECLAD METAL, OTHER THAN ZIRNLO

340 SECTIONS FROM CHEMICAL REJECT PRIMARY INGOTS, NOT PICKLED

CHAPTER 3 MATERIAL DESCRIPTION CODES (cont.)

CASTING PRODUCTS

401 SPECIAL SOLID INGOTS OR SLABS

402 SPECIAL HOLLOW INGOTS

403 SPECIAL CASTINGS, INCLUDING STATIC AND CENTRIFUGAL

404 N REACTOR INGOTS - RAW

405 N REACTOR INGOTS - DIRECT CASTINGS FOR FINISHED BILLET MACHINING

406 MARK 31 CASTINGS - RAW - INNER

407 MARK 31 CASTINGS - RAW - OUTER

408 MARK 31 CASTINGS - FINISHED - INNER

409 MARK 31 CASTINGS - FINISHED - OUTER

410 N REACTOR INGOTS - FINISHED

411 URANIUM SHOT

412 MARK 15 CASTINGS - RAW - INNER

413 MARK 15 CASTINGS - RAW - OUTER

414 MARK 15 CASTINGS - FINISHED - INNER

415 MARK 15 CASTINGS - FINISHED - OUTER

416 MARK 25 CASTINGS - RAW - INNER

417 MARK 25 CASTINGS - RAW - OUTER

418 MARK 25 CASTINGS - FINISHED - INNER

419 MARK 25 CASTINGS - FINISHED - OUTER

CHAPTER 3 MATERIAL DESCRIPTION CODES (cont.)

ROLLING AND EXTRUSION PRODUCTS

450 BILLETS, ROLLING MILL

451 MARK 15 EXTRUDED TUBES - INNER

452 MARK 15 EXTRUDED TUBES - OUTER

453 N REACTOR EXTRUDED TUBES

454 N REACTOR RAW BILLETS - SAWED EXTRUSIONS

455 MARK 31 EXTRUDED TUBES - INNER

456 MARK 31 EXTRUDED TUBES - OUTER

457 SPECIAL RODS AND/OR TUBES

459 N REACTOR RAW BILLETS - UPSET FORGED

461 MARK 25 EXTRUDED TUBES - INNER

462 MARK 25 EXTRUDED TUBES - OUTER

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CHAPTER 3 MATERIAL DESCRIPTION CODES (cont.)

MACHINING PRODUCTS

500 MARK 31 ELEMENTS - INNER

501 MARK 31 ELEMENTS - OUTER

503 N REACTOR FINISHED BILLETS FROM EXTRUSIONS

505 N REACTOR FINISHED BILLETS FROM DIRECT CASTINGS

506 SPECIAL MACHINED SHAPES

507 MARK 15 ELEMENTS - INNER

508 MARK 15 ELEMENTS - OUTER

509 MARK 25 ELEMENTS - INNER

510 MARK 25 ELEMENTS - OUTER

CHAPTER 4 SOURCE OR ORIGIN CODES

PLANT 1 CODES

100 PLANT 1 GENERAL

101 PLANT 1 MAINTENANCE

102 MAINTENANCE SHOP (RCRA MATERIALS)

103 OIL STORAGE AREA (RCRA & TSCA)

105 PLANT 1 CONSTRUCTION WASTE

107 SOURCE UNKNOWN

110 PLANT 1 MILLING

111 DRUM DUMPER

112 TITAN MILL

113 DUST COLLECTOR NUMBER 64

114 DUST COLLECTOR NUMBER 76

115 THREE PHASE GALIGHER SAMPLER

116 HOPPER OR DRUM FILLING STATION

117 HOFFMAN VACUUM

119 FITZ MILL

120 PLANT 1 STILL

121 DRUM SIPHON

122 STILL TANK

123 WATER DRUMMING

124 RECLAIMED FLUID DRUMMING

CHAPTER 4 SOURCE OR ORIGIN CODES (cont.)

PLANT 1 CODES (cont.)

130 **PLANT 1 DRUM RECONDITIONING**

131 SHOT SCREEN

132 WHEELABRATOR SHOT BLAST UNIT

133 DRUM ROLLER

134 PANGBORN DUST COLLECTOR

135 DRUM PAINTING BOOTH

136 DRUM DRYER

137 DRUM BALER

140 **PLANT 1 SAMPLING**

141 SMALL SHEATHED AUGER

142 WHEELABRATOR DUST COLLECTOR

143 LARGE SHEATHED AUGER

144 PIPE SAMPLER

145 SLY DUST COLLECTOR

150 COPPER SHREDDER

151 COPPER PILE

175 PLANT 1 SOIL REMOVAL PROJECT

176 PLANT 1 SOIL TREATABILITY PROJECT

CHAPTER 4 SOURCE OR ORIGIN CODES (cont.)

PLANTS 2 AND 3 CODES

200 **PLANTS 2 AND 3 GENERAL**

201 PLANTS 2 AND 3 MAINTENANCE

202 MAINTENANCE SHOP (RCRA MATERIALS)

203 OIL STORAGE AREA (RCRA & TSCA)

210 **PLANT 2 DIGESTION**

211 SOUTH SIDE DIGESTORS

212 NORTH SIDE DIGESTORS

213 TURNER-HAWES DUST COLLECTOR

214 DAY-HOFFMAN DUST COLLECTOR

220 **METAL DISSOLVER**

221 OLIVER FILTER

222 METAL DISSOLVER GRATE

225 **EXTRACTION**

226 SOUTH SIDE EXTRACTION COLUMN LINE

227 NORTH SIDE EXTRACTION COLUMN LINE

228 MIXER-SETTLER

230 **SOLVENT TREATMENT**

235 **HOT RAFFINATE BUILDING**

236 FILTERS

240 TRASH BALER

CHAPTER 4 SOURCE OR ORIGIN CODES (cont.)

PLANTS 2 AND 3 CODES (cont.)

245 **REFINERY SUMP SYSTEM**

246 DORR THICKENERS

247 FILTERS

250 **RAFFINATE EVAPORATORS**

255 **ABSORBERS**

256. PLANT COLUMN ABSORBERS

260 **DENITRATION SYSTEM**

261 SCRUBBER SYSTEM

262 SOUTH SIDE PACKAGING

263 NORTH SIDE PACKAGING

267 **SAFE GEOMETRY EVAPORATOR CALCINER**

268 **PULLMAN VACMOBILE**

270 **DRUM DIGESTION**

271 CARTRIDGE FILTER

272 PLATE AND FRAME FILTER

CHAPTER 4 SOURCE OR ORIGIN CODES (cont.)

PILOT PLANT CODES

300 PILOT PLANT GENERAL

301 PILOT PLANT MAINTENANCE

302 MAINTENANCE SHOP (RCRA MATERIALS)

303 OIL STORAGE AREA (RCRA & TSCA)

310 GREEN SALT PRODUCTION

311 REACTOR NUMBER 1

312 REACTOR NUMBER 2

313 DUST COLLECTORS

314 VACUUM - PORTABLE

315 AUTOCLAVE

316 COLD TRAP

320 METAL REDUCTION PILOT PLANT

321 SLY DUST COLLECTOR

322 HOFFMAN VACUUM

323 ROCKWELL FURNACES

324 BREAKOUT STATION

330 DERBY SHOT BLASTING

331 PANGBORN ROTO-BLAST UNIT

332 SPENCER VACUUM

333 EAST WHEELABRATOR DUST COLLECTOR

334 DUCLONE CYCLONE

CHAPTER 4 SOURCE OR ORIGIN CODES (cont.)

PILOT PLANT CODES (cont.)

335 **SHOT PRODUCTION UNIT**

336 SHOT TANK

340 **PILOT PLANT REMELT AND CASTING**

341 REMELT FURNACE

343 CRUCIBLE BURNOUT

345 SAWS

346 WEST WHEELABRATOR DUST COLLECTOR

347 HOFFMAN VACUUM

350 **PILOT PLANT HEAT TREATING**

351 SALT BATH

352 WATER QUENCH

353 OIL QUENCH

355 **PILOT PLANT METAL DISSOLVING**

356 HNO3 PICKLING OR DECOPPERING

357 HF OR HCl DISSOLVER

358 FILTER

359 NEUTRALIZER

360 **PILOT PLANT AUXILIARY EQUIPMENT**

361 PRECIPITATOR

362 FILTER

364 TRAY DRYER-THORIUM

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CHAPTER 4 SOURCE OR ORIGIN CODES (cont.)

PILOT PLANT CODES (cont.)

365 **PILOT PLANT OXIDIZING**

366 SETTLING TABLE

367 OXIDATION FURNACE

368 AIR FILTER

369 **S&W GLO-BAR FURNACE**

370 **PILOT PLANT MILLING**

371 JAW CRUSHERS

372 BALL MILL-THORIUM

375 **PILOT PLANT SOLVENT EXTRACTION**

376 SIX-INCH EXTRACTION COLUMN

377 BOILDOWN TANKS

378 PRODUCT TANK

379 TWO-INCH EXTRACTION COLUMN

380 **PILOT PLANT SUMP**

381 SUMP CATCH BASIN

382 PRECIPITATOR

383 UNCONTAMINATED SUMP

CHAPTER 4 SOURCE OR ORIGIN CODES (cont.)

PLANT 4 CODES

400 **PLANT 4 GENERAL**

401 PLANT 4 MAINTENANCE

402 MAINTENANCE SHOP (RCRA MATERIALS)

403 OIL STORAGE AREA (RCRA & TSCA)

R 407 BANK 7

R 408 BANK 8

R 409 BANK 9

R 410 TANK FARM

R 411 PLANT 4 SAMPLING

420 **DUST COLLECTORS - GENERAL**

421 DUST COLLECTOR G4-1

422 DUST COLLECTOR G4-2

423 DUST COLLECTOR G4-15

424 DUST COLLECTOR G4-4

425 DUST COLLECTOR G4-5

426 DUST COLLECTOR G4-6

427 DUST COLLECTOR G4-7

429 DUST COLLECTOR G4-9

431 DUST COLLECTOR G4-11

R 432 DUST COLLECTOR G4-12

433 DUST COLLECTOR G4-13

434 DUST COLLECTOR G4-14

435 **PLANT 4 SUMP**

CHAPTER 4 SOURCE OR ORIGIN CODES (cont.)

PLANT 4 CODES (cont.)

440 **PACKAGING STATION - GENERAL**

441 EAST (NO. 1) PACKAGING STATION

442 WEST (NO. 2) PACKAGING STATION

443 SOUTHWEST (NO. 3) PACKAGING STATION

CHAPTER 4 SOURCE OR ORIGIN CODES (cont.)

PLANT 5 CODES

500 **PLANT 5 GENERAL**

501 PLANT 5 MAINTENANCE

502 MAINTENANCE SHOP (RCRA MATERIALS)

503 OIL STORAGE AREA (RCRA & TSCA)

509 DRUM STORAGE PAD

510 **METAL REDUCTION AREA**

511 BLENDERS

512 BLENDING FILLING CAP AND LID AREA
DUST COLLECTORS 251, 253

513 JOLTER AREA
DUST COLLECTORS 247, 248

514 BOMB FILLING STATION

515 CAP AND LID

516 ROCKWELL FURNACES

517 COOLING TANKS

518 BREAKOUT STATIONS

519 EAST BREAKOUT AREA
DUST COLLECTORS

520 WEST BREAKOUT AREA
DUST COLLECTORS

521 DERBY QUENCH

522 SLAG CONVEYOR PIT

523 POT REAMING STATION

CHAPTER 4 SOURCE OR ORIGIN CODES (cont.)

PLANT 5 CODES (cont.)

530 **CASTING AREA**

531 REMELT FURNACES

532 SEPARATION BOOTH

533 REMELT
DUST COLLECTOR 260

534 CRUCIBLE BURNOUT

535 CRUCIBLE BURNOUT
DUST COLLECTOR 261

536 SLY DUST COLLECTOR 100

537 GRAPHITE LATHE

538 HILCO OIL FILTER

539 BURNOUT AND MOLD TANKS

540 GRAPHITE BREAKUP STATIONS

545 **SUMP TREATMENT AREA**

550 **SAW AREA**

551 HACK SAW

552 NORTH CIRCULAR SAW

553 EAST CIRCULAR SAW

554 WEST CIRCULAR SAW

560 **EAST SLAG PLANT**

561 CRUSHER

562 COARSE SEPARATOR

CHAPTER 4 SOURCE OR ORIGIN CODES (cont.)

PLANT 5 CODES (cont.)

564 BIN 4: -20 MESH MAGNESIUM FLUORIDE

565 BIN 3: +20 MESH MAGNESIUM FLUORIDE

566 BIN 5, 6, 7, 8: MAGNESIUM FLUORIDE

570 **WEST SLAG PLANT**

571 CRUSHER

572 COARSE SEPARATOR

573 FINE SEPARATOR

574 -20 MESH MAGNESIUM FLUORIDE

575 +20 MESH MAGNESIUM FLUORIDE

576 GOOD LINER SOURCE

CHAPTER 4 SOURCE OR ORIGIN CODES (cont.)

PLANT 6 CODES

600 **PLANT 6 GENERAL**

601 PLANT 6 MAINTENANCE

602 MAINTENANCE SHOP (RCRA MATERIALS)

603 OIL STORAGE AREA (RCRA & TSCA)

610 **ROLLING**

611 INGOT FURNACE

612 BLOOMING MILL

613 CROP SHEAR OR GAG SHEAR

614 EQUALIZER FURNACE

615 CONTINUOUS MILL

616 FLYING SHEAR

617 COOLING BEDS

618 STRAIGHTENER

619 INSPECTION - ROD AREA

620 **MACHINING**

621 BLANKING ACMES

622 CROSS TRANSFERMATIC

623 CENTERLESS GRINDERS

624 DRILLING ACMES

625 SUNDSTRAND LATHES

626 HEALD BOREMATICS

627 TURRET LATHES

CHAPTER 4 SOURCE OR ORIGIN CODES (cont.)

PLANT 6 CODES (cont.)

631 BARDONS AND OLIVER CUTOFF LATHE

632 CNC MACHINE

640 HEAT TREATING

642 SALT-OIL FURNACE

643 NU SAL FURNACE

645 BRIQUETTING

646 CHIP CRUSHER

647 CHIP PICKLING TANKS

648 CHIP BRIQUETTING PRESS

650 DUST COLLECTORS

652 TURNER HAWES

655 WATER TREATMENT AREA

656 COLLECTION TANKS

657 PRECIPITATORS

658 FILTERS

659 HOFFMAN CLARIFIES

660 DEGREASING AND PICKLING

661 DERBY PICKLING

662 CORE PICKLING

663 REMELT METAL PICKLING

665 INSPECTION

CHAPTER 4 SOURCE OR ORIGIN CODES (cont.)

MISCELLANEOUS FACILITIES CODES

700 WASTE MANAGEMENT

701 MULTIPLE SOURCES

702 MAINTENANCE SHOP (RCRA MATERIALS)

703 OIL STORAGE AREA (RCRA & TSCA)

705 CONSTRUCTION

706 PLANTWIDE EHSI - PHASE IV STORMWATER RUNOFF

707 BIODENITRIFICATION

710 K-65 GENERAL - AREA 34

711 SILO #1 K-65

712 SILO #2 K-65

713 SILO #3 COLD-METAL OXIDE

714 SILO #4

715 BUILDING 64

716 BUILDING 65

717 BUILDING 65 - WEST PAD

718 BUILDING 67

719 BUILDING 68

720

721 CHEMICAL PITS - GENERAL

722 CHEMICAL PIT NO. 1

723 CHEMICAL PIT NO. 2

724 CHEMICAL PIT NO. 3

725 CHEMICAL PIT NO. 4

726 CHEMICAL PIT NO. 5

727 CHEMICAL PIT NO. 6

728 SURGE LAGOONS

CHAPTER 4 SOURCE OR ORIGIN CODES (cont.)

MISCELLANEOUS FACILITIES CODES (cont.)

R 729 ENVIRONMENTAL MONITORING

R 730 **LABORATORY GENERAL - BUILDING 15**

731 OPERATIONS & ENGINEERING SERVICES

R 732 ANALYTICAL LABORATORY

733 ANALYTICAL LABORATORY HAZARDOUS WASTE

R 734 BIO-CHEMISTRY LABORATORY

R 735 SERVICE - BUILDING 11

R 736 LAUNDRY

R 737 HUMAN RESOURCES AND GUARD HOUSE - BUILDING 28

738 GARAGE (RCRA)

R 739 GARAGE OIL (RCRA)

R 740 ADMINISTRATION - BUILDING 14

R 741 GARAGE - BUILDING 31

R 742 DECONTAMINATION - BUILDING 69

743 STORES-RECEIVING

R 744 TRUCK DOCK - PLANT 1

745 **MAINTENANCE SECTION**

746 MACHINE SHOP (RCRA)

747 MACHINE SHOP OIL STORAGE (RCRA & TSCA)

748 PAINT SHOP (RCRA)

749 INSTRUMENT SHOP (RCRA)

R 751 EXPANSION PLANT - BUILDING 51

R 755 SAFETY AND HEALTH - BUILDING 53

CHAPTER 4 SOURCE OR ORIGIN CODES (cont.)

MISCELLANEOUS FACILITIES CODES (cont.)

756 DOSIMETRY LABORATORY HAZARDOUS WASTE

R 759 BUILDING 3045 - LABORATORY MACHINE SHOP - RUST

R 760 DELETED

761 GENERAL SUMP

762 INCINERATOR

R 763 OIL BURNER AT BOILER PLANT (OPERATED BY NLO PRODUCTION)

764 GRAPHITE BURNER

765 WATER TREATMENT

766 SEWAGE TREATMENT

767 BOILER PLANT

768 BOILER PLANT (RCRA)

769 BOILER PLANT OIL STORAGE (RCRA)

775 LAB MAINTENANCE SHOP (RCRA)

776 LAB OIL STORAGE AREA (RCRA & TSCA)

CHAPTER 4 SOURCE OR ORIGIN CODES (cont.)

PLANT 8 CODES

800 **PLANT 8 GENERAL**

801 PLANT 8 MAINTENANCE

802 MAINTENANCE SHOP (RCRA MATERIALS)

803 OIL STORAGE AREA (RCRA & TSCA)

805 DRUM WASHER

806 DRUM RECONDITIONING

810 **WET-CHEMICAL SYSTEM**

811 PRIMARY CALCINER

812 PLANT 8 MILLING

813 SUMP

814 DIGESTION

815 EIMCO FILTERS

816 PRECIPITATION

817 OLIVER FILTER

818 CALCINATION

819 LEACH TANK

820 **OXIDATION SYSTEM**

821 CRUSHER

822 ROTEX SCREENING

823 MUFFLE FURNACE

824 BOX FURNACE

825 OXIDATION FURNACE NUMBER 1

CHAPTER 4 SOURCE OR ORIGIN CODES (cont.)

PLANT 8 CODES (cont.)

R	826	ROTARY KILN - OLD UNIT
	827	OXIDATION FURNACE NUMBER 2
R	828	PLANT 8 DUST COLLECTORS
R	830	ROTARY KILN FACILITY - NEW UNIT
	836	THO2 PLANT 8
	845	HYDRAULIC SEPARATOR
	852	BLENDING AND SCREENING OPERATION
	853	OIL DECANTATION
	854	DUST COLLECTOR & FILTER BAG WASHING
	855	AIR SEPARATOR
	856	HAND SORTING

CHAPTER 4 SOURCE OR ORIGIN CODES (cont.)

PLANT 9 CODES

900 **PLANT 9 GENERAL**

901 PLANT 9 MAINTENANCE

902 MAINTENANCE SHOP (RCRA MATERIALS)

903 OIL STORAGE AREA (RCRA & TSCA)

910 **REDUCTION**

911 JOLTERS

912 F MACHINE AND CAPPING

913 ROCKWELL FURNACES - MOLTEN SALT CLEANING

914 BREAKOUT STATION

915 TURNER-HAWES, HOFFMAN VACUUM SYSTEM

916 COOLING TANK

917 SPENCER PORTABLE VACUUM

920 **CASTING**

921 NPR FURNACE

922 CINCINNATI MILLING MACHINE

924 NPR PRIMARY HOFFMAN VACUUM UNIT

925 NPR BAG HOFFMAN VACUUM UNIT

926 NPR AAF DUST COLLECTOR

927 NPR AAF DUST COLLECTOR PRIMARY SEPARATOR

933 G9-NI 1035 DUST COLLECTOR

935 **EXTRUSION SAWING**

0244

CHAPTER 4 SOURCE OR ORIGIN CODES (cont.)

PLANT 9 CODES (cont.)

940 MACHINING

941 GISHOLT TURRET LATHE

942 J+L AUTOMATIC LATHE

945 L+S DUOMATIC LATHE

949 J+L TURRET LATHE

951 LEBLOND RAPID BORER

953 WARNER AND SWASEY LATHE

954 MONARCH ENGINE LATHE

955 BRIQUETTING

956 CRUSHER AND METSO WASH

957 CHIP PICKLING AND RINSING

958 CHIP CENTRIFUGING

959 MAGNETIC SEPARATOR & BRIQUETTE PRESS

960 PICKLING

961 REMELT PICKLING AND RINSING

962 CORE DEGREASING AND PICKLING

965 SUMP LIQUOR PROCESSING

966 COLLECTION TANKS

967 PRECIPITATORS

968 FILTERS

970 HEAT TREATING

CHAPTER 4 SOURCE OR ORIGIN CODES (cont.)

PLANT 9 CODES (cont.)

980 ZIRNLO PROCESS - GENERAL

981 HACKSAW

982 DEGREASER

983 DECOPPERING

984 DEZIRCING

985 ACID FILTRATION

986 NEUTRALIZATION

987 NITRIC ACID PICKLE

988 KOH PICKLE

1.0 PURPOSE

The purpose of this document is to provide the procedure for storing radioactive material.

2.0 APPLICABILITY

This procedure shall apply to designated Plant 1 radioactive material storage areas.

3.0 RESPONSIBILITIES

3.1 Supervisors shall be responsible for the following:

3.1.1 Coordinating and notifying support organizations if assistance is required.

3.1.2 Specifying storage location for material in accordance with the"Radiation Control Manual" (FMPC-2084).

3.1.3 Ensuring that personnel are qualified per the established training requirements identified by the Department/Staff Manager.

3.1.4 Distributing documentation as required per this SOP.

3.1.5 Performing required inspections of storage facilities.

3.1.6 Ensuring that AEDO is notified of any release to the environment.

3.1.7 Ensuring authorized storage configurations, aisle spacing, material segregation and other storage requirements are maintained per this SOP.

3.1.8 Contacting Industrial Hygiene or Radiological Safety to determine the appropriate respiratory protection for the process being performed.

3.1.9 Issuing the required respiratory protection to operators.

3.1.10 Contacting Radiological Safety to perform a survey prior to storing the radioactive material.

3.1.11 Reviewing applicable Material Safety Data Sheets (MSDS) with operators.

3.2 Solid Waste Compliance shall be responsible for the following:

3.2.1 Performing surveillances of radioactive material storage areas according to regulatory requirements.

3.0 RESPONSIBILITIES (cont.)

3.2.2 Assuring proper characterization and classification of FEMP waste streams.

3.2.3 Ensuring applicable regulation requirements are incorporated into this procedure and are being followed at the FMPC.

3.2.4 Performing surveillances of radioactive material storage area records to ensure adequacy and completeness.

3.3 Operators shall be responsible for complying with this SOP.

3.4 Materials Control & Accountability shall be responsible for the following:

3.4.1 Maintaining current radioactive material inventory.

3.4.2 Preparing, maintaining and signing inventory and identification records per this SOP.

4.0 DEFINITIONS

4.1 Material Characterization - An evaluation which provides the physical and chemical characteristics and major radiological content and concentration of the material.

4.2 FMPC Lot Marking System - A 15 digit alpha numeric coding system used to identify nuclear material to ensure separation of depleted, normal, and enriched uranium or thorium materials.

4.3 Non-Characterized Material - Radioactive material that is suspected to have constituents on the Environmental Protection Agency Hazardous Waste List.

4.4 Resource Conservation & Recovery Act (RCRA) - The Congressional Act which established safe and environmentally acceptable management practices for specific wastes. RCRA requires strict "cradle to grave" control and proper management of all hazardous waste.

4.5 Short Term Material - Radioactive material stored only for a maximum of six months.

4.6 Radioactive Material - Material composed of radioactive or radioactively contaminated material in excess of safe limits for unconditional release.

5.0 APPLICABLE DOCUMENTS

5.1 Drivers

5.1.1 PO-D-026, "Site Services Document Program"

5.1.2 FEMP Conduct of Operations Manual

4552.

5.0 APPLICABLE DOCUMENTS (cont.)

5.2 References

5.2.1 SOP 20-C-902, "Liquid Propane Gas (LPG) Powered Handstackers and Tuggers"

5.2.2 SOP 1-C-101, "Sampling Residue and Waste Material"

5.2.3 SOP 1-C-804, "Overpacking Deteriorated Containers"

5.2.4 SOP 20-C-904, "General Nuclear Safety Requirements"

5.2.5 SOP 1-C-604, "Inspection of Containerized and Drummed Residues"

5.2.6 SOP 01-104, "Segregation of Wooden Pallets"

5.2.7 SOP 20-C-601, "Packaging Low Level Radioactive Waste (L- LRW) for Offsite Disposal"

6.0 INDUSTRIAL HEALTH AND SAFETY REQUIREMENTS

6.1 A defined safety system is not involved.

6.2 Respiratory protection provided by the supervisor shall be worn when required.

6.3 A HEPA type filter vacuum cleaner or a vacuum system approved by IH&S shall be used during spill cleanup with a current DOP test label properly affixed to vacuum.

6.4 Leather-palm gloves shall be worn when handling drums, operating equipment and when handling rough, sharp-edged or contaminated materials.

6.5 Any release of radioactive material outside of storage container shall be reported to the supervisor immediately.

6.6 Communications devices and emergency response equipment shall be available to personnel performing this procedure.

6.7 Operators shall have reviewed and be familiar with MSDSs for hazardous materials/chemicals that may be used or encountered.

6.0 INDUSTRIAL HEALTH AND SAFETY REQUIREMENTS (cont.)

6.8 Any circumstance which could have resulted in an intake of radioactive materials by inhalation, ingestion, or absorption shall immediately be reported to a Supervisor. The Supervisor shall immediately report the circumstance of possible radioactive materials intake to ES&H Radiological Control Department for evaluation. When the suspect isotope is uranium, the involved personnel shall report to the Urine Sampling Station at the end of their shift to complete an Incident Investigation Report (IIR) (Form No. FMPC-ES&H-1458), and submit an incident urine sample. The involved personnel shall also report to the Urine Sampling Station at the start of their next shift to submit a follow up urine sample. When the suspect isotope is other than uranium, the involved personnel shall report to the Dosimetry Section of the Radiological Control Department for further determination of actions. Employees are responsible for complying with additional requirements as specified by the Radiological Control Section.

6.9 Any situation which could have resulted in the inhalation, ingestion, or absorption of a hazardous material shall immediately be reported to a Supervisor or to the Assistant Emergency Duty Officer (AEDO), who will immediately report the circumstances to Medical and Industrial Hygiene. The involved personnel shall be directed by the Supervisor or AEDO as to when and where to report for medical evaluation, completion of an Incident Investigation Report (IIR) (Form No. FMPC-ES&H-1458), and submitting bioassay samples (e.g. blood, urine). Employees are responsible for complying with any additional requirements as specified by ES&H.

7.0 GENERAL

7.1 Warnings, Cautions, and Notes precede the Step or Item to which they apply.

8.0 PROCEDURE

8.1 Preparing Containers for Storage

NOTE: The supervisor shall notify an MC&A representative of requirement for inventory update.

8.1.1 Inform the supervisor of material for storage.

NOTE: An "NM Transfer Record/NM Receipt Record/Material Identification Record" (68/69 card) is not required for radioactive material received from offsite.

8.1.2 Upon delivery of radioactive material to the storage area, inspect container(s) and accompanying paperwork per the "Radioactive Material Pre-Storage Checklist", Form FMPC-REST-3183 (See Figure 1).

8.1.2.1 If an unacceptable item is noted, complete "Corrective Action" and "Date Corrected" section on the "Radioactive Material Pre-Storage Checklist".

8.1.3 Sign the "NM Transfer Record/NM Receipt Record/Material Identification Record", 68/69 card (See Figure 2).

8.0 PROCEDURE (cont.)

8.1.4 Request the Waste Management Supervisor and the Nuclear Materials Reporting Specialist to sign 68/69 card.

8.1.5 If the container was received from offsite, complete the "Nuclear Material Receiving Report," Form FMPC-ADMS-613 (Figure 3) "Offsite Nuclear Materials Receipt Verification and Disposition Report", Form FMPC-ADMS-PRO-1131-1 (Figure 4).

NOTE: Supervisor shall forward Form FMPC-ADMS-613 to MC&A.

8.1.6 Transmit the forms to the supervisor.

CAUTION

Respiratory protection shall be worn while removing rust and/or painting/chipping.

8.1.7 Using a metal brush, remove loose paint or rust before painting.

8.1.8 Paint bare metal, chipped paint areas, or rust areas using the same color of rust inhibiting paint.

8.1.9 Request Nuclear Materials Reporting Specialist to record data for LLRM Inventory database.

8.1.10 Check to ensure a hazardous material warning label (See Figure 5) coated with polyurethane is affixed on the container.

8.1.10.1 If there is no label, notify the supervisor.

8.1.10.2 If label(s) do not have coating, apply polyurethane coating.

8.1.11 Sign the completed "Radioactive Material Pre-Storage Checklist", Form FMPC-REST-3183.

8.1.12 Obtain the other required signatures.

8.1.13 Submit signed form to the supervisor.

NOTE: The supervisor shall notify MC&A of the move and new location.

8.1.14 Notify the supervisor when a container is moved form one location to another location.

8.2 Storage

NOTE: Handstacker shall be inspected and operated per SOP 20-C-902.

8.2.1 Check that the handstacker or forklift has been inspected.

8.2.1.1 If not, perform an inspection.

8.2.2 Using a forklift or handstacker, move radioactive material containers to storage per Table 1.

8.0 PROCEDURE (cont.)

8.2.3 If additional action is required and the action is not listed in Table 1, notify the supervisor.

8.3 Inspection

8.3.1 Inspect radioactive material containers per Table 2 on a periodic basis as required by the "Drum Management Plan."

8.3.2 Complete the "Radioactive Material Container/Storage Discrepancy Record", Form FMPC-REST- 3182 (See Figure 6) during inspection by recording only the container/storage area discrepancies.

8.3.2.1 If an unacceptable condition is noted on Form FMPC-REST-3182, refer to Tables 1 and 2 for corrective action.

NOTE: The supervisor shall specify corrective action.

8.3.2.2 If other items of concern are noted during inspection, notify the supervisor.

NOTE 1: The inspector and supervisor shall sign the completed form.

NOTE 2: The supervisor shall maintain records of completed remediation.

8.3.3 When inspection is completed, submit Form FMPC-REST- 3182 to the supervisor.

9.0 APPLICABLE FORMS

9.1 Form FMPC-REST-3182, "Radioactive Material Container/Storage Discrepancy Record"

9.2 Form FMPC-REST-3183, "Radioactive Material Container Pre- Storage Checklist"

9.3 Form FMPC-ADMS-613, "Nuclear Material Receiving Report"

9.4 Form FMPC-AC-1990, "NM Transfer Record"

9.5 Form FMPC-AC-2220, "Nuclear Material Receipt Record"

9.6 Form FMPC-AC-2221, "Material Identification Record"

9.7 Form FMPC-ADMS-PRO-1131-1, "Offsite Nuclear Materials Receipt Verification and Disposition Report"

TABLE 1
STORAGE REQUIREMENTS FOR RADIOACTIVE MATERIAL

STORAGE REQUIREMENT	APPLICABLE RADIOACTIVE MATERIAL			
	CONTAINERIZED		NON-CHARACTERIZED WASTE	NON-CONTAINERIZED FREE-RELEASE MATERIAL
	LONG TERM	SHORT TERM		
1 Stack maximum of three containers high	X	X	X	
2 Group containers per lot number	X	X	X	X
3 Maintain forklift accessibility to rows	X	X	X	X
4 Spacing must be facility dependent	X	X	X	X
5 Store drummed material on pallets	X	X	X	
6 Container markings and labels shall be visible in aisle	X	X	X	
7 Aisles shall be accessible for inspection	X	X	X	
8 May be stored on or off pad				X
9 Nuclear safety requirements apply per SOP 20-C-904	X	X	X	

TABLE 2
RADIOACTIVE MATERIAL STORAGE INSPECTION

ITEM	INSPECTION ITEM	INSPECTION CRITERIA	CORRECTIVE ACTION REQUIRED
Container	Hole	An opening in the container including breach, gouge, puncture or leak.	Overpack per SOP 1-C-804.
Container	Dent	A crease, depression or hollow made by blow or pressure; a concave distortion which jeopardizes the integrity of the container. A dent in the top or bottom rim.	Overpack per SOP 1-C-804.
Container	Bulge	A swollen area, a convex distoration, an outward bend which jeopardizes the integrity of the container.	Overpack per SOP 1-C-804.
ontainer	Corrosion	A container exhibiting exterior rust which is flaking or discoloration and bulging from interior rust.	Overpack per SOP 1-C-804.
Configu-ation	Spacing	Aisle spacing must be three feet between pallets and between rows of pallets for non-characterized material. All ther material must be spaced per supervisor's direction.[1]	Move container(s).
Pallet	Boards	Inspect for broken boards per criteria of SOP 01-104.	Replace or repair pallet.
Container	Labeling	A hazardous material label, FMPC lot marking code, and gross weight must be visible and legible on the container.[2]	Affix label or stencil with enamel paint the required markings in 2 inch letters.

Excluding requirements for nuclear safe masses per SOP 20-C-904.

Enriched material shall include labeling requirements of SOP 20-C-904.

RADIOACTIVE MATERIAL CONTAINER PRE-STORAGE CHECKLIST					
STORAGE AREA:		FMPC INVENTORY NO.:			DATE:
ITEM NO.	INSPECTION ITEM	ACCEPTABLE		CORRECTIVE ACTION	DATE CORRECTED
		YES	NO		
1	Form FMPC-CONT-1945-XX car complete			Complete form per SOP 20-C-601 or 1-C-6040[1].	
2	68/69 card complete			Notify supervisor.	
3	Shipping manifest and waste characterization complete[2]			Notify supervisor.	
4	Container free of spilled/leaked material			Notify supervisor and contain spill/leak per SOP 20-C-606	
5	Container free of damage (i.e. bare metal, hole, dent, bulge, corrosion)			Overpack per SOP 1-C-804.	
6	Container bolt ring secure			Secure or replace bolt ring.	
7	Material sampled/factor assay performed for radionuclides and RCRA determination			Sample per SOP 1-C-101.	
8	FMPC Lot Number complete and stencilled on container			Obtain and stencil lot number per SOP 20-C-601 or 1-C-604[1].	
9	Gross, net, and tare weight complete and stencilled on container			Stencil weights per SOP 20-C-601 or 1-C-604[1].	

RADIOACTIVE MATERIAL CONTAINER PRE-STORAGE CHECKLIST
FORM NO. FMPC-REST-3183
Figure 1 (Sheet 1 of 2)

10	"POOS" marking stencilled on container, if applicable			Stencil "POOS" marking on container per SOP 20-C-601 or 1-C-604[1].	
11	Gross weight marking correct size (2")			Correct marking per SOP 20-C-601 or 1-C-604[1].	
12	Container markings and labels correctly located per Figure 7[3].				
13	"Hazardous Material Warning Label" affixed to container			Affix label to container.	
14	Other labels affixed to container as applicable (Flammable)			Affix applicable labels per SOP 20-C-601 or 1-C-604 [1].	
15	Pallet free of damage			Replace or repair pallet per SOP 01-104.	
16	Container plastic wrapping secure, if applicable			Secure, rewrap, or container size.	

[1]SOP 20-C-601 is applicable to radioactive waste. SOP 1-C-604 is applicable to residues and refuse material.

[2]Applicable to material received from offsite.

[3]Box markings and labels shall be located as shown in Figure 8.

COMMENTS: _____

_____

_____

MC&A Signature Badge No. Waste Management Signature Date

Inspector's Signature Date

RADIOACTIVE MATERIAL PRE-STORAGE CHECKLIST
FORM NO. FMPC-REST-3183
Figure 1 (Sheet 2 of 2)

NUCLEAR MATERIAL TRANSFER RECORD

CARD SEQUENCE NO. 92852

CARD PL. NO. 53

NOTE: Green card is for receiver information ONLY and may be retained in file. DO NOT FORWARD to Data Processing. DO NOT LEAVE with the material.

DATE TRANSFERRED: NEGATIVE | DAY | YEAR | SHIFT | TRANS. BY BADGE NO.

P.O. NO.: | SOURCE:

MATERIAL CLASS: | MATERIAL TYPE:

LOT SEQUENCE NO.:

MATERIAL DESCRIPTION:

SHAPE CODE:

MBA: FROM: | PLANT:

MBA: TO: | PLANT:

STORAGE LOCATION:

NO. OF CONTAINERS OR ITEMS: NUMBER | DESCRIPTION

GROSS WEIGHT:

TARE WEIGHT:

SIGNATURES:

FMPC-AC-1990 (REV 10/7/88)

NUCLEAR MATERIAL RECEIPT RECORD

CARD SEQUENCE NO. 92852

CARD PL. NO. 69

NOTE: Green card is for receiver information ONLY and may be retained in file. DO NOT FORWARD to Data Processing. DO NOT LEAVE with the material.

DATE RECEIVED: NEGATIVE | NO. | DAY | YEAR | SHIFT | RECEIVED BY BADGE NO.

P.O. NO.: | SOURCE:

MATERIAL CLASS: | MATERIAL TYPE:

LOT SEQUENCE NO.:

MATERIAL DESCRIPTION:

SHAPE CODE:

MBA: FROM: | PLANT:

MBA: TO: | PLANT:

STORAGE LOCATION:

NO. OF CONTAINERS OR ITEMS: NUMBER | DESCRIPTION

GROSS WEIGHT:

TARE WEIGHT:

SIGNATURES:

FMPC-AC-2220 (REV 10/7/88)

MATERIAL IDENTIFICATION RECORD

CARD SEQUENCE NO. 92852

CARD PL. NO. XX

NOTE: Green card is for receiver information ONLY and may be retained in file. DO NOT FORWARD to Data Processing. DO NOT LEAVE with the material.

DATE RECEIVED: NEGATIVE | NO. | DAY | YEAR | SHIFT | RECEIVED BY BADGE NO.

P.O. NO.: | SOURCE:

MATERIAL CLASS: | MATERIAL TYPE:

LOT SEQUENCE NO.:

MATERIAL DESCRIPTION:

SHAPE CODE:

MBA: FROM: | PLANT:

MBA: TO: | PLANT:

STORAGE LOCATION:

NO. OF CONTAINERS OR ITEMS: NUMBER | DESCRIPTION

GROSS WEIGHT:

TARE WEIGHT:

SIGNATURES:

FMPC-AC-2221 (REV 10/7/88)

NM TRANSFER RECORD/NM RECEIPT RECORD/MATERIAL IDENTIFICATION RECORD
FORMS FMPC-AC-1990, 2220, 2221
Figure 2

Westinghouse Materials Company of Ohio
P.O. BOX [illegible]
CINCINNATI, OHIO 45239

NUCLEAR MATERIAL RECEIVING REPORT

NUCLEAR MATERIAL RECEIVING REPORT NO _____

DATE UNLOADED _____ '9 ____ DATE RECEIVED _____ '9 ____

RECEIVED FROM _____

CARRIER _____ CAR NUMBER _____ SEAL NUMBER _____

FREIGHT BILL NO _____ BILL OF LADING NO _____

NUMBER OF ITEMS RECEIVED _____ TYPE OF ITEMS RECEIVED _____ GROSS WEIGHT _____

MATERIAL DESCRIPTION AS PER BILLING _____ NLT NO _____

CHECKED BY _____ RECEIVED BY _____

NOTE: [illegible]

CONSIGNOR'S INFORMATION			DESCRIPTION OF MATERIAL	RECEIVING SECTION INFORMATION			
LOT NUMBER	QUANTITY	WEIGHT LBS		GROSS LBS	TARE LBS	NET LBS	ELEMENT WT

REMARKS (Related document numbers for additional material received) _____

[illegible]

RECEIVER TO MATERIALS CONTROL & ACCOUNTABILITY

NUCLEAR MATERIALS RECEIVING REPORT
FORM FMPC-ADMS-613
Figure 3

- 4552-

Page ____ of ____ Pages

OFF-SITE NUCLEAR MATERIALS RECEIPT VERIFICATION AND DISPOSITION REPORT

Shipped From _____ Nuclear Mat'l Rec Report No _____ Date Discovered _____

Date Received _____ DOE Tel No _____

Carrier _____ Shipper's Tally List Received with Shipment ☐ Yes

No. of containers on Nuclear Mat'l Receiving Report _____ AMT No _____ ☐ No

PRODUCTION RECEIVING DATA

LINE ITEM	SHIPPER'S PO NO	NO OF CONTAINERS	MATERIAL DESCRIPTION	FMPC GROSS LBS	FMPC TARE LBS	FMPC NET LBS	SHIPPER'S NET WT LBS
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							

DISPOSITION

LINE ITEMS INCLUDED	FMPC LOT NO. ASSIGNED	DELIVERED TO (CONSIGNEE)

Condition Received (Remarks & Recommendations).

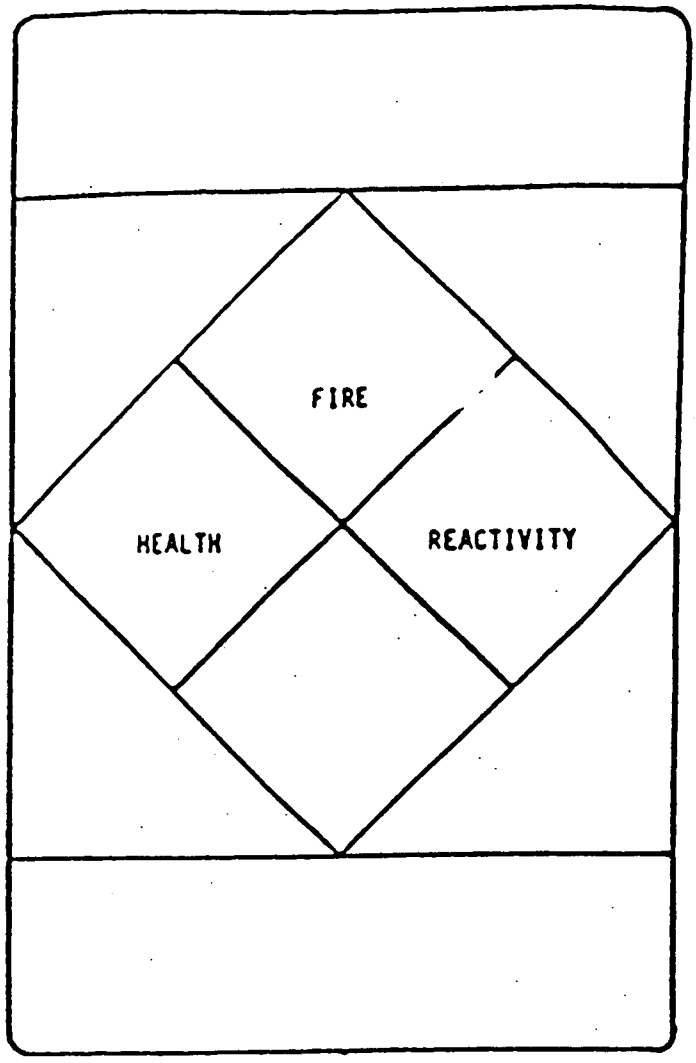
Disposition by _____

Persons Consulted in Reference to Disposition

NO	DISTRIBUTION OF COPIES
1	MC&A (record copy)
2	Receiving Group - Plant 1
3	Operations Scheduling & Planning
4	Production Records - Plant 1
5	Receiving Plant

FMPC-ADMS-PRO-1131-1 (REV 6/88)

OFFSITE NUCLEAR MATERIALS RECEIPT VERIFICATION AND DISPOSITION REPORT
FORM FMPC-ADMS-PRO-1131-1
Figure 4



"HAZARDOUS MATERIAL WARNING LABEL"
Figure 5

- 4552 -

RADIOACTIVE MATERIAL CONTAINER/STORAGE DISCREPANCY RECORD

INSPECTOR'S NAME:_____ INSPECTOR'S BADGE NO.:_____

LOCATION:_____ DATE:_____ TIME:_____

FMPC LOT NUMBER	MC&A INVENTORY NUMBER	HOLE		SPACING		BROKEN PALLET BOARD		CORRECT LABELING		LOCATION NO.
		YES	NO	YES	NO	YES	NO	YES	NO	

COMMENTS:_____

INSPECTOR'S SIGNATURE:_____ DATE:_____

SUPERVISOR'S SIGNATURE:_____ DATE:_____

RADIOACTIVE MATERIAL STORAGE INSPECTION
FORM FMPC-REST-3182
Figure 6

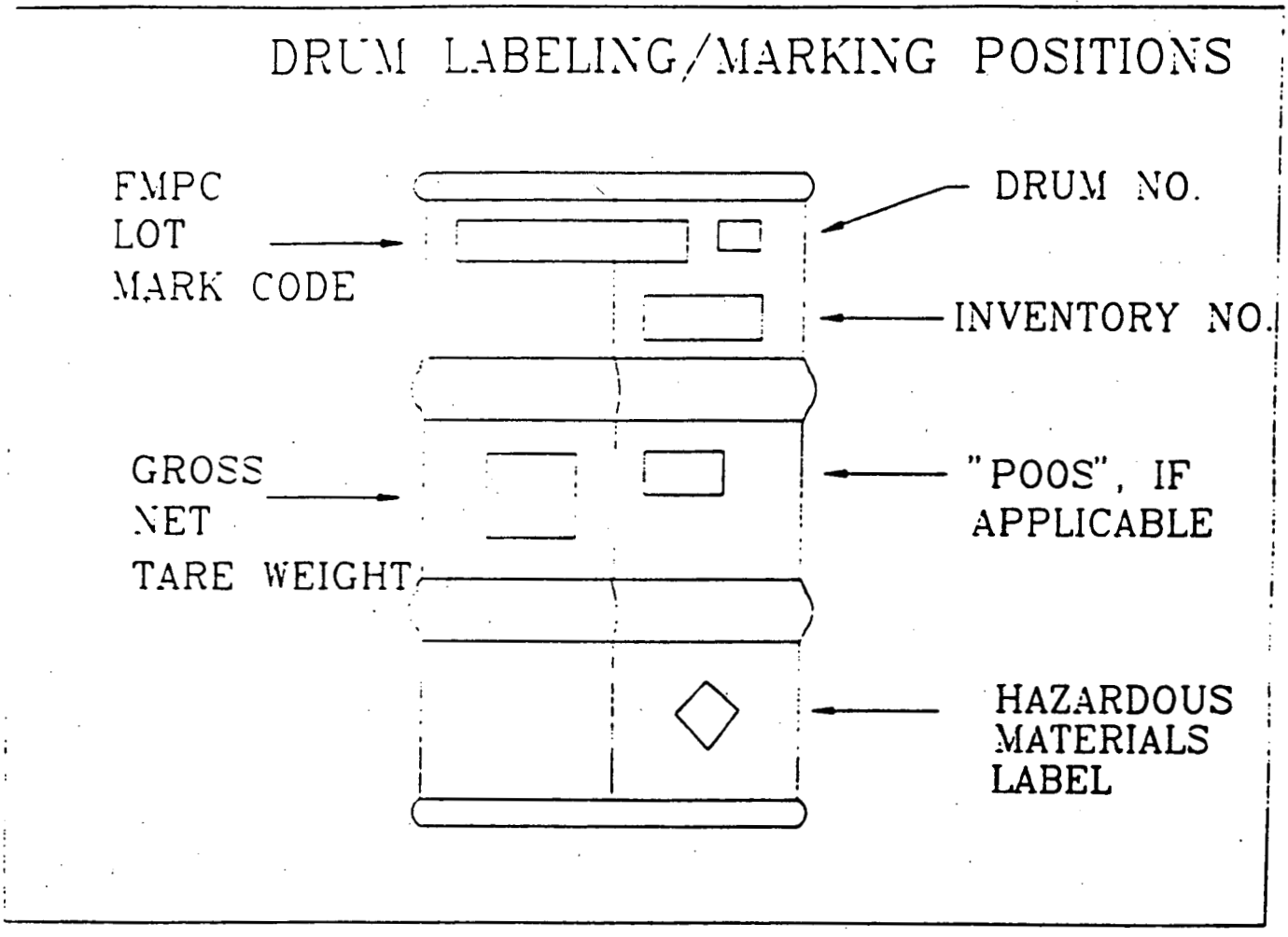


DIAGRAM OF RADIOACTIVE MATERIAL CONTAINER LABELING
Figure 7

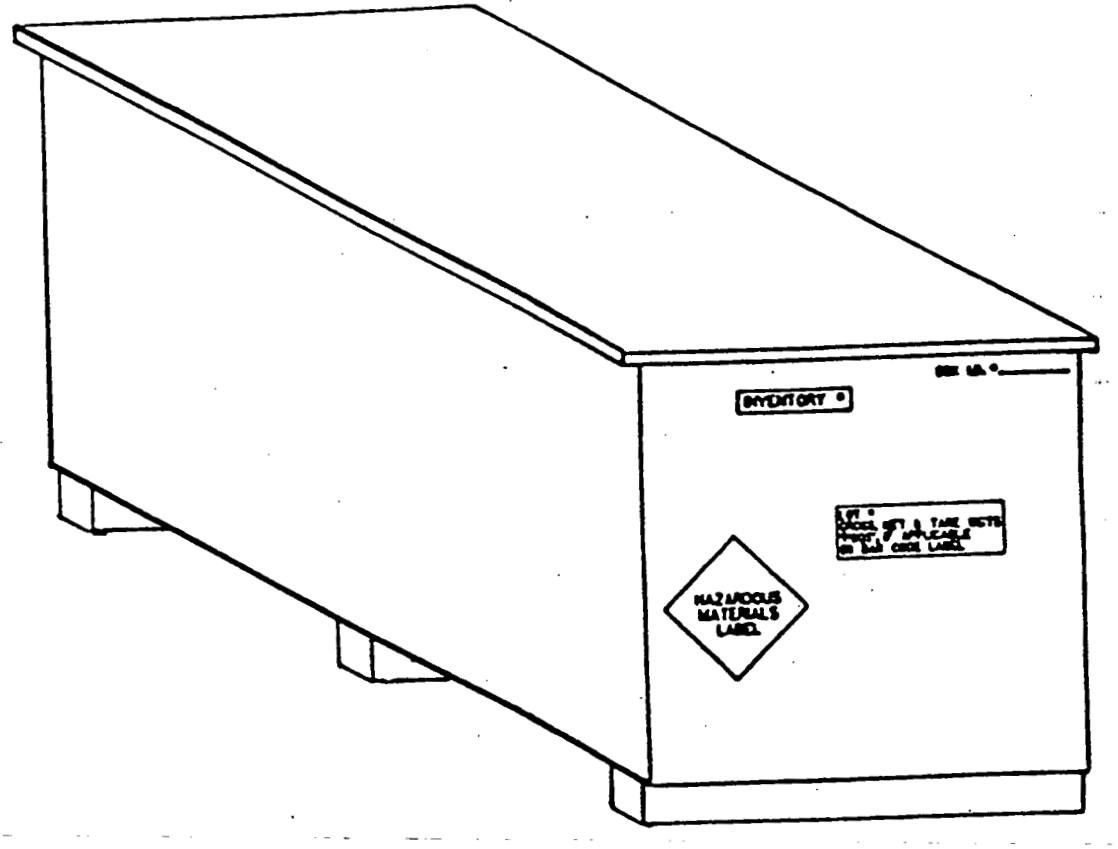


DIAGRAM OF LLRM BOX LABELING
Figure 8

RECORD OF ISSUE/REVISIONS

DATE	REV. NO.	DESCRIPTION AND AUTHORITY
08-13-90	0	Procedure required for storing radioactive material per Request No. P89-448, initiated by K. Dunbar.
12-09-92	1	Revised to incorporate CIOs C92-013 (P92-277), C92-024 (P92-131), and update to current Procedure Program requirements.
03-12-93	2	Revised to correct the 12-09-92 entry under the DESCRIPTION AND AUTHORITY HEADING of the RECORD OF ISSUE/REVISION per Request No. P93-113.

NON-CONTROLLED COPY

Controlled Copy No. - 4552 -

SITE STANDARD OPERATING PROCEDURE
DOCUMENT NO. SSOP-0075
REVISION NO. 0

PACKAGING LOW LEVEL RADIOACTIVE WASTE (LLRW) IN DRUMS FOR OFFSITE SHIPMENT

SSOP-0075

Effective Date: 12-14-92

AUTHORIZED BY: _____ 11/30/92
H. F. Daugherty, President Date

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

Westinghouse Environmental Management Company of Ohio
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WESTINGHOUSE ENVIRONMENTAL MANAGEMENT COMPANY OF OHIO SITE DOCUMENT PROGRAM		SITE STANDARD OPERATING PROCEDURE Page 1 of 19
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Authorization: H. F. Daugherty, President	Replaces: SSOP-0024, Dated 10-14-91 Rev. 0	Effective Date: 12-14-92

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RECORD OF ISSUE/REVISIONS

DATE	REV. NO	DESCRIPTION AND AUTHORITY
12-14-92	0	Separate procedure written, using information from SSOP-0024, for packaging LLRW in drums per Request No. S92-123, initiated by M. Hundley. SSOP-0075, SSOP-0078, and SSOP-0079 replaces SSOP-0024.

1.0 PURPOSE

This procedure provides the instructions for packaging low level radioactive waste (LLRW) in drums for shipment off-site from the Fernald Environmental Management Project (FEMP).

2.0 SCOPE

This procedure outlines the steps for (1) inspecting the waste to be packaged, (2) inspecting empty drums, (3) filling drums, (4) weighing filled drums, and (5) securing and labeling the drums.

The packaging operation is applicable to FEMP personnel (including subcontractors) responsible for packaging LLRW into open-head drums at any packaging location of the FEMP site. The packaging operation originates upon approval from DOE for a specific waste stream.

3.0 DEFINITIONS

Drum - A cylindrical, metal open-head container which meets Department of Transportation (DOT) and Environmental Protection Agency (EPA) requirements, and Nevada Test Site (NTS) acceptance criteria.

Free Liquid - Any free flowing liquid or any liquid that readily separates from the solid portion of a waste under ambient temperature and pressure conditions. Ice is also considered a free liquid.

Low-Level Radioactive Waste (LLRW) - All radioactive waste not classified as high-level waste, spent nuclear fuel, TRU waste, uranium mill tailings, or MW. Low-level waste can contain TRU nuclides in concentrations not greater than 100 nanocuries per gram, where TRU means transuranic and MW means mixed waste.

Packaging Location - Any area where waste is stored or generated.

Resource Conservation and Recovery Act (RCRA) - The Congressional Act which established safe and environmentally acceptable management practices for specific wastes. RCRA requires strict "cradle to grave" control, documentation and proper management of hazardous wastes.

4.0 RESPONSIBILITIES

Environmental Compliance & Quality Assurance (EC&QA)

- Ensures waste is not a prohibited material.
- Provides documentation supporting characterization results as needed.

4.0 RESPONSIBILITIES (cont.)

- Overviews packaging operation to ensure compliance with this procedure.

Industrial, Radiological Safety & Training (IRS&T)

- Provides a Radiological Safety Technician, as requested.
- Determines appropriate respiratory equipment and any other employee protection.

Logistics Administration specifies the drum type.

Materials Control and Accountability (MC&A) provides bar-code labels.

Motor Vehicle Operator (MVO) of Facilities and Warehousing (F&W)

- Transports packaged waste to the applicable storage area.
- Delivers empty drums to designated areas.
- Supports packager when performing scale inspection/test.

Packager

- Inspects waste per this procedure.
- Packages waste per this procedure.
- Complies with any additional requirements specified by Industrial, Radiological Safety and Training (IRS&T).

Supervisor

- Specifies applicable scale procedures and standard tare weight of packages.
- Ensures packaging materials are available for packagers.
- Ensures that trained personnel package waste material.
- Determines disposition of waste material identified in this procedure.
- Ensures that personnel package waste for shipment to meet applicable Nevada Test Site (NTS), Department of Transportation (DOT), and Environmental Protection Agency (EPA) regulations.

4.0 RESPONSIBILITIES (cont.)

- Contacts Industrial, Radiological Safety and Training (IRS&T) to determine the appropriate respiratory protection for the process being performed and the radiological surveys required for materials moving in and out of regulated areas.
- Provides packagers with the required respiratory protection and other personal protective equipment.
- Ensures the lid on an unfilled waste container is secured when no packaging is occurring to prevent addition of unknown materials.
- Ensures waste packages are weather-protected.
- Contacts IRS&T prior to opening any drum of unknown radioactive material.

5.0 GENERAL

None

6.0 PREREQUISITES

6.1 INDUSTRIAL HEALTH AND SAFETY REQUIREMENTS

- Safety glasses with side shields shall be worn unless other eye protection is specified by IRS&T.
- Respiratory protection provided by the supervisor shall be worn when required.
- Leather-palm gloves shall be worn when handling drums, operating equipment, and handling rough, sharp-edged, or contaminated material.
- HEPA type filter vacuum cleaners or a vacuum system approved by IRS&T with a current DOP test label properly affixed to vacuum shall be used for cleaning.
- A minimum of two packagers shall package waste.

6.0 PREREQUISITES (cont.)

- Any circumstance which could have resulted in an employee inhaling, ingesting or absorbing radioactive materials shall immediately be reported to a supervisor. The supervisor shall immediately report the possibility of radioactive materials intake to IRS&T Radiological Safety Section. The involved employee(s) shall report to the FEMP Urine Sampling Station at the end of their shift to complete an "Incident Investigation Report" (IIR), Form FMPC-ES&H-1458 and submit an incident urine sample. The involved employee(s) shall also report to the Urine Sampling Station at the start of their next shift to submit a follow-up urine sample. Employees shall be held accountable for complying with additional requirements as specified by IRS&T.

6.2 PACKAGING SUPPLIES

- Obtain the following items/supplies prior to preparing drums and packaging waste:
  - indelible ink marker
  - black paint, red paint, white paint (as applicable)
  - 15/16 inch combination wrench
  - calibrated torque wrench
  - wire and wire pullers
  - applicable drum labels
  - lab label tape and dispenser

6.3 POSTING REQUIREMENTS

- A "Prohibited Materials List" (see Figure 1) shall be displayed in the packaging area.

6.4 WASTE CHARACTERIZATION

- A Material Evaluation Form (MEF), FS-F-3252, shall be completed to categorize the material as RCRA or Non-RCRA.

  NOTE: A numbered MEF may be obtained from Waste Management Records and initiated per SSOP-0002, "Completing the Material Evaluation Form".

- Additional documentation supporting the characterization results shall be provided by Environmental Compliance.

PACKAGING GUIDELINES FOR WASTE GENERATOR

Package has been properly prepared for closing:

No liquids of any kind have been placed in container

Heavy/bulky items have been secured within container

All available space has been utilized efficiently

Prohibited materials have been excluded (see below)

Packaging has not been damaged during loading

Liner is in place and properly lapped and sealed

PROHIBITED MATERIALS

Compressed Gases (unpunctured aerosol cans included)

Explosives

Free liquids

Fine particulates (respirable fines)

Hazardous Waste (suspect RCRA materials included)

Corrosive materials

Etiologic agents

Figure 1 - PROHIBITED MATERIALS LIST

6.0 PREREQUISITES (cont.)

- A sample of the waste for Toxicity Characteristic Leaching Procedure (TCLP) may be required as requested by Facilities and Material Evaluation (FME).
- A sample may be required for major radionuclides and other suspected nuclides as determined by supervision.

7.0 PROCEDURE

NOTE: Within this section, Warnings and Cautions precede the step to which they apply. Notes follow the step to which they apply.

7.1 INSPECTING THE WASTE

EC&QA AND PACKAGER

1. Ensure the waste to be packaged is not on the "Prohibited Materials List" (see Figure 1).

PACKAGER

a. If the waste is listed on the "Prohibited Materials List", do not package this waste. Notify supervisor for disposition.

2. As required, notify supervisor that a Radiological Safety Technician (RST) is needed.

> **WARNING**
>
> **AN RST SHALL BE PRESENT PRIOR TO OPENING ANY CONTAINER OF UNKNOWN RADIOACTIVE MATERIAL.**

3. As applicable, remove container lid. Visually check waste for free liquid.

   a. If free liquid is present or material is wet, notify supervisor.

4. When recent weather conditions have occurred that could cause ice, carefully inspect waste for ice.

   a. If ice is present in waste, notify supervisor.

7.1 INSPECTING THE WASTE (cont.)

PACKAGER

5. Complete a "Visual Inspection of Drummed Material", Form FS-F-3570 (see Figure 2), as applicable and transmit to supervisor.

6. Fill out an "Item Production/Certification/Identification", XX card, Form FS-F-1945-XX (see Figure 3) as follows:

   a. Record the FEMP Lot Marking Code per "FEMP Lot Marking and Color-Coding System", RM-0005, in the areas titled "P.O. No.", "Source", Material Class", and "Material Type".

   b. Record a general description of the waste in the area titled "Waste Description and Comments".

7.2 PREPARING EMPTY DRUMS

SUPERVISOR

1. Notify Facilities and Warehousing (F&W) to deliver appropriate type of drum(s) to the designated packaging area.

   NOTE: The specific drum type shall be determined by Logistics Administration.

PACKAGER

2. Visually inspect the drum interior and exterior for damage, such as corrosion, dents, holes, or other defects (refer to Tables 1 and 2).

   a. If the drum is damaged, mark the lid or side with a red "X" and refer to Tables 1 and 2 for corrective action, as applicable.

3. Visually inspect the interior to ensure the drum is empty.

   a. If material is present in the drum, notify supervisor.

4. Using indelible ink, mark the lot and drum number per the "FEMP Lot Marking and Color Coding System", RM-0005, on the lid and side of the drum (see Figure 4).

FEMP

VISUAL INSPECTION OF DRUMS

INSPECTOR'S NAME:		BADGE NUMBER:	DATE:
INVENTORY NUMBER:	FEMP LOT NUMBER:	DRUM NUMBER:	
DESCRIPTION OF MATERIAL: ☐ Solid ☐ Liquid ☐ Damp Color _____		FREE-STANDING LIQUID/ICE: ☐ Yes ☐ No	
AMOUNT OF MATERIAL IN DRUM: ☐ Empty ☐ 1/4 Full ☐ 1/2 Full ☐ 3/4 Full ☐ Full		IS IT O.P., IF SO WHAT SIZE:	
WEIGHTS ON DRUM: G _____ T _____ N _____		pH, IF LIQUID:	

COMMENTS: _____

_____ PACKAGER _____ DATE

FS-F-3570 (8/17/92)

Figure 2 - VISUAL INSPECTION OF DRUMMED MATERIAL
Form FS-F-3570

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Authorization: H. F. Daugherty, President	Replaces: SSOP-0024, Dated 10-14-91 Rev. 0	Effective Date: 12-14-92

CARD 65-1 ITEM PRODUCTION/CERTIFICATION/IDENTIFICATION

INV. NO.:

P. O. NO.	SOURCE	CLASS	MATERIAL TYPE	LOT SEQUENCE NO.	DATE MO	DAY	YEAR	SHIFT	BADGE NO.	CONT. NO.	SERIAL NO.

SEAL NUMBER	SEAL DATE MONTH	DAY	YEAR

WASTE DESCRIPTION AND COMMENTS

PACKAGE TYPE	
PACKAGE SIZE	
PROJECT	

PACKAGE PHYSICAL CERTIFICATION	YES	NO
EMPTY CONTAINER AT START		
RUST HOLES OR DENTS		
MATERIAL IS AS CODED		
PROHIBITED MATERIALS		
LIQUIDS IN CONTAINER		
MINIMUM OF VOID SPACE		
PACKAGE SECURED		
DRAIN PLUG SECURED		
OVERPACK		
REPACK		

PLANT	PROD. MBA	MEF NO.
DCAR	SURV. NO.	GROSS WEIGHT
		TARE WEIGHT
		NET WEIGHT

GENERATOR SIGNATURE

SUPERVISOR SIGNATURE DATE

FS-F-1945-1 (REV. 11/20/92)

Figure 3 - ITEM PRODUCTION/CERTIFICATION/IDENTIFICATION CARD
Form FS-F-1945-XX

TABLE 1
CORROSION INSPECTION CATEGORIES

CATEGORY	CHARACTERISTIC	COULD CAUSE LOSS OF DRUM INTEGRITY		CORRECTIVE ACTION
		YES	NO	
A	Severe corrosion with deep pitting and/or metal flaking	X		1. Notify supervisor. **NOTE**: The drum requires disposition as directed by supervision within 24 hours.
B	Corrosion with shallow pitting and/or mild metal flaking		X	1. Proceed as directed by the supervisor. **NOTE**: Disposition shall be determined by the supervisor following review of completed inspection form.
C	Surface rust with no pitting and mild paint flaking which exposes bare metal		X	1. Proceed as directed by the supervisor. Repainting shall be scheduled by supervisor.

TABLE 2
LLRW DRUM INSPECTION

INSPECTION ITEM	INSPECTION CRITERIA	CORRECTIVE ACTION REQUIRED
Hole	An opening in the container including breach, gouge, puncture or leak.	Notify supervisor of condition and request disposition instructions.
Dent	A crease, depression or hollow made by blow or pressure; a concave distortion which jeopardizes the integrity of the container. A dent in the top or bottom rim.	Notify supervisor of condition and request disposition instructions.
Bulge	A swollen area, a convex distortion, an outward bend which jeopardizes the integrity of the container.	Notify supervisor of condition and request disposition instructions.

TYPICAL LABELING OF NON-RCRA OR LOW-LEVEL RADIOACTIVE WASTE DRUM

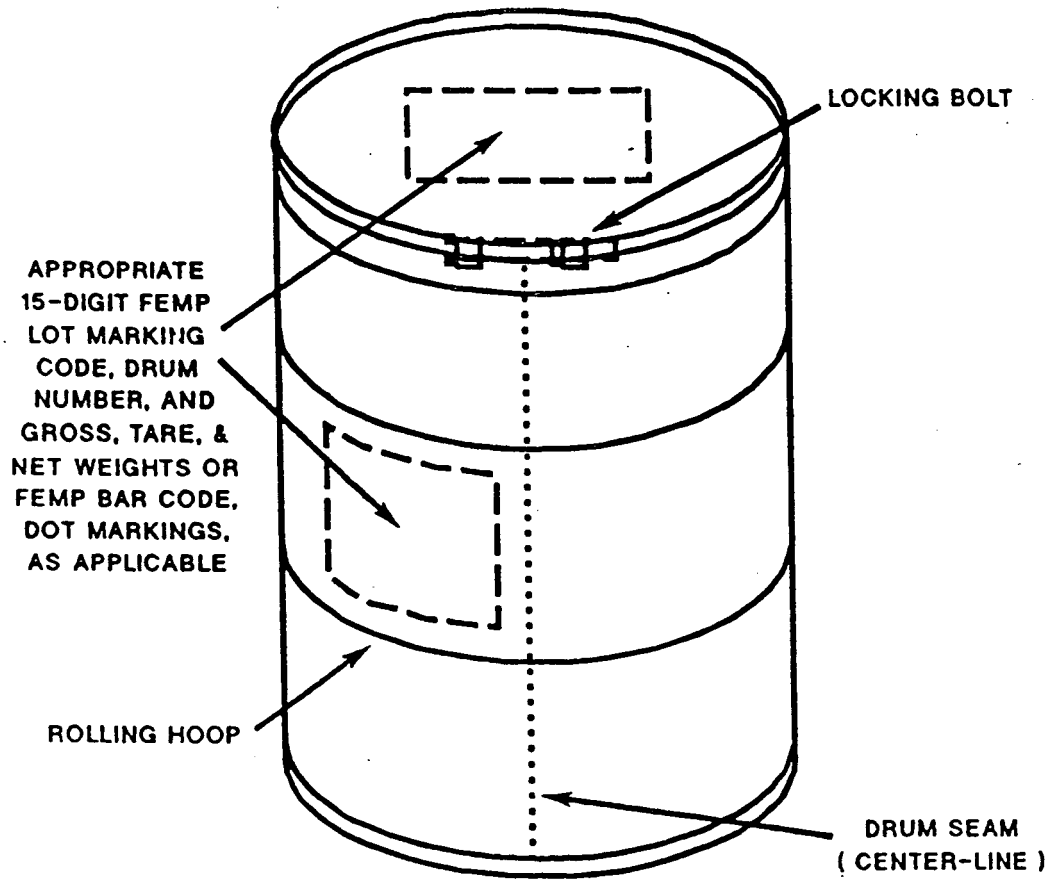

Figure 4 - LOCATIONS FOR LLRW DRUM LABELING

7.2 PREPARING EMPTY DRUMS (cont.)

PACKAGER

5. On the XX Card (see Figure 3), record the type of container in the area titled "Package Size" and fill out the "Package Physical Certification" area excluding the last two items.

SUPERVISOR

6. Specify the scale for weighing and the method of transporting the drum to the scale.

PACKAGER

7. Inspect the scale to be used per the scale procedure applicable to the area.

8. Using method specified by supervisor, place drum on scale.

9. Tare weigh every twentieth drum for each drum type per the scale procedure applicable to the area.

10. Insert the XX card into the scale printer to record tare weight.

11. Using method specified by supervisor, remove drum from scale.

12. Move drum to loading area as directed by the supervisor.

7.3 FILLING DRUMS WITH WASTE MATERIAL

EC&QA

1. Oversee filling of drums to ensure compliance with this procedure.

   a. If a nonconformance is identified, document and evaluate for corrective action per applicable department procedure.

7.3 FILLING DRUMS WITH WASTE MATERIAL (cont.)

CAUTION

RESPIRATORS AND OTHER PERSONAL PROTECTIVE EQUIPMENT PROVIDED BY THE SUPERVISOR SHALL BE WORN PRIOR TO FILLING DRUMS.

PACKAGER

2. Manually remove lock ring and lid from empty drum.

3. Using method specified by supervisor, fill drum with LLRW ensuring the waste level remains three inches below top of drum.

   NOTE: Because the density varies according to waste type, the volume of waste to be packed will vary.

4. Place lid on drum ensuring gasket is seated to maintain a tight seal.

5. Install bolt-type lock ring on lid.

7.4 WEIGHING FILLED DRUMS

SUPERVISOR

1. Specify scale for weighing and the method of transporting drum to scale.

PACKAGER

2. Inspect scale to be used per the applicable scale procedure.

MVO

3. Using equipment specified by supervisor, move drum onto scale.

PACKAGER

4. Using the applicable scale procedure, weigh drum and note scale indication of gross weight.

7.4 WEIGHING FILLED DRUMS (cont.)

PACKAGER

5. If drum gross weight is over specified limit (refer to Table 3), then proceed as follows:

TABLE 3
WEIGHT LIMITATIONS

DRUM SIZE	MAXIMUM GROSS WEIGHT
30 gallons	700 pounds
55 gallons	1,200 pounds
85 gallons	1,000 pounds

a. On the scale, remove lock ring and lid from the drum.

b. Gradually transfer waste from drum into approved container until the scale indicates gross weight of drum is within limits in Table 3.

<u>NOTE</u>: The removed material may be included in an underweight drum of the same lot or packaged in another drum of the same lot.

c. Place lid on drum and install bolt-type lock ring on lid.

MVO

6. Using equipment specified by supervisor, remove the drum from the scale.

PACKAGER

7. Using indelible ink, mark the gross weight on the lid and side of the drum in the area shown in Figure 4.

8. Calculate net weight.

9. Complete XX Card including gross weight, net weight, lot sequence number, badge number, and signature.

10. Transmit XX Card to supervisor.

7.4 WEIGHING FILLED DRUMS (cont.)

SUPERVISOR

11. Sign XX card and transmit XX card to MC&A.

MC&A

12. Using XX card data, print required bar-code labels and submit to supervisor.

7.5 SECURING AND LABELING DRUMS

PACKAGER

1. Visually inspect drum for corros and dirt.

   a. If drum is not clean, wipe drum exterior with a rag and dispose of rag in a designated container.

   b. If corrosion is present, notify supervisor.

2. Using a combination wrench and a torque wrench, tighten lock ring bolt to a minimum of 45 ± 5 pounds.

3. Secure lid by completing the following steps:

   a. Manually thread wire through bolt holes.

   b. Using wire pullers, clamp wire and pull away from bolt.

      NOTE: The wire should twist together when pulled.

   c. Remove wire pullers from wire.

   d. Manually grasp twisted wire and bend underneath the bolt.

4. Using red paint, apply dot on bolt.

5. Using bar-code labels provided by supervisor, affix labels to the lid and side of drum as shown in Figure 4.

   NOTE: For drums requiring immediate shipment, labels do not require the positioning (in relation to the seam) shown in Figure 4.

7.5 SECURING AND LABELING DRUMS (cont.)

MVO

6. Using a hoist/crane and barrel grab or equipment specified by supervisor, place the drum with bolt of lock ring facing outward on pallet.

PACKAGER

7. Notify supervisor the waste has been packaged.

SUPERVISOR

8. Request MVO to move pallet(s) to a designated storage area or to the designated waste staging area.

MVO

9. Strap drum(s) and move pallet(s) to the storage area or the waste staging area specified by the supervisor.

8.0 APPLICABLE DOCUMENTS

8.1 DRIVERS

NVO-325, "Nevada Test Site Defense Waste Acceptance Criteria, Certification, and Transfer Requirements"

8.2 REFERENCES

RM-0005, "FEMP Lot Marking and Color-Coding System"

SSOP-0002, "Completing the Material Evaluation Form"

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SITE STANDARD OPERATING PROCEDURE
DOCUMENT NO. SSOP-0078
REVISION NO. 0

PACKAGING LOW LEVEL RADIOACTIVE WASTE (LLRW) INTO ISO CONTAINERS FOR OFFSITE SHIPMENT

SSOP-0078

Effective Date: 12-14-92

AUTHORIZED BY: _____ 11/30/92
H. F. Daugherty, President Date

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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WESTINGHOUSE ENVIRONMENTAL MANAGEMENT COMPANY OF OHIO SITE DOCUMENT PROGRAM		SITE STANDARD OPERATING PROCEDURE Page 1 of 18
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RECORD OF ISSUE/REVISIONS

DATE	REV. NO	DESCRIPTION AND AUTHORITY
12-14-92	0	New procedure required for shipping LLRW in ISO containers per Request S92-175, initiated by M. Hundley. SSOP-0079, SSOP-0075, and SSOP-0078 replace SSOP-0024.

1.0 PURPOSE

This procedure provides the instructions for packaging low level radioactive waste (LLRW) into ISO containers for shipment offsite from the Fernald Environmental Management Project (FEMP).

2.0 SCOPE

This procedure outlines the steps for (1) preparing the empty ISO container, (2) inspecting the waste to be packaged, (3) filling container with waste, (4) weighing container, and (5) labelling container.

The packaging operation is applicable to FEMP personnel (including subcontractors) responsible for packaging LLRW in ISO containers at any packaging location of the FEMP site. This operation originates upon approval by DOE for a specific waste stream. LLRW may be packaged at any designated packaging location at the FEMP.

3.0 DEFINITIONS

Free Liquid - Any free flowing liquid or any liquid that readily separates from the solid portion of a waste under ambient temperature and pressure conditions. Ice is also considered a free liquid.

ISO Container - An Intermodal container (Dry Cargo Type). Those used at the FEMP typically measure 8-1/2 feet high X 8 feet wide X 20 feet long with two doors on the end. Although frequently referred to as a "Sea/Land" container at the FEMP, an ISO container may be, but is not necessarily, a Sea-Land container.

Low Level Radioactive Waste (LLRW) - Waste that contains radioactivity and is not classified as high level waste, transuranic waste, spent nuclear fuel or 11e(2) byproduct material as defined by DOE Order 5820.2A. Test specimens of fissionable material irradiated for research and development only, and not for the production of power or plutonium, may be classified as low-level waste, provided the concentration of transuranic is less than 100 nCi/g.

Packaging Location - Any area where waste is stored or generated.

Resource Conservation and Recovery Act (RCRA) - The Congressional Act which established safe and environmentally acceptable management practices for specific wastes. RCRA requires strict "cradle to grave" control, documentation and proper management of hazardous wastes.

3.0 DEFINITIONS (cont.)

Toxicity Characteristic Leaching Process (TCLP) - A RCRA term referring to wastes, the extracts from which contain the contaminants listed in Table 1 of 40 CFR 261.24, at a concentration equal to or greater than the respective value given in the table.

4.0 RESPONSIBILITIES

Checker fills out weight ticket.

Environmental Management (Facilities & Material Evaluation) provides documentation supporting characterization results as needed.

Industrial, Radiological Safety & Training (IRS&T)

- Provides a Radiological Safety Technician, as requested.
- Determines appropriate respiratory equipment and any other employee protection.

Logistics Administration specifies the required waste container.

Materials Control and Accountability (MC&A) provides bar-code labels.

Packager

- Inspects waste and container per this procedure.
- Packages waste per this procedure.
- Complies with any additional requirements specified by IRS&T.

Quality Assurance (QA) overviews packaging operation to ensure compliance with this procedure.

Supervisor of the waste generation area or packager

- Specifies applicable scale procedures and standard tare weight of packages.
- Ensures packaging materials are available for packagers.
- Ensures that trained personnel package waste material.
- Determines disposition of waste material identified in this procedure.

4.0 RESPONSIBILITIES (cont.)

- Ensures that personnel package waste for shipment to meet applicable Nevada Test Site (NTS), Department of Transportation (DOT), and Environmental Protection Agency (EPA) regulations.
- Contacts Industrial, Radiological Safety and Training (IRS&T) to determine the appropriate respiratory protection for the process being performed and the radiological surveys required for materials moving in and out of regulated areas.
- Contacts Radiological Safety for a radiological work permit or other safety permits and ensures permits are obtained and signed prior to performing work.
- Provides packagers with the required respiratory protection and other personal protective equipment.
- Ensures the doors on an unfilled waste containers are secured when no packaging is occurring thereby preventing addition of unknown materials.
- Ensures waste packages are weather-protected.
- Contacts IRS&T prior to opening any container of unknown radioactive material.

5.0 GENERAL

5.1 The determination to package a waste stream is based on approval by DOE and a completed Material Evaluation Form.

5.2 On-site movement of waste shall be completed per PP-0314.

6.0 PREREQUISITES

6.1 INDUSTRIAL SAFETY AND HEALTH REQUIREMENTS

Safety glasses with side shields shall be worn unless other eye protection is specified.

Respiratory protection provided by the supervisor shall be worn when required.

Leather-palm gloves shall be worn when handling containers, operating equipment and when handling rough, sharp-edged, or contaminated material.

6.0 PREREQUISITES (cont.)

6.1 INDUSTRIAL SAFETY AND HEALTH REQUIREMENTS

Neoprene rubber gloves shall be worn when handling HEPA type filter vacuum cleaners, or a vacuum system approved by IRS&T with a current DOP test label properly affixed to vacuum shall be used for cleaning.

A Radiation Work Permit must be approved and current.

Face shields shall be worn when removing lids or bungs of containers filled with liquids or during operations where the possibility exists that personnel could be splashed with liquids.

Any circumstance that could have resulted in an intake of radioactive materials by inhalation, ingestion or absorption shall immediately be reported to a supervisor. The supervisor shall immediately report the circumstance of possible radioactive materials intake to IRS&T Radiological Safety Section for evaluation. The involved personnel shall report to the Urine Sampling Station at the end of their shift to complete an Incident Investigation Report (IIR) (Form FMPC-ES&H-1458), and submit an incident urine sample. The involved personnel shall also report to the Urine Sampling Station at the start of their next shift to submit a follow-up urine sample. Employees are responsible for complying with additional requirements as specified by the Radiological Safety Section.

6.2 TOOLS AND MATERIALS REQUIRED

Obtain the following items/supplies prior to performing the packaging operation:

- appropriate safety protective equipment
- silicone caulk
- caulk gun
- absorbent pads
- 1/4 inch x 4 foot x 8 foot plywood sheets (all grades)
- plastic liner (6 mil)
- utility knife
- clean rags
- indelible marker
- 1-1/2 inch black bands, clips, and banding equipment

- 4552 -
FER-0121

FEMP
SITE DOCUMENT SYSTEM

SDC No. SC93-006
Effective Date: 04-05-93
Expiration Date: 10-05-93

SITE DOCUMENT CHANGE

1. AFFECTED DOCUMENT NUMBER SSOP-0078	2. AFFECTED DOCUMENT PAGE NUMBER 6

3. TITLE OR SUBJECT:
Packaging LLRW into ISO Containers for Offsite Shipment

4. ACTIVITY AND AREA AFFECTED:
Packaging LLRW/RSO

5. APPROVAL SIGNATURE:

J. Long	Department	4/5/93 Date

6. CHANGE:

1) An additional Industrial Safety and Health Requirement is added to Section 6.1 as follows:

A hard hat shall be worn when inside a front/side loaded ISO container.

7. DOCUMENTATION CONTROL REQUIRED DOCUMENT ACTION

[ ] No Procedure Action

[X] Revise affected procedure/specification per this document.

FILING INSTRUCTIONS: File facing page 6 , Document No. SSOP-0078
(Effective Date: 12-14-92 , Revision No. 0)

0292

6.0 PREREQUISITES (cont.)

6.3 WASTE CHARACTERIZATION REQUIREMENTS

A Material Evaluation Form (MEF), FMPC-OPR-3252 shall be initiated to determine if the material as RCRA/Non-RCRA. The packaging operation may be started before the characterization results are received.

NOTE: A numbered MEF may be obtained from Waste Management Records and initiated per SSOP-0002.

Additional documentation supporting the characterization results shall be provided by Facilities and Material Evaluation (F&ME).

A sample of the waste for Toxicity Characteristic Leaching Process (TCLP) may be required as requested by Hazardous & Solid Waste Compliance.

A sample may be required for major radionuclides and other suspected nuclides as determined by supervision.

6.4 PERSONNEL REQUIREMENTS

A minimum of two personnel are required to package waste.

Packagers shall be certified in use of Personal Protective Equipment (PPE).

7.0 PROCEDURE

7.1 PREPARING EMPTY ISO CONTAINER

SUPERVISOR

1. Notify Facilities and Warehousing (F&W) to deliver an empty ISO container to the designated packaging area.

   NOTE: The specific ISO container type will be determined by Logistics Administration.

7.1 PREPARING EMPTY ISO CONTAINER (cont.)

PACKAGER

2. After the container is delivered, open ISO container doors and visually inspect the container interior and exterior for damage, such as dents, holes, or other defects.

   a. If the container is damaged or shows evidence of leakage, notify supervisor.

3. Visually inspect interior to ensure the container is empty.

   a. If material is present in the container, notify supervisor.

SUPERVISOR

4. Specify the scale for weighing and method of transporting the container to the scale.

PACKAGER

5. Inspect the scale to be used per the scale procedure applicable to the area.

HEO

6. As directed by the supervisor, move the container onto the scale.

PACKAGER

7. Tare weigh every twentieth container per the applicable department scale procedure applicable to the area.

8. Calculate tare weight by adding 350 lbs to weight of container.

   NOTE: The weight of 350 lbs represents the materials used to prepare the container.

9. Initiate an Item Production/Certification/Identification XX card, Form FS-F-1945 by recording the tare weight (see Figure 1).

HEO

10. Using the method specified by supervisor, remove the container from the scale.

7.1 PREPARING EMPTY ISO CONTAINER (cont.)

PACKAGER

11. Caulk seams, air vents, welded patches, and any other container openings.

    NOTE: Seams closed with a continuous weld need not be caulked.

    a. If a breach or hole is present, notify supervisor.

       NOTE: Supervisor shall contact Maintenance to complete repair.

12. Completely cover floor of container with two layers of absorbent pads permitting no gaps. Allow padding to extend three inches, ± one inch, upward along each wall.

    NOTE: Doorway edge shall remain free of padding at this time.

13. Apply silicone caulk, approximately 4 feet, ± 6 inches high, along the three walls of the container to hold liner in place.

14. Starting at the back of the container, unroll plastic liner over floor to the front of the container, ensuring plastic is up a minimum of 4 feet, along each wall.

15. Using a utility knife, cut off excess liner extending beyond front of container.

16. Drape and press remaining sections of liner to the three caulked walls of the container.

17. Place one layer of absorbent pads over liner on container floor, allowing pad to extend approximately three inches, ± one inch, upward along the three walls.

18. Starting at the back of container, place plywood sheets over the pads, overlapping, across the container floor to the doorway.

19. Lean three plywood sheets along each container side and one plywood sheet along the back wall.

7.1 PREPARING EMPTY ISO CONTAINER (cont.)

PACKAGER

20. Adhere the "Prohibited Materials List" (see Figure 2) to interior side of door.

21. Notify supervisor the container preparation is complete.

    NOTE: Supervisor shall notify QA that the container has been prepared.

QA

22. Inspect container preparation per applicable department procedure for compliance with this procedure.

7.2 INSPECTING THE WASTE

PACKAGER

1. Ensure the waste to be packaged is not on the "Prohibited Materials List" (see Figure 2).

    a. If the waste is listed on the "Prohibited Materials List", do not package this waste. Notify supervisor for disposition.

2. When weather conditions occur that could cause ice, carefully inspect waste for ice.

    a. If ice is present in waste, notify supervisor.

3. Record the following data on the XX Card (see Figure 1) for each container as follows:

    a. Determine the FEMP Lot Marking Code per RM-0005, "FEMP Lot Marking and Color-Coding System" and record code in the areas titled "P.O. No.", "Source", "Class", and "Material Type".

    b. Record a general description of the waste in the area titled "Waste Description and Comments".

WESTINGHOUSE ENVIRONMENTAL MANAGEMENT COMPANY OF OHIO SITE DOCUMENT PROGRAM		SITE STANDARD OPERATING PROCEDURE Page 11 of 18
Title: PACKAGING LOW LEVEL RADIOACTIVE WASTE (LLRW) INTO ISO CONTAINERS FOR OFFSITE SHIPMENT		DOCUMENT NO: SSOP-0078 REVISION NO. 0
Authorization: H. F. Daugherty, President	Replaces: SSOP-0024, Dated 10-14-91, Rev. 0	Effective Date: 12-14-92

CARD 65-1 **ITEM PRODUCTION/CERTIFICATION/IDENTIFICATION** INV. NO.:

P. O. NO.	SOURCE	CLASS	MATERIAL TYPE	LOT SEQUENCE NO.	DATE MO	DAY	YEAR	SHIFT	BADGE NO.	CONT. NO.	SERIAL NO.

SEAL NUMBER	SEAL DATE MONTH	DAY	YEAR

WASTE DESCRIPTION AND COMMENTS

PACKAGE TYPE	
PACKAGE SIZE	
PROJECT	

PACKAGE PHYSICAL CERTIFICATION	YES	NO
EMPTY CONTAINER AT START		
RUST HOLES OR DENTS		
MATERIAL IS AS CODED		
PROHIBITED MATERIALS		
LIQUIDS IN CONTAINER		
MINIMUM OF VOID SPACE		
PACKAGE SECURED		
DRAIN PLUG SECURED		
OVERPACK		
REPACK		

PLANT	PROD. MBA	MEF NO.
DCAR	SURV. NO.	GROSS WEIGHT
		TARE WEIGHT
		NET WEIGHT

GENERATOR SIGNATURE

SUPERVISOR SIGNATURE DATE

FS-F-1945-1 (REV. 11/20/92)

Figure 1 - Item Production/Certification/Identification (Form FS-F-1945)

PACKAGING GUIDELINES FOR WASTE GENERATOR

Package has been properly prepared for closing:

- No liquids of any kind have been placed in container
- Heavy/bulky items have been secured within container
- All available space has been utilized efficiently
- Prohibited materials have been excluded (see below)
- Packaging has not been damaged during loading
- Liner is in place and properly lapped and sealed

PROHIBITED MATERIALS

Compressed Gases (unpunctured aerosol cans included)

- Explosives
- Free liquids
- Fine particulates (respirable fines)
- Hazardous Waste (Suspect RCRA materials included)
- Corrosive materials
- Etiologic agents

Figure 2 - Prohibited Materials List

7.3 FILLING ISO CONTAINERS WITH WASTE MATERIAL

PACKAGER

1. Maintain communication with QA to permit QA to overview filling of containers in accordance with applicable QA department procedure.

QA

2. If a nonconformance is identified, document and evaluate for corrective action per applicable department procedure.

PACKAGER

> **CAUTION**
>
> **A RESPIRATOR AND OTHER PERSONAL PROTECTIVE EQUIPMENT PROVIDED BY THE SUPERVISOR SHALL BE WORN PRIOR TO FILLING CONTAINERS.**

3. As specified by supervisor, load waste into container as tightly as possible.

7.4 SECURING ISO CONTAINER

QA

1. Perform final examination of contents and complete documentation for verification of materials packaged.

   NOTE: This documentation may include photographs.

PACKAGER

2. If directed by supervisor, place two sheets of plywood vertically in front of container doorway for shoring.

3. Roll absorbent pads (double-thick) together and place evenly along the floor (maintaining continuous contact with floor) in front of the plywood sheets.

4. Caulk door frame interior and inside edges of each door.

5. Close the container doors.

7.4 SECURING ISO CONTAINER (cont.)

PACKAGER

6. Close and latch doors ensuring all latching mechanisms are engaged.

7. Band doors securely together with 1-1/4 inch bands spaced approximately 2 feet apart around the center locking bars at mid-height of the container.

8. Secure each band with two double-crimp seals.

7.5 WEIGHING FILLED ISO CONTAINERS

SUPERVISOR

1. Contact Logistics Administration for weight limits.

2. Notify Heavy Equipment Supervisor to move container to the appropriate scale.

   NOTE: The scale shall be a currently calibrated accountability scale.

HEO

3. Move container on to scale.

CHECKER

4. Fill out weight ticket and transmit to Shipping Coordinator.

   a. If the box is over the specified weight limit, notify supervisor and proceed as directed.

HEO

5. Remove container from the scale.

PACKAGER

6. Complete the XX card, Form FS-F-1945 (see Figure 1) and transmit card to supervisor.

7.5 WEIGHING FILLED ISO CONTAINERS (cont.)

SUPERVISOR

7. Sign XX card and transmit to MC&A.

MC&A

8. Using XX card data, print required bar-code labels.

9. Submit bar-code labels to supervisor.

7.6 LABELLING AND INSPECTING FILLED CONTAINERS

PACKAGER

1. Affix the bar-code labels, provided by MC&A, to sides of ISO container as shown in Figure 3.

2. Using paint, touch up container exterior. If paint is flaking, scrape container and paint over bare metal.

3. Using as "ISO Final Inspection Checklist" (see Figure 4), perform a final visual inspection of container and fill out checklist.

4. Transmit completed checklist to supervisor.

SUPERVISOR

5. Review checklist for unacceptable inspection items.

   a. If an item is unacceptable, complete appropriate corrective action.

   b. If container is acceptable, contact Heavy Equipment Supervisor to move box to designated staging area.

8.0 <u>APPLICABLE DOCUMENTS</u>

8.1 DRIVERS

- NVO-325, "Nevada Test Site Defense Waste Acceptance Criteria, Certification, and Transfer Requirements"

8.0 **APPLICABLE DOCUMENTS** (cont.)

8.2 REFERENCES

- RM-0005, "FEMP Lot Marking and Color-Coding System"
- SSOP-0002, "Completing the Material Evaluation Form"
- PP-0314, "Packaging, On-Site Movement, and Off-Site Shipment of Material"

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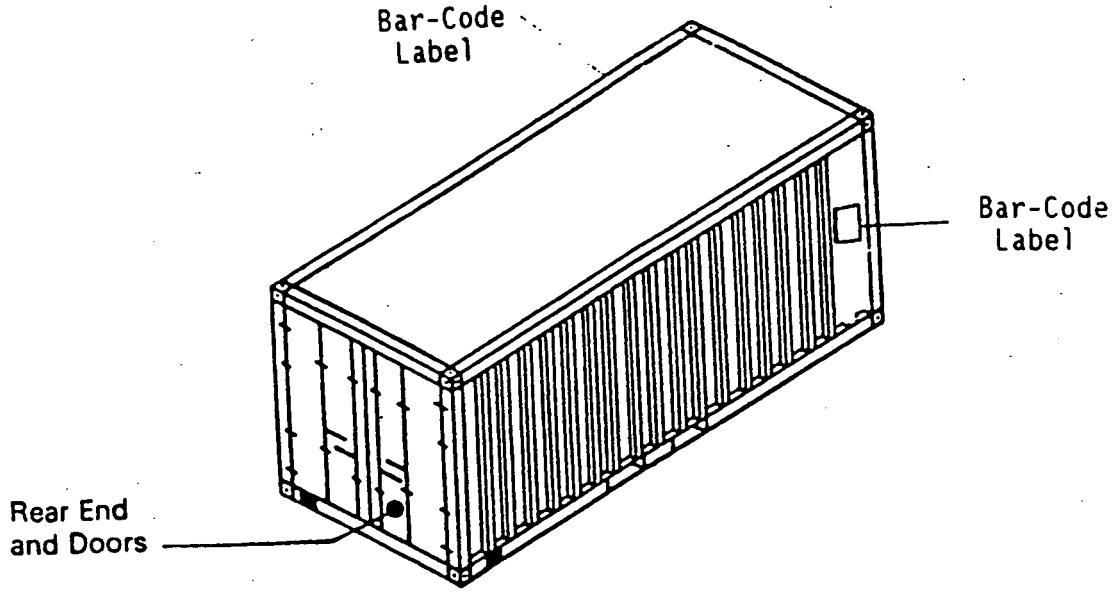
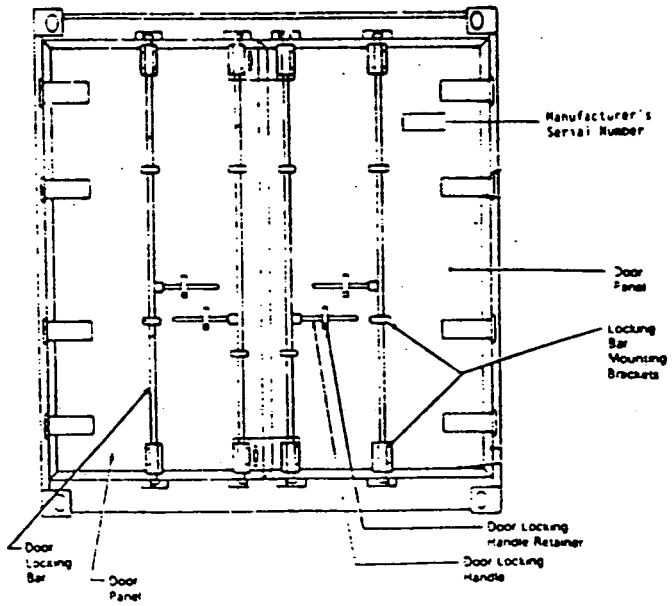
Authorization: H. F. Daugherty, President	Replaces: SSOP-0024, Dated 10-14-91, Rev. 0	Effective Date: 12-14-92





TYPICAL REAR END AND DOOR STRUCTURE

Figure 3 - Diagram of LLRW ISO Container Labeling

ISO FINAL INSPECTION CHECKSHEET

ISO SHIPMENT NO: _____

NUMBER OF CONTAINERS IN SHIPMENT _____

NAME: _____
BADGE NO: _____
DATE OF INSPECTION: _____

NAME: _____
BADGE NO. _____
DATE OF INSPECTION: _____

INSPECTION ITEM	*PLACE INITIALS BELOW IF ACCEPTABLE*
1. Doors and vents caulked. Caulking visible around entire door and vent area	
2. Doors banded with two bands and two clips. Banding is tight.	
3. All erroneous markings blacked out.	
4. Container in good condition (no holes or structrually affecting dents)	
5. Container clean - free of debris and loose dirt.	
6. Labels are placed on two sides of container, not doors.	
7. Labels are placed on two sides of container, not doors.	

Inspector's Signature _____ Date _____

Inspectors's Signature _____ Date _____

Figure 4 - ISO Final Inspection Checksheet

NON-CONTROLLED COPY

Controlled Copy No. - 4352 -

SITE STANDARD OPERATING PROCEDURE
DOCUMENT NO. SSOP-0079
REVISION NO. 0

PACKAGING LOW-LEVEL RADIOACTIVE WASTE (LLRW) IN METAL BOXES FOR OFFSITE SHIPMENT

SSOP-0079

Effective Date: 12-14-92

AUTHORIZED BY: _____ 11/30/92
H. F. Daugherty, President Date

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

Westinghouse Environmental Management Company of Ohio
P. O. Box 398704
Cincinnati, Ohio 45239-8704

WESTINGHOUSE ENVIRONMENTAL MANAGEMENT COMPANY OF OHIO SITE DOCUMENT PROGRAM		SITE STANDARD OPERATING PROCEDURE Page 1 of 20
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Authorization: H. F. Daugherty, President	Replaces: SSOP-0024, Dated 10-14-91, Rev. 0	Effective Date: 12-14-92

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Title: PACKAGING LOW-LEVEL RADIOACTIVE WASTE (LLRW) IN METAL BOXES FOR OFFSITE SHIPMENT		DOCUMENT NO: SSOP-0079 REVISION NO. 0
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RECORD OF ISSUE/REVISIONS

DATE	REV. NO	DESCRIPTION AND AUTHORITY
12-14-92	0	Separate procedure written for packaging LLRW in boxes per Request No. S92-176, initiated by M. Hundley. SSOP-0079, SSOP-0075, and SSOP-0078 replace SSOP-0024.

1.0 PURPOSE

This procedure provides the instructions for packaging low level radioactive waste (LLRW) in metal boxes for shipment offsite from the Fernald Environmental Management Project (FEMP).

2.0 SCOPE

The procedure outlines the steps for (1) inspecting the waste to be packaged, (2) inspecting and preparing empty boxes, (3) filling boxes with waste, (4) weighing filled boxes, (5) closing and labeling boxes, and (6) final inspection of boxes.

The packaging operation is applicable to FEMP personnel (including subcontractors) responsible for packaging noncontained LLRW in metal boxes. This activity originates upon approval by DOE for a specific waste stream. LLRW may be packaged at any designated packaging location at the FEMP.

3.0 DEFINITIONS

Free Liquid - Any free flowing liquid or liquid that readily separates from the solid portion of a waste under ambient temperature and pressure conditions. Ice is also considered a free liquid.

Low Level Radioactive Waste (LLRW) - Waste that contains radioactivity and is not classified as high level waste, transuranic waste, spent nuclear fuel or 11e(2) byproduct material as defined by DOE Order 5820.2A. Test specimens of fissionable material irradiated for research and development only, and not for the production of power or plutonium, may be classified as low-level waste, provided the concentration of transuranic is less than 100 nano curies per gram.

Packaging Location - Any area where waste is stored or generated.

Resource Conservation and Recovery Act (RCRA) - The Congressional Act which established safe and environmentally acceptable management practices for specific wastes. RCRA requires strict "cradle to grave" control, documentation and proper management of hazardous wastes.

4.0 RESPONSIBILITIES

Packager

- Inspects waste per this procedure.
- Packages waste per this procedure.

4.0 RESPONSIBILITIES (cont.)

- Complies with any additional requirements specified by Industrial, Radiological Safety and Training (IRS&T).

Supervisor of the waste generation area or packager

- Specifies applicable scale procedures and standard tare weight of packages.
- Ensures packaging materials are available for packagers.
- Ensures that trained personnel package waste material.
- Determines disposition of waste material identified in this procedure.
- Ensures that personnel package waste for shipment to meet applicable Nevada Test Site (NTS), Department of Transportation (DOT), and Environmental Protection Agency (EPA) regulations.
- Contacts Industrial, Radiological Safety and Training (IRS&T) to determine the appropriate respiratory protection for the process being performed and the radiological surveys required for materials moving in and out of regulated areas.
- Contacts Radiological Safety for a radiological work permit or other safety permits and ensures permits are obtained and signed prior to performing.
- Provides packagers with the required respiratory protection and other personal protective equipment.
- Ensures the lid on an unfilled waste container is secured when no packaging is occurring thereby preventing addition of unknown materials.
- Ensures waste packages are weather-protected.

Logistics Administration specifies the required waste container.

Motor Vehicle Operator (MVO) of Facilities and Warehousing

- Delivers empty boxes to designated packaging area.
- Supports packager as needed per this procedure.

4.0 RESPONSIBILITIES (cont.)

Industrial, Radiological Safety & Training (IRS&T)

- Provides a Radiological Safety Technician, as requested.
- Determines appropriate respiratory equipment and any other employee protection.

Quality Assurance (QA) overviews packaging operation to ensure compliance with this procedure.

Environmental Compliance (EC) provides documentation supporting characterization results as needed.

Materials Control and Accountability (MC&A) provides bar-code labels.

5.0 GENERAL

None

6.0 PREREQUISITES

6.1 INDUSTRIAL HEALTH AND SAFETY REQUIREMENTS

Safety glasses with side shields shall be worn unless other eye protection is specified.

Respiratory protection provided by the supervisor shall be worn when required.

Leather-palm gloves shall be worn when handling boxes, operating equipment, and handling rough, sharp-edged, or contaminated material.

Neoprene rubber gloves shall be worn when handling hazardous chemical substances where skin contact is possible.

A Radiation Work Permit must be approved and current.

Face shields shall be worn when removing lids of containers filled with liquids or during operations where the possibility exists that personnel could be splashed with liquids.

6.0 PREREQUISITES (cont.)

Any circumstance that could have resulted in an intake of radioactive materials by inhalation, ingestion or absorption shall immediately be reported to a supervisor. The supervisor shall immediately report the circumstance of possible radioactive materials intake to IRS&T Radiological Safety Section for evaluation. The involved personnel shall report to the Urine Sampling Station at the end of their shift to complete an Incident Investigation Report (IIR) (Form FMPC-ES&H-1458), and submit an incident urine sample. The involved personnel shall also report to the Urine Sampling Station at the start of their next shift to submit a follow-up urine sample. Employees are responsible for complying with additional requirements as specified by the Radiological Safety Section.

6.2 TOOLS AND MATERIALS REQUIRED

Obtain the following materials and tools, as needed, prior to performing the packaging operation:

- Appropriate safety protective equipment
- Foam-strip gasket (size appropriate for box)
- Diatomaceous earth
- Indelible marker
- Hammer and screw driver, as applicable
- Wrench and channel locks, as applicable
- Clear lab label tape and dispenser
- Clean rags
- Electric drill
- Ink/paint as required
- Calibrated torque wrench

6.3 POSTING REQUIREMENTS

A "Prohibited Materials List" (see Figure 1) shall be displayed in the packaging area or on the container.

6.4 WASTE CHARACTERIZATION

A Material Evaluation Form (MEF) shall be initiated to determine the waste as RCRA/Non-RCRA. The packaging operation may be started before the characterization results are received.

For bulk waste streams, complete evaluation per SOP 20-C-625.

NOTE: A numbered MEF may be obtained from Waste Management Records and initiated per SSOP-0002.

PACKAGING GUIDELINES FOR WASTE GENERATOR

Package has been properly prepared for closing:

No liquids of any kind have been placed in container

Heavy/bulky items have been secured within container

All available space has been utilized efficiently

Prohibited materials have been excluded (see below)

Packaging has not been damaged during loading

Liner is in place and properly lapped and sealed

PROHIBITED MATERIALS

Compressed Gases (unpunctured aerosol cans included)

Explosives

Free liquids

Fine particulates (respirable fines)

Hazardous Waste (Suspect RCRA materials included)

Corrosive materials

Etiologic agents

Figure 1 - Prohibited Materials List

6.0 PREREQUISITES (cont.)

Additional documentation supporting the characterization results shall be provided by Facilities and Material Evaluation (F&ME)

A sample of the waste for Toxic Characteristic Leaching Process (TCLP) may be required as requested by F&ME.

A sample may be required for major radionuclides and other suspected nuclides as determined by supervision.

6.5 PERSONNEL REQUIREMENTS

A minimum of two personnel are required to package waste.

Packagers shall be certified in use of Personal Protective Equipment (PPE).

7.0 PROCEDURE

NOTE: Within this section, Warnings and Cautions precede the step to which they apply. Notes follow the step to which they apply.

7.1 INSPECTING THE WASTE

NOTE: The determination to package a waste stream is based on approval by DOE and a completed MEF.

PACKAGER

1. Ensure the waste to be packaged is not on the "Prohibited Materials List" (see Figure 1).

   a. If the waste is listed on the "Prohibited Materials List", do not package this waste. Notify supervisor for disposition.

2. Ensure the waste has been characterized.

   a. If the waste has not been characterized, package waste per this procedure and transfer box to a controlled holding area per SSOP-0008.

QA

3. Perform periodic surveillance of waste per applicable department procedure.

7.1 INSPECTING THE WASTE (cont.)

PACKAGER

4. Visually check waste for free liquid.

   a. If free liquid is present or material is wet, write "FREE LIQUID-DON'T SHIP" on box exterior and notify supervisor.

SUPERVISOR

   b. Take appropriate action to absorb free liquid.

6. Fill out an "Item Production/Certification/Identification", XX Card (see Figure 2) for each box as follows:

   a. Record the FEMP Lot Marking Code per "FEMP Lot Marking and Color-Coding System", RM-0005, in the areas titled "P.O. No.", "Source", "Class", and "Material Type".

   b. Record a general description of the waste in the area titled "Waste Description and Comments" or attach a list of the items packaged for content documentation.

7.2 PREPARING EMPTY BOX

SUPERVISOR

1. Notify Facilities and Warehousing (F&W) to deliver empty metal box to the designated packaging area.

   NOTE: The specific box type shall be determined by Logistics Administration.

PACKAGER

2. Visually inspect the box for interior and exterior damage, such as corrosion, dents, holes, or other defects (refer to Tables 1 and 2).

   a. If the box is damaged, mark the lid or side with a red "X" and complete corrective action per Table 1.

3. Visually inspect interior to ensure the box is empty.

   a. If material is present in the box, notify supervisor.

CARD 65-2 **ITEM PRODUCTION/CERTIFICATION/IDENTIFICATION** INV. NO.:

P. O. NO.	SOURCE	CLASS	MATERIAL TYPE	LOT SEQUENCE NO.	DATE MO	DATE DAY	DATE YEAR	SHIFT	BADGE NO.	CONT. NO.	SERIAL NO.

SEAL NUMBER	SEAL DATE MONTH	SEAL DATE DAY	SEAL DATE YEAR

WASTE DESCRIPTION AND COMMENTS

PACKAGE TYPE	
PACKAGE SIZE	
PROJECT	

PACKAGE PHYSICAL CERTIFICATION	YES	NO
EMPTY CONTAINER AT START		
RUST HOLES OR DENTS		
MATERIAL IS AS CODED		
PROHIBITED MATERIALS		
LIQUIDS IN CONTAINER		
MINIMUM OF VOID SPACE		
PACKAGE SECURED		
DRAIN PLUG SECURED		
OVERPACK		
REPACK		

PLANT	PROD. MBA	MEF NO.
DCAR	SURV. NO.	GROSS WEIGHT
		TARE WEIGHT
		NET WEIGHT

GENERATOR SIGNATURE

SUPERVISOR SIGNATURE DATE

FS-F-1945-2 (REV. 11/20/92)

Figure 2 - Item Production/Certification/Identification Card, FS-F-1945-XX

TABLE 1
CORROSION INSPECTION CATEGORIES

CATEGORY	CHARACTERISTIC	COULD CAUSE LOSS OF BOX INTEGRITY		CORRECTIVE ACTION
		YES	NO	
A	Severe corrosion with deep pitting and/or metal flaking	X		1. Notify supervisor. **NOTE**: The box requires disposition as directed by supervision within 24 hours.
B	Corrosion with shallow pitting and/or mild metal flaking		X	1. Proceed as directed by the supervisor. **NOTE**: Disposition shall be determined by the supervisor following review of completed inspection form.
C	Surface rust with no pitting and mild paint flaking which exposes bare metal		X	1. Proceed as directed by the supervisor. Repainting shall be scheduled by supervisor.

TABLE 2
LLRW CONTAINER INSPECTION CRITERIA

INSPECTION ITEM	INSPECTION CRITERIA	CORRECTIVE ACTION REQUIRED
Hole	An opening in the container including breach, gouge, puncture or leak.	Notify supervisor of condition and request disposition instructions.
Dent	A crease, depression or hollow made by blow or pressure; a concave distortion which jeopardizes the integrity of the container. A dent in the top or bottom rim.	Notify supervisor of condition and request disposition instructions.
Bulge	A swollen area, a convex distortion, an outward bend which jeopardizes the integrity of the container.	Notify supervisor of condition and request disposition instructions.

7.2 PREPARING EMPTY BOX (cont.)

PACKAGER

4. If the bottom of the box has a drain plug, ensure plug is securely in place.

5. On the XX Card (Figure 2), record the type of container in the area titled "Type of Container", fill out the "Package Physical Certification" area excluding the last two items, and record box dimensions in area titled "Package Size".

SUPERVISOR

6. Specify the scale for weighing and method of transporting the box to the scale.

   NOTE: The scale shall be a currently calibrated accountability scale.

PACKAGER

7. Inspect the scale to be used per the scale procedure applicable to the area.

MVO/PACKAGER

8. As directed by supervisor, move the box onto the scale.

PACKAGER

9. Tare weigh every twentieth box per the scale procedure applicable to the area.

10. Record the weight on the XX card.

MVO/PACKAGER

11. Remove the box from the scale.

PACKAGER

12. Remove lid and place in a designated location to prevent damage.

13. Using the method specified by supervisor, place one layer of pallets in the bottom of the box.

7.2 PREPARING EMPTY BOX (cont.)

PACKAGER

14. Manually pour 1/2 to 1 inch of diatomaceous earth evenly over the pallets.

7.3 FILLING BOX WITH WASTE MATERIAL

PACKAGER

1. Check with supervisor for weight limitation of box.

QA

2. Overview filling of boxes per applicable department procedure to ensure compliance with this procedure.

   a. If a nonconformance is identified, document and evaluate for corrective action per applicable department procedure.

PACKAGER

> **WARNING**
>
> **A RESPIRATOR AND OTHER PERSONAL PROTECTIVE EQUIPMENT PROVIDED BY THE SUPERVISOR SHALL BE WORN PRIOR TO FILLING DRUMS.**

3. As specified by supervisor, load waste into box as tightly as possible ensuring the waste level remains at least three inches below the top of the box, the box weight is within the specified limitation, and the load is balanced to prevent tipping.

4. When the box is full, place lid on box and secure as directed by supervisor.

5. Notify supervisor the box is ready to be weighed.

7.4 WEIGHING FILLED BOXES

SUPERVISOR

1. Specify the scale and the method of transporting the box to the scale.

PACKAGER

2. Inspect the scale to be used per the applicable scale procedure.

3. Per the method specified by supervisor, move the box on to the scale.

4. Using the applicable scale procedure, weigh the box including box pins and other hardware to obtain gross weight of the box.

   a. If the box is over the specified weight limit, notify supervisor and proceed as directed.

PACKAGER OR QA

5. For a box requiring temporary storage, apply a tamper-proof seal, lock, and other device to secure lid and prevent unauthorized additions.

PACKAGER

6. Using indelible ink, mark the gross weight and shipping number on the front side of box.

7. Complete XX Card (see Figure 2), including weights, and send card to supervisor.

SUPERVISOR

8. Sign XX card for accuracy and completeness and send card to MC&A.

MC&A

9. Using XX card data, print required bar-code labels and submit to supervisor.

10. Remove box from scale as directed by supervisor.

7.5 FINAL CLOSURE, LABELLING, AND INSPECTION

PACKAGER

1. Manually remove hardware and lid, as directed by supervisor, and place in designated area to prevent damage.

2. Using a clean rag, wipe top edge of box. Place rag in disposal container.

3. Peel protective paper from foam-strip gasket and carefully apply gasket to box edge and/or to channel of lid underside, as directed by supervisor.

4. Place lid on box as directed by supervisor.

5. Using appropriate hardware and tools, secure lid on the box in accordance with the manufacturer's recommendations.

6. Inspect exterior of box, excluding bottom, for damage such as corrosion, dents, holes, or other defects (refer to Tables 1 and 2).

7. Using a calibrated torque wrench, torque closure bolts to 45 $\pm$ 5 ft lbs.

8. Using paint, cover scratched areas on box.

SUPERVISOR

9. Contact QA for examination and certification of package.

   <u>NOTE</u>: QA shall perform an examination and certification per applicable department procedures.

10. Determine if the box will fit on the inspection stand.

7.5 FINAL CLOSURE, LABELLING, AND INSPECTION (cont.)

PACKAGER

11. If the box will fit on the stand, notify MVO to move box to inspection stand and direct Packager to proceed as follows:

    a. Visually inspect runners for drain holes.

        (1) If holes are not in runners, drill one hole with electric drill through underside of each runner and proceed to step 11, substep b.

        (2) If holes are present in runners, proceed to step 11, substep b.

    b. Using indelible ink, place a check mark next to red or black dot to indicate the runners have been checked.

    c. Visually inspect bottom of box for damage, such as corrosion, dents, holes or other defects in accordance with Tables 1 and 2.

    d. Inspect bottom of box for drain plug.

        (1) If drain plug is present, tighten the plug and paint a red dot on opposite sides of box to indicate plug has been tightened.

        (2) If drain plug is not present, paint a black dot on opposite sides of the box to indicate that box has been checked for drain plug.

MVO

12. Remove box form stand per applicable department procedure.

PACKAGER

13. If the box will not fit on the inspection stand, drill holes through the lower edge of runner.

14. Affix the bar-code labels provided by supervisor to the sides of box as shown in Figure 3 and cover labels with clear label tape.

15. Wrap two banding straps around box, position straps within outer feet of box, and secure straps with banding clip.

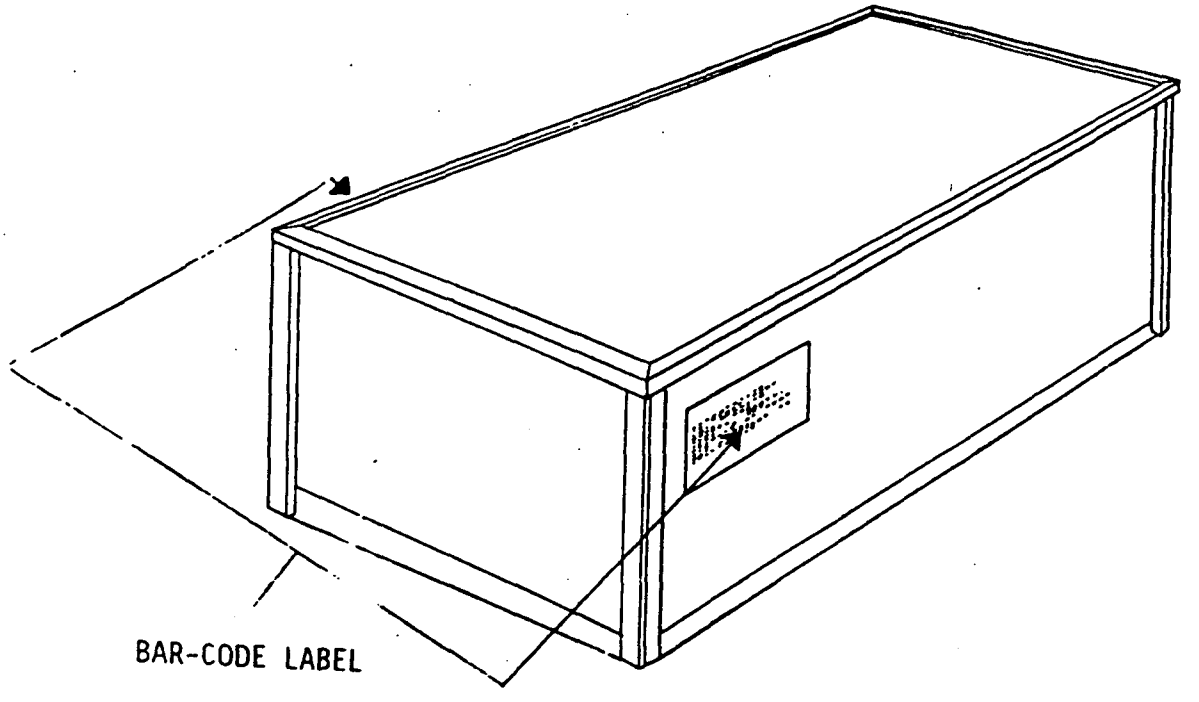


Figure 3 - LLRW Box Labeling

7.5 FINAL CLOSURE, LABELLING, AND INSPECTION (cont.)

PACKAGER

16. Using a "Box Final Inspection Checklist" (see Figure 4), perform an inspection of box and record inspection results on checklist.

17. When inspection is complete, submit checklist to supervisor.

18. Review inspection checklist.

    a. If the inspection results are acceptable, request MVO to transport box to designated staging area.

    b. If the inspection results are not acceptable, complete appropriate corrective action.

8.0 APPLICABLE DOCUMENTS

8.1 DRIVERS

- NVO-325, "Nevada Test Site Defense Waste Acceptance Criteria, Certification, and Transfer Requirements"

8.2 REFERENCES

- SOP 20-C-625, "Evaluating Low Level Radioactive (LLRW) Bulk Waste Streams for Shipment"
- RM-0005, "FEMP Lot Marking and Color-Coding System"
- SSOP-0002, "Completing the Material Evaluation Form"
- SSOP-0008, "Preparing and Transferring Uncharacterized Waste to the Controlled Holding Area"

BOX FINAL INSPECTION CHECKLIST

WHITE METAL BOX SHIPMENT NO. _____

NUMBER OF CONTAINERS IN SHIPMENT _____

NAME: _____
BADGE NO: _____
DATE OF INSPECTION: _____

NAME: _____
BADGE NO: _____
DATE OF INSPECTION: _____

INSPECTION ITEM	*ITEM ACCEPTABLE*	
	YES	*NO*
1. Box in good condition (no holes or structurally affecting dents or rust.)		
2. Boxes clean - free of debris and loose dirt.		
3. Boxes touched up and erroneous markings whited out.		
4. Red or black dot on box.		
5. Pins locked in place & flush against box. Nuts & bolts tight.		
6. Banding tight.		
7. Bar-Code label located on both sides of box.		

_____ _____
Inspector's Signature Date

_____ _____
Inspector's Signature Date

Figure 4 - Box Final Inspection Checklist

CHANGE NOTICE

-4552-

No. EQP-12.03-00-01	Effective Date: 07/31/92	Page 1 of 1

AUTHORIZED: Eric G Gluden for Elley D Savage

PROCEDURE

EQP-12.03 Certification of Waste Package Examination and Sealing for Off-Site Shipment Rev. 0 05/30/91

Existing, Page 8 of 19, item 2.10.9.(d)

2.10.9 d. Verify that gross weight does not exceed 6,000 pounds.

Revise, Page 8 of 19, item 2.10.9.(d) as follows:

2.10.9 d. Verify that gross weight for DOT 7A containers does not exceed 8,000 lbs. Gross weight for older boxes may not exceed 6,000 lbs.

CIO NO. C93-023

Effective Date: 02-08-93

Expiration Date: 08-09-93

CHANGE IN OPERATION
REMEDIATION SUPPORT OPERATIONS DOCUMENT PROGRAM

(As identified in Figure 1) DOCUMENT NO.:	AFFECTED DOCUMENT PAGE NO.: 1	ISSUE DATE: (As listed in Figure 1)

TITLE: As identified in Figure 1.

AUTHORIZATION: Per LTR No. M:RSO:93-096, Dated 01-12-93, Nelson K. Weichold to James A. Long

CHANGE:

1) The identified document (See Figure 1) in the Site Services Document Program is now identified as a Fernald Environmental Restoration Management Corporation (FERMCO) Remediation Support Operation (RSO) Division document, for use in the RSO Division by the applicable RSO Department.

<u>NOTE</u>: The document identified in Figure 1 may not reflect the current FERMCO organizational structure.

NON-CONTROLLED COPY

Document No.	Title	Issue Date	Revision No.	Revision Date
01-107	OPERATION OF GENIE LIFT MODEL PL36PDC	09/09/87		
01-108	OPERATION OF ANTHES MODEL RZ-40 ROTO-ZOOM AERIAL LIFT	12/22/87		
01-BE-410-02	DRUM PAINTING AND DRYING	04/18/89		
01-C-101	SAMPLING RESIDUE AND WASTE MATERIALS	06/16/89	2	03/11/91
01-C-301	DRUM CLEANING AND DECONTAMINATION	02/20/90	0	
01-C-302	DRUM PAINTING AND DRYING	01/15/90		
01-C-304	REROLLING 30 GALLON DRUMS AND EXPANDING 55 GALLON DRUMS	01/11/89		
01-C-305	BALING SCRAP METAL DRUMS	03/22/90	0	
01-C-306	CRUSHING SCRAP DRUMS	09/26/89	0	
01-C-602	LOW LEVEL RADIOACTIVE WASTE (L-LRV) SHIPMENT PREPARATION	11/12/91	2	07/30/92
01-C-604	INSPECTION AND EVALUATION OF CONTAINERIZED LOW LEVEL RADIOACTIVE WASTE (LLRV)	12/05/91	0	12/08/92
01-C-606	HAZARDOUS WASTE SHIPMENT PREPARATION	06/14/89		
01-C-608	STORAGE OF RADIOACTIVE MATERIAL	08/13/90	0	12/09/92
01-C-609	PLANT 1 STORAGE INSPECTION	06/12/90	0	
01-C-701	PLANT 1 DUST COLLECTORS	05/24/89		
01-C-803	PREPARATION OF ENRICHED URANIUM(<20% U235) FOR OFFSITE SHIPMENT	07/20/88		
01-C-902	DISPOSAL OF PLANT 1 EFFLUENT	09/14/90	0	
01-C-905	PRODUCTION NUCLEAR MATERIALS(NM) RECEIVING, STORING, AND HANDLING	09/01/88		
01-C-911	PLANT 1 EMERGENCIES	07/05/91	0	
01-C-915	CLEANING OF CONTAMINATED METAL AND EQUIPMENT	12/28/87	2	05/05/92

1.0 PURPOSE

This document provides the procedure for preparing LLRW for shipment offsite.

2.0 APPLICABILITY

This procedure shall apply to LLRW received in Plants 1 and 6 for offsite shipment.

3.0 RESPONSIBILITIES

3.1 Supervisors shall be responsible for the following:

3.1.1 Coordinating and notifying supporting organizations of assistance as required per this SOP.

3.1.2 Determining disposition of items as defined in this SOP.

3.1.3 Ensuring packaging materials are available for operators.

3.1.4 Designating area for rejected containers.

3.1.5 Notifying shipment coordinator of rejected container(s).

3.1.6 Contacting Industrial Hygiene or Radiological Safety to determine the appropriate respiratory protection for the operation being performed.

3.1.7 Obtaining approval for the use of paints, sealants, caulking, or absorbents to be used.

3.1.8 Providing operators with the required respiratory protection and reviewing Material Safety Data Sheets (MSDS), as applicable, with operators.

3.1.9 Ensuring that personnel are qualified per the established training requirements identified by the Department/Staff Manager.

3.1.10 Authorizing waste shipments.

3.2 Radiation Safety Technicians (RST) shall be responsible for surveying containers classified as low level radioactive waste.

3.3 Waste Shipment Coordinators shall be responsible for preparing and coordinating documentation required for a waste shipment.

3.4 Operators shall be responsible for complying with this SOP.

3.0 RESPONSIBILITIES (cont.)

3.5 Quality Assurance (QA) shall be responsible for the following:

3.5.1 Certifying containers for shipment.

3.5.2 Issuing a deviation report for damaged containers.

3.6 Materials Control and Accountability (MC&A) shall be responsible for providing shipping documentation.

4.0 DEFINITIONS

4.1 Waste Generator - Organization (point of generation) at which waste is originated.

4.2 Transport Index - A dimensionless (rounded up to the first decimal place) number placed on the label of a package to designate the degree of control to be exercised by those handling the package. The number is from the higher of the two following derivations: (1) the maximum radiation level (in mR/h) at one meter from the package; and (2) for fissile Class II and III shipments, an index is calculated for criticality control purposes.

5.0 APPLICABLE DOCUMENTS

5.1 Drivers

5.1.1 PO-D-026, "Site Services Document Program"

5.1.2 RM-0014, "FEMP Conduct of Operations Manual"

5.2 References

None

6.0 INDUSTRIAL HEALTH AND SAFETY REQUIREMENTS

6.1 Safety glasses with side shields shall be worn unless other eye protection is specified by IRS&T.

6.2 Respiratory protection provided by the supervisor shall be worn when required by IRS&T.

6.3 Leather-palmed gloves shall be worn to protect the hands from rough material and contamination.

6.4 HEPA type filter vacuum cleaners or an IRS&T approved vacuum system with a current DOP test sticker properly affixed to vacuum shall be used for cleaning.

6.5 Employees shall have reviewed and be familiar with the information contained in Material Safety Data Sheets for the chemicals/hazardous materials being used.

6.0 INDUSTRIAL HEALTH AND SAFETY REQUIREMENTS (cont.)

6.6 Any circumstance which could have resulted in an intake of radioactive materials by inhalation, ingestion or absorption shall immediately be reported to a supervisor. The supervisor shall immediately report the circumstance of possible radioactive materials intake to IRS&T Radiological Safety Section for evaluation. The involved personnel shall report to the Urine Sampling Station at the end of their shift to complete a Incident Investigation Report (IIR) (Form FMPC-ES&H-1458), and submit an incident urine sample. The involved personnel shall also report to the Urine Sampling Station at the start of their next shift to submit a followup urine sample. Employees are responsible for complying with additional requirements as specified by the Radiological Safety Section.

7.0 PROCEDURE

7.1 General

7.1.1 Warnings, cautions, and notes precede the Step/Item to which they apply.

7.2 Drum Preparation

7.2.1 Move drum for shipment to Waste Operations Staging Area.

7.2.2 Check the drum for damage (such as dents, rust, holes, cracks, water leaks, and defects).

7.2.2.1 If drum is damaged, mark damaged container with a red "X" on the lid.

7.2.2.2 Contact supervisor for area of disposition.

7.2.2.3 Move damaged drums to area designated by supervisor.

7.2.3 Check outside of drums for moisture.

7.2.3.1 If moisture is found, wipe the drum with a rag.

7.2.3.2 Dispose of rag in a designated container.

7.2.4 Torque lock ring bolt to 45 ±5 ft-lbs using a certified break-away torque wrench.

7.2.5 Tighten the locking nut against the threaded flange (right flange) (See Figure 1) by hand.

7.2.6 Tighten the locking nut 1/4 turn using a wrench.

7.2.7 Dab the bolt with red paint as a visual code designating that tightening has been completed.

7.2.8 Thread safety wire through hole in either the bolt head or threaded portion of bolt and around threaded portion of bolt ring (See Figure 1).

7.0 PROCEDURE (cont.)

7.2.9 Secure the wire.

NOTE 1: Waste packages shall be marked with the appropriate 13 alphanumeric character waste stream identification number, log number and a six digit numeric character container identification number unique to each shipment.

NOTE 2: The shipment log number, container identification number, and waste stream identification number shall be marked in one inch (minimum) letters using black waterproof ink or paint.

7.2.10 Notify supervisor to request the Waste Shipment Coordinator to assign shipment log number, container identification number and waste stream identification number.

NOTE 1: The drum number shall be used as the container identification number.

NOTE 2: Container identification numbers less than six digits are to be preceded by zeros (e.g. Container #25432 would be changed to #025432, Container #5 would be changed to #000005)

7.2.11 Stencil or mark assigned shipment log number, container identification number, and waste stream identification number in 1-1/2 inch (minimum) block or legible letters with enamel paint on the top center of container (See Figure 2).

7.2.12 Touch-up paint scratches on container.

7.2.13 Notify MC&A to write shipment document using a "LLRW Shipment Preparation Worksheet", Form FS-F-3470.

7.2.14 Notify supervisor that an RST is required to survey container.

7.2.15 Place a plastic cover over the drum after the survey is complete.

7.2.16 Move drum to holding area.

7.2.17 Notify MC&A of drum relocation.

7.3 Wooden Box Preparation

7.3.1 Notify MC&A of boxes requiring transfer to staging area for shipping preparation.

7.3.2 After MC&A has completed documentation to release box for shipping preparation, move box for shipment to applicable staging area.

7.3.3 Check the box for damage such as holes, cracks, water leaks, and defects.

7.0 PROCEDURE (cont.)

NOTE: MC&A shall complete documentation to release box from to storage.

7.3.3.1 If box is damaged, mark box with a red "X" on the side.

7.3.3.2 Contact supervisor for area of disposition.

7.3.3.3 Move damaged boxes to area designated by supervisor.

7.3.3.4 Notify MC&A of damaged box requiring transfer to storage.

7.3.4 Check inside and outside of box for moisture.

7.3.4.1 If moisture is present on outside of container, remove moisture with rag and dispose of rag in designated container.

7.3.4.2 If moisture is inside container, add uncalcined diatomaceous earth or wet-strength, polypropylene-pulp, super-absorbent fabric.

7.3.5 Obtain the "Item Production/Certification/Identification" (65 Card), Form FMPC-CONT-1945-XX from the Waste Shipment Coordinator.

7.3.6 Ensure information corresponds to box identification and contents.

7.3.6.1 Notify supervisor if card is not complete.

7.3.6.2 Return the card to Waste Shipment Coordinator.

NOTE: Supervisor shall specify the scale to be used.

7.3.7 Using forklift, move box to scale for weighing.

7.3.8 If not previously completed, inspect the scale to be used in accordance with the SOP applicable to the area.

7.3.9 Using the forklift, move the box onto the scale.

7.3.10 Weigh the box.

7.3.11 Stamp the weight on 65 card.

7.3.12 Apply GE-RTV Silicone adhesive (or equivalent) in a continuous bead (1/4 inch minimum to 1/2 inch maximum) on top edges of the vertical 3/4 inch panel lid.

7.3.13 Place lid on box.

7.3.14 Secure lid using 10 penny nails on three inch centers and two 16 penny galvanized nails on side panel into each 2 inch x 4 inch on top panel (eight places).

7.3.15 Band the box vertically with three 1-1/4 inch metal bands by placing one band on each end of the box and one in the middle (See Figure 3).

7.0 PROCEDURE (cont.)

NOTE: Waste packages shall be marked with the appropriate 13 alphanumeric character waste stream identification number, log number and a six digit numeric character container identification number unique to each shipment.

7.3.16 Notify the supervisor to request the Waste Shipment Coordinator to assign shipment log number and waste stream identification number.

NOTE 1: The box serial number shall be used as the container identification number.

NOTE 2: Container identification numbers less than six digits are to be preceded by zeros (e.g. Container #25432 would be changed to #025432, Container #5 would be changed to #000005).

7.3.17 Stencil or mark assigned shipment log number, container identification number, waste stream identification number, and gross weight in 1 1/2 inch (minimum) block or legible letters with waterproof ink or paint on the top center and two sides of the box (See Figure 4).

7.3.18 Notify MC&A to write shipment document using a "LLRW Shipment Preparation Worksheet".

7.3.19 Notify supervisor that an RST is required to survey box.

7.3.20 Move box to holding area and cover with tarp, or equivalent cover, after survey is complete.

7.4 Metal Box/Type A-7A Metal Box Preparation

7.4.1 Notify MC&A of boxes requiring transfer to staging area for shipping operation.

7.4.2 After MC&A completes documentation to release box for shipping preparation, move metal box for shipment to Waste Operations Staging Area.

7.4.3 Break temporary seal and remove lid.

7.4.4 Check inside and outside of box for moisture.

7.4.4.1 If moisture is present on container outside, remove with rag.

7.4.4.2 Dispose of rag in designated container.

7.4.4.3 If moisture is inside container, add uncalcined diatomaceous earth or wet-strength, polypropylene-pulp super- absorbent fabric.

7.4.5 Check the container for damage such as dents, rust, holes, cracks, water leaks, and defects.

7.4.5.1 If container is damaged, mark damaged container with a red "X" on the side.

7.0 PROCEDURE (cont).

7.4.5.2 Contact supervisor for area of disposition.

7.4.5.3 Move damaged containers to area designated by supervisor.

7.4.6 Using forklift, place box on stand.

7.4.7 Remove truck forks.

7.4.8 Check bottom for dents, holes, or stress cracks.

7.4.8.1 If a dent is deep or metal protruding more than one inch from box surface, reject the box.

7.4.9 Check the bottom of the box for a drain hole/plug.

7.4.9.1 If there is a drain hole but no plug, contact supervisor.

7.4.9.2 If a drain hole/plug is present, tighten the drain plug.

7.4.9.3 Paint red dot on opposite sides of box to indicate plug has been tightened.

7.4.9.4 If drain hole/plug is not present, paint a black dot on the opposite sides of box to indicate that the box has been checked for drain holes.

7.4.10 Check each runner on box for two drain holes.

7.4.10.1 If drain holes are not present, drill holes in runner.

7.4.11 Place a check mark next to red or black dot to indicate that runners have been checked.

7.4.12 Obtain the "Item Production/Certification/Identification" (65 Card), Form FMPC-CONT-1945-XX from Waste Shipment Coordinator.

7.4.13 Ensure information corresponds to box identification and contents.

7.4.13.1 Notify supervisor if card is not complete.

7.4.13.2 Return card to Waste Shipment Coordinator.

7.4.14 Ensure gasket on lid is in place.

7.4.15 Check the gasket for damage.

7.4.15.1 If gasket is damaged, install a new gasket or apply GE-RTV silicone adhesive (or equivalent) in a continuous bead (1/4 inch minimum to 1/2 inch maximum) on top edges of the vertical 3/4 inch panel lid.

7.4.16 Using forklift, position lid on box.

7.0 PROCEDURE (cont.)

NOTE: Supervisor shall specify the scale to be used.

7.4.17 Using forklift, move box to scale for weighing.

7.4.18 If not previously completed, inspect the scale to be used in accordance with the SOP applicable to the area.

7.4.19 Using the forklift, move the box onto the scale.

7.4.20 Weigh the box.

7.4.21 Stamp the weight on 65 card.

NOTE: Waste packages shall be marked with the appropriate 13 alphanumeric character waste stream identification number and a six digit numeric character container identification number unique to each shipment.

7.4.22 Notify the supervisor to request the Waste Shipment Coordinator to assign shipment log number and waste stream identification number.

NOTE 1: The box serial number shall be used as the container identification number.

NOTE 2: Container identification numbers less than six digits are to be preceded by zeros (e.g. Container #25432 shall be changed to #025432, Container #5 would be changed to #000005).

7.4.23 Stencil or mark assigned shipment log number, container identification number, gross weight, and waste stream identification number in one inch (minimum) block or legible letters with waterproof ink or paint on the top center and two sides of the box (See Figure 5).

7.4.24 Notify MC&A to write shipment document using a "LLRW Shipment Preparation Worksheet", Form FS-F-3470.

7.4.25 Close metal box in accordance with box type per 7.11.

7.4.26 Notify supervisor that an RST is required to survey box.

7.4.27 Move box(s) to holding area.

7.4.28 Notify MC&A of box relocation.

7.5 Sea/Land Container Preparation

7.5.1 Notify MC&A of containers requiring shipping preparation.

7.5.2 After MC&A completes documentation to release containers for shipping preparation, check the container for damage (such as dents, rust, holes, cracks, water leaks, and defects).

7.0 PROCEDURE (cont.)

NOTE: MC&A shall complete documentation to release box to storage.

7.5.2.1 If a container is damaged, mark a red "X" on the door.

7.5.2.2 Contact the supervisor for disposition.

7.5.2.3 Notify MC&A of damaged container requiring transfer to storage.

7.5.3 Inspect contaminated doors and caulking for water.

7.5.3.1 If water is found, notify the supervisor.

7.5.4 Obtain the "Item Production/Certification/Identification" (65 Card), Form FMPC-CONT-1945-XX from the Waste Shipment Coordinator.

7.5.5 Ensure information corresponds to container identification.

7.5.5.1 Notify supervisor if card is not complete.

7.5.5.2 Return card to Waste Shipment Coordinator.

NOTE: Waste packages shall be marked with the appropriate 13 alphanumeric character waste stream identification number and a six digit container identification number unique to each shipment.

7.5.6 Notify supervisor to request the Waste Shipment Coordinator and MC&A to assign a shipment log number, container identification number, and waste stream identification number.

7.5.7 Stencil or mark assigned shipment log number, container identification number and waste stream identification number in one inch (minimum) black or legible letters with waterproof ink or paint on the sides of container as shown in Figure 6.

7.5.7.1 For containers with seven digit numbers, change the number to six digits by deleting the suffix (e.g. 178936-1 shall be 178936).

7.5.8 Notify supervisor that an RST is required to survey container.

7.5.9 Write shipment document using a "LLRW Shipment Preparation Worksheet".

7.6 Container Verification

7.6.1 Notify supervisor that the shipment documentation requires completion by the Waste Shipment Coordinator.

7.6.2 After documentation verification is complete, move the shipment to staging area for final preparation.

7.6.3 Notify supervisor that a smear test of the container is required within the time period specified by IRS&T.

7.0 PROCEDURE (cont.)

7.7 Drum Shipment Inspection

7.7.1 Check drum for damage such as dents, rust, holes, cracks, water leaks, and defects.

7.7.1.1 If a drum is damaged, mark the lid with a red "X".

7.7.1.2 Stop the shipment.

7.7.1.3 Notify the supervisor.

7.7.1.4 Move the damaged drum to the area designated by supervisor.

7.7.1.5 Notify MC&A of drum relocation.

NOTE: The shipment log number, container identification number, and waste stream identification number shall be marked in one inch block (minimum) letters using black waterproof ink or paint.

7.7.2 Check that the shipment log number, container identification number, and waste stream identification number are present and legible.

7.7.2.1 If not, notify the supervisor.

7.7.3 Check that the gross weight is marked in two inch (minimum) letters on each drum.

7.7.3.1 If not, notify the supervisor.

7.7.4 Ensure that the jam nut is locked to opposite side of bolt head with flat side against ring harness.

7.7.5 Ensure safety wire is installed on bolt.

7.7.6 Check bolt ring/drum seal to ensure proper seating of locking ring on drum.

7.7.7 Touch-up paint scratches.

7.7.8 Check for moisture on outside of drum.

7.7.8.1 Using a rag, remove moisture.

7.7.8.2 Dispose of rag in designated container.

7.7.9 Stencil the LSA (Low Specific Activity), LQ (Limited Quantity) or RQ (Reportable Quantity) on drum or affix appropriate label.

7.8 Wooden Box Shipment Inspection

7.8.1 Check box for damage (such as holes, cracks, water leaks, or defects).

7.0 PROCEDURE (cont.)

7.8.1.1 If a box is damaged, stop shipment.

7.8.1.2 Mark the side of box with a red "X".

7.8.1.3 Notify supervisor.

7.8.1.4 Move the damaged box to area designated by supervisor.

7.8.1.5 Notify MC&A of box relocation.

NOTE: The shipment log number, container identification number, and waste stream identification number shall be marked in one inch (minimum) letters using black waterproof ink or paint.

7.8.2 Check that the shipment log number, container identification number, and waste stream identification number are present and legible.

7.8.2.1 If data is missing or illegible, notify the supervisor.

7.8.3 Ensure gross weight is marked in two inch (minimum) letters on each box.

7.8.3.1 If not, notify the supervisor.

7.8.4 Ensure that three metal bands are secure.

7.8.5 Check that the bands are located vertically with one in the center and the remaining two equidistant from the center.

7.8.6 Check for moisture on the outside of the box.

7.8.6.1 Using a rag, remove moisture.

7.8.6.2 Dispose of rag in designated container.

7.8.7 Stencil LSA, LQ or RQ on box or affix appropriate label.

7.9 Metal Box Shipment Inspection

7.9.1 Check for damage such as dents, rust, holes, cracks, water leaks, and defects.

7.9.1.1 If box is damaged, mark side of box with a red "X".

7.9.1.2 Contact the supervisor for area of disposition.

7.9.1.3 Using forklift, move damaged box to area designated by supervisor.

7.9.1.4 Notify MC&A of box relocation.

7.9.2 Ensure drain plug is secure by checking for red paint dot on either side of box.

7.9.2.1 If there is no red dot, perform Step 7.3.9.

7.0 PROCEDURE (cont.)

7.9.3 Ensure wedge type pins (if used) are secure.

7.9.3.1 If the locking notch of the pin is 1/4 inch or below the box strips, replace the pin.

7.9.3.2 If angle of pin is less than or greater than 90 degrees, replace the pin.

7.9.4 Ensure bolt type locking devices (if used) are secure.

7.9.5 Check that the shipment log number, container identification number, and waste stream identification number are present and legible.

7.9.5.1 If not, notify the supervisor.

7.9.6 Ensure the shipment log number, container identification number, and waste stream identification number is marked in one inch (minimum) letters with black waterproof ink or paint.

7.9.7 Visually verify that gross weight is marked in two inch (minimum) letters on box.

7.9.8 Ensure two bands (if used) are located vertically on box, secure, and equidistant from center.

7.9.9 Touch-up paint scratches, if any.

7.9.10 Check for moisture on box.

7.9.10.1 If moisture is present, remove with a rag.

7.9.10.2 Dispose of rag in designated area.

7.9.11 Stencil LSA, LQ, or RQ on box or affix appropriate label.

7.10 Sea/Land Container Shipment Inspection

7.10.1 Check the sea/land container for structural damage such as structurally affecting dents, severe rust, holes, stress cracks, flaking paint, or water leaks).

7.10.1.1 If container is damaged, mark the door with a red "X".

7.10.1.2 Contact supervisor for area of disposition.

7.10.1.3 Move damaged container to area designated by supervisor.

7.10.2 Check for markings not pertaining to load.

7.10.2.1 Using paint, obliterate markings.

7.0 PROCEDURE (cont.)

7.10.3 Check that the shipment log number, waste stream identification number, lot number, gross, tare, and net weights, and container identification number are present and legible.

7.10.3.1 If not, notify the supervisor.

7.10.4 Ensure the shipment log number, container identification number, and waste stream identification number are marked in one inch (minimum) letters with black waterproof ink or paint.

7.10.5 Ensure that gross weight is marked in two inch letters (minimum) on side of container.

7.10.6 Check around doors and sealing surfaces for caulking.

7.10.6.1 Notify the supervisor if doors/surfaces are not caulked.

7.10.7 Ensure doors are closed.

7.10.8 Check that doors are secured by two bands.

7.10.8.1 If not, notify the supervisor.

7.10 9 Ensure that bottom edge and forklift indentations of container are clean.

7.10.10 Stencil LSA (Low Specific Activity), LQ (Limited Quantity) or RQ (Reportable Quantity) on box or affix appropriate label.

7.11 Final Documentation Prior to Loading

NOTE 1: The Waste Management Supervisor shall authorize the release of each shipment by signing the Waste Shipment Authorization Checklist, Form No. QA:WC:06.

NOTE 2: EC&QA shall affix certification sticker NV-211 to each container and authorize container.

NOTE 3: MC&A shall prepare a shipping order (Form FMPC-CONT- 558) for nuclear material.

7.11.1 Notify supervisor that shipment is ready for loading.

7.12 Closing Metal Boxes

7.12.1 7A Type Box with Clip Style Retainer (See Figure 7)

7.12.1.1 Remove the lid edge protector from the container.

7.12.1.2 Position the container lid on edge at an angle with the bottom facing out and leaning against the container.

7.0 PROCEDURE (cont.)

7.12.1.3 Install a neoprene sponge rubber gasket on the lid sealing surface.

7.12.1.4 Place the lid into position on top of the container.

NOTE 1: Four clips shall be in place on each side of the container, three clips in front and three in back for a total of 14 clips.

NOTE 2: The clips are the primary container closing/locking devices.

7.12.1.5 Using the tool provided, install "L" clips in sequence on corners, sides, front, and back of the container.

7.12.1.6 Using a wide edged blunt chisel, bend the bottom edge of the clip locking strap inward until the strap is secured.

7.12.1.7 Install the Lid Edge Protector on the container.

7.12.1.8 Using 3/8 x 16 hex bolts, washers, and hex head elastic stop nuts, secure the edge protector on the container.

7.12.1.9 Finger tighten each hex nut.

7.12.1.10 Tighten the hex bolts until a minimum of two threads are visible beyond the nut.

7.12.2 Metal Box with Wedge Type Pins (See Figure 8)

CAUTION

Do not use pins if the notches are 1/4 inch or more below the box straps or if the angle of pin is less than or greater than 90 degrees.

7.12.2.1 Insert pins through the straps located on the upper perimeter of the box so that the locking notches are below the straps.

NOTE: Metal band shall be 1-1/4 inch wide X .044 inch thick mangus P/W (paint/waxed), tensile strength of 7,610 lbs, 5.3 ft-lb, 100 lbs/coil, located equidistance from center.

7.12.2.2 Band box with two metal bands.

7.12.3 7A Type A Box with Positive Closer Bolt (See Figure 9)

7.12.3.1 Using forklift, remove lid from the container.

7.12.3.2 Install a neoprene sponge rubber gasket on the lid sealing surface.

7.12.3.3 Place the lid into position on container.

7.12.3.4 Put washers in place and insert bolt through holes in lid and lip on container per Figure 9.

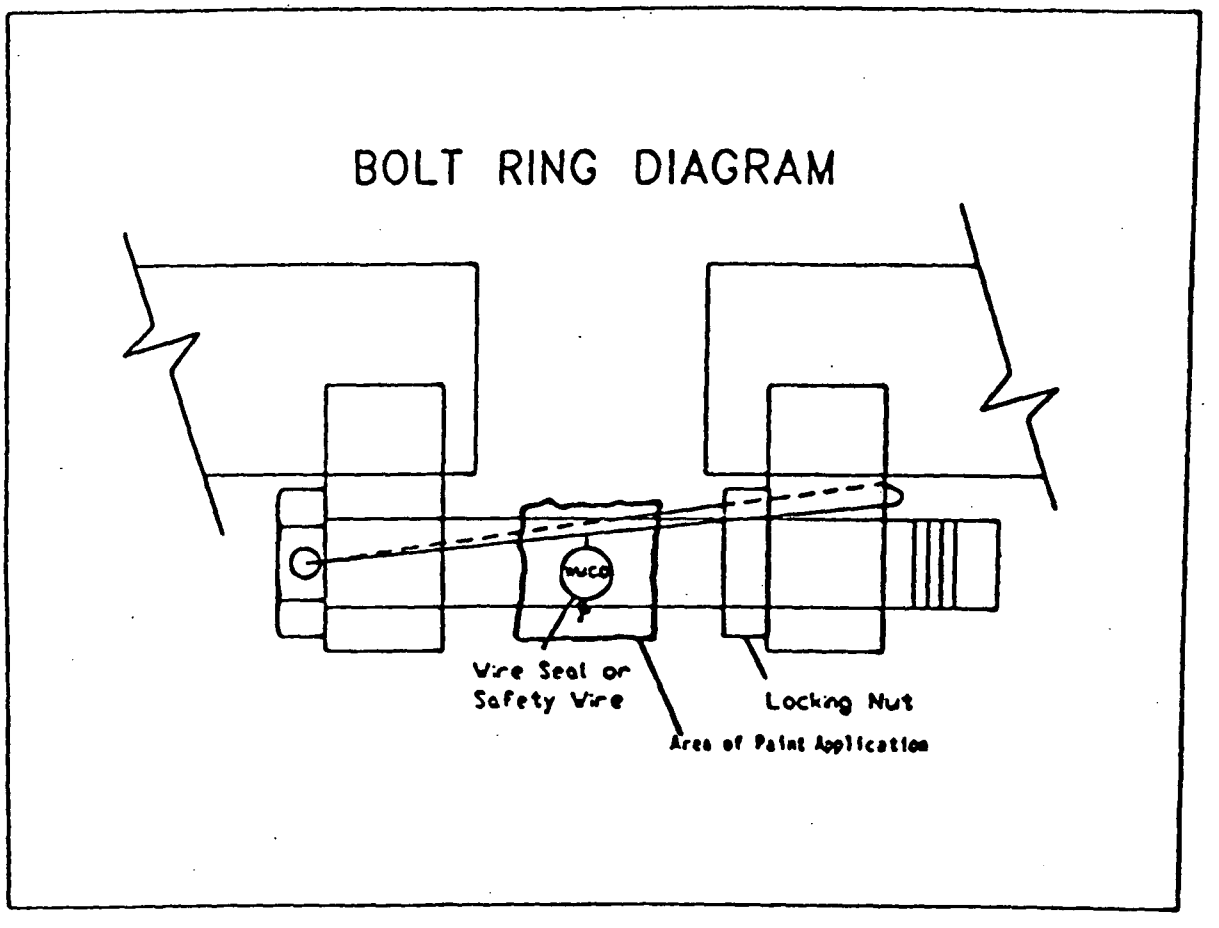
7.0 PROCEDURE (cont.)

7.12.3.5 Tighten bolts with impact wrench.

8.0 APPLICABLE FORMS

8.1 Form FMPC-CONT-1945-XX, "Item Production/Certification/Identification"

8.2 Form FS-F-3470, "LLRW Shipment Preparation Worksheet"



LOCK RING PAINT AND BOLT AND SAFETY WIRE INSTALLATION
Figure 1

4552-

TYPICAL CONTAINER MARKINGS & LABELS FOR OFFSITE SHIPMENT

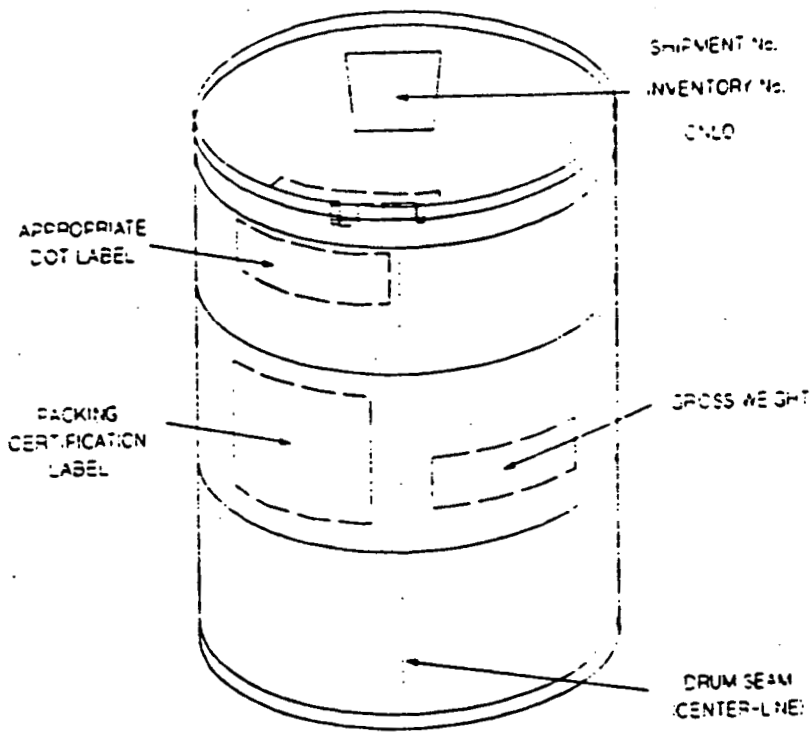
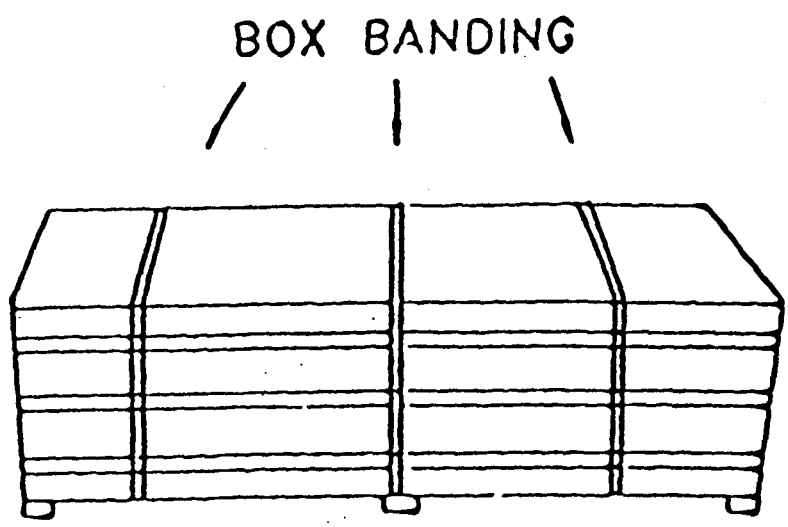


DIAGRAM OF DRUM IDENTIFICATION
Figure 2



WOODEN BOX BANDING
Figure 3

4552-

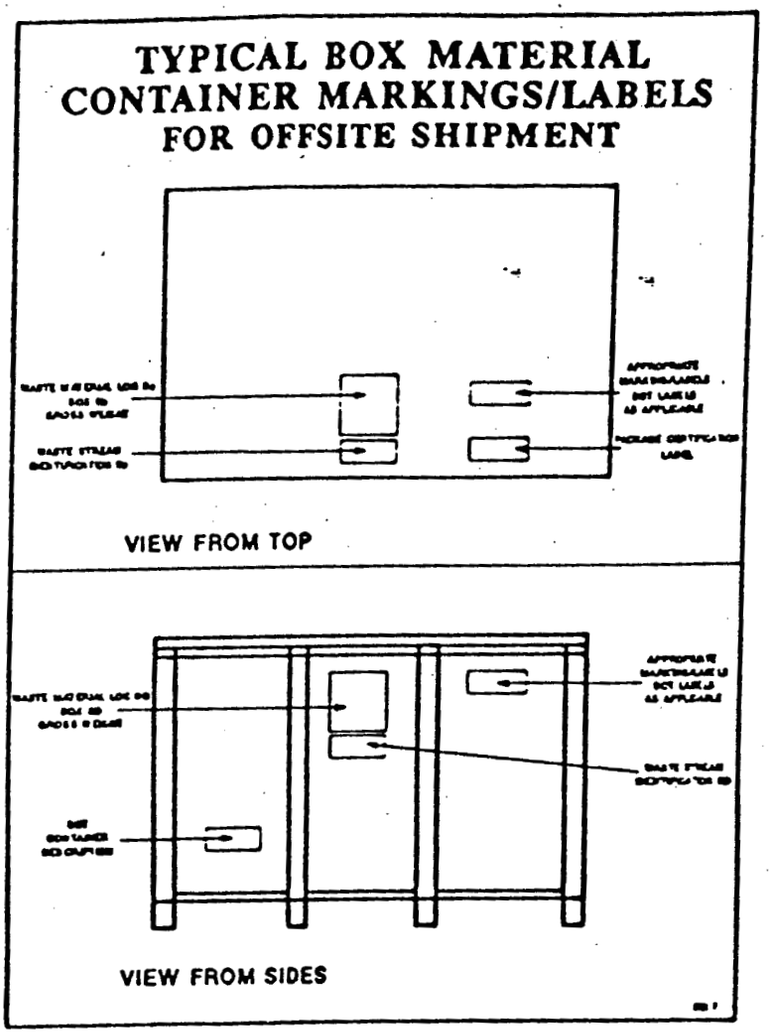


DIAGRAM OF WOODEN BOX IDENTIFICATION
Figure 4

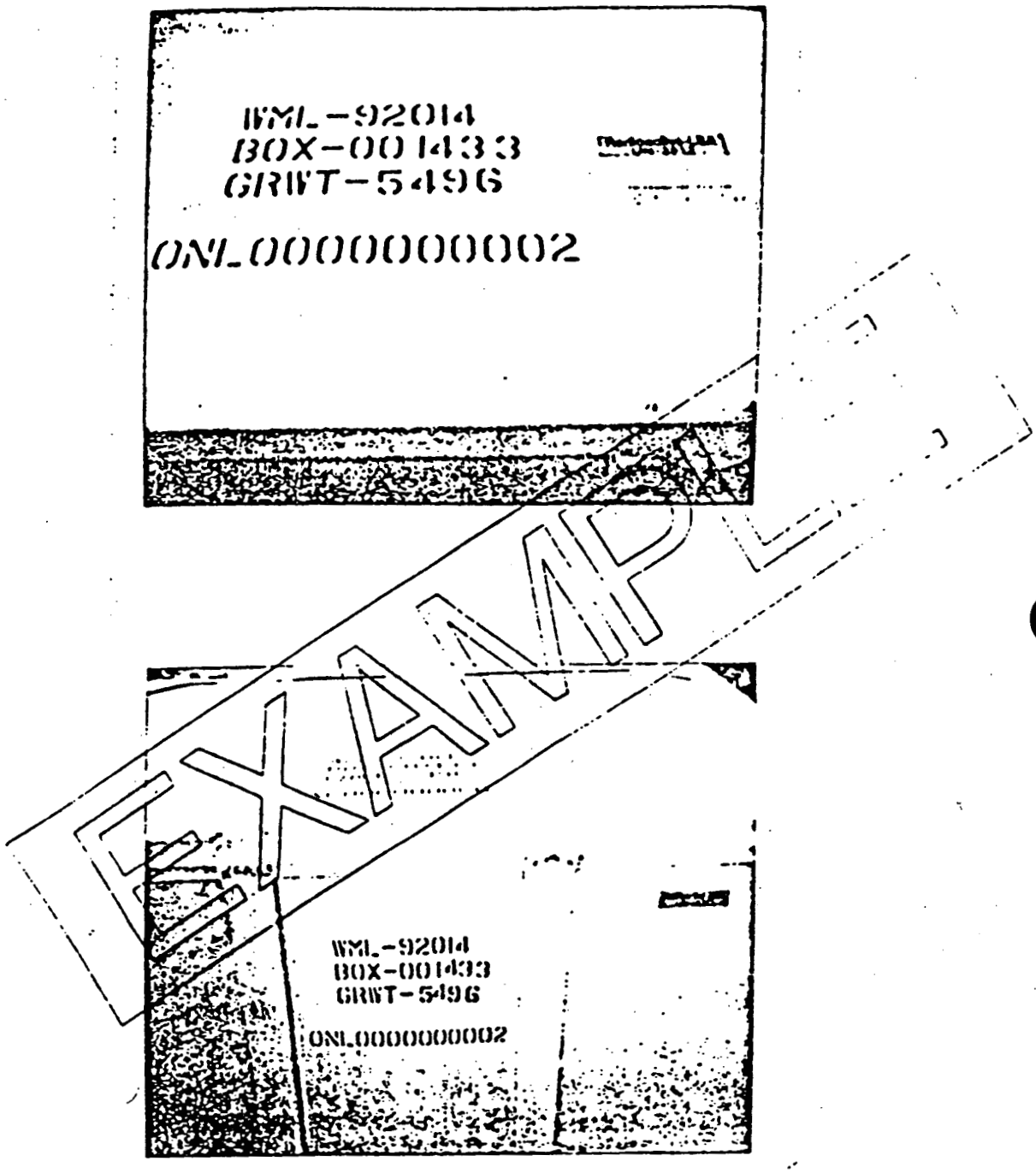


DIAGRAM OF METAL BOX IDENTIFICATION
Figure 5

- 4552-

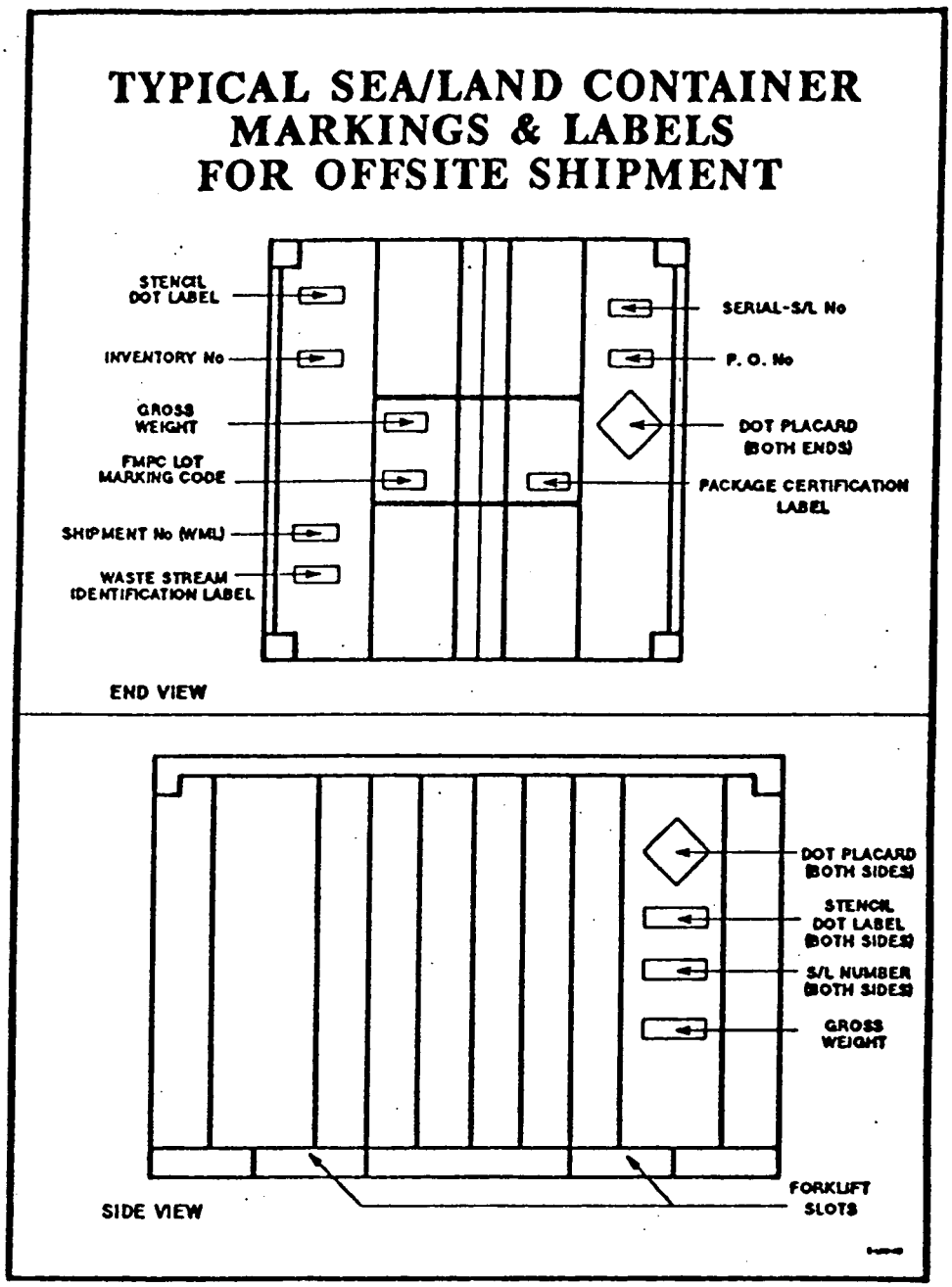


DIAGRAM OF SEA/LAND IDENTIFICATION
Figure 6

CIO NO. C93-489

Effective Date: 03-09-93

Expiration Date: 09-09-93

CHANGE IN OPERATION
REMEDIATION SUPPORT OPERATIONS DOCUMENT PROGRAM

DOCUMENT NO.: 01-C-602	AFFECTED DOCUMENT PAGE NO.: 21	AREA AFFECTED: Container Labeling/ Plant 1
DIVISION: RSO	DEPARTMENT: RSO/OP	SECTION: FW

TITLE: Low Level Radioactive Waste Shipment Preparation

AUTHORIZATION: (Signature On File)
R. L. Gardner, Manager
Facilities & Waste Operations

CHANGE:

1) Figure 6 is revised to delete Tare and Net Weight markings.

FILING INSTRUCTIONS: File facing page 21 of SOP 01-C-602 (Issue Date: 11-12-91, Rev. No. 2)	DOCUMENT PTR: T. Huey X-6533

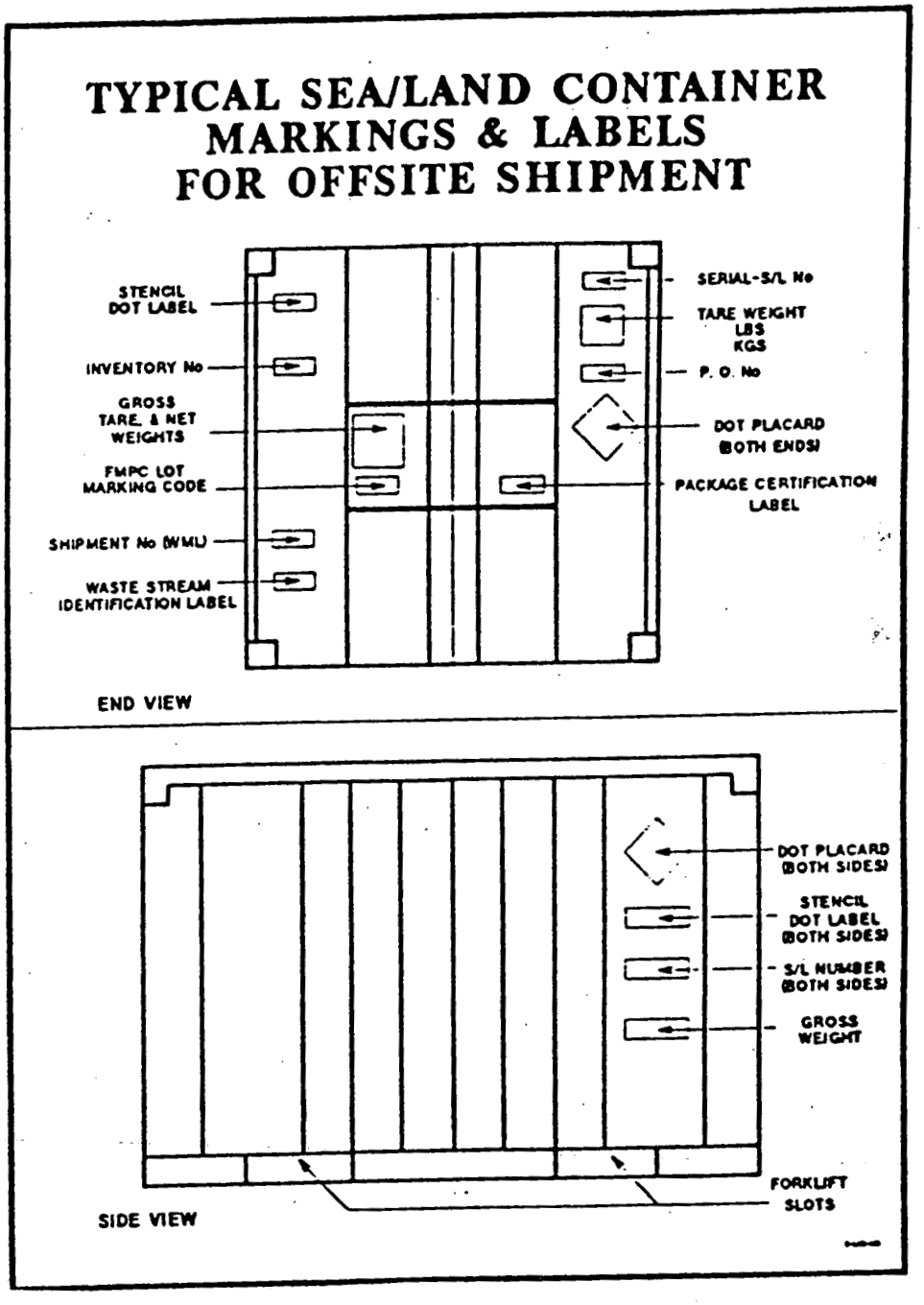
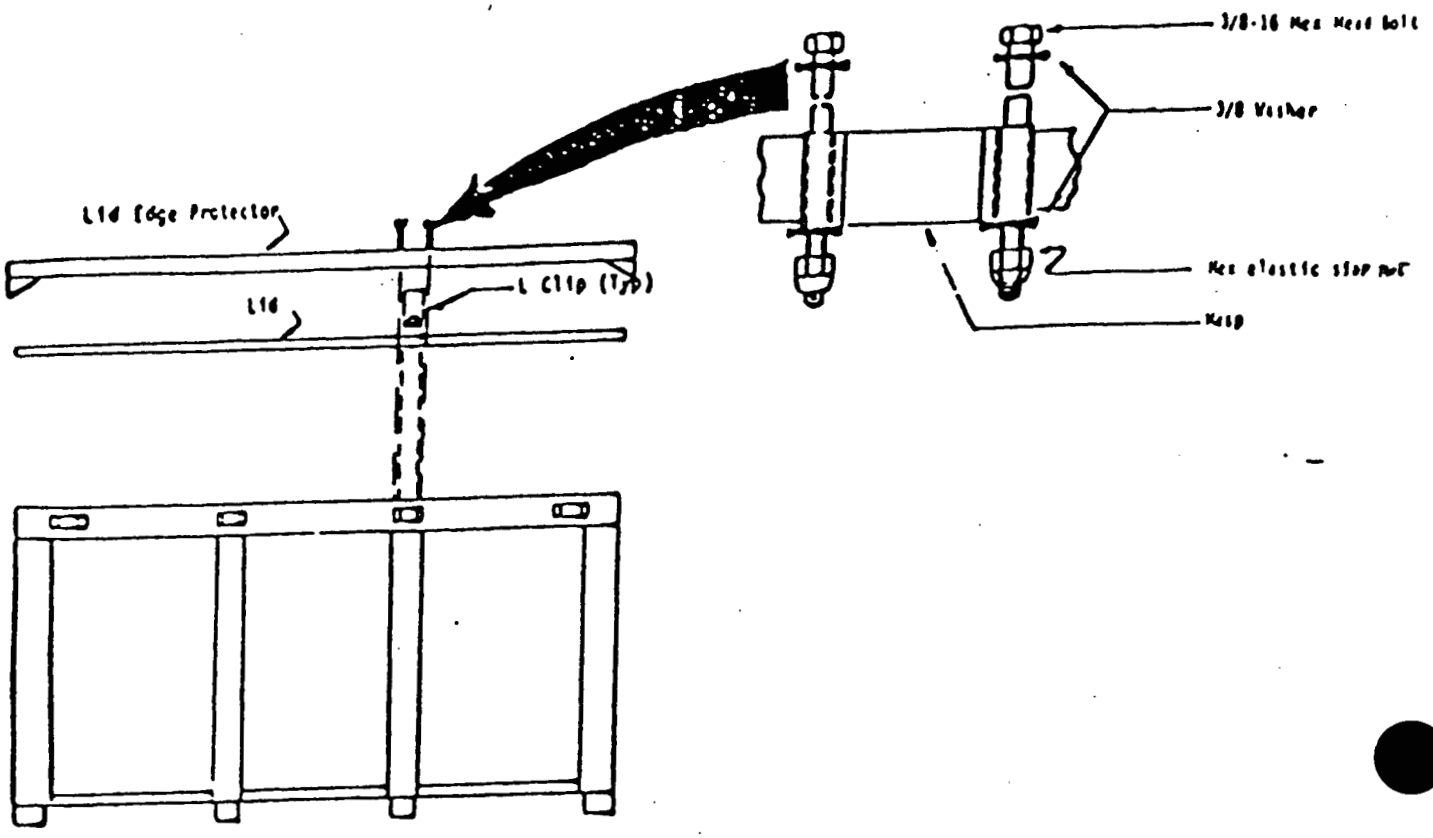
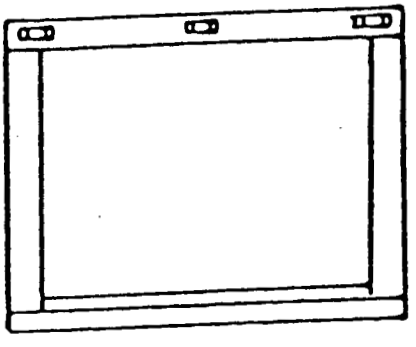
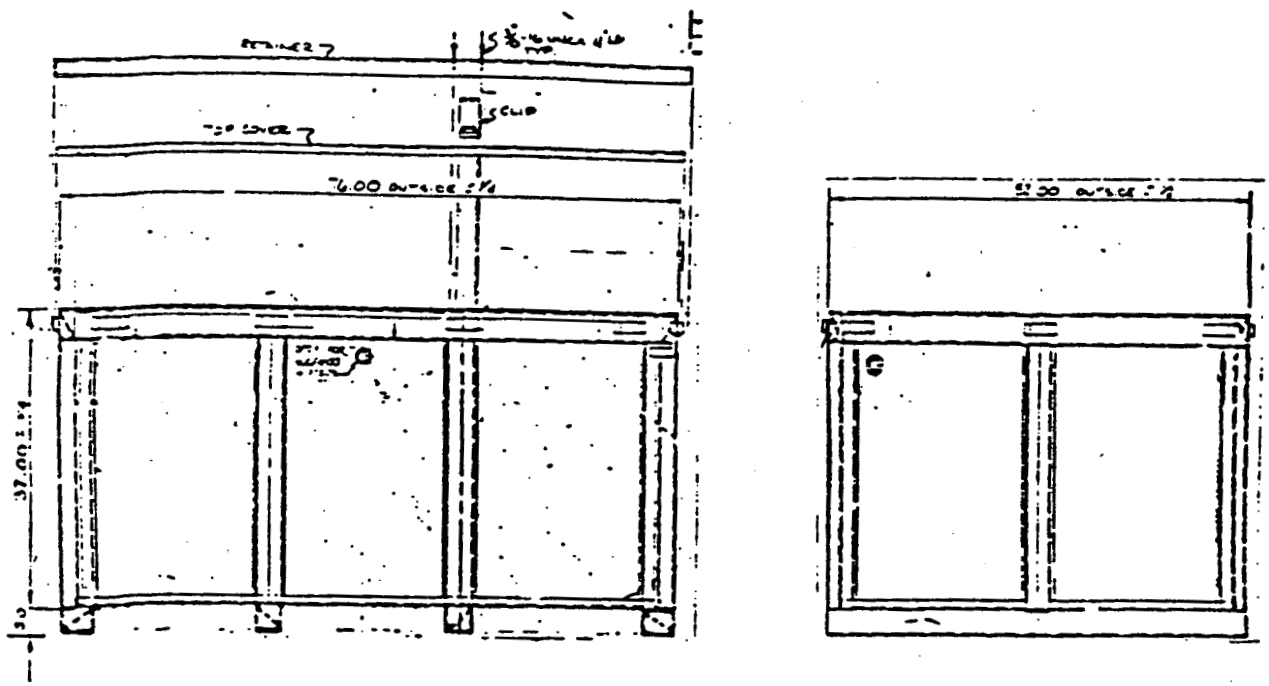


DIAGRAM OF SEA/LAND IDENTIFICATION
Figure 6

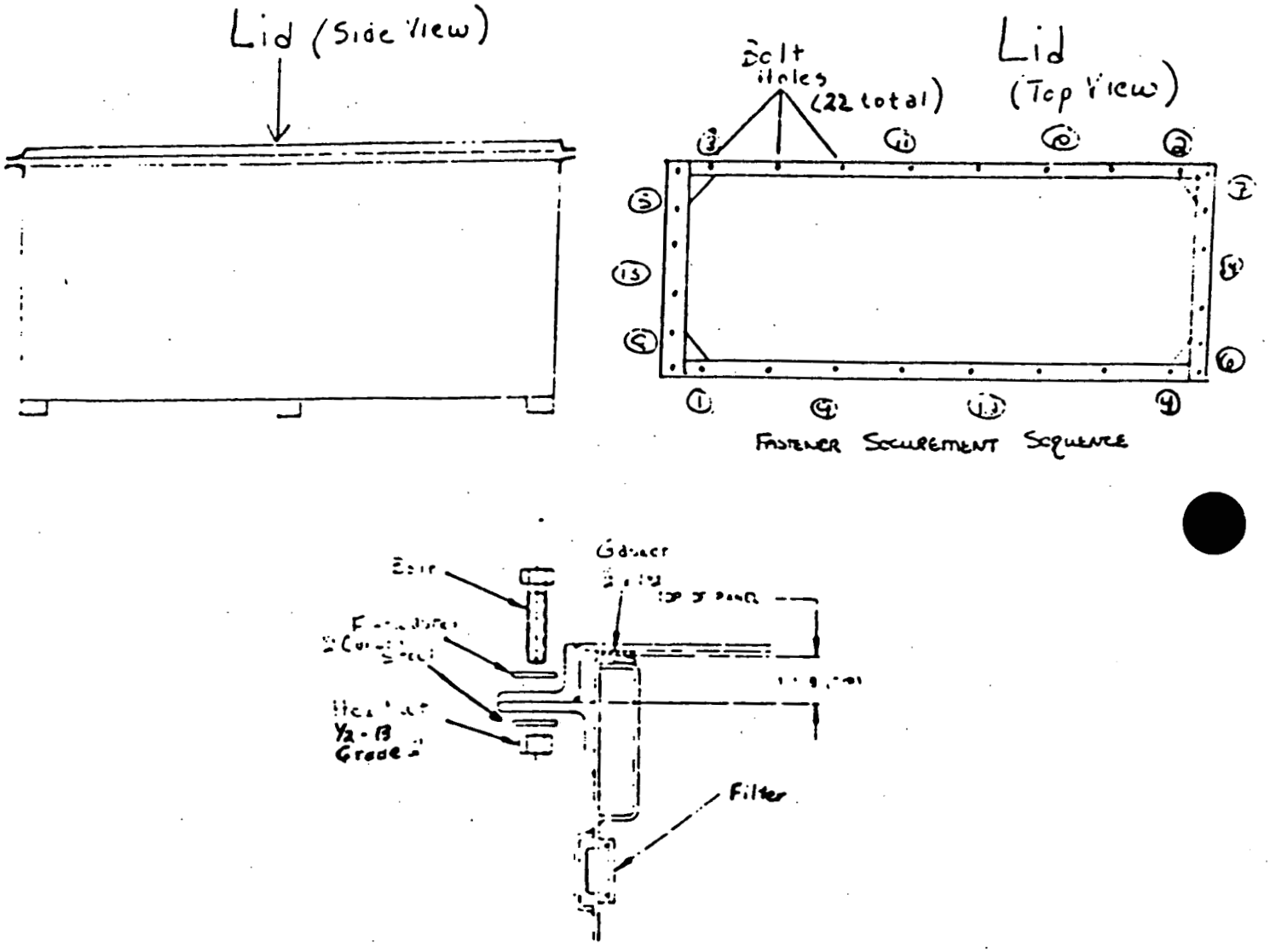




LID INSTALLATION FOR 7A TYPE A BOX WITH CLIP STYLE RETAINER
Figure 7



LID INSTALLATION FOR METAL BOX WITH WEDGE PINS
Figure 8



LID INSTALLATION FOR 7A TYPE A BOX WITH POSITIVE CLOSER BOLT
Figure 9

RECORD OF ISSUE/REVISIONS

- 4552-

DATE	REV. NO	DESCRIPTION AND AUTHORIZATION
07-07-87	N/A	Procedure requirement for low level (LLRW) shipment preparation per Request No. P87-150, initiated by K. J. Dunbar.
01-05-88	N/A	Revised to incorporate recommendations from QA/internal audit per Request No. P87-230, initiated by J. E. Harmon.
04-03-89	N/A	Reissued to include final sea/land container preparation and baled trash, and also general update of procedure per Request P88-257, initiated by K. J. Dunbar.
08-21-90	0	Reissued to reflect current operations per Request No. P89-396, initiated by K. A. Lawson. Revision program changed from "Page Revision Date" to "Revision No.".
09-17-90	1	Revised to incorporate CIO Nos. C90-054, C90-055, per Request Nos. P90-339 and P90-341.
06-11-91	2	Revised to include addition of waste stream identification number, clarify container identification, and update 6.5 per Request No. P91-226, initiated by S. Brown.
11-12-91	0	Reissued to update to current operation per Request No. P91-197, initiated by S. Brown and incorporated CIO C91-066 per Request No. P91-472.
01-27-92	1	Revised to incorporate C91-081 per Request No. P92-027.
07-30-92	2	Revised to incorporate C92-005 per Request No. P92-113.

CHANGE NOTICE - 4552-

No. EQP-12.04-00-03	Effective Date: 07/31/92	Page 1 of 1

AUTHORIZED: [illegible] for Elley D. Emery

PROCEDURE

EQP-12.04 Certification of Loading and Shipment of Low-Level Radioactive Waste
Rev. 0 05/30/91

Existing, Page 8 of 39, item 2.4.3.7.(c)

2.4.3.7 c. Verify that gross weight does not exceed 6,000 pounds and that it is marked in two inch (minimum) letters on each box.

Revise, Page 8 of 39, item 2.4.3.7.(c) as follows:

2.4.3.7 c. Verify that gross weight for DOT 7A containers does not exceed 8,000 lbs. Gross weight for older boxes may not exceed 6,000 lbs.

CHANGE NOTICE

No. EQP-12.04-00-05	Effective Date: 10/23/92	Page 1 of 1

AUTHORIZED: VP, (SA/CIP&QA) J.H. Fremsli

PROCEDURE

EQP-12.04 Certification of Loading and Shipment of Low-Level Radioactive Waste
Rev. 0 05/30/91

- Revise, Page 8 of 39, add item 2.4.3.12 as follows:

2.4.3.12 Affix tamper indicating device(s) to each container.

CHANGE NOTICE

No. EQP-12.04-00-04	Effective Date: 09/30/92	Page 1 of 1
AUTHORIZED: VP, (SA/CIP&QA)		

PROCEDURE

EQP-12.04 Certification of Loading and Shipment of Low-Level Radioactive Waste
Rev. 0 05/30/91

Existing, Page 14 of 39, item 2.13, NOTE

2.13 General Examination Activities After Loading

Waste Certification Personnel shall conduct the following activities after the trailer has been loaded:

NOTE: Two (2) photographs of the packages shall be taken prior to closing the doors of the trailer. Photos are also required of flat bed loads. Include information on shots to be taken.

Revise, Page 14 of 39, item 2.13, NOTE as follows:

2.13 General Examination Activities After Loading

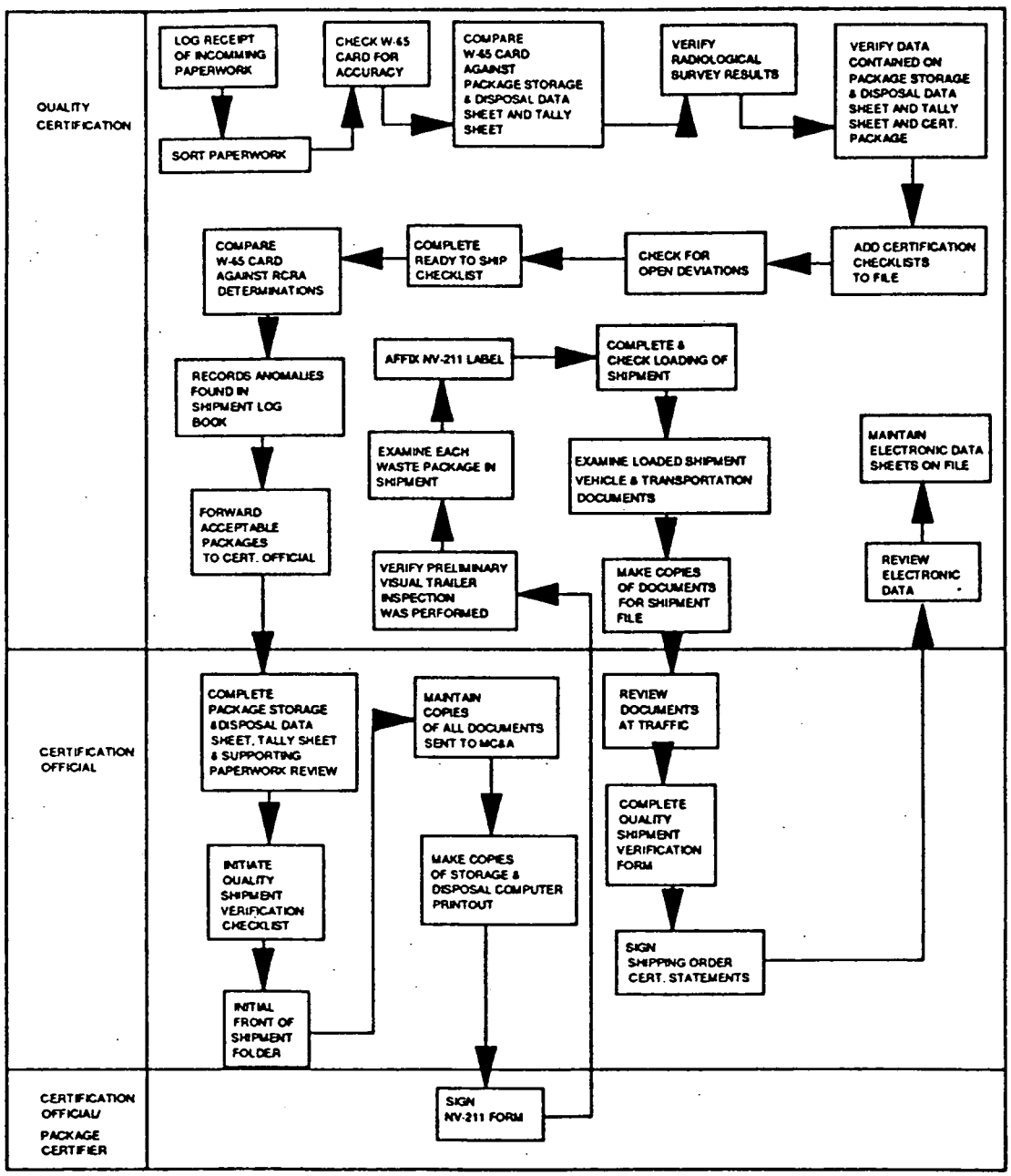
Waste Certification Personnel shall conduct the following activities after the trailer has been loaded:

NOTE: Two (2) photographs of the packages shall be taken prior to closing the doors of the trailer. Photos are also required of flat bed loads. *Include the trailer number in the photos. Label the pictures with shipment number, date and initials.*

WESTINGHOUSE MATERIALS COMPANY OF OHIO - FMPC		DOCUMENT NUMBER: EQP-12.07
ENVIRONMENTAL QUALITY PROCEDURE	SUBJECT: CERTIFICATION OF LOW LEVEL WASTE SHIPMENTS TO NTS	REVISION: 0
		Page 1 of 22
	AUTHORIZED: (Manager, Environmental Compliance & Quality Assurance) S. M. Bechman for E.D. Savage	Effective Date: 09/6/91

1.0. SCOPE

This procedures establishes a detailed method for the certification of Low-Level Radioactive Waste packages (L-LRW) for shipment to NTS. For abbreviation, acronyms, and definitions refer to WMCO-EQP-1.05.



2.0. PROCEDURE

2.1 Event Notification and Reporting Requirements

All unplanned or unwanted events or incidents shall be immediately reported to supervision. In the supervisor's absence the Assistant Emergency Duty Officer (AEDO) shall be notified for proper notification and reporting in accordance with, OM-FMPC-0001, "Event Notification and Reporting."

2.2 Industrial Health and Safety Requirements

All posted safety requirements (such as safety glasses, gloves etc.) and radiological requirements (such as respirators, proper clothing, etc.) shall be complied with in accordance topical manuals FMPC-2128, Industrial Hygiene and Safety Manual and FMPC-2084, Radiation Control Manual.

2.3 Examination and Certification of Incoming Paperwork

Quality Certification

2.3.1 Examine waste shipment paperwork packages prepared by the Waste Shipment Coordinator for accuracy, completeness, and that requirements for compliance with NVO-325 are met prior to forwarding them to MC&A for preparation of Shipping Orders.

2.3.2 Upon receipt of shipment packages from Waste Shipment Coordinator, log receipt of incoming shipment paperwork in the Shipment Log Book, which may be a computer data base. The following minimum data is required to be in the log book or data base:

a. Shipment Number
b. Container Quantity
c. Container Type
d. Material Type
e. Month, Date, and Time of Receipt

2.3.3. Sort paperwork in folder into two groups:

a. Group I is documents that are forwarded to MC&A, which include:

1. Package Storage and Disposal Data sheet.

2. Tally Sheet.

3. Storage and Disposal computer printout (List of the packages with weights and curies for each, grouped by DOT marking category), commonly called the "curie sheet".

4. Storage and Disposal computer printout (List of packages with weights, and required DOT markings), commonly called "circle copy".

5. Radiological Survey Report, form FMPC-IRS&T-1993-1.

6. Shipping Order, Form FMPC-CONT-558.

b. Group II is information pertaining to the shipment but not required by other organizations, which include:

1. Shipment worksheet, and untitled and unsigned document used to collect and process information. This is not part of the official certification record.

2. Waste Shipment Data Special Entry Information. This is not part of the official certification record.

3. Factor Assay data, either a letter or form listing the correct factor assay for a particular shipment.

4. Computer printout data entry sheets.

5. Any worksheets, such as Preparation of Baled Trash Shipment.

6. Item Production/Certification/Identification Card, (W-65 Card) FMPC-Cont-1945-XX.

2.3.4. Check the W-65 Card for accuracy. Check the signatures on the W-65 card to be sure the card has been signed by a properly trained individual. Only original W-65 card, or replacement W-65 cards having verified documentation of required information, are to be accepted for certification.

2.3.5. Compare the W-65 Card against the Package Storage and Disposal Data sheet and Tally Sheet for:

a. material type
b. shipment number
c. package serial number
d. material description
e. lot number
f. package number
g. gross, tare and net weights
h. package description

2.3.6. Verify Radiological Survey Results for packages being shipped are on file, complete and within acceptable limits, and verify accuracy of all entries to extent possible for computer entries made on Data Entry Sheets for items listed above. Radiological Survey Result Limits are:

a. Beta/Gamma radiation levels 200 millirem/hour measured externally at the surface.

b. Alpha emitters 220 DPM/100 cm2

c. Beta/Gamma emitters 2200 DPM/100 cm2

2.3.7 Verify that data contained on the Package Storage and Disposal Data sheet and Tally Sheet correspond with supporting documentation received in the shipment certification package.

2.3.8 Utilizing package serial numbers, obtain completed Quality Certification check lists and add to the file. Verify that all anomalies noted on the check lists have been resolved.

2.3.9 Check to make sure there are no open Deviation Reports, per PP-FMPC-706, against the package (packaging and contents) being shipped.

2.3.10 Compare material descriptions and source information on W-65 card against RCRA determination letters from Environmental Compliance to ensure that only materials approved for release are approved for shipment.

2.3.11 Complete a Ready to Ship Checklist for any Sea/Land containers in the shipment. (Attachment A)

2.3.12 Record anomalies found in the Shipment Log Book, and ensure the respective shipment package is returned to the Waste Shipment Coordinator for resolution.

2.3.13 Forward acceptable shipment packages to a Certification Official.

Certification Official

2.3.14 Complete the "Package Storage & Disposal Sheet, Tally Sheet, and Supporting Paperwork Review Checklist for L-LRW" (Attachment B). This becomes part of the shipment paperwork file retained in Quality Certification. If the shipment is unusually complex or non-routine, a second Certification Official may be asked to check the shipment paperwork, and will either fill out a new check list, or countersign the first Certification Official's checklist. The second check need only include as many checks as deemed necessary to provide confidence that the paperwork package is acceptable.

2.3.15 Sign and date the Package Storage and Disposal Data sheet signifying the paperwork is acceptable and can be forwarded to MC&A to initiate shipment.

2.3.16 Complete sections 1 and 2 of the Quality Shipment Verification checklist (Attachment C). It is filed separately from the shipment file and is kept ready for use at Traffic. A blank copy of the Certification Statement (Attachment D), the Certification Statement Specific to Hazardous Waste (Attachment E), and a copy of the Package Storage and Disposal Data Sheet are attached to this form along with any additional original documents which will accompany the shipment to NTS.

2.3.17 Initial the front of the shipment folder indicating the date and time the package was approved.

2.3.18 Maintain in the shipment certification file copies of all documents sent to MC&A.

NOTE: Documents from the certification paperwork package required by MC&A, are either faxed to MC&A (# 6454), delivered to the recipient within the group, or delivered to a designated pick-up point. The time of transmittal is recorded on the certification file folder and in the Shipment Log book.

2.3.19 Make copies of the Storage and Disposal computer printout (list of packages with weights, and required DOT markings), the Package Storage and Disposal Data sheet, and the Tally Sheet for Quality Certification persons checking packages prior to loading of shipment.

Certification Official/Package Certifier

2.3.20 Either the Certification Official or the Package Certifier can sign NV-211 Certification labels (Attachment F) for the shipment as follows:

a. When Certification Official signs NV-211 labels:

Certification Official

1. Sign NV-211, identify the packet of labels with the shipment number, and enter in the Chain of Custody Log book (Attachment G) the Quality Certification person responsible for affixing them to the containers.

Quality Certification

2. Sign in the log book acknowledging receipt of signed NV-211 labels. Any damaged, replaced, or unused labels (e. g. canceled shipments) are to be returned, and a record of return is to be made in the log book. The Certification Official signing the labels signs to acknowledge receipt, or in their absence, another Certification Official may sign for the labels, but must immediately destroy them.

b. When the Package Certifier signs NV-211 labels:

1. Sign as needed to affix to each package. Any damaged, replaced, or unused labels are to be destroyed.

2.4 <u>Waste Packages and Shipment Vehicle</u>

Quality Certification

2.4.1 Complete examination of waste packages, shipment vehicle, and check loading of shipment.

Note : Detailed instructions for each of the following checklists are found in WMCO-EQP-12.04 "Certification of Loading and Shipment of Low-Level Radioactive Waste".

2.4.2 Verify that a Preliminary Visual Trailer Inspection was performed by WEMCO mechanics. Examine the transport trailer/vehicle and complete either the "Waste Certification Preliminary Trailer Checklist for Flat Beds" (Attachment H) or the "Waste Certification Preliminary Checklist for Vans" (Attachment I) as applicable. The checklist becomes part of the shipment certification file.

2.4.3 Examine each waste package in the shipment. Each package prior to loading is checked for agreement with the information on the approved Package Storage and Disposal Data sheet, the Tally Sheet, and the Storage and Disposal computer printout list of packages, weights, and DOT markings. When this agrees, and criteria listed in EQP-12.04 are met, affix a properly completed and signed NV-211 certification label on each package.

2.4.4 Examine the loaded shipment vehicle after it has been sealed, weighed, monitored, and moved to traffic, take photographs, and complete the "Quality Certification Final Vehicle/Trailer Checklist" (Attachment J) which becomes part of the shipment certification file.

2.4.5 Examine the Transportation documents as listed in EQP-12.04 for accuracy and completeness. Complete the "Quality Certification Traffic Shipment Documentation Checklist" (Attachment K) which becomes part of the shipment certification file.

2.4.6 Make copies of the following documents and make them part of the shipment file:

a. Waste Certification Final Trailer Checklist

b. Waste Certification Traffic Shipment Document Checklist

c. Shipping Order for Nuclear Material

d. Radiological Survey Results (48-Hour Smears) if original is not already in file

f. Out going vehicle Radiation Survey

g. Out going vehicle Radiation Monitoring Sheet

2.5 <u>Shipping Papers</u>

Certification Official

2.5.1 Review the following documents for accuracy and completeness at Traffic :

a. Shipping Order for Nuclear Material
b. Bill of Lading
c. Low Level Waste Shipment Checklist and NTS Notification Form
d. Vehicle Radiation Monitoring Reports
e. Radiological Survey Report for results of smear samples of packages.

f. Weight Ticket
g. Off-Site Tie Down Inspection Form
h. LSA/RQ, LQ Documentation
i. Drivers Instructions
j. Waste Certification checklists

2.5.2 Complete the "Quality Shipment Verification Form" form and list any nonconformances. This becomes part of the shipment certification file.

2.5.3 Sign and date the Shipping Order, in the space provided for Quality Certification, when all documents are complete and accurate.

2.5.4 Sign the Certification Statement. The original and one copy are given to Traffic. One copy is retained and becomes part of the shipment certification file.

2.5.5 Sign the Certification Statement Specific to Hazardous Waste. The original and one copy are given to Traffic. One copy is retained and becomes part of the shipment certification file.

2.5.6 Fax the Certification Statement Specific to Hazardous Waste, the Package Storage and Disposal Data Sheet, and a Facsimile Service form to NTS per the directions on the Facsimile Service form two days prior to the shipment's arrival at NTS. This is to be followed by a phone call to NTS to verify the receipt of this information.

NOTE: The Facsimile Service form or a variation thereof is to be used for faxing. Instructions for faxing to DOE/NV may be found near the fax machine. If problems are encountered in faxing the above information, inform the Quality Certification Manager, or if unable to do so, contact DOE/NV by telephone (number on fax form) for instructions. Make a note on the Facsimile Service form of failure to transmit, and log the date, time, and name of person contacted by telephone at DOE/NV.

2.6 Electronic Data Transfer Sheet

Quality Certification

2.6.1 Receive the electronic transfer data sheet from the Shipping Coordinator.

2.6.2 Review electronic transfer data sheet for accuracy. Data must agree with the approved respective Package Storage and Data Disposal report and comply with the requirements of Reynolds Electrical & Engineering Company's, Inc. (REECO) Defense Low Level Waste Information System Data Transmission Guide. If not acceptable, return it to the shipping coordinator for clarification or correction and resubmittal.

2.6.3 Maintain a file for the electronic data sheet.

3.0 REFERENCES

3.1 NVO-325 "Nevada Test Site Defense Waste Acceptance Criteria, Certification and Transfer Requirements"

3.2 WMCO:EQP-1.05 "Abbreviations, Acronyms, and Definitions"

3.3 PP-FMPC-706 "Deviation and Corrective Action Reporting"

3.4 WMCO-EQP-12.04 "Certification of Loading and Shipment of Low-Level Radioactive Waste

3.5 OM-FMPC-0001 "Event Notification and Reporting"

3.6 FMPC-2128 "Industrial Hygiene and Safety Manual"

3.7 FMPC-2084 "Radiation Control Manual"

4.0 ATTACHMENTS

4.1 Attachment A, Quality Certification Checklist Sea/Land Container "Ready to Ship"

4.2 Attachment B, Package Storage and Disposal Data Sheet, Tally Sheet, and Supporting Paperwork Review Checklist for L-LRW

4.3 Attachment C, Quality Waste Shipment Verification Form

4.4 Attachment D, Certification Statement

4.5 Attachment E, Certification Statement Specific to Hazardous Waste

4.6 Attachment F, NV-211 Certification Labels

4.7 Attachment G, Example of Chain of Custody Log used to issue NV-211 labels

4.8 Attachment H, Quality Certification Preliminary Trailer Checklist For Flat Beds

4.9 Attachment I, Quality Certification Preliminary Trailer Checklist For Vans

4.10 Attachment J, Quality Certification Final Trailer/Vehicle Checklist

4.11 Attachment K, Quality Certification Traffic Shipment Document Checklist

4.12 Attachment L, Facsimile Service Form

Attachment A
Page 1 of 1

QUALITY CERTIFICATION CHECKLIST
SEA/LAND CONTAINER "READY TO SHIP"

INFORMATION
DATE: _____ SHIPMENT NUMBER: _____

MTL. TYPE: _____ BOX ___ Serial No.: _____

MTL. TYPE: _____ ___ Serial No.: _____

LOCATION : _____ WEIGHTS: Gross _____ BOX 1 _____ BOX 2

_____ Tare _____ _____

_____ Net _____ _____

EXAMINATION CRITERIA (Quality Certification)

Trailer No.: _____ Initials

1. Verify "Item Production/Certification/Identification" W-65 card is completed accurately (Form FMPC-ES&H-1945-XX) _____
2. Container does not show evidence of leaking. _____
3. Radioactive placards present. (4 sides) _____
4. No holes, serious dents, or excessive rust. _____
5. Marking is complete as follows:
   - Proper shipping label(s) identified on three sides (LSA, RQ, LQ) _____
   - Gross weight identified _____
   - Shipment Number _____
   - Waste Stream Number _____
   - Container Number _____
   - FEMP Marking Code _____
6. Marked weight values match above values. _____
7. The doors are latched, sealed with caulking, and the two latch bars are banded together. _____
8. Seal number Box #1_____ affixed to container. _____

   Box #2_____
9. All unnecessary markings have been removed or covered. _____

PLACE NV-211 ON DOOR OF CONTAINER WHEN ABOVE CRITERIA IS SATISFACTORILY MET.

I hereby certify the above items have been examined and the above items are correct to the best of my knowledge.

Signed:_____ Date: _____
(Quality Certification)

ECQ-880930-1, Rev. 3 (08/26/91)

EXHIBIT

PACKAGE STORAGE & DISPOSAL SHEET, TALLY SHEET, AND SUPPORTING PAPERWORK REVIEW CHECKLIST FOR L-LRW

Shipment No. _____

Review the paperwork for the following requirements:	Approval Check
Shipment No. agrees with LLW shipping report.	_____
Waste Stream number present and correct.	_____
Waste material description present and accurate.	_____
W-65 cards are correct for each container.	_____
Lot No. agree with LLW shipping report.	_____
Lot Code agrees with LLRW shipping report material description.	_____
Lot enrichment code agrees with U-235 analysis.	_____
U Assay, U-235, & U-238 concur with approved values. (from Analytical or approved in writing by MC&A)	_____
No unusual analysis dates (If so, check).	_____
Container type code listed and accurate.	_____
Proper waste code is entered.	_____
Combustibility percent listed and appropriate for contents.	_____
Gross weights agree with LLRW shipping report.	_____
Gross weights do not exceed the maximum gross weight per container type.	_____
Tare weights agree with LLW shipping report.	_____
Net weights agree with LLW shipping report.	_____
Net + Tare = Gross	_____
Inner container identity numbers check.	_____
Outer container identity numbers check.	_____
Total number of containers agrees with LLRW shipping report.	_____

EXHIBIT

ECQ-881115-2, Rev. 2 (07/30/91)

PACKAGE STORAGE & DISPOSAL SHEET, TALLY SHEET, AND
SUPPORTING PAPERWORK REVIEW CHECKLIST FOR L-LRW (Continued)

	Approval Check
Total containers correct on Storage & Disposal Sheet.	_____
Package description correct on Storage & Disposal Sheet.	_____
Correct volume listed for outer container.	_____
Gross volume is correct for shipment.	_____
Checked conversion from English to Metric units.	_____
Radiological Survey results present.	_____
Rad Survey at Contact is not greater than 200 mR/hr.	_____
Rad Survey at 3 ft is not greater than 10 mR/hr.	_____
No unusual values or arrangement indicating computer error.	_____
LQ, RQ, & LSA designations correct on Curie List. (If not, verify correct curie list is issued)	_____
LSA, LQ, & RQ list for loading correct and in agreement with Curie List. (Non-process contaminated materials are always LSA.	_____
Appropriate preparer signature on Storage & Disposal Sheet.	_____
Checked against RCRA letters and found to be non-RCRA.	_____
Partially completed Shipping Order included in folder.	_____

EXHIBIT

I hereby certify the above criteria has been verified to be correct, to the best of my knowledge.

Signature: _____

Date: _____

ECQ-881115-2, Rev. 2 (07/30/91)

Attachment C
Page 1 of 2

QUALITY WASTE SHIPMENT VERIFICATION

Page 1 of 2

Date_____ Time _____

Shipment No. WML-_____Trailer No._____No./Type Container_____

1. Storage & Disposal Data Sheet
   A. Material Descsription_____
   B. Signed _____ Shipment No. WML-_____
   C. Total Curries _____
   D. Total Gross Weight (Lbs.)_____ (Kgs)_____
   E. Total Volume (Cu Ft) _____ (Cu Meters)_____
   F. Type Container _____
   G. Date _____Time _____
   H. Check of "G" for all copies _____

2. Tally Sheet
   Shipment No. WML-_____ Date _____ Time _____
   Check of Date & Time of all copies in Pkg. _____
   A. Lot Number Gross Weight Net Weight
   _____ _____ _____
   _____ _____ _____
   _____ _____ _____
   _____ _____ _____
   Totals _____ _____
   B. Total containers _____ Totals agree with "1" above _____
   C. Field check of Tally Sheet included _____

3. Bill of Lading (FMPC PM&A-452 Rev 2/12/91)
   B/L No._____ Trailer No._____ Seal No.FA/WMCO_____
   741 No.FVC-VAB- _____SS-SO No. _____ _____
   ETA : _____
   Number of containers:

		Type Container	Gross Wt.	Net Wt.
LSA _____	RQ _____	_____	_____	_____
	NON-RQ _____	_____	_____	_____
LQ _____	RQ _____	_____	_____	_____
	NON-RQ _____	_____	_____	_____
Totals	_____		_____	_____

   _____ Above information agrees with Shipping Order & Tally Sheet.
   _____ Remainder of information of Bill of Lading checked.

4. Shipping Order for Nuclear Material (FMPC-ES&H-558-3 REV. 1/29/87)
   A. Shipping Order No. _____ Trailer No. _____
   B. Bill of Lading No. _____ Seal No. FA-WMCO_____
   C. 741 No. FVC-VAB _____ MC & A Signed_____ _____
   D. Material Type _____
   E. Lot Nos. agrees with Tally Sheet _____ Total Quantity _____
   F. Gross Weight _____* Element Lbs. _____*
   G. Tare Weight _____* Element Grams or Kgs _____*
   H. Net Weight _____* Iso. Analysis _____*
   I. Element Analysis _____* U235 Grams or Kgs _____*
   J. Est. Time of Arrival _____
   K. *Totals (listed) & Individual Lot values (not listed) agree with Tally Sheet. _____

EXHIBIT

ECQ-890601-1, Rev.1, (08/04/91)

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QUALITY WASTE SHIPMENT VERIFICATION

5. Low Level Waste Shipment Checklist and NTS Notification Form
   A. Shipment No. WML-_____ B/L No. _____
      SS-SO No. _____
   B. Data on line 5A agrees with B/L and Shipping Order _____
   Completed except for Departure Time and Traffic Manager review _____

6. Radiation Monitoring Sheet (FMPC ES&H-1596-1) For:
   A. Trailer Empty _____ Trailer ID _____
   B. Trailer Loaded _____ Trailer ID _____
   C. Cab Only _____ Trailer ID_____ License No._____
   D. Loaded Vehicle Radiological Survey _____ Trailer ID _____
   E. Temporary Seal Numbers _____
   F. Garage inspection attached _____

7. Container Radiological Data
   Initial Dose Rate Data _____ 48 Hour Smears: Date_____Time_____
   Equal to or less than 48 hours prior to Load Time _____

8. Weight Ticket
   Load Weight _____ Rear Axle Wt._____ Drive Wt._____

9. Off-Site Tie-Down Inspection Form (FMPC SAML 2495 REV 4/5/89)
   Shipment No. WML-_____Trailer No._____Seal No. FA/WMCO_____
   A. Checked and signed in two places _____ _____

10. LSA/RQ, LQ documentation
   One copy in Traffic File package _____
   One copy in envelope for driver _____
   A. Wt. checks with Tally Sheet _____
   B. Curies checks with Disposal Sheet or Tally Sheet _____
   C. Tally Sheet also in envelope _____
   D. Weight ticket in/with envelope (2 copies) _____

11. Driver Instructions Complete (2 sets) _____
   All Written identity & information checks _____

12. Waste Certification Checklist present, signed and in agreement with other documentation.
   A._____ Waste Certification Preliminary Trailer Checklist

   B._____ Waste Certification Traffic Shipment Documentation Checklist

   C._____ Waste Certification Final Trailer/Vehicle Checklist

Shipping Order signed by Certification Official _____

Shipment released on _____ at _____AM/PM

Signed _____

List Nonconformances found:

_____

_____

ECQ-890601-1, Rev 1, (08/04/91)

EXHIBIT

CERTIFICATION STATEMENT

Shipment No. WML-91-_____ Trailer No. _____

Bill of Lading No. _____ Seal No. _____

This is to certify that the herein named materials are properly classifies, described, packaged, marked and labeled, are in proper condition for transportation according to the applicable regulations of the Department of transportation, and that the shipment meets DOT and EPA requirements. Except for exemptions approved by DOE/Nevada, and data that is being transmitted in the same format and content as that for preceding shipments, this shipment and all packages contained therein meets NVO-325 requirements.

EXHIBIT

_____
FMPC Certification Official

Date: _____

Quality Certification Form

ECQ-900914-1, Rev. 2 (08/06/91)

Attachment E
Page 1 of 1

- 4552-

CERTIFICATION STATEMENT SPECIFIC TO HAZARDOUS WASTE

This is to certify that the packages itemized in the attached list for Shipment No. WML-91-_____ contain no hazardous waste as determined by 40 CFR Part 261.30, and OAC 3745-54.

_____
FMPC Certification Official

Date: _____

EXHIBIT

Quality Certification Form
ECQ-900914-2, Rev. 2 (08/06/91)

NV-211 LABELS

NV-211 **PACKAGING CERTIFICATION**

This certifies that this container and its contents are in acceptable condition for transportation and waste disposal according to DOT (49 CFR), EPA (40 CFR), and DOE/NV (NVO-325) requirements.

DATE: _____

CERTIFIED BY: _____

TITLE: CERTIFICATION OFFICIAL

ORGANIZATION: FMPC

FMPC-O&S-234 (REV. 9/7/89)

EXHIBIT

NV-211 **PACKAGING CERTIFICATION**

This certifies that this container and its contents are in acceptable condition for transportation and waste disposal according to DOT (49 CFR), EPA (40 CFR), and DOE/NV (NVO-325) requirements.

DATE: _____

CERTIFIED BY: _____

TITLE: PACKAGE CERTIFIER

ORGANIZATION: FMPC

FMPC-O&S-234-1 (REV. 9/7/89)

CHAIN OF CUSTODY LOG
FOR
ISSUE & RECEIPT OF SIGNED NV-211 LABELS

DATE	SHIPMENT NUMBER	LABELS ISSUED	ISSUED BY (SIGNATURE)	NUMBER RECD.	RECEIVED BY (SIGNATURE)	LABELS RETURNED	RECEIVED BY (SIGNATURE)

EXHIBIT

QAC-890712-1, REV. 0

QUALITY CERTIFICATION - PRELIMINARY TRAILER CHECKLIST FOR FLAT BEDS
(SEA/LAND SHIPMENTS)

DATE: _____ CARRIER: _____ TRAILER NO.: _____

CHECKLIST ITEM	VERIFIED BY
1. Verify the preliminary trailer inspection completed (on trailer only) prior to driver unhooking from the empty trailer: Accepted _____ Rejected _____	_____
2. Prior to loading verify the RS Technician has surveyed the empty trailer, recorded results on Form E98H-1596-1, and that results meet acceptance requirements listed in 49 CFR 173.441. (Note: If over 48 hrs. since smears were made, the trailer must be resmeared.)	_____
3. Verify that the doors of the Sea/Land containers are banded closed and secured with a tamper proof DOT approved seal.	_____
4. Verify that packages are properly tied-down as specified by SOP-TRF-46-C-110. Sea/Land containers shall be secured with four straps on each container, and shall be both chained and blocked with a 2X4 on front and back of load.	_____
5. Record shipping information in the blocks below:	_____

Shipment No. WML- _____ - _____

Container No. 1: Ser. No. _____ Seal No. _____

Container No. 2: Ser. No. _____ Seal No. _____

Signed: _____ Date: _____
(Quality Certification)

Distribution: 1. QA Certification 2. Traffic Manager

QA Certification Form
ECQ-891010-1, Rev. 3 (07/31/91)

EXHIBIT

Attachment I
Page 1 of 1

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QUALITY CERTIFICATION - PRELIMINARY TRAILER CHECKLIST FOR VANS

DATE: _____ CARRIER: _____ TRAILER NO.: _____

CHECKLIST ITEM	VERIFIED BY
1. Verify preliminary trailer inspection completed (on the trailer only) prior to driver unhooking from the empty trailer: Accepted ____ Rejected ____	_____
2. Verify the RS Technician has surveyed the empty trailer, recorded results on Form ES&H-1596-1, and results meet acceptance requirements listed in 49 CFR 173.441.	_____
3. After the survey, verify the RS Technician has sealed the doors with a tamper proof seal. Seal No. _____	_____
4. Prior to loading, verify seal number is same as applied by RS Technician and shows no evidence of tampering.	_____
5. If trailer is to be loaded with baled trash, verify the trailer has been lined properly as specified per SOP-TRF-46-C-110.	_____
6. Verify that packages have been properly tied-down as specified by SOP-TRF-46-C-110.	_____
7. Verify that the loaded trailer rear doors are secured with a tamper proof seal. Shipment No. WML- - _____ Seal No. _____	_____

EXHIBIT

Signed: _____ Date: _____
(Quality Certification)

Distribution: 1. QA Certification 2. Traffic Manager

QA Certification Form
ECQ-880801-1, Rev. 4 (07/30/91)

QUALITY CERTIFICATION FINAL TRAILER/VEHICLE CHECKLIST

Carrier:_____ Trailer No. :_____ Shipment No. :_____

Initials

1. Verify the RST has surveyed the trailer/vehicle and recorded results on Vehicle Radiation Monitoring Report (Form FMPC-ES&H-1596-1). _____

2. Verify the proper placards are in place, as required. _____

3. Verify the driver has performed a safety inspection of vehicle prior to leaving the FMPC: _____

headlights	_____	horn	_____
turn signals	_____	tires	_____
brake lights	_____	braking check test (optional)	_____

4. Verify the envelope with Manifest and Tally Sheets is in trailer. _____

5. Verify that a seal has been placed on the trailer doors and that the trailer number and seal number match the trailer and seal number recorded on the Bill of Lading. Report all discrepancies to the Traffic Manager. _____

Seal Number: _____

6. Verify all lot markings and weights on the Tally Sheet match the lot markings and weights on the Shipping Order. _____

Date Shipped: _____ Time Shipped: _____

I hereby certify that the above items have been verified and are correct to the best of my knowledge.

Signed:_____ Date:_____
(Quality Certification Personnel)

NOTE: UPON SATISFACTORY COMPLIANCE WITH THE ABOVE CHECKLIST CERTIFICATION PERSONNEL SHOULD SIGN THE SHIPPING ORDER AT THE SPACE MARKED "QUALITY CONTROL APPROVAL".

ECQ-881115-1, Rev. 3 (07/30/91)

EXHIBIT

Attachment K
Page 1 of 1

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Quality Certification Traffic Shipment Document Checklist

	Bill/Lading(B/L)	Shipping Order(S.O.)
Ship #		
B/L#		
S.O.#		
Trailer#		
Date Prep		
Mat.Type		
Gross Wt.		
Tare Wt.		
Net Wt.		
E.T.A.		
Seal #		
MCA sign		
# of cont.		
LSA/LQ/RQ		

	Low Level Checklist		Packaging Information	
Ship #			Hazard Class	
B/L #			Material Form	
S.O.#			Chemical Form	
All Checks			Labels Required	
3 sign			Packaging Type	

Radiation Monitoring Sheets

	Empty	Outgoing	Survey	Cab
Trailer#				
Date/Time				
Survey com.				

*Complete liscense # _____
*Temporary Seal # _____

Container Radiological Sheets

	Date	Time	Data Complete	Ship #
Initials				
Resmears				

Off Site Tie Down Contaminated Articles Sheet

Ship #		Curies	
Trailer #		Signature	
Seal #		Data Complete	
Sup.Sign			

*3 Tally Sheets & 1 Storage/Disposal Sheet present _____
*Driver Inst. Pack complete and numbered _____
*Weight Ticket *Ft. Axle_____* Rear Axle_____* GR. Wt._____
(Maxium weight on front or rear axle 34,000 lbs.)
*Two stick-on Radioactive Placards included for Sea/Land shipments _____

ECQ-880731-1, Rev.3 (07/31/91)

EXHIBIT

Attachment L
Page 1 of 1

FEED MATERIALS PRODUCTION CENTER

WESTINGHOUSE MATERIALS COMPANY OF OHIO
P.O. Box 398704
Cincinnati, Ohio 45239-8704

Equipment: Sharp FO-230

FAX:

FTS: 774-8651
COMMERCIAL NO: (513)-738-8651

VERIFICATION:

FTS: 774-8649
COMMERCIAL NO: (513)-738-8649

EXHIBIT

DATE: _____ TIME: _____

TO: Stacey A. Sorg

ORGANIZATION & LOCATION: DOE/NV

FACSIMILE NO.: FTS 575-1810

VERIFICATION REQUESTED: _____ YES _____ NO

FROM: James E. Clements FMPC/WMCO FTS 774-8648

SUBJECT: CERTIFICATION STATEMENT(S) FOR L-LRW SHIPMENT(S) TO NTS

FAX MACHINE OPERATOR: _____ VERIFICATION CONFIRMED BY: _____

This message consists of _____ pages excluding cover sheets.

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

APPLICATION TO SHIP WASTE TO THE NEVADA TEST SITE

MAY 1989

Revision 4.2 November 1992

Prepared by
WESTINGHOUSE ENVIRONMENTAL MANAGEMENT COMPANY OF OHIO
P. O. BOX 398704
CINCINNATI, OHIO 45239-8704

Prepared for
U.S. DEPARTMENT OF ENERGY
FERNALD FIELD OFFICE
Contract DE-AC05-86OR21600

SIGNATURES BELOW ATTEST THAT THE INFORMATION CONTAINED IN THIS APPLICATION IS CORRECT AND THAT THE WASTE STREAMS TO BE SHIPPED WILL MEET THE NTS WASTE ACCEPTANCE CRITERIA:

DOE-FN Ray Hansen, Acting Assistant Manager
Site Operations

WEMCO President, H. F. Daugherty

Vice President, J. A. Grumski
Self-Assessment and Continuous
Improvement Processes and QA

WEMCO Manager, E. D. Savage
Environmental Compliance

WEMCO Chief Waste Certification
Official, J. E. Clements

WEMCO Manager, L. S. Farmer
Environmental Management
(Analytical/Waste Management)

WEMCO Acting Manager, R. L. Gardner
Site Services
(Waste Operations & Traffic)

RECORD OF REVISIONS

Revision No.	Date
0	5/89
1	8/90
2	11/90
3	5/91
4	7/92
4.1	10/92
4.2	11/92
4.2	1/93
4.2	2/93

L0382

APPLICATION TO SHIP WASTE

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I. GENERATOR INFORMATION

A. Signature Page

See cover page.

B. EPA Identification Number

OH6890008976

C. Facility Name and Location

Shipping Address:

Fernald Environmental Management Project (FEMP)
7400 Willey Road
Fernald, Ohio 45030

Mailing Address:

Fernald Environmental Management Project
P. O. Box 398704
Cincinnati, Ohio 45239-8704

D. DOE Field/Area Office and Contacts

Primary:

James J. Fiore
Acting Manager
DOE Field Office, Fernald
P. O. Box 398705
Cincinnati, Ohio 45239-8705
(513) 738-9180
Facsimile Number (513) 738-6588

Alternates:

Ray Hansen
Acting Assistant Manager, Site Operations
DOE Field Office, Fernald
P. O. Box 398705
Cincinnati, Ohio 45239-8705
(513) 738-9287

David M. Rast
Acting Branch Chief, Waste Packaging and Transportation
DOE Field Office, Fernald
P. O. Box 398705
Cincinnati, Ohio 45239-8705
(513) 738-6322

E. Contractor Name and Contacts

Fernald Environmental Restoration Management Corporation (FERMCO)
P. O. Box 398704
Cincinnati, Ohio 45239-8704

Primary contacts:

Jeffrey G. Rowe (Manager, Backlog and Disposal Programs)
Fernald Environmental Restoration Management Corporation
P.O. Box 398704
Cincinnati, Ohio 45239-8704
(513) 738-6099
Facsimile Number (513) 738-6311

James E. Clements (Manager, Quality Certification)
Fernald Environmental Restoration Management Corporation
P. O. Box 398704
Cincinnati, Ohio 45239-8704
(513) 738-8648
Facsimile Number (513) 738-8651

Kenneth N. Beyma (Manager, Logistic Administration)
Fernald Environmental Restoration Management Corporation
P. O. Box 398704
Cincinnati, Ohio 45239-8704
(513) 738-8990

Alternate contacts:

Steven M. Ferguson (Area Supervisor, Radiological Assessment)
Fernald Environmental Restoration Management Corporation
P. O. Box 398704
Cincinnati, Ohio 45239-8704
(513) 738-8906
Facsimile Number (513) 738-9215

Robert L. Gardner (Manager, Facilities & Waste Operations)
Fernald Environmental Restoration Management Corporation
P. O. Box 398704
Cincinnati, Ohio 45239-8704
(513) 738-6244
Facsimile Number (513) 738-9000

40385

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F. Waste Certification Officials and Alternates

1.0 Chief Waste Certification Official

James E. Clements (Manager, Quality Certification)
Fernald Environmental Restoration Management Corporation
P.O. Box 398704
Cincinnati, Ohio 45239-8704
(513) 738-8648
Facsimile Number (513) 738-8651

2.0 Alternate Waste Certification Officials

Robert L. Ashcraft (Quality Analyst)
Fernald Environmental Restoration Management Corporation
P.O. Box 398704
Cincinnati, Ohio 45239-8704
(513) 738-6608
Facsimile Number (513) 738-8651

Eleanor B. Spencer (Certification Officer)
Fernald Environmental Restoration Management Corporation
P.O. Box 398704
Cincinnati, Ohio 45239-8704
(513) 738-8647
Facsimile Number (513) 738-8651

Justification for additional alternate waste certification officials:

- The FEMP is a large volume shipper of low level waste, over 744,000 cubic feet in FY-1992.
- Services of Waste Certification Officials are required each day of the work week, and occasionally on weekends and other shifts.
- The physical layout of operations, and inflexible work schedules, require the services of a Waste Certification Official in several places at the same time.
- Availability of certification personnel is limited by increased training, vacations, and other assignments.

3.0 Waste Package Certifiers

Arthur L. Craig (Manager, Waste Verification)
Fernald Environmental Restoration Management Corporation
P.O. Box 398704
Cincinnati, Ohio 45239-8704
(513) 738-8438
Facsimile Number (513) 738-8651

Richard M. Kirkham (Quality Analyst)
Fernald Environmental Restoration Management Corporation
P.O. Box 398704
Cincinnati, Ohio 45239-8704
(513) 738-6063
Facsimile Number (513) 738-8651

Mary L. (Laverne) March (Senior Specialist)
Fernald Environmental Restoration Management Corporation
P.O. Box 398704
Cincinnati, Ohio 45239-8704
(513) 738-8646
Facsimile Number (513) 738-8651

John McDonald (Quality Analyst)
Fernald Environmental Restoration Management Corporation
P.O. Box 398704
Cincinnati, Ohio 45239-8704
(513) 738-8649
Facsimile Number (513) 738-8651

Donald G. Miller (Quality Analyst)
Fernald Environmental Restoration Management Corporation
P.O. Box 398704
Cincinnati, Ohio 45239-8704
(513) 738-8649
Facsimile Number (513) 738-8651

John W. Stanzak (Technician)
Fernald Environmental Restoration Management Corporation
P.O. Box 398704
Cincinnati, Ohio 45239-8704
(513) 738-8985
Facsimile Number (513) 738-8651

0387

G. Justification for Shipment to Nevada Test Site

The FEMP proposes to ship waste streams consistent with those listed in Section III, Part A through Part E of this application in accordance with NVO-325, Revision 1 requirements. The waste streams will be processed (if necessary), packaged, transported, and disposed at the Nevada Test Site (NTS).

Since 1986, the FEMP has not been permitted to dispose of any Low Level Waste (LLW) on site. As a result, a backlog of low level waste, equal to approximately 9.5 million $ft.^3$ has accumulated at the FEMP.

In addition to the backlog waste, the FEMP continues to generate LLW from ongoing clean up activities required by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), construction projects that are underway to refurbish the portions of the FEMP required to accomplish long term cleanup, and daily operational activities. The CERCLA cleanup activities and construction projects are expected to generate approximately 950,000 $ft.^3$ of LLW between 1991 and 1995. Daily operational activities currently generate approximately 740,000 $ft.^3$ of LLW per year.

Based upon the relatively small size of the Fernald Environmental Management Project (1,050 acres), its close proximity to densely populated areas, and its location over a major sole source aquifer, off-site disposal of this Low Level Waste is an essential part of the environmental remediation at the FEMP. The waste generated at the FEMP is defense waste and must be disposed of in accordance with DOE Order 5820.2A, III.2.c.

H. Waste Minimization Plan Statement

The FEMP employs waste minimization techniques to reduce the quantity and toxicity of wastes generated at the facility. These efforts are outlined in the FEMP "Waste Minimization and Pollution Prevention Awareness Plan." This document educates personnel and establishes programmatic goals for waste minimization at the FEMP. This plan meets regulatory requirements of the Resource Conservation And Recovery Act as well as satisfying DOE Orders 5400.1 and 5820.2A.

I. Funding Method

Funding shall be set up to prepay FEMP estimated waste volumes at least a fiscal quarter in advance. Purchase orders shall be prepared and addressed to Reynolds Electrical and Engineering Company (REECo), based upon the fiscal year estimated waste volume and consistent with the forecasts identified in this application and the current disposal charge per cubic foot. Upon receipt of an invoice from REECo, payment shall be expedited. FEMP shall adjust any quarterly forecast prior to the initiation of billing by REECo for that quarter.

This section of the application provides an overview of the FEMP Waste Characterization Program Plan. It defines the goals and objectives of the program, describes the characterization process, summarizes the evaluation criteria, and identifies the documentation system for the program.

The Waste Characterization Program at the FEMP has three primary goals: (1) support health and safety programs, (2) comply with the waste characterization requirements of regulatory programs and legal agreements, and (3) provide information required to ensure operational compliance for materials management (e.g., National Pollution Discharge Elimination System (NPDES) permit conditions, disposal facility Waste Acceptance Criteria (WAC), etc.).

There are several key objectives that assure the integrity of the program. These include the following:

- The scope of the program is identified.
- The waste characterization process, including roles and responsibilities, is well specified.
- The key questions to be answered are clearly stated. The evaluation criteria for answering each key question and the requirements for data quality and quantity are explicitly identified.
- There is a documentation system that supports all decision-making criteria and provides traceability to individual waste packages.

Waste characterization is required for all wastes generated or managed at the FEMP. Characterization is also required for environmental media (e.g., soils) that are managed as waste because they contain materials regulated under one or more of the material specific regulatory authorities. In addition, under legal agreement with the state of Ohio, certain materials stored on site that may not be classified as waste must be characterized. Waste characterization is required for both currently generated wastes and for backlogged wastes that have not been appropriately characterized.

Waste characterization requirements apply to those wastes that are generated under continuing operation and maintenance programs as well as to those wastes generated or managed under the CERCLA Removal Action Programs at the FEMP.

All LLW in the five waste streams identified in this application fall within the scope of the Waste Characterization Program. However, it must be understood that for purposes of characterization, the FEMP definition of a Waste Stream is much more discrete than what is identified by the five waste streams provided in Section III (Waste Stream Identification) of this application. At the FEMP a waste stream could comprise a single 55-gallon container, or several hundred box containers depending on the method of generation and the time period during which the waste is generated. For purposes of characterization at the FEMP, a waste stream is identified by the documentation contained in a discrete, uniquely identifiable characterization file. For purposes of disposal at the NTS, a waste stream is identified as one of the five waste streams listed in Section III of this application. Therefore, there are multiple characterization files for each of the waste streams listed in Section III of this application.

II. WASTE CHARACTERIZATION PROGRAM

The FEMP's Waste Characterization Program has been developed and refined over several years as the facility has worked to characterize its inventory of backlogged (primarily process residues) and newly generated waste. The basic process is depicted in Figures 1 and 2 (reference pages 11 and 12) with responsible organizations identified for each stage of the process. The organization with primary responsibility for characterization and maintenance of the characterization files is Facilities and Materials Evaluation (FME) group under the Environmental Management Department. There are two basic processes for completing work characterization.

The first process for obtaining waste characterization at the FEMP has been developed into a site procedure (SSOP 0002 - Completing the Material Evaluation Form). This process is depicted in Figure 1 with the responsible organizations identified for each stage in the process. The responsibilities of each group involved in waste stream characterization is explained in detail in SSOP-0002. The primary vehicle for completing the characterization is the two page material evaluation form (MEF) which is part of the site procedure. Waste characterization for construction projects is currently documented with RCRA characterization/ radiological determination letter or a MEF or checklist completed by the FME Group. The FEMP plans (target date, February 1993) to characterize all waste using the MEF process.

The first page of the MEF is the Generator's Section which summarizes information provided by the FEMP (internal) waste generator. It is similar to the waste profile sheets used by commercial treatment, storage, and disposal facilities (TSDFs) allowing for documentation of information regarding generator and waste stream identification, generation information, gross material characteristics, material composition, and health and safety precautions.

The second page of the MEF is the Evaluation Section, which summarizes the results of the waste characterization with respect to the evaluation criteria. It summarizes pertinent information from the evaluation process including material regulatory status, material management requirements, and health and safety precautions.

Supplementing the MEF are a series of worksheets which are completed with each MEF to establish other relevant criteria for disposal of the waste. One of these worksheets is titled "NTS Waste Acceptance Criteria." This completed worksheet and completed MEF are the process by which waste is characterized and the characterization documented to ensure that NVO-325, Revision 1 criteria are met.

A second process for completing characterization is used for project waste when the MEF process is not used. Site standard operating procedure, SSOP-0044 provides direction for completing this process. Under this process, all wastes from a given project (e.g., construction projects) identified by the project engineer are documented to the FME Group. FME reviews the wastes, completes a project walkdown, documents process knowledge, and determines required sampling and analysis needs to support waste characterization. When all supporting information (including sampling and analysis) are complete, FME issues a RCRA determination/radiological characterization letter for the project. This letter serves as documentation of the regulatory status of the generated waste material. The process for completing project waste characterization is documented in Figure 2.

A. Process Knowledge

The FEMP relies on process knowledge to complete characterization at the FEMP for certain waste streams that have sufficient process knowledge documentation and material controls measures (these include a large number of process waste streams). In joint guidance issued by DOE and EPA, process knowledge was identified as being most appropriate when one or more of three conditions exist (employee exposure concerns (ALARA), the matrix is not amenable to sampling or highly heterogenous waste final form). The NVO-325, Revision 1, WAC establish a higher standard for waste characterization stipulating that one or more of these conditions must be met in order for waste to be characterized by process knowledge alone.

Process knowledge includes the sum of all information that can be collected on a material, including information from operating procedures, manufacturing specifications, material safety data sheets (MSDS), spill reporting logs, visual inspections, and personnel affidavits. All process knowledge used for waste characterization is documented in the waste characterization file for each waste stream.

The RCRA regulations specifically provide that the waste generator may apply knowledge of the hazard characteristic of the waste in light of the material or processes used. The FEMP takes two basic approaches for evaluating waste using process knowledge. The first approach is to determine that the waste matrix (the material) can not exhibit a hazardous waste characteristic. For example a non-liquid waste, by definition, can not exhibit the characteristic of corrosivity. Likewise, bulk structural steel with virtually no absorptive capacity will never fail the Toxicity Characteristic (TC) provided any surface coatings have been appropriately addressed.

The second approach is to demonstrate that the generating process was well documented, controlled, and did not involve the introduction or generation of any material that could cause the waste to be regulated. For example, materials generated from a high temperature furnace with sufficient residence (e.g., a metals reduction furnace) and which had known feed materials (e.g., UF_4, Mg metal, and MgF_2) may be determined by process knowledge not to fail the TC for organics.

Process knowledge is only used at the FEMP when there is sufficient objective information to support the determination. This information is captured in the individual waste characterization files that support each individual determination such that the logic for reaching a conclusion can be reconstructed by an independent reviewer if necessary. Additional information on the use of process knowledge is provided in the FEMP Waste Characterization Plan.

The FEMP recognizes that DOE/NVO has established a standard higher than either the federal/state regulatory requirements or the DOE/EPA guidance and will comply with this higher standard in completing waste characterization to support shipment of waste to the NTS. The FEMP will complete confirmatory characterization sampling and analysis (S&A) to supplement process knowledge determinations for materials that fail to meet one of the three criteria. When these waste streams do not meet one or more of the three conditions specified in NVO-325, Revision 1 for use of process knowledge (e.g., unsampleable, high heterogeneity, or ALARA concerns) the FEMP completes confirmatory sampling to satisfy the requirements of NVO-325. The basis for characterizing waste for shipment to the NTS is identified for each waste stream in the waste stream information Section (III). Protocol for confirmatory sampling is provided in Section II. B.

B. Sampling Plan

When process knowledge is not sufficient to characterize the waste, sampling and analysis is completed. Sampling and analysis completed to support waste characterization is conducted in accordance with US EPA SW-846, "Test Methods for Evaluating Solid Waste," for RCRA waste characterization. Protocols required by other regulatory programs (e.g., polarized light microscopy (PLM) for identification of asbestos containing materials (ACM)) are used when applicable. All data required to support waste characterization by sampling and analysis are included in the waste characterization files. The files include the request for analysis, sampling plan, field sample log book, analytical data report, Quality Assurance/Quality Control (QA/QC) Report, chain-of-custody forms, and statistical treatment of analytical data. An individual sampling plan is written for each waste stream that must be sampled. The plans are written by personnel within WEMCO's Environmental Monitoring Section. Sampling plans are reviewed and signed by the author of the plan and the author's immediate supervisor. Sampling is then performed per the sampling plan.

For certain waste streams at the FEMP process knowledge alone is sufficient to meet all regulatory and waste management requirements at the FEMP. When these waste streams do not satisfy one or more of the conditions for use of process knowledge specified in NVO-325, Revision 1 (e.g., the waste form is amenable to sampling) confirmatory sampling is conducted to satisfy NVO-325, Revision 1 requirements. Confirmatory sampling is conducted in accordance with SW-846 (including all QA/QC requirements) but at a lower sampling rate than characterization sampling. Confirmatory sampling for containerized waste is completed in accordance with FMPC-2185 "Sampling Plan for Drummed Waste at the FMPC".

Confirmatory sampling essentially serves as a quality assurance check on process knowledge to ensure that materials meet the NVO-325, Revision 1, WAC for shipment to the NTS. If confirmatory sampling fails to substantiate the process knowledge determination, then the waste is re-evaluated and further sampling and analysis completed, if necessary. Additional information on the protocol for confirmatory sampling is provided in the FEMP Waste Characterization Plan (Section 13.1.2).

C. Waste Analysis Requirements

Materials characterized under the program fall into three general categories: (1) large volume scrap waste streams (Waste Stream ONLO-000000001), (2) project waste (Waste Stream ONLO-000000002), and (3) nonproject waste (Waste Streams ONLO-000000005, ONLO-000000006, and ONLO-000000007).

Large volume scrap waste (Contaminated Process Area Scrap Wastes) are defined as a limited number of waste streams that are not difficult to characterize in terms of regulatory status and conformance to the NVO-325, Revision 1 WAC. Currently these waste streams include scrap metal, scrap wood, and scrap vehicles. These wastes are not amenable to sampling. These waste streams have been evaluated under the MEF process and determined to be acceptable for shipment to the NTS under the NVO-325, Revision 1, WAC provided they meet certain specified criteria.

Each container filled with large volume scrap waste is evaluated to ensure that all materials placed in the container meet the specified criteria. The criteria have been incorporated into a checklist that provides traceability from the waste container to the appropriate scrap waste MEF. Use of the checklists is controlled by a standard operating procedure (SOP 20-C-625, Evaluating Low Level Radioactive Waste Bulk Waste Streams for Shipment). Wastes that fail to meet the specified criteria for large volume scrap waste are generally characterized as nonproject waste.

Project generated wastes (Contaminated Construction/Removal Action Wastes) may be generated from construction projects, removal actions, or other large planned activities. Waste characterization is completed for project generated waste prior to actual waste generation whenever possible (e.g., to minimize the volume of waste generated for disposal at the NTS, soils from an excavation area are sampled prior to excavation). This proactive waste characterization supports waste management and compliance issues.

Nonproject generated waste (Thorium Waste, Low/High Grade Residues, and Contaminated Trash) are wastes from activities at the FEMP that are not large enough or planned with enough lead time to fall into the project generated waste category. The preference for these waste streams is still to characterize them prior to generation, but this is not generally as feasible as with the project generated waste.

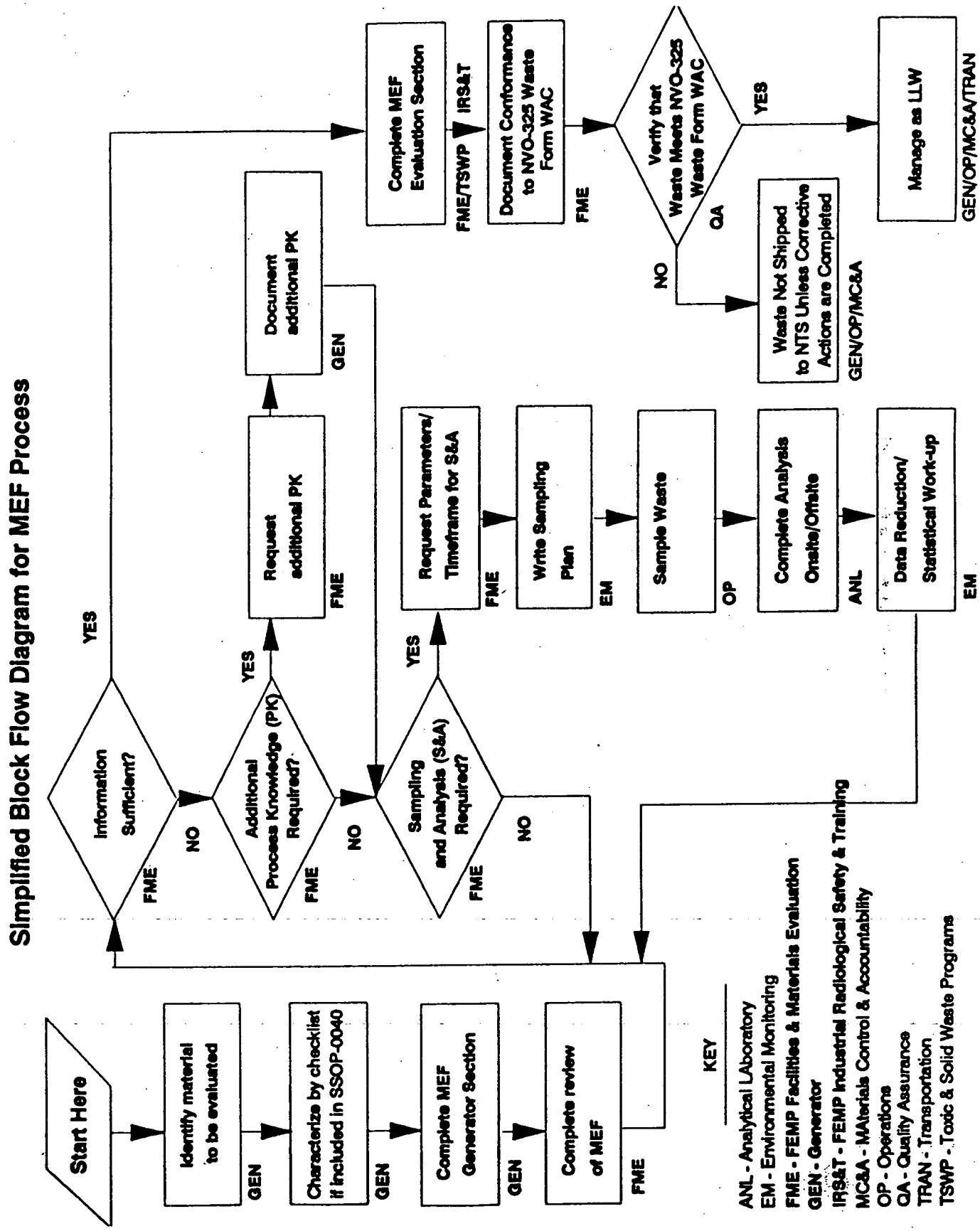
All documentation to support the waste characterization is contained in FME's Waste Characterization File System. The system is comprised of a physical file for each waste stream with its status summarized in the FME Waste Stream Database. Some elements of the waste stream file are mandatory (e.g., unique identification number), while others only contain information when applicable for the waste stream (e.g., sampling data). The FME Waste Stream Database provides a convenient way to track a material's status through waste characterization, to check the status of an evaluated waste stream, or to summarize information across broad categories of waste streams.

Access to the Waste Characterization File System is limited to FME personnel and persons assisted by FME personnel. Files removed from the trailer must be signed out. Duplicate copies of each element of the file are maintained at a separate location to provide backup documentation. The Waste Characterization System is maintained in a secured trailer with limited access.

D. Standardized Data Reporting Forms

The FEMP has requested an exemption to this NVO-325, Revision 1 requirement. The exemption request is presented in Section V of this application.

E. Waste Characterization Flow Diagram Figure 1



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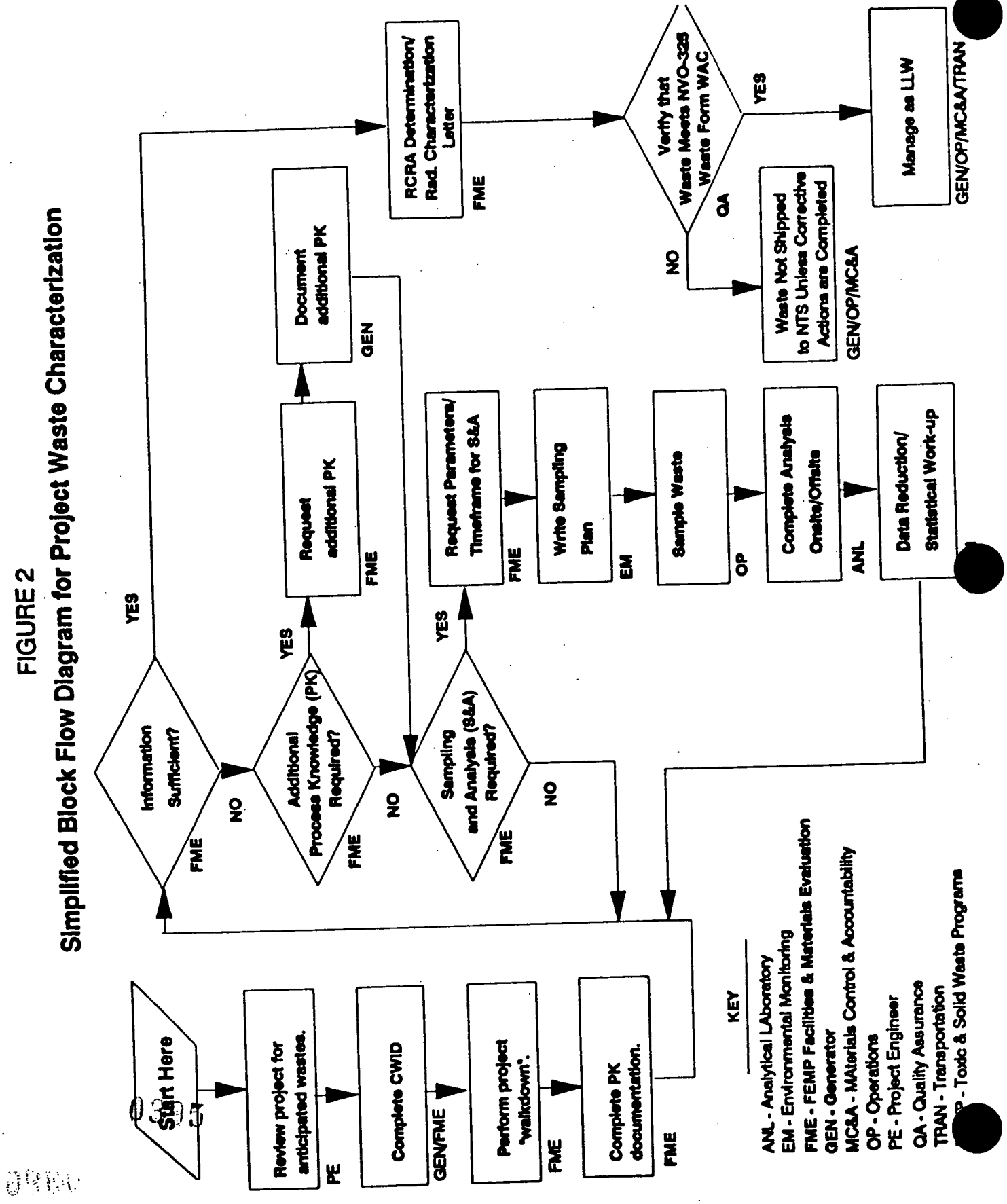
F. Waste Characterization Flow Diagram Figure 2



A. Waste Stream Identification Number

ONLO-000000001 Contaminated Process Area Scrap Wastes

1.0 Waste Type

Low Level Waste

2.0 Waste Description

A waste stream is defined as a waste which is categorized by similar characterization process and/or point of generation. The criteria used for evaluating candidate LLW for shipment to the NTS, excerpted from the FEMP Waste Characterization Plan (Draft), are described on the following pages.

2.1 Contaminated Process Area Scrap Wastes

Contaminated process area wastes are generated at the FEMP. These wastes are currently being shipped to the NTS and may include the following:

- Scrap metal
- Scrap vehicles
- Scrap wood

This waste is generated in the following ways:

Remediation activities at the FEMP involve dismantling of equipment and disposal of waste which has been stockpiled during FEMP operations. This remediation process generates scrap metal, scrap wood, and scrap vehicles which have become radioactively contaminated and must be disposed as low level waste. This material is evaluated by operations personnel using SOP 20-C-625, Evaluating Low Level Radioactive Waste Bulk Waste Streams for Shipment, which list specific criteria that must be met to ensure that NVO-325, Revision 1 criteria have been satisfied. No treatment of this waste is completed prior to packaging. If the waste does not meet disposal criteria as specified in the FEMP's Waste Characterization Program (SOP 20-C-625), the waste is not packaged for disposal. Scrap metal and scrap wood are the final forms of these wastes. Scrap metal and scrap wood are packaged in their existing form. Scrap vehicles are drained of all liquids prior to packaging. SOP 20-C-625 permits a small percentage of equipment, rubber, plastic, etc. to be included with the scrap metal and scrap wood waste. No special handling or disposal requirements exist for this waste.

2.1.1 Waste Stream Characterization Data Sheet

1. Waste Stream No.: O N L O - O O O O O O O O 1

2. Waste Description:

a. Physical Characteristics: Dry solid demolition materials from maintenance and remediation activities which generate scrap wood, scrap metal, and scrap vehicles. No treatment of this waste is performed prior to packaging.

b. Special Handling/Disposal Requirements: None
The average radiation levels on contact is .50 mrem/hr. with a range of <.50 mrem/hr to .90 mrem/hr.

3. Basis for Characterization:

a. Process Knowledge: ____ b. Analytical Knowledge: ____

c. Both: ✓

If B or C, provide Standard Data Reporting Forms as necessary.

4. Radioactive Characteristics:

a. Is Waste > NRC Class-C (see Title 10 CFR 61.55)?: No

b. WMIS Nuclide Category (circle): 1 ② 3 4 5 NA 7 8

(Choose the highest predominate nuclide. The number 6 is not an option.)

c. Radioactive Constituents:

Specific Activity Range of Waste Stream

	Nuclide	Chemical Forms	Low	Mean	High	Units(Ci/kg)
(1)	U-238 (0.1% to 1.0% U)	*	3.36E-07	1.81E-06	3.29E-06	Ci/kg
(2)	U-235 (0.2% to 2.0% on a U basis)	*	4.76E-09	2.19E-07	4.34E-07	Ci/kg
(3)	U-234 (0.001% to 0.01% on a U basis)	*	1.38E-07	4.07E-06	8.01E-06	Ci/kg

* Uranium oxides and salts (typically UO_3, U_3O_8, and UF_4)

III. WASTE STREAM INFORMATION

Page 2 of Waste Stream Characterization Data Sheet

5. Hazardous Components (for MW): **NOT APPLICABLE**

a. Basis for Identifying as MW (circle): (1) Ignitable

(2) Reactive (3) Corrosive (4) TCLP (5) Listed Waste

b. List the applicable EPA waste code, the chemical name, the treatment performed (if applicable) and the Regulatory/Treatment Standard. Attach Standardized Data Forms.

EPA Hazardous Waste No.	Chemical Name	Treatment Performed	Regulatory Threshold/Treatment Standard
(1)			
(2)			
(3)			
(4)			

NOTE: Waste characterization of materials included in this waste stream is predominantly completed using process knowledge because the material meets all the criteria of NVO-325, Revision 1, Section 4.1.1.A, B, and C. Administrative controls are also employed to maintain waste stream integrity (SOP 20-C-625, Evaluating Low Level Radioactive Waste Bulk Waste Stream for Shipment).

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2.2 Waste Stream Specific Criteria

a. Low Level Waste: Only the contaminated process area scrap wastes defined as LLW per DOE Orders 5820.2A, 5400.1, and 5480.11 guidelines shall be shipped to the NTS. (NVO-325, Revision 1, 5.5.1).

Compliance Method: The DOE Performance Objective (Draft) for radioactive waste characterization specifies the methodology to be used for identifying radioactive waste. In general, wastes that originate from Controlled Areas at the FEMP are considered radioactive waste unless demonstrated otherwise through analysis or administrative controls. Further guidance on radioactive waste characterization is provided in the DOE Performance Objective (Draft). In accordance with the "Waste Minimization and Pollution Prevention Awareness Plan," the FEMP attempts to minimize waste generation whenever possible.

b. Transuranics: The contaminated process area scrap wastes shall have a TRU concentration less than 100 nCi/g (e.g.,, shall not be regulated as TRU waste). (NVO-325, Revision 1, 5.5.1.1(A)).

Compliance Method: MC&A records indicate there are no materials at the FEMP with TRU concentrations above the 100 nCi/g level. The highest TRU concentrations found were associated with some materials that were determined through analysis to contain in one case up to 93,904 dpm/g (42 nCi/g). Because process area scrap wastes are bulk materials that have become radioactively contaminated they can not exceed these highest TRU concentrations recorded on site.

c. Hazardous Waste: All contaminated process area scrap wastes are evaluated for any characteristics of, or listed, hazardous waste as identified in Title 40 CFR 261, "Identification and Listing of Hazardous Waste," or state of generation hazardous waste regulations. (NVO-325, Revision 1, 5.5.1.1(B)).

Compliance Method: Process area scrap wastes are evaluated in accordance with SOP 20-C-625 "Evaluating Low Level Radioactive Waste Bulk Waste Streams for Shipment". This procedure provides a checklist which identifies the criteria that must be met in order for the waste to be identified as non-hazardous and acceptable for shipment to the NTS. The checklist criteria were developed based on a detailed review of the waste stream versus the criteria for identifying hazardous waste codified in the federal and state hazardous waste regulations. This comprehensive review of regulatory criteria is documented on an MEF for the waste stream on file in the FME Waste Characterization Files. All cases that could possibly cause a waste stream to be identified as a hazardous waste (or otherwise fail to meet NVO-325, Revision 1, WAC) are specifically excluded under the checklist. For example, because free liquids are specifically prohibited, scrap wastes that meet checklist criteria could not possibly exhibit the hazardous waste characteristic of corrosivity. Other such required exclusions are incorporated into the checklist criteria as well to ensure that no characteristic or listed hazardous waste are packaged for shipment to the NTS.

d. Free Liquids: The contaminated process area scrap wastes disposed at NTS waste management sites shall contain as little free liquids as is reasonably achievable, but in no case shall the liquid equal or exceed 0.5% by volume of the external waste container and shall meet the following criteria (NVO-325, Revision 1, 5.5.1.1(C).

Compliance Method: Free liquids in process are scrap wastes may be evaluated based on process knowledge or waste testing to determine whether the waste stream meets this criteria. Determinations based on process knowledge generally include a visual inspection of the waste (e.g.,, during a visual inspection or sampling episode). Working fluids from equipment will be determined to contain no free liquids when the chamber containing the liquid has been drained completely and no dripping is observed. Chambers will be plugged or sealed and the equipment tagged as being drained. Free liquid determinations are generally completed as part of the RCRA waste characterization process. The PFLT test is performed to determine the presence of free liquids when process knowledge does not yield sufficient information to complete this determination. However, the PFLT is generally not required to make a determination because the waste matrix provides little effective absorbative capacity. Reference FEMP Waste Characterization Plan (Draft) - RCRA Section.

e. Particulates: Wastes containing fine particulate materials less-than-ten-micrometer-diameter and greater than 1 weight percent or 15 weight percent less-than-200 micrometer diameter particles will be immobilized or packaged in accordance with NVO-325, Revision 1, 5.5.1.1(D).

Compliance Method: Based on the waste matrix and checklist requirements, process area scrap wastes will always meet this NVO-325, Revision 1, WAC requirement. In no case will the scrap waste streams (metal, wood, and vehicles) be comprised of or contain any particulate matter. The checklist provides additional assurance for this by requiring that all residues be removed from the scrap waste before the waste may be packaged for disposal at the NTS.

f. Gases: Process area scrap waste streams are evaluated to determine if they contain any items that potentially produces pressure in the package greater than 1.5 atmospheres at 20° celsius. (NVO-325, Revision 1, 5.5.1.1(E))

Compliance Method: Process area scrap waste are evaluated for there potential to produce pressure in excess of 1.5 atmospheres at 20° C during the hazardous waste determination (SSOP-0002). The primary source of gases in this waste steam, compressed gas cylinders, shall have their valves removed to demonstrate that they are at atmospheric pressure. Aerosol cans shall be punctured and void of all free liquids to demonstrate that they meet the WAC.

g. Stabilization: Where practical, contaminated process area scrap waste shall be treated to reduce volume and provide a more structurally and chemically stable waste form. (NVO-325, Revision 1, 5.5.1.1(F))

Compliance Method: LLWP will identify wastes that are candidates for treatment to reduce volume and provide a structurally stable waste form. No treatment of this waste will be required to stabilize harmful gases or vapors. Free liquids will be drained per SOP 20-C-625. FME will identify all LLW streams that have potential to generate harmful gases, vapors, or liquids. Waste that fail this WAC will not be shipped to the NTS.

h. Etiologic Agents: Process area scrap wastes to be shipped to the NTS will not contain pathogens, infectious wastes, or other etiologic agents as defined in Title 49 CFR 173.386. (NVO-325, Revision 1, 5.5.1.1(G))

Compliance Method: The only significant source of potential etiologic agents on site is from medical services. Such materials may include band aids, tongue blades, syringes, cotton balls or other materials stained with blood or other body fluids, and outdated pharmaceuticals. These materials are managed according to Ohio Infectious Waste Law/Regulation (ORC 3734 and OAC 3745-27-01 through 25) which includes segregated packaging at the point of generation. Materials are placed in a red bag in a box premarked with the international biohazard label. These boxes are then transported by a registered transporter to a licensed treatment facility. These administrative controls prevent etiologic agents from entering the process area scrap waste stream. Reference FEMP Waste Characterization Plan (Draft)- Infectious Waste Section for additional evaluation criteria.

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i. Chelating Agents: If a waste is determined to contain chelating agents above the one percent by weight limit, the waste will not be approved for disposal at the NTS (NVO-325, Revision 1, 5.5.1.1(H).

Compliance Method: Process area scrap waste will always meet this NVO-325, Revision 1, WAC based on the waste matrix and compliance with the checklist requirements. None of materials which comprise the basic waste matrix (e.g., wood and metal) are considered chelating agents. In addition, the checklist requires that all residues be removed from the scrap waste before it may be packaged for disposal at the NTS.

j. Polychlorinated Biphenyls: PCB contaminated waste will not be shipped for disposal at the NTS in the contaminated process area scrap waste stream unless the PCB concentration meets the municipal solid waste disposal limits. See Title 40 CFR 761.60 for PCB disposal requirements. (NVO-325, Revision 1, 5.5.1.1(I))

Compliance Method: The FEMP samples wastes for PCB contamination when the waste matrix (e.g.,, oily material) or review of previous operations, manufacturers manuals, and previous sampling and analyses provides a reason to suspect PCB contamination. This determination is performed during the hazardous waste determination (SSOP-0002). Reference FEMP Waste Characterization Plan (Draft) - TSCA PCB Section for evaluation criteria.

k. Explosives and Pyrophorics: Contaminated process area scrap waste does not contain potentially explosive or pyrophoric material in a form that may spontaneously combustion if the container is breached. (NVO-325, Revision 1, 5.5.1.1(J))

Compliance Method: This WAC is evaluated during the hazardous waste characterization. This evaluation is performed in accordance with SSOP-0002, Completing the Material Evaluation Form and the FEMP Waste Characterization Plan (Draft). Any waste that potentially fails this WAC shall be identified by FME and the material will not be shipped to the NTS for disposal. None of the materials that comprise the basic waste matrix (e.g.,, wood and metal) of the process area scrap wastes are considered explosive or pyrophoric. The checklist requirements provide the additional controls necessary to ensure that in all cases this NVO-325, Revision 1, WAC is met. For example, scrap vehicles must have their fuel tanks removed and rendered non-explosive (e.g., through steam rinsing) before being packaged for disposal at the NTS.

2.3 Waste Stream General Package Criteria

a. Design

Waste packaging criteria for contaminated process area scrap waste shipped to the NTS for disposal shall meet DOT Regulations, 49 CFR 173, Subpart I. Standard operating procedures listed in Table I of the Waste Certification Plan, concerning storage and off-site shipments, shall be used to assure that all shipments meet DOT requirements and NTS site-specific requirements.

b. Nuclear Safety

The quantity of radioactive materials in contaminated process area scrap waste shipped to the NTS shall be limited so that an infinite array of packages will remain subcritical. This quantity shall be determined on the basis of a specific nuclear safety analysis, considering credible accident situations, and taking into account the actual materials in the waste and shall meet 49 CFR, Parts 173.453(c)(3) and 173.453(d). Process area scrap waste packages will not contain uranium enriched ^{235}U greater than one percent by weight and with a mass of ^{235}U greater than 800 grams per package. The total mass of plutonium and ^{233}U will not exceed one percent of the mass of ^{235}U in any package.

c. Nuclear Heating

In compliance with 49 CFR 173.442, Thermal Limitations, a Health Physics evaluation of waste packages of material to be shipped to the NTS from the FEMP show no evidence of a heating effect above NVO-325 limits from radiological decay. Calculations from these waste streams at the FEMP show the power output from either ^{233}U or ^{235}U at maximum potential concentration in any waste package will not exceed 0.1 Watt. These calculations are based on the total alpha energy from each isotope in the waste and its associated daughters during normal radioactive decay.

d. Radiation Levels

In compliance with 49 CFR 173.441, Radiation Levels, the radiation exposure rate at the surface and at 1 meter of each package of contaminated process area scrap waste shall be measured and recorded in the data package. Packages that exceed 200 millirem/hr on contact shall not be shipped to NTS.

e. External Contamination

In compliance with 49 CFR 173.443, the surface contamination of each container of contaminated process area scrap waste shall be measured using instruments calibrated by the IRS&T Dosimetry & Instrumentation Section and recorded in the data package. If these instruments indicate that the limits of 49 CFR 173.443 are exceeded, then the package shall be cleaned until it is within the limits or the contents shall be transferred to a clean container.

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f. Activity Limits

The activity limits of Titles 49 CFR 173.421, "Limited Quantities of Radioactive Materials," and 49 CFR 173.425, "Transport Requirements for Low-Specific Activity Radioactive Materials" shall be met.

In compliance with Title 49 CFR 173.421 and 173.425, strong, tight containers used for shipping Limited Quantities (LQ) and Low-Specific Activity (LSA) LLW shall be constructed so they will not leak during normal transportation and handling conditions.

g. Multiple Hazards

Not applicable, the FEMP does not ship wastes with multiple hazards to the NTS.

2.4 Waste Stream Specific Package Criteria

a. Closure

All contaminated process area scrap waste package closures will be sturdy enough to assure the closures will not be breached under normal handling conditions and will not serve as weak points for package failure.

b. Strength

Contaminated process area scrap waste will be packaged in containers capable of supporting a uniformly distributed load of 4,000 lbs/ft^2, except for waste packaged in DOE NV approved containers (drums and ISO containers).

c. Handling

All contaminated process area scrap waste containers shall have permanently attached skids, cleats, offsets, rings, handles, or other auxiliary lifting devices to allow handling by means of forklifts, cranes, or similar handling equipment. Lifting rings and other auxiliary lifting devices shall be recessed, offset, or hinged in a manner that does not inhibit stacking the packages. The lifting devices shall be designed to meet a 5:1 safety factor based upon the ultimate strength of the material. All rigging devices that are not permanently attached to the waste package shall have a current load test based on 125 percent of the safe working load.

d. Size

The size of the containers used by the FEMP to package contaminated process area scrap wastes includes container codes: 109, 117, 119, 120 and 121 from Table I.

e. Weight

In addition to the weight limits set for specific packaging designs, a 9,000 lb. limit per box and a 1,200 lb. limit per 55-gallon drum shall be maintained. Containers of contaminated process area scrap waste exceeding the 9,000 lb. limit shall be shipped in removable-top trailers, or on flatbeds.

f. Loading

Contaminated process area scrap waste shall be packaged to ensure that the interior volume is as efficiently and compactly loaded as practical.

g. Nonstandard Type A Packaging

The FEMP is currently using a Type 7A Container as a strong, tight container. Used for this purpose, the container does not require a DOE Type A Certification. If a Type A Container is required to ship process area scrap waste, only containers with a DOE Type A Certification will be used.

h. Package Protection

Every FEMP contaminated process area scrap waste package shall be prepared for shipment so as to minimize damage during transit. The preshipment storage environment shall be controlled to avoid adverse influence from weather or other factors on the containment capability of the waste packaging during handling, storage, and transport. FEMP shall take all responsibility for preshipment storage and take all reasonable precautions to preclude the accumulation of moisture on or in packages prior to their arrival to the NTS. Tamper indicating devices are used to maintain control of the container contents once certification actions are completed.

The FEMP shall package all contaminated process area scrap waste for shipment to NTS in containers meeting DOT requirements (e.g., DOT Type 17H 55-gallon drums or other NTS approved containers). All containers shall be shipped to meet DOT requirements for interstate travel and shall meet the requirements of 49 CFR 173.411, 173.421, and 173.425.

i. Marking and Labeling

Contaminated process area scrap waste shipped to the NTS shall be marked and labeled as required in Title 49 CFR 172, Subparts D and E [with exceptions noted in Title 173.425 (b) and (c)]. Also, each waste container shall be marked with a unique six character container identification number and eight character shipment number per NVO-325, Revision 1, 5.5.1.3 (I,3) so that the container can be identified from another container within the shipment or from another set of containers. The approved 13 digit waste stream number (ONLO-000000001) will also be placed onto the waste container. Marking and labeling of the contaminated process area scrap waste packages shall be for radioactive material. The weight of the package will be marked in pounds and kilograms. Signed NV-211 labels will be attached to containers certified for shipment to the NTS.

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j. Barcoding

Barcode labels will meet NVO-325, Revision 1 requirements and must be approved by DOE NV prior to use. Two barcode labels will be placed on each contaminated process area scrap waste package. The barcode labels will be placed near the top and on opposite sides of nonstandard containers. Barcode Labels on drums will be placed on the lid and one side near the top of the drum.

k. On-site Transfer

Only packaged contaminated process area scrap waste is shipped from the FEMP for disposal at the NTS. The FEMP will not provide any material which will require on-site transfer of unpackaged bulk materials by the NTS.

2.5 Additional Criteria for Mixed Waste

None of the waste streams listed in this application are mixed waste. The FEMP will not be disposing of mixed waste at the NTS.

2.6 Additional Criteria for Transuranic/Transuranic Mixed Waste

None of the waste streams listed in this application contain Transuranic or Transuranic Mixed waste. The FEMP will not be disposing of Transuranic or Transuranic Mixed waste at the NTS.

2.7 Additional Criteria for Bulk Waste

The FEMP is not currently and does not intend to ship mixed waste to the NTS for disposal. By default, the FEMP will not be shipping mixed waste as bulk waste or mixed waste for bulk disposal.

The FEMP does ship bulk waste to the NTS for disposal in the form of scrap material (metal, wood, vehicles) that is contaminated radioactively. This material is well below the 49 CFR 173.425(c) requirement of 0.001 millicurie per square centimeter when averaged over one square meter of the material. The type of container in which the FEMP ships bulk waste is identified in the sections relating to the NTS specific packaging criteria. Approval of this application will constitute approval of continued use of this container.

2.8 Additional Criteria for Case-by-Case Waste

2.8.1 Weight

The FEMP is currently shipping and intends to continue to ship waste in ISO (International Shipping Organization) containers generally referred to as Sea/Land containers. These containers routinely weigh greater than 9,000 pounds and require either a large fork truck or crane for removal from the transport vehicle. The FEMP ships these containers on flat bed trailers which require no top or side wall removal.

2.8.2 Activity Limits

All containers shipped from the FEMP for disposal at the NTS are within the activity limits specified in NVO-325, Revision 1, Section 5.5.1.2.F.

2.8.3 Radioactively Contaminated Asbestos

Friable asbestos will not be shipped to the NTS before securing DOE/NV approval. None of the waste streams included in this application contain radioactively contaminated friable asbestos.

2.8.4 DOE Comparable Greater-Than-Class-C As Defined in 10 CFR 61.55

This requirement is not applicable to the FEMP waste streams since no greater-than-Class-C waste is shipped from the FEMP for disposal at NTS.

2.8.5 Classified Waste Streams

This requirement is not applicable to the FEMP since no classified waste is shipped for disposal at the NTS.

2.8.6 Radioactive Animal Carcasses

This requirement is not applicable to the FEMP since no radioactive animal carcasses are included in the process area scrap waste stream.

2.8.7 Other Waste Forms

The FEMP will secure DOE-NV approval for any waste forms that do not meet NTS requirements before shipping to the NTS.

B. Waste Stream Identification Number

ONLO-000000002 Contaminated Construction/Removal Action Wastes

1.0 Waste Type

Low Level Waste

2.0 Waste Description

A waste stream is defined as a waste which is categorized by similar characterization process and/or point of generation. The criteria used for evaluating candidate LLW for shipment to the NTS, excerpted from the FEMP Waste Characterization Plan (Draft), are described on the following pages.

2.1 Contaminated Construction/Removal Action Wastes

Radioactively contaminated construction wastes are generated at the FEMP. These wastes are currently being shipped to NTS and may include the following:

- Soil
- Rocks, gravel
- Concrete
- Metal
- Wood
- Trash (plastic, cardboard, paper, etc.)
- Asphalt
- Glass

This waste is generated in the following ways:

During the demolition or excavation phase of a construction, maintenance, or removal action project, radioactively contaminated waste is produced. No treatment of this waste is completed prior to packaging. If the waste does not meet the disposal criteria in its existing form, the waste is not packaged for disposal. The final form of the waste is demolition waste typical of construction projects (e.g., crushed concrete, soil, broken pieces of wood). The waste is packaged directly into containers for disposal. No special handling or disposal requirements exist for this waste.

2.1.1 Waste Stream Characterization Data Sheet

1. Waste Stream No.: O N L O - 0 0 0 0 0 0 0 0 2

2. Waste Description:

   a. Physical Characteristics: Dry solid demolition materials from construction and/or removal action activities which generates soils, gravel, concrete, metal, wood, paper, plastic, glass, and asphalt. No treatment of this waste is performed prior to packaging.

   b. Special Handling/Disposal Requirements: None
   The average radiation levels on contact is .50 mrem/hr. with a range of <.50 mrem/hr. to 1.5 mrem/hr.

3. Basis for Characterization:

   a. Process Knowledge: ____ b. Analytical Knowledge: ____

   c. Both: ✓

   If B or C, provide Standard Data Reporting Forms as necessary.

4. Radioactive Characteristics:

   a. Is Waste > NRC Class-C (see Title 10 CFR 61.55)?: No

   b. WMIS Nuclide Category (circle): 1 (2) 3 4 5 NA 7 8

   (Choose the highest predominate nuclide. The number 6 is not an option.)

   c. Radioactive Constituents:

   Specific Activity Range of Waste Stream

	Nuclide	Chemical Forms	Low	Mean	High	Units(Ci/kg)
(1)	U-238 (0.1% to 1.0% U)	*	3.36E-07	1.68E-05	3.33E-05	Ci/kg
(2)	U-235 (0.2% to 1.0% on a U basis)	*	4.76E-09	1.08E-06	2.16E-06	Ci/kg
(3)	U-234 (0.001% to 0.01% on a U basis)	*	1.38E-07	2.15E-05	4.29E-05	Ci/kg

* Uranium oxides and salts (typically UO_3, U_3O_8, and UF_4)

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III. WASTE STREAM INFORMATION

Page 2 of Waste Stream Characterization Data Sheet

5. Hazardous Components (for MW): **NOT APPLICABLE**

a. Basis for Identifying as MW (circle): (1) Ignitable

(2) Reactive (3) Corrosive (4) TCLP (5) Listed Waste

b. List the applicable EPA waste code, the chemical name, the treatment performed (if applicable) and the Regulatory/Treatment Standard. Attach Standardized Data Forms.

EPA Hazardous Waste No.	Chemical Name	Treatment Performed	Regulatory Threshold/Treatment Standard
(1)			
(2)			
(3)			
(4)			

NOTE: Waste characterization of materials included in this waste stream is completed using a combination of sampling and analysis and process knowledge. Process knowledge is used when the material meets one or more of the criteria of NVO-325, Revision 1, Section 4.1.1.A, B, and C. (Examples of materials characterized by process knowledge includes metal, wood and other construction/demolition debris, equipment, etc.)

2.2 Waste Stream Specific Criteria

a. Low Level Waste: Only contaminated construction/removal action wastes defined as LLW per DOE Orders 5820.2A, 5400.1, and 5480.11 guidelines shall be shipped to the NTS. (NVO-325, Revision 1, 5.5.1).

   Compliance Method: The DOE Performance Objective (Draft) for radioactive waste characterization specifies the methodology to be used for identifying radioactive waste. In general, wastes that originate from Controlled Areas at the FEMP are considered radioactive waste unless demonstrated otherwise through analysis or administrative controls. Further guidance on radioactive waste characterization is provided in the DOE Performance Objective (Draft). In accordance with the "Waste Minimization and Pollution Prevention Awareness Plan," the FEMP attempts to minimize waste generation whenever possible.

b. Transuranics: Contaminated construction/removal action wastes shall have a TRU concentration less than 100 nCi/g (e.g.,, shall not be regulated as TRU waste). (NVO-325, Revision 1, 5.5.1.1(A)).

   Compliance Method: MC&A records indicate there are no materials at the FEMP with TRU concentrations above the 100 nCi/g level. The highest TRU concentrations found were associated with some materials that were determined through analysis to contain in one case up to 93,904 dpm/g (42 nCi/g).

c. Hazardous Waste: All contaminated construction/removal action wastes are evaluated for any characteristics of, or listed, hazardous waste as identified in Title 40 CFR 261, "Identification and Listing of Hazardous Waste," or state of generation hazardous waste regulations. (NVO-325, Revision 1, 5.5.1.1(B)).

   Compliance Method: All construction/removal action wastes are evaluated by the FME Group to determine if they are regulated as hazardous waste. During the planning phases of the project, the project engineer identifies to FME all wastes to be generated from the project for evaluation. A project walkdown is conducted to collect information on the wastes to be generated and the generation process (e.g., excavated or dismantled). During the project walkdown initial decisions for sampling and analysis plan for wastes and parameters of concern. Using a combination of process knowledge and sampling and analysis FME evaluations the waste with respect to each of the criteria by which a waste can be identified as either a characterization or listed hazardous waste. The characterization is documented using either the General MEF or by issuing a RCRA Determination/ Radiological Characterization (RD/RC) letter.

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d. Free Liquids: Contaminated construction/removal action wastes disposed at NTS waste management sites shall contain as little free liquids as is reasonably achievable, but in no case shall the liquid equal or exceed 0.5% by volume of the external waste container and shall meet the following criteria (NVO-325, Revision 1, 5.5.1.1(C).

Compliance Method: Free liquids in contaminated construction/removal action wastes may be evaluated based on process knowledge or waste testing to determine whether the waste stream meets this criteria. Determinations based on process knowledge generally include a visual inspection. Working fluids from equipment will be determined to contain no free liquids when the chamber containing the liquid has been drained completely and no dripping is observed. Chambers will be plugged or sealed and the equipment tagged as being drained. Free liquid determinations are generally completed as part of the RCRA waste characterization process. The PFLT test is performed to determine the presence of free liquids when process knowledge does not yield sufficient information to complete this determination. Reference FEMP Waste Characterization Plan (Draft) - RCRA Section.

e. Particulates: Wastes containing fine particulate materials less-than-ten-micrometer-diameter and greater than 1 weight percent or 15 weight percent less-than-200 micrometer diameter particles will be immobilized or packaged in accordance with NVO-325, Revision 1, 5.5.1.1(D).

Compliance Method: Some construction/removal action waste streams will categorically fail the particulates WAC while others may require testing to complete a rigorous evaluation. Dust collector residues (MTC 062) have been documented to have greater than one percent by weight of less-than-ten-micron-diameter particles. In addition, depending on the moisture content, many of the soils on site will fail these limits. If testing is required because the waste form does not clearly meet the WAC, the waste stream shall be identified as requiring testing. Testing may be conducted using a particle size impactor or some other form of particle sizing equipment. Should the waste fail the criteria for particulates and immobilization is impractical, the waste packaging will be completed by overpacking, using steel drums with 6 mil plastic liners or steel boxes in accordance with NVO-325, Revision 1.

f. Gases: Contaminated construction/removal action waste streams are evaluated to determine if they contain any items that potentially produces pressure in the package greater than 1.5 atmospheres at 20° celsius. (NVO-325, Revision 1, 5.5.1.1(E))

Compliance Method: Contaminated construction/removal action wastes are evaluated for there potential to produce pressure in excess of 1.5 atmospheres at 20° C during the hazardous waste determination (SSOP-0002). The primary source of gases in this waste steam, compressed gas cylinders, shall have their valves removed to demonstrate that they are at atmospheric pressure. Aerosol cans shall be punctured and void of all free liquids to demonstrate that they meet the WAC.

g. Stabilization: Where practical, contaminated construction/removal action wastes shall be treated to reduce volume and provide a more structurally and chemically stable waste form. (NVO-325, Revision 1, 5.5.1.1(F))

Compliance Method: LLWP will identify wastes that are candidates for treatments to reduce volume and provide a structurally stable waste form. No treatment of this waste will be required to stabilize harmful gases or vapors. Free liquids will be drained per SOP 20-C-625. FME will identify all LLW streams that have potential to generate harmful gases, vapors, or liquids. Waste that fail this WAC will not be shipped to the NTS.

h. Etiologic Agents: All contaminated construction/removal action wastes to be shipped to the NTS will not contain pathogens, infectious wastes, or other etiologic agents as defined in Title 49 CFR 173.386. (NVO-325, Revision 1, 5.5.1.1(G)).

Compliance Method: The only significant source of potential etiologic agents on site is from medical services. Such materials may include band aids, tongue blades, syringes, cotton balls or other materials stained with blood or other body fluids, and outdated pharmaceuticals. These materials are managed according to Ohio Infectious Waste Law/Regulation (ORC 3734 and OAC 3745-27-01 through 25) which includes segregated packaging at the point of generation. Materials are placed in a red bag in a box premarked with the international biohazard label. These boxes are then transported by a registered transporter to a licensed treatment facility. These administrative controls prevent etiologic agents from entering the contaminated construction/removal action wastes. Reference FEMP Waste Characterization Plan (Draft) - Infectious Waste Section for additional evaluation criteria.

i. Chelating Agents: If a waste is determined to contain chelating agents above the one percent by weight limit, the waste will not be approved for disposal at the NTS. (NVO-325, Revision 1, 5.5.1.1(H)).

Compliance Method: Chelating agents form coordination compounds by offering two or more chemical bonds (through ligands) to a central metal ion. The most common chelating agent is EDTA. Other common chelating agents are also aminopolyacteic acids. Excess chemicals from the on-site laboratory are the primary potential source of materials that may be identified as true chelating agents. This determination will be accomplished through the use of the MEF or RD/RC letter which will designate the waste as containing above one percent by weight chelating agents. FME has generated a list of potential chelating or complexing agents through an on-line database search and will consult this list to evaluate potential chelating or complexing agents. The waste certification official is responsible for ensuring that this material containing chelating agents at concentrations greater than one percent by weight are not shipped from FEMP to the NTS for disposal is properly tagged as not meeting the criteria for shipment. This process prevents waste that does not meet the NTS WAC from being shipped for disposal.

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j. Polychlorinated Biphenyls: PCB contaminated waste will not be shipped for disposal at NTS in the contaminated construction/removal action waste stream unless the PCB concentration meets the municipal solid waste disposal limits. See Title 40 CFR 761.60 for PCB disposal requirements. (NVO-325, Revision 1, 5.5.1.1(I)).

Compliance Method: The FEMP samples wastes for PCB contamination when the waste matrix (e.g.,, oily material) or review of previous operations, manufacturers manuals, and previous sampling and analyses provides a reason to suspect PCB contamination. This determination is performed during the waste characterization by FME. Reference FEMP Waste Characterization Plan (Draft) -TSCA PCB Section for evaluation criteria.

k. Explosives and Pyrophorics: Contaminated construction/removal action waste does not contain potentially explosive or pyrophoric material in a form that may spontaneously combustion if the container is breached. (NVO-325, Revision 1, 5.5.1.1(J)).

Compliance Method: This WAC is evaluated during the hazardous waste characterization and is also generally addressed in the health and safety plan for a project if there is any potential concern. This evaluation is performed in accordance with the FEMP Waste Characterization Plan (Draft). Any waste streams that potentially fails this WAC shall be identified by FME and the material will not be shipped to the NTS for disposal.

2.3 Waste Stream General Packaging Criteria

a. Design

Waste packaging criteria for contaminated construction/removal action waste shipped to the NTS for disposal shall meet DOT Regulations, 49 CFR 173, Subpart I. Standard operating procedures listed in Table I of the Waste Certification Plan, concerning storage and off-site shipments, shall be used to assure that all shipments meet DOT requirements and NTS site-specific requirements.

b. Nuclear Safety

The quantity of radioactive materials in contaminated construction/removal action wastes shipped to the NTS shall be limited so that an infinite array of packages will remain subcritical. This quantity shall be determined on the basis of a specific nuclear safety analysis, considering credible accident situations, and taking into account the actual materials in the waste and shall meet 49 CFR, Parts 173.453(c)(3) and 173.453(d). Contaminated construction/removal action waste packages will not contain uranium enriched ^{235}U greater than one percent by weight and with a mass of ^{235}U greater than 800 grams per package. The total mass of plutonium and ^{233}U will not exceed one percent of the mass of ^{235}U in any package.

c. Nuclear Heating

In compliance with 49 CFR 173.442, Thermal Limitations, a Health Physics evaluation of waste packages of material to be shipped to the NTS from the FEMP show no evidence of a heating effect above NVO-325 limits from radiological decay. Calculations from these waste streams at the FEMP show the power output from either ^{233}U or ^{235}U at maximum potential concentration in any waste package will not exceed 0.1 Watt. These calculations are based on the total alpha energy from each isotope in the waste and its associated daughters during normal radioactive decay.

d. Radiation Levels

In compliance with 49 CFR 173.441, Radiation Levels, the radiation exposure rate at the surface and at 1 meter of each package of contaminated construction/removal action waste shall be measured and recorded in the data package. Contaminated construction/removal action waste packages that exceed 200 millirem/hr on contact shall not be shipped to NTS.

e. External Contamination

In compliance with 49 CFR 173.443, the surface contamination of each container of contaminated construction/removal action waste shall be measured using instruments calibrated by the IRS&T Dosimetry & Instrumentation Section and recorded in the data package. If these instruments indicate that the limits of 49 CFR 173.443 are exceeded, then the package shall be cleaned until it is within the limits or the contents shall be transferred to a clean container.

f. Activity Limits

The activity limits of Titles 49 CFR 173.421, "Limited Quantities of Radioactive Materials," and 49 CFR 173.425, "Transport Requirements for Low-Specific Activity Radioactive Materials" shall be met.

In compliance with Title 49 CFR 173.421 and 173.425, strong, tight containers used for shipping Limited Quantities (LQ) and Low-Specific Activity (LSA) LLW shall be constructed so they will not leak during normal transportation and handling conditions.

g. Multiple Hazards

Not applicable, the FEMP does not ship wastes with multiple hazards to the NTS.

2.4 Waste Stream Specific Package Criteria

a. Closure

All contaminated construction/removal action waste package closures will be sturdy enough to assure the closures will not be breached under normal handling conditions and will not serve as weak points for package failure.

b. Strength

Contaminated construction/removal action waste will be packaged in containers capable of supporting a uniformly distributed l[illegible]f 4,000 lbs/ft^2, except for waste packaged in DOE NV approved containers (d[illegible] and ISO containers).

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c. Handling

All contaminated construction/removal action waste containers shall have permanently attached skids, cleats, offsets, rings, handles, or other auxiliary lifting devices to allow handling by means of forklifts, cranes, or similar handling equipment. Lifting rings and other auxiliary lifting devices shall be recessed, offset, or hinged in a manner that does not inhibit stacking the packages. The lifting devices shall be designed to meet a 5:1 safety factor based upon the ultimate strength of the material. All rigging devices that are not permanently attached to the waste package shall have a current load test based on 125 percent of the safe working load.

d. Size

The size of the containers used by the FEMP to package contaminated construction/removal action waste includes container codes: 109, 117, 119, 102, and 121 from Table I.

e. Weight

In addition to the weight limits set for specific packaging designs, a 9,000 lb. limit per box and a 1,200 lb. limit per 55-gallon drum shall be maintained. Containers of contaminated construction/removal action waste exceeding the 9,000 lb. limit shall be shipped in removable-top trailers, or on flatbeds.

f. Loading

Contaminated construction/removal action waste shall be packaged to ensure that the interior volume is as efficiently and compactly loaded as practical.

g. Nonstandard Type A Packaging

The FEMP is currently using a Type 7A Container as a strong, tight container. Used for this purpose, the container does not require a DOE Type A Certification. If a Type A Container is required to ship contaminated construction/removal action waste, only containers with a DOE Type A Certification will be used.

h. Package Protection

Every FEMP contaminated construction/removal action waste package shall be prepared for shipment so as to minimize damage during transit. The preshipment storage environment shall be controlled to avoid adverse influence from weather or other factors on the containment capability of the waste packaging during handling, storage, and transport. FEMP shall take all responsibility for preshipment storage and take all reasonable precautions to preclude the accumulation of moisture on or in packages prior to their arrival to the NTS. Tamper indicating devices are used to maintain control of the container contents once certification actions are completed.

The FEMP shall package all contaminated construction/removal action waste for shipment to NTS in containers meeting DOT requirements (e.g., DOT Type 17H 55-gallon drums or other NTS approved containers). All containers shall be shipped to meet DOT requirements for interstate travel and shall meet the requirements of 49 CFR 173.411, 173.421, and 173.425.

i. Marking and Labeling

Contaminated construction/removal action waste shipped to the NTS shall be marked and labeled as required in Title 49 CFR 172, Subparts D and E [with exceptions noted in Title 173.425 (b) and (c)]. Also, each waste container shall be marked with a unique six character container identification number and eight character shipment number per NVO-325, Revision 1, 5.5.1.3(I,3) so that the container can be identified from another container within the shipment or from another set of containers. The approved 13 digit waste stream number (ONLO-000000002) will also be placed onto the waste container. Marking and labeling of the Construction/removal action waste packages shall be for radioactive material. The weight of the package will be marked in pounds and kilograms. Signed NV-211 labels will be attached to containers certified for shipment to the NTS.

j. Barcoding

Barcode labels will meet NVO-325, Revision 1 requirements and must be approved by DOE NV prior to use. Two barcode labels will be placed on each contaminated process area scrap waste package. The barcode labels will be placed near the top and on opposite sides of nonstandard containers. Barcode Labels on drums will be placed on the lid and one side near the top of the drum.

k. On-site Transfer

Only packaged contaminated construction/removal action waste is shipped from the FEMP for disposal at the NTS. The FEMP will not provide any material which will require on-site transfer of unpackaged bulk materials by the NTS.

2.5 Additional Criteria for Mixed Waste

None of the waste streams listed in this application are mixed waste. The FEMP will not be disposing of mixed waste at the NTS.

2.6 Additional Criteria for Transuranic/Transuranic Mixed Waste

None of the waste streams listed in this application contain Transuranic or Transuranic Mixed waste. The FEMP will not be disposing of Transuranic or Transuranic Mixed waste at the NTS.

2.7 Additional Criteria for Bulk Waste

The FEMP is not currently and does not intend to ship mixed waste to the NTS for disposal. By default, the FEMP will not be shipping mixed waste as bulk waste or mixed waste for bulk disposal.

The FEMP does ship bulk waste to the NTS for disposal in the form of scrap material (metal, wood, vehicles) that is contaminated radioactively. This material is well below the 49 CFR 173.425(c) requirement of 0.001 millicurie per square centimeter when averaged over one square meter of the material. The type of container in which the FEMP ships bulk waste is identified in the sections relating to the NTS specific packaging criteria. Approval of this application will constitute approval of continued use of this container.

2.8 Additional Criteria for Case-by-Case Waste

- 4552-

2.8.1 Weight

The FEMP is currently shipping and intends to continue to ship waste in ISO (International Shipping Organization) containers generally referred to as Sea/Land containers. These containers routinely weigh greater than 9,000 pounds and require either a large fork truck or crane for removal from the transport vehicle. The FEMP ships these containers on flat bed trailers which require no top or side wall removal.

2.8.2 Activity Limits

All containers shipped from the FEMP for disposal at the NTS are within the activity limits specified in NVO-325, Revision 1, Section 5.5.1.2.F.

2.8.3 Radioactively Contaminated Asbestos

Friable asbestos will not be shipped to the NTS before securing DOE/NV approval. None of the waste streams included in this application contain radioactively contaminated friable asbestos.

2.8.4 DOE Comparable Greater-Than-Class-C As Defined in 10 CFR 61.55

This requirement is not applicable to the FEMP waste streams since no greater-than-Class-C waste is shipped from the FEMP for disposal at NTS.

2.8.5 Classified Waste Streams

This requirement is not applicable to the FEMP since no classified waste is shipped for disposal at the NTS.

2.8.6 Radioactive Animal Carcasses

This requirement is not applicable to the FEMP since no radioactive animal carcasses are included in the contaminated construction/removal action waste stream.

2.8.7 Other Waste Forms

The FEMP will secure DOE-NV approval for any waste forms that do not meet NTS requirements before shipping to the NTS.

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C. Waste Stream Identification Number

ONLO-000000005 Thorium Wastes

1.0 Waste Type

Low Level Waste

2.0 Waste Description

A waste stream is defined as a waste which is categorized by similar characterization process and/or point of generation. The criteria used for evaluating candidate LLW for shipment to the NTS, excerpted from the FEMP Waste Characterization Plan (Draft), are described on the following pages.

2.1 Thorium Wastes

Since 1972, the FEMP has served as the U.S. DOE storage repository for thorium. Approximately two-thirds of the thorium inventory stored at the FEMP was processed at the FEMP with the remaining one-third originating at other DOE facilities. The thorium at the FEMP is in the form of thorium metal, oxides, hydroxides, oxalates, and residues.

The thorium in this waste stream comprises 1,624 drums of material primarily consisting of thorium hydroxide and thorium oxide, with some thorium tetrafluoride, thorium oxalate and uranium. The waste was produced during thorium material production processes in the late 1960s and early 1970s. No treatment of this material was performed prior to packaging. The thorium residues included in this waste stream were packaged from one silo and two bins from Plant 8 Building in 1989. The final form of this material is dry thorium residues packaged in 48-gallon drums overpacked in 55-gallon drums. Three containers will be overpacked in 85-gallon containers.

Thorium Wastes:

- Thorium hydroxides, oxides, oxalates
- Thorium tetrafluoride, ThF_4

III. WASTE STREAM INFORMATION

2.1.1 Waste Stream Characterization Data Sheet

1. Waste Stream No.: O N L O - 0 0 0 0 0 0 0 0 5

2. Waste Description:

   a. Physical Characteristics: Dry thorium oxides and hydroxides generated during thorium oxide production. No treatment of this material was performed prior to packaging.

   b. Special Handling/Disposal Requirements: This material has an average radioactive level on contact of 50 mrem/hr. with a range of 25 mrem/hr. to 105 mrem/hr. Time, distance, and shielding techniques should be employed to reduce exposure.

3. Basis for Characterization:

   a. Process Knowledge: ____ b. Analytical Knowledge: ____

   c. Both: ✓

   If B or C, provide Standard Data Reporting Forms as necessary.

4. Radioactive Characteristics:

   a. Is Waste > NRC Class-C (see Title 10 CFR 61.55)?: No

   b. WMIS Nuclide Category (circle): 1 (2) 3 4 5 NA 7 8

   (Choose the highest predominate nuclide. The number 6 is not an option.)

Page 2 of Waste Stream Characterization Data Sheet

c. Radioactive Constituents:

Specific Activity Range of Waste Stream

Nuclide	Chemical Forms	Low	Mean	High	Units(Ci/kg)
(1) Th-232 (0.1% to 100% Th)	*	1.09E-07	5.46E-05	1.09E-04	Ci/kg
(2) Th-228 Natural abundance	*	1.09E-07	5.46E-05	1.09E-04	Ci/kg
(3) Th-230 (Activity = 10% Th-232 activity)	*	1.09E-08	5.46E-06	1.09E-05	Ci/kg
(4) U-238 (0.1% to 2.0% Total U)	*	3.34E-07	3.51E-06	6.68E-06	Ci/kg
(5) U-235 Natural Abundance	*	1.43E-08	1.62E-07	3.10E-07	Ci/kg
(6) U-234 (0.006% on a U basis)	*	3.56E-07	3.74E-06	7.12E-06	Ci/kg

* Thorium oxides and hydroxides with traces of thorium oxalates and thorium tetrafluoride ThF_4.

5. Hazardous Components (for MW): **NOT APPLICABLE**

a. Basis for Identifying as MW (circle): (1) Ignitable

(2) Reactive (3) Corrosive (4) TCLP (5) Listed Waste

b. List the applicable EPA waste code, the chemical name, the treatment performed (if applicable) and the Regulatory/Treatment Standard. Attach Standardized Data Forms.

EPA Hazardous Waste No.	Chemical Name	Treatment Performed	Regulatory Threshold/Treatment Standard
(1)			
(2)			
(3)			
(4)			

NOTE: Waste characterization of materials included in this waste stream is predominantly completed using process knowledge because the material meets the criteria of [illegible] 325, Revision 1, Section 4.1.1.B. The FEMP has conducted confirmatory an[illegible]s to support the process knowledge waste characterization for disposal at the [illegible].

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2.2 Waste Stream Specific Criteria

a. Low Level Waste: Only the thorium wastes defined as LLW per DOE Orders 5820.2A, 5400.1, and 5480.11 guidelines shall be shipped to the NTS. (NVO-325, Revision 1, 5.5.1).

Compliance Method: The DOE Performance Objective (Draft) for radioactive waste characterization specifies the methodology to be used for identifying radioactive waste. In general, wastes that originate from Controlled Areas at the FEMP are considered radioactive waste unless demonstrated otherwise through analysis or administrative controls. Further guidance on radioactive waste characterization is provided in the DOE Performance Objective (Draft). In accordance with the "Waste Minimization and Pollution Prevention Awareness Plan," the FEMP attempts to minimize waste generation whenever possible.

b. Transuranics: Thorium wastes shall have a TRU concentration less than 100 nCi/g (e.g.,, shall not be regulated as TRU waste). (NVO-325, Revision 1, 5.5.1.1(A)).

Compliance Method: MC&A records indicate there are no materials at the FEMP with TRU concentrations above the 100 nCi/g level. The highest TRU concentrations found were associated with some materials that were determined through analysis to contain in one case up to 93,904 dpm/g (42 nCi/g).

c. Hazardous Waste: All thorium wastes are evaluated for any characteristics of, or listed, hazardous waste as identified in Title 40 CFR 261, "Identification and Listing of Hazardous Waste," or state of generation hazardous waste regulations. (NVO-325, Revision 1, 5.5.1.1(B)).

Compliance Method As waste is generated, the generator contacts the WEMCO organization responsible for waste characterization, FME, to determine if a hazardous waste evaluation for the waste has been made. If no evaluation exists and characterization is required, the generator completes Section I of the MEF and submits the form to FME for characterization. FME completes characterization by one of two methods, either process knowledge or sampling/analysis. If enough information is known about the process by which the waste was generated and FME is able to firmly establish that the waste would not exhibit hazardous waste characteristics or contain a listed hazardous waste, a process knowledge determination would be made that the waste is nonhazardous. If sufficient information about the generation process for the waste is not available, FME requires that sampling be completed on the waste. FME will specify the parameters to be sampled, a waste specific sampling plan will be written, and the waste will be sampled per an approved SOP 20-C-805. The sample will be submitted to an analytical laboratory following chain-of-custody procedures and analysis will be completed per SW-846 Methodology. A statistical analyses and quality assurance check will be completed on the analytical data. The data will be forwarded to FME where the final characterization will be completed and documented on the MEF. A copy of the MEF is returned to the generator. The generator will then package nonhazardous waste that meets the criteria of this application. Oversight of packaging is completed by WEMCO Quality Certification to ensure that only material specified in the MEF is packaged.

d. Free Liquids: Thorium wastes disposed at NTS waste management sites shall contain as little free liquids as is reasonably achievable, but in no case shall the liquid equal or exceed 0.5% by volume of the external waste container and shall meet the following criteria (NVO-325, Revision 1, 5.5.1.1(C).

Compliance Method Free liquids in thorium wastes may be evaluated based on process knowledge or waste testing to determine whether the waste stream meets this criteria. Determinations based on process knowledge generally include a visual inspection of at least 10% of a container population (e.g.,, during a visual inspection or sampling episode). Free liquid determinations are generally completed as part of the RCRA waste characterization process. The PFLT test is performed to determine the presence of free liquids when process knowledge does not yield sufficient information to complete this determination. Reference FEMP Waste Characterization Plan (Draft) - RCRA Section.

e. Particulates: Wastes containing fine particulate materials less-than-ten-micrometer-diameter and greater than 1 weight percent or 15 weight percent less-than-200 micrometer diameter particles will be immobilized or packaged in accordance with NVO-325, Revision 1, 5.5.1.1(D).

Compliance Method The thorium waste stream may categorically fail the particulates WAC. This material is packaged in steel drums with 6 mil plastic liners and overpacking exceeding NVO-325, Revision 1 requirements.

f. Gases: Radioactive gases shall be stabilized or absorbed so that pressure in the waste package does not exceed 1.5 atmospheres at 20° celsius. Compressed gases as defined by Title 49 CFR 173.300, including unpunctured aerosol cans, will not be shipped for disposal in the thorium waste stream. Aerosol cans shall have puncture disfigurements readily recognizable by real-time-radiography. Expended gas cylinders shall have the valve mechanism removed. (NVO-325, Revision 1, 5.5.1.1(E)).

Compliance Method The thorium waste packages were evaluated to determine if they contain any items that potentially fail this WAC. During the hazardous waste determination
(SSOP-0002).

g. Stabilization: Where practical, Thorium waste shall be treated to reduce volume and provide a more structurally and chemically stable waste form. (NVO-325, Revision 1, 5.5.1.1(F)).

Compliance Method FME reviewed the thorium waste stream during the hazardous waste evaluation for the potential to generate harmful gases, vapors, or liquids. No treatment of the thorium waste stream was required to meet the WAC for this waste stream.

h. Etiologic Agents: Thorium wastes to be shipped to the NTS will not contain pathogens, infectious wastes, or other etiologic agents as defined in Title 49 CFR 173.386. (NVO-325, Revision 1, 5.5.1.1(G)).

Compliance Method The only significant source of potential etiologic agents on site is from medical services. Such materials may include band aids, tongue blades, syringes, cotton balls or other materials stained with blood or other body fluids, and outdated pharmaceuticals. These materials are managed according to Ohio Infectious Waste Law/Regulation (ORC 3734 and OAC 3745-27-01 through 25) which includes segregated packaging at the point of generation. Materials are placed in a red bag in a box premarked with the international biohazard label. These boxes are then transported by a registered transporter to a licensed treatment facility. These administrative controls prevent etiologic agents from entering the process area scrap waste stream. Reference FEMP Waste Characterization Plan (Draft) - Infectious Waste Section for additional evaluation criteria.

i. Chelating Agents: If a waste is determined to contain chelating agents above the one percent by weight limit, the waste will not be approved for disposal at the NTS. (NVO-325, Revision 1, 5.5.1.1(H)).

Compliance Method: Chelating agents form coordination compounds by offering two or more chemical bonds (through ligands) to a central metal ion. The most common chelating agent is EDTA. Other common chelating agents are also aminopolyacteic acids. Excess chemicals from the on-site laboratory are the primary potential source of materials that may be identified as true chelating agents. This determination will be accomplished through the use of the MEF which will designate the waste as containing above one percent by weight chelating agents. FME has generated a list of potential chelating or complexing agents through an on-line database search and will consult this list to evaluate potential chelating or complexing agents. The MEF (example provided in this application) contains a specific section for denoting the presence of chelating agents. This information is provided to the waste certification official who is responsible for ensuring that material containing chelating agents at concentrations greater than one percent by weight are not shipped from FEMP to the NTS for disposal is properly tagged as not meeting the criteria for shipment. This process prevents waste that does not meet the NTS WAC from being shipped for disposal.

j. Polychlorinated Biphenyls: PCB contaminated waste will not be shipped for disposal at NTS in the thorium waste stream unless the PCB concentration meets the municipal solid waste disposal limits. See Title 40 CFR 761.60 for PCB disposal requirements. (NVO-325, Revision 1, 5.5.1.1(I)).

Compliance Method The FEMP samples wastes for PCB contamination when the waste matrix (e.g.,, oily material) or review of previous operations, manufacturers manuals, and previous sampling and analyses provides a reason to suspect PCB contamination. This waste stream contains no oily material and no additional process knowledge exists to provide any reason to suspect PCB contamination. This determination is performed during the hazardous waste determination (SSOP-0002). Reference FEMP Waste Characterization Plan (Draft) -TSCA PCB Section for evaluation criteria.

k. Explosives and Pyrophorics: Thorium waste does not contain potentially explosive or pyrophoric material in a form that may spontaneously combustion if the container is breached. (NVO-325, Revision 1, 5.5.1.1(J)).

Compliance Method This WAC is evaluated during the hazardous waste characterization. This evaluation is performed in accordance with SSOP-0002, Completing the Material Evaluation Form and FEMP Waste Characterization Plan (Draft). Any waste that potentially fails this WAC shall be identified by FME and the material will not be shipped to the NTS for disposal.

2.3 Waste Stream General Package Criteria

a. Design

Waste packaging criteria for thorium waste shipped to the NTS for disposal shall meet DOT Regulations, 49 CFR 173, Subpart I. Standard operating procedures listed in Table I of the Waste Certification Plan, concerning storage and off-site shipments, shall be used to assure that all shipments meet DOT requirements and NTS site-specific requirements.

b. Nuclear Safety

The quantity of radioactive materials in thorium waste shipped to the NTS shall be limited so that an infinite array of packages will remain subcritical. This quantity shall be determined on the basis of a specific nuclear safety analysis, considering credible accident situations, and taking into account the actual materials in the waste and shall meet 49 CFR, Parts 173.453(c)(3) and 173.453(d). Thorium waste packages will not contain uranium enriched ^{235}U greater than one percent by weight and with a mass of ^{235}U greater than 800 grams per package. The total mass of plutonium and ^{233}U will not exceed one percent of the mass of ^{235}U in any package.

c. Nuclear Heating

In compliance with 49 CFR 173.442, Thermal Limitations, a Health Physics evaluation of waste packages of material to be shipped to the NTS from the FEMP show no evidence of a heating effect above NVO-325 limits from radiological decay. Calculations from these waste streams at the FEMP show the power output from either ^{232}Th at maximum potential concentration in any waste package will not exceed 0.1 Watt. These calculations are based on the total alpha energy from each isotope in the waste and its associated daughters during normal radioactive decay.

d. Radiation Levels

In compliance with 49 CFR 173.441, Radiation Levels, the radiation exposure rate at the surface and at 1 meter of each package of thorium waste shall be measured and recorded in the data package. Thorium waste packages that exceed 200 millirem/hr on contact shall not be shipped to NTS.

e. External Contamination

In compliance with 49 CFR 173.443, the surface contamination of each container of thorium waste shall be measured using instruments calibrated by the IRS&T Dosimetry & Instrumentation Section and recorded in the data package. If these instruments indicate that the limits of 49 CFR 173.443 are exceeded, then the package shall be cleaned until it is within the limits or the contents shall be transferred to a clean container.

f. Activity Limits

The activity limits of Titles 49 CFR 173.421, "Limited Quantities of Radioactive Materials," and 49 CFR 173.425, "Transport Requirements for Low-Specific Activity Radioactive Materials" shall be met.

In compliance with Title 49 CFR 173.421 and 173.425, strong, tight containers used for shipping Limited Quantities (LQ) and Low-Specific Activity (LSA) LLW shall be constructed so they will not leak during normal transportation and handling conditions.

g. Multiple Hazards

Not applicable, the FEMP does not ship wastes with multiple hazards to the NTS.

2.4 Waste Stream Specific Package Criteria

a. Closure

All thorium waste package closures will be sturdy enough to assure the closures will not be breached under normal handling conditions and will not serve as weak points for package failure.

b. Strength

Thorium waste will be packaged in containers capable of supporting a uniformly distributed load of 4,000 lbs/ft^2, except for waste packaged in DOE NV approved containers (drums).

c. Handling

All Thorium waste containers shall have permanently attached skids, cleats, offsets, rings, handles, or other auxiliary lifting devices to allow handling by means of forklifts, cranes, or similar handling equipment. Lifting rings and other auxiliary lifting devices shall be recessed, offset, or hinged in a manner that does not inhibit stacking the packages. The lifting devices shall be designed to meet a 5:1 safety factor based upon the ultimate strength of the material. All rigging devices that are not permanently attached to the waste package shall have a current load test based on 125 percent of the safe working load.

d. Size

FEMP thorium waste will be packaged in 55-gallon or 85-gallon drums.

e. Weight

Thorium waste will not exceed the 1,200 lb. per 55-gallon drum per NVO-325, Revision 1.

f. Loading

Thorium waste shall be packaged to ensure that the interior volume is as efficiently and compactly loaded as practical.

g. Nonstandard Type A Packaging

The FEMP is currently using a Type 7A Container as a strong, tight container. Used for this purpose, the container does not require a DOE Type A Certification. If a Type A Container is required to ship thorium waste, only containers with a DOE Type A Certification will be used.

h. Package Protection

Every FEMP thorium waste package shall be prepared for shipment so as to minimize damage during transit. The preshipment storage environment shall be controlled to avoid adverse influence from weather or other factors on the containment capability of the waste packaging during handling, storage, and transport. FEMP shall take all responsibility for preshipment storage and take all reasonable precautions to preclude the accumulation of moisture on or in packages prior to their arrival to the NTS. Tamper indicating devices are used to maintain control of the container contents once certification actions are completed.

The FEMP shall package all thorium waste for shipment to NTS in containers meeting DOT requirements (e.g., DOT Type 17H 55-gallon drums or other NTS approved containers). All containers shall be shipped to meet DOT requirements for interstate travel and shall meet the requirements of 49 CFR 173.411, 173.421, and 173.425.

i. Marking and Labeling

Thorium waste shipped to the NTS shall be marked and labeled as required in Title 49 CFR 172, Subparts D and E [with exceptions noted in Title 173.425 (b) and (c)]. Also, each waste container shall be marked with a unique six character container identification number and eight character shipment number per NVO-325, Revision 1, 5.5.1.3(I,3) so that the container can be identified from another container within the shipment or from another set of containers. The approved 13 digit waste stream number (ONLO-000000005) will also be placed onto the waste container. Marking and labeling of the thorium waste packages shall be for radioactive material. The weight of the package will be marked in pounds and kilograms. Signed NV-211 labels will be attached to containers certified for shipment to the NTS.

j. Barcoding

Barcode labels will meet NVO-325, Revision 1 requirements and must be approved by DOE NV prior to use. Two barcode labels will be placed on each thorium waste package. The barcode labels will be placed near the top and on opposite sides of nonstandard containers. Barcode Labels on drums will be placed on the lid and one side near the top of the drum.

k. On-site Transfer

Only packaged thorium waste is shipped from the FEMP for disposal at the NTS. The FEMP will not provide any material which will require on-site transfer of unpackaged bulk materials by the NTS.

2.5 Additional Criteria for Mixed Waste

None of the waste streams listed in this application are mixed waste. The FEMP will not be disposing of mixed waste at the NTS.

2.6 Additional Criteria for Transuranic/Transuranic Mixed Waste

None of the waste streams listed in this application contain Transuranic or Transuranic Mixed waste. The FEMP will not be disposing of Transuranic or Transuranic Mixed waste at the NTS.

2.7 Additional Criteria for Bulk Waste

The FEMP is not currently and does not intend to ship mixed waste to the NTS for disposal. By default, the FEMP will not be shipping mixed waste as bulk waste or mixed waste for bulk disposal.

The FEMP does ship bulk waste to the NTS for disposal in the form of scrap material (metal, wood, vehicles) that is contaminated radioactively. This material is well below the 49 CFR 173.425(c) requirement of 0.001 millicurie per square centimeter when averaged over one square meter of the material. The type of container in which the FEMP ships bulk waste is identified in the sections relating to the NTS specific packaging criteria. Approval of this application will constitute approval of continued use of this container.

2.8 Additional Criteria for Case-by-Case Waste

2.8.1 Weight

The FEMP is currently shipping thorium waste in 55-gallon and 85-gallon drums. No thorium containers will weigh greater than 9,000 pounds and require either a large fork truck or crane for removal from the transport vehicle.

2.8.2 Activity Limits

All containers shipped from the FEMP for disposal at the NTS are within the activity limits specified in NVO-325, Revision 1, Section 5.5.1.2.F.

2.8.3 Radioactively Contaminated Asbestos

Friable asbestos will not be shipped to the NTS before securing DOE/NV approval. None of the waste streams included in this application contain radioactively contaminated friable asbestos.

2.8.4 DOE Comparable Greater-Than-Class-C As Defined in 10 CFR 61.55

This requirement is not applicable to the FEMP waste streams since no greater-than-Class-C waste is shipped from the FEMP for disposal at NTS.

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2.8.5 Classified Waste Streams

This requirement is not applicable to the FEMP since no classified waste is shipped for disposal at the NTS.

2.8.6 Radioactive Animal Carcasses

This requirement is not applicable to the FEMP since no radioactive animal carcasses are included in the thorium waste stream.

2.8.7 Other Waste Forms

The FEMP will secure DOE-NV approval for any waste forms that do not meet NTS requirements before shipping to the NTS.

D. Waste Stream Identification Number

ONLO-000000006 Low/High Grade Residues

1.0 Waste Type

Low Level Waste

2.0 Waste Description

A waste stream is defined as a waste which is categorized by similar characterization process and/or point of generation. The criteria used for evaluating candidate LLW for shipment to the NTS, excerpted from the FEMP Waste Characterization Plan (Draft), are described on the following pages.

2.1 Low/High Grade Residues

Residues are stored at the FEMP as a result of the production processes within the various FEMP plants or from other DOE facilities. These residues are divided into two subgroups: low grade and high grade residues.

Low grade residues generally contain between 1% to 20% ^{238}U by weight and 0.2% to 2.0% ^{235}U relative to total uranium. Low grade residues comprise approximately 70 percent of this waste stream.

Low Grade Uranium Residues:

- Discard process residues
- Trailer cakes
- Waste slurries (dried)
- Raffinate
- Sump cake
- Dust collector residues
- Filter cakes
- Magnesium fluoride, MgF_2

High grade residues are also generated or stored at the FEMP as a result of the production processes within the various plants or other DOE facilities. High grade residues generally contain between 20% to 88% ^{238}U by weight and 0.2% to 2.0% ^{235}U relative to total uranium. High grade residues comprise approximately 30 percent of this waste stream.

Many of the high grade residues are intermediate products in the uranium metal production process which do not meet the quality requirements to allow further processing and, therefore, are classified as LLW.

High Grade Uranium Residues:

- Uranium tetrafluoride, UF_4 (off-spec green salt)
- Scrap uranium oxide, U_3O_8 (black oxide)
- Reject uranium trioxide, UO_3 (orange oxide)

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No chemical treatment of high or low grade wastes will be completed prior to shipment for disposal. Physical treatment will be completed as required to remove free liquids. FEMP SSOP-0024 (Packaging Low Level Radioactive Waste (LLRW) for off-site disposal) is used to ensure that no free liquids are present in residue waste packages. Size reduction may also be completed on the waste prior to shipment.

All residues will be overpacked into metal boxes or overpack drums meeting strong, tight container requirements to comply with NTS WAC. All low and high grade residue drums contain less than one percent by weight ^{235}U or if greater than one percent by ^{235}U the package will have less than 800 grams ^{235}U per package. Residue packages containing uranium enriched in ^{235}U greater than one percent by weight will be packaged to insure the mass of ^{235}U is less than 800 grams per package and the package is fissile exempt. This hazard classification is contingent on the fact that the total mass of plutonium and ^{233}U does not exceed one percent of the mass of the ^{235}U.

2.1.1 Waste Stream Characterization Data Sheet

1. Waste Stream No.: O N L O - 0 0 0 0 0 0 0 0 6

2. Waste Description:

a. Physical Characteristics: Dry solid residues from uranium metal production which generated off-spec residues, slurries, sump cakes, filter cakes, dust collector residues, raffinate, and magnesium fluoride. Some decanting and absorbent addition (typically dicalite®) will be performed prior to packaging this material.

b. Special Handling/Disposal Requirements: None

The average radiation level on contact is 2.0 mrem/hr. with a range of <0.5 mrem/hr. to 10.0 mrem/hr.

3. Basis for Characterization:

a. Process Knowledge: ____ b. Analytical Knowledge: __

c. Both: ✓

If B or C, provide Standard Data Reporting Forms as necessary.

4. Radioactive Characteristics:

a. Is Waste > NRC Class-C (see Title 10 CFR 61.55)?: No

b. WMIS Nuclide Category (circle): 1 ② 3 4 5 NA 7 8

(Choose the highest predominate nuclide. The number 6 is not an option.)

c. Radioactive Constituents:

Specific Activity Range of Waste Stream

Nuclide	Chemical Forms	Low	Mean	High	Units(Ci/kg)
(1)a U-238 (1% to 20% U) Low Grade	*	3.36E-06	3.46E-05	6.59E-05	Ci/kg
b U-238 (20% to 88% U) High G	*	6.71E-05	1.79E-04	2.90E-04	Ci/kg
(2) U-235 (0.2% to 2.0% on a U basis)	*	4.29E-08	1.90E-05	3.80E-05	Ci/kg
(3) U-234 (0.001% to 0.01% on a U basis)	*	1.37E-06	3.53E-04	7.05E-04	Ci/kg

* Uranium oxides and salts (typically UO_3, U_3O_8, and UF_4)

III. WASTE STREAM INFORMATION

Revision 4.2
November 1992

Page 2 of Waste Stream Characterization Data Sheet

5. Hazardous Components (for MW): **NOT APPLICABLE**

a. Basis for Identifying as MW (circle): (1) Ignitable

(2) Reactive (3) Corrosive (4) TCLP (5) Listed Waste

b. List the applicable EPA waste code, the chemical name, the treatment performed (if applicable) and the Regulatory/Treatment Standard. Attach Standardized Data Forms.

EPA Hazardous Waste No.	Chemical Name	Treatment Performed	Regulatory Threshold/Treatment Standard
(1)			
(2)			
(3)			
(4)			

NOTE: Waste characterization of materials included in this waste stream is completed using a combination of sampling and analysis and process knowledge. Process knowledge is used when the material meets one or more of the criteria of NVO-325, Revision 1, Section 4.1.1.A, B, and C or when process controls are well documented and controlled. (Examples of materials characterized by process knowledge includes residues generated from well controlled, well documented processes such as MgF_2). The FEMP will conduct confirmatory sampling of waste streams characterized by process knowledge before shipping for disposal at the NTS.

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2.2 Waste Stream Specific Criteria

a. Low Level Waste: Only the low/high grade residues defined as LLW per DOE Orders 5820.2A, 5400.1, and 5480.11 guidelines shall be shipped to the NTS. (NVO-325, Revision 1, 5.5.1).

Compliance Method: The DOE Performance Objective (Draft) for radioactive waste characterization specifies the methodology to be used for identifying radioactive waste. In general, wastes that originate from Controlled Areas at the FEMP are considered radioactive waste unless demonstrated otherwise through analysis or administrative controls. Further guidance on radioactive waste characterization is provided in the DOE Performance Objective (Draft). In accordance with the "Waste Minimization and Pollution Prevention Awareness Plan," the FEMP attempts to minimize waste generation whenever possible.

b. Transuranic: The low/high grade residues shall have a TRU concentration less than 100 nCi/g (e.g.,, shall not be regulated as TRU waste). (NVO-325, Revision 1, 5.5.1.1(A)).

Compliance Method: MC&A records indicate there are no materials at the FEMP with TRU concentrations above the 100 nCi/g level. The highest TRU concentrations found were associated with some materials that were determined through analysis to contain in one case up to 93,904 dpm/g (42 nCi/g).

c. Hazardous Waste: All low/high grade residues are evaluated for any characteristics of, or listed, hazardous waste as identified in Title 40 CFR 261, "Identification and Listing of Hazardous Waste," or state of generation hazardous waste regulations. (NVO-325, Revision 1, 5.5.1.1(B)).

Compliance Method: As waste is generated, the generator contacts the WEMCO organization responsible for waste characterization, FME, to determine if a hazardous waste evaluation for the waste has been made. If no evaluation exists and characterization is required, the generator completes Section I of the MEF and submits the form to FME for characterization. FME completes characterization by one of two methods, either process knowledge or sampling/analysis. If enough information is known about the process by which the waste was generated and FME is able to firmly establish that the waste would not exhibit hazardous waste characteristics or contain a listed hazardous waste, a process knowledge determination would be made that the waste is nonhazardous. If sufficient information about the generation process for the waste is not available, FME requires that sampling be completed on the waste. FME will specify the parameters to be sampled, a waste specific sampling plan will be written, and the waste will be sampled per an approved SOP (e.g., for drummed waste sampling, SOP 1-C-101). All FEMP SOPs are issued as site controlled documents after the SOP has been through a review and approval process. The WEMCO departments designated for review are determined by the SOP author based on the nature of the SOP. The sample will be submitted to an analytical laboratory following chain-of-custody procedures and analysis will be completed per SW-846 Methodology. A statistical analyses and quality assurance check will be completed on the analytical data. The data will be forwarded to FME where the final characterization will be completed and documented on the MEF. A copy of the MEF is returned to the generator. The generator will then package nonhazardous waste that meets the criteria of this application. Oversight of packaging is completed by WEMCO Quality Certification to ensure that only material specified in the MEF is packaged.

d. Free Liquids: The low/high grade residues disposed at NTS waste management sites shall contain as little free liquids as is reasonably achievable, but in no case shall the liquid equal or exceed 0.5% by volume of the external waste container and shall meet the following criteria (NVO-325, Revision 1, 5.5.1.1(C).

Compliance Method Low/high grade residues may be evaluated based on process knowledge or waste testing to determine whether the waste stream meets this criteria. Determinations based on process knowledge generally include a visual inspection. Free liquid determinations are generally completed as part of the RCRA waste characterization process. The PFLT test is performed to determine the presence of free liquids when process knowledge does not yield sufficient information to complete this determination. Reference FEMP Waste Characterization Plan (Draft) -RCRA Section.

e. Particulates: Wastes containing fine particulate materials less-than-ten-micrometer-diameter and greater than 1 weight percent or 15 weight percent less-than-200 micrometer diameter particles will be immobilized or packaged in accordance with NVO-325, Revision 1, 5.5.1.1(D).

Compliance Method Some residue waste streams will categorically fail the particulates WAC while others may require testing to complete a rigorous evaluation. Dust collector residues (MTC 062) have been documented to have greater than one percent by weight of less-than-ten-micron-diameter particles. In addition, depending on the moisture content, many of the residues on-site will fail these limits. If testing is required because the waste form does not clearly meet the WAC, the waste stream shall be identified as requiring testing. Testing may be conducted using a particle size impactor or some other form of particle sizing equipment. Should the waste fail the criteria for particulates and immobilization is impractical, the waste packaging will be completed by overpacking, using steel drums with 6 mil plastic liners or steel boxes in accordance with NVO-325, Revision 1.

f. Gases: Radioactive gases shall be stabilized or absorbed so that pressure in the waste package does not exceed 1.5 atmospheres at 20° celsius. Compressed gases as defined by Title 49 CFR 173.300, including unpunctured aerosol cans, will not be shipped for disposal in the low/high grade residues Waste Stream. Aerosol cans shall have puncture disfigurements readily recognizable by real-time-radiography. Expended gas cylinders shall have the valve mechanism removed. (NVO-325, Revision 1, 5.5.1.1(E)).

Compliance Method: Low/high grade residues are evaluated to determine if they contain any items that potentially fail this WAC during the hazardous waste determination (SSOP-0002). Residues that fails to meet this WAC will not be shipped to the NTS.

g. Stabilization: Where practical, low/high grade residues waste shall be treated to reduce volume and provide a more structurally and chemically stable waste form. (NVO-325, Revision 1, 5.5.1.1(F)).

Compliance Method: FME will identify all LLW streams that have potential to generate harmful gases, vapors, or liquids. In addition, FME will identify waste streams that are candidates for treatment to reduce volume or provide a structurally more stable waste form. Treatment of low/high grade residues is typically to remove free liquids. The compliance method for meeting this WAC is stated in Section 1.4.2.d.

h. Etiologic Agents: Low/high grades residues to be shipped to the NTS will not contain pathogens, infectious wastes, or other etiologic agents as defined in Title 49 CFR 173.386. (NVO-325, Revision 1, 5.5.1.1(G)).

Compliance Method: The only significant source of potential etiologic agents on site is from medical services. Such materials may include band aids, tongue blades, syringes, cotton balls or other materials stained with blood or other body fluids, and outdated pharmaceuticals. These materials are managed according to Ohio Infectious Waste Law/Regulation (ORC 3734 and OAC 3745-27-01 through 25) which includes segregated packaging at the point of generation. Materials are placed in a red bag in a box premarked with the international biohazard label. These boxes are then transported by a registered transporter to a licensed treatment facility. These administrative controls prevent etiologic agents from entering the low/high grade residues waste stream. Reference FEMP Waste Characterization Plan (Draft) - Infectious Waste Section for additional evaluation criteria.

i. Chelating Agents: If a waste is determined to contain chelating agents above the one percent by weight limit, the waste will not be approved for disposal at the NTS. (NVO-325, Revision 1, 5.5.1.1(H)).

Compliance Method: Chelating agents form coordination compounds by offering two or more chemical bonds (through ligands) to a central metal ion. The most common chelating agent is EDTA. Other common chelating agents are also aminopolyacteic acids. Excess chemicals from the on-site laboratory are the primary potential source of materials that may be identified as true chelating agents. This determination will be accomplished through the use of the MEF which will designate the waste as containing above one percent by weight chelating agents. FME has generated a list of potential chelating or complexing agents through an on-line database search and will consult this list to evaluate potential chelating or complexing agents. The MEF (example provided in this application) contains a specific section for denoting the presence of chelating agents. This information is provided to the waste certification official who is responsible for ensuring that material containing chelating agents at concentrations greater than one percent by weight are not shipped from FEMP to the NTS for disposal is properly tagged as not meeting the criteria for shipment. This process prevents waste that does not meet the NTS WAC from being shipped for disposal.

j. Polychlorinated Biphenyls: PCB contaminated waste will not be shipped for disposal at NTS in the low/high grade residues waste stream unless the PCB concentration meets the municipal solid waste disposal limits. See Title 40 CFR 761.60 for PCB disposal requirements. (NVO-325, Revision 1, 5.5.1.1(I)).

Compliance Method: The FEMP samples wastes for PCB contamination when the waste matrix (e.g.,, oily material) or review of previous operations, manufacturers manuals, and previous sampling and analyses provides a reason to suspect PCB contamination. This determination is performed during the hazardous waste determination (SSOP-0002). Reference FEMP Waste Characterization Plan (Draft) - TSCA PCB Section for evaluation criteria.

k. Explosives and Pyrophorics: Low/high grade residues do not contain potentially explosive or pyrophoric material in a form that may spontaneously combustion if the container is breached. (NVO-325, Revision 1, 5.5.1.1(J)).

Compliance Method: This WAC is evaluated during the hazardous waste characterization. This evaluation is performed in accordance with SSOP-0002, Completing the Material Evaluation Form and FEMP Waste Characterization Plan (Draft). Any waste that potentially fails this WAC shall be identified by FME and the material will not be shipped to the NTS for disposal.

2.3 Waste Stream General Package Criteria

a. Design

Waste packaging criteria for low/high grade residue containers with less than 50% U_{TOT} or less than 1% ^{235}U shipped to the NTS for disposal shall meet DOT Regulations, 49 CFR 173, Subpart I. High grade residues containing greater than 50% U_{TOT} and greater than 1% ^{235}U will be packaged according to 49 CFR 173.451 through 173.459. Standard operating procedures listed in Table I of the Waste Certification Plan, concerning storage and off-site shipments, shall be used to assure that all shipments meet DOT requirements and NTS site-specific requirements.

b. Nuclear Safety

The quantity of radioactive materials in low/high grade residue shipped to the NTS shall be limited so that an infinite array of packages will remain subcritical. This quantity shall be determined on the basis of a specific nuclear safety analysis, considering credible accident situations, and taking into account the actual materials in the waste and shall meet 49 CFR, Parts 173.453(c)(3) and 173.453(d). Low/high grade residue packages will not contain uranium enriched ^{235}U greater than one percent by weight and with a mass of ^{235}U greater than 800 grams per package. The total mass of plutonium and ^{233}U will not exceed one percent of the mass of ^{235}U in any package.

c. Nuclear Heating

In compliance with 49 CFR 173.442, Thermal Limitations, a Health Physics evaluation of waste packages of material to be shipped to the NTS from the FEMP show no evidence of a heating effect above NVO-325 limits from radiological decay. Calculations from these waste streams at the FEMP show the power output from either ^{233}U or ^{235}U at maximum potential concentration in any waste package will not exceed 0.1 Watt. These calculations are based on the total alpha energy from each isotope in the waste and its associated daughters during normal radioactive decay.

d. Radiation Levels

In compliance with 49 CFR 173.441, Radiation Levels, the radiation exposure rate at the surface and at 1 meter of each package of shall be measured and recorded in the data package. Low/high grade residue packages that exceed 200 millirem/hr on contact shall not be shipped to NTS.

e. External Contamination

In compliance with 49 CFR 173.443, the surface contamination of each container of low/high grade residue shall be measured using instruments calibrated by the IRS&T Dosimetry & Instrumentation Section and recorded in the data package. If these instruments indicate that the limits of 49 CFR 173.443 are exceeded, then the package shall be cleaned until it is within the limits or the contents shall be transferred to a clean container.

f. Activity Limits

The activity limits of Titles 49 CFR 173.421, "Limited Quantities of Radioactive Materials," and 49 CFR 173.425, "Transport Requirements for Low-Specific Activity Radioactive Materials" shall be met.

In compliance with Title 49 CFR 173.421 and 173.425, strong, tight containers used for shipping Limited Quantities (LQ) and Low-Specific Activity (LSA) LLW shall be constructed so they will not leak during normal transportation and handling conditions.

g. Multiple Hazards

Not applicable, the FEMP does not ship wastes with multiple hazards to the NTS.

2.4 Waste Stream Specific Package Criteria

a. Closure

All low/high grade residue package closures will be sturdy enough to assure the closures will not be breached under normal handling conditions and will not serve as weak points for package failure.

b. Strength

Low/high grade residue will be packaged in containers capable of supporting a uniformly distributed load of 4,000 lbs/ft^2, except for waste packaged in DOE NV approved containers (drums and ISO containers).

c. Handling

All low/high grade residue containers shall have permanently attached skids, cleats, offsets, rings, handles, or other auxiliary lifting devices to allow handling by means of forklifts, cranes, or similar handling equipment. Lifting rings and other auxiliary lifting devices shall be recessed, offset, or hinged in a manner that does not inhibit stacking the packages. The lifting devices shall be designed to meet a 5:1 safety factor based upon the ultimate strength of the material. All rigging devices that are not permanently attached to the waste package shall have a current load test based on 125 percent of the safe working load.

d. Size

FEMP low/high grade residue will be packaged in 55-gallon drums, 85-gallon drums or the recommended 4'x4'x7' boxes including container codes: 117, and 119 from Table I.

e. Weight

In addition to the weight limits set for specific packaging designs, a 9,000 lb. limit per box and a 1,200 lb. limit per 55-gallon and 85-gallon drums shall be maintained. Low/high grade residue exceeding the 9,000 lb. limit shall be shipped in removable-top trailers, or on flatbeds.

f. Loading

Low/high grade residue shall be packaged to ensure that the interior volume is as efficiently and compactly loaded as practical.

g. Nonstandard Type A Packaging

The FEMP is currently using a Type 7A Container as a strong, tight container. Used for this purpose, the container does not require a DOE Type A Certification. If a Type A Container is required to ship low/high grade residues, only containers with a DOE Type A Certification will be used.

h. Package Protection

Every FEMP low/high grade residue package shall be prepared for shipment so as to minimize damage during transit. The preshipment storage environment shall be controlled to avoid adverse influence from weather or other factors on the containment capability of the waste packaging during handling, storage, and transport. FEMP shall take all responsibility for preshipment storage and take all reasonable precautions to preclude the accumulation of moisture on or in packages prior to their arrival to the NTS. Tamper indicating devices are used to maintain control of the container contents once certification actions are completed.

The FEMP shall package all low/high grade residue for shipment to NTS in containers meeting DOT requirements (e.g., DOT Type 17H 55-gallon drums or other NTS approved containers). All containers shall be shipped to meet DOT requirements for interstate travel and shall meet the requirements of 49 CFR 173.411, 173.421, and 173.425.

i. Marking and Labeling

Low/high grade residue shipped to the NTS shall be marked and labeled as required in Title 49 CFR 172, Subparts D and E [with exceptions noted in Title 173.425 (b) and (c)]. Also, each waste container shall be marked with a unique six character container identification number and eight character shipment number per NVO-325, Revision 1, 5.5.1.3(I,3) so that the container can be identified from another container within the shipment or from another set of containers. The approved 13 digit waste stream number (ONLO-000000006) will also be placed onto the waste container. Marking and labeling of the low/high grade residue packages shall be for radioactive material. The weight of the package will be marked in pounds and kilograms. Signed to containers certified for shipment to the NTS.

j. Barcoding

Barcode labels will meet NVO-325, Revision 1 requirements and must be approved by DOE NV prior to use. Two barcode labels will be placed on each low/high grade residue package. The barcode labels will be placed near the top and on opposite sides of nonstandard containers. Barcode Labels on drums will be placed on the lid and one side near the top of the drum.

k. On-site Transfer

Only packaged low/high grade residue is shipped from the FEMP for disposal at the NTS. The FEMP will not provide any material which will require on-site transfer of unpackaged bulk materials by the NTS.

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2.5 Additional Criteria for Mixed Waste

None of the waste streams listed in this application are mixed waste. The FEMP will not be disposing of mixed waste at the NTS.

2.6 Additional Criteria for Transuranic/Transuranic Mixed Waste

None of the waste streams listed in this application contain Transuranic or Transuranic Mixed waste. The FEMP will not be disposing of Transuranic or Transuranic Mixed waste at the NTS.

2.7 Additional Criteria for Bulk Waste

The FEMP is not currently and does not intend to ship mixed waste to the NTS for disposal. By default, the FEMP will not be shipping mixed waste as bulk waste or mixed waste for bulk disposal.

The FEMP does ship bulk waste to the NTS for disposal in the form of scrap material (metal, wood, vehicles) that is contaminated radioactively. This material is well below the 49 CFR 173.425(c) requirement of 0.001 millicurie per square centimeter when averaged over one square meter of the material. The type of container in which the FEMP ships bulk waste is identified in the sections relating to the NTS specific packaging criteria. Approval of this application will constitute approval of continued use of this container.

2.8 Additional Criteria for Case-by-Case Waste

2.8.1 Weight

The FEMP is currently shipping and intends to continue to ship waste in ISO (International Shipping Organization) containers generally referred to as Sea/Land containers. These containers routinely weigh greater than 9,000 pounds and require either a large fork truck or crane for removal from the transport vehicle. The FEMP ships these containers on flat bed trailers which require no top or side wall removal.

2.8.2 Activity Limits

All containers shipped from the FEMP for disposal at the NTS are within the activity limits specified in NVO-325, Revision 1, Section 5.5.1.2.F.

2.8.3 Radioactively Contaminated Asbestos

Friable asbestos will not be shipped to the NTS before securing DOE/NV approval. None of the waste streams included in this application contain radioactively contaminated friable asbestos.

2.8.4 DOE Comparable Greater-Than-Class-C As Defined in 10 CFR 61.55

This requirement is not applicable to the FEMP waste streams since no greater-than-Class-C waste is shipped from the FEMP for disposal at NTS.

2.8.5 Classified Waste Streams

This requirement is not applicable to the FEMP since no classified waste is shipped for disposal at the NTS.

2.8.6 Radioactive Animal Carcasses

This requirement is not applicable to the FEMP since no radioactive animal carcasses are included in the low/high grade residues waste stream.

2.8.7 Other Waste Forms

The FEMP will secure DOE-NV approval for any waste forms that do not meet NTS requirements before shipping to the NTS.

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E. Waste Stream Identification Number

ONLO-000000007 Contaminated Trash

1.0 Waste Type

Low Level Waste

2.0 Waste Description

A waste stream is defined as a waste which is categorized by similar characterization process and/or point of generation. The criteria used for evaluating candidate LLW for shipment to the NTS, excerpted from the FEMP Waste Characterization Plan (Draft), are described on the following pages.

2.1 Contaminated Trash

Contaminated trash is generated at the FEMP. This waste stream is currently being shipped to the NTS and may include the following:

- Trash (plastic, cardboard, paper, etc.)

This material is generated in the following way:

Daily office operations and material unpackaging operations generate plastic, cardboard and paper waste. No treatment of this waste is completed prior to packaging. Evaluation of this waste is accomplished administratively. Controls are in place (a prohibitive materials list and SOP 20-C-604, Control and Utilization of Contaminated Trash Dumpsters) to provide personnel with the knowledge and procedure for preventing waste which does not meet the NTS Waste Acceptance Criteria from entering this stream at the point of collection (trash dumpsters). The waste is then further evaluated with a second procedure (SOP 2-C-923, Trash Baler Operation) when it is compacted and baled to ensure that only waste which meets the NTS WAC is packaged for disposal. This waste is not treated prior to packaging. If the waste does not meet disposal criteria in its existing form, the waste is not packaged for disposal. The waste is size reduced in a compactor prior to packaging. The final form is a bale of trash which is packaged into a container for shipment. No special handling or disposal requirements exist for this waste.

2.1.1 Waste Stream Characterization Data Sheet

1. Waste Stream No.: O N L O - 0 0 0 0 0 0 0 7

2. Waste Description:

   a. Physical Characteristics: Dry solid paper, cardboard, plastic, etc. generated by daily office and unpackaging activities within radiological controlled areas. This material is baled (volume reduction) prior to packaging.

   b. Special Handling/Disposal Requirements: None
   The average radiation level on contact is .50 mrem/hr. with a range of <.50 mrem/hr. to 1.0 mrem/hr.

3. Basis for Characterization:

   a. Process Knowledge: ✓ b. Analytical Knowledge: ___

   c. Both: ___

   If B or C, provide Standard Data Reporting Forms as necessary.

4. Radioactive Characteristics:

   a. Is Waste > NRC Class-C (see Title 10 CFR 61.55)?: No

   b. WMIS Nuclide Category (circle): 1 ② 3 4 5 NA 7 8

   (Choose the highest predominate nuclide. The number 6 is not an option.)

   c. Radioactive Constituents:

   Specific Activity Range of Waste Stream

	Nuclide	Chemical Forms	Low	Mean	High	Units(Ci/kg)
(1)	U-238 (0.1% to 1.0% U)	•	3.36E-07	1.81E-06	3.29E-06	Ci/kg
(2)	U-235 (0.2% to 2.0% on a U basis)	*	4.76E-09	2.19E-07	4.34E-07	Ci/kg
(3)	U-234 (0.001% to 0.01% on a U basis)	*	1.38E-07	4.07E-06	8.01E-06	Ci/kg

* Uranium oxides and salts (typically UO_3, U_3O_8, and UF_4)

III. WASTE STREAM INFORMATION

Page 2 of Waste Stream Characterization Data Sheet

5. Hazardous Components (for MW): **NOT APPLICABLE**

   a. Basis for Identifying as MW (circle): (1) Ignitable

      (2) Reactive (3) Corrosive (4) TCLP (5) Listed Waste

   b. List the applicable EPA waste code, the chemical name, the treatment performed (if applicable) and the Regulatory/Treatment Standard. Attach Standardized Data Forms.

EPA Hazardous Waste No.	Chemical Name	Treatment Performed	Regulatory Threshold/Treatment Standard
(1)			
(2)			
(3)			
(4)			

NOTE: Waste characterization of materials included in this waste stream is predominantly completed using process knowledge because the material meets all the criteria of NVO-325, Revision 1, Section 4.1.1.A, B, and C. Administrative controls are also employed to preserve waste stream integrity (SOP 2-C-923, Trash Baler Operation and SOP 20-C-604, Control and Utilization of Contaminated Trash Dumpsters).

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2.2 Waste Stream Specific Criteria

a. Low Level Waste: Only the contaminated trash defined as LLW per DOE Orders 5820.2A, 5400.1, and 5480.11 guidelines shall be shipped to the NTS. (NVO-325, Revision 1, 5.5.1).

Compliance Method: The DOE Performance Objective (Draft) for radioactive waste characterization specifies the methodology to be used for identifying radioactive waste. In general, wastes that originate from Controlled Areas at the FEMP are considered radioactive waste unless demonstrated otherwise through analysis or administrative controls. Further guidance on radioactive waste characterization is provided in the DOE Performance Objective (Draft). In accordance with the "Waste Minimization and Pollution Prevention Awareness Plan," the FEMP attempts to minimize waste generation whenever possible.

b. Transuranic: The contaminated trash shall have a TRU concentration less than 100 nCi/g (e.g., shall not be regulated as TRU waste). (NVO-325, Revision 1, 5.5.1.1(A)).

Compliance Method: MC&A records indicate there are no materials at the FEMP with TRU concentrations above the 100 nCi/g level. The highest TRU concentrations found were associated with some materials that were determined through analysis to contain in one case up to 93,904 dpm/g (42 nCi/g).

c. Hazardous Waste: All contaminated trash are evaluated for any characteristics of, or listed, hazardous waste as identified in Title 40 CFR 261, "Identification and Listing of Hazardous Waste," or state of generation hazardous waste regulations. (NVO-325, Revision 1, 5.5.1.1(B)).

Compliance Method: Through careful selection of the items to place on the prohibited materials lists wastes are excluded from the contaminated trash dumpsters that could possibly cause the contaminated trash to exhibit a hazardous waste characterization or be listed as a hazardous waste. Process area personnel are trained in their annual RCRA refresher to understand their responsibilities on following all waste management and waste characterization procedures (SOP 2-C-923 and SOP 20-C-604).

d. Free Liquids: Contaminated trash disposed at NTS waste management sites shall contain as little free liquids as is reasonably achievable, but in no case shall the liquid equal or exceed 0.5% by volume of the external waste container and shall meet the following criteria (NVO-325, Revision 1, 5.5.1.1(C):

Compliance Method Free liquids are prohibited from disposal in the contaminated trash dumpsters.

e. Particulates: Wastes containing fine particulate materials less-than-ten-micrometer-diameter and greater than 1 weight percent or 15 weight percent less-than-200 micrometer diameter particles will be immobilized or packaged in accordance with NVO-325, Revision 1, 5.5.1.1(D).

Compliance Method: The contaminated trash waste streams will not fail the particulates WAC because fine particulates are excluded from the waste stream by procedures SOP 2-C-923 and SOP 20-C-604.

f. Gases: Radioactive gases shall be stabilized or absorbed so that pressure in the waste package does not exceed 1.5 atmospheres at 20° celsius. Compressed gases as defined by Title 49 CFR 173.300, including unpunctured aerosol cans, will not be shipped for disposal in the contaminated trash waste stream. Aerosol cans shall have puncture disfigurements readily recognizable by real-time-radiography. Expended gas cylinders shall have the valve mechanism removed. (NVO-325, Revision 1, 5.5.1.1(E)).

Compliance Method: Specific items that could result in generation of harmful gases are specifically prohibited for inclusion in the contaminated trash waste stream. This is accomplished via implementation of procedures SOP 20-C-604 and SOP 2-C-923.

g. Stabilization: Where practical, contaminated trash shall be treated to reduce volume and provide a more structurally stable waste form. (NVO-325, Revision 1, 5.5.1.1(F)).

Compliance Method LLWP will identify waste streams that are candidates for treatment to reduce volume or provide a structurally more stable waste form. No contaminated trash will be shipped to the NTS that has the potential to fail this WAC.

h. Etiologic Agents: Contaminated trash to be shipped to the NTS will not contain pathogens, infectious wastes, or other etiologic agents as defined in Title 49 CFR 173.386. (NVO-325, Revision 1, 5.5.1.1(G)).

Compliance Method The only significant source of potential etiologic agents on site is from medical services. Such materials may include band aids, tongue blades, syringes, cotton balls or other materials stained with blood or other body fluids, and outdated pharmaceuticals. These materials are managed according to Ohio Infectious Waste Law/Regulation (ORC 3734 and OAC 3745-27-01 through 25) which includes segregated packaging at the point of generation. Materials are placed in a red bag in a box premarked with the international biohazard label. These boxes are then transported by a registered transporter to a licensed treatment facility. These administrative controls prevent etiologic agents from entering the contaminated trash waste stream. Reference FEMP Waste Characterization Plan (Draft) - Infectious Waste Section for additional evaluation criteria.

i. Chelating Agents: If a waste is determined to contain chelating agents above the one percent by weight limit, the waste will not be approved for disposal at the NTS. (NVO-325, Revision 1, 5.5.1.1(H)).

Compliance Method: Chelating agents are excluded from the contaminated trash waste stream. Excess chemicals from the on-site laboratory are the primary potential source of materials that may be identified as true chelating agents. This determination will be accomplished through the use of the MEF which will designate the waste as containing above one percent by weight chelating agents. FME has generated a list of potential chelating or complexing agents through an on-line database search and will consult this list to evaluate potential chelating or complexing agents. Contaminated trash waste stream feed materials is controlled by procedures which require visual inspection of all trash. This process prevents waste that does not meet the NTS WAC from being shipped for disposal.

j. Polychlorinated Biphenyls: PCB contaminated waste will not be shipped for disposal at NTS in the contaminated trash waste stream unless the PCB concentration meets the municipal solid waste disposal limits. See Title 40 CFR 761.60 for PCB disposal requirements. (NVO-325, Revision 1, 5.5.1.1(I)).

Compliance Method: SOP 20-C-604 prohibits addition of any materials that may be suspected of being contaminated by PCBs.

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k. Explosives and Pyrophorics: Contaminated trash does not contain potentially explosive or pyrophoric material in a form that may spontaneously combustion if the container is breached. (NVO-325, Revision 1, 5.5.1.1(J)).

Compliance Method This WAC is evaluated during the hazardous waste characterization. This evaluation is performed in accordance with SSOP-0002, Completing the Material Evaluation Form and FEMP Waste Characterization Plan (Draft). Any waste that potentially fails this WAC shall be identified by FME and the material will not be shipped to the NTS for disposal.

2.3 Waste Stream General Package Criteria

a. Design

Waste packaging criteria for contaminated trash shipped to the NTS for disposal shall meet DOT Regulations, 49 CFR 173, Subpart I. Standard operating procedures listed in Table I of the Waste Certification Plan, concerning storage and off-site shipments, shall be used to assure that all shipments meet DOT requirements and NTS site-specific requirements.

b. Nuclear Safety

The quantity of radioactive materials in contaminated trash shipped to the NTS shall be limited so that an infinite array of packages will remain subcritical. This quantity shall be determined on the basis of a specific nuclear safety analysis, considering credible accident situations, and taking into account the actual materials in the waste and shall meet 49 CFR, Parts 173.453(c)(3) and 173.453(d). Contaminated trash packages will not contain uranium enriched ^{235}U greater than one percent by weight and with a mass of ^{235}U greater than 800 grams per package. The total mass of plutonium and ^{233}U will not exceed one percent of the mass of ^{235}U in any package.

c. Nuclear Heating

In compliance with 49 CFR 173.442, Thermal Limitations, a Health Physics evaluation of waste packages of material to be shipped to the NTS from the FEMP show no evidence of a heating effect above NVO-325 limits from radiological decay. Calculations from these waste streams at the FEMP show the power output from either ^{233}U or ^{235}U at maximum potential concentration in any waste package will not exceed 0.1 Watt. These calculations are based on the total alpha energy from each isotope in the waste and its associated daughters during normal radioactive decay.

d. Radiation Levels

In compliance with 49 CFR 173.441, Radiation Levels, the radiation exposure rate at the surface and at 1 meter of each package of shall be measured and recorded in the data package. Contaminated trash packages that exceed 200 millirem/hr on contact shall not be shipped to NTS.

e. External Contamination

In compliance with 49 CFR 173.443, the surface contamination of each container of contaminated trash shall be measured using instruments calibrated by the IRS&T Dosimetry & Instrumentation Section and recorded in the data package. If these instruments indicate that the limits of 49 CFR 173.443 are exceeded, then the package shall be cleaned until it is within the limits or the contents shall be transferred to a clean container.

f. Activity Limits

The activity limits of Titles 49 CFR 173.421, "Limited Quantities of Radioactive Materials," and 49 CFR 173.425, "Transport Requirements for Low-Specific Activity Radioactive Materials" shall be met.

In compliance with Title 49 CFR 173.421 and 173.425, strong, tight containers used for shipping Limited Quantities (LQ) and Low-Specific Activity (LSA) LLW shall be constructed so they will not leak during normal transportation and handling conditions.

g. Multiple Hazards

Not applicable, the FEMP does not ship wastes with multiple hazards to the NTS.

2.4 Waste Stream Specific Package Criteria

a. Closure

All contaminated trash package closures will be sturdy enough to assure the closures will not be breached under normal handling conditions and will not serve as weak points for package failure.

b. Strength

Contaminated trash will be packaged in containers capable of supporting a uniformly distributed load of 4,000 lbs/ft^2, except for waste packaged in DOE NV approved containers (drums and ISO containers).

c. Handling

All contaminated trash containers shall have permanently attached skids, cleats, offsets, rings, handles, or other auxiliary lifting devices to allow handling by means of forklifts, cranes, or similar handling equipment. Lifting rings and other auxiliary lifting devices shall be recessed, offset, or hinged in a manner that does not inhibit stacking the packages. The lifting devices shall be designed to meet a 5:1 safety factor based upon the ultimate strength of the material. All rigging devices that are not permanently attached to the waste package shall have a current load test based on 125 percent of the safe working load.

d. Size

FEMP contaminated trash will be packaged typically in ISO container codes: 109 from Table I. Small quantities may be packaged in 55-gallon drums or metal boxes including container codes: 117, and 119 from Table I.

e. Weight

In addition to the weight limits set for specific packaging designs, a 9,000 lb. limit per box and a 1,200 lb. limit per 55-gallon drum shall be maintained. Contaminated trash exceeding the 9,000 lb. limit shall be shipped in removable-top trailers, or on flatbeds.

f. Loading

Contaminated trash shall be packaged to ensure that the interior volume is as efficiently and compactly loaded as practical.

g. Nonstandard Type A Packaging

The FEMP is currently using a Type 7A Container as a strong, tight container. Used for this purpose, the container does not require a DOE Type A Certification. If a Type A Container is required to ship contaminated trash, only containers with a DOE Type A Certification will be used.

h. Package Protection

Every FEMP contaminated trash package shall be prepared for shipment so as to minimize damage during transit. The preshipment storage environment shall be controlled to avoid adverse influence from weather or other factors on the containment capability of the waste packaging during handling, storage, and transport. FEMP shall take all responsibility for preshipment storage and take all reasonable precautions to preclude the accumulation of moisture on or in packages prior to their arrival to the NTS. Tamper indicating devices are used to maintain control of the container contents once certification actions are completed.

The FEMP shall package all contaminated trash for shipment to NTS in containers meeting DOT requirements (e.g., DOT Type 17H 55-gallon drums or other NTS approved containers). All containers shall be shipped to meet DOT requirements for interstate travel and shall meet the requirements of 49 CFR 173.411, 173.421, and 173.425.

i. Marking and Labeling

Contaminated trash shipped to the NTS shall be marked and labeled as required in Title 49 CFR 172, Subparts D and E [with exceptions noted in Title 173.425 (b) and (c)]. Also, each waste container shall be marked with a unique six character container identification number and eight character shipment number per NVO-325, Revision 1, 5.5.1.3.(I,3) so that the container can be identified from another container within the shipment or from another set of containers. The approved 13 digit waste stream number (ONLO-000000007) will also be placed onto the waste container. Marking and labeling of the contaminated trash packages shall be for radioactive material. The weight of the package will be marked in pounds and kilograms. Signed NV-211 labels will be attached to containers certified for shipment to the NTS.

j. Barcoding

Barcode labels will meet NVO-325, Revision 1 requirements and must be approved by DOE NV prior to use. Two barcode labels will be placed on each contaminated trash package. The barcode labels will be placed near the top and on opposite sides of nonstandard containers. Barcode Labels on drums will be placed on the lid and one side near the top of the drum.

k. On-site Transfer

Only packaged contaminated trash is shipped from the FEMP for disposal at the NTS. The FEMP will not provide any material which will require on-site transfer of unpackaged bulk materials by the NTS.

2.5 Additional Criteria for Mixed Waste

None of the waste streams listed in this application are mixed waste. The FEMP will not be disposing of mixed waste at the NTS.

2.6 Additional Criteria for Transuranic/Transuranic Mixed Waste

None of the waste streams listed in this application contain Transuranic or Transuranic Mixed waste. The FEMP will not be disposing of Transuranic or Transuranic Mixed waste at the NTS.

2.7 Additional Criteria for Bulk Waste

The FEMP is not currently and does not intend to ship mixed waste to the NTS for disposal. By default, the FEMP will not be shipping mixed waste as bulk waste or mixed waste for bulk disposal.

The FEMP does ship bulk waste to the NTS for disposal in the form of scrap material (metal, wood, vehicles) that is contaminated radioactively. This material is well below the 49 CFR 173.425(c) requirement of 0.001 millicurie per square centimeter when averaged over one square meter of the material. The type of container in which the FEMP ships bulk waste is identified in the sections relating to the NTS specific packaging criteria. Approval of this application will constitute approval of continued use of this container.

2.8 Additional Criteria for Case-by-Case Waste

2.8.1 Weight

The FEMP is currently shipping and intends to continue to ship waste in ISO (International Shipping Organization) containers generally referred to as Sea/Land containers. These containers routinely weigh greater than 9,000 pounds and require either a large fork truck or crane for removal from the transport vehicle. The FEMP ships these containers on flat bed trailers which require no top or side wall removal.

2.8.2 Activity Limits

All containers shipped from the FEMP for disposal at the NTS are within the activity limits specified in NVO-325, Revision 1, Section 5.5.1.2.F.

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2.8.3 Radioactively Contaminated Asbestos

Friable asbestos will not be shipped to the NTS before securing DOE/NV approval. None of the waste streams included in this application contain radioactively contaminated friable asbestos.

2.8.4 DOE Comparable Greater-Than-Class-C As Defined in 10 CFR 61.55

This requirement is not applicable to the FEMP waste streams since no greater-than-Class-C waste is shipped from the FEMP for disposal at NTS.

2.8.5 Classified Waste Streams

This requirement is not applicable to the FEMP since no classified waste is shipped for disposal at the NTS.

2.8.6 Radioactive Animal Carcasses

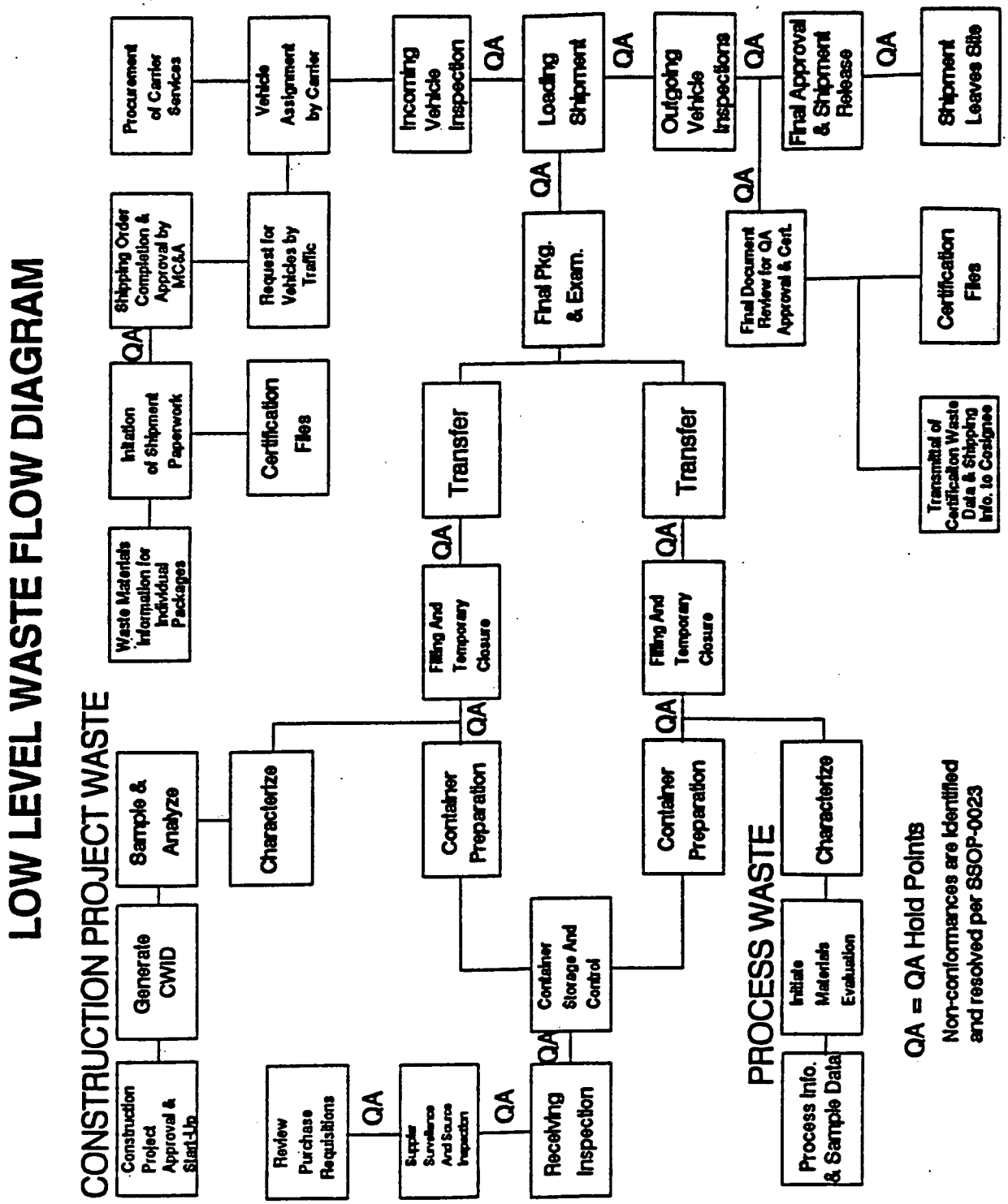
This requirement is not applicable to the FEMP since no radioactive animal carcasses are included in the contaminated trash waste stream.

2.8.7 Other Waste Forms

The FEMP will secure DOE-NV approval for any waste forms that do not meet NTS requirements before shipping to the NTS.

F. Waste Certification Flow Diagram

The waste certification flow diagram is provided here and in the Waste Certification Program Plan.



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G. Shipping Containers and Codes

TABLE I

SHIPPING CONTAINERS

CONTAINER CODE	SHIPPING CONTAINER	TARE WEIGHT	BURIAL FEET
117	White Metal Box - Clip Type (Electropanel) No. 89DW000800, Rev. 1 41"H x 54"W x 78"L Exterior 37"H x 48"W x 72"L Interior	680	106
119	White Metal Box - Bolt Type No. C01-542-2-01 40.5"H x 57.25"W x 81.25"L Exterior 32"H x 52"W x 75"L Interior	850	109
109	ISO Container - Conventional (Sea/land®) 102"H x 95"W x 238"L Exterior 93"H x 94"W x 232"L Interior	Varied	1349
120	Top Load Container No. 40X-5500-M-00041, Rev. 1 89"H x 95"W x 240"L Exterior	Varied	1231
121	Top Load Container No. IS1272 94"H x 96"W x 240"L Exterior 88"H x 92"W x 236"L Interior	Varied	1253

H. Three-Year Waste Shipment Forecast

The FEMP estimated three-year waste shipment forecast for Fiscal Years 1993 through 1995 are provided on the following pages. These forecasts are subject to change due to budget impact and FEMP priorities. FEMP waste forecasts will be updated every six months and submitted to DOE/NV and REECo/DWMD by February 15 and August 15.

THREE - YEAR WASTE SHIPMENT FORECAST

GENERATOR: Fernald Environmental Management Project **PREPARED BY:** J. G. Rowe **DATE:** 10/01/92

FORECAST PERIOD	WASTE STREAM NUMBER	WASTE TYPE	CONTAINER			NUMBER OF SHIPMENTS	TOTAL VOLUME (meters^3)
			TYPE	SIZE	NUMBER		
FY-1993 10/01-12/31	ONLO-000000001	LLW	Sea/Land	8'x 8'x 20'	12	9	436
01/01-03/31	ONLO-000000001	LLW	Sea/Land	8'x 8'x 20'	13	10	472
04/01-06/30	ONLO-000000001	LLW	Sea/Land	8'x 8'x 20'	21	18	762
07/01-09/30	ONLO-000000001	LLW	Sea/Land	8'x 8'x 20'	13	10	472
FY-1994	ONLO-000000001	LLW	Sea/Land	8'x 8'x 20'	41	28	1488
FY-1995	ONLO-000000001	LLW	Sea/Land	8'x 8'x 20'	50	40	1815

REMARKS:

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0458

THREE - YEAR WASTE SHIPMENT FORECAST

GENERATOR: Fernald Environmental Management Project PREPARED BY: J. G. Rowe DATE: 10/01/92

FORECAST PERIOD	WASTE STREAM NUMBER	WASTE TYPE	CONTAINER			NUMBER OF SHIPMENTS	TOTAL VOLUME (meters^3)
			TYPE	SIZE	NUMBER		
FY-1993 10/01-12/31	ONLO-000000002	LLW	Sea/Land	8'x 8'x 20'	15	15	544
			Metal Box	4'x 4'x 7'	384	48	387
01/01-03/31	ONLO-000000002	LLW	Sea/Land	8'x 8'x 20'	25	25	908
			Metal Box	4'x 4'x 7'	702	87	2247
04/01-06/30	ONLO-000000002	LLW	Sea/Land	8'x 8'x 20'	30	30	1089
			Metal Box	4'x 4'x 7'	1126	140	3603
07/01-09/30	ONLO-000000002	LLW	Sea/Land	8'x 8'x 20'	20	20	726
			Metal Box	4'x 4'x 7'	560	70	1792
FY-1994	ONLO-000000002	LLW	Sea/Land	8'x 8'x 20'	63	63	2287
			Metal Box	4'x 4'x 7'	1020	127	3264
FY-1995	ONLO-000000002	LLW	Sea/Land	8'x 8'x 20'	60	60	2178
			Metal Box	4'x 4'x 7'	990	90	3168

REMARKS: _____

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THREE - YEAR WASTE SHIPMENT FORECAST

GENERATOR: Fernald Environmental Management Project **PREPARED BY:** J. G. Rowe **DATE:** 10/01/92

FORECAST PERIOD	WASTE STREAM NUMBER	WASTE TYPE	CONTAINER			NUMBER OF SHIPMENTS	TOTAL VOLUME (meters^3)
			TYPE	SIZE	NUMBER		
FY-1993 10/01-12/31	ONLO-000000005	LLW	Drums	85-Gallon	3	1	1
01/01-03/31	ONLO-000000005	LLW	Drums	85-Gallon	0	0	0
04/01-06/30	ONLO-000000005	LLW	Drums	85-Gallon	0	0	0
07/01-09/30	ONLO-000000005	LLW	Drums	85-Gallon	0	0	0
FY-1994	ONLO-000000005	LLW	Drums	85-Gallon	0	0	0
FY-1995	ONLO-000000005	LLW	Drums	85-Gallon	0	0	0

REMARKS:

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THREE - YEAR WASTE SHIPMENT FORECAST

GENERATOR: Fernald Environmental Management Project **PREPARED BY:** J. G. Rowe **DATE:** 10/01/92

FORECAST PERIOD	WASTE STREAM NUMBER	WASTE TYPE	CONTAINER			NUMBER OF SHIPMENTS	TOTAL VOLUME (meters^3)
			TYPE	SIZE	NUMBER		
FY-1993 10/01-12/31	ONLO-000000006	LLW	Drums	55-Gallon	0	0	0
			Metal Box	4'x 4'x 7'	0	0	0
01/01-03/31	ONLO-000000006	LLW	Drums	55-Gallon	0	0	0
			Metal Box	4'x 4'x 7'	0	0	0
04/01-06/30	ONLO-000000006	LLW	Drums	55-Gallon	320	4	64
			Metal Box	4'x 4'x 7'	18	2	58
07/01-09/30	ONLO-000000006	LLW	Drums	55-Gallon	540	6	108
			Metal Box	4'x 4'x 7'	27	3	86
FY-1994	ONLO-000000006	LLW	Drums	55-Gallon	0	0	0
			Metal Box	4'x 4'x 7'	200	22	640
FY-1995	ONLO-000000006	LLW	Drums	55-Gallon	0	0	0
			Metal Box	4'x 4'x 7'	150	17	480

REMARKS:

THREE - YEAR WASTE SHIPMENT FORECAST

GENERATOR: Fernald Environmental Management Project PREPARED BY: J. G. Rowe DATE: 10/01/92

FORECAST PERIOD	WASTE STREAM NUMBER	WASTE TYPE	CONTAINER			NUMBER OF SHIPMENTS	TOTAL VOLUME (meters^3)
			TYPE	SIZE	NUMBER		
FY-1993 10/01-12/31	ONLO-000000007	LLW	Sea/Land	8'x 8'x 20'	9	4	327
01/01-03/31	ONLO-000000007	LLW	Sea/Land	8'x 8'x 20'	9	5	327
04/01-06/30	ONLO-000000007	LLW	Sea/Land	8'x 8'x 20'	9	4	327
07/01-09/30	ONLO-000000007	LLW	Sea/Land	8'x 8'x 20'	9	5	327
FY-1994	ONLO-000000007	LLW	Sea/Land	8'x 8'x 20'	10	5	363
FY-1995	ONLO-000000007	LLW	Sea/Land	8'x 8'x 20'	7	4	254

REMARKS: _____

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000462

I. Waste Security Information

This section is not applicable to the FEMP since no classified waste is shipped for disposal at the NTS.

IV. WASTE CERTIFICATION PROGRAM

A. Waste Certification Program Plan

The FEMP WCPP is included as Appendix I of this application.

B. Certification Related Procedures

See Appendix I.

V. EXEMPTION REQUEST

A. Exemption

1.0 Standardized Data Reporting Forms are not available for the five FEMP waste streams. All LLW in the five waste streams identified in this application fall within the scope of the Waste Characterization Program. For purposes of characterization, the FEMP definition of a Waste Stream is much more discrete than what is identified by the five waste streams provided in Section III (Waste Stream Identification) of this application. At the FEMP, a waste stream is identified by an MEF in a discrete characterization file.

For purposes of disposal at the NTS, a waste stream is identified as one sub waste stream of the five waste streams listed in Section III of this application. Therefore, there are individual characterization files for each sub waste stream which comprises the five waste streams listed in Section III of this application.

Each individual sub waste stream is evaluated against the waste acceptance criteria of NVO-325, Revision 1 for the five waste streams listed in this application. All sub wastes streams meeting the waste stream specific criteria are grouped into one of the five streams listed in this application. Therefore, each of the five waste streams included in this application is comprised of a large amount of individual FEMP sub waste stream characterization data. The amount of analytical data generated for each waste stream in the application is quite voluminous.

The analysis completed under the former and current contracts with the laboratories did not require that analytical results be reported using standardized Data Reporting forms. The analytical results and equivalent quality assurance methods are provided by alternate means. These results could be transcribed on to standardized data reporting forms; however, the FEMP will reserve this action for specific requests from DOE/NV.

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V. EXEMPTION REQUEST

B. Requested Duration

1.0 The new contract currently being placed with subcontract laboratories requires the laboratories to submit results using standardized data reporting forms. This contract is targeted to be in effect by March 1993. Sample analysis results submitted after this date will be reported on the Standardized Data Reporting Forms. The Standardized Data Reporting Forms exemption is requested for all sample analysis completed prior to the initiation of the new laboratory contract. This exemption request will be reevaluated during the next DOE/NV Application Audit.

C. Plan for Corrective Action

1.0 The Standardized Data Reporting Forms will be required in future laboratory contracts. Analytical results completed prior to the initiation of the new contract could be transcribed on to standardized data reporting forms; however, the amount of data to be transcribed forces the FEMP to reserve this action for specific analytical results requests from DOE/NV. The exemption request will be reevaluated at the time of the next DOE/NV Application Audit.

VI. PROCEDURES AND SUPPORTING DOCUMENTATION

The procedures listed below have been provided in the SOP section of this application.

SSOP-0002 - Completing the Material Evaluation Form

SSOP-0024 - Packaging Low Level Radioactive Waste (LLRW) for Offsite Disposal

SOP 2-C-923 - Trash Baler Operation

SOP 20-C-604 - Control and Utilization of Contaminated Trash Dumpsters

SOP 20-C-625 - Evaluating Low Level Radioactive Waste Bulk Waste Streams for Shipment

SOP 20-C-805 - Sampling Drummed Waste for Hazardous Determinations

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1.0 PURPOSE

The purpose of this document is to provide the procedure for completing the Material Evaluation Form (MEF) to classify material as RCRA or NON-RCRA.

2.0 APPLICABILITY

This procedure shall apply to the classification of raw, process, excess, and waste material.

3.0 RESPONSIBILITIES

3.1 The Material Generator shall be responsible for the following:

3.1.1 Completing Section I, with input from IRS&T, of the Material Evaluation Form.

3.1.2 Maintaining a copy of the completed MEF for each generated stream.

3.1.3 Determining if a prior MEF has been submitted.

3.1.4 Completing a new MEF if changes occur to a previously evaluated material stream.

3.2 Facilities and Materials Evaluation (F&ME) shall be responsible for the following:

3.2.1 Completing Section II of the MEF per this procedure.

3.2.2 Determining that sufficient information exists to classify material as RCRA or NON-RCRA.

3.2.3 Recommending to Environmental Monitoring additional information that is required to complete a RCRA determination.

3.2.4 Maintaining the original of the completed form on file.

3.2.5 Establishing a primary and alternate contact within F&ME responsible for replying to inquiries on the completing and utilization of the Material Evaluation Form.

3.3 Environmental Engineering shall be responsible for the following:

3.3.1 Completing Section III of the MEF per this procedure.

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3.0 RESPONSIBILITIES (cont.)

3.3.2 Maintaining a record of the completed form.

3.4 Material Control and Accountability (MC&A) shall be responsible for the following:

3.4.1 Retaining a record copy of Section IV for each Material Evaluation Number.

3.4.2 Maintaining a listing that relates inventory numbers to the Material Evaluation Number.

3.4.3 Assisting Material Generator in maintenance of Material Evaluation files and tracking the Material Evaluation form.

3.5 Facilities & Warehousing (F&W) shall be responsible for the following:

3.5.1 Providing a Material Evaluation Number to generator upon request.

3.5.2 Maintaining a log of Material Evaluation Numbers.

3.5.3 Retaining a record copy of Section IV for each Material Evaluation Number.

3.6 Industrial, Radiological Safety, and Training (IRS&T) shall be responsible for the following:

3.6.1 Reviewing data provided by the Material Generator to establish the Health & Safety requirements applicable to the sampling, handling, packaging processing or transportation of material.

3.6.2 Reviewing, after completion of Section I and II of the MEF, the additional information and identifying additional personnel safety requirements.

3.7 Toxic and Solid Waste Programs (TSWP) shall be responsible for the following:

3.7.1 Providing the Department of Transportation (DOT) shipping name.

3.7.2 Providing the DOT hazard class.

3.7.3 Specifying required labels.

3.7.4 Providing DOT identification No.

R - MATERIAL REVISED, ADDED, OR DELETED.

3.0 RESPONSIBILITIES (cont.)

3.7.5 Providing EPA waste No.

3.7.6 Providing applicable reactivity group codes.

3.7.7 Filling out Section IV of the MEF.

4.0 DEFINITIONS

4.1 Material Generator - a person at the originating facility who is authorized to prepare raw material, process material, and waste material for transfer.

4.2 Resource Conservation and Recovery Act (RCRA) - The congressional act which established safe and environmentally acceptable management practices for specific wastes. RCRA requires strict "cradle to grave" control and proper management of hazardous waste.

4.3 Hazardous Waste - A discarded material which is listed in the Environmental Protection Agency Hazardous Waste List which exhibits characteristics of ignitability, corrosivity, or reactivity. Both "listed" and "characteristic" wastes are regulated under RCRA.

4.4 Ignitable - Liquid waste with closed-cup flash points < 60°C (140°F), or non-liquid waste capable of causing fire through friction, absorption of moisture, or spontaneous chemical changes.

4.5 Corrosive - Aqueous (water based) wastes with a pH $\leq$ 2 or $\geq$ 12.5.

4.6 Reactive - Waste that exhibits properties such as reacting violently, forming potentially explosive mixtures or generating toxic gases when mixed with water, generating toxic gases (cyanide or sulfied) at pH between 2 and 12.5, or detonating or exploding at standard temperature and pressure or when heated under confinement.

4.7 Authorized Personnel - Personnel who have successfully completed all training requirements to perform work related to this procedure and have been authorized by the Facility Owner to perform the work.

4.8 Controlled Holding Area - The area designated for holding uncharacterized material and staging characterized material (excluding backlog material and material generated from a soil boring activity) for a maximum period of 90 calendar days.

4.0 DEFINITIONS (cont.)

4.9 Fingerprint Analysis - An analytical process providing a brief description of material parameters as listed in Table 5.

4.10 Raw Material - A non-manufactured substance at the FEMP.

4.11 Process Material - A substance which has gone through a physical state of change.

4.12 Excess Material - A substance which has exceeded its recommended shelf life or intended use.

4.13 Waste Material - A substance which has expended its usefulness, non-recyclable and non-recoverable.

5.0 GENERAL

5.1 General Instructions for Completing the Material Evaluation

5.1.1 Fill in all items of each section. If an item cannot be answered, enter "NOT KNOWN".

5.1.1.1 If an item is not applicable to the material stream being evaluated, indicate as "N/A".

5.1.2 If there is not enough space on the form to record the required data, proceed as follows:

5.1.2.1 Prepare an attachment sheet with the MEF number (and Revision Number, if applicable) and date.

5.1.2.2 Enter the Item Number that corresponds to the Item Number on the MEF.

5.1.2.3 Enter the required data on the attachment sheet.

5.1.2.4 Sign the attachment sheet.

5.1.2.5 In the item block on the MEF, enter "See attachment".

5.1.2.6 Fasten the attachment sheet to the MEF.

5.1.3 Refer questions regarding the form to F&ME.

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6.0 PROCEDURE

6.1 Identification of Material

MATERIAL GENERATOR

6.1.1 If no information is known on the material and the container has no identification, contact F&ME and IRS&T for direction.

6.1.2 Obtain a Material Evaluation Number from F&W.

6.1.3 Record the Material Evaluation Number at the top of each sheet of the Material Evaluation, Form FMPC-OPR-3252 (See Figure 1).

6.1.4 Complete Section I, Items 1 thru 16b, of the Material Evaluation Form per Table 1.

6.1.5 When Section I (Items 1 thru 16b) is completed, forward the form to IRS&T.

NOTE: The material being evaluated shall remain in the generator area until direction is received from F&ME for disposition.

6.2 Establish Safety Requirements

IRS&T

6.2.1 Review the data provided in Section I of the MEF.

6.2.2 Determine potential health or safety concerns that may be encountered while sampling, handling, or processing the material.

6.2.3 In Item 16c specify protective gear that must be used while sampling, handling, or processing material (such as protective clothing, respirator, gloves).

6.2.4 Sign Item 16d and return the MEF to the Material Generator.

6.3 Identification of Material

MATERIAL GENERATOR

6.3.1 Complete Section I of the MEF and forward the form to F&ME.

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6.0 PROCEDURE (cont.)

6.4 Evaluation of Material

F&ME

6.4.1 Ensure an evaluation has not been previously completed for this material type per the source and material type code (Item 1 of Section 1). F&ME may use entire lot codes to designate a waste stream.

6.4.2 Complete Section II of the Material Evaluation form per Table 2.

6.4.3 When Section II is complete, proceed as follows:

6.4.3.1 If the material is classified RCRA or additional information is required for the classification (refer to Item 7 of Section IV), forward the form to Environmental Engineering and Material Generator.

6.4.3.2 If the material is classified as NON-RCRA or exempt (refer to Item 7 of Section II), retain the original form on file and transmit copies to distribution.

NOTE: The Material Generator shall respond by moving the drum to the designated storage area.

6.5 Material Analysis/Disposition Determination

F&ME

6.5.1 Refer to Section II and complete the following applicable substep.

6.5.1.1 If the material had been classified, proceed to Item 6.8.

6.5.1.2 If additional information is required to classify the material, complete items 13 and 14 of Section II.

6.5.1.3 Forward MEF to IRS&T to determine any additional safety requirements.

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6.0 PROCEDURE (cont.)

6.6 Establish Safety Requirements

IRS&T

6.6.1 Review additional information for safety concerns and identify any additional safety requirements.

6.6.2 Sign and forward the MEF to F&ME.

6.7 Additional Requirements

F&ME

6.7.1 Forward a copy of Section II to the Material Generator as authorization to prepare uncharacterized material for transfer to the Controlled Holding Area and a copy to Environmental Monitoring to identify and authorize sampling requirements.

NOTE: The original form shall be retained until the required information is received.

6.7.2 When additional information is received, proceed as follows:

6.7.2.1 Fill in the completion date (Item 15 of Section II).

6.7.2.2 Ensure that Section II is complete.

6.7.2.3 Initial and date each revision of Section II.

6.7.2.4 Briefly explain any corrections made (Item 2 of Section II) to the information contained in Section II.

6.7.2.5 Forward the Material Evaluation and analysis results to Environmental Engineering.

6.8 Classified Material

ENVIRONMENTAL ENGINEERING

NOTE: Refer to Item 7 of Section II for material classification.

6.8.1 If the material is classified as NON-RCRA, proceed as follows:

6.0 PROCEDURE (cont.)

6.8.1.1 For material in storage, transmit the original Material Evaluation form to F&ME, a copy to the Facility Owner of the Controlled Holding Area, and a copy to the material generator.

6.8.1.2 For material being held at the generator area, forward the original Material Evaluation form to F&ME and a copy to the material generator.

6.8.2 If the material is classified as RCRA, proceed as follows:

6.8.2.1 Complete Section III per Table 3.

6.8.2.2 Forward the Material Evaluation Form to Toxic & Solid Waste Programs.

6.9 Material Identification

TSWP

NOTE: DELETED

6.9.1 Complete Section IV per Table 4.

6.9.2 Review section IV and confirm container information is correct.

6.9.3 Forward the MEF to FM&E.

6.10 Revising the Material Evaluation

MATERIAL GENERATOR, F&ME, OR ENVIRONMENTAL ENGINEERING

6.10.1 Determine a revision to the MEF is required.

6.10.2 Notify the appropriate departments of the numbered MEF requiring change and the revision required.

MATERIAL GENERATOR

6.10.3 Obtain file copy of the specified MEF and a new MEF.

6.10.4 Obtain a revision number from Waste Management.

6.0 PROCEDURE (cont.)

6.10.5 Record the original MEF number and the revision number on the new MEF.

6.10.6 Complete Section I of the new MEF incorporating the necessary revisions and submit to F&ME.

6.10.6.1 If the revision requested is not applicable to Section I, complete Section I per the original MEF and forward to F&ME.

F&ME/ENV. ENG./TSWP/IRS&T

6.10.7 If the revision is applicable to Section II, III, or IV, complete the new MEF incorporating the revision.

7.0 APPLICABLE DOCUMENTS

7.1 Drivers

None

7.2 Reference Documents

None

8.0 APPLICABLE FORMS

8.1 FS-F-3252, "Material Evaluation Form"

TABLE 1
INSTRUCTIONS FOR COMPLETING MATERIAL EVALUATION FORM - (SECTION I)

ITEM NO	DESCRIPTION
1	Record the FEMP Source Code (SRC), Material Type Code (MTC), and the 15 digit Lot Code.
2	Designate the Plant/Building/Site location where material was generated.
3	Specify the process/building area which generates the material.
4	Provide the name of equipment generating the material.
5	Record the approximate date of generation (year, month, day) as specifically as possible.
6	Indicate the physical state of the material.
7	Estimate net weight of the material.
8	Indicate whether the material contains more than one substance (such as contaminated gloves, coveralls, booties, or other contaminated items).
9	Indicate whether the material is a waste.
10	Provide common names of the material.
11	Provide chemical names associated with the material.
12	Indicate sources of the common and chemical names.
13	Specify alternate material name (For example, identical material generated by different equipment).
14	Record alternate codes (source or material codes) used for material which is chemically identical to this material.
15	Indicate any substance, such as pesticides, solvents, or heavy metals, which is contained or suspected to be contained in the material.
16	a) Specify the reason for suspecting the substance indicated and quantity of suspect material[1]. b) List sources of information utilized for identifying the suspect substances indicated.

[1] Attach a copy of the MSDS as applicable.

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TABLE 1 (cont.)
INSTRUCTIONS FOR COMPLETING MATERIAL EVALUATION FORM - (SECTION I)

ITEM NO	DESCRIPTION
16 (cont.)	c) Identify safety concerns & special safety requirements. d) Sign and date the form
17	If a fingerprint visual inspection (Table 5) of the material was completed, attach to the Material Evaluation Form.
18	Record and describe the number of solid/liquid/gas layers within the material.
19	Record the pH of liquid material or liquid phase of material[2].
20	Record the flashpoint of liquid material or liquid phase[2].
21	If the material is a wet solid (sludge) and a paint filter test has been completed, specify test results (solid or liquid)[2].
22	Indicate if material is considered reactive. Include an explanation.
23	If the material is not a liquid, indicate if material is ignitable. Include an explanation.[2]
	DELETED
24	Provide additional information that may be used to evaluate the material.
25	List additional sources (such as phone call, specification, procedures, or other input) of information used to complete this form.
26	a) Provide the name and extension number of the individual responsible for responding to questions regarding Section I. b) Record the date Section I is completed.

[2] Attach results if available. Identify source, such as a sample plan.

R - MATERIAL REVISED, ADDED, OR DELETED.

TABLE 2
INSTRUCTIONS FOR COMPLETING MATERIAL EVALUATION FORM - (SECTION II)

ITEM NO	DESCRIPTION
1	Indicate if material is waste (discarded, used, by- product).
2	Indicate if waste is excluded under 261.4(a) (CWA pointsource discharge, irrigation return flow, AEC source, special nuclear or by-product material, insitu mining waste).
3	Indicate if waste excluded from regulation under 264.1(b).
4	If the waste is listed in 261 Subpart D, or material contains a waste listed in subpart D, indicate the list and the waste number.
5	Indicate if waste exhibits characteristics specified in 261 Subpart C. List the characteristic exhibited.
6	Indicate if the material is a possible RQ hazardous substance. If yes, list the RQ amount in Lbs.
7	Indicate material classification. If material can not be classified indicate that the material needs further action and provide recommendations regarding information required.
8	Indicate if classification was based on data from Section I or an evaluation of an identical waste stream. If based on previous evaluation, list the Material Evaluation # and lot code of stream.
9	Indicate whether or not the material is subject to land ban restrictions and the effective date if applicable.
10	Distribute to the Departments listed in Section IV (Item 9).
11	List additional sources of information (phone calls, manufacturing specification, reference) used in this evaluation.
12	Provide the name and phone extension of the individual responsible for responding to questions regarding Section II and the date that Section II was completed.books).
13	Indicate if sampling is required (Refer to Section II Item 7).
14	Indicate if amount of time necessary for sampling and analysis require transfer of material to a controlled holding area. If yes, record date that the material was authorized for transfer.
15	Indicate date that additional information was included.
16.a	Identify any additional safety concerns and requirements.
16.b	Sign and date the form.

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TABLE 3
INSTRUCTIONS FOR COMPLETING MATERIAL EVALUATION FORM - (SECTION III)

ITEM NO	DESCRIPTION
	DELETED
	DELETED
	DELETED
1	Based on Section I and II (or recent information) indicate container recommended (such as carbon steel, stainless steel, polyethylene).
2	Based on Section I and II (or recent information) indicate the reactivity group codes associated with the material.
3	List additional sources of information used to complete the form (phone calls, material specifications, reference material).
4	Provide the name and extension of the individual responsible for responding to questions regarding Section III and the date that Section III was completed.

R - MATERIAL REVISED, ADDED, OR DELETED.

TABLE 4
INSTRUCTIONS FOR COMPLETING MATERIAL EVALUATION FORM - (SECTION IV)

ITEM NO	DESCRIPTION
1	Provide the D.O.T. Shipping Name for material.
2	Provide the D.O.T. Hazard Class for material.
3	List required D.O.T. drum labels.
4	Provide the D.O.T. Identification No. (UN or NA) and prefix.
5	Provide the EPA Waste No. noted for material.
6	List applicable reactivity group codes (Refer to Section III, Item 2).
7	Record the FEMP lot code (Refer to Section I, Item 1).
8	Indicate whether a revision is required to the MEF.
9	Distribution.
10	Provide the name and extension of the individual responsible for responding to questions regarding Section IV and the date that Section IV was completed.

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TABLE 5
FINGERPRINT ANALYSIS PARAMETERS

PARAMETER	APPLICABILITY	TEST METHOD/REQUIREMENTS
Visual inspection	Required for all waste streams	To include, at a minimum, a discussion of the following: general description material color(s) particle size apparent stains multiple phases probe drum with pipe to ensure consistency
Liquid content	Required for waste suspected of containing free liquids	SW-846-9095: Paint Filter Liquids Test (PFLT)
pH	Required for waste streams with a free liquid phase (as determined by the PFLT)	SW-846-9040: pH Electrometric Method FMPC Method No. 3033[1]
Flash point	Required for waste with a free liquid phase (as determined by the PFLT)	Flash point meter
Density/specific gravity	Required for homogeneous wastes only; density for solid wastes, specific gravity for liquid wastes	Gravimetric for Density/ASTM D 1217 for Specific Gravity FMPC Method Nos. 1004 and 1005[1]

[1] These references are included for information, not for operational use.

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Fernald Site
MATERIAL EVALUATION FORM

MEF NO.: _____

MEF REV. NO.: _____

SECTION I - MATERIAL GENERATOR

1. FEMP SRC. | MTC
2. PLANT AND/OR BUILDING NO.
3. PROCESS AREA
4. EQUIPMENT NAME(S).
5. MEF NO DATE | MEF REV DATE
6. MATERIAL PHYSICAL STATE: ☐ Liquid ☐ Gas ☐ Wet Solid (Sludge) ☐ Dry Solid
7. APPROXIMATE NET WEIGHT OF FULL CONTAINER? ☐ <100 lbs. ☐ 100 to 1000 lbs ☐ >1000 lbs
8. DOES MATERIAL CONSIST OF MORE THAN ONE SUBSTANCE? ☐ YES ☐ NO
9. IS MATERIAL A WASTE? ☐ YES ☐ NO
10. COMMON NAMES: _____
11. CHEMICAL NAMES: _____
12. COMMON/CHEMICAL NAME SOURCE: ☐ Process Information ☐ MSDS ☐ Container Label ☐ FEMP Lot Code — OTHER _____
13. SIMILAR MATERIAL NAME
14. SIMILAR MATERIAL LOT CODE(S)
15. SUBSTANCES SUSPECTED:

		☐ Endrine	☐ Methylene Chloride	☐ TBP/Kerosene
☐ Aerosols	☐ Cresol	☐ Heptachlor	☐ Motor/Engine Oil	☐ Tetrachloroethylene
☐ Arsenic	☐ m-Cresol	☐ Hexachlorobenzene	☐ Nitrobenzene	☐ 1,1,1-Trichloroethane
☐ Barium	☐ o-Cresol	☐ Hexachloroethane	☐ Other Organics	☐ 2,4,5-TP (Silvex)
☐ Benzene	☐ p-Cresol	☐ Hexachloro-1,3-butadiene	☐ Paint Stripper	☐ 2,4,5-Trichlorophenol
☐ Cadmium	☐ 2,4-D	☐ Hydraulic Oil	☐ Paint Thinner/Mineral Spirits	☐ 2,4,6-Trichlorophenol
☐ Carbon Tetrachloride	☐ Degreaser	☐ Ink	☐ Pentachlorophenol	☐ Toxaphene
☐ Chlordane	☐ 1,4-Dichlorobenzene	☐ Lead	☐ Perchloroethylene	☐ Trichloroethylene
☐ Chlorobenzene	☐ 1,2-Dichloroethane	☐ Lindane	☐ Pyridine	☐ Unknown
☐ Chloroform	☐ 1,1-Dichloroethylene	☐ Mercury	☐ Selenium	☐ Vinyl Chloride
☐ Chromium	☐ 2,4-Dinitrotoluene	☐ Methoxychlor	☐ Silver	☐ Xylene
☐ Coolants	☐ Enamel	☐ Methyl ethyl ketone	☐ Synthetic oil	☐ Oil

16. a. REASON FOR SUSPECTING ALL SUBSTANCES AND QUANTITY
16. b. SOURCE FOR REASON AND QUANTITY (Attach MSDS if Available)
☐ MSDS ☐ Prior Evaluation of Similar Material
☐ Personnel Interviews ☐ AEDO Log ☐ Container Label
☐ Historical Records ☐ Physical Evidence ☐ Sump Report
☐ FEMP Lot Code ☐ Process Information ☐ Spill Database
What Material: _____
SRC: _____ MTC: _____
16. c. HEALTH AND SAFETY CONCERNS/REQUIREMENTS
16. d. SIGNATURE AND DATE
17. HAS THE "FINGERPRINT" VISUAL INSPECTION BEEN COMPLETED? ☐ YES ☐ NO
18. NUMBER OF PHASES
19. pH (IF KNOWN) (Attach Lab Results)
20. FLASH POINT (IF KNOWN) (Attach Lab Results)
21. HAS A PAINT FILTER TEST BEEN COMPLETED? ☐ YES ☐ NO
22. IS IT REACTIVE? ☐ YES ☐ NO — EXPLAIN
23. IS IT IGNITABLE? ☐ YES ☐ NO — EXPLAIN
24. OTHER INFORMATION (Example Is the Material a Product or Waste?)
25. ADDITIONAL SOURCES OF INFORMATION
26. PRIMARY CONTACT INDIVIDUAL | EXTENSION | DATE COMPLETED

NOTE: Form shall be completed using ink or a typewriter
NOTE: Only WEMCO employees shall sign this form

MATERIAL EVALUATION FORM
FORM NO. FS-F-3252
Figure 1 (Sheet 1 of 2)

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Fernald Site
MATERIAL EVALUATION FORM
(Continued)

MEF NO _____

MEF REV NO _____

SECTION II - FACILITY AND MATERIALS EVALUATION

1. IS MATERIAL A WASTE? ☐ YES ☐ NO
2. IS IT EXCLUDED UNDER 261.4(a)? ☐ YES ☐ NO
3. IS IT EXCLUDED UNDER 261.4(b)? ☐ YES ☐ NO
4. DOES IT CONTAIN A LISTED WASTE AS PER 261 SUBPART D? ☐ s ___ ☐ t ___ ☐ u ___ ☐ v ___ ☐ not listed
5. DOES IT EXHIBIT ANY CHARACTERISTICS AS PER 261 SUBPART C? ☐ YES ☐ NO EXPLAIN
6. IS THIS A HAZARDOUS SUBSTANCE? ☐ YES ☐ NO POUNDS
7. CLASSIFICATION AS A WASTE
   ☐ RCRA Hazardous Waste
   ☐ Source Exempt
   ☐ Non-RCRA Waste
   ☐ Radioactive
   ☐ Needs Further Action (no sampling)
   EXPLAIN: _____
8. PRIMARY BASIS FOR CLASSIFICATION
   ☐ Generator Information
   ☐ Prior material evaluation
   WHAT MATERIAL? _____
   LOT NUMBER _____
9. IS IT SUBJECT TO LAND BAN RESTRICTIONS?
   ☐ NO ☐ YES Effective Date _____
10. DISTRIBUTE PER SECTION IV ITEM 9
11. OTHER INFORMATION SOURCES USED
12. PRIMARY CONTACT INDIVIDUAL — EXTENSION — DATE COMPLETED
13. IS SAMPLING REQUIRED? ☐ YES ☐ NO
14. IS TRANSFER TO CONTROLLED HOLDING AREA REQUIRED? ☐ YES ☐ NO — DATE
15. INFORMATION ACTION COMPLETION DATE
16. HEALTH AND SAFETY CONCERNS REQUIREMENTS
16. B. SIGNATURE AND DATE

SECTION III - ENVIRONMENTAL ENGINEERING

1. RECOMMENDED STORAGE CONTAINER MATERIAL ☐ Carbon Steel ☐ Stainless Steel ☐ Polyethylene ☐ Other _____
2. APPLICABLE REACTIVITY GROUP CODES ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F ☐ G ☐ -
3. OTHER INFORMATION SOURCES USED
4. PRIMARY CONTACT INDIVIDUAL — EXTENSION — DATE COMPLETED

SECTION IV - TOXIC AND SOLID WASTE PROGRAMS

1. PROPER D.O.T. SHIPPING NAME
2. D.O.T. HAZARD CLASS
3. REQUIRED LABELS
4. D.O.T. IDENTIFICATION NO ☐ UN ☐ NA — SUFFIX
5. EPA WASTE NO
6. APPLICABLE REACTIVITY GROUP CODES (COPY FROM SECTION III, ITEM 2)
7. FEMP SRC AND MTC (COPY FROM SECTION I, ITEM 1) — SRC — MTC
8. IS A REVISION TO MEF REQUIRED? ☐ YES ☐ NO
9. DISTRIBUTION

	DATE
MATERIAL GENERATOR	
ENVIRONMENTAL ENGINEERING	
ENVIRONMENTAL MONITORING	
MCBA	
IPS&T	
FACILITIES AND WAREHOUSING	
FAME	
CONTROLLED HOLDING AREA	

10. PRIMARY CONTACT INDIVIDUAL — EXTENSION — DATE COMPLETED

FS-F-3252 (REV 10-10-91), Sheet 2

MATERIAL EVALUATION FORM
FORM NO. FS-F-3252
Figure 1 (Sheet 2 of 2)

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RECORD OF ISSUE/REVISIONS

DATE	REV. NO	DESCRIPTION AND AUTHORITY
01-11-91	0	Instructions for completing the Material Evaluation form required per Request No. P90-292, initiated by K. Nuhfer.
04-16-91	1	Revised to update form and include steps to allow for an MEF revision per Request No. P91-093, initiated by J. Ogg.
06-20-91	2	Revised to update technical content and form per Request No. P91-235, initiated by R. Henderson.
10-22-91	3	Revised to insert correct form per Request P91-390, initiated by L. Hamblin.

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1.0 PURPOSE

To describe the process for the identification, response, evaluation and resolution of deviations and corrective actions required at the Fernald Environmental Management Project (FEMP).

2.0 SCOPE

This procedure identifies the assigned responsibilities and required actions for identifying, documenting, responding and evaluating deviations and corrective actions observed during audits, reviews, surveillances, inspections or tests performed at the FEMP by internal and external organizations. It also covers the evaluation of supplier-proposed disposition and corrective action plans.

3.0 DEFINITIONS

Condition Adverse to Quality (CAQ) - An all-inclusive term used in reference to any of the following: failures, malfunctions, deficiencies, defective items, violations of regulatory requirements or nonconformances.

Corrective Action - Measures taken to rectify significant conditions adverse to quality or violations of regulatory requirements and, where necessary, to preclude repetition.

Corrective Action Report (CAR) (See Figure 1) - A form used to document the corrective action process for significant conditions adverse to quality or violation of regulatory requirements discovered during audits, reviews, surveillances, inspections or tests performed by internal or external organizations. This form can be either the CAR form shown in Figure 1 or a computer generated form which contains the same information. This report is used to identify and resolve recurring problems, programmatic deviations and significant conditions adverse to quality.

Deviation - As used in this procedure, "deviation" means a departure from a specified requirement discovered during an audit, review, surveillance, inspection or test. A deviation can be a condition in which characteristics of an item or service do not conform to prescribed limits, a required document is not available or is inadequate, a regulatory requirement was violated, or a procedure does not yield the desired results. These conditions can occur at any point in the fabrication, handling, shipment, storage, installation, or operation of an item; the performance of a service; or the execution of quality assurance activities.

3.0 DEFINITIONS (cont.)

Deviation Report (DR) (See Figure 2) - A form used to document the disposition, verification and closure of deviations. This form can be either the DR form shown in Figure 2 or a computer generated form which contains the same information. This report is used to identify and resolve a specific deviation.

Disposition - The action necessary to correct or resolve a specific deviation.

Priority Level - As used in this procedure, "Priority Level" is the rank or the seriousness of an observed condition. Priority levels are used to ensure that corrective action of the more serious conditions are implemented first.

Requisitioner - The individual who authorizes and/or initiates a purchase request.

Root Cause - The most basic reason for an effect, which, if corrected, will prevent recurrence of that effect. The correction must be achievable by WEMCO and it cannot interfere with WEMCO's goals and objectives. Most negative effects of interest will have a root cause that falls into one of three categories: Personnel Error, Procedural Error, or Equipment Failure.

Senior Management - Management reporting directly to the President of WEMCO.

Significant Condition Adverse to Quality (SCAQ) - A condition which, if uncorrected, could have an impact on safety of employees and general public or operability, or violate a regulatory requirement.

4.0 RESPONSIBILITIES

4.1 WEMCO Personnel/Preparer

- Notify Environmental Compliance and Quality Assurance (EC&QA) of deviations by completing sections 1 and 2, as appropriate, of the Deviation Report (DR) form Figure 2.

4.2 Environmental Compliance and Quality Assurance (EC&QA)

- Evaluates deviations to see if a Deviation Report will be issued.
- Identifies, documents, and requests disposition of deviations on a DR form.

4.0 RESPONSIBILITIES (cont.)

- Evaluates proposed disposition for DRs.
- Verifies that disposition actions are complete and acceptable, and closes DRs.
- Evaluates Deviation Reports for issue of Corrective Action Reports (CARs), Figure 1.
- Accepts the proposed corrective action for CARs.
- Performs verification of corrective action and closes out CARs.
- Performs trend analysis of Deviation Reports.

4.3 Self-Assessment

- Performs trend analysis of Corrective Action Reports (CARs) and issues a CAR for identified adverse trends.

4.4 Commitment Control

- Provides sequential numbers for Corrective Action Reports.
- Maintains the central data base for tracking the status of corrective actions.
- Issues status reports on corrective actions.
- Retains official records and files related to the documentation of Corrective Action Reports.

4.5 Senior Manager/Activity Manager/Cognizant Engineer

- Evaluates and determines the root cause for each deviation reported on a Corrective Action Report.
- Responds to DRs and CARs by completing section 3 of the DR and/or CAR form.
- Proposes and accomplishes disposition for Deviation Reports and corrective action for Corrective Action Reports.
- Notifies EC&QA when disposition action and/or corrective action is complete.

4.0 RESPONSIBILITIES (cont.)

- Approves Supplier Disposition Requests.

4.6 Procurement

- Coordinates Supplier Disposition Requests for disposition/corrective action approval.

4.7 Evaluator

- Initiates a DR or CAR form and signs off in section 2 of the appropriate form.
- Evaluates the responses to the DR or CAR and signs off in section 4 of the appropriate form.
- Verifies the completion of disposition action or corrective action and signs off in section 6 of the appropriate form.

4.8 Administrator of Deviations (EC&QA)

- Provides sequential numbers for Deviation Reports.
- Maintains the central data base for tracking the status of Deviation Reports.
- Issues status reports on deviations.
- Retains official records and files related to the documentation of deviations issued.
- Reviews completed Deviation Reports and stamps them as validated QA records.
- Performs trend analysis of Deviation Reports.

5.0 GENERAL

5.1 Deviations may or may not be a significant condition adverse to quality. The effect on the quality of the item or service involved depends on the severity of the condition. Those deviations determined to be significant conditions adverse to quality require corrective action in accordance with this procedure. Corrective Action Reports shall be evaluated for root cause determinations.

5.0 GENERAL (cont.)

5.2 Repetitive non-significant conditions adverse to quality noted over a short period of time require corrective action in accordance with the requirements of this procedure.

5.3 A trend analysis of DRs and CARs is performed to identify chronic problem areas. Results of this trend analysis are reported in a letter and a CAR is issued for any adverse trends identified in the letter. The CAR is issued to the responsible manager who determines the root cause of the adverse trend and develops corrective actions.

5.4 All personnel issuing Deviation Reports or Corrective Action Reports shall have training or orientation on the WEMCO deviation and corrective action system prior to issuing a DR or CAR.

6.0 INDUSTRIAL HEALTH AND SAFETY REQUIREMENTS

None

7.0 PROCEDURE

7.1 Deviation Reports

WEMCO PERSONNEL/PREPARER

7.1.1 Evaluate deviations in accordance with the Priority Levels identified in Table 1.

7.1.2 Identify and document deviations in sections 1 and 2 of the Deviation Report (DR) form (see Figure 2).

NOTE: For Priority Level 3, issue a letter or other report describing the condition observed to responsible individuals.

7.1.3 Sign and date the "Prepared By" block in section 2.

7.1.4 Forward the DR to Environmental Compliance and Quality Assurance (EC&QA), Administrator of Deviations.

ADMINISTRATOR OF DEVIATIONS

7.1.5 Forward DR to the appropriate EC&QA section for evaluation.

7.0 PROCEDURE (cont.)

EC&QA EVALUATOR

7.1.6 Evaluate the deviation for significant and actual violation of requirement/specifications.

7.1.6.1 If a deviation exists, assure a clear description of the deviation is provided.

7.1.6.2 If an actual DR is not required, notify the preparer that a DR is not required.

7.1.7 Verbally notify the senior manager/activity manager/cognizant engineer of the deviation in a timely manner.

7.1.8 Evaluate deviations for Significant Conditions Adverse to Quality (SCAQ) and check the appropriate block in section 2 of the DR form.

NOTE: See Figure 4 for criteria and examples for determining the need for a Corrective Action Report.

7.1.8.1 For those deviations determined to be SCAQ, complete a Corrective Action Report in accordance with section 7.2

7.1.9 Sign and date the "Evaluator" block in section 2.

7.1.10 Ensure a Quality Nonconformance Tag, Form FS-F-2708 (see Figure 3) is attached to a nonconforming item (hardware or material), where practical.

NOTE: Quality Nonconformance Tags shall be removed only after completion of the disposition action identified on the DR.

7.1.10.1 If not practical to affix Nonconformance Tag, ensure other precautions are taken to preclude inadvertent use or further processing.

7.1.11 Obtain and enter a DR number from the computer DR data base or from the Administrator of Deviations on the DR form.

NOTE: The unique number is composed of the last two digits of the current year, a three digit number, and the letters DR after the number (Example 92-001 DR).

7.0 PROCEDURE (cont.)

EC&QA EVALUATOR

7.1.12 Issue the DR to the senior manager/activity manager/cognizant engineer of the organization responsible for the item or activity in which the deviation was discovered and forward a copy to the EC&QA Administrator of Deviations and the preparer.

ADMINISTRATOR OF DEVIATIONS

7.1.13 Enter the following data into the data base: DR number, date of discovery, responsible organization representative, provide disposition by, description of the deviation, evaluator's name, date evaluator signed (date issued), description of required action to be completed (such as response required) and department issuing DR.

SENIOR MANAGER/ACTIVITY MANAGERS/COGNIZANT ENGINEER

7.1.14 Separate hardware items in designated hold areas or implement other precautions to stop inadvertent use, as appropriate.

7.1.15 Evaluate deviations for reportability under the Event Notification and Reporting system (ED-0001) and Occurrence Reports system (PR-FMPC-4006).

7.1.16 When an Occurrence Report (OR) is required, enter this as the proposed disposition and the DR will be closed out based upon the issue of an OR.

7.1.17 Enter the proposed disposition by checking the appropriate block in section 3 of the DR. Disposition involves the following:

7.1.17.1 Accept-as-is - item is acceptable for use when supported with technical justification.

7.1.17.2 Rework - item needs further processing to conform to specified requirements.

7.1.17.3 Repair - item needs processing to become acceptable for use but does not conform to specified requirements.

7.1.17.4 Reject - a decision that a nonconforming item cannot be accepted-as-is, reworked, or repaired. Rejected items shall be scrapped, identified, and altered so as to be inapplicable for their original use, or returned to the supplier, as appropriate.

7.0 PROCEDURE (cont.)

SENIOR MANAGER/ACTIVITY MANAGERS/COGNIZANT ENGINEER

7.1.17.5 Other - describe in space provided on DR form the specific actions taken or to be taken such as revise procedure, develop procedure, provide training, etc.

NOTE: For non-hardware deviations check the "Other" block and enter the disposition in the space provided.

7.1.18 Enter the scheduled completion date in section 3.

7.1.19 Provide a technical justification for items which are labeled "Accept-As-Is" or "Repair".

NOTE: This justification must identify specific engineering calculations or higher tier documents which provide evidence that the item will function reliably and safely even though it does not conform to the original requirement. An unsupported belief, opinion, or recommendation is not an acceptable technical justification.

NOTE: When "accept-as-is" or "repair" are used for the disposition, configuration control records shall be updated to reflect changes.

7.1.20 Sign and date the Responsible Organization Representative block, and return the original DR with the disposition to the Evaluator within the requested time frame.

EC&QA EVALUATOR

7.1.21 Evaluate proposed disposition action(s), with the assistance of the preparer, as necessary, and notify the senior manager/activity manager/cognizant engineer of the responsible organization of the results.

7.1.22 Sign the "Evaluation of Disposition" section, after acceptable response is obtained, and forward original to responsible organization with a copy to the Administrator of Deviations.

ADMINISTRATOR OF DEVIATIONS

7.1.23 Enter the following data into the data base: Date response provided, date for completion of disposition, description of action to be completed and date response was approved by evaluator.

7.0 PROCEDURE (cont.)

SENIOR MANAGER/ACTIVITY MANAGERS/COGNIZANT ENGINEER

7.1.24 Complete disposition action(s) as scheduled.

7.1.25 Sign and date section 5 when disposition action(s) is complete and forward the DR to the evaluator.

EC&QA EVALUATOR

7.1.26 Monitor accomplishment of disposition action(s) and verify completeness and acceptability.

7.1.27 Close DR by signing the "Verification of Disposition Action Completion" section of the DR form. Notify the activity/cognizant engineer of the organization responsible for disposition action, of closure.

7.1.28 Ensure Nonconformance tags are removed and release any hardware items from hold status.

7.1.29 Forward original completed DR to the Administrator of Deviations.

ADMINISTRATOR OF DEVIATIONS

7.1.30 Enter the date of completion of Disposition into the tracking data base.

7.1.31 Review the completed DR form and validate the form by stamping it as a record copy.

NOTE: If the form is not correct, contact evaluator and have it corrected.

7.1.32 Maintain the official record copy of all deviation reports.

7.2 Corrective Action Reports

EVALUATOR

7.2.1 Evaluate deviations for Significant Conditions Adverse to Quality (SCAQ).

NOTE: See Figure 4 for criteria and examples for determining the need for a Corrective Action Report.

7.0 PROCEDURE (cont.)

EVALUATOR

7.2.2 Evaluate the need to issue the CAR to Senior Management in accordance with Figure 4.

NOTE: A Deviation Report is not required in order to issue a CAR.

7.2.3 When a CAR is required, obtain a CAR number from Commitment Control.

NOTE: The unique number is composed of the last two digits of the current year, a three digit number and the letters CAR (Example 92-001 CAR).

COMMITMENT CONTROL

7.2.4 Provide a CAR number from the computer data base for corrective action reports and enter the appropriate data into the commitment tracking system.

7.2.5 Prepare commitment planning form and notify evaluator.

EVALUATOR

7.2.6 Provide timely notification of deviations to affected senior manager/activity manager/cognizant engineer.

7.2.7 Identify and document the request for corrective actions in sections 1 and 2 of the CAR form Figure 1.

7.2.8 Obtain the concurrence of the Evaluator's manager.

7.2.9 Issue the Corrective Action Report along with commitment planning form to the senior manager/activity manager/cognizant of the organization responsible for the deviation, with a copy to Commitment Control.

COMMITMENT CONTROL

7.2.10 Enter the appropriate data into the commitment tracking system.

SENIOR MANAGER/ACTIVITY MANAGER/COGNIZANT ENGINEER

7.2.11 Evaluate deviations for reportability under the Event Notification and Reporting system (ED-0001) and Occurrence Reports system (PR-FMPC-4006).

7.0 PROCEDURE (cont.)

SENIOR MANAGER/ACTIVITY MANAGER/COGNIZANT ENGINEER

7.2.12 When an Occurrence Report (OR) is required, enter this as the corrective action and the CAR will be closed out based upon the issue of an OR.

7.2.13 Determine the underlying (root) cause of the problem and document it in Section 3A of the CAR form.

7.2.14 If necessary, perform an investigation to determine if any similar work is affected by the problem and, if so, identify the action taken/proposed and the schedule to correct it in Section 3B of the CAR form.

7.2.15 Describe in section 3C of the CAR form the action taken/proposed to correct the root cause and to prevent recurrence of the problem. Enter the scheduled completion date for corrective action in Section 3D.

7.2.16 Provide response to the Evaluator within the time frame requested.

EVALUATOR

7.2.17 Evaluate proposed corrective action(s), if acceptable, sign block 4 of CAR form and obtain evaluating manager's approval.

7.2.18 Forward the original CAR to the senior manager/activity manager/ cognizant engineer of the responsible organization indicating the results of the evaluation and forward a copy to Commitment Control.

COMMITMENT CONTROL

7.2.19 Enter the appropriate data into the commitment tracking system.

SENIOR MANAGER/ACTIVITY MANAGER/COGNIZANT ENGINEER

7.2.20 Complete corrective action(s) as scheduled.

7.2.21 Sign and date section 5 when corrective action(s) is complete and forward the CAR to the evaluator.

EVALUATOR

7.2.22 Monitor accomplishment of corrective action(s) and verify completeness and acceptability.

7.0 PROCEDURE (cont.)

EVALUATOR

7.2.23 Verify completion of corrective action and close CAR by signing section 6 of the CAR form.

7.2.24 Notify the senior manager/activity manager/cognizant engineer of the organization responsible for corrective action, of closure.

7.2.25 Forward the original completed CAR to Commitment Control.

COMMITMENT CONTROL

7.2.26 Enter the appropriate data into the commitment tracking system.

7.2.27 Maintain the official record copy of Corrective Action Reports.

7.3 External Findings/Deviations

EC&QA

7.3.1 Receive external findings from external organizations (such as Tiger Teams, Technical Safety Appraisal, etc.).

7.3.2 Process the finding in accordance with 7.2.

7.4 Supplier Request for Disposition/Corrective Action Approval

BUYER

7.4.1 Receive Supplier Disposition Requests (SDR) (see Figure 5), with proposed dispositions.

7.4.2 Forward the SDR with proposed disposition to requisitioning department and send a copy to Environmental Compliance and Quality Assurance for review and concurrence.

REQUISITIONER

7.4.3 Evaluate the supplier's proposed disposition, obtain concurrence from Environmental Compliance and Quality Assurance concerning its acceptability and if appropriate, approve the disposition action in an approval memorandum.

NOTE: If disposition action is unacceptable, the Requisitioner initiates correspondence through the Buyer back to the supplier until resolution is reached.

7.0 PROCEDURE (cont.)

REQUISITIONER

7.4.4 Forward the approval memorandum and supporting documentation to the Buyer.

BUYER

7.4.5 Issue disposition approval memorandum to supplier.

7.4.6 File a copy of disposition approval memorandum, completed SDR and supporting documentation in the purchase order file.

7.5 Trend Analysis

SELF-ASSESSMENT

7.5.1 Maintain a trend analysis program for Corrective Action Reports.

7.5.2 Issue a Corrective Action Report for identified trends in accordance with 7.2.

ADMINISTRATOR OF DEVIATIONS

7.5.3 Maintain a trend analysis program for Deviation Reports.

7.5.4 Issue a Corrective Action Report for identified trends in accordance with 7.2.

7.6 Tracking of Deviations

COMMITMENT CONTROL

7.6.1 Maintain a computer tracking/history system on open and closed Corrective Action Reports.

7.6.2 Provide status reports on the status of Corrective Action Reports.

ADMINISTRATOR OF DEVIATIONS

7.6.3 Maintain a computer tracking/history system on open and closed Deviation Reports.

7.6.4 Provide reports on the status of Deviation Reports.

8.0 APPLICABLE DOCUMENTS

8.1 Drivers

- RM-0012, "Quality Assurance Program Description"

8.2 Reference Documents

- PR-FMPC-4006, Occurrence Reports (OR)
- ED-0001, "Event Notification and Reporting"

9.0 APPLICABLE FORMS

- Form FS-F-2909 Deviation Report (DR)
- Form FS-F-2708, Quality Nonconformance Tag
- Form FS-F-2909-1, Corrective Action Report (CAR)
- Form FS-F-2642, Supplier Disposition Request

10.0 FIGURES

- Figure 1 - Corrective Action Report Form (CAR)
- Figure 2 - Deviation Report (DR)
- Figure 3 - Quality Nonconformance Tag
- Figure 4 - Criteria for Determining If a Corrective Action Report Is Required and Criteria for Determining If a Corrective Action Report Is Required To Be Issued To Senior Management
- Figure 5 - Supplier Disposition Request (SDR)

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TABLE 1

Priority Levels	DR REQUIRED
Priority Level 1 - A situation which poses a imminent threat to safety, health or the environment or which warrants immediate corrective action due to major or significant non-compliance, or to avoid an enforcement action by state or federal agencies or the DOE, or to avoid possible disruption of a vital site program.	YES
Priority Level 2 - A situation or non-compliance issue which by itself does not pose an imminent threat to safety, health or the environment but could pose an imminent threat at a future date (i.e. under different conditions).	YES
Priority Level 3 - A situation which does not pose a significant threat to safety, health or the environment, or risk of programmatic impact; which can be corrected immediately by personnel in the work area or can be scheduled for routine correction; are Best Management Practices,or housekeeping issues that do not warrant a priority level 1 or 2.	NO

Fernald Site
CORRECTIVE ACTION REPORT

CAR NUMBER REVISION

SECTION 1

DATE DISCOVERED RESPONSIBLE ORGANIZATION

RESPONSIBLE ORGANIZATION REPRESENTATIVE

ACTIVITY LOCATION

SECTION 2

REQUIREMENTS

DEVIATION

VERBALLY NOTIFIED MANAGEMENT EVALUATOR DATE

PROVIDE DISPOSITION BY EVALUATING MANAGER DATE

SECTION 3 - Response to the Request for Corrective Action

A. REASON FOR THE DEVIATION (ROOT CAUSE)

B. ACTION TAKEN/PROPOSED TO INVESTIGATE AND CORRECT SIMILAR WORK

C. ACTION TAKEN TO PREVENT RECURRENCE

D. DATE(S) ACTION(S) WILL BE COMPLETE

RESPONSIBLE ORGANIZATION REPRESENTATIVE DATE

SECTION 4 - Evaluation of Corrective Action Reponse

EVALUATOR DATE

EVALUATING MANAGER DATE

SECTION 5 - Completion of Corrective Action

RESPONSIBLE ORGANIZATION REPRESENTATIVE DATE

SECTION 6 - Verification of Corrective Action Completion

EVALUATOR DATE

VERIFICATION ACTION

FS-F-2909-1 (REV 5-7-92)

0498

CORRECTIVE ACTION REPORT
Form FS-F-2909-1
Figure 1 (Sheet 1 of 2)

4552

CORRECTIVE ACTION REPORT (CAR) - INSTRUCTIONS

EVALUATOR - COMPLETE SECTION 1 AND 2 AS FOLLOWS	
ITEM	INSTRUCTIONS
DATE OF DISCOVERY	Enter date that corrective action was discovered to be required.
RESPONSIBLE ORGANIZATION	Enter the organization responsible for the item or activity in which a corrective action is required.
RESPONSIBLE ORGANIZATION'S REPRESENTATIVE	Enter name of the representative responsible for corrective action.
ACTIVITY	Enter activity performed. (Example Audit 189-1)
LOCATION	Location of the activity (Example Plant 6)
REQUIREMENTS	Identify the procedure, instruction, standard, or code which establishes the acceptance criteria for the activity or item being evaluated.
DEVIATION	Fully describe the deviation as it relates to the requirements.
VERBALLY NOTIFIED MANAGEMENT	List the date that the responsible organization's management was verbally notified of the potential deviation.
CAR NO.	Obtain and enter on the CAR Form a CAR Number from Commitment Control
REVISION	Enter the current revision number 0, 1, etc.
PROVIDE DISPOSITION BY DATE	Request the organization deemed responsible to provide dispositioning action by a certain date outlining steps taken or planned to correct immediate problem.
EVALUATOR	Sign and date Section 2 of the CAR form.
EVALUATING MANAGER	Obtain the concurrence of the Evaluator's Manager.

RESPONSIBLE ORGANIZATION REPRESENTATIVE - COMPLETION OF DISPOSITION ACTION SECTION 3	
A. REASON FOR THE DEVIATION (ROOT CAUSE)	Determine the underlying (root) cause of the problem and document it in Section 3A of the CAR form.
B. ACTION TAKEN/PROPOSED TO INVESTIGATE AND CORRECT SIMILAR WORK	If necessary, perform an investigation to determine if any similar work is affected by the problem and, if so, identify the action taken/proposed and the schedule to correct it in Section 3B of the CAR form.
C. ACTION TAKEN TO PREVENT RECURRENCE	Describe action taken/proposed to correct the root cause and to prevent recurrence of the problem in Section 3C of the CAR form.
D. DATE(S) ACTION(S) WILL BE COMPLETE	Enter the scheduled completion date for corrective action in Section 3D.

EVALUATOR - COMPLETION OF THE EVALUATION OF CORRECTIVE ACTION RESPONSE SECTION 4
Receive and evaluate the proposed corrective action to determine its adequacy for solving the specific problem identified in the deviation report.
Document acceptance of the proposed corrective action in Block 4 by signature and date.
Notify the organization responsible for corrective action of the rejection of the proposed corrective action and coordinate with the organization to obtain a revised response.

RESPONSIBLE ORGANIZATION REPRESENTATIVE - COMPLETION OF CORRECTIVE ACTION SECTION 5
Completes corrective action sign Block 5 and forward to evaluator.

EVALUATOR - COMPLETION OF THE VERIFICATION AND CLOSURE OF DISPOSITION ACTION SECTION 6
Monitor the corrective action and verify that the actions taken to correct the deviation have been completed satisfactorily.
Approve acceptance of verified corrective action in Section 6 by signature and date. Enter the verification action performed.
Ensure the removal of nonconforming item tag(s) only after verifying satisfactory completion of all dispositioning actions.
Forward the closed out corrective action report (CAR) to the Commitment Control with a copy to responsible organization management.

FS-F-2909-1 (REV 5/7/92)

CORRECTIVE ACTION REPORT (CAR) - INSTRUCTIONS
Form FS-F-2909-1
Figure 1 (Sheet 2 of 2)

Fernald Site
DEVIATION REPORT

DR NUMBER | REVISION

SECTION 1

DATE DISCOVERED | RESPONSIBLE ORGANIZATION

RESPONSIBLE ORGANIZATION REPRESENTATIVE

ACTIVITY | LOCATION

SECTION 2

REQUIREMENTS

DEVIATION

VERBALLY NOTIFIED MANAGEMENT | PREPARED BY | DATE

PROVIDE DISPOSITION BY | CORRECTIVE ACTION REPORT REQUIRED? ☐ YES ☐ NO

EVALUATOR | DATE

SECTION 3 - Response to the Request for Disposition

DISPOSITION

☐ Accept-As-Is ☐ Rework ☐ Repair ☐ Reject ☐ Other

ACCEPT-AS-IS/REPAIR JUSTIFICATION

SCHEDULED COMPLETION DATE(S)

RESPONSIBLE ORGANIZATION REPRESENTATIVE | DATE

SECTION 4 - Evaluation of Disposition Response

EVALUATOR | DATE

SECTION 5 - Completion of Disposition Action

RESPONSIBLE ORGANIZATION REPRESENTATIVE | DATE

SECTION 6 - Verification of Disposition Action Completion

EVALUATOR | DATE

VERIFICATION ACTION

FS-F-2909 (REV 5/7/92)

DEVIATION REPORT
Form FS-F-2909
Figure 2 (Sheet 1 of 2)

0500

- 4552-

DEVIATION REPORT (DR) - INSTRUCTIONS

PREPARER - COMPLETE SECTION 1 AND 2 AS FOLLOWS	
ITEM	INSTRUCTIONS
DATE OF DISCOVERY	Enter date that deviation was discovered.
RESPONSIBLE ORGANIZATION	Enter the organization responsible for the item or activity in which a deviation is discovered.
RESPONSIBLE ORGANIZATION'S REPRESENTATIVE	Enter name of the representative responsible for disposition/corrective action.
ACTIVITY	Enter activity performed. (Example Audit 189-1)
LOCATION	Location of the activity (Example Plant 6)
REQUIREMENTS	Identify the procedure, instruction, standard, or code which establishes the acceptance criteria for the activity or item being evaluated.
DEVIATION	Fully describe the deviation as it relates to the requirements.
VERBALLY NOTIFIED MANAGEMENT	List the date that the responsible organization's management was verbally notified of the deviation.
PREPARED BY	The preparer signs and dates for Section 2.

EVALUATOR - COMPLETE SECTION 2 AND HEADING AS FOLLOWS	
IS CORRECTIVE ACTION REPORT REQUIRED	Evaluate deviation for issue of a Corrective Action Report. Check "Yes" if required, or "No" if not required.
DR NO.	Obtain and enter on the DR Form a DR Number from the Computer DR Data Base or from the Administrator of Deviations.
REVISION	Enter the current revision number 0, 1, etc.
PROVIDE DISPOSITION BY DATE	Request the organization deemed responsible to provide dispositioning action by a certain date outlining steps taken or planned to correct immediate problem.
EVALUATOR	Sign and date Section 2 of the DR form.

RESPONSIBLE ORGANIZATION REPRESENTATIVE - COMPLETION OF DISPOSITION ACTION SECTION 3	
DISPOSITION	Check the appropriate block for Accept-as-is, Rework, Repair, Reject or Other and indicate the appropriate disposition in the space provided. If disposition is Accept-as-is or Repair, provide a technical justification. Enter the date that disposition action will be completed.

EVALUATOR - COMPLETION OF THE RECEIPT AND EVALUATION OF PROPOSED DISPOSITIONS SECTION 4
Receive and evaluate the proposed disposition action to determine its adequacy for solving the specific problem identified in the deviation report.
Document acceptance of the proposed disposition in Block 4 by signature and date.
Notify the organization responsible for disposition action of the rejection of the proposed disposition action and coordinate with the organization to obtain a revised response.

RESPONSIBLE ORGANIZATION REPRESENTATIVE - COMPLETION OF DISPOSITION ACTION SECTION 5
Complete disposition action sign Block 5 and forward to evaluator.

EVALUATOR - COMPLETION OF THE VERIFICATION AND CLOSURE OF DISPOSITION ACTION SECTION 6
Monitor the disposition and verify that the actions taken to correct the deviation have been completed satisfactorily.
Approve acceptance of verified disposition in Section 6 by signature and date. Enter the verification action performed.
Ensure the removal of nonconforming item tag(s) only after verifying satisfactory completion of all dispositioning actions.
Forward the closed out deviation report (DR) to the Administrator of Deviations with a copy to responsible organization management.

FS-F-2909 (REV 9/7/92)

DEVIATION (DR) REPORT - INSTRUCTIONS
Form FS-F-2909
Figure 2 (Sheet 2 of 2)

QUALITY NONCONFORMANCE

P.O./SHIPMENT/LOT/PACKAGE/CONTAINER I.D. No.: _____

RECEIVING REPORT NO.: _____ INSPECTION REPORT NO.: _____

DESCRIPTION OF NONCONFORMANCE: _____

_____

_____

NAME: _____ BADGE No.: _____ PHONE No.: _____

TO BE REMOVED BY AUTHORIZED PERSONNEL ONLY

FS-F-2708 (REV. 10/10/91)

QUALITY NONCONFORMANCE

P.O./SHIPMENT/LOT/PACKAGE/CONTAINER I.D. No.: _____

RECEIVING REPORT NO.: _____ INSPECTION REPORT NO.: _____

DESCRIPTION OF NONCONFORMANCE: _____

_____

_____

NAME: _____ BADGE No.: _____ PHONE No.: _____

TO BE REMOVED BY AUTHORIZED PERSONNEL ONLY

FS-F-2708 (REV. 10/10/91)

QUALITY NONCONFORMANCE
FORM FS-F-2708
Figure 3

CRITERIA FOR DETERMINING IF A CORRECTIVE ACTION REPORT IS REQUIRED

A Corrective Action Report shall be issued for deviations with:

- o Significant Conditions Adverse to Quality - Deviations which have, or may have, serious effect on safety, health, operability, environment or reliability.
- o Quantity/Frequency - Repetitive deviations or similar deviations resulting from activities or conditions which are common to the deviations.
- o Ineffective Implementation of Dispositions - Deviations which have not been properly or promptly dispositioned or resolved and which, if uncorrected, could result in other deviations or significant conditions adverse to quality.

The following are examples of significant conditions adverse to quality and shall be processed in accordance with this procedure:

- o Approved and released documents such as design documents, procurement documents, procedures, instructions, reports, and data found to contain significant errors or to be inadequate for their intended function.
- o In-process checks that indicate process or test limits may be exceeded and may have serious effect on safety, operability, or reliability.
- o Out-of-calibration standards or instruments used to verify process limits and may have serious effect on safety, operability, or reliability.
- o Significant adverse trend analysis results.

CRITERIA FOR DETERMINING IF A CORRECTIVE ACTION REPORT IS REQUIRED TO BE ISSUED TO SENIOR MANAGEMENT

An evaluation shall be performed of each CAR for issue to Senior Management. If the CAR meets the following criteria, it shall be issued to Senior Management:

a) Significant and repetitive trends in deviation documents, audit/surveillance findings, and other inspections for which corrective action measures have proven ineffective or inadequate.
b) Delinquent Corrective Action that cannot be resolved at a lower level of management.
c) Significant conditions adverse to quality which require more than a routine evaluation, analysis and corrective action.

CRITERIA FOR DETERMINING IF A CORRECTIVE ACTION REPORT IS REQUIRED
Figure 4

Fernald Site
SUPPLIER DISPOSITION REQUEST

SDR SERIAL NUMBER:	SUBCONTRACT NUMBER:
TO BE COMPLETED BY SUPPLIER	
1 Waiver ☐ (W) Non Conformance ☐ (N) Attn: _____ SUBCONTRACT ADMINISTRATOR	2 From: (SUPPLIER NAME & ADDRESS) _____ 3 DRAWING NUMBER & REVISION:
4 COMPONENT AND SERIAL NUMBER:	5 PART NAME AND SERIAL NUMBER:
6 DESCRIPTION OF SPECIFICATION OR DRAWING REQUIREMENTS TO BE WAIVED OR INTERPRETATION REQUIRED: (W) OR DEFICIENT CONDITION: (N)	
7 SDR'S PREVIOUSLY ISSUED ON THIS PART:	8 OTHER PARTS AFFECTED: ☐ YES ☐ SDR NO. _____ (W) ☐ NO ☐ Quantity _____ (N)
9 (A) SUPPLIER'S RECOMMENDED DISPOSITION (WAIVER) (B) JUSTIFICATION FOR WAIVER (W). (A) SUPPLIER'S RECOMMENDED DISPOSITION. (B) JUSTIFICATION. (C) CORRECTIVE ACTION BEING TAKEN TO PREVENT RECURRENCE. (N)	
10 THIS DISPOSITION WOULD AFFECT: INTERCHANGEABILITY ☐ YES ☐ NO OPERATION ☐ YES ☐ NO REPAIR PARTS ☐ YES ☐ NO	
11 LIST ATTACHMENTS:	12 SIGNATURE OF SUPPLIER'S AUTHORIZED REPRESENTATIVE: DATE:
TO BE COMPLETED BY WEMCO	
13 BASELINE ENG'R. DOCUMENTS AFFECTED (ECR REQUIRED): ☐ YES ☐ NO ☐ MAJOR SCOPE CHANGE	
14 DISPOSITION ACTION: APPROVED AS RECOMMENDED ☐ DISAPPROVED ☐ OR AS BELOW ☐	
15 THIS REQUEST AFFECTS INSPECTION OR INSTALLATION AT SITE: ☐ YES ☐ NO	
16 SIGNATURE & APPROVALS:	17 DISTRIBUTION:
ENGINEERING APPROVAL: DATE:	
QUALITY DATE:	
SUBCONTRACT ADMINISTRATOR/BUYER: DATE: Subcontract Consideration Required ☐ Yes ☐ No	
DOE (AS REQUIRED): DATE:	

The supplier accepts full responsibility for the accuracy and completeness of the information above.
The issuance and acceptance of this request in no way limits or affects the warranty provisions of the order. This request shall not establish a precedent or obligation to accept similar conditions in the future.

FS-F-2642 (6/31/92)

0504

SUPPLIER DISPOSITION REQUEST
Form FS-F-2642
Figure 5 (Sheet 1 of 2)

INSTRUCTIONS FOR PREPARATION OF SUPPLIER DISPOSITION REQUEST

GENERAL

It shall be the responsibility of the Supplier to initiate an SDR for each waiver or nonconforming condition and submit it to WEMCO for approval prior to implementing the supplier's recommended disposition. Attach all supplemental sheets as necessary to provide detailed explanations for those factors that cannot be fully explained in the space provided on the SDR form. Reports and dispositions via telephone or TWX are not prohibited, however, the supplier is responsible to execute an SDR on all deviations from drawing, specifications or contract requirements. Any work done before receipt of written approval of the recommended disposition shall be at the supplier's risk. Items shall not be released for shipment before approval of the recommended disposition.

The supplier shall maintain an SDR log and record a sequential, numerical identification number on each SDR submitted. the subcontract or purchase order number, and the serial number shall be entered on the top of each SDR submitted.

PROCEDURE

Supplier Responsibility

Box 1 - Record the name of the cognizant Subcontract Administrator and check Box W or N.
Box W (Waiver) shall be used to identify a design change which will produce a better or less expensive product or improve the delivery schedule, but require waiving one or more requirements of the procurement document.
Box W shall also be checked if a clarification of specified requirements is requested.
Box N (Nonconformance) shall be used to identify a deviation from procurement document requirements which has occurred unintentionally during fabrication.

Box 2 - Record the mailing address as stated on the purchase order.

Box 3 - Record the drawing number and revision for the affected parts.

Box 4 - Record name of article as described in purchase order including serial number if applicable.

Box 5 - Record name of the affected part as shown on the drawing recorded in block 3, including serial number if applicable.

Box 6 - (W) For waiver or clarification request: Describe the problem or question, identifying specification section for which the waiver is requested.
(N) For nonconformance: Record the condition, including specification section violated.
(Both) Include sufficient detail to allow complete evaluation. Describe in detail those conditions not characterized by numerical variables.

Box 7 - List by serial number all previous SDR'S submitted on the material defined by the information in blocks 5 and 6.

Box 8 - Evaluate and record whether other parts are influenced by the condition in block 6.
(W) For waiver or clarification request: Enter number of associated SDR.
(N) For nonconformance: Record the quantity of parts which are part of the same lot having the same attributes as described in block 6 for which disposition has not been requested.

Box 9 - Record the recommended disposition, the justification for such disposition and the corrective action to be taken to prevent recurrence (if applicable).

Box 10 - Record what effect the recommended disposition would have on interchangeability, operation and repair parts in so far as the Supplier can determine. Attach supplemental sheets explaining in detail what the effects are, if any of the blocks are checked "yes".

Box 11 - List attachments to this SDR.

Box 12 - Signature and title of the Supplier's authorized representative.

Mail to the cognizant Subcontract Administrator.

WEMCO Responsibility

Box 13 - Responsible WEMCO Engineer shall indicate if Baseline Engineering Documents are affected. If an Engineering Change Request is required, process and obtain required reviews and approvals prior to obtaining the required signatures in Box 16.

Box 14 - The WEMCO Engineer shall record the disposition action after coordination with Quality and Procurement. Reason for disapproval shall be stated.

Box 15 - The WEMCO Engineer shall check the appropriate box after coordination with Quality. The affected superintendent or manager shall be notified immediately.

Box 16 - The representatives of Engineering, Quality and Subcontracts will endorse the disposition by their signature.

Box 17 - Distribute copies of completed form to signers and receiving inspection.

NOTE: The Subcontract Administrator will record in the SDR log the date of transmittal to the disposition to the supplier.

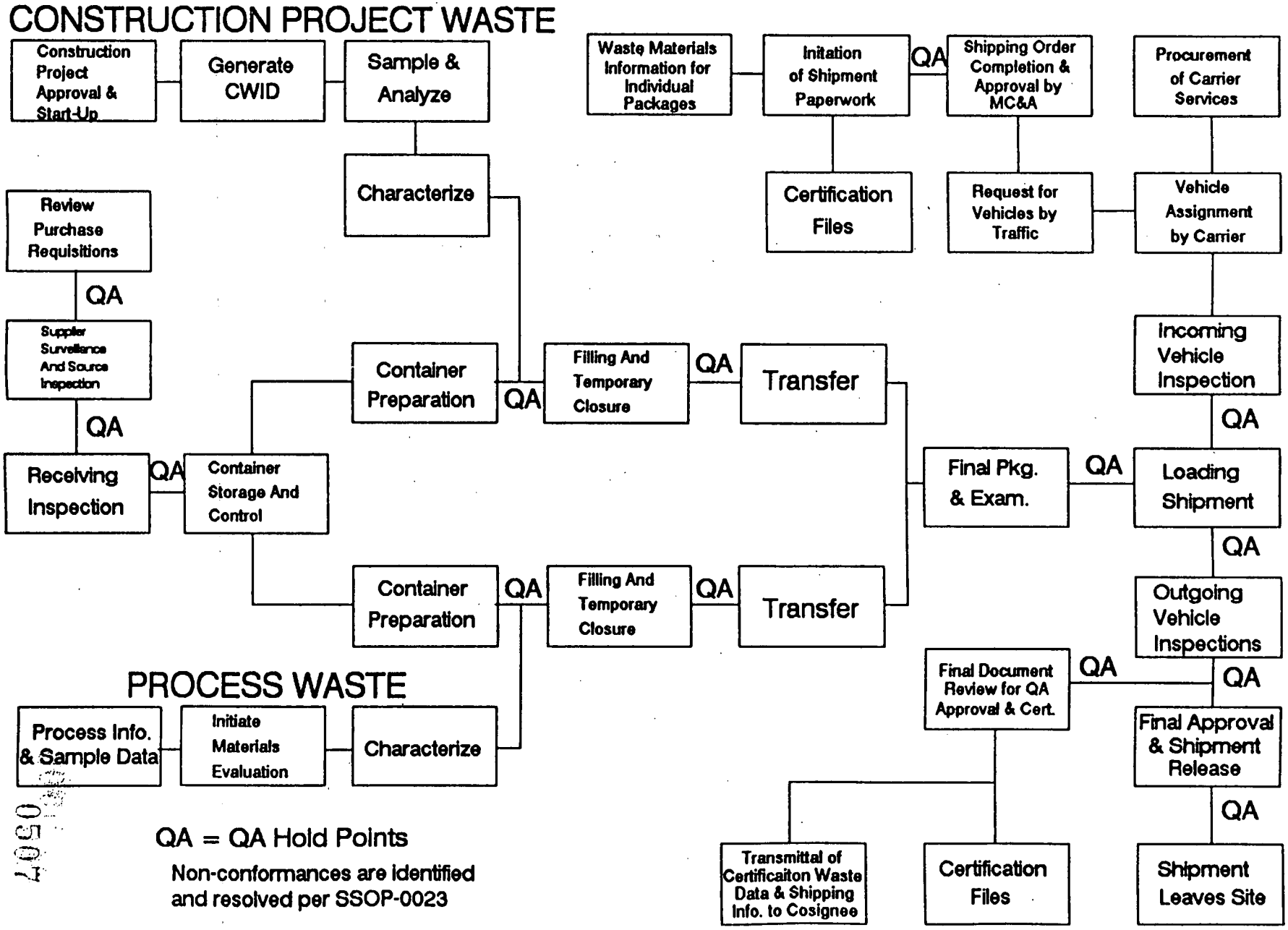
FS-F-2642 (5/31/82)

INSTRUCTION FOR PREPARATION OF SUPPLIER DISPOSITION REQUEST
Form FS-F-2642
Figure 5 (Sheet 2 of 2)

RECORD OF ISSUE/REVISIONS

DATE	REV. NO	DESCRIPTION AND AUTHORITY
06-27-91	0	Issued to identify the assigned responsibilities and required actions for identifying, documenting, and providing dispositions for deviations and corrective actions observed during audits, reviews, initiated by M. A. Malone per Request No. P91-220.
02-04-92	1	Incorporation of temporary revisions T91-021 thru T91-025 per Request Nos. S92-012 thru S92-016, initiated by M. Malone.
06-25-92	2	Revision to SSOP-0023, per Request No. S92-048, initiated by M. Malone.

LOW LEVEL WASTE FLOW DIAGRAM



QA = QA Hold Points

Non-conformances are identified and resolved per SSOP-0023

0507

NON-CONTROLLED COPY

1.0 PURPOSE

This document provides the procedure for packaging low level radioactive waste (LLRW) for offsite disposal.

2.0 APPLICABILITY

This procedure is applicable to the packaging methods required for shipping LLRW off site at packaging areas.

3.0 RESPONSIBILITIES

3.1 The waste generator/packager shall be responsible for complying with this procedure.

3.2 The supervisor of the waste generation area or packager shall be responsible for the following:

3.2.1 Specifying applicable scale check procedures and standard tare weight of packages.

3.2.2 Ensuring packaging materials are available for operators.

3.2.3 Ensuring that trained personnel package waste material.

3.2.4 Determining disposition of material identified in this procedure.

3.2.5 Ensuring that personnel package waste for shipment to meet applicable NTS, DOT, and EPA regulations.

3.2.6 Contacting Industrial Hygiene or Radiological Safety to determine the appropriate respiratory protection for the process being performed.

3.2.7 Providing operators with the required respiratory protection.

3.2.8 Ensuring the lid on an unfilled waste container is secured when no packaging is occurring to prevent additions of unknown materials.

3.2.9 Ensuring waste packages are weather-protected before, during, and after use to prevent moisture build-up.

3.2.10 Contacting Radiological Safety prior to opening any drum of radioactive or unknown material.

3.2.11 Contacting Industrial Hygiene prior to opening any container suspected of containing asbestos.

3.0 RESPONSIBILITIES (cont.)

3.3 Traffic shall be responsible for specifying the required waste container, transporting packaged waste to the applicable storage area, and weighing sea/land containers.

3.4 Materials Control and Accountability (MC&A) shall be responsible for completing a tally sheet for drums of non-RCRA wet and dried residues.

4.0 DEFINITIONS

4.1 Low Level Radioactive Waste (LLRW) - Waste the contains radioactivity and is not classified as high level waste, transuranic waste, or spent nuclear fuel or 11e(2) byproduct material as defined by DOE Order 5820.2A. Test specimens of fissionable material irradiated for research and development only, and not for the production of power or plutonium, may be classified as low-level waste, provided the concentration of transuranic is less than 100 n Ci/g.

4.2 Waste Generator - Organization (point of generation) at which waste is originated.

4.3 Overpack - A container into which one or more smaller containers are placed.

4.4 Waste Container - A container which meets DOT requirements and NTS acceptance criteria.

4.5 RCRA (Resource Conservation and Recovery Act) - The Congressional Act which established safe and environmentally acceptable management practices for specific wastes. RCRA requires strict "cradle to grave" control and proper management of hazardous wastes.

4.6 Respirable Fines - Particulates and vapors capable of being inhaled.

5.0 GENERAL

5.1 The waste generator/packager shall package waste material in a container specified for disposal by Traffic.

5.2 Stencilling shall be 1-1/2 inch (minimum) legible block letters using waterproof ink/paint unless otherwise specified.

CONTROL NO. 99-1242
- 4552-

FEMP
SITE DOCUMENT SYSTEM

SDC No. SC92-005	
Effective Date: 04-29-92	
Expiration Date: 10-29-92	

SITE DOCUMENT CHANGE

1. AFFECTED DOCUMENT NUMBER SSOP-0024	2. AFFECTED DOCUMENT PAGE NUMBER 2

3. TITLE OR SUBJECT:
Packaging Low Level Radioactive Waste (LLRW) for Offsite Disposal

4. OPERATION AND AREA AFFECTED:
Waste Packaging/Disposal

5. SAFETY SYSTEM INVOLVED: YES [ ] NO [X]

6. APPROVAL: S. J. Dechter S J Dechter DEPARTMENT: Site Services

7. CHANGE:

1) Item 4.7 is added to 4.0 DEFINITIONS section as follows:

4.7 Fine Particulates - Waste classified as containing greater than one weight percent of less than ten micrometer diameter particles or greater than 15 weight percent of less than 200 micrometer diameter particles.

8. DOCUMENTATION CONTROL REQUIRED DOCUMENT ACTION

[ ] No Procedure Action

[X] Revise affected procedure/specification per this document.

FILING INSTRUCTIONS: File facing page 2 , Document No. SSOP-0024
(Effective Date: 10-14-91 , Revision No. 0)

6.0 INDUSTRIAL HEALTH AND SAFETY REQUIREMENTS

6.1 A defined safety system is not involved.

6.2 Safety glasses with side shields shall be worn unless other eye protection is specified.

6.3 Respiratory protection provided by the supervisor shall be worn when required.

6.4 Leather-palm gloves shall be worn when handling drums/boxes/ containers, operating equipment, and when handling rough, sharp-edged, or contaminated material.

6.5 HEPA type filter vacuum cleaners or a vacuum system approved by IRS&T with a current DOP test label properly affixed to vacuum shall be used for cleaning.

6.6 Only trained personnel shall handle asbestos-containing materials.

6.7 Adequate ventilation must be provided when using silicone adhesive sealant.

6.8 Any circumstance which could have resulted in an intake of radioactive materials by inhalation, ingestion or absorption shall immediately be reported to a supervisor. The supervisor shall immediately report the circumstance or possible radioactive materials intake to IRS&T Radiological Safety Section for evaluation. The involved personnel shall report to the Urine Sampling Station at the end of their shift to complete an Incident Investigation Report (IIR) (Form FMPC-ES&H-1458), and submit a urine sample. The involved employees shall also report to the Urine Sampling Station at the start of their next shift to submit a followup urine sample. Employees are responsible for complying with additional requirements as specified by the Radiological Safety Section.

NOTE: WARNINGS, CAUTIONS, and NOTES precede the step/item to which they apply.

7.0 PROCEDURE

WARNING: A RADIOLOGICAL SAFETY TECHNICIAN SHALL BE PRESENT PRIOR TO OPENING ANY CONTAINER OF UNKNOWN RADIOACTIVE MATERIAL.

WARNING: AN INDUSTRIAL HYGIENE REPRESENTATIVE SHALL BE PRESENT PRIOR TO OPENING ANY DRUM SUSPECTED OF CONTAINING ASBESTOS.

CAUTION: PRIOR TO PERFORMING THE PACKAGING OPERATION, EACH CONTAINER SHALL BE INSPECTED BY THE WASTE GENERATOR/PACKAGER TO ENSURE THE CONTAINER IS EMPTY.

NOTE: Items 7.1 through 7.3 shall be performed prior to the packaging of any waste.

7.1 Prohibited Material Check

WASTE GENERATOR/PACKAGER

7.1.1 Check that a "Prohibited Materials List" (Figure 1) is displayed in the loading area or on the container.

7.1.1.1 If the list is not posted, notify the supervisor.

WASTE GENERATOR AND QUALITY ASSURANCE

7.1.2 Ensure the waste to be packaged is not on the "Prohibited Materials List".

7.1.2.1 If the waste is listed on the "Prohibited Materials List", do not package this waste. Notify the supervisor for disposition.

SUPERVISOR

7.1.2.2 Dispose of the waste on a case by case basis.

7.0 PROCEDURE (cont.)

7.2 Waste Characterization

WASTE GENERATOR/PACKAGER

7.2.1 Ensure a Material Evaluation Form (MEF), FMPC-OPR-3252 has been completed determining the material as RCRA/Non-RCRA and additional documentation from Environmental Compliance is provided specifying evaluation results for LLRW.

NOTE: A sample of the waste for TCLP may be required as requested by Operable Unit 3 (OU3) Compliance.

7.2.1.1 If an MEF has not been generated, obtain a numbered MEF from Waste Management Records and initiate a "Material Evaluation" per SSOP-0002.

NOTE: RCRA waste shall not be shipped.

7.2.1.2 If the waste is determined to be RCRA, notify the supervisor for disposition.

7.2.1.3 If the waste is determined to be non-RCRA, proceed to 7.2.2.

7.2.2 If notified by the supervisor a sample is required for major radionuclides and other suspected nuclides, obtain a sample of the waste per SOP 1-C-101.

7.3 Waste Inspection

WASTE GENERATOR/PACKAGER

7.3.1 Check waste for free liquid.

7.3.1.1 If free liquid is present which exceeds 0.5% of the material volume, notify supervisor.

7.3.1.2 If free liquid exists which does not exceed 0.5% of the material volume, proceed to the applicable packaging section of this SSOP.

7.3.2 When weather drops below 32°F, carefully inspect waste for ice.

7.3.2.1 If ice is present in waste, notify supervisor.

7.0 PROCEDURE (cont.)

7.4 Filling 55 and 85 Gallon Drums

WASTE GENERATOR/PACKAGER

7.4.1 Inspect the empty drum for damage, such as corrosion, dents, holes or other defects (Refer to Tables 1 and 2).

7.4.1.1 If damaged, mark the lids or side of the damaged drums with a red "X" and refer to Tables 1 and 2 for corrective action, as applicable.

7.4.2 Stencil on the drum the lot and drum number in accordance with the FEMP Lot Marking and Color-Coding System, RM-0005 or apply designated preprinted label (See Figure 2).

7.4.3 Weigh the empty drum per substeps 7.4.3.1 through 7.4.3.5.

SUPERVISOR

7.4.3.1 Specify the scale and the method of transporting the drum to the scale.

WASTE GENERATOR/PACKAGER

NOTE: The scale shall be inspected and operated in accordance with the SOP applicable to the area.

7.4.3.2 Inspect the scale to be used.

7.4.3.3 Move the drum on to the scale.

7.4.3.4 Obtain the tare weight.

7.4.3.5 Remove the drum from the scale and move to the loading area.

7.4.4 Stencil the tare weight on the drum (See Figure 2).

7.4.5 Record the data from the drum on to "Item Production/ Certification/Identification" XX Card, Form FMPC-CONT-1945-XX.

7.0 PROCEDURE (cont.)

WASTE GENERATOR/PACKAGER

7.4.6 Remove the drum lock ring and lid.

CAUTION: DO NOT FILL THE DRUM ABOVE THREE INCHES FROM THE TOP.

NOTE: Because density varies according to material type, the volume of material to be packed will vary.

7.4.7 By estimation, fill the 55 gallon drum to a maximum of 1,200 pounds (plus tare weight) and the 85 gallon drum to 1,000 pound maximum (plus tare weight).

7.4.8 Place a lid on the drum.

7.4.9 Secure the drum lid by installing a bolt-type lock ring and tighten the bolt.

7.4.10 Weigh drum per Item 7.5.

7.4.11 Mark the drum with the gross weight and net weight using two inch (minimum) letters.

WASTE GENERATOR/PACKAGER

7.4.12 Complete the "Item Production/Certification/Identification" XX Card, Form FMPC-CONT-1945-XX by entering the gross and net weights and transmit card to MC&A.

7.4.13 If the drum contains respirable fines, overpack per SOP 20-C-600.

7.4.14 Using the hoist/crane and barrel grab or equipment specified by supervisor, place the drum with bolt of lock ring facing outward on a pallet.

TRAFFIC

7.4.15 Strap the drum(s) and move the pallet(s) to the storage area designated by the supervisor.

WASTE GENERATOR/PACKAGER

7.4.16 When the operation is complete and all pallets are stored, notify the supervisor that the drums are ready to be moved to the designated waste staging area.

7.0 PROCEDURE (cont.)

7.5 Weighing Singlepack/Overpack Drums

SUPERVISOR

7.5.1 Specify the scale and the method of transporting the drum.

WASTE GENERATOR/PACKAGER

NOTE: The scale shall be inspected and operated in accordance with the SOP applicable to the area.

7.5.2 If not already completed, inspect the scale to be used as specified by the supervisor.

7.5.3 Notify supervisor the drum is ready to be moved to scale.

SUPERVISOR

7.5.4 As applicable, notify Traffic that a Motor Vehicle Operator (MVO) is required.

MVO/PACKAGER

7.5.5 Move the drum onto the scale.

WASTE GENERATOR/PACKAGER

7.5.6 Obtain the gross weight of the drum.

> WARNING: MAXIMUM WEIGHT OF DRUMS SHALL BE 700 POUNDS FOR A 30 GALLON OVERPACK AND 1,200 POUNDS FOR 55 GALLON OVERPACKS, 55 GALLON SINGLEPACKS, AND 85 GALLON OVERPACKS. MAXIMUM WEIGHT OF 85 GALLON SINGLEPACKS SHALL BE 1,000 POUNDS.

7.5.7 If the drum is over the specified weight limit, proceed as follows:

7.5.7.1 Remove lock ring(s) and lid(s) from the drums.

NOTE: The removed material may be included in an underweight drum of the same lot or packaged in another drum of the same lot.

CONTROL NO. 99-142

FEMP
SITE DOCUMENT SYSTEM

SDC No. SC92-007	
Effective Date: 04-29-92	
Expiration Date: 10-29-92	

SITE DOCUMENT CHANGE

1. AFFECTED DOCUMENT NUMBER SSOP-0024	2. AFFECTED DOCUMENT PAGE NUMBER 9

3. TITLE OR SUBJECT:
Packaging Low Level Radioactive Waste (LLRW) for Offsite Disposal

4. OPERATION AND AREA AFFECTED:
Waste Packaging/Disposal

5. SAFETY SYSTEM INVOLVED: YES [ ] NO [X]

6. APPROVAL: S. J. Dechter DEPARTMENT: Site Services

7. CHANGE:

1) Step 7.5.9 is revised to read as follows:

7.5.9 If the drum contains fine particulates, install lever lock ring or bolt with a wire seal, record the seal number and date on Form FMPC-CONT-1945-XX, and overpack per SOP 20-C-600.

8. DOCUMENTATION CONTROL REQUIRED DOCUMENT ACTION

[ ] No Procedure Action

[X] Revise affected procedure/specification per this document.

FILING INSTRUCTIONS: File facing page 9 , Document No. SSOP-0024 (Effective Date: 10-14-91 , Revision No. 0)

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7.0 PROCEDURE (cont.)

WASTE GENERATOR/PACKAGER

7.5.7.2 Remove material from the drum until the drum is within limit. Place the removed material in an approved container.

7.5.7.3 Place lid securely on the drum.

MVO/PACKAGER

7.5.8 Remove the drum from the scale.

WASTE GENERATOR/PACKAGER

7.5.9 If the drum contains respirable fines, install lever lock ring or bolt with a wire seal, record the seal number and date on Form FMPC-CONT-1945-XX, and overpack per SOP 20-C-600.

7.6 Filling Metal Boxes With Loose Material

WASTE GENERATOR/PACKAGER

7.6.1 Visually inspect boxes for rust, dents, or holes, including the bottom per Tables 1 and 2.

7.6.1.1 If damaged, mark side of box with a red "X" and complete corrective action per Tables 1 and 2.

7.6.2 If the bottom of the box has a drain plug, ensure plug is securely in place.

SUPERVISOR

7.6.3 Specify the scale and the method of transporting the box.

WASTE GENERATOR/PACKAGER

7.6.4 Move the empty metal box to the staging area.

7.6.5 Remove banding and cardboard packing material from the metal box and place in a designated container.

7.0 PROCEDURE (cont.)

WASTE GENERATOR/PACKAGER

7.6.6 Tare weigh each twentieth box to verify standard tare weight as follows:

NOTE: The scale shall be inspected and operated in accordance with the SOP applicable to the area.

7.6.6.1 If scale to be used as specified by the supervisor has not been checked, inspect scale.

7.6.6.2 Place box on the scale, obtain tare weight.

7.6.7 Record the weight on a "Box Tare Weight Check", Form FMPC-PRO-2867.

7.6.8 Remove box from the scale.

7.6.9 Remove lid and place in a designated location to prevent damage.

7.6.10 Add one fifty-pound bag of uncalcined diatomaceous earth spread evenly or sheets of wet-strength polypropylene pulp, super-absorbent fabric in the bottom of the box.

7.6.11 Place a clean, used skid over dicalite or fabric in the bottom of the box.

CAUTION: MATERIAL SHALL NOT BE LOADED IN BOX ABOVE THREE INCHES FROM THE TOP.

7.6.12 Load loose materials in box as tightly as possible.

7.6.13 When box is full, place lid on box and notify supervisor box is loaded.

SUPERVISOR

7.6.14 Specify the scale to be used and the method of transporting the box to the scale.

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7.0 PROCEDURE (cont.)

WASTE GENERATOR/PACKAGER

NOTE: The scale shall be inspected and operated in accordance with the applicable scale procedure for the area of the packaging operation.

7.6.15 If not already completed, perform scale check according to the applicable SOP in the area of the packaging operation.

7.6.16 Move the box on to the scale.

7.6.17 Weigh the box including box pins and other hardware to ensure gross weight does not exceed 6000 lbs.

7.6.18 Remove the box from the scale.

7.6.19 Mark the side of the box with the gross weight and content description in 1-1/2 inch (minimum) block letters (See Figure 4).

7.6.20 Affix a Hazardous Waste Label (See Figure 3) on the box as shown in Figure 4.

7.6.21 Notify QA the box is ready for certification.

QUALITY ASSURANCE

7.6.22 Certify the box per applicable department procedures.

7.6.22.1 If the box does not meet certification requirements, complete a DCAR per SSOP-0023, tag the box for correction, and notify the generator.

WASTE GENERATOR/PACKAGER

7.6.23 Fill out an "Item Production/Certification/Identification card, Form FMPC-CONT-1945-XX, including standard tare weight specified by the supervisor, and the content description and transmit to MC&A.

7.6.24 Using fabric strapping or closure bolts, secure lid on the box for interplant shipment.

7.6.25 Notify the supervisor that boxes are ready to be moved to the Waste Management staging area.

7.0 PROCEDURE (cont.)

7.7 Loading Drums in Metal Boxes

WASTE GENERATOR/PACKAGER

7.7.1 Prior to completing Item 7.7, proceed to 7.10 or 7.11 (as applicable) for drum inspection.

7.7.2 Visually inspect boxes for corrosion, holes, or dents per Tables 1 and 2.

7.7.2.1 If damage is found, mark side of box with a red "X" and complete corrective action per Tables 1 and 2.

7.7.3 Place empty metal box in staging area.

7.7.4 Remove the banding and cardboard packing material from box and place in designated container.

7.7.5 Tare weigh each twentieth box per 7.6.6.1 through 7.6.6.2.

7.7.6 Record the weight on a "Box Tare Weight Check", Form FMPC-PRO-2867.

7.7.7 Remove lid from metal boxes.

7.7.8 Add a 50 lb bag of uncalcined diatomaceous earth or sheet(s) of wet-strength polypropylene pulp, super-absorbent fabric to the floor of the box.

7.7.9 Using a forklift, move box to a designated location to prevent damage.

7.7.10 Check drums to ensure that lever lock rings are closed.

7.7.10.1 If the drum contains respirable fines, install wire seal through lever lock ring.

7.7.11 Complete an "Item Production/Certification/Identification Card", Form FMPC-CONT-1945-XX per drum and insert the drum lot number and tare weight on the card and transmit to MC&A.

NOTE: Inspect and operate the hoist/crane in accordance with the applicable SOP for the area.

7.7.12 Ensure that the hoist/crane to be used has been inspected.

CONTROL NO. 99-1242

FEMP
SITE DOCUMENT SYSTEM

SDC No. SC92-00	4552-
Effective Date:	04-29-92
Expiration Date:	10-29-92

SITE DOCUMENT CHANGE

1. AFFECTED DOCUMENT NUMBER SSOP-0024	2. AFFECTED DOCUMENT PAGE NUMBER 12

3. TITLE OR SUBJECT:
Packaging Low Level Radioactive Waste (LLRW) for Offsite Disposal

4. OPERATION AND AREA AFFECTED:
Waste Packaging/Disposal

5. SAFETY SYSTEM INVOLVED: YES [ ] NO [X]

6. APPROVAL: S. J. Dechter S J Dechter DEPARTMENT: Site Services

7. CHANGE:

1) Step 7.7.10.1 is revised to read as follows:

7.7.10.1 If the drum contains fine particulates, install wire seal through lever lock ring.

8. DOCUMENTATION CONTROL REQUIRED DOCUMENT ACTION

[ ] No Procedure Action

[X] Revise affected procedure/specification per this document.

FILING INSTRUCTIONS: File facing page 12, Document No. SSOP-0024 (Effective Date: 10-14-91 , Revision No. 0)

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7.0 PROCEDURE (cont.)

WASTE GENERATOR/PACKAGER

7.7.13 Place barrel grab over drum.

7.7.14 Attach the lifting device specified by the supervisor on each side of the drum ring.

7.7.15 Position drum over the top of the box.

7.7.16 Lower drum into box and remove the lifting device.

CAUTION: DO NOT EXCEED A MAXIMUM GROSS WEIGHT OF 6,000 POUNDS.

7.7.17 Ensuring the weight does not exceed 6,000 pounds, repeat steps 7.7.1 through 7.7.16 until enough drums are loaded to fill a box.

7.7.18 When the box is filled, add a fifty-pound bag of uncalcined diatomaceous earth or sheets of wet-strength polypropylene pulp, super-absorbent fabric to the top of drums if condensation/frost is present or could develop on exterior of drums.

7.7.19 Place the lid on the box.

7.7.20 Obtain tabulated tare weight of box and contents. Record the tabulated tare box weight, contents, and gross weight on the FMPC-CONT-1945 card.

7.7.21 Stencil on the box the shipment log number, box identification, and gross weight (See Figure 4).

7.7.22 Affix a Hazardous Material Warning Label (See Figure 3) as shown in Figure 4.

7.7.23 Notify QA the box is ready for certification.

QUALITY ASSURANCE

7.7.24 Certify the box per the applicable department procedure.

7.7.24.1 If the box is not certified, complete a DCAR per SSOP-0023, tag the box for correction, and notify the generator.

7.0 PROCEDURE (cont.)

WASTE GENERATOR/PACKAGER

7.7.25 Using fabric strapping, secure lid on the box for interplant shipment.

7.7.26 Notify the supervisor that boxes are ready to be moved to the Waste Management staging area.

7.8 Loading Asbestos in Boxes

WASTE GENERATOR/PACKAGER

> WARNING: ONLY CERTIFIED PERSONNEL SHALL HANDLE AND LOAD ASBESTOS-CONTAINING MATERIAL.

7.8.1 Visually inspect boxes for rust, holes, or dents.

7.8.1.1 If damage is found, mark the side of the box with a red "X".

7.8.1.2 Notify the supervisor of damaged box condition and request instructions.

7.8.1.3 Move damaged boxes to designated area.

7.8.2 Move the empty box to the staging area.

7.8.3 Remove banding and cardboard packing material and place in a designated container.

7.8.4 Tare weigh each twentieth box per 7.6.6.1 through 7.6.6.2.

7.8.5 Record the weight on a "Box Tare Weight Check", Form FMPC-PRO-2867.

7.8.6 Remove and place box lid in a designated location to prevent damage.

7.8.7 Stencil lot number per FEMP Lot Marking and Color Coding System or content description on the box (See Figure 4).

7.8.8 Affix a Hazardous Material Warning Label (See Figure 3) to box in location shown in Figure 4.

7.8.9 Add a minimum of one fifty-pound bag of uncalcined diatomaceous earth spread evenly in the bottom of the box.

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7.0 PROCEDURE (cont.)

WASTE GENERATOR/PACKAGER

7.8.10 Adhere "Danger-Asbestos" stickers on two sides and lid of box.

7.8.11 Check to ensure that asbestos is double-bagged in labeled asbestos disposal bags.

7.8.12 Load asbestos in box ensuring not to exceed maximum gross weight.

CAUTION: DO NOT EXCEED MAXIMUM GROSS WEIGHT OF 6,000 POUNDS FOR METAL BOXES/5,000 POUNDS FOR WOODEN BOXES.

7.8.13 Place lid on the box.

7.8.14 Using fabric strapping, secure lid on the box for interplant shipment.

7.8.15 Perform scale check per the applicable SOP in the area of the packaging operation.

7.8.16 As directed by the supervisor, move box to scale.

7.8.17 Weigh the box.

7.8.18 Fill out an "Item Production/Certification/Identification" card, Form FMPC-CONT-1945-XX and transmit to MC&A.

7.8.19 Notify the supervisor that boxes are ready to be moved to the Waste Management staging area.

7.9 Packaging Material into Sea/Land Containers

WASTE GENERATOR/PACKAGER

NOTE: Do not place containers directly on ground.

7.9.1 Check the container for damage such as structurally affecting dents, stress cracks, flaking paint, rust, holes, and water leaks.

7.9.1.1 If container is damaged, mark a red "X" on the side of the container, notify supervisor of damage and request disposition of damaged container. Move unacceptable container to area designated by Waste Shipping.

7.9.1.2 If the container is free from damage, proceed to 7.9.2.

7.0 PROCEDURE (cont.)

WASTE GENERATOR/PACKAGER

7.9.2 Notify Waste Shipping that the container is ready for shipping preparation.

7.9.3 Attach a Prohibited Materials List (See Figure 1) to the container in a visible location.

WARNING: VAPOR FROM SILICONE ADHESIVE IS HAZARDOUS.

NOTE: Adhesive shall be applied to the farthest inside section first and outward from container to minimize inhalation of vapor.

NOTE: The bead of sealant shall be a minimum of 1/4 inch.

7.9.4 In a well ventilated area, apply a continuous bead of GE RTV SILICONE RUBBER ADHESIVE SEALANT, or equivalent, on all seams and corners of the container interior.

7.9.5 Check to ensure all vents are closed and sealed.

7.9.6 Line the container floor with wet-strength polypropylene/pulp super-absorbent fabric, blotter paper, or uncalcined diatomaceous earth.

7.9.7 Cover the absorbent fabric, blotter paper or uncalcined diatomaceous earth with a 0.006 inch thick plastic sheet that extends at least 36 inches up each side of the container.

7.9.8 Place plywood on the container floor and up to approximately four feet in height on all sides.

7.9.9 Remove all container outside markings not related to load (See Figure 5).

CAUTION: THE GROSS WEIGHT OF THE CONTAINER SHALL NOT EXCEED 42,000 LBS.

CAUTION: AN UNSEALED CONTAINER SHALL BE LOCKED OR TEMPORARILY SEALED WHEN NOT ATTENDED.

7.9.10 Load the container. Use all the space in the container.

7.0 PROCEDURE (cont.)

WASTE GENERATOR/PACKAGER

7.9.11 After the container has been filled, clean the back ledge of the container.

7.9.12 Add a roll of wet-strength polypropylene/pulp super absorbent fabric extending width of container on base of lid/door.

7.9.12.1 If moisture is still present, add additional uncalcined diatomaceous earth or sheets of wet-strength polypropylene, super-absorbent fabric as needed.

7.9.13 Shut the container doors.

7.9.14 Complete applicable sections of the "Item Production/ Certification/Identification" card, Form FMPC-CONT-1945-XX and transmit to MC&A.

7.9.15 Notify the supervisor that sea/land containers are ready to be weighed.

WASTE GENERATOR SUPERVISOR

7.9.16 Notify Traffic to transport containers to Waste Management staging area.

TRAFFIC (HEAVY EQUIPMENT)

7.9.17 Move containers to Waste Management staging area per applicable department procedures.

7.9.18 Weigh the containers per applicable department procedure.

7.9.19 Deliver weigh ticket to Waste Shipping Coordinator.

7.10 Inspecting Drums Containing Non-RCRA Dried Residues

WASTE GENERATOR/PACKAGER

7.10.1 For a drum not in an overpack, proceed to step 7.10.3.

7.10.2 For an overpacked drum, complete the following:

7.10.2.1 Inspect the hoist/crane to be used if not previously completed.

7.0 PROCEDURE (cont.)

WASTE GENERATOR/PACKAGER

NOTE: The supervisor shall specify the hoist/crane to be used.

NOTE: Hoists/cranes shall be inspected and operated in accordance with the SOP applicable to the area.

7.10.2.2 Remove overpack lid.

7.10.2.3 Install a barrel grab over the drum in the overpack.

7.10.2.4 Attach the barrel grab to the hoist/crane, lift the drum from overpack, and lower on to the floor.

7.10.2.5 Remove barrel grab from the drum.

7.10.3 Notify MC&A the drum(s) are ready for inspection and re-packaging.

MC&A

7.10.4 Complete a MC&A tally sheet for the drum(s).

WASTE GENERATOR/PACKAGER

7.10.5 Remove lid from the drum and inspect drum interior for free-standing liquid.

7.10.5.1 If free-standing liquid is present at the top of the drum, pump liquid from the drum or drain the liquid from the drum using a drainage lid into the facilities sump system.

7.10.6 Replace lid on the drum.

7.10.7 Using a forklift, move drum to the scale specified by the supervisor.

7.10.7.1 If not already completed, perform scale check according to the applicable SOP in the area of the packaging operation.

NOTE: The scale shall be inspected and operated in accordance with the applicable scale procedure for the area of the packaging operation.

7.10.8 Weigh the drum and compare this weight to the weight stencilled on the drum.

7.0 PROCEDURE (cont.)

WASTE GENERATOR/PACKAGER

7.10.8.1 If the drum weighs more than the stencilled weight, remove drum lid and add one pound of Dicalite for every two pounds above the weight.

7.10.8.2 If the drum weighs less than the stenciled weight, proceed to 7.10.9.

7.10.9 Place lid on the drum and secure lever/lock rings onto the drum.

7.10.10 Using forklift, remove drum from scale and load drum into metal box per 7.7.

NOTE: A packager assigned to handle non-RCRA wet residues shall perform the procedural steps in the Plant 1 Mill Area.

7.11 Inspecting Drums Containing Non-RCRA Wet Residues

SUPERVISOR

7.11.1 Contact Traffic to transport drum(s) to Plant 1 Mill Area for inspection.

TRAFFIC

7.11.2 Deliver transport drum(s) to Plant 1 Mill Area per applicable department procedure.

PACKAGER

7.11.3 After delivery of drums to Plant 1 Mill Area, notify MC&A the drum(s) are ready for inspection and re-packaging.

MC&A

7.11.4 Complete a MC&A tally sheet for the drum(s).

PACKAGER

7.11.5 Remove the lid from drum and inspect for free-standing liquid.

7.11.5.1 If the drum contains oil, use a forklift and move drum to designated area. Notify supervisor for disposition of drum.

7.0 PROCEDURE (cont.)

PACKAGER

7.11.5.2 If the drum contains other free-standing liquids, complete steps 7.11.6 through 7.11.12.

7.11.5.3 If no free-standing liquid is present in the drum, proceed to 7.11.12.

7.11.6 Obtain a drainage lid and place on the drum.

7.11.7 Using forklift, rotate drum approximately at a 45 degree angle, drain liquid from drum into the Plant 1 Sump System until no liquid flows from drainage lid, and lower drum to floor.

7.11.8 Inspect and drain the remaining drums per steps 7.11.5 through 7.11.7.

7.11.9 After draining the drums, inspect each drum for damage.

7.11.9.1 If drum is damaged, complete 7.11.10 and then using a forklift, move damaged drum to holding area, as specified by supervisor, for disposal.

7.11.9.2 If drum is not damaged, proceed to 7.11.10.

7.11.10 Using a forklift, transfer the drained material into another drum of drained material filling the drum approximately six inches from the top.

NOTE: Steps 7.11.11 through 7.11.12 are applicable to filled and partially filled drums of drained material.

7.11.11 Add a minimum of one inch of dicalite to each drum.

7.11.12 Replace lid on the drum, close lever lock/bolt ring, and load the drum into a metal box per Item 7.8.

7.11.13 Using a forklift, move any empty drums to holding area for disposal.

8.0 REFERENCE DOCUMENTS

8.1 SSOP-0002, "Completing the Material Evaluation Form"

8.2 SSOP-0023, "Deviation and Corrective Action Reporting"

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8.0 REFERENCE DOCUMENTS (cont.)

8.3 RM-0005, "FEMP Lot Marking and Color-Coding System"

8.4 20-C-600, "Overpacking Defective Containers"

9.0 APPLICABLE FORMS

9.1 FMPC-CONT-1945-XX, "Item Production/Certification/Identification"

9.2 FMPC-PRO-2867, "Box Tare Weight Check"

9.3 FMPC-OPR-3252, "Material Evaluation"

10.0 FIGURES

10.1 Figure 1, "Prohibited Materials List"

10.2 Figure 2, Diagram of LLRW Drum Labeling

10.3 Figure 3, Diagram of Hazardous Waste Label

10.4 Figure 4, Diagram of Metal Box Identification

10.5 Figure 5, Diagram of Sea/Land Identification

TABLE 1
CORROSION INSPECTION CATEGORIES

CATEGORY	CHARACTERISTIC	COULD CAUSE LOSS OF DRUM INTEGRITY		CORRECTIVE ACTION
		YES	NO	
A	Severe corrosion with deep pitting and/or metal flaking	X		1. Notify supervisor. NOTE: The drum requires disposition as directed by supervision within 24 hours.
B	Corrosion with shallow pitting and/or mild metal flaking		X	1. Proceed as directed by the supervisor. NOTE: Disposition shall be determined by the supervisor following review of completed inspection form.
C	Surface rust with no pitting and mild paint flaking which exposes bare metal		X	1. Proceed as directed by the supervisor. Repainting shall be scheduled by supervisor.

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TABLE 2
LLRW CONTAINER INSPECTION

INSPECTION ITEM	INSPECTION CRITERIA	CORRECTIVE ACTION REQUIRED
Hole	An opening in the container including breach, gouge, puncture or leak.	Notify supervisor of condition and request disposition instructions.
Dent	A crease, depression of hollow made by blow or pressure; a concave distortion which jeopardizes the integrity of the container. A dent in the top or bottom rim.	Notify supervisor of condition and request disposition instructions.
Bulge	A swollen area, a convex distortion, an outward bend which jeopardizes the integrity of the container.	Notify supervisor of condition and request disposition instructions.

PACKAGING GUIDELINES

FOR

WASTE GENERATOR

PACKAGE HAS BEEN PROPERLY PREPARED FOR CLOSING:

- NO LIQUIDS OF ANY KIND HAVE BEEN PLACED IN CONTAINER
- HEAVY/BULKY ITEMS HAVE BEEN SECURED WITHIN CONTAINER
- ALL AVAILABLE SPACE HAS BEEN UTILIZED EFFICIENTLY
- PROHIBITED MATERIALS HAVE BEEN EXCLUDED (SEE BELOW)
- PACKAGING HAS NOT BEEN DAMAGED DURING LOADING
- LINER IS IN PLACE AND PROPERLY LAPPED AND SEALED

PROHIBITED MATERIALS

COMPRESSED GASES
(UNPUNCTURED AEROSOL CANS INCLUDED)

EXPLOSIVES

FREE LIQUIDS

FINE PARTICULATES (RESPIRABLE FINES)

HAZARDOUS WASTE
(SUSPECT RCRA MATERIALS INCLUDED)

CORROSIVE MATERIALS

ETIOLOGIC AGENTS

PROHIBITED MATERIALS LIST
Figure 1

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NON-RCRA, RADIOACTIVE, OR ASBESTOS DRUM

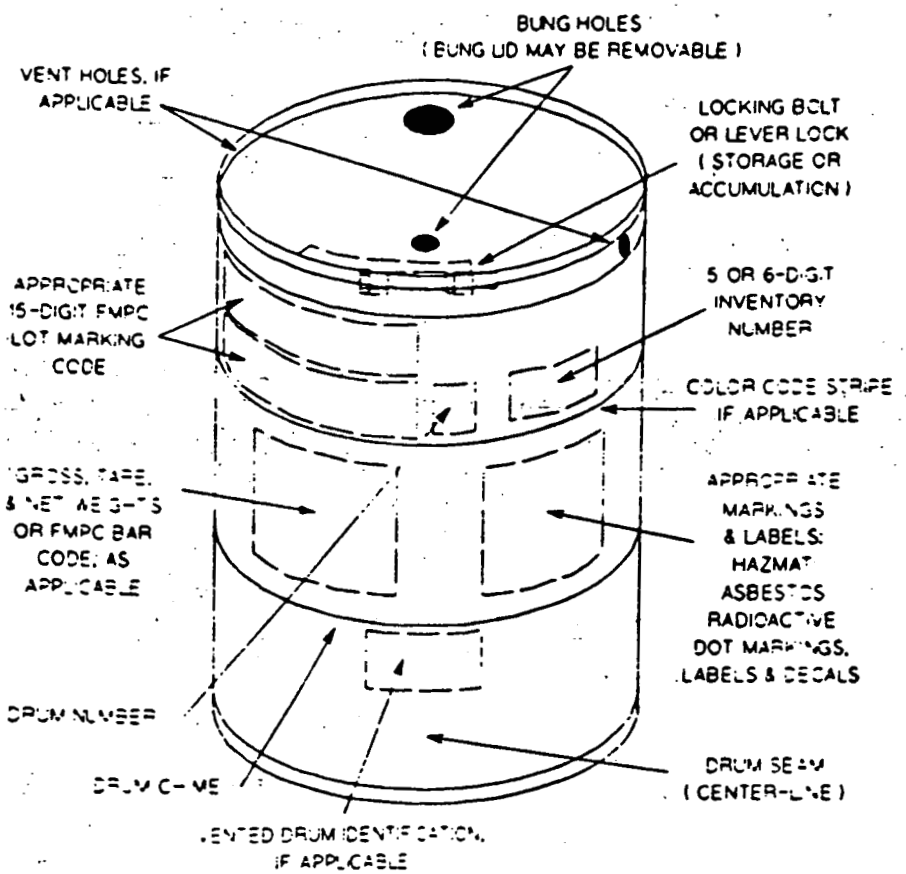

DIAGRAM OF LLRW DRUM LABELING
Figure 2

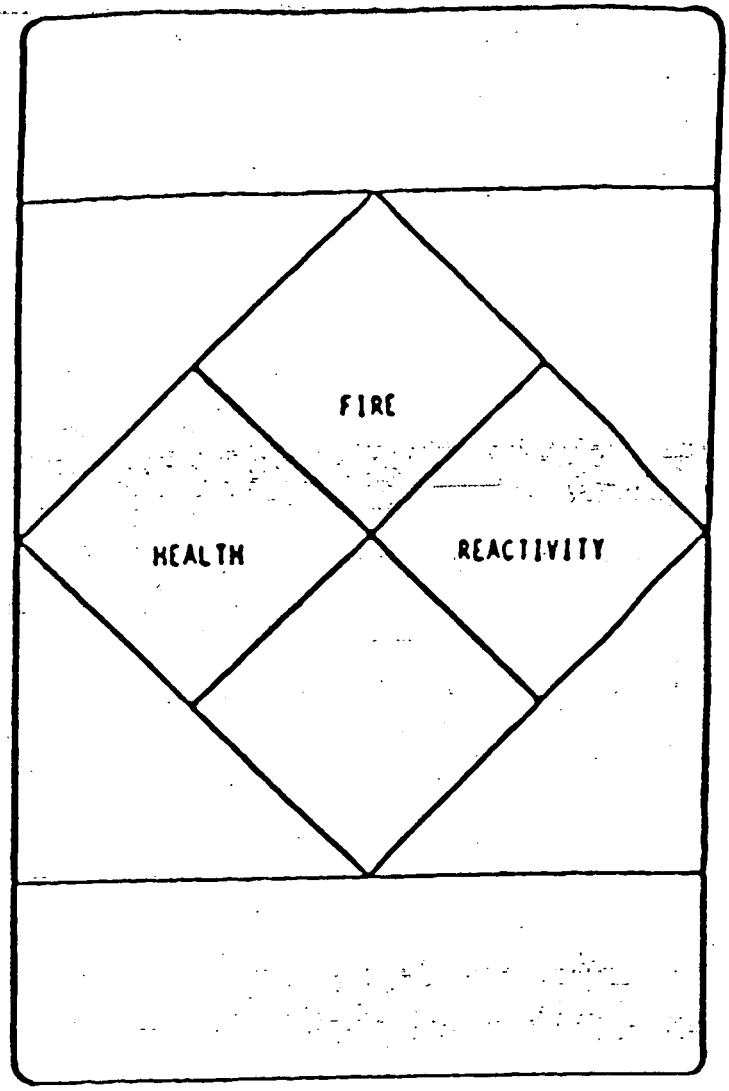

DIAGRAM OF HAZARDOUS WASTE LABEL
Figure 3

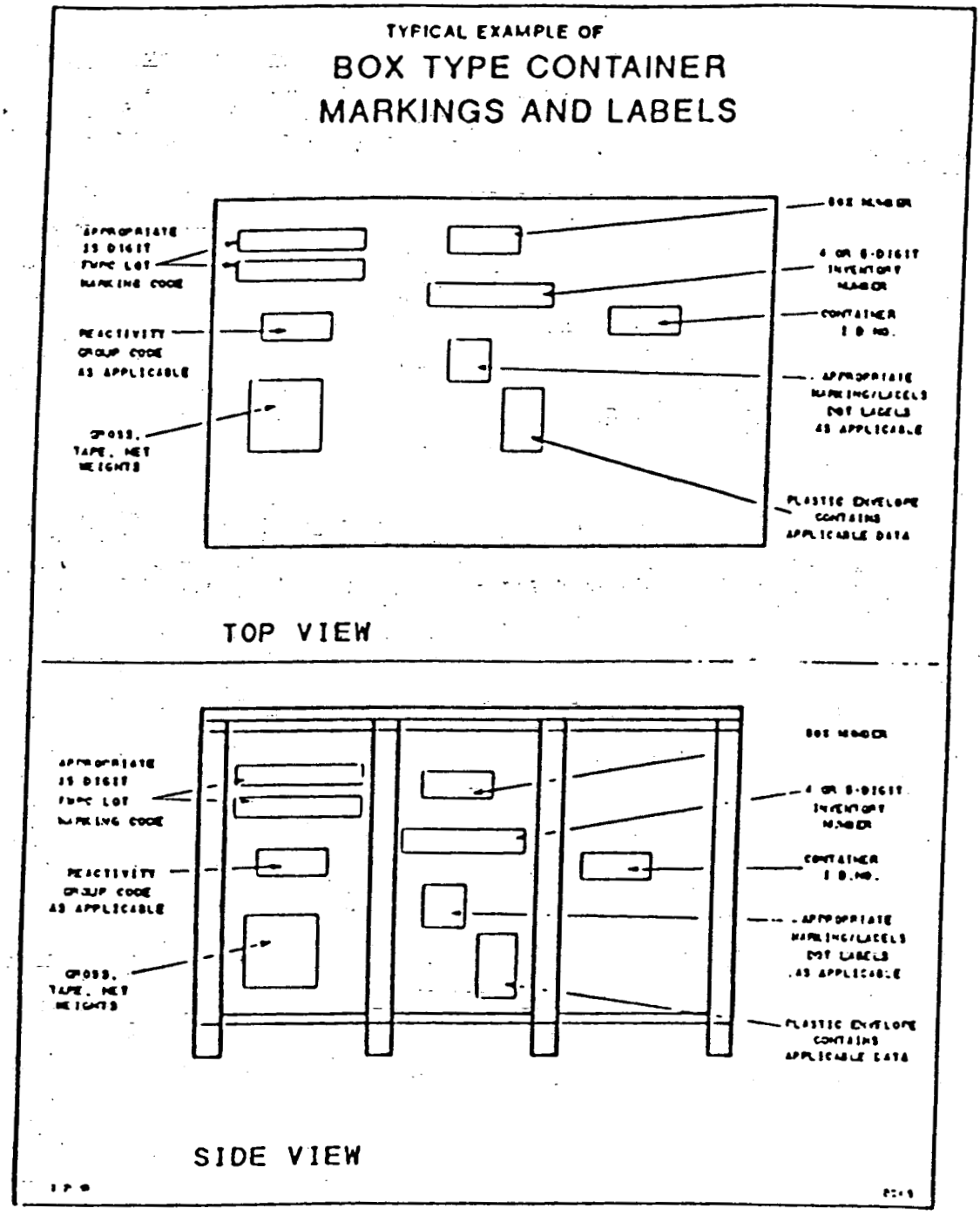

DIAGRAM OF METAL BOX IDENTIFICATION
Figure 4

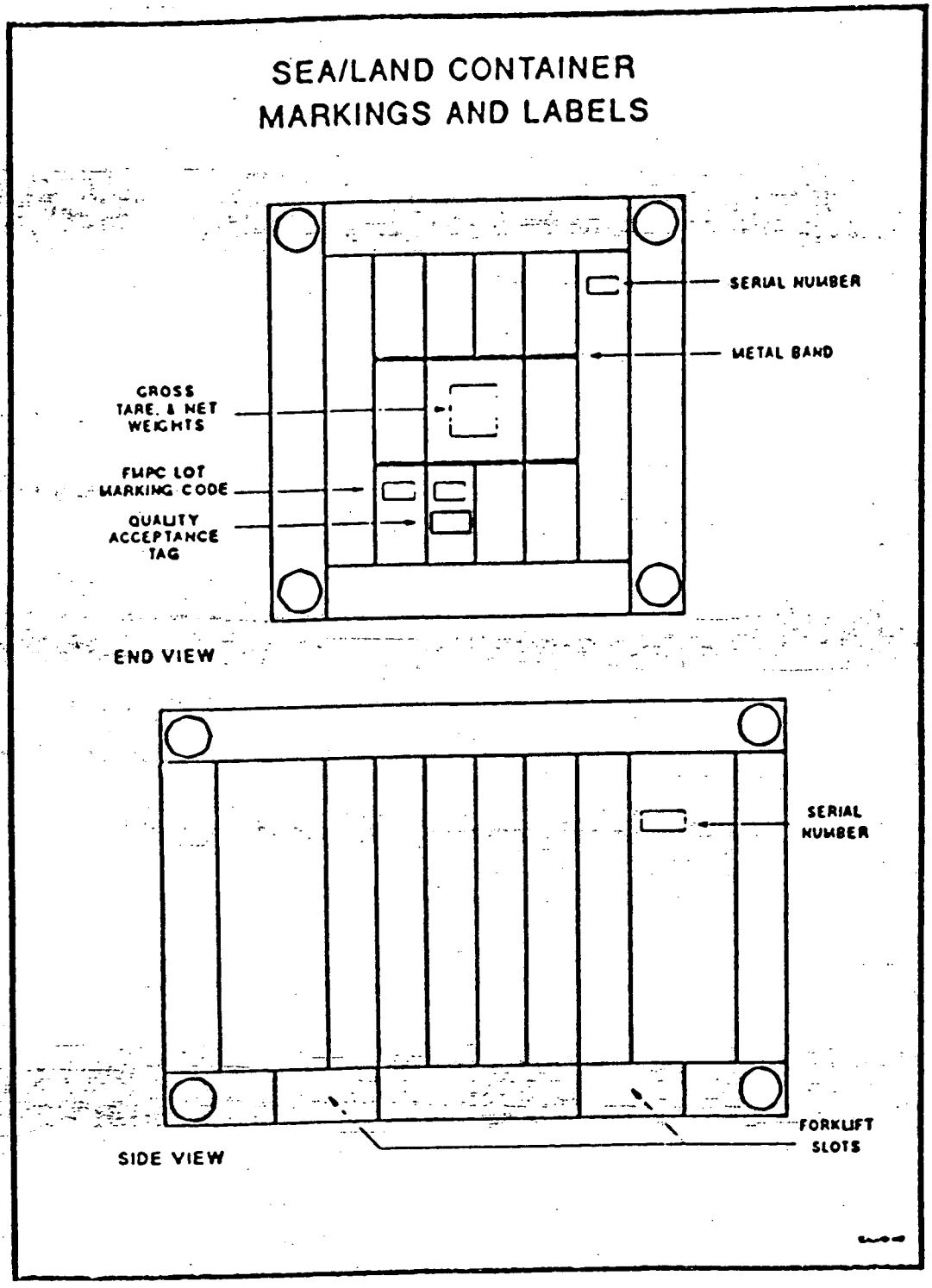

DIAGRAM OF SEA/LAND IDENTIFICATION
Figure 5

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RECORD OF ISSUE/REVISIONS

DATE	REV. NO	DESCRIPTION AND AUTHORITY
10-14-91	0	New site procedure required to replace SOP 20-C-601 per Request No. P91-196, initiated by S. Brown.

FEMP WESTINGHOUSE ENVIRONMENTAL MANAGEMENT COMPANY OF OHIO SITE SERVICES DOCUMENT PROGRAM		Page 1 of 11 Revision No. 0
SITE SERVICES PROCEDURE	TRASH BALER OPERATION	SOP 2-C-923 AREA: Plant 2/3
Authorization: R. L. Gardner, Facilities and Warehousing	Supersedes: None	Issue Date: 10-14-91

NON-CONTROLLED COPY
MAY 1992

1.0 PURPOSE

The purpose of this document is to establish the procedure for bagging contaminated trash for off-site disposal.

2.0 APPLICABILITY

This procedure applies to the SELCON Trash Baler in the Incinerator Bldg.

3.0 RESPONSIBILITIES

3.1 The supervisor shall be responsible for the following:

3.1.1 Ensuring that personnel are qualified per the established training requirements identified by the Department/Staff Manager.

3.1.2 Contacting Industrial Hygiene or Radiological Safety to determine the appropriate respiratory protection for the process being performed.

3.1.3 Providing operators with the required respiratory protection.

3.2 Operators shall be responsible for complying with this SOP.

4.0 DEFINITIONS

4.1 Platen - Pressure plate of the baler.

5.0 REFERENCES

5.2 PP-FMPC-719, "Energy Control (Lockout and Tagout)"

6.0 INDUSTRIAL HEALTH AND SAFETY REQUIREMENTS

6.1 A defined safety system is not involved.

6.2 Safety glasses with side shields shall be worn at all times unless other protection is specified by the supervisor, IRS&T, or posted signs.

6.3 Leather-palm gloves shall be worn when loading or conveying trash.

6.4 When making adjustments or cleaning the baler, personnel shall comply with the "Energy Control (Lockout and Tagout)", procedure PP-FMPC-719.

6.5 Respiratory protection provided by the supervisor shall be worn when specified by IRS&T, the supervisor, or posted signs.

6.0 INDUSTRIAL HEALTH AND SAFETY REQUIREMENTS (cont.)

6.6 Any circumstance which could have resulted in an intake of radioactive materials by inhalation, ingestion or absorption shall immediately be reported to a supervisor. The supervisor shall immediately report the circumstance of possible radioactive materials intake to IRS&T Radiological Safety Section for evaluation. The involved personnel shall report to the Urine Sampling Station at the end of their shift to complete a Incident Investigation Report (IIR) (Form FMPC-ES&H-1458), and submit an incident urine sample. The involved personnel shall also report to the Urine Sampling Station at the start of their next shift to submit a followup urine sample. Employees are responsible for complying with additional requirements as specified by the Radiological Safety Section.

7.0 PROCEDURE

7.1 Trash Receiving

7.1.1 Move away from the incinerator bin and conveyor while the Transportation Driver is emptying material from the dumpster.

7.1.2 Check dumpster while bottom is open to ensure that all trash has been deposited in the bin.

7.1.2.1 If trash remains inside the dumpster, use a rake and pull the material from the dumpster.

7.1.3 Complete a "Trash Baler Operation Log", Form FMPC-PRO-2887.

7.1.4 Visually inspect the trash to determine if prohibited items or categories of waste (Refer to Table 1) are contained in the trash.

7.1.4.1 If prohibited items are found, remove the items from the trash.

NOTE

Prohibited waste types shall be separated by container (such as paint cans in one, glass in another).

7.1.4.2 Segregate each item in a container or plastic bag designated for that type of waste.

7.1.4.3 Label each bag/container with the waste description.

Effective Date: [illegible]
Expiration Date: 10-28-92

CHANGE IN OPERATION

SITE SERVICES DEPARTMENT

E 4552-

DOCUMENT NO.: 2-C-923	AFFECTED DOCUMENT PAGE NO.: 2	DEPARTMENT: Site Services
OPERATION & AREA AFFECTED: Safety/Plant 2/3		AUTHORIZATION: R.L. Gardner, Facilities & Warehousing

TITLE:
Trash Baler Operation

CHANGE:

1) Step 7.1.4.1 is revised to read as follows:

> WARNING: APPROPRIATE PROTECTIVE CLOTHING SHALL BE WORN WHILE REMOVING ITEMS.

7.1.4.1 If prohibitive items are found, remove the items from the trash.

FILING INSTRUCTIONS: File facing page 2 of SOP 2-C-923 (Issue Date: 10-14-91, Revision No. 0)

7.0 PROCEDURE (cont.)

TABLE 1
WASTE PROHIBITED FROM CONTAMINATED TRASH DUMPSTERS

Item No.	DESCRIPTION
1	Any liquid
2	Non-radioactive materials
3	Pressurized containers/spray cans
4	Explosive materials
5	Gaseous radioactive materials
6	High-level radioactive waste
7	Pyrophoric materials
8	Hazardous waste materials
9	Flammable substances
10	Alkaline metals
11	Reactive or oxidizing materials
12	Ashes, dry powders, or dusts
13	Immobilized or ionized waste with pH less than 4
14	Asbestos containing materials
15	Glass
16	Heavy metal objects
17	Soft drink/juice cans

7.0 PROCEDURE (cont.)

NOTE

Supervisor shall notify the Facility Owner and Waste Operations of prohibited items found.

NOTE

Prohibited items shall be returned to the area where the items were picked up.

7.1.4.3 Notify the supervisor of prohibited items found.

NOTE

The Trash Baler supervisor and operator, as generator, shall sign the 1945-XX Card.

7.1.5 Complete and sign an "Item Production/Certification/Identification card", Form FMPC-CONT-1945-XX.

7.1.6 Ensure that the bale removal chain at the rear of the baler is unhooked from the platen (See Figure 1).

NOTE

Trash Baler will not operate in the automatic mode unless the door is positioned against limit switches and latched.

7.1.7 Ensure that the bale removal door is closed and securely latched.

7.1.8 Check the scaffold to be used to ensure the platform is free of loose items.

7.1.9 Position the scaffold platform against the bale removal door.

7.1.10 Lock the scaffold wheels in place.

7.1.11 Latch scaffolding chain locks onto the baler frame.

7.1.12 Place moveable walkway between the scaffolding and the platform.

7.1.13 Position the south swinging gate between the angle iron and scaffolding.

7.1.14 Chain and lock the north swinging gate to the scaffolding.

7.0 PROCEDURE (cont.)

7.2 Baler Operation (See Figure 1)

7.2.1 Raise the safety gate.

7.2.2 Cover the bale chamber floor with a large sheet of trash cardboard.

7.2.3 Place trash bags in the bale chamber.

NOTE

Automatic operation of baler is not possible unless the safety gate is latched closed.

7.2.4 Pull down the safety gate until the gate is latched.

NOTE

The baler will automatically compact the contents, then return to the UP position, when the DOWN button is pressed.

7.2.5 At the control panel, press the DOWN button.

7.2.6 Repeat steps 7.2.1 thru 7.2.5 until the bale is nearly complete.

7.2.7 Before compaction is complete, add a large cardboard sheet to top of bale.

NOTE

When bale is completed, the indicator at the control panel will light and the baler automatically shut off in the DOWN position.

7.2.8 Repeat steps 7.2.1 thru 7.2.5 and complete the bale.

7.2.9 Record the bale number on the "Trash Baler Operation Log", Form FMPC-PRO-2887.

7.3 Bale Removal

7.3.1 Check the scaffold to ensure that loose items have been removed from the platform.

7.3.2 Unlock scaffold platform wheels.

7.3.3 Move the platform away from the bale removal door.

7.0 PROCEDURE (cont.)

7.3.4 Open the bale removal door using the gradual tension release latch.

7.3.5 Insert four or more wires through the slots in the floor of the baling chamber.

7.3.6 Wrap the wires around bale and then back through the slots in the ram of the baler.

7.3.7 Insert the end of each wire through the end loop.

7.3.8 Wrap each end of the wire at least four times above the end loop.

7.3.9 At the rear of the baler, hook bale removal chains onto the platen.

7.3.10 Operate the hand stacker or forklift to be used without a load to ensure safe conditions.

7.3.11 Complete "Operator Checklist," Form FMPC-ADMS-2414 or "Electric Truck Operator's Daily Checklist," Form FMPC-ADMS-2415 as applicable.

7.3.12 Using the hand stacker or forklift, position a wood skid at bale removal door.

7.3.13 Ensure that the baler safety gate is in the closed position.

NOTE

Only one bale shall be placed on a skid.

7.3.14 On the control panel, press and hold the UP button until bale rolls out onto the skid.

7.3.15 Using the hand stacker or forklift, move the skid away from the baler.

NOTE

Use bale number "W050-240-P-027-XXXX." The last four numbers shall be in sequence, starting with 0001.

7.3.16 Mark the bale with the date and bale number.

7.3.17 Record the bale number on the log sheet.

7.3.18 On the baler, close and latch the bale removal door.

7.0 PROCEDURE (cont.)

7.3.19 At control panel, press and hold the DOWN button.

7.3.20 When the baler platen reaches the lowest position, ensure that bale removal chains automatically unhook from rear of platen.

7.3.21 If chains fail to unhook proceed as follows:

7.3.21.1 Release the DOWN button.

7.3.21.2 Press the EMERGENCY STOP button at the control panel.

7.3.21.3 Manually unhook the chains.

7.3.21.4 Turn the EMERGENCY STOP button head.

7.3.21.5 Ensure that the baler cycle completes with the baler ram in the UP position.

7.2.22 Release the down button and ensure that baler returns to the UP position.

7.2.23 Move completed bale to the designated storage area.

7.4 Monthly Inspection

7.4.1 At the start of the first day shift each month, inspect contaminated trash dumpsters per the "Contaminated Trash Dumpster Monthly Checksheet", Form FMPC-OPR-3258.

NOTE

The supervisor shall report problems to the facility owner of the building where the dumpster is located.

7.4.2 Notify the supervisor of discrepancies.

7.4.3 Turn in the completed checksheet to the supervisor.

7.0 PROCEDURE (cont.)

7.5 Trouble Shooting (Refer to Table 2)

TABLE 2
Baler Trouble Shooting

Problem	Cause	Corrective Action
1. Baler will not start.	A. Bale removal door/latch open.	A. Close removal door and latch.
	B. Safety Gate Open	B. Close safety gate.
	C. EMERGENCY STOP Switch activated.	C. Turn EMERGENCY STOP push button head to release the locking device.
2. Baler Shuts Down	A. Safety gate raised faster than ram.	A. Allow ram to move up before activating safety gate.
	B. Releasing the UP push button during the ejection cycle.	B. Press and hold the UP button.

8.0 APPLICABLE FORMS

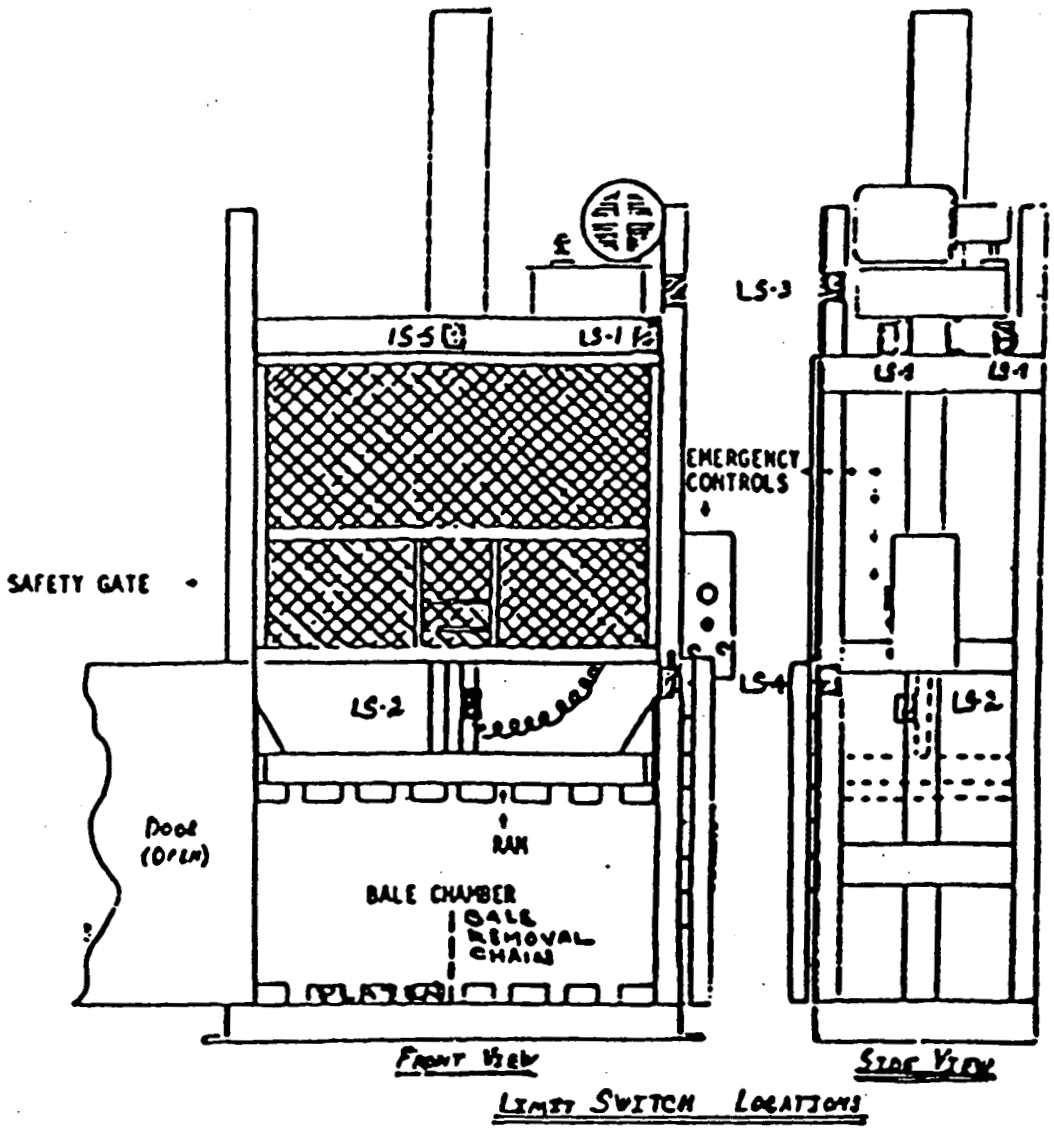
8.1 FMPC-PRO-2887, "Trash Baler Operation Log"

8.2 FMPC-CONT-1945-XX, "Item Production/Certification/Identification"

8.3 FMPC-ADMS-2414, "Gas, LPG or Diesel Fueled Equipment Operator's Checklist"

8.4 FMPC-ADMS-2415, "Electric Truck Operator's Daily Checklist"

8.5 FMPC-OPR-3258, "Contaminated Dumpster Monthly Checksheet"



LS-1 - UP STOP
LS-2 - GATE-PLATEN INTERLOCK
LS-3 - GATE CLOSE
LS-4 - BALE CHAMBER DOOR
LS-5 - BALE SIZE

TRASH BALER CONFIGURATION
Figure 1

RECORD OF ISSUE/REVISIONS

DATE	REV. NO	DESCRIPTION AND AUTHORITY
10-21-87	N/A	Preparation of procedure for Baling Trash per Request No. P86-168, initiated by B. Perkins.
06-19-89	N/A	Revised to incorporate C89-002 per Request No. P89-098.
09-01-89	1	Revised to incorporate CIO Nos. C89-065 (P89-352), C89-066 (P89-372), and C89-005 (P89-100). Revision program changed from "Page Revision Date" to "Revision No.".
10-14-91	0	Reissued to update technical content per Request P91-270 initiated by M. Jackson and to incorporate CIOs C90-058, (P91-095) and C90-062 (P91-112).

FEMP WESTINGHOUSE MATERIALS COMPANY OF OHIO SITE SERVICES DOCUMENT PROGRAM		Page 1 of 6 Revision No. 2	
SITE SERVICES PROCEDURE	CONTROL AND UTILIZATION OF CONTAMINATED TRASH DUMPSTERS		SOP 20-C-604 AREA: As Applicable
Authorization: R. L. Gardner, Facilities & Warehousing Manager		Supersedes: None	Issue Date: 05-24-88

NON-CONTROLLED COPY

1.0 PURPOSE/DESCRIPTION

The purpose of this document is to provide procedures for filling dumpsters with contaminated trash.

2.0 APPLICABILITY

This procedure is applicable to contaminated trash dumpsters.

3.0 RESPONSIBILITIES

3.1 Site Services shall be responsible for the following:

3.1.1 Providing personnel with training or training material on controlling contaminated trash dumpsters.

3.1.2 Ensuring that designated contaminated trash dumpster access doors remain locked when not in use.

3.2 Supervisors shall be responsible for the following:

3.2.1 Ensuring that personnel are qualified per the established training requirements identified by the Department/Staff Manager.

3.2.2 Maintaining training records of personnel who are using the dumpsters.

3.2.3 Providing training records to Waste Operations.

3.2.4 Contacting Industrial Hygiene or Radiological Safety to determine the appropriate respiratory protection for handling contaminated trash.

3.2.5 Providing operators with the required respiratory protection.

3.3 Waste Generators shall be responsible for the following:

3.3.1 Ensuring that prohibited items are not placed into contaminated trash dumpsters.

3.3.2 Ensuring that contaminated trash is bagged in plastic prior to being placed in the dumpster.

3.4 Facility Owners shall be responsible for ensuring that designated contaminated trash dumpster access doors remain locked when not in use.

4.0 DEFINITIONS

4.1 Contaminated Waste Dumpster - Secured container for the collection of contaminated trash.

4.2 Contaminated Waste Generator - Person filling the contaminated trash dumpster

5.0 REFERENCES

None

6.0 INDUSTRIAL HEALTH AND SAFETY REQUIREMENTS

6.1 A defined safety system is not involved.

6.2 Safety glasses with side shields shall be worn unless other eye protection is specified by IRS&T or posted signs.

6.3 Respiratory protection provided by the supervisor shall be worn when required by IRS&T.

6.4 Leather-palm gloves shall be worn when handling rough and/or contaminated material.

6.5 Contaminated trash shall not be allowed to accumulate around the dumpsters.

6.6 Any circumstance which could have resulted in an intake of radioactive materials by inhalation, ingestion or absorption shall immediately be reported to a supervisor. The supervisor shall immediately report the circumstance of possible radioactive materials intake to IRS&T Radiological Safety Section for evaluation. The involved personnel shall report to the Urine Sampling Station at the end of their shift to complete an Incident Investigation Report (IIR) (Form FMPC-ES&H-1458), and submit an incident urine sample. The involved personnel shall also report to the Urine Sampling Station at the start of their next shift to submit a followup urine sample. Employees are responsible for complying with additional requirements as specified by the Radiological Safety Section.

NOTE: Warnings, cautions, and notes precede the Item or Step to which they apply.

7.0 PROCEDURE

7.1 Inspection

7.1.1 Examine the trash for prohibited items or categories of waste (Refer to Figure 1).

7.0 PROCEDURE (cont.)

7.1.1.1 If a suspect item is located and determination is impossible, remove the item.

7.1.1.2 Contact the supervisor and request instructions.

7.1.2 Remove prohibited items from the trash as instructed by supervision.

7.2 Filling Dumpsters

7.2.1 Dispose of small or loose items as follows:

7.2.1.1 Place the small/loose material in clear plastic bags.

7.2.1.2 Gather or twist the open end of the bag until the opening is closed.

7.2.1.3 Using tape, secure the bag.

7.2.2 Contact the person responsible for the dumpster to obtain approval and the door keys.

7.2.3 Unlock dumpster.

7.2.4 Place bulky items (such as oversize pieces of cardboard) directly into the dumpster.

7.2.5 Inspect the trash in the secured clear plastic bag to ensure there are no prohibited items.

NOTE: Do not place unsecured bags or damaged bags into the dumpster.

7.2.6 Inspect the bags for damage.

7.2.6.1 Place damaged bags into undamaged bags.

CAUTION: **PIPING AND PIECES OF WOOD OVER TWO FEET IN LENGTH SHALL NOT BE PLACED IN THE DUMPSTER.**

7.2.7 Place identified contaminated trash excluding items in Figure 1 into the dumpster.

7.2.8 Lock dumpster.

7.2.9 Return the door key to the responsible person.

8.0 APPLICABLE FORMS

None

LIST OF WASTE TYPES PROHIBITED FROM THE CONTAMINATED TRASH DUMPSTERS

- Any kind of liquid
- * Non-radioactive materials
- Pressurized containers/spray cans
- Explosive materials
- Gaseous radioactive materials
- High-level radioactive waste
- Pyrophoric materials
- Hazardous materials
- * Flammable substances
- * Alkaline metals
- Reactive or oxidizing materials
- * Ashes, dry powders, or dusts
- * Immobolized or ionized waste with pH less than 4.
- * Mixed waste

R * Glass

WARNING: IF THERE IS ANY QUESTION ABOUT WHETHER OR NOT THE TRASH FALLS INTO ANY OF THE CATEGORIES ABOVE, CONTACT THE AREA SUPERVISOR OR SITE SERVICES.

PROHIBITED WASTE
Figure 1

LIST OF ISSUE/REVISION

DATE	REV. NO	DESCRIPTION AND AUTHORITY
05-24-88	0	New procedure issued from CIO C88-014 per Request No. P88-056, initiated by J. E. Harmon.
12-27-90	1	Revised procedure to incorporate CIO C90-024 per Request P90-255.
01-28-91	2	Revised to incorporate CIO C91-061 per Request No. P92-015.

NON-CONTROLLED COPY - 4552 -

1.0 PURPOSE

The purpose of this procedure is to allow waste generators to evaluate bulk waste streams designated as Low Level Radioactive Waste (LLRW). The waste streams must be evaluated to ensure the material is properly characterized as non hazardous (as defined by the Resource Conservation and Recovery Act) prior to packaging and shipment for disposal.

2.0 APPLICABILITY

This document is applicable to scrap wood, scrap metal, light/medium duty vehicles and forklifts waste streams being packaged (excluding wastes associated with a Hazardous Waste Management Unit) for disposal as low level radioactive waste.

3.0 RESPONSIBILITIES

3.1 Supervisors shall be responsible for the following:

3.1.1 Ensuring that only trained personnel perform this procedure.

3.1.2 Contacting Industrial Hygiene or Radiological Safety to determine the appropriate respiratory protection requirements.

3.1.3 Providing waste generator with the required respiratory protection.

3.2 Waste generators shall be responsible for complying with this procedure.

3.3 Logistics Administration shall be responsible for transporting material to the packaging area upon request.

3.4 Centralized Training shall be responsible for training personnel to this procedure and maintaining a record of trained personnel.

4.0 DEFINITIONS

4.1 Low Level Radioactive Waste - Radioactive waste that is not classified as high level waste, transuranic waste, spent nuclear fuel, or by product material as defined by DOE order 5820.2A. However, test specimens of fissionable material irradiated for research and development purposes only, and not for the production of power or plutonium, may be classified as low level radioactive waste provided the activity of transuranic material is less than 100 nCi/g.

4.2 Waste Generator - Organization (point of generation) at which waste originates.

4.0 DEFINITIONS (cont.)

4.3 RCRA (Resource Conservation Recovery Act) - The federal statute which established safe and environmentally acceptable management practices for specific wastes. RCRA requires strict "cradle to grave" control and proper management of solid and hazardous wastes

4.4 Entrapped Liquids - Collected fluids that have accumulated by exposure to elements.

4.5 Internal Fluids - Liquid within equipment which functioned as a working component of the equipment.

4.6 Waste Streams - For the purpose of this procedure, this term is defined as wood, metal, light/medium duty vehicles or fork lifts designated as Low Level Radioactive Waste.

4.7 Hazardous Waste Management Unit - Any unit/facility where hazardous waste is currently controlled or an empty unit which held hazardous waste (e.g. treatment, storage or disposal).

5.0 GENERAL

5.1 Drivers

5.1.1 DOE 5820.2A, "Radioactive Waste Treatment"

5.2 References

5.2.1 SSOP-0002, "Completing the Material Evaluation Form"

5.2.2 SOP 20-C-605, "Establishment and Control of Satellite Accumulation Areas"

6.0 INDUSTRIAL HEALTH AND SAFETY REQUIREMENTS

6.1 Safety glasses with side shields shall be worn unless other eye protection is specified by IRS&T.

6.2 Respiratory protection provided by the supervisor shall be worn when required by IRS&T.

6.3 Leather-palmed gloves shall be worn to protect hands from rough material and contamination.

6.4 HEPA type filter vacuum cleaners or an IRS&T approved vacuum shall be used for cleaning.

6.5 Any circumstance which could have resulted in an intake of radioactive materials by inhalation, ingestion or absorption shall immediately be reported to a supervisor. The supervisor shall immediately report the circumstance of possible radioactive materials intake to IRS&T Radiological Safety Section for evaluation. The involved personnel shall report to the Urine Sampling Station at the end of their shift to complete an Incident Investigation Report (IIR) (Form FMPC-ES&H-1458), and submit an incident urine sample. The involved personnel shall also report to the Urine Sampling Station at the start of their next shift to submit a follow-up urine sample. Employees are responsible for complying with additional requirements as specified by the Radiological Safety Section.

6.0 INDUSTRIAL HEALTH AND SAFETY REQUIREMENTS (cont.)

6.6 Use proper lifting techniques when manually lifting wood or metal material. Heavy objects shall be lifted with mechanical lifting devices.

6.7 Do not work under a suspended load unless load has been blocked or supported with jack stands.

7.0 PROCEDURE

7.1 General

7.1.1 Warning, Cautions, and Notes in this procedure precede the step to which they apply.

7.1.2 Generators shall inspect/prepare and evaluate scrap wood per Step 7.2 using checklist FS-F-3465, scrap metal per Step 7.3 using checklist FS-F-3464, and light/medium duty vehicles and forklifts per Step 7.4 using checklist FS-F-3472.

7.2 Evaluating Scrap Wood Waste Stream

7.2.1 Every item to be packaged for disposal must be visually inspected and evaluated using the criteria of Section I of Materials Evaluation and Container Information-Wood, Form No. FS-F-3465 (See Figure 1).

7.2.2 The "Yes," "No," and "N/A" boxes must be checked as appropriate for all criteria listed in Section I. If one answer to items 1 through 5 is "No", the item being evaluated must be set aside - not packaged - and a material evaluation form completed for that item. A "No" to one of items 1 through 5 checked on a form causes rejection of the package for shipment by quality assurance.

7.2.3 Complete Section II of Form No. FS-F-3465 as material is packaged.

7.2.3.1 The material origin/description block (block 1) of Section II should list the type of material packaged into the container and the material origin as determined by the packager.

7.2.3.2 The MEF number block (block 8) of Section II should list the Material Evaluation Form (MEF) number of any material placed into the package that was not evaluated using Section I of the Form No. FS-F-3465, but is approved for shipment based on an existing and approved MEF.

7.2.4 The completed form FS-F-3465 must be signed by the waste packager, then packager's supervisor and then sent to quality assurance for approval.

7.2.5 Distribute form as required by distribution block provided in lower left corner of each form.

7.3 Evaluating Scrap Metal Waste Stream

7.3.1 Every item to be packaged for disposal must be evaluated using the criteria of Section I of Materials Evaluation and Container Information - Metal, Form No. FS-F-3464 (See Figure 2).

7.0 PROCEDURE (cont.)

7.3.2 The "Yes," "No," and "N/A" boxes must be checked as appropriate for all criteria listed in Section I. If one answer to items 1 through 5 is "No", the item being evaluated must be set aside - not packaged - and a material evaluation form completed for that item. A "No" checked on items 1 through 5 of a form causes rejection of the package for shipment by quality assurance.

7.3.3 Complete Section II of Form No. FS-F-3464 as material is packaged.

7.3.3.1 The material origin/description block (block 1) of Section II should list the type of material packaged into the container and the material origin as determined by the packager.

7.3.3.2 The MEF number block (block 8) of Section II should list the Material Evaluation Form (MEF) number of any material placed into the package that was not evaluated using Section I of Form No. FS-F-3464, but is approved for shipment based on an existing and approved MEF.

7.3.4 The completed Form No. FS-F-3464 must be signed by the waste packager, then packager's supervisor and then sent to quality assurance for approval.

7.3.5 Distribute form as required by distribution block provided in lower left corner of each form.

7.4 Evaluating Light/Medium Duty Vehicles and Forklifts Waste Stream

NOTE: Only light/medium duty vehicles and forklifts are to be evaluated per this procedure. This document is not applicable to heavy equipment.

7.4.1 Every vehicle to be packaged for disposal must be evaluated using the criteria of Section I of Evaluation and Container Information - Light Duty Vehicle, Form No. FS-F-3472 (See Figure 3).

7.4.2 The "Yes," "Unknown," "No," and "N/A" boxes must be checked as appropriate for all criteria listed in Section I. If the appropriate answer to the criteria is "No", the vehicle being evaluated cannot be packaged and a material evaluation form must be completed for that vehicle. A "No" checked on a form causes rejection of the package for shipment by quality assurance.

7.4.3 Complete Section II of Form No. FS-F-3472 as material is packaged.

7.4.3.1 The material origin/description block (block 1) of Section II should list the type of material packaged into the container and the material origin as determined by the packager.

7.4.3.2 The MEF number block (block 8) of Section II should list the Material Evaluation Form (MEF) number of any material placed into the package that was not evaluated using Section I of Form No. FS-F-3472, but is approved for shipment based on an existing and approved MEF.

7.4.4 The completed Form No. FS-F-3472 must be signed by the waste packager's supervisor.

7.0 PROCEDURE (cont.)

7.4.5 Distribute form as required by distribution block provided in lower left corner of each form.

8.0 APPLICABLE FORMS

8.1 FS-F-3465, "Materials Evaluation and Container Information - Wood"

8.2 FS-F-3464, "Materials Evaluation and Container Information - Metal"

8.3 FS-F-3472, "Evaluation and Container Information - Light Duty Vehicle"

FEMP

Reference MEF # 905

LOW-LEVEL RADIOACTIVE WASTE

MATERIALS EVALUATION AND CONTAINER INFORMATION - WOOD

SECTION I

WASTE EVALUATION	YES	NO	N/A
1. Treated: a. Material free from creosote treatment			
2. Residues: a. Free from process or waste residues			
3. Stains: a. Stains cover less than 10% of wood surface or Stain covers more than 10% of wood surface caused by green salt, black oxide, white salt, or orange oxide.			
4. Paint: a. Free from lead-based paint or Paint covers less than 10% of material			
5. Plastic/Rubber: a. Material consists of less than 20% by volumes other materials and does not contain any oil, solid residues, or entrapped liquids (e.g. plastic or rubber parts/hardware)			
6. Metal: a. Metal constitutes more than 10% by volume (If yes, then metals checklist (FS-F—3464) must also be used.)			

SECTION II - CONTAINER INFORMATION

1. MATERIAL ORIGIN/DESCRIPTION:

2. PACKAGING START DATE | PACKAGING FINISH DATE

3. OPERATOR(S) SIGNATURE: | DATE:

4. CONTAINER NUMBER:

5. CONTAINER TYPE: ☐ S/L ☐ WHITE METAL BOX

6. 65 CARD NUMBER:

7. LOCATION PACKAGED:

8. * MEF NUMBER:

9. % COMBUSTIBLE:

APPROVED BY: SUPERVISOR(S) SIGNATURE/DATE

APPROVED BY: QA SIGNATURE/DATE

* When materials are packaged that do not meet the criteria established in Section I, but have an approved MEF number, the MEF number and material must be recorded.

GENERATOR TO MAKE DISTRIBUTION:		
1	Original to Facilities and Material Evaluation	MS65
2	Copy to Waste Shipping	MS63
3	Copy to Environmental Compliance	MS65
4	Copy to Materials Control and Accountability	MS28

FS-F-3465 (REV. 4/7/92)

LLRW WOOD MATERIALS EVALUATION
Form FS-F-3465
Figure 1

4552-

FEMP
LOW-LEVEL RADIOACTIVE WASTE
MATERIALS EVALUATION AND CONTAINER INFORMATION - METAL

Reference MEF # 1088

SECTION I

WASTE EVALUATION		YES	NO	N/A
1. Free from the following:	a. Grease/oils			
	b. Solid residues			
	c. Entrapped liquids			
	d. Internal fluids			
2. Material tagged as drained				
3. Paint:	Material free from lead-based paint *or* Paint covers less than 10% of materials *or* Material is greater than 1/16 inch thick			
4. Electrical Equipment:	a. Ballasts removed			
	b. Starter caps removed			
	c. Mercury switches removed			
	d. Dielectric fluid removed			
5. Plastic/Rubber:	a. Material consists of less than 20% other materials by volume and meets the criteria set in #1 (e.g. plastic, or rubber parts/hardware)			—
6. Wood:	a. Constitutes more than 20% by volume (If yes, then wood checklist (FS-F-3465) must also be used.)			

SECTION II - CONTAINER INFORMATION

1. MATERIAL ORIGIN/DESCRIPTION:

2. PACKAGING START DATE	PACKAGING FINISH DATE:	3. OPERATOR(S) SIGNATURE	DATE
4. CONTAINER NUMBER:		5. CONTAINER TYPE:	
6. 65 CARD NUMBER:		7. LOCATION PACKAGED:	
8. * MEF NUMBER:		9. % COMBUSTIBLE	
APPROVED BY: SUPERVISOR(S) SIGNATURE/DATE		APPROVED BY: QA SIGNATURE/DATE	

* When materials are packaged that do not meet the criteria established in Section I, but have an approved MEF number, the MEF number and material must be recorded.

GENERATOR TO MAKE DISTRIBUTION:		
1	Original to Facilities and Material Evaluation	MS65
2	Copy to Waste Shipping	MS63
3	Copy to Environmental Compliance	MS65
4	Copy to Materials Control and Accountability	MS28

FS-F-3464 (REV 4/7/92)

LLRW METAL MATERIALS EVALUATION
Form FS-F-3464
Figure 2

Reference MEF # 1230

Fernald Site
LOW-LEVEL RADIOACTIVE WASTE

EVALUATION AND CONTAINER INFORMATION - LIGHT-DUTY VEHICLE

SECTION I

WASTE EVALUATION	YES	UNKNOWN	NO	N/A
1. Free from the following fluids: a. Anti-freeze				
b. Brake fluid				
c. Gasoline				
d. Transmission fluid				
e. Engine oil				
f. Power steering				
g. Differential fluid (rear end)				
h. Windshield Wiper Fluid				
2. Removed: a. Radios				
b. Distributor coils and amplifiers				
c. Alternators				
d. Electronic fuel injector circuit				
3. Fuel tank removed				
4. Propane tank removed				
5. Tires Deflated				
6. Tire valve stem removed				
7. Freon pumped/contained for recycling				
8. Auxiliary Hydraulic Unit removed or drained				
9. Oil filter removed				
10. Oil filter drained				
11. Oil filter replaced in vehicle or discarded and oil line capped				
12. Batteries removed				

SECTION II - CONTAINER INFORMATION

1. MATERIAL ORIGIN/DESCRIPTION:

2. PACKAGING START DATE | PACKAGING FINISH DATE | 3. OPERATOR(S) SIGNATURE: | DATE

4. CONTAINER NUMBER: | 5. CONTAINER TYPE:

6. 65 CARD NUMBER: | 7. LOCATION PACKAGED:

8. * MEF NUMBER: | 9. % COMBUSTIBLE:

GENERATOR TO MAKE DISTRIBUTION:	
1 Original to Facilities and Material Evaluation	MS65
2 Copy to Waste Shipping	MS63
3 Copy to Environmental Compliance	MS65
4 Copy to Materials Control and Accountability	MS28

APPROVED BY:

SUPERVISOR'S SIGNATURE | DATE

* When materials are packaged that do not meet the criteria established in Section I, but have an approved MEF number, the MEF number and material must be recorded

FS-F-3472 (12/12/91)

LLRW LIGHT-DUTY VEHICLE EVALUATION
Form FS-F-3472
Figure 3

E 4552

RECORD OF ISSUE/REVISIONS

DATE	REV. NO.	DESCRIPTION AND AUTHORITY
06-26-92	0	Requirement for procedure Evaluating Low Level Radioactive Waste (LLRW) per Request No. P92-106, initiated by M. J. Krauss.

SITE SERVICES PROCEDURE	SAMPLING DRUMMED WASTE FOR HAZARD IDENTIFICATION	SOP 20-C-805 Area: As Applicable
Authorization: R. L. Gardner, Facilities & Warehousing Manager	Supersedes: None	Issue Date: 04-10-92

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OCT 1992

1.0 PURPOSE

The purpose of this document is to establish the procedure for sampling drummed waste.

2.0 APPLICABILITY

This procedure is applicable to taking samples of drummed waste material at drum sampling locations and Resource Conservation and Recovery Act (RCRA) facilities.

3.0 RESPONSIBILITIES

3.1 Supervisors shall be responsible for the following:

3.1.1 Contacting Industrial Hygiene and/or Radiological Safety to determine the appropriate respiratory protection for the process being performed.

3.1.2 Providing operators with the required respiratory protection.

3.1.3 Ensuring that personnel are qualified per the established training requirements identified by the Department/Staff Manager.

3.1.4 Reviewing applicable Material Safety Data Sheets (MSDS) with operators.

3.1.5 Obtaining and posting a "Radiation Work Permit."

3.1.6 Obtaining and posting a "Hazardous Material Permit."

3.1.7 Obtaining specific drum storage location(s) from MC&A.

3.1.8 Notifying Materials Control & Accountability (MC&A) prior to moving drums.

3.1.9 Notifying the Transportation representative to move the drums to a diked sampling area.

3.1.10 Notifying Radiological Safety prior to moving drums in and out of Radiological Zones.

3.2 Operators and Supervisors shall be responsible for complying with this procedure.

3.0 RESPONSIBILITIES

3.3 Environmental Management (EM) shall be responsible for the following:

3.3.1 Preparing "Sampling Request" forms for RCRA or suspect RCRA materials.

3.3.2 Performing statistical analysis on data received from on-site and off-site laboratories.

3.3.3 Performing hazardous waste determination.

3.4 Materials Control and Accountability (MC&A) shall be responsible for the following:

3.4.1 Assigning a representative to areas where drums are being moved.

3.4.2 Furnishing material identification data.

3.5 Industrial, Radiological Safety & Training (IRS&T) shall be responsible for the following:

3.5.1 Monitoring vehicles and drums entering and exiting Radiological Zones.

3.5.2 Issuing Radiation Work Permits.

4.0 DEFINITIONS

4.1 Equipment Blank Sample - Specimens of analyte-free media poured over previously cleaned sample equipment and accompanies the actual samples to the laboratory.

4.2 Composite Sample - Specimen derived by combining equal numbers of random samples obtained from the same waste stream.

4.3 Multi-Phase - A material consisting of liquid and a solid in any combination of 2 or more.

4.4 Random Sample - A representative sample of waste material taken from a drum chosen from a group of drums that had equal probability of being selected.

4.5 Trip Blank - A specimen of deionized water that accompanies the sample to the laboratory.

4.0 DEFINITIONS (cont.)

4.6 Wash Water Blank Sample - A specimen of clean rinseate water that accompanies actual samples to the laboratory.

4.7 Contact Waste - Unwanted material that has come into contact with a RCRA Waste or Suspect RCRA Waste during sampling.

5.0 REFERENCES

5.1 SOP 20-C-605, "Establishment and Control of Satellite Accumulation Areas"

5.2 SOP 20-C-909, "Portable Ventilation Unit Operation"

5.3 SOP 20-C-912, "Checking Scale Operation"

5.4 SSOP-0018, "Processing Site Wide Analysis Request/Custody Record for Sample Control"

5.5 SSOP-0024, "Packaging of Low Level Radioactive Waste (L-LRW) for Off-Site Disposal"

6.0 INDUSTRIAL HEALTH & SAFETY REQUIREMENTS

6.1 A defined safety system is not involved.

6.2 Portable ventilation devices shall be used per SOP 20-C-909 when collecting samples from drums containing dry materials or volatile compounds.

6.3 Operators shall wear respiratory protection provided by the supervisor.

6.4 Leather-palm gloves shall be worn when handling drums, locking rings, lids, sharp or abrasive material, or when using tools.

6.5 Safety glasses shall be worn unless a full face respirator is used.

6.6 Face shields, neoprene gloves, aprons, and chemical cover goggles shall be worn when taking samples of caustic material, acid slurries, or liquids.

6.7 Gloves shall be leaked checked by water immersion prior to use. Leaking gloves or gloves contaminated on the inside shall be discarded.

6.8 Employees shall have reviewed, and be familiar with, the information contained in the MSDS for the chemical/hazardous materials that may be used or encountered.

6.0 INDUSTRIAL HEALTH & SAFETY REQUIREMENTS (cont.)

6.9 Specified personal protective equipment (PPE) (including booties), which are specified on Work Permits and this procedure, shall be worn before entering a sample area.

6.10 Personnel shall have access to communications devices and emergency response equipment.

6.11 Industrial Hygiene shall be contacted to measure volatile organic compounds for all drums classified as containing organic liquids. Results of monitoring along with personal protective equipment requirements shall be communicated to supervision on a "Hazardous Chemical Work Permit".

6.12 Fire and Safety Inspectors shall be contacted to check for flammable vapors from all drums classified as containing organic liquids. Flammable liquids identified by Fire and Safety shall only be sampled at the flammable liquid sampling line using explosion proof electrical equipment and non-sparking tools.

6.13 All persons will remain clear of aisle-ways while forklifts and handstackers are in use.

6.14 Any circumstance which could have resulted in an intake of radioactive materials by inhalation, ingestion, or absorption shall immediately be reported to a supervisor. The supervisor shall immediately report the circumstance of possible radioactive materials intake to IRS&T Radiological Safety Section for evaluation. The involved personnel shall report to the Urine Sampling Station at the end of their shift to complete a Incident Investigation Report (IIR) (Form FMPC-ES&H-1458), and submit an incident urine sample. The involved personnel shall also report to the Urine Sampling Station at the start of their next shift to submit a followup urine sample.

7.0 PROCEDURE

7.1 General

7.1.1 Warnings, cautions, and notes precede the Item or Step to which they apply.

7.1.2 Any deviation from the Sampling Plan shall be noted in the "Sampling Log Book."

7.1.3 To prevent contamination, only one drum per sampling line shall be opened, unless a composite sample is required.

7.0 PROCEDURE (cont.)

7.1.4 Volatile organic compounds (VOC) and combustible materials being sampled or staged shall be segregated from other materials. See Item 6.11 for identification and sampling of flammable liquids.

7.1.5 When samples are requested for volatile organic analysis, the samples shall be taken and the sample container and drum closed and sealed as quickly as possible.

7.2 Preparation for Sampling

NOTE: Contact supervisor if there are questions pertaining to the Sampling Request Form.

7.2.1 Obtain the "Sampling Request Form" from the supervisor.

7.2.1.1 Take Sampling Request Form to Material Control and Accountability where a lot number and location will be placed on the form.

7.2.1.2 Obtain the Lot Marking System Number for rinseate and trash cans containing contact waste from MC&A.

7.2.2 Check that a "Radiation Work Permit" and/or "Hazardous Material Permit" are posted and current with each new Sample Request Form.

7.2.2.1 If no permit(s) is/are posted, notify the supervisor.

NOTE: Scales shall be checked at the start of each operating shift or before the first use each day.

7.2.3 If not already completed, check the scales to be used per SOP 20-C-912.

NOTE: VOC and flammable/combustible material shall be moved to respectively designated area identified by the supervisor.

7.2.4 Using a handstacker, move skids of material into the designated sampling or staging areas.

NOTE: Two five gallon containers shall be used unless a composite sample is to be prepared and then three containers are required.

7.2.5 Prepare containers (for cleaning sampling equipment and disposal of trash) as follows:

7.0 PROCEDURE (cont.)

7.2.5.1 Tare weigh the empty, clean, color-coded 5-gallon containers.

7.2.5.2 Stencil the containers with the tare weight and the Lot Marking System Number according to RM-0005, Lot Marking and Color Coding System.

7.2.5.3 Install plastic liners in the five gallon containers.

NOTE: The equipment to be used for sampling is identified in the Sample Request Form.

7.2.6 Obtain sampling equipment that has a "Clean Equipment" tag attached.

7.2.6.1 If clean equipment is not available, obtain dirty equipment and clean per Item 7.8.

7.2.7 Obtain a box of clean, lidded sampling jars.

7.2.7.1 If the box of jars was not labeled, "Clean," process the jars per Item 7.8.

7.2.8 Tare weigh each sample jar (with lid).

7.2.8.1 Mark the tare weight on a piece of marking tape and place on the jar.

7.2.9 Complete the Sample Label, mark the tare weight on the Sample Label, Form 144, M-145, or M-160 to be used (Refer to Figure 1).

7.2.10 Fill out the applicable portions of a "Solid Waste Analysis Request/Custody Request" (SWAR/CR) form per SSOP-0018.

7.2.11 Place an absorbent pad that is applicable for material to be sampled (water/oil) under the sample jars(s).

7.2.12 Using the Log Book Stamps, imprint the "Sampling Log Book."

7.2.13 Fill out the log book with the information required by the stamp.

7.0 PROCEDURE (cont.)

7.3 SAMPLING

CAUTION: ONLY NON-SPARKING TOOLS AND EXPLOSION-PROOF EQUIPMENT SHALL BE USED IN THE VICINITY OF FLAMMABLE OR COMBUSTIBLE MATERIAL SAMPLING LINES.

7.3.1 Remove the locking ring and drum lid from the drum to be sampled.

7.3.2 Visually inspect the waste material to be sampled to determine the physical characteristics (liquid, solid, dry, or moist).

NOTE: HEPA ventilation devices shall have current DOP Test Labels. DOP Test Labels must be unbroken and legible.

7.3.2.1 If the material is dry, install a HEPA filtered ventilation system per SOP 20-C-602.

7.3.3 Check that the drum contents corresponds with the Material Type Code (MTC) on the drum and the Sample Request Form.

NOTE: The supervisor shall inform Site Media Sampling.

7.3.3.1 If the material does not match the form, notify the supervisor.

7.3.4 If a drum contains solid and liquid phases, proceed as follows:

7.3.4.1 Measure the amount of liquid (in inches) in the drum using a COLIWASA.

7.3.4.2 Measure the amount of solid (in inches) using an Auger or Pipe Sampler.

7.3.4.3 Record the percent liquid and solid in the "Sampling Log Book."

NOTE 1: If the liquid or solid phase is less than five percent of the total volume of the material in the drum, the material is considered single phase and the phase that constitutes less than five percent does not require sampling.

NOTE 2: When each phase is equal to or greater than five percent of the total volume of material in the drum, the drum content is considered multi-phase. Both phases shall be sampled individually.

7.3.4.4 Using a clean COLIWASA, sample the liquid per Item 7.6.

7.0 PROCEDURE (cont.)

7.3.4.5 Deposit the sample into a collection jar or can.

7.3.4.6 If the "Sampling Request" form specifies Volatile Organic Analysis, perform Item 7.10.

7.3.4.7 Transfer collection jar with sample to ventilation enclosure.

7.3.4.8 Fill sample jars from material in the collection jar or can.

7.3.4.9 Dispose of excess sample material in the container from which the sample was taken.

7.3.4.10 Place the lid on sample jar.

7.3.4.11 After the required samples have been taken, clean the exterior of the filled sample jars with either a dry or wet cloth and dispose of the cloth per Item 7.8.7.1.

7.3.4.12 Affix the label(s) to sample jar(s).

7.3.4.13 Seal the jar lid with a "Tamper Proof Seal" (Refer to Figure 2).

7.3.4.14 Using a Pipe Sampler or Auger, take a sample of the solid material per Item 7.4 or 7.5.

7.3.4.15 Deposit the sample into a collection jar or can.

7.3.4.16 Transfer the collection jar with sample to ventilation enclosure.

7.3.4.17 Fill sample jars from material in the collection jar or can.

7.3.4.18 Dispose of excess sample material in the container from which the sample was taken.

7.3.4.19 Place the lid on sample jar.

7.3.4.20 After the required samples have been taken, clean the exterior of the filled sample jars.

7.3.4.21 Affix the label(s) to sample jar(s).

7.3.4.22 Seal the jar lid with a "Tamper Proof Seal" (Refer to Figure 2).

7.3.4.23 Clean samples per Item 7.8.

7.0 PROCEDURE (cont.)

7.3.5 If the waste material is a single solid phase, proceed as follows:

7.3.5.1 Using an Auger Sampler or Pipe Sampler, take a sample per Item 7.4 or 7.5.

7.3.5.2 Deposit the sample into a collection jar or can.

7.3.5.3 Transfer the collection jar with sample to ventilation enclosure.

7.3.5.4 Fill sample jars from material in the collection jar or can.

7.3.5.5 Dispose of excess sample material in the container from which the sample was taken.

7.3.5.6 Place the lid on sample jar.

7.3.5.7 After the required samples have been taken, clean the exterior of the filled sample jars.

7.3.5.8 Affix the label(s) to sample jar(s).

7.3.5.9 Seal the jar lid with a "Tamper Proof Seal" (See Figure 2).

7.3.5.10 Clean the sampler per Item 7.8.

7.3.6 If the waste material is a single liquid phase, proceed as follows:

7.3.6.1 Using a clean COLIWASA, take a sample per Item 7.6.

7.3.6.2 If the "Sampling Request Form" specifies Volatile Organic Analysis, perform 7.10.

7.3.6.3 Deposit the sample into a collection jar or can.

7.3.6.4 Transfer collection jar with sample to ventilation enclosure.

7.3.6.5 Fill sample jars from material in the collection jar or can.

7.3.6.6 Dispose of excess sample material in the container from which the sample was taken.

7.3.6.7 Place the lid on sample jar.

7.3.6.8 After the required samples have been taken, clean the exterior of the filled sample jars.

7.0 PROCEDURE (cont.)

7.3.6.9 Affix the label(s) to sample jar(s).

7.3.6.10 Seal the jar lid with a "Tamper Proof Seal" (See Figure 2).

7.3.6.11 Clean the sampler per Item 7.8.

7.3.7 If a composite sample is to be taken from drums of multi-phase material, record the Lot Marking System Numbers of the drums making up the composite in the Log Book and proceed as follows:

7.3.7.1 Notify the supervisor.

7.3.7.2 Obtain drums that are color coded and identified the same as the drum to be sampled.

7.3.7.3 Using a clean portable pump, transfer the liquid to the empty drum(s).

7.3.7.4 Using an clean Auger Sampler or Pipe Sampler, take samples of the solid material in the drums per Item 7.4 or 7.5.

7.3.7.5 If there is not enough material to fill the samples, take a second sample from each drum.

7.3.7.6 Using a clean stainless steel spatula, mix the contents of the sample can to blend the sample material.

7.3.7.7 Using a scoop, take a sample of the blended composite.

7.3.7.8 Deposit the sample into a collection jar or can.

7.3.7.9 Transfer collection jar with sample to ventilation enclosure.

7.3.7.10 Fill sample jars from material in the collection jar or can.

7.3.7.11 Dispose of excess sample material in the container from which the sample was taken.

7.3.7.12 Place the lid on sample jar.

7.3.7.13 After the required samples have been taken, clean the exterior of the filled sample jars.

7.3.7.14 Affix the label(s) to sample jar(s).

7.0 PROCEDURE (cont.)

7.3.7.15 Seal the jar lid with a "Tamper Proof Seal" (See Figure 2).

7.3.7.16 Lid the composite sample can.

7.3.7.17 Mark the can with the same Material Type and Source Code as the drums that were sampled.

7.3.7.18 Clean the sampler per Item 7.8.

7.3.7.19 Using a COLIWASA, sample the liquid from the drums per Item 7.6.

7.3.7.20 If the "Sampling Request Form" specifies Volatile Organic Analysis, perform 7.10.

7.3.7.21 Deposit the sample into a collection jar or can.

7.3.7.22 Transfer collection jar with sample to ventilation enclosure.

7.3.7.23 Fill sample jars from material in the collection jar or can.

7.3.7.24 Dispose of excess sample material in the container from which the sample was taken.

7.3.7.25 Place the lid on sample jar.

7.3.7.26 After the required samples have been taken, clean the exterior of the filled sample jars.

7.3.7.27 Affix the label(s) to sample jar(s).

7.3.7.28 Seal the jar lid with a "Tamper Proof Seal" (See Figure 2).

7.3.7.29 Mark the can with the same Material Type and Source Code as the drums that were sampled.

7.3.7.30 Clean the sampler per Item 7.8.

7.3.7.31 Prepare the appropriate blank per Item 7.7.

7.3.8 If a composite sample is to be taken from drums of single phase solid material, perform Steps 7.3.7.4 thru 7.3.7.18.

7.3.9 If a composite sample is to be taken from drums of single phase liquid material, perform Steps 7.3.7.19 thru 7.3.7.31.

7.0 PROCEDURE (cont.)

7.3.10 Place the sample jars and blanks in the lockable refrigerator.

7.3.11 Contact MC&A for storage of the drums, Composite Sample Cans, and Trash Containers.

7.3.12 Complete a "Chain-of-Custody Record," Form FMPC-SS-3361 (see Figure 3).

7.3.12.1 If the samples will remain in the area overnight, place the custody record form in the top drawer of the sampling area desk.

7.3.12.2 Lock the desk drawer containing the custody record form.

7.3.13 Lock the refrigerator.

NOTE 1: The supervisor shall arrange to have the samples and "Chain-of-Custody Record" form delivered to the laboratory.

NOTE 2: All sample containers and trash bags shall be surveyed by a Radiation Technician prior to exiting a regulated area.

7.3.14 At the end of the shift, or when sampling is complete, notify the supervisor that samples and blanks require delivery to the Analytical Laboratory.

7.3.15 Ensure that the custody record form accompanies samples being transferred.

7.4 Using the Auger Sampler

7.4.1 Insert the sampler into the material being sampled.

7.4.2 Press down and rotate the sampler T-handle.

7.4.3 Withdraw the sampler from the drum of material.

7.4.4 Check that a complete core sample was taken.

7.4.4.1 If a complete core was not taken, empty the sampler into the drum the material was taken from and return to Step 7.4.1.

7.4.5 Using a clean spatula, push the sample out of the sampler and into a collection jar or can.

7.0 PROCEDURE (cont.)

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7.5 Using the Pipe Sampler

NOTE: The pipe sampler shall be long enough to reach the bottom of the container being sampled.

7.5.1 Insert the pipe sampler diagonally through the contents of the drum.

7.5.2 Rotate the pipe sampler once or twice to cut a core of material.

7.5.3 Ensure that the slot is face up.

7.5.4 Slowly withdraw the pipe sampler from the drum.

7.5.5 Check that the entire length of pipe contains material.

7.5.6 If part of the pipe is empty, proceed as follows:

7.5.6.1 Empty the sampler into the drum the material was taken from.

7.5.6.2 Repeat Steps 7.5.1. thru 7.5.5 until a representative sample is obtained.

7.6 Using a COLIWASA SAMPLER

7.6.1 Check to ensure that the inner tubing and the outer sheath are not cracked.

7.6.1.1 If the sampler is cracked, obtain a new, clean, intact sampler.

7.6.2 Insert the inner tubing inside the sheath.

7.6.3 Raise the ground glass end of tube several inches above the hole in the bottom of the sheath.

NOTE: The COLIWASA shall be lowered so that the levels of liquid inside and outside the sampler tube remain even. If the liquid level in the sampler tube is lower than the level outside the sampler, the rate is too fast and will result in a nonrepresentative sample.

7.6.4 Slowly lower the COLIWASA vertically into the drum, keeping the ground glass end away from the hole in the bottom of the sheath.

7.6.5 When the sheath hits the bottom of the drum, push the inner tube downward so that the ground glass end seals the sheath.

7.0 PROCEDURE (cont.)

NOTE: The ground glass end shall seal the tube bottom.

7.6.6 Slowly withdraw the COLIWASA sampler with one hand while wiping the outside of the sampler with a clean disposable cloth.

7.6.7 Place the disposable cloth in a plastic bag that is labelled for the type of material being sampled.

7.6.8 Dispose of trash bags containing non-RCRA waste per SOP 20-C-601.

7.6.9 Dispose of trash bags containing RCRA, or suspected RCRA, waste per SOP 20-C-605.

NOTE: The analyses listed on the "Sampling Request" form should also be performed on blank samples.

7.7 Taking Blanks

NOTE: Wash Water Blanks are taken weekly, alternating with Equipment Blanks and Trip Blanks.

7.7.1 Wash Water Blanks

7.7.1.1 Using a clean (per item 7.8) pressurized hand pump, decant the clean rinseate from the Wash Water Container into the appropriate numbered sample jars.

NOTE: Taken on alternating weeks with Wash Water and Trip Blanks and Equipment Blanks.

7.7.2 Equipment Blank

7.7.2.1 Using a clean (per Item 7.8) pressurized hand pump and deionized water, rinse the clean sampling equipment.

7.7.2.2 Collect the rinseate in a clean (per Item 7.8) one-gallon sample container.

7.7.2.3 Transfer the water from the container into clean sample jars.

7.7.3 Lid the sample jars.

7.0 PROCEDURE (cont.)

NOTE: Trip Blanks are prepared by Site Media Sampling.

NOTE: Trip Blanks shall only be obtained when volatile organic analysis is required for the material being sampled.

NOTE: Trip Blanks are used to measure cross-contamination of volatile organics during transport, and are taken on alternating weeks with Wash Water and Equipment Blanks.

7.7.4 Trip Blanks

7.7.4.1 Contact Site Media Sampling to obtain blanks.

7.7.5 Complete the applicable "Sample Label" (Refer to Step 7.2.9).

7.7.6 Affix the label(s) to the sample jar(s).

7.8 Cleaning Sampling Equipment

NOTE: Cleaning and rinsing shall be performed over the five-gallon container marked with the appropriate 15-digit FEMP Lot Markings (Refer to Step 7.2.5).

7.8.1 Position the five gallon container in the area where cleaning will be performed.

NOTE: A bottle brush shall be used as necessary to remove particulate matter, films, or other dirt.

NOTE: ALQUINOX or LIQUINOX (or equivalent) may be used as the cleaning detergent.

7.8.2 Using a phosphate free liquid detergent solution, wash the sampling equipment thoroughly.

7.8.3 Rinse the sampling equipment with water.

7.8.4 Drain excess water off the sampling equipment.

NOTE: Pesticide grade isopropanol is below laboratory grade isopropanol.

7.8.5 Rinse the sampling equipment with pesticide grade isopropanol and, if necessary, dry with a clean dry cloth.

7.0 PROCEDURE (cont.)

CAUTION: THE LID SHALL BE KEPT ON THE CONTAINER OF USED WASH AND/OR RINSE SOLUTION WHEN NOT IN USE.

7.8.6 Lid the container of used wash/rinse solution.

7.8.7 If the sampler will not be used immediately, proceed as follows:

7.8.7.1 Place the clean sampler in a clean plastic bag or wrap with a plastic sheet.

7.8.7.2 Complete a "Clean Equipment" tag, Form FMPC-PRO-3128, (See Figure 6).

7.8.7.3 Attach the tag to the clean equipment.

7.8.7.4 Store the sampler per Item 7.9.

7.8.8 When the wash/rinse container is full, process the contents as RCRA waste per SOP 20-C-605.

7.8.9 Dispose of absorbent cloths or trash bags which have not come in contact with RCRA waste or suspected RCRA waste per SSOP-0024.

7.9 Storing Sampling Equipment

7.9.1 Seal the plastic bag with tape.

7.9.2 Place the samplers in a clean, protected area.

7.10 Liquid Organic Analysis Sampling

7.10.1 Obtain a septum bottle.

NOTE: The liquid shall reach slightly above the lip of the bottle.

7.10.2 Carefully fill the septum bottle with the sample liquid.

7.10.3 Place the teflon septum (with teflon side down) on top of the bottle.

7.10.4 Screw the plastic lid on the bottle.

7.10.5 Check the liquid for air bubbles by turning the bottle upside down.

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7.0 PROCEDURE (cont.)

NOTE: Organic analysis requires that no air bubbles be present in the septum bottle.

7.10.6 If air bubbles are present, empty the bottle and repeat Steps 7.10.2 through 7.10.5 until no air bubbles are present.

7.10.7 Label the septum bottle.

8.0 APPLICABLE FORMS

8.1 M-144, M-145, M-160, "Sample Label"

8.2 No Form Number, "Tamper Proof Seal"

8.3 FMPC-SS-3361, "Chain of Custody Record"

8.4 FMPC-PRO-3128, "Clean Equipment Tag"

Green on White
For Enrichment
Less Than 0.71

FMPC-SAMPLE LABEL/RCRA MATERIAL-DEPLETED

SAMPLING LOCATION
COLLECTOR
TYPE OF MATERIAL
TYPE OF SAMPLE
LOT NUMBER OR IDENT
DATE | TIME | NET WT

P.O. NO./ENRICHMENT

FMPC-FORM-306 M-144 (REV 11-29-89)

Red on White
For Enrichment
Greater Than
0.71

FMPC-SAMPLE LABEL/RCRA MATERIAL-ENRICHED

SAMPLING LOCATION
COLLECTOR
TYPE OF MATERIAL
TYPE OF SAMPLE
LOT NUMBER OR IDENT
DATE | TIME | NET WT

P.O. NO./ENRICHMENT

FMPC-FORM-306 M-145 (REV 11-29-89)

(Grams) Gross: Tare:

Black on Yellow
For Enrichment
Equal to 0.71

FMPC-SAMPLE LABEL/RCRA MATERIAL-NORMAL

SAMPLING LOCATION
COLLECTOR
TYPE OF MATERIAL
TYPE OF SAMPLE
LOT NUMBER OR IDENT
DATE | TIME | NET WT

P.O. NO./ENRICHMENT

FMPC-FORM-306 M-160 (REV 11-29-89)

SAMPLE LABELS
M-144, M-145, M-160
Figure 1

4552-

If Seal is broken or package damaged check contents before signing receipt.

TAMPER PROOF SEAL
Figure 2

FMPC
PRODUCTION OPERATIONS
CHAIN-OF-CUSTODY RECORD

Request No _____

Company's Name and Address _____ Phone No _____ Carrier Way Bill No. _____ Lab Destination _____

Name of Sampler(s) _____ Phone No _____ Badge No. _____

SAMPLE NUMBER	SAMPLE LOCATION AND DESCRIPTION (Waste Type)	SAMPLED		SAMPLE TYPE	CONTAINER TYPE	ANALYSES REQUESTED (please refer to last column)						SAMPLE COND ON RECEIPT	TYPES OF ANALYSES
		DATE	TIME										
													1 Complete Analysis 2 Total U 3 Total Th 4 EP Toxicity 5 Isotopic 6 Th-230 7 Th-232 8 Ra-226 9 UpCorg Sample (U Concerned) 10 TopCorg Sample (Th Concerned) 11 _____ 12 _____ 13 _____ 14 _____ 15 _____

Field Information: _____

Possible Sample Hazards: _____

SIGNATURES:

1. Relinquished By: _____ (SIGNATURE / TITLE / COMPANY / INCLUSIVE DATES) Received By: _____
2. Relinquished By: _____ (SIGNATURE / TITLE / COMPANY / INCLUSIVE DATES) Received By: _____
3. Relinquished By: _____ (SIGNATURE / TITLE / COMPANY / INCLUSIVE DATES) Received By: _____
4. Relinquished By: _____ (SIGNATURE / TITLE / COMPANY / INCLUSIVE DATES) Received By: _____

NO.	DISTRIBUTION OF COPIES
1	To Accompany Samples
2	Field Copy

CHAIN OF CUSTODY
FMPC-SS-3361
Figure 3

4552-

CLEANED BY: _____

DATE: _____

Cleaned according to sop : _____

FMPC-OPR-3128 (6/22/89)

CLEAN EQUIPMENT
FMPC-PRO-3128
Figure 4

RECORD OF ISSUE/REVISION

DATE	REV. NO.	DESCRIPTION AND AUTHORITY
04-10-92	0	Procedure required for taking samples from drums of waste material per Request No. P92-049, initiated by J. Hey.

WASTE CERTIFICATION PROGRAM PLAN

FOR

LOW LEVEL WASTE CHARACTERIZATION AND CERTIFICATION

WESTINGHOUSE ENVIRONMENTAL MANAGEMENT COMPANY OF OHIO

P. O. Box 398704

Cincinnati, Ohio 45239-8704

Revision 6 11-20-92

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RECORD OF REVISIONS

REVISION NO.	DATE
0	10/1/87
1	9/19/88
2	1/24/89
3	4/06/89
4	6/28/89
5	6/30/90
6	11/20/92

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PURPOSE OF PLAN

This Waste Certification Program Plan (WCPP) describes the procedures that are used by the Fernald Environmental Management Project (FEMP), Fernald, Ohio, to ensure that the low level waste (LLW) shipped to the Nevada Test Site (NTS) for disposal conforms with all pertinent federal, state and local regulations, and NTS acceptance criteria. The FEMP is managed by Westinghouse Environmental Management Company of Ohio for the U. S. Department of Energy (DOE). The FEMP, previously designated as the Feed Materials Production Center (FMPC), served an important role in DOE defense programs by employing a variety of chemical and metallurgical processes. Although the site is no longer in the production mode, remediation and environmental restoration by Westinghouse Environmental Management Company of Ohio (WEMCO) requires management and disposal of LLW associated with prior defense programs.

The production processes at the FEMP generated solid and liquid low level radioactive wastes. The primary waste forms to be packaged and shipped are waste process residues, scrap wood and wood pallets, refuse metal, miscellaneous trash, thorium waste, and construction/removal action wastes. The uranium content of the uranium waste streams range from about 0.1% to 88%. The ^{235}U isotopic content normally is 0.2% to 2.0%. The specific activity content of the wastes allows it to be classified as Limited Quantity (LQ), or as Low Specific Activity (LSA), subject to exclusive use vehicle shipment regulations.

This WCPP is based primarily on the waste acceptance criteria (WAC) established by NTS NVO-325 and on the American National Standards Institute/American Society of Mechanical Engineers (ANSI/ASME) NQA-1 Quality Assurance Program (QAP) and its supplements, which is applicable to nuclear facilities. In addition, adherence to the QAP ensures compliance with applicable U. S. Department of Transportation (DOT), U. S. Nuclear Regulatory Commission (NRC), U. S. Environmental Protection Agency (EPA), State Environmental Protection Agency and DOE regulations and orders. This WCPP document presents a brief description of operations, waste generation, and applicable standards, regulations, and guidelines, and the QA measures concerning each of the 18 NQA-1 elements.

This WCPP defines key responsibilities for quality assurance and waste certification. Specific responsibilities are defined for Waste Certification Officials and Waste Package Certifiers who certify the waste for shipment.

Flow diagrams and brief descriptions of organizational functions pertaining to waste certification are provided to identify each organization's involvement in the certification process, and to show how each interfaces with the other.

WASTE CERTIFICATION PROGRAM PLAN

1.0 ORGANIZATION

1.1 FEMP Management Organization

The Fernald Environmental Management Project (FEMP) is managed by WEMCO under contract to DOE. An overall WEMCO organizational chart appears in Figure 1. All internal organizations that generate waste are responsible for having their waste characterized and handling it accordingly. The characterization, packaging, certification, and shipment of LLW at the FEMP involves numerous organizations.

1.1.1 Low Level Waste Program

Low Level Waste Program Section manages the waste management functions. This section has the responsibility of defining the management system used to assure the quality of the desired results for waste certification activities. This organization is responsible for establishing sufficient quality control hold points and verifying satisfactory performance of the Quality Certification Program. Specifically, quality control hold points shall be monitored by the Low Level Waste Program management staff to assure program quality is accomplished. The staff shall also evaluate results of program reviews, surveys, surveillances, and audits to determine satisfactory progress of certification activity. However, the performance of these activities may be by other qualified organizations.

1.1.2 On-site Waste Generators (All Organizations)

On-site waste generators are responsible for identifying and describing their waste for characterization and are required to initiate a Material Evaluation Form (MEF) and submit it, along with supporting information, to Facilities and Materials Evaluation (FME). An exception to this is construction projects, where an information package without an MEF is developed for each project and submitted to FME for characterization. Waste characterization for construction projects is documented with a RCRA Characterization/Radiological Determination (RD/RC) letter or a completed MEF or checklist issued from the FME Group and covering all waste streams. The flow diagram (Figure 2 in the Application) reflects the process whereby construction project wastes are characterized. In the near future (target date of February 1, 1993) all waste streams generated at the FEMP will be assigned an MEF number and reviewed in accordance with the MEF worksheets. Once the waste is characterized and determined to be LLW, the waste generator initiates an Item Production/Certification/Identification Card for each waste package, which is traceable to the container either by the container serial number, or the FEMP lot number and assigned container number in combination. The waste generator is responsible for communicating the ongoing status of packaging operations to QA to ensure that all necessary QA examinations can be performed and documented in a timely manner.

1.1.3 Facilities and Materials Evaluation

The FME Section has responsibility for evaluating, characterization, and maintenance of the characterization files. The FEMP's Waste Characterization Program has been developed and refined over several years as the facility has worked to characterize its inventory of backlogged (primarily process residues) and newly generated waste. Additional responsibilities include documenting the evaluation process, maintaining the characterization files, and distributing results of the evaluation.

1.1.4 Materials Control & Accountability

Materials Control & Accountability (MC&A) is responsible for documenting the transfer of the nuclear material constituents of the low level waste. MC&A completes the Shipping Order for the Nuclear Material (FEMP-CONT-558-3) which authorizes each individual shipment. They also perform other nuclear materials accountability functions, including preparation, approval and transmission of the Nuclear Material Transaction Report (DOE-741).

MC&A is responsible for nuclear materials measurement control at the FEMP, which includes weighing, sampling, and analysis. When materials are not amenable to sampling, process measurements are evaluated by MC&A to produce factor assays that are used to quantify nuclear materials in each shipment. They also have the responsibility for generating barcode labels and tracking nuclear materials, which provides accountability and traceability of LLW. The FEMP Lot Marking and Color Coding System is defined in Site Document RM-0005.

1.1.5 Logistics Administration (Traffic)

Logistics Administration contracts with carriers for services that meet DOE requirements for transportation. This organization prepares paperwork for each shipment, overviews supporting documentation for conformance to DOT requirements, and signs the Bill of Lading authorizing shipment. Information on each shipment, including estimated time of arrival, is communicated to NTS and updated as necessary. Logistics Administration exercises review approval of all packaging, loading configuration, shoring, and securing of materials in each shipment.

1.1.6 Transportation and Support Services

Transportation and Support Services is responsible for loading shipments in accordance with approved procedures. Included in this action is inspection of each trailer for leaks, holes, adverse deterioration, or improper sealing. (See Figure 12.

1.1.7 Maintenance Garage

The Maintenance Garage is responsible for performing a limited mechanical inspection of all trailers received at the FEMP and designated for shipment of LLW. Results of these inspections are documented on FS-F-3344 (Figure 13).

1.1.8 Waste Shipping

Waste Shipping is a subgroup in the Waste Shipment & Mixed Waste Storage Group under the Facilities & Warehousing Section of the Site Services Department. Waste Shipping, which is also a significant waste generator, is responsible for final preparation of packages for shipment. Responsibilities include examination, final closure, weighing, labeling, marking, touch-up painting, and staging of shipments for loading.

1.1.9 Waste Shipping Coordinator

The Waste Shipping Coordinator generates the initial paperwork for each shipment that is submitted to Quality Certification for approval. The shipment paperwork package contains the Reynolds Electrical & Engineering Company, Inc. (REECo) Package Storage and Disposal Data Form and other information supporting shipment. Once a shipment is prepared, this individual, or delegate, is responsible for the electronic data transmission to the Low Level Waste Information System, as required by REECo Document DM-5.13.

1.1.10 Centralized Training

Centralized Training is a service organization that reports to the Vice President of Industrial, Radiological Safety and Training. The overall purpose of the section is to assure needed training is identified, developed, implemented, and administered effectively. The Centralized Training Section maintains training records for the FEMP.

1.1.11 Analytical Laboratories

Analytical Laboratories is a section of the Environmental Management Department which performs analyses on site. These analyses include radioactive assay determinations, chemical analyses, and determination of physical properties. The Analytical Laboratories Section includes a Quality Control subsection that administers a formal quality control program for the individual laboratories.

1.1.12 Environmental Monitoring

Environmental Monitoring prepares sampling and analysis plans used in the characterization of low level waste.

1.1.13 Sampling & Analysis Management

Sampling & Analysis Management has responsibility for on-site analytical laboratory quality control and for oversight of contracted laboratory services. The Project Planning Group within this organization has responsibility for preparation of laboratory quality control samples and conduct of laboratory quality control checks and reviews. A Site Sample Management group has responsibility for receipt and shipment of samples, placement and oversight of the laboratory services contract, review of sampling plans, and coordination of site sampling collection activities.

1.1.14 Radiological Safety

Radiological Safety performs radiological surveys of all packages and vehicles involved in the transportation of LLW. This section also maintains an instrumentation laboratory for maintenance and calibration of instruments used in making the surveys.

1.1.15 Environmental Quality Assurance

Environmental Quality Assurance, a section of the Self-Assessment and Continuous Improvement Improvement Processess and Quality Assurance Departments, is comprised of three subsections. Each contributes to ensuring the integrity of waste shipments.

The Audits subsection schedules, plans, and conducts audits to ensure operating organizations (including those involved in waste operations and characterization activities) are in compliance with the FEMP QA Program (Site Document No. RM-0012).

The Regulatory Assurance subsection ensures compliance with all environmental transportation and site requirements. The activity of particular importance to the waste shipping programs includes overview of the entire waste characterization process to ensure that sampling, packaging, analysis, and supporting documentation meet site and regulatory requirements.

The third subsection, Environmental Assurance, maintains full time overview of on-site laboratory activities, and ensures that only qualified contract laboratories are sent samples for analysis. This group also performs surveillance activities of waste storage areas, radiological controls, and other activities which support the waste shipping process.

1.1.16 Sitewide Quality Assurance

Sitewide QA of the Self Assessment, Continuous Improvement Processes, and Quality Assusrance Department is divided into two subsections.

The Quality Certification subsection is responsible for certification of packages and shipments of LLW to the NTS. Activities include verification that packaging, package contents, labeling, marking, placarding, transport vehicle condition, and related paperwork and activities conform to NVO-325 requirements. (Responsibilities and activities of Quality Certification are further delineated in Items 1.2 through 1.4.18, and 2.2 through 2.5 of this WCPP.)

The Quality Verification subsection administers a procurement quality program, which includes the procurement of waste packaging for the LLW shipments. This subsection also provides quality verification of contracted construction work, which includes LLW packaging from the construction projects. When verifying packaging of LLW, respective personnel within this subsection are accountable to the Quality Certification subsection manager, who is also the Chief Certification Official.

1.2 Waste Certification Organization Independence

The independence of the Waste Certification Organization (Quality Certification) is assured by the following organizational hierarchy.

The President of WEMCO retains the authority and responsibility for the overall QA Program of WEMCO, and has approved this WCPP as an appendix to the application to ship LLW to the NTS. Also, by approval of the Quality Assurance Program Description (RM-0012), the President of WEMCO has given the QA portion of the Self Assessment, Continuous Improvement Processes, and Quality Assurance Department (SA,CIP&QA) freedom and authority to assure that the QA Program is implemented throughout WEMCO, and to stop work or control further operations where significant conditions adverse to quality are identified.

The Manager of SA,CIP&QA is responsible for developing the QA Program, with input from all senior managers, monitors its implementation and effectiveness and coordinates the WEMCO Organizations' QA functions. The Manager of SA,CIP&QA reports directly to the President.

The Low Level Waste Program Manager defines the management system to be used to assure the quality of the desired results for waste certification activities.

The Manager of Quality Certification, a subsection of the SA,CIP&QA Department, has full access to the office of the President to resolve certification issues as indicated by a dotted line on the organization chart. This manager, who is also the Chief Certification Official, has authority over the Waste Certification Officials and Waste Package Certifiers, and has responsibility to ensure that all legitimate certification issues are duly addressed. Since all Certification Officials and Waste Package Certifiers are members of the SA,CIP&QA Department, they are also provided independence and protection as provided by the QA Program Description (RM-0012).

1.3 Specific Waste Certification Program Responsibilities

1.3.1 The President of WEMCO retains the authority and responsibility for the overall QA Program of WEMCO.

1.3.2 The Manager of SA,CIP&QA is responsible for monitoring the implementation and effectiveness of the QA Program, and coordinating QA functions.

1.3.3 Low Level Waste Program Manager shall define a management system to be used to assure the quality of the desired results for waste certification activities. The Low Level Waste Program Staff shall:

- Ensure sufficient quality control hold points are established.
- Monitor quality control hold points to assure that program quality has satisfactorily been accomplished.
- Ensure sufficient program reviews, surveys, surveillances, and audits are conducted to ensure satisfactory progress of waste certification activities.

1.3.4 The Chief Waste Certification Official (CWCO) at WEMCO is the Manager of Quality Certification, a subsection of the Sitewide QA Section of the SA,CIP&QA Departments. There are four alternate Waste Certification Officials and five Waste Package Certifiers. These individuals are responsible to the CWCO in the performance of certification activities.

In accordance with NVO-325, Waste Certification Officials are assigned the following responsibilities:

The Chief Waste Certification Official shall:

- Sign the WEMCO application signature page certifying that the information is correct and that the waste stream(s) will meet the NTS WAC upon implementation of the certification program.
- Ensure certification procedures are prepared and used for waste certification activities.
- Ensure the performance of internal audits, inspections, and surveillances.
- Ensure timely identification of deficiencies and effective corrective action.
- Be responsible for assuring that alternate Waste Certification Officials and Waste Package Certifiers are properly trained and qualified to the requirements of NTS Defense WAC and Certification requirements (NVO-325).

Waste Certification Officials shall:

- Verify and document compliance with NVO-325 requirements for shipment of LLW.
- For each waste shipment certified, overview all pertinent documentation and activities as required by procedure to ensure completeness and accuracy, including work of Waste Package Certifiers.
- Sign the Waste Package Disposal Data Report.
- Sign and affix NV-211 stickers to packages of waste they have personally examined for shipment to the NTS.
- Sign the Nuclear Materials Shipping Order to acknowledge QA release of each individual waste shipment.
- Sign the LLW certification statement for each shipment.

Waste Package Certifiers shall:

- Verify and document compliance with NVO-325 requirements for shipment of LLW.
- Sign and affix NV-211 stickers to packages of waste they have personally examined for shipment to the NTS.

1.4 Waste Process and Certification Interface Description

1.4.1 Responsibility for specific operations for LLW generation rests primarily with Low Level Waste Program, Facilities & Materials Evaluation, Analytical Laboratories, Waste Shipping, Radiological Safety, Materials Control & Accountability, Shipping & Support Services, and Logistics Administration (Traffic), and Quality Assurance. Figure 2 shows the waste processing interface, and Figure 3 shows waste certification process.

1.4.2 Once a material, or a group of materials, is declared a waste, the waste is characterized for either storage or disposal. If the waste is characterized as low level defense waste, and sufficient funding is available, Low Level Waste Program may apply to the NTS for approval to ship the waste for burial. The request is prepared in accordance with NVO-325 requirements, with a specified list of approvals required. It is the responsibility of WEMCO Low Level Waste Program to assure that the latest waste acceptance requirements are available from DOE/NV and properly distributed to ensure effective compliance.

1.4.3 Only after approval of the application to ship a waste is received from DOE/NV will shipment be made. It is the responsibility of Low Level Waste Program to provide written notification of approval of any new waste stream, or changes in approval status, to the affected organizations involved in the shipment of LLW.

1.4.4 At the FEMP, a waste generator initiates the waste disposal process by submitting a request to characterize the waste, or by determining that a characterization of the waste has already been made. This is done to verify that the waste is truly a LLW suitable for disposal at NTS. The process for obtaining waste characterization is contained in Site Procedure SSOP-0002.

1.4.5 The waste characterization process is described in detail in Section II of the application to ship waste to NTS. Basic requirements of the program are that waste characterization shall demonstrate compliance with Title 40 Code of Federal Regulations (CFR) 261 through 268, and provide information required by DOE Order 5820.2a. The FEMP waste characterization will also address other waste disposal characteristics specified by NVO-325. Characterization shall be made by process knowledge, and/or through sampling and testing. The results of the characterization shall be supplied to effected organizations and shall specify any administrative controls required to ensure compliance. Administrative controls may typically be special QA verification requirements, specific packaging requirements, or special segregation requirements.

1.4.6 Once the waste generator receives written notification from the FME section of Environmental Management Department that a waste is characterized as LLW, and complies with the general waste form criteria specified by NVO-325, the waste is packaged in containers approved by Low Level Waste Program and accepted by the FEMP Procurement Quality process. All void space in containers is used within practical limits, contingent upon weight restrictions. Waste minimization is further achieved in loading to the extent practical through strategic arrangement, and by utilizing properly sized containers. During filling, the waste generator complies with requirements of a prohibited materials list either attached to the container or maintained in close proximity to the packaging operation. Also, the waste generator shall abide by any administrative controls that are specified in the results of characterization received from FME. When required by procedure, all waste containers are sealed and/or locked to maintain integrity. All packages are closed and temporarily fastened and/or sealed prior to transfer to the Waste Shipping Area. The waste generator, or a cognizant official representative, completes the multiple copy Item Production/Certification/Identification Card for each container (package). The card and other information from packaging is processed by MC&A in the transfer of the container to Waste Shipping.

1.4.7 In accordance with procedure, Sitewide QA personnel inspect empty containers to verify container integrity, verify container preparation for filling, and witness packaging operations to ensure integrity of the waste being packaged. Quality Verification personnel verify waste generated from construction contracts, whereas, Quality Certification personnel verify packaging of waste generated from the process areas. For waste generated from construction contract projects, Quality Verification approves the corresponding Item Production/Certification/Identification Cards (W-65 cards) prior to the waste leaving the construction site. This evidence eventually becomes part of the paperwork package documentation used by Quality Certification to certify the waste for shipment. When quality verification personnel, who may also be qualified as a waste certification official, signs a W-65 card, that individual will not be permitted to certify that package for disposal at the NTS.

1.4.8 At the waste generator's request, MC&A personnel arrange for Transportation and Support Services to move waste packages to a Shipment Staging Area. Waste Shipping receives the waste and prepares the packages for shipment. In some instances (e.g., sea/land type cargo containers), the sealing and final closure may be performed by Waste Shipping at the generation site.

1.4.9 Unless excluded by management directive, all waste containers (except drums) are opened and examined by Waste Shipping for any obvious prohibited materials, utilization of space, and damage prior to final closure. Procedures for closing and securing individual containers vary with the container type. All containers are gross weighed on a calibrated scale to provide accountability and ensure compliance with weight limits. Tare weights may be actual weights, or factor weights based on weighing given quantities of empty containers.

1.4.10 Radiological Safety monitors all transport vehicles and each waste container prior to shipment. Both inbound and outbound vehicles are monitored. Survey measurements on packages are taken prior to preparation of the shipping paperwork. Radiological swipe samples may be taken later, but are required prior to shipment. Administrative time limits are imposed on the swipe sample results commensurate with the package storage environment.

1.4.11 The Waste Shipping Coordinator receives the Item Production/Certification/Identification Cards (W-65 cards) for each package along with other documentation, and uses this information to prepare the REECo Package Storage and Disposal Data Report, and a tally sheet, for each shipment. Once completed, the entire paperwork package, which includes such information as radiological surveys for radiation emission, waste characterization documentation, and a partially completed Nuclear Materials Shipping Order, is delivered to Quality Certification for review and approval.

1.4.12 Quality Certification reviews the shipment paperwork package for accuracy and completeness, verifies compliance with requirements, and approves the Waste Package Disposal and Data Report as required by Procedure EQP-12.07. This is a key control point, as only paperwork listing wastes accepted by formal characterization by FME, and that are listed in a DOE/NV approved application to ship to the NTS will be approved. Although a comprehensive check list is used, certification personnel are not restricted to the checklist requirements, and are encouraged to investigate any anomaly. When approval is granted, the Package Storage and Disposal Data Report is signed by the Waste Certification Official, and pertinent paperwork (e.g., tally sheet, nuclear materials shipping order, radiological survey report, and packaging curie list, is forwarded to MC&A.

1.4.13 MC&A completes and approves the Nuclear Materials Shipping Order, and forwards it along with other pertinent information to the Manager of Logistics Administration to schedule shipment and arrange for transport with an approved carrier.

1.4.14 Radiological checks are made on vehicles entering the site for loading. Also, the trailers receive a mechanical check, which is performed by the Garage mechanics. Once accepted, trailers are staged for subsequent use. At the loading area, a visual examination is made of the interior and loading surfaces to determine suitability for loading.

1.4.15 Quality Certification, either a Waste Package Certifier (WPC) or a Waste Certification Official (WCO), makes a visual inspection of each package in each shipment while still at the staging area. Packages are checked for damage, closure, weight limits, identification, labeling, and marking. Administrative controls include a verification comparison of container identity and other information on the package against that on the respective Package Storage & Disposal (PS&D) Report and corresponding "circle copy." An approved inspection plan, or check list, is used to document verification of acceptance, and is signed by the WPC or WCO directly involved in the examination. The WPC or WCO then signs and affixes an NV-211 sticker to each package on the basis of the examination and confirmation that the PS&D Report was signed by a WCO. The WCO's approval signature on the PS&D Report provides verification that documentation is in file justifying certification and shipment of the packaged material(s). Once the NV-211 sticker is affixed, a tamper indicating device (more than one if needed) is applied to each waste container.

1.4.16 At loading, a signed copy of the Package Storage & Disposal Data Report, and accompanying paperwork, is used by Quality Certification to verify that only packages approved for shipment are loaded. The actual loading is witnessed to ensure that packages are not damaged in the loading process, and that loading is conducted in accordance with procedure. When vans are left unattended, with doors unlocked or unblocked, a temporary security seal is placed on the closure mechanism. Absence of a security seal, after a period of inattention, requires careful examination to assure the integrity of the contents. When shipments are made on flat bed trailers, security seals are attached to the package closure mechanisms to detect possible intrusion.

1.4.17 Once loaded, shipments are weighed and moved to the Traffic Area. Drivers are scheduled to the site and are required to assist in performing a limited vehicle safety check prior to release of the shipment. Radiological checks are made of the outgoing vehicle, including the cab, to ensure compliance with 49 CFR.

1.4.18 The Logistics Administrator's group prepares the Bill of Lading for each shipment and submits a collection of shipment paperwork to a Waste Certification Official for approval. A comprehensive review is made of the paperwork supporting shipment, which includes: Nuclear Materials Shipping Order; Bill of Lading; drivers' routing instructions; permit; radiological surveys of the vehicle; and various checklists, including some prepared by Quality Certification personnel. Signatures are verified, including the Waste Certification Official's approval signature on the Package Storage and Data Disposal Report. Once completed and accepted, the Waste Certification Official signs the Nuclear Materials Shipping Order and a Certification Statement in compliance with NVO-325, which officially releases the shipment to the Manager of Logistics Administration. Based on Traffic requirements, the Logistics Administration, or his delegate, signs the Bill of Lading to authorize shipment to NTS. A unique tamper-proof security seal is affixed to the closure mechanism of each van to provide evidence of any unexpected intrusion during transit.

2.0 WASTE CERTIFICATION PROGRAM

2.1 Quality Assurance Policy Statement - Responsibilities

This WCPP and associated implementing procedures incorporate the WEMCO policies for achieving or exceeding the required level of quality for the packaging and shipping of waste to the NTS for disposal. These documents define a program which provides assurance that DOE, EPA, DOT, and NTS WAC are met.

The authority and responsibilities for the overall quality of the program rests with the President of WEMCO. Members of the President's staff are responsible for implementing the program in their organizations. The responsibility for establishing, executing, and evaluating the overall Quality Assurance Program is assigned to the Manager, SA,CIP&QA. As required by NVO-325, The Manager of Low Level Waste Program is responsible for defining the management system to be used, defining and effecting desired results, and overviewing the certification program to assure that program quality has been satisfactorily accomplished. The Chief Waste Certification Official is responsible for coordinating and managing package and shipment certification activities. Each employee is responsible for compliance with the requirements of this WCPP and the implementing of procedures as they apply to his/her work assignments. Organization charts are shown in Figure 1.

Organizations with the FEMP shall provide support as necessary to certify LLW for disposal at the Nevada Test Site. Certification shall be based on test results and documentation of compliance, which may originate in any one of these groups. To provide highly visible evidence of compliance, a Waste Package Certifier, or a Waste Certification Official, shall sign an NV-211 sticker affixed to each package certifying that the package meets the specified requirements of DOT (49 CFR), EPA (40 CFR), DOE/NV (NVO-325). Prior to LLW leaving the FEMP, a Waste Certification Official shall sign a certification statement that all packages in each shipment do not contain hazardous waste, as defined in 40 CFR 261, or the State of Ohio hazardous waste regulations, as defined in the Ohio Administrative Code (OAC) 3745-54.

2.2 Statement of Independence - Interface Control

Both Waste Package Certifiers and Waste Certification Officials shall be trained and qualified in accordance with approved procedures to provide the necessary skills to make independent judgement decisions regarding certification of low level waste. This WCPP protects their rights of independence in performing this work, as ensured by the WEMCO Quality Assurance Program Description Requirements Manual (RM-0012).

Waste packages and shipments are certified by trained and qualified personnel in the Sitewide Quality Assurance Group, which is organizationally independent from groups directly involved in the actual packaging and shipping of waste. The Manager of Sitewide QA, SA,CIP&QA Departments, or his delegate, certifies that personnel are properly trained and qualified to certify waste packages and shipments. (Reference Appendix I, Section B, FEMP Department Procedures EQP-6.05 and 6.06, for specific training requirements.)

The Quality Certification Manager, as Chief Waste Certification Official, directly supports the implementation of the certification program. Up to four alternate Waste Certification Officials and five Waste Package Certifiers work under his/her direction. Other individuals may perform certification verification work provided they are properly trained for the work performed, as determined by the Chief Waste Certification Official. However, only Waste Certification Officials are authorized to sign certification statements, and only Waste Certification Officials and Waste Package Certifiers are authorized to sign the NV-211 package certification stickers.

The Waste Certification Official and Waste Package Certifiers are not involved in the actual packaging of waste. The Waste Certification Officials and Waste Package Certifiers are part of the SA,CIP&QA Departments. The Manager of SA,CIP&QA reports directly to the President of WEMCO.

2.3 Waste Certification Program Description

The Waste Certification Program provides verification and documentation that waste packages, the materials contained therein, and all package labels and markings thereon, comply with DOE, DOT, and NTS requirements as specified by NVO-325, latest revision, prior to shipment to the NTS. Specific requirements regarding disposal of waste are issued by the WEMCO Facilities & Materials Evaluation Section, and are used by Waste Certification personnel as additional control.

Competent and trained individuals are employed in the packaging, marking, labeling, verifying, and certifying process to provide and collect physical evidence of compliance.

Trained and qualified certifiers are responsible for verifying that all waste packages are in compliance with all applicable requirements. The Certifier is responsible for certifying each package for shipment to NTS. The program empowers the Waste Certification Official, as an independent overviewer, authority to withhold approval of shipments. The Deviation and Corrective Action reporting system provides a means to address questions regarding disposition and corrective action.

The verification and certification of activities, packages, and shipments are directed by Quality Certification procedures EQP-12.03, Certification of Waste Package Examination and Sealing for Off-Site Shipment; EQP-12.04, Certification and Shipment of Low level Waste; and EQP-12.07, Certification of Low Level Waste Shipments to NTS. Numerous other procedures control activities providing documentation used in the certification process. These are included in the list in Table I.

The integrity and acceptability of waste packaged is monitored and documented by established checklists or by approved inspection plans.

Prior to initiating shipment of waste, Quality Certification checks the documentation supporting shipment to ensure conformance to NTS waste acceptance requirements. Material descriptions and traceability are checked against characterization documents to verify that the material has an acceptable characterization determination. Various other checks are made at this time.

Prior to loading packages in a shipment, verification is made that all packages (packaging and contents) meet DOT, EPA, and NVO-325 requirements. The verification is based on visual examination of the packages and review of previous verification documentation. Once completed, an NV-211 sticker, signed by the Waste Package Certifier or a Waste Certification Official, is affixed to each package.

Documents prepared for transport of waste to NTS, and loading and placarding of transport vehicles are verified to be in compliance with DOT and NVO-325 requirements prior to release of shipments.

2.4 Qualification of Waste Certification Officials

Waste Certification Officials are qualified per procedure EQP-6.05, Qualification of Waste Certification Officials. Qualification is based on education, experience, surveillance skills, and rights of management. In order to be certified as a Waste Certification Official, the candidate must understand and be able to apply the requirements unique to the waste type and the acceptance criteria specific to the repository, treatment, or disposal facility. Waste Certification Officials are required to have working knowledge of applicable regulations and procedures and to be familiar with prohibited and non-prohibited waste materials and their chemical constituents. Experience and ongoing training in environmental compliance and DOT regulations are required. This training is accomplished through attendance at DOE sponsored courses, as well as other agency courses that may be available.

2.5 Qualification of Waste Package Certifiers

Waste Package Certifiers are qualified per procedure EQP-6.04, Qualification of Waste Package Certifiers. Qualification is made on the basis of education, experience, management judgement, and surveillance skills. In order to be certified for a waste package type, the candidate must understand and be able to verify the requirements unique to that package type and the acceptance criteria unique to the repository, treatment, or disposal facility. Specific verification skills include specialized areas of expertise, such as vehicle inspection, understanding of applicable standards, and FEMP requirements.

2.6 General Requirements for Certification/Verification Personnel

Personnel performing certification verification work are selected and assigned work based upon work experience and training. Formal training is required on NVO-325, the WCPP, and the W-65 card (FMPC-CONT-1945-XX, Item Production/Certification/Identification). Supplementary training includes attending Shipping & Support Services, Waste Shipping, Solid Waste Compliance, and Quality procedures training courses that are offered by WEMCO. Based upon need and application to work performed, attendance at selected training seminars is required.

3.0 DESIGN CONTROL

3.1 Design of Waste Certification Process

At the present time, no actual design work relating to the waste certification process is in progress. However, development and control of design is controlled by Site Procedure FMPC-0702. This procedure specifies the activities that are required to assure that design requirements are correctly translated into specifications, drawings, procedures and instructions. It also specifies requirements for a formal design verification process.

To assure waste determination, each generator must initiate an "Item Production/Certification/Identification" (see Figure 14). This form verifies the container is empty before filling, and that the container is filled with only the waste as specified. When the container is filled, the form is completed and signed by the generator. Prior to the shipment of waste, the signed form is sent to Quality Certification and is maintained as a permanent record.

Processes that directly affect the certification of the waste material shall be performed in accordance with written procedures or instructions (see Table I). Assurance that current SOPs are being followed shall be ensured by internal audits and surveillances, and by inspections performed by QA personnel. Data from sample analyses offer a secondary assurance of conformance, and shall be collected and kept as recorded evidence of verification of the processes.

A performance-based in-house training program shall be utilized to train personnel involved in waste processing. This ensures that supervision and operation staffs have the necessary skills to prepare waste for shipment.

3.1.1 Waste materials shall not be mixed with other waste or materials which could cause any harmful effects, such as heat or pressure, fire or explosion, toxic dusts, fumes, or gases or flammable fumes or gases (40 CFR 265 Appendix V). Compatibility determinations are based on analytical data and/or process knowledge. The type of waste container selected to hold a waste is compatible with the respective waste, and meets requirements of the Department of Transportation (49 CFR 173.411, 173.421 and 173.425).

3.2 Waste Form Processing for Compliance

The Operational Defense Waste Management Plan for the NTS, NVO-325, and DOE Order 5700.6C establishes procedures and criteria for the safe shipping, receiving, processing, disposing, and storing of radioactive defense waste at NTS. These criteria are based on current low level radioactive waste management practices and guidelines of (DOE Order 5820.2A). The quality assurance guidelines of DOE Order 5700.6C and ANSI/ASME NQA-1 have also been incorporated in the WEMCO Quality Assurance Program Description (RM-0012). All work is performed in accordance with this manual.

Old, stored waste forms will be handled in much the same manner as newly generated waste. A waste characterization shall be performed to determine major radionuclide content and a RCRA determination, if not previously done. After characterization is complete and the waste form meets NVO-325 requirements as stated above, the waste shall be processed, if necessary, and repackaged or overpacked for shipment and disposal to meet NVO-325 packaging requirements and DOT transport regulations.

3.3 Waste Packaging Processing for Compliance

Waste packaging criteria for LLW shipped to the NTS for disposal shall meet DOT regulations, 49 CFR 173, Subpart I. Standard operating procedures listed in Table I concerning storage and off-site shipments shall be used to assure that all shipments meet DOT requirements.

4.0 PROCUREMENT DOCUMENT CONTROL

The Procurement Document package is prepared by requisitioners/users, and includes drawings, specifications, and quality requirements for suppliers of critical items, such as waste shipping containers. The document packages are reviewed by QA, Safety, and Procurement to assure that specifications are complete, appropriate quality level assignments are made, and that quality requirements are included that correspond to the quality level assigned for the procurement.

Quality Assurance provides Procurement with recommended supplier lists that are generated based on QA supplier surveillance activity and performance on prior contracts.

Critical characteristics for inspection are identified during QA review of the specification documents with a cognizant engineer representing the requisitioner/user of the items being procured, and an Inspection Plan is prepared. The Inspection Plan is used by QA during surveillance activity conducted at the supplier's facilities in the verification of inspection of the items being procured. Surveillance activity at the supplier's facilities is used to verify compliance with the procurement contract requirements and eliminate receipt and isolation of nonconforming items at the FEMP. Receiving Inspection for waste shipping containers is performed by Shipping and Support Services. A prearranged Inspection Plan is used for this function. Acceptable items are tagged acceptable (Form FS-F-2707) and released for use. Nonconforming items, identified during FEMP Receiving Inspection, are isolated, red-tagged (Form FMPC-Q-2708), and dispositioned based on approved Deviation/Corrective Action Reports.

Traceability is maintained for the Procurement Document Control activities for the critical items listed in Table V.

5.0 INSTRUCTIONS, PROCEDURES & DRAWINGS

5.1 Procedures for Waste Generation, Segregation, Packaging & Shipping

When a waste operations process is in the development state, qualification of the new or revised process shall be achieved in accordance with the documented "Test Authorization," (Operating Manual OM-003 and Site Procedure PP-0721). Results of the development and a record of the changes to the process will be documented by the Test Coordinator in a "Test Authorization" Completion Report.

Prior to implementation, procedures developed for waste generating, segregating, packaging, and shipping must be routed and approved by all departments involved in the process. Procedures are approved by the applicable department managers. The approvals verify that particular control requirements are applicable for their intended use. Understanding and acceptance are indicated by the signature(s) and the date(s) on the procedure.

The release and distribution of Site Plans, Site Manuals, and Site Standard Operating Procedures are controlled by the Commitment and Documentation Control Section of the Resource Planning, Scheduling, and Integration (RSP&I) Department. This group is also responsible for directing the user to dispose of applicable procedures.

Some procedures are routed and controlled within each individual department (e.g. Radiological Safety). These procedures are approved by the responsible department manager, and are controlled and released by the applicable department.

In accordance with the site document control procedure, all procedures will be reviewed annually for accuracy and to assure they are up-to-date.

5.2 Analytical Procedures

Wastes are sampled for hazardous waste determination according to sample plans developed, the FEMP Waste Characterization Plan, and the U.S. EPA method as described in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods" (SW-846), and the FEMP Procedure SOP 1-C-101, entitled "Sampling Residues and Waste Materials."

Samples may be taken using an open scoop, a slotted pipe, a sheathed or closed auger, or other approved sampling device, depending on the nature of the material. The sample obtained from the waste material requires sample preparation, which may including: drying, milling, blending, screening, pulverizing, and subsampling. The prepared sample is then submitted to the FEMP Laboratory for the percent uranium (or thorium) analysis and isotopic evaluation. Before a given sampling device or procedure can be finally accepted for sampling purposes, it is necessary to evaluate the accuracy and precision of the method as it is used to sample a specific type of material. It is also desirable to provide periodic and/or continuous checks on the various sampling techniques. These evaluations may be accomplished in a number of ways.

Sampling of uranium (or thorium) solutions is accomplished by taking dip samples or removing a sample from a well-agitated storage tank using a liquid sampler. However, bulk solids sampling presents the greatest difficulty. Some of the various methods for evaluating sampling procedures are:

1. Duplicate sampling by identical procedures.
2. Dual sampling, using at least two different samplers.
3. Dilution of inert material with a known amount of standard oxide, and blending the mixture.
4. Process evaluation in which samples of questionable materials, not amenable to sampling in their original state, may be evaluated by comparison with samples taken of the processed or oxidized product, once it is in a form suitable for sampling.

In all cases, analytical variance statistical techniques are used in determining the significance of differences between sampling tests. Sample results are entered into the Analytical Laboratory Information System (AnaLIS) and available to the users.

Some materials, such as contaminated baled trash and solid metal, cannot be representatively sampled for percent uranium. These types of materials are assigned factor assays. These factor assays are based upon recovery campaigns, special studies, or process knowledge estimates.

Tentative assay values are used for materials routinely produced, until individual lot assays are performed by the Analytical Laboratory. A complete factor and tentative assay list is issued as needed by MC&A for general use.

The MC&A Section calculates element and isotopic content by weight. The necessary release documentation for off-site shipment is then prepared. All process residues prepared for off-site disposal are sampled, and analyses are performed in accordance with approved Analytical Laboratory methods.

The hazardous waste determination performed on FEMP waste follows a strict chain-of-custody protocol for collected samples. Chain-of-custody accounts for the transfer of each sample from collection through delivery to the laboratory. Following collection of the samples for hazardous determination, the lids on the containers shall be securely fastened, and proper chain-of-custody documentation prepared (see Figures 7 & 8).

5.3 Sample Custody

Routine samples of process waste collected, while packaging, are accompanied by an "Analytical Laboratory Sample Seal," "Analytical Laboratory Sample Label," and a "Chain-of-Custody Record," FMPC-PRO-3112, (Figures 6, 7, and 8). These forms are completed by the requester, who retains a copy and forwards the form and samples to the analytical laboratory.

Wet/dry residue samples for percent uranium are returned to the waste stream for disposal. The Chain-of-Custody Record is kept for at least three years by the sample receiving laboratory. The Communications Services Group maintains the Chain-of-Custody Record and analyses reports for a minimum of three years. Figure 4 shows a flow chart of analysis reports and samples.

Sample determinations for hazardous materials following EPA (SW-846) protocols require chain-of-custody documentation to accompany the samples. Figures 7 and 8 show these FEMP forms.

5.4 Drawings - Facilities, Process Equipment & Forms Control

Documents (plans, drawings, specifications, procedures, instructions) that establish the waste process and the integrity of the waste container and its contents shall be controlled and maintained for a period of 20 years. Changes to these documents are initiated, reviewed, and approved by the same department/section that originated and approved the controlled documents. Tables II and III identify the documents to be controlled.

Each process, waste lot, or batch is accounted for by item number, net weight, element weight, and isotopic weight, which are the result of actual measurements. Lot numbers are assigned and controlled in accordance with RM-0005, FEMP Lot Marking and Color Coding System. The movement of material from a location is strictly controlled by MC&A and must be authorized in advance. Physical inventories are taken and recorded annually. All accounting records are maintained in computer data bases.

All box type containers are tracked and controlled in accordance with Site Procedure SSOP-0027, Control of Box Type Containers.

Whenever amenable, composite samples are taken of each lot during the waste and production process to verify isotopic and percent uranium content. Sampling and analysis of each individual waste is performed as required to classify each waste. Sampling of drummed waste is performed in accordance with FMPC-2185, Sampling Plan for Drummed Waste at the FMPC.

Forms are controlled by unique numbers that are traceable.

5.5 Inspection & Certification Procedures

Inspection and certification activities shall be identified on documents traceable to the items, inspected or certified. Table I lists the procedure in which inspection and certification activities are documented.

5.6 Procedures For Keeping Pertinent Regulations Up-To-Date

Compliance documents, federal and state regulations are ordered annually by subscription through the FEMP Library with approval by DOE. [Procedure for Obtaining New Library Materials (TS:RHG:88-003)]. Current regulations are maintained in the library and the Code of Federal Regulations are maintained in the Legal Library. Other WEMCO departments must request copies of regulatory documents through the Technical Library. A list of waste processing specifications appears in Table VI.

Subscription copies of Title 49 CFR, Part 100-177, and Title 40 CFR are maintained by the Chief Waste Certification Official, and are kept up to date for use by Waste Certification Officials and Waste Package Certifiers in the performance of their work.

All procedures and manuals (including this document) are reviewed by the responsible departments on a periodic basis and revised as required.

Regulatory Affairs initiates and routes new regulatory requirements to Low Level Waste Program, Quality Certification, and waste generators in a document titled "Regulatory Compliance Guide." They also issue Federal Register Highlights and/or notify management by memorandum.

6.0 DOCUMENT CONTROL

6.1 Waste Certification Program Plan

The WCPP shall be controlled with unique numbers and identified on a controlled master list, so that the number designating the current issue can be quickly and easily checked to ensure that the most up-to-date version of a document is used. This list is updated on a periodic basis as the document(s) are changed and reissued. DOE/NV and REECo shall be issued a control copy of the WCPP, and significant revisions shall be submitted to DOE/NV and REECo for review.

6.2 Document Preparation, Review, Approval & Issuance

Site Document PP-0103, Site Document System, defines the system of documents by which the FEMP is managed, and details the requirement for development, preparation, and control of these documents.

Site document preparation, review, approval, and issuance is under the control of the Commitment and Documentation Control Section in the Resource Planning, Scheduling, and Integration Department. Preparation of site documents involves a subject matter expert, a technical writer, and the user. All site documents undergo an extensive review process.

Department level documents are prepared, reviewed, approved, and issued by each department. Reviews and issuance of these documents may cross departmental lines. However, approval is by the Manager of the department having ownership of the document. It is the responsibility of each department to exercise control of their documents.

Some documents are controlled and issued by the Library, or are available for use in the Library.

Controlled documents are maintained as stated in 6.1. Table I contains a list of documents to be controlled.

7.0 CONTROL OF PURCHASED ITEMS & SERVICES

7.1 Receipt Inspection

All shipping containers are initially reviewed upon receipt at WEMCO for visible damage and completeness of the shipping orders. Sitewide QA is responsible for overviewing receipt inspection of items as required. All inspections are documented on an inspection form containing the acceptance requirements. All items found to be acceptable are tagged and released for use (Figures 9, 10, and 11). Items found to be nonconforming are tagged and a nonconformance report issued (see Section 15.0). In addition, inspections of containers are reviewed by Sitewide QA at the supplier facility prior to shipment to WEMCO.

7.2 Contract Review

Review of contract and supplier submittal is performed by QA, the requisitioner, and Procurement and Contracts Sections. Based on the importance and complexity of the purchase, requirements are placed in the purchase order for QA to conduct, as applicable, supplier surveillances of fabricating, inspecting, testing, and shipping. During the course of the procurement process, documents by the supplier are submitted for WEMCO approval. The requisitioner, Procurement and Contracts, and QA may witness supplier activities, if deemed necessary. Controlled items are listed in Table V.

7.3 Purchase Requisitions, Purchase Orders & Invoices

A purchase requisition package is initiated by requisitioners/users of the items to be procured which includes drawings, written specifications, and quality requirements for FEMP suppliers. The requisitioner/user applies a quality level numerical indicator to the requisition package and the package is reviewed and approved by QA and Safety prior to receipt by Procurement for processing.

The FEMP QA Program provides a grade level system to indicate the appropriate management system controls to be imposed in order to assure conformance to applicable quality requirements. Quality levels are defined and guidelines are provided for matching quality requirements to quality levels in Site Procedure FMPC-711. Quality levels are assigned, based on a risk assessment of the consequence and probability of a failure. Instructions for performing a risk assessment and a matrix for determining the appropriate quality level assignment are provided in Site Manual SM-0001.

The approved requisition package is Procurement's authority to initiate the procurement process. Procurement evaluates and selects suppliers based on a suggested suppliers identified on the requisition by the requisitioning party, recommended suppliers lists from QA, and evaluations made from bid/proposal responses solicited from potential suppliers. Based on these evaluations, Procurement issues a purchase order to the selected supplier. The purchase order is the contract agreement between FEMP Procurement and the supplier.

Procurement maintains a database for purchase order information. Receiving information is entered into the Procurement purchase order database direct by FEMP Receiving personnel. Receiving people can access the database for entry of receiving information or pricing. Critical items, as listed in Table V, are then moved into the Receiving Inspection area for inspection by Facilities and Warehousing.

7.4 Source Inspections

Supplier inspection of containers, assay systems, and instruments are witnessed by QA and Procurement Contracts Sections. Surveillance of suppliers is planned and performed during material processing to assure the supplier satisfactorily performs the fabrication, inspection, and testing prior to shipping according to purchase order requirements. Surveillance activities, including supplier discrepancies and audit results, are documented. Source inspections of procured items are documented in surveillance reports, and copies are sent to the Chief Certification Official for informal review.

8.0 IDENTIFICATION & CONTROL OF MATERIALS, PARTS & COMPONENTS

8.1 Containers & Packaging Materials

All containers used for shipment to NTS shall be properly designed to reduce the chance of radiological or occupational safety occurrences during the transporting, handling, and disposing operations. The size and the load of each container shall be controlled to ensure the minimization of the number of waste shipments to NTS and the space required for disposal (Table V).

Package materials are maintained and controlled in FEMP Stores (stock room). Each item is numbered and cataloged. Daily computer printouts show maximum/minimum levels of items for reorder as necessary. Economic order quantity calculations to determine annual usage are performed on items which are not needed as often.

8.2 FEMP Materials Lot Marking System

Filled waste containers are marked in accordance with the "FEMP Lot Marking Code and Color Coding System," RM-0005. This code system identifies the waste material and the source. The system utilizes a 15-digit number which appears in the following sequence:

4-digits **Production Order (PO) Number**, which is an alpha numeric number assigned at the FEMP. Waste packaged specifically for shipment to NTS may be marked with the PO Number N003 for uranium wastes and PO Number N004 for thorium wastes.

or

When the PO Number is not applicable, other code designations may appear here. For LLW, a "W" as the first digit indicates the material is a nonrecoverable radioactive waste. The three digits following the "W" are the FEMP's best estimate of the secondary nuclide content expressed in percent of the total nuclides.

3-digits **Source Code**. The source code will vary for LLW dependent of the source location of the waste when packaging was completed for shipment. Thus, this code does not always indicate the initial source location or origin of the waste.

1-digit **Class or Enrichment Code.** The code can either be numeric or alphabetic. Codes currently assigned for waste are:

- P Depleted uranium (<0.710% U-235)
- N Normal uranium (0.710% to 0.712% U-235)
- V Enriched uranium (>0.712% U-235)
- T Thorium

3-digits **Material Description Code.** These codes are used at the FEMP to designate residue and product categories, which include the material codes for waste shipped to the NTS. Although an extensive number of codes are assigned, some are defined more generically to permit packaging and lotting the more diverse materials with similar characteristics together.

4-digits **Lot Sequence Number.** For residues, the 4-digit number identifies consecutive lots of specific material in sequence where more than one lot was produced in a month. Where not more than one lot was produced in a month, the lot sequence number indicates the consecutive month of production starting with January 1962 as Lot 0001. Thus, the lot designation for January 1992 is 0361, February 1992 is 0362, and etc.

For trash, the last three digits of the four digit number indicate the consecutive lot sequence number that started in January 1962 as explained above. The preceding digit, or first digit, indicates the trash description as defined in the FEMP Lot Marking Manual as follows:

1 Glass
2 Rubber Hose
3 Plastic
4 Metal
5 Concrete, Ceramics, Soil
6 Contaminated Burnables
7 (not used for waste shipped to NTS)
8 Floor Sweepings
9 Other (Type of trash stenciled on container until dispositioned for shipment)

Examples of the lot marking for LLW are as follows:

Example 1: W050 - 100 - P003 - 9144

W = Waste
050 = Applicable to waste (0.5% U-235)
1 = Produced in Plant 1 Area
00 = General (no specific source area designated)

P = Enrichment designated as Depleted
003 = Material description is "Non-recoverable Trash - for Off-Site Burial

9 = Other trash
144 = The 144th lot produced sequentially, where rate of production was more than one lot each month.

Example 2: 0000 - 800 - T167 - 0024

0000 = (The first four digits of the code was not used and appear as zeros.)

8 = Produced in Plant 8 Area
00 = General (No specific area designated)

T = Thorium
167 = ThO_2 Powder - Refinery Feed

0024 = The 24th lot produced sequentially, where rate of production was more than one lot each month.

The lot marking system was designed many years ago to provide identity and method of accounting for radioactive materials associated with the defense program at the FEMP. During this extensive period, the system worked well, but required numerous changes to better account for an ever changing diversity of materials. The system is still undergoing change, much of it in response to the conversion of the FEMP from a production site to an environmental remediation site, which has induced a need to better define the non-nuclear components of the various radioactive and radioactive contaminated materials.

Since there was, and continues to be, a practical limit to the number of material description codes and associated control and segregation work, some material description codes were intentionally made more generic. As a result, it is possible that like materials fitting more than one description may have been lotted at different times with different material description codes. Or in the case of updates to the coding system, a new material description may have been found more applicable to the material being lotted than a previously used code. Thus, it is important to understand that for nondescript materials that were lotted, the material description will not necessarily provide an exact physical description of all materials within a respective lot.

8.3 Analytical Calibration Standards

Primary reference standards are obtained from the National Institute of Standards and Technology (NIST) or other reliable sources. Secondary reference standards are traceable to primary standard, or compared to a primary standard within the FEMP Analytical Laboratories, if available. All standards used for TCLP analyses are traceable to the National Institute of Standards & Technology (NIST). Preparation of secondary standards within the Analytical Lab are per approved documented procedures. Documentation of the preparation of secondary standards is complete and accurate.

9.0 CONTROL OF PROCESS

9.1 Sample For Waste Analysis

Process waste samples are collected when characterization by process knowledge cannot be completed and delivered to the FEMP laboratory for analysis. MC&A calculates an assay factor to estimate percent uranium on waste for which samples are not obtained. A chain of custody for laboratory samples is presently being used (Figures 7 & 8). Figure 4 shows the flow of samples and analysis reports.

9.2 Control of Processes

Waste acceptance criteria (WAC) are incorporated by each organization (e.g. Waste Shipping, QA, Radiological Safety, Shipping and Support Services, etc.) into established procedures for the safe processing of radioactive defense wastes based upon current LLW practices and guidelines (DOE Order 5820.2a). QA guidelines of DOE Order 5700.6C and ANSI/NQA-1 are incorporated into the FEMP waste processing system. How the FEMP meets the WAC is illustrated in Figures 3, 4 and 5 of this plan.

9.3 Nuclear Safety

The quantity of fissile materials within a package shall be limited so that an infinite array of such packages will remain subcritical, even with close water reflection on all sides. This quantity shall be determined on the basis of a specific nuclear safety analysis, considering credible accident situations, and taking into account the actual materials in the waste. Title 49 CFR 173.451, "Fissile Materials - General Requirements" shall be followed.

9.4 Storage and Shipment

All low level radioactive waste destined for off-site disposal at NTS shall meet DOT regulations (49 CFR 173, Subpart I). Standard operating procedures listed in Table I, concerning storage and off-site shipments, shall be used to assure that all shipments meet DOT requirements. Packaging shall be consistent with 49 CFR requirements and NVO-325.

9.5 Certification Process

9.5.1 The certification process is designed to "certify" that each waste package meets all applicable criteria and is accompanied by all necessary documentation before leaving the FEMP site. Figure 3 shows a flow chart of the process and QA hold points.

9.5.2 Waste certification begins with the generator, who is responsible for the waste until the container is transferred to Waste Shipping. The generator's signature on an FMPC-ES&H-1945-XX form, "Item Production/Certification/Identification" card (see Figure 14) provides documented verification that the waste is as described and contains no prohibited materials.

This form requires completion and signature of the person packaging, or observing the packaging of waste, which can be an hourly or salaried person. The approval of the form shall always be a responsible salaried person. Personnel from the Sitewide Quality Assurance Section periodically witness container filling in accordance with procedures, which requires full-time attention in some areas. The Quality Verification Group of Sitewide QA provides routine verification of waste packaged at subcontract projects on site.

9.5.3 The Quality Certification Group, Sitewide Quality Assurance, obtains information for certification from several sources. Considerable reliance is placed on Facilities and Materials Evaluation for characterization of waste; Analytical for analytical results of materials characterized and shipped; and Materials Control and Accountability for material control and waste information, and for formulation of factor assay analyses. The certification process utilizes the expertise of all pertinent organizations to the extent necessary to provide an authoritative basis for certification. All information used is related to the wastes of concern by a suitable reference identification supplemented by material descriptions as needed.

9.5.4 Waste Certification Officials overview waste packaging and shipment activities, and either directly or indirectly verify the adequacy and authenticity of documentation of certification. Based on their evaluation, certification is made or withheld. Reevaluation and changes in decisions are possible based on additional information providing there is valid technical justification for change.

9.5.5 Each filled container has an identification number that is unique either by itself or in combination with the FEMP lot code number assigned in accordance with RM-0005, FEMP Lot Marking and Color Coding System. This identifying information, and other pertinent information, is recorded on the FMPC-ES&H-1945-XX form, which upon shipment becomes part of the official certification file. Once completed, the generator notifies Materials Control and Accountability (MC&A) who then requests transfer by Shipping and Support Services. The filled containers are then moved to Waste Shipping for final shipment preparation, or to temporary storage. During the entire process, MC&A maintains an inventory and tracks the movement of all individual containers of LLW.

9.5.6 Waste Shipping completes final shipment preparation and assigns the sequential shipment number. Drums, which have sequential numbers starting over with each sequential lot, are at this time sequentially renumbered for each shipment to avoid duplication. Traceability is maintained by recording the change on the Item Production/Certification/Identification card (FEMP-CONT-1945-XX).

9.5.7 Waste Package Certifiers and/or Waste Certification Officials perform final examination of each package of waste. They may be assisted by other personnel in examining packages and affixing labels provided direct and continuous overview is maintained, and the person assisting is not required to make significant judgement decisions. The signing of the NV-211 sticker (legibly handwritten - not stamped) by a trained and qualified Waste Package Certifier or Waste Certification Official certifies that the package complies with U.S. DOT, EPA, and DOE/NV requirements.

9.5.8 The loading of packages on the transport vehicle by Shipping and Support Services is monitored by Quality Certification to ensure that no damage occurs between certification and shipment. Transport vehicles are examined by Quality Certification prior to and after loading. Shipping and Support Services also checks the vehicles and the loading of the shipments.

9.5.9 Quality Certification provides control over materials shipped through an approval and certification process. The approval by a Waste Certification Official is required on the Storage and Disposal Date Report that is prepared for each shipment. The Nuclear Material Shipping Orders, and corresponding shipment certification statements, require approval signatures of a Waste Certification Official before shipments are released. Once this approval is complete, Logistics Administration is responsible for final release and arrangement for transport of each waste shipment. They provide notification to NTS of estimated arrival times, change in schedules, and other traffic related matters.

9.5.10 Deviation and Corrective Action Reports document disposition of nonconformances, including technical justification of acceptance. Disposition requires independent evaluation and approval by a QA evaluator. Nonconformances that do not meet requirements for shipment are unacceptable.

9.6 Shipping Process - Manifest, Labeling, Placarding, Weighing, and Loading

All radioactive waste shipments consigned to NTS shall be made in accordance with applicable Department of Transportation (Title 49 CFR) and DOE/NV requirements.

Special requirements for the documentation,, labeling, placarding, weighing and loading are detailed in Department Procedure SOP-TRF-46-C-110, and Policy and Procedure PP-0314.

10.0 INSPECTION

10.1 Waste Package Receiving Inspections

Inspections of waste packaging are conducted by the supplier per approved inspection plan, and witnessed by Sitewide Quality Assurance. On the basis of acceptable results, a Supplier Quality Assurance Release is issued to permit shipment. Issuance of a surveillance report documents all inspection activity. Once received at the FEMP, the waste containers are inspected for evidence of damage incurred during shipping and handling. An inspection report is issued, and containers are tagged accepted, on the basis of results.

10.2 In-Process Inspections

In-process inspections/reviews of identified waste operations processes are met through procedures and checklists. FEMP acceptance standards are:

- Incoming vehicle inspections
- Verification of materials packaged
- Container integrity
- Proper markings on exterior of containers, including gross weight (49 CFR 172.310a), and container identification
- Integrity of container liner as applicable
- Waste material sufficiently dry
- Proper seating and tightening of container lid and closure to specifications
- Contamination readings on exterior of packages and vehicles
- Radiation reading at specified points (packages and vehicles)

Analytical results shall be performed, as necessary, to verify that the chemical and radiological composition of the waste is within the requirements specified for shipment to NTS.

10.3 Define Waste Certifying Function

The Quality Certification function is to certify that wastes shipped to the NTS meet NVO-325, DOE, EPA, and DOT requirements. In accordance with procedures, regulations, and official directives developed by Waste Management Projects, Waste Shipping, Environmental Compliance and Quality Assurance, Radiological Safety, and Environmental Engineering, Quality Certification is responsible for verifying the acceptability of the labeling and marking, the condition, the content of each waste package, and the use of approved packaging materials and techniques prior to loading each shipment. Also, an overview is performed of the loading and placarding of each vehicle (to ensure compliance with DOT regulations). Shipping documentation is reviewed for accuracy and completeness prior to final release for shipment. Included in the certification function is the collecting, processing, documenting, and distributing of information used to certify shipment of waste to the NTS. A responsibility also exists for monitoring in areas of waste generation.

11.0 TEST CONTROLS

11.1 Definition of Test

Tests that are required to verify and certify conformance to specification requirements shall be planned and executed. Characteristics to be tested and test methods to be employed shall be specified. The results shall be documented and their conformance with acceptable criteria shall be evaluated and included in the certification reports.

When a process is in the development state, qualification of the new or revised process shall be achieved in accordance with the documented "Test Authorization" (TA). Results of the development and a record of the changes to the process will be documented by the Test Coordinator in the TA completion report. Applicable management review and approval is required to issue a TA. Results of the TA can be utilized to develop procedures and specifications that address particle size, package design, labeling, exterior contamination, radiation levels at exterior surfaces, and chemical composition.

11.2 Analytical Test Controls

Analytical Laboratories Quality Control/Data Management prepares and distributes quality control samples for the analytical lab. The individual laboratories analyze these quality control samples in the normal lab sample stream. Quality control samples make up approximately 10 percent of the total samples analyzed. The following Analytical Laboratory controls are:

- An internal lab standard, reference standard, is used to analyze the measurement system to ensure it is "in control." The frequency of analysis of reference standards depends on the characteristics of the individual measurement system.

- A blank sample is formulated in the lab or field in order to duplicate a routine sample excepting the absence of the analyte. Analysis of blank samples provides a date for determining interferences due to contamination and for establishing lower limits of detection.

- Two kinds of samples are used for replication of analyses, duplicate and recycle samples. Replicate analyses provide data for the evaluation of the precision of an analytical method.

- Control samples are a sample of known concentration of either a primary standard or a standardized production material. These samples provide data for the evaluation of the accuracy and precision of an analytical method.

- Finally, the Analytical Laboratory uses a spiked sample of a known amount of analyte. The percent recovery can be calculated from the difference between the measured concentrations of the spiked and routine samples. Analyses of the percent recovery from spiked samples is useful for determination of matrix and interference effects, determination of accuracy, and precision and testing for changes in analytical quality.

11.3 Traceability of Calibration Sources

The Analytical Laboratory Quality Control/Data Management supervisor has the responsibility to monitor the lab activities for strict adherence to calibration/standardization programs documentation as is approved by Analytical Methods and/or SOPs. The calibration/standardization of a given piece of equipment involves the following considerations:

- frequency
- range
- reference standards
- environmental conditions
- documentation

The calibration/standardization of each piece of equipment is documented in a logbook, card, label, or other record as appropriate. This document permits monitoring of instrument or system status and traceability of results.

11.4 Operational Package Weight

Package weight is controlled with checklists and SOPs. Package weight limits are listed in SSOP-0024 and SOP-TRF-46-C-110. Most process waste is weighed and packaged at the point of generation, except for sea/land containers which are weighed at the central truck scale. Shipping and Support Services weighs construction waste to verify and record the package weight prior to transfer to Waste Shipping. Packages not conforming to weight limits are returned to the waste generator. Weights are recorded on the FMPC-CONT-1945-XX form as well as each individual container.

12.0 CONTROL OF MEASURING & TEST EQUIPMENT

12.1 Calibration Schedules & Stickers

Each WEMCO organization is responsible for ensuring that items requiring calibration are of the proper type, range, accuracy, and tolerance to accomplish the function of determining conformance to specified requirements. Calibration control shall be achieved by manuals and procedures that describe techniques and requirements for the frequency of calibration of the operating instruments. This control ensures that all instruments, gauges, and other measuring and test equipment are calibrated to the required accuracies. Devices that require a high degree of accurracy are checked daily by the user before using (e.g., radiological monitoring equipment according to SP-P-35-028). If this check reveals that the device is out of calibration, the device is removed from service and/or recalibrated before they are used.

Test equipment and measuring devices shall (as practicable) bear, by label, evidence that they are currently calibrated or certified for current use. Users shall be knowledgeable of calibration requirements, and are responsible for only using instruments that are operational ready. When measuring and test equipment is found to be out of calibration, evaluation shall be made and documented of the validity of previous inspection or test results and of the acceptability of items previously inspected or tested.

Analytical test instruments are calibrated using standards traceable to National Institute of Standards and Technology (NIST), or an other recognized source.

Analytical laboratory equipment and instrumentation, and field equipment and instrumentation, shall be calibrated in accordance with the FEMP Sitewide CERCLA Quality Assurance Project Plan (FD-1000). Requirements are that measuring and test equipment used in the field and the laboratory be controlled by formally procscribed calibration requirememts. Equipment shall be of the type, range, accuracy, and precision necessary to provide data compatible with the proscribed Analytical Supprt Levels specified in applicable Data Quality Objectives of Project-Specific Plans. Calibration of the measuring and test equipment shall be performed using documented and approved procedures. When available, accepted procedures published by the American Society for Testing and Materials, the EPA, the National Institute of Standards and Technology (NIST), or manufacturer equipment manuals shall be used. Variance from these procedures shall be justified and documented in Project-Specific Plans. Reference standards shall have known relationships to nationally recognized standards (e.g., NIST) or accepted values of natural physical constants (If national standards do not exist, the basis for calibration is documented). A log of calibration shall be maintained for each instrument.

Responsibility for ensuring the analytical laboratory equipment and instrumentation calibration requirements are met rests with the laboratory manager, whether on-site or a subcontractor. The assigned FEMP project manager or designee is responsible for ensuring that field equipment and instrumentation calibration requirements are met.

Quality Assurance inspection equipment is either checked internally, or is serviced by contract. Procurement of these services is made per the WEMCO procurement control system.

Nuclear material scales are checked by the Maintenance and Support Services Department using standards traceable to standards obtained from NIST.

Maintenance and calibration of laboratory balances is contracted using services procured through the WEMCO procurement control system.

Calibration of radiological test instruments are traceable to NIST.

All measuring and test equipment is categorized into one of three types:

1. "casual" devices & systems that do not need to be calibrated in service
2. "routine" devices and systems that are to be included in a calibration recall program on a regular cycle
3. "experimental" devices and systems that are to be calibrated by, or at the direction of the user

Items that fall in the first classification are rulers, tape measures, levels, and other such devices. Hand-held radiation meters and counters are calibrated on a routine schedule and are on a recall program. The specific items requiring calibration and frequency of recalibration are listed in Table IV.

12.2 Environmental Controls For Measuring Equipment

The environmental conditions under which a piece of equipment is calibrated/standardized shall duplicate the environmental conditions under which the desired analyses will be performed. Control samples/standards are run to monitor the response of equipment.

13.0 HANDLING, STORAGE & SHIPPING

13.1 Not Adverse To Certification

Waste containers destined for off-site disposal at NTS are maintained in such a way as to not alter the container certification. All containers are closed and/or locked to prevent tampering. Containers awaiting shipment must be placed in temporary storage. Immediately prior to loading, containers are rechecked per SOPs and checklists to verify the original certification. A new radiation smear is required for shipment, if a container has been exposed in a radiological regulated area for more than 48 hours. However, if a container is protected from exposure to radiological contamination (e.g., enclosure in a van), there is no limit on the duration of the smear result. Smear results for containers stored in controlled radiological areas (non-regulated) expire after seven days (168 hours).

13.2 Security

The FEMP, where LLW activities are conducted, is a fenced and secured area. The Safeguards and Security Section conducts random mobile tours of the site during the first shift (8:00 AM - 4:30 PM). During the off-shifts and weekends, some of the buildings are locked and security foot patrols are conducted throughout the site. Security must be notified to open the door of a locked building.

13.3 Fire Safety

Specific fire and safety controls are detailed in the SOPs of applicable operations/processes. Monthly fire and safety inspections are performed in the waste and process areas/buildings by the Fire and Safety Group. A report is completed and forwarded to the facility owner. Special work practices, which may require additional monitoring by Fire and Safety Group, can be arranged on an as need basis.

13.4 ALARA

The "As Low As Reasonably Achievable" (ALARA) principle is a requirement for waste processes to implement programs to assure that exposures to chemicals and physical stresses are maintained within the guidelines and standards provided in DOE/OR 5480.4. Additionally, the reduction of radiation exposure is maintained with the ALARA principle adherence to DOE/EV/1830-TS, 4-80. A dosimeter program is utilized for FEMP personnel and subcontractors. Employees are trained to work each job with ALARA principle as a key practice. Also, each SOP is reviewed with ALARA goals effecting each new or revised work practice.

13.5 Compliance With Title 49 of the CFR and NVO-325 Shipping Requirements

Compliance with Title 49 of the CFR for handling, storing, and shipping are detailed in Site Procedure SSOP-0024 and Department Procedure SOP-TRF-46-C-110. Preparation of packages for shipment is detailed in SOP 1-C-602. Shipping and Support Services and Quality Certification verifies by informal inspection that the enclosure and loading surfaces of vehicles are acceptable for use prior to loading. Quality Certification verifies packages are secured, marked, labeled, undamaged, loaded per procedure, and placarded as necessary (large containers loaded on flat bed trailers).

A radiation survey is performed to assure contamination levels are in compliance with Title 49 CFR criteria levels, and results are recorded on FMPC-ES&H-1596 and FS-F-1993 forms. The vehicle is weighed to ensure axle weights are within legal limits.

Containers are checked at loading against the Waste Package Storage and Disposal, and Tally Sheet, for:

- correct container identification numbers
- shipment number
- quantities
- gross weights
- waste stream number
- LSA/LQ/RQ labels attached
- DOT hazard labels as applicable
- inspect for any container defect
- proper container closure
- security seals
- NV-211 certification sticker attached

The Manager of Logistics Administration, or his delegate, gives final authorization to release a shipment off-site with the signing of the Bill of Lading and the required 49 CFR certification statement. Signing is conditional on the necessary shipping paperwork being complete, and a Waste Certification Official's signature on the Nuclear Materials Shipping Order and certification statement(s) required by NVO-325. The Waste Certification Official signs the foregoing documents on the basis of verification of signatures and completion of various forms and checklist required by procedures documenting the certification process.

An envelope containing copies of the Tally Sheet, Curie List, and REECo Waste Management Package Storage and Disposal Sheet is attached to the rear inside door, container or side panel, or given to the driver in the case of sea/land type cargo containers. Radioactive placards are posted, trailer doors closed, and a numbered tamper proof seal is applied to the locking mechanism.

Shipping documents are prepared in compliance with Title 49 CFR. Carrier/driver instructions, a signed copy of the Bill of Lading, Nevada Permit, Tally Sheet, envelope for consignee with Tally Sheet, Curie List, and Memo Bill of Lading are issued to the driver. Each driver is instructed to call WEMCO each day so that WEMCO can report any travel delay to REECo with a new estimated arrival time. If the trailer is not enclosed, the tamper proof seal is attached to the closing mechanism of each container.

14.0 INSPECTION, TEST & OPERATIONAL STATUS

14.1 Calibration Sources

The status of inspection and test activities shall be identified on documents traceable to the items tested or inspected. The status shall be maintained through indicators such as physical location and tags, markings, stamps, inspection records, or other suitable needs.

Calibration stickers are placed on measuring and test equipment (Table IV).

14.2 Preventative Maintenance

Preventative maintenance on analytical measuring systems and instruments is provided by the Electronics Laboratory for anlytical instruments, and by Safety and Training Instrument Laboratory (S&TIL) for radiological measuring equipment. Personnel performing preventive maintenance work have had manufacturer training courses for some of the equipment. Some complete service manuals and a limited stock of spare parts are available. The availability of these personnel and resources at FEMP provide a means of ensuring optimum performance and minimum downtime for instruments and measurement systems.

Vendor service contracts or contracts with service agencies are utilized to provide preventive maintenance for some major instrument systems to ensure performance and to minimize downtime. Process Area scales are maintained by the Maintenance and Support Services.

15.0 CONTROL OF NONCONFORMING ITEMS

15.1 Control and Disposition of NonConformances

Nonconformances of major significance meeting specified criteria are handled in accordance with Site Procedures FMPC-703, Unusual Occurrence Reporting System, and FMPC-704, Minor Event Reporting System. The handling of all other nonconformances, except of a minor nature (e.g., paperwork inconsistencies easily and quickly resolved), is governed by SSOP-0023, Deviation and Corrective Action Reporting. The systems defined in the above include reporting, dispositioning, corrective action, tracking and closeout of nonconformances.

15.2 Special Tags & Labels

Nonconforming items are tagged for identification and control. The control of nonconforming items and use of tags are detailed in written site procedures. Three tags are utilized FMPC-Q-2708 (Figure 10) for nonconformances, and FMPC-QA-2709 (Figure 11) for hold for inspection, and FS-F-2707 for quality accepted (Figure 9).

15.3 Segregation and/or Removal From Operating Status

Where practicable, non-conforming items are physically segregated to preclude inadvertent use. The nonconforming condition is evaluated by cognizant personnel and disposition specified, performed, and verified as complete as a basis for acceptance.

15.4 Documentation

The nonconforming condition is documented on a Deviation Report (DR) form and responsible supervision notified. If necessary, a Corrective Action Report is issued. Once the corrective action(s) are completed, physical corrective action verification is documented and physical control is released. Non-conforming conditions that are not easily and promptly reworked, or require corrective action of the root cause, are processed.

16.0 CORRECTIVE ACTIONS

16.1 NonConformance Items

Corrective actions on nonconforming items are part of the Deviation and Corrective Action Reporting (DCAR) system. Corrective action is to identify the root cause and preclude recurrence. In response to the request for corrective action, the applicable manager shall detail the underlying (root) cause of the deviation, action to be taken/proposed, and action taken to prevent recurrence. Permanent corrective actions are required to preclude recurrence of significant problems.

16.2 Findings/Recommendations

Findings and recommendations from external audits, internal audits, and internal surveillances require a response within the time period specified by the reviewing organization. Follow-up audits and surveillances, with written dispositions per the DCAR system, are required.

16.3 Exceptions Approval from the DOE/NV Manager

Exceptions Approval from the DOE/NV Manager to the criteria specified in NVO-325 will be obtained as needed. A safety analysis will accompany the request for exception when the fissile loading is increased or when other compliance criteria is significantly affected. All exceptions will be requested by DOE/FEMP and approval received by the DOE/NV manager prior to shipment. A copy of the Exception Approval will be sent to the Radioactive Waste Management Project of REECo Environmental Sciences Department.

17.0 QUALITY ASSURANCE RECORDS

Records that furnish documentary evidence of quality shall be specified, prepared, and maintained. Records shall be legible, identifiable, and retrievable. Mistakes or corrections in records shall have a single line drawn through the changed data and shall be signed or initialed and dated. Records shall be protected against damage, deterioration, and loss. Requirements, responsibilities for record transmittal, distribution, retention, maintenance, and disposition shall be established and documented. The waste processing records are identified in Table III and their retention period identified in DOE Order 1324.2.

18.0 AUDITS/WASTE CERTIFICATION

18.1 External

An audit by DOE/NV of WEMCO waste operations is conducted annually as defined in NVO-325. Currently there is no prescribed audit schedule by external organizations other than DOE/NV.

18.2 Internal

Internal overview activities of the waste shipment activities, in addition to the certification activities, are performed as surveillances or internal audits. Surveillance activities are outlined in the process flow diagram, Figure 5. Surveillances are conducted on a periodic basis of real time activities as described in standard operating procedures. These surveillances, conducted by QA, are documented on a surveillance report addressed to responsible management for resolution of observations and findings. All nonconformances are documented on Deviation and Corrective Action Reports. All accepted corrective action responses (as agreed to by QA) are verified to be complete by QA prior to close out of the surveillance.

Internal audits of the LLW shipping program shall be scheduled on basis of evaluation of need. Each audit may concentrate on a particular segment of the operation, but sufficient audits shall be conducted annually to overview the entire program. All audits are conducted by a team using written checklists. Results of all audits are documented in an audit report addressed to responsible management for written corrective action responses to findings. All nonconformances are documented on Deviation and Corrective Action Reports. Verification of completion of all accepted corrective responses are documented prior to close-out of the audit.

19.0 TRAINING

In compliance with NQA-1, NVO-325, 49 CFR Section 173.1(b), and DOE Order 5480.1A Chapter V, formal training of all personnel directly involved in the waste certification process and preparation of waste shipments shall be conducted. The training shall be documented, updated biannually, and available for inspection by any auditing official.

19.1 Training Program

A Centralized Training Program Manual RM-FMPC-002 establishes requirements for all personnel involved in the development and implementation of performance based training at the FEMP. This manual provides guidance on DOE Order 5480.18, Accreditation of Performance-Based Training for Category A Reactors and Nuclear facilities. Training per this training program complies with NQA-1, NVO-325, and DOE Order 5480.1A Chapter V requirements.

Training shall be designed as a number of performance based modules. Each module contains learning objectives, conditions, and an evaluation to measure the trainee's competence in performing required tasks. Certified instructors from applicable departments shall provide instruction, generate training records, and conduct a biannual evaluation of the effectiveness of the training program. Permanent training records are maintained by the Centralized Training Section of the Industrial, Radiological Safety and Training Department.

19.2 Training Requirements

In compliance with NVO-325, all persons associated with the waste certification program shall be trained in the requirements of this WCPP and NVO-325. All persons who generate, package, certify, prepare data, perform related radiation surveys, or perform the associated quality functions, must have received training in the requirements and implementing procedures for those parts of the certification program in which they are involved. In the absence of specific training courses for specific parts of the certification program, a general training course will be utilized to train personnel identified in the foregoing requirements.

Waste Certification Officials and Waste Package Certifiers shall receive specialized training on NVO-325, this WCPP, and their certification procedures. They shall be required to pass a proficiency test to qualify for the respective position. Additional training pertaining to environmental compliance and DOT regulations shall be provided commensurate with responsibilities.

The FEMP Site Services Department conducts training for personnel directly involved with off-site shipments. Also, there is a training program for safe operation of powered industrial trucks. Site Services' training program is administered by their Training Coordinator who utilizes classroom instructions, demonstrations, and on-the-job training. The program consists of four phases: familiarization, operation, qualifications (written examination and performance tests), and nuclear safety.

19.3 Training Responsibilities

Each FEMP organization is responsible to ensure that their employees are trained per the requirements specified in this Plan. Validation that employees have been trained is the responsibility of each organization with the assistance of Centralized Training. QA validation of training shall be in the form of surveillances and audits.

TABLE I

MASTER PLANS, MANUALS, AND PROCEDURES

FEMP DEPARTMENT PROCEDURES

Environmental Compliance & Quality Assurance

*	EQP- 6.04	Qualification of Waste Package Certifiers
*	EQP- 6.05	Qualification of Waste Certification Officials
	EQP- 6.06	Environmental Compliance and Quality Assurance Department Training Plan
	EQP- 7.01	Administration and Conduct of Surveillance
	EQP- 7.05	Participation in Supplier Selection
	EQP- 7.09	Source Surveillance
	EQP- 8.01	Disposition of Supplier Deviations
	EQP- 9.01	Designation, Preparation, Storage and Maintenance of Quality Documents
	EQP-10.01	Root Cause Analysis
*	EQP-12.03	Certification of Waste Package Examination and Sealing for Off-Site Shipment
*	EQP-12.04	Certification of Loading and Shipment of Low-Level Radioactive Waste
	EQP-12.06	Certification of Hazardous Waste Loading, Examination of Transport Vehicle/Trailer for Off-Site Shipment
*	EQP-12.07	Certification of Low Level Waste Shipments to NTS
	EQP-12.08	Verification of Waste Packaging
	EQP-14.01	Receiving Inspection

* These documents have been provided as part of the WCPP: all other documents will be provided upon request.

Industrial, Radiological Safety and Training

SP-P-35-009	Radioactive Material Shipping & Receiving
SP-P-35-020	Radiological Survey of Vehicles Entering and Exiting the Controlled Areas of the FEMP

Project Engineering

PMP-425	Construction Waste Handling

TABLE I
(CONTINUED)

MASTER PLANS, MANUALS, AND PROCEDURES (CONT.)

FEMP DEPARTMENT PROCEDURES (CONT.)

Transportation and Support Services

M-102	Transportation Requirements Manual
POD-035	Shipment of Low Level Radioactive Waste (LLRW) Requirements

Site Services

1-C-305	Baling Scrap Metal Drums
1-C-306	Crushing Metal Drums
1-C-602	Low-Level Radioactive Waste (L-LRW) Shipment Preparation
1-C-604	Inspection and Evaluation of Containerized Low-Level Radioactive Waste (LLRW)
1-C-608	Storage of Radioactive Material
2-C-923	Trash Baler Operation
4-C-804	Mobile Hopper Discharge Station Operation and Packaging Depleted UF4
20-C-600	Overpacking Defective Containers
20-C-604	Control and Utilization of Contaminated Trash Dumpsters
20-C-607	Segregation of Wooden Pallets
20-C-625	Evaluating Low Level Radioactive Bulk Streams for Shipment
20-C-805	Sampling Drummed Waste for Hazard Identification
20-C-912	Checking Scale Operation
PO-D-006	Calculation of Drum Equivalents for FMPC Waste Volumes
PO-S-01-001	Storage and Handling of Empty L-LRW Containers
PO-S-01-002	Internal Audit Program

TABLE I
(CONTINUED)

MASTER PLANS, MANUALS, AND PROCEDURES (CONT.)

FEMP DEPARTMENT PROCEDURES (CONT.)

FEMP SITE PROCEDURES

FMPC-0102	Training
PP-0103	Site Document System
FMPC-0302	Request for Purchase
FMPC-0307	Control and Accountability of Nuclear Materials
PP-0314	Packaging, On-Site Movement and Off-Site Shipment of Material
FMPC-0702	Development and Control of Design
FMPC-0707	Audit Program
FMPC-0708	Personnel Certification
PP-0709	Conduct of Independent Surveillance Activity
PP-0710	Quality Assurance Plans
FMPC-0711	Quality Levels
FMPC-0716	Control of Processes
FMPC-0717	Inspection
FMPC-0718	Measuring and Test Equipment Calibration and Control
PP-0721	Test Authorization
PP-FMPC-5010	Management of Low-Level Waste (LLW)
PP-5030	Change Proposal Procedure

FEMP MANUALS

OM-0003	Test Authorization
RM-0005	FEMP Lot Marking and Color Coding System
RM-0009	Radiological Controls
RM-0012	Quality Assurance Program Description
SM-0001	Risk Assessment and Management (RAM) System Manual

TABLE I
(CONTINUED)

MASTER PLANS, MANUALS, AND PROCEDURES (CONT.)

FEMP PLANS

ANL-SP-1001	Analytical Laboratory Quality Assurance Plan
FD-1000	FEMP Sitewide CERCLA Quality Assurance Project Plan
FMPC-2040	FMPC Waste Management Plan
FMPC-2114	Environmental, Safety, Health and Waste Management Plan
FMPC-2133	FMPC Waste Minimization Plan
FMPC-2185	Sampling Plan for Drummed Waste at the FMPC
PL-FMPC-3006	Materials Control and Accountability Plan
PL-FMPC-3009	Waste Minimization & Pollution Prevention Awareness Plan

FEMP SITE STANDARD OPERATING PROCEDURES

SSOP-0002	Completing the Material Evaluation Form
SSOP-0014	Documentation of a Subject Matter Expert (SME)
SSOP-0018	Processing the Site-Wide Analysis Request/Custody Record for Sample Control
SSOP-0023	Deviation and Corrective Action Reporting
SSOP-0024	Packaging Low Level Radioactive Waste (LLRW) for Off-Site Disposal
SSOP-0027	Control of Box-Type Containers
SSOP-0036	Quality Assurance Project Plans
SSOP-0044	Management of Soil, Debris, and Waste from a Project

TABLE II

WASTE PROCESSING - ARCHIVAL DOCUMENTS

DOCUMENT DESCRIPTION
Documents in Table I and Specifications listed in Table VI
Bill of Lading
Item Production/Certification/Identification Card
Laboratory Analysis Reports
Loading Inspection and Tie-down Sheet
Nuclear Materials Shipping Order
Nuclear Materials Transaction Report (DOE-741)
Plant Test Authorizations and Reports
Quality Assurance Plans
Radiolgical Monitoring Records
Tally Sheets
Trailer/Vehicle Checklists
Waste Shipment Final Authorization Checklist
Waste Stream Characterization Data
Weight Tickets

TABLE III

WASTE PROCESSING - QUALITY ASSURANCE RECORDS

RECORDS DESCRIPTION

Audit Reports

Bill of Lading for Waste Shipments

Carrier/Driver Instructions for Radioactive Shipments, and exclusive use.

Inspections and Tests

Item Production/Certification/Identification cards.

Materials Evaluation checklists

Personnel Training Records

Purchase Requisition and Purchase Order documentation

Radiation Monitoring Reports

Receipt Inspection of Incoming Materials, including Supplier Certification if applicable

Shipping Order for Nuclear Materials

Surveillance Reports

Tally Sheets

Test and Calibration Records

Transport vehicle inspection records

Waste certification checklists

Waste Certification Statements

Waste Certification Program Plan

Waste Stream Characterization Data Records

Weight Tickets

Note: Retention periods are in accordance with DOE Order 1324.2.

TABLE IV

Waste Processing - Measuring and Test Equipment Calibration
(Procedures indicate minimum actions when in use)

Accountability Scales (Measures gross and tare weight used to calculate net shipping weight of waste packages.)	Quarterly*
IRS&T Radiological Monitoring Equipment	Semiannual
IRS&T Scintillation Alpha Counters (SAC)	Semiannual*
Laboratory Equipment	Annual*
Laboratory Instruments	Calibration schedules maintained as specified for the method.
Torque Wrenches Waste Shipping	Quarterly

* Also daily efficiency checks.

TABLE V

WASTE PACKAGING MATERIALS REQUIRING PROCUREMENT CONTROL

MATERIAL DESCRIPTION	DRAWING/SPECIFICATION
48-gallon Metal Drum ("Jug Head" Type)	WMCO 40X-5500-M-00012-1
55-gallon Metal Drum (17H)	49 CFR 178.118-2 and in accordance with DOE Eval. Document for DOT-7A Type A Pkg. MLM-3245 DP/00053-H1
83/85-gallon drums	N/A
Metal Box Shipping Container 40-1/2" H x 57-1/4" W x 81-1/4" L Gusset/Bolt type closure	Container Products Assembly SSB-82.3-5-7A-BRF, Dwg. 01-542-2-01
Metal Box Shipping Container 41" H x 56" W x 80" L Retainer/Bolt type closure	ElectroPanel Dwg. 89DW000800, Rev. 9
Metal Box Shipping Container 42-1/2" H x 55-1/2" W x 79-1/2" L Bolted type closure	WMCO Dwg. 40X-5500-M-00011
Metal Box Shipping Container 43" H x 53" W x 77" L Clip type closure	WEMCO Dwg. 30A-5500-M-00059
Metal Box Shipping Container 8' H x 8' W x 20' L Top Load Clip type closure	WEMCO Dwg. 40X-5500-M-00034
Metal Box Shipping Container 8' x 8' x 20' Top Load Clip type closure	Container Products Dwg. 02-594-2-01
Metal Box Shipping Container 8' x 8' x 20' top load Bolt type closure	Sea Box Inc. Dwg. IS1272
Cargo Container, 8-1/2' H x 8' W x 20' L Reconditioned, Front load	N/A

NOTE: The above listing represents basic designs. Future purchases will not necessarily be made to the drawings and/or specifications listed. However, new items procured will be similar, will meet specified requirements, and will receive similar procurement controls.

TABLE VI

WASTE PROCESSING - SPECIFICATIONS

SPECIFICATION DESCRIPTION:

U. S. Department of Energy Nevada Operations Office, "Nevada Test Site Defense Waste Acceptance Criteria, Certification, and Transfer Requirements," NVO-325.

U. S. Department of Energy, DOE Order 1540.1, "Materials Transportation and Traffic Management."

U. S. Environmental Protection Agency, "Code of Federal Regulations, Title 40, Part 261, Identification and Listing of Hazardous Waste."

U. S. Department of Transportation, "Code of Federal Regulations, Title 10, Section 71, Packaging and Transportation of Radioactive Material."

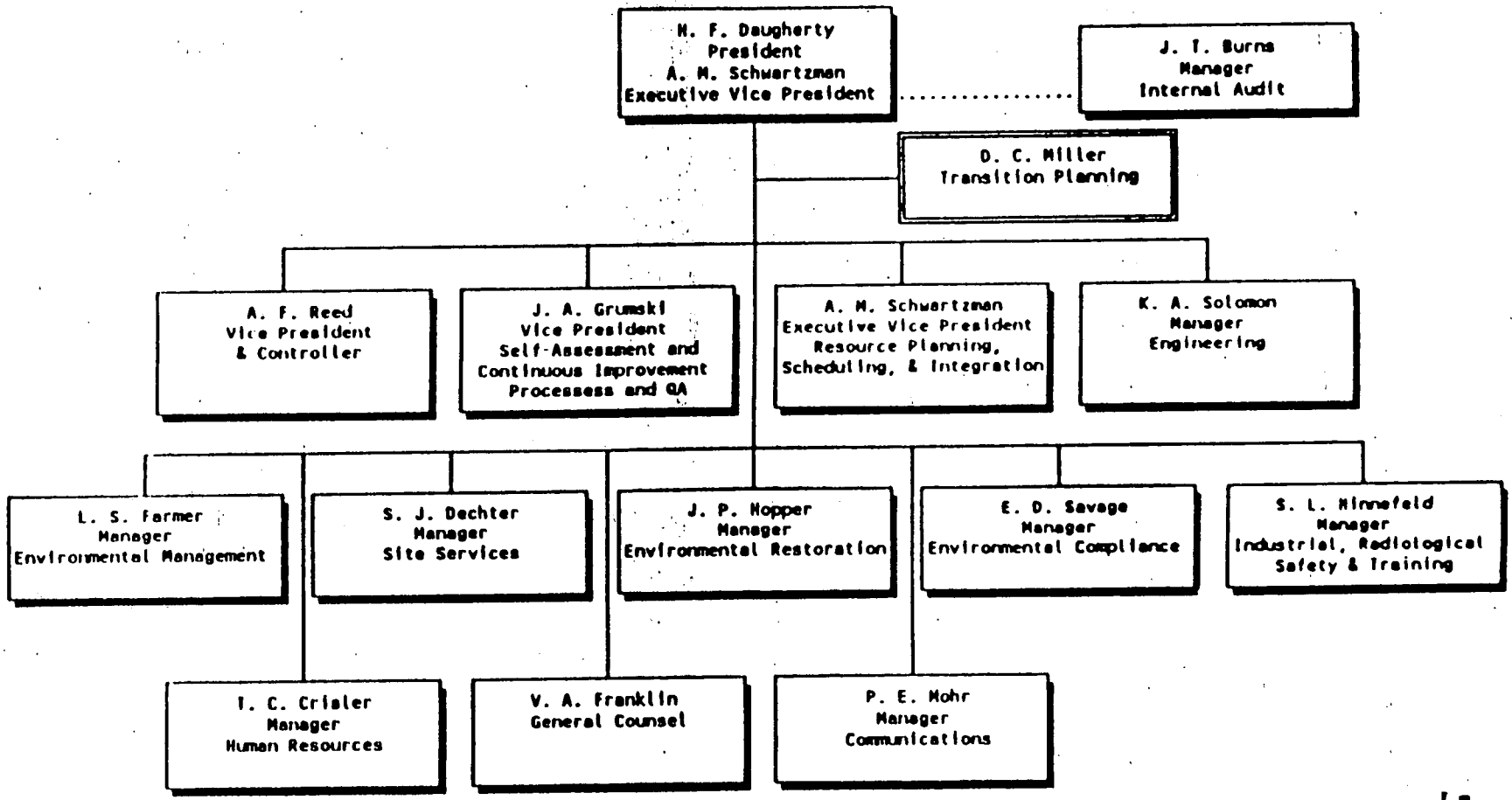
U. S. Department of Energy, ORO 5480.11, "Radiation Protection for Occupational Workers."

U. S. Department of Energy, DOE Order 5700.6C, "Quality Assurance."

U. S. Department of Energy, DOE Order 5820.2A, "Radioactive Waste Management."

U. S. Department of Transportation, "Code of Federal Regulations, Title 49, Transportation."

WESTINGHOUSE ENVIRONMENTAL MANAGEMENT
COMPANY OF OHIO
OFFICE OF THE PRESIDENT



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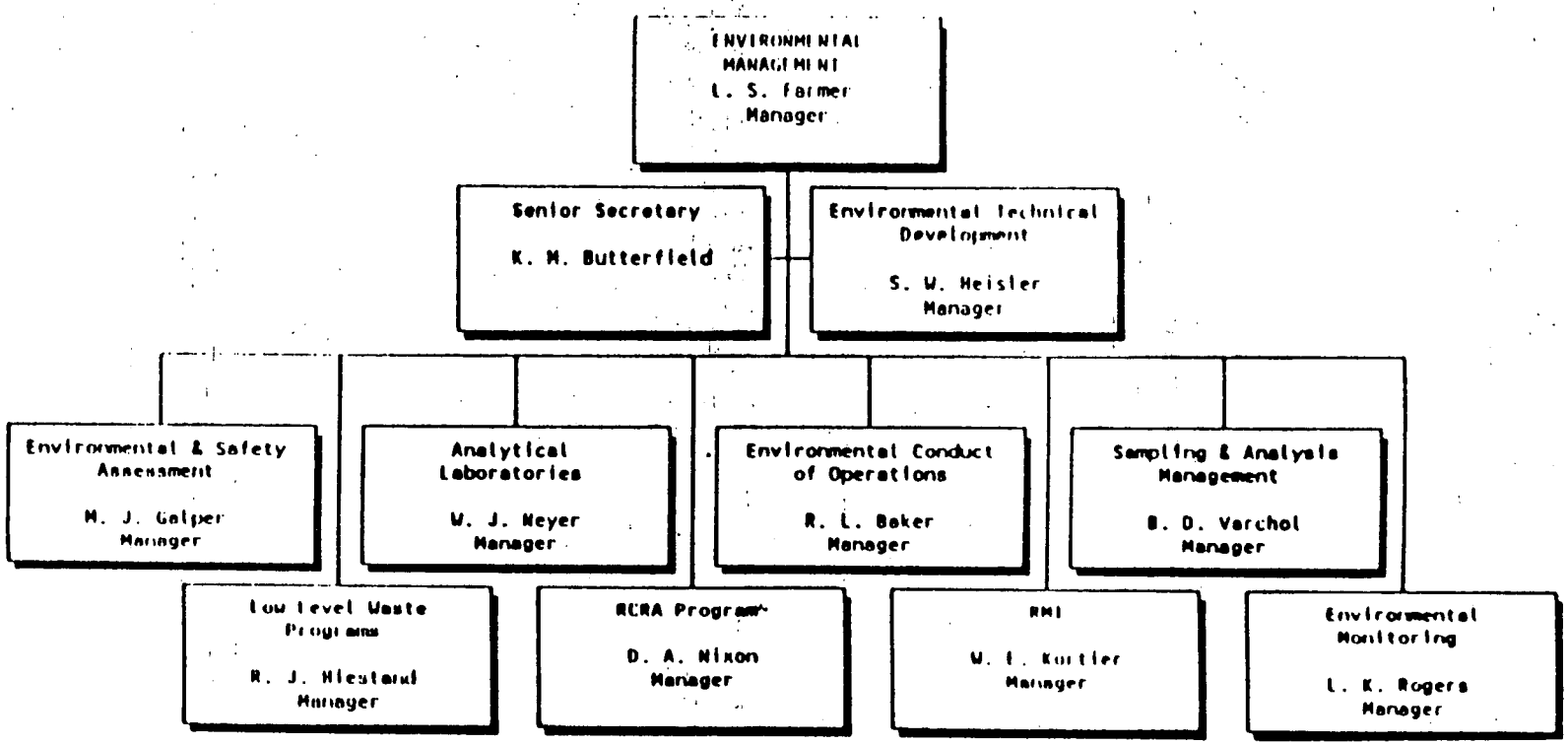
ENVIRONMENTAL MANAGEMENT

October 1, 1992



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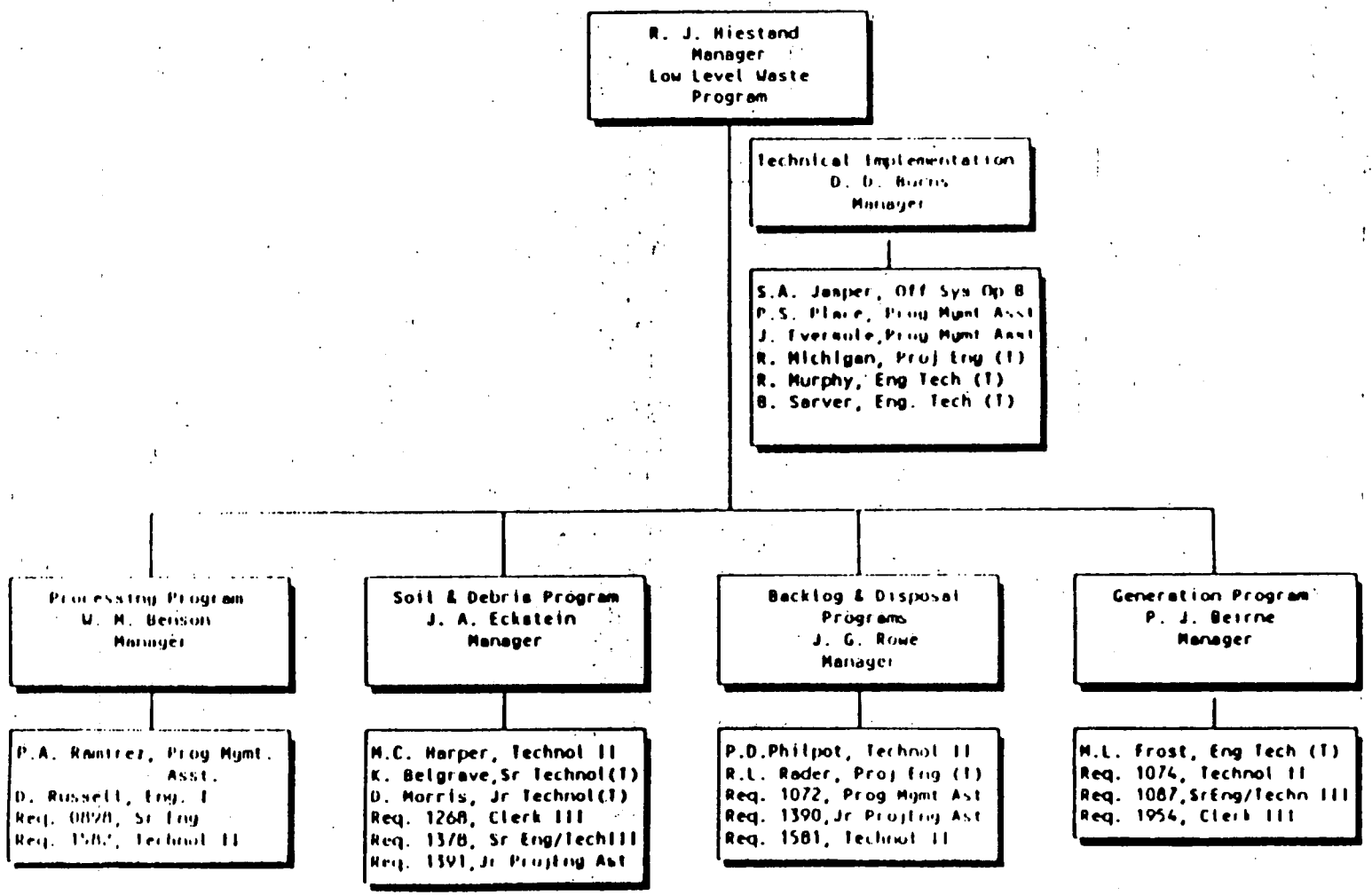
ENVIRONMENTAL MANAGEMENT
LOW LEVEL WASTE PROGRAM

October 1, 1992



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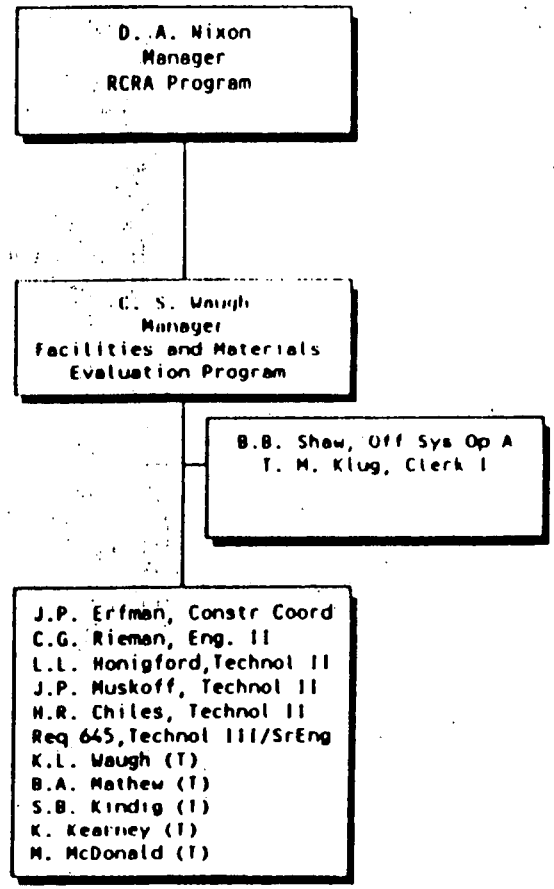
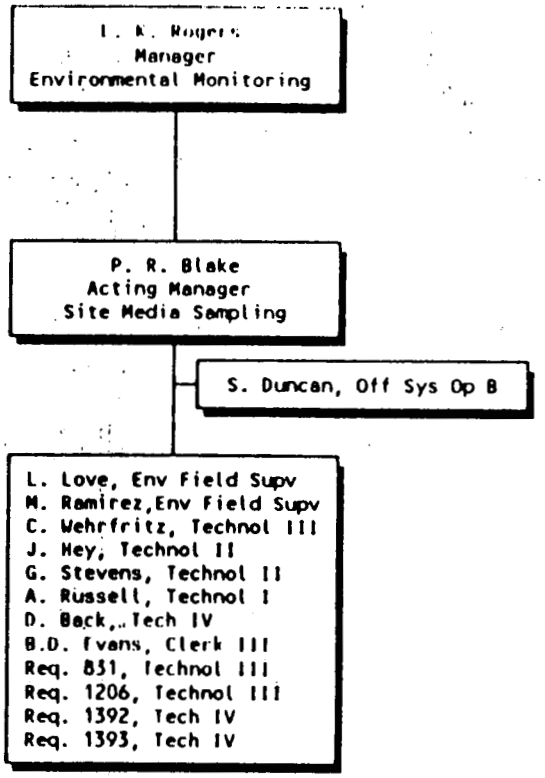
RCRA PROGRAM
FACILITIES AND MATERIALS EVALUATION

October 1, 1992



ENVIRONMENTAL MONITORING
SITE MEDIA SAMPLING

October 1, 1992



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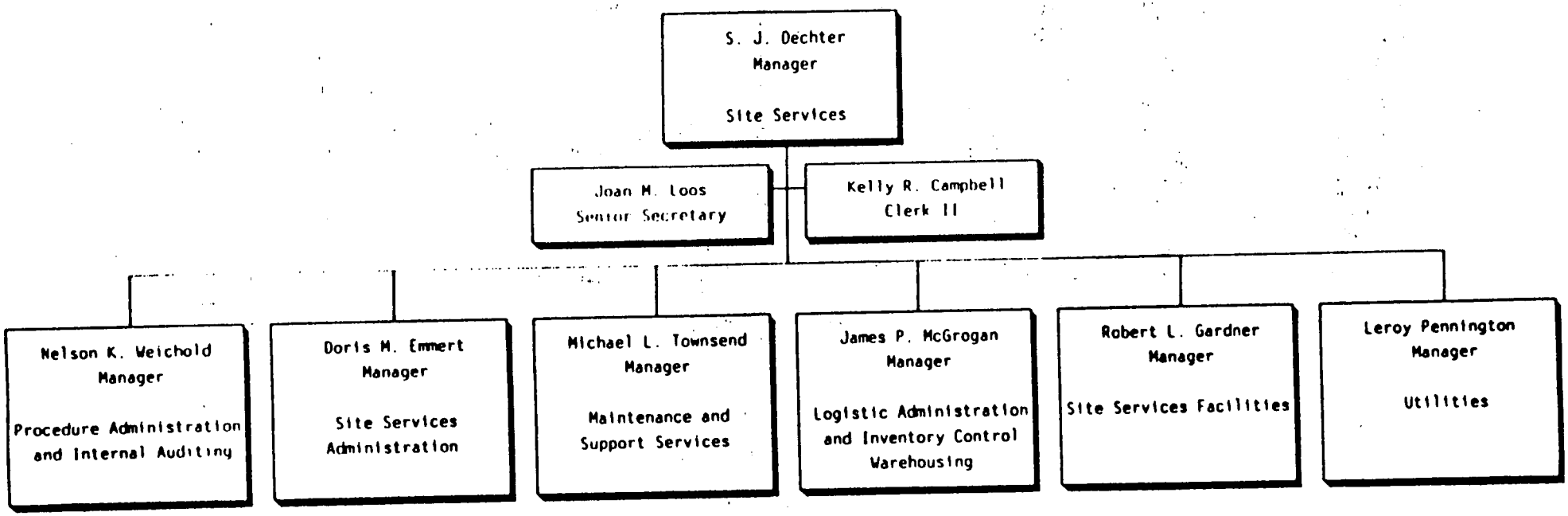
WESTINGHOUSE ENVIRONMENTAL MANAGEMENT
COMPANY OF OHIO
SITE SERVICES DEPARTMENT



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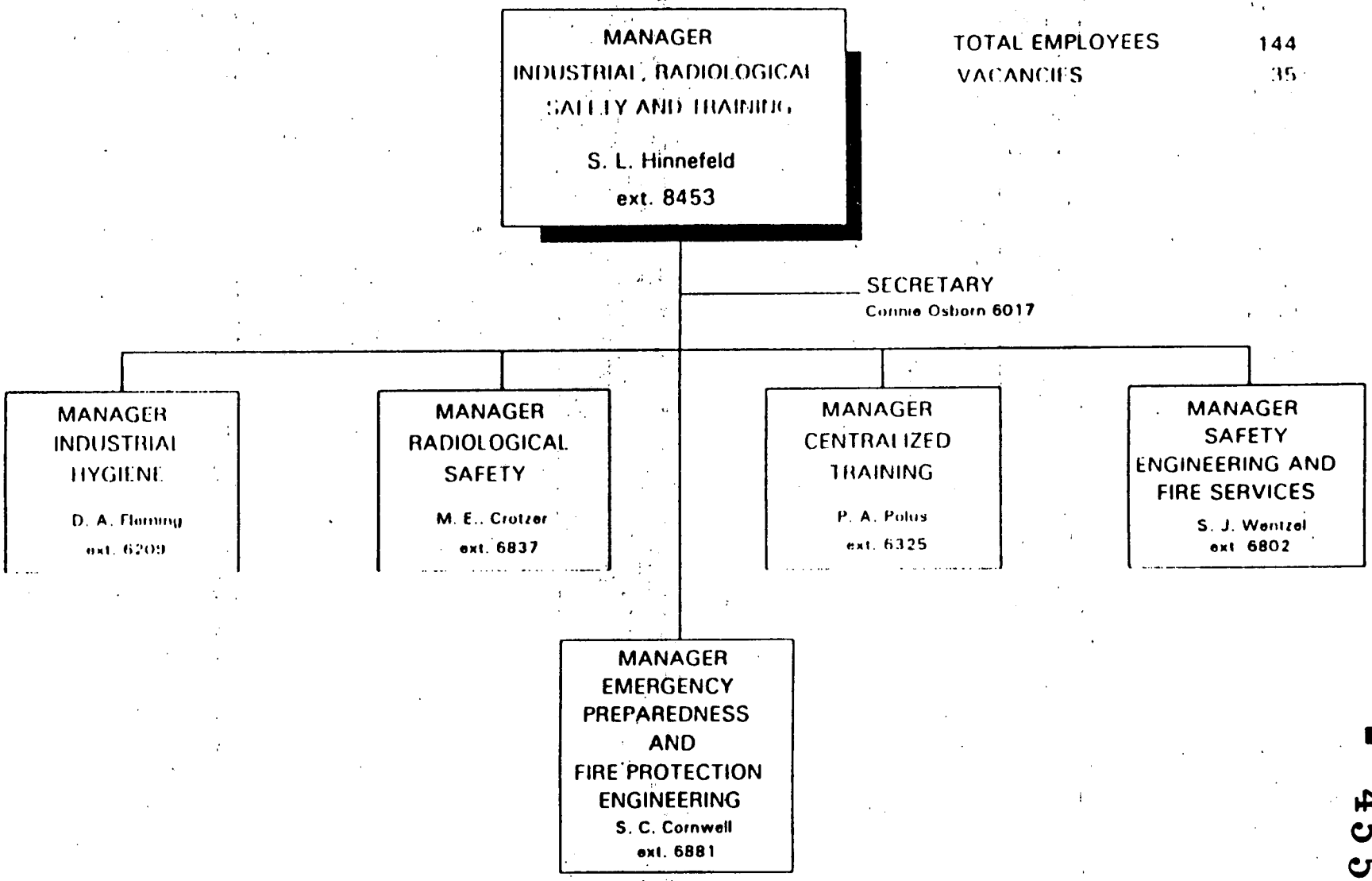
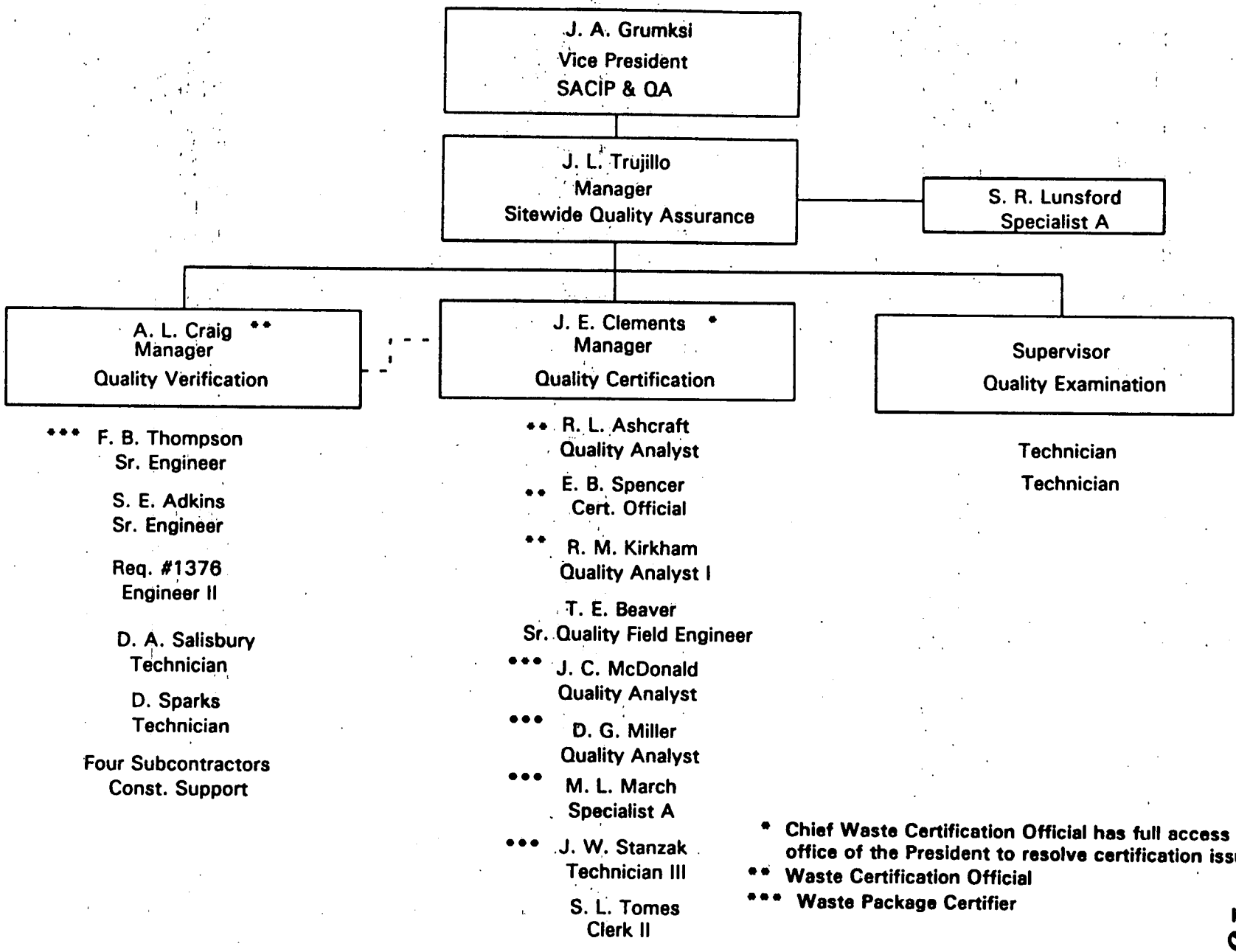
06648

WESTINGHOUSE ENVIRONMENTAL MANAGEMENT COMPANY OF OHIO

INDUSTRIAL, RADIOLOGICAL SAFETY & TRAINING DEPARTMENT





* Chief Waste Certification Official has full access to the office of the President to resolve certification issues.

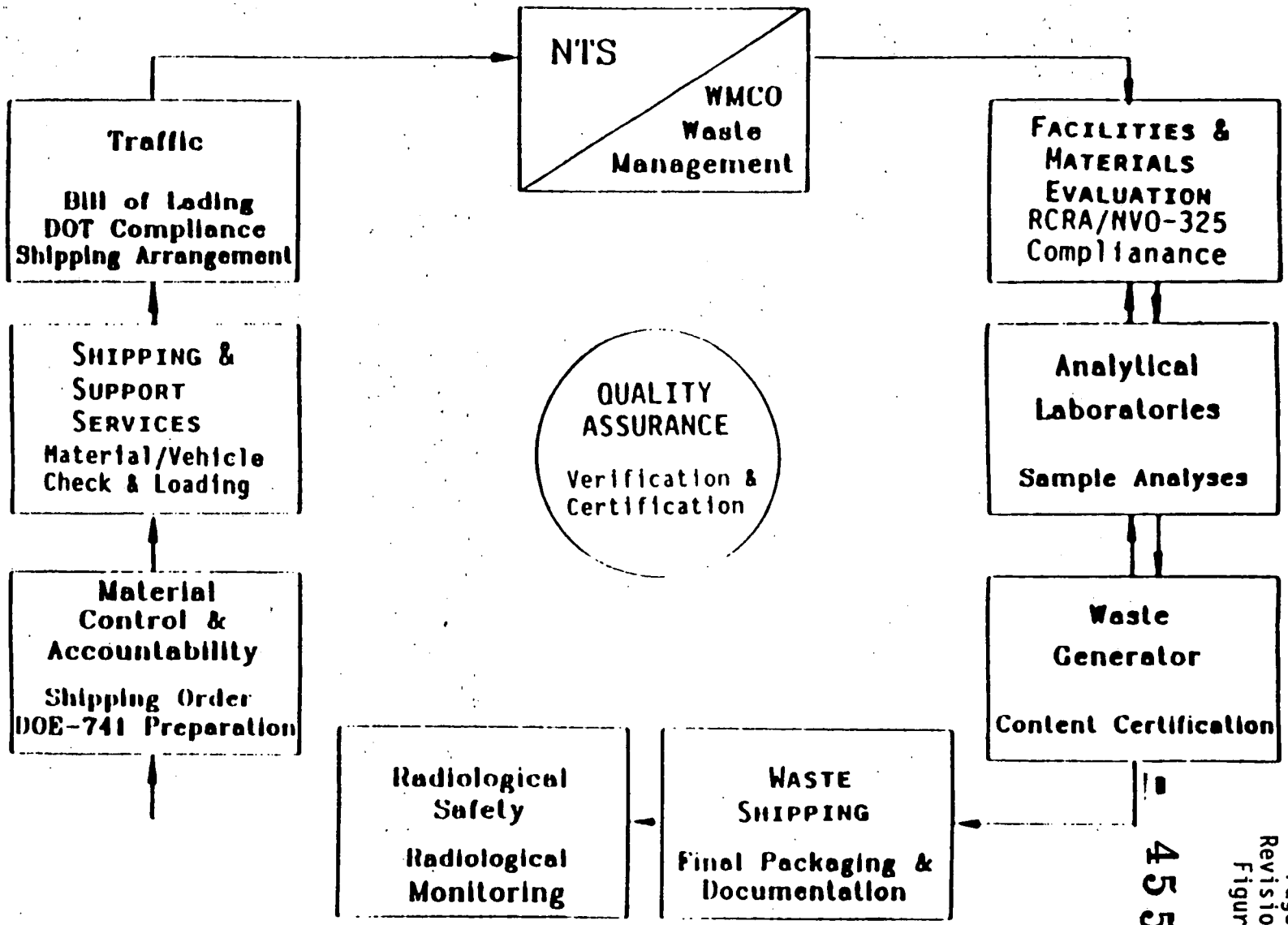
** Waste Certification Official

*** Waste Package Certifier

4552-

0650

Waste Processing Interface



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Page 61
Revision 6
Figure 2

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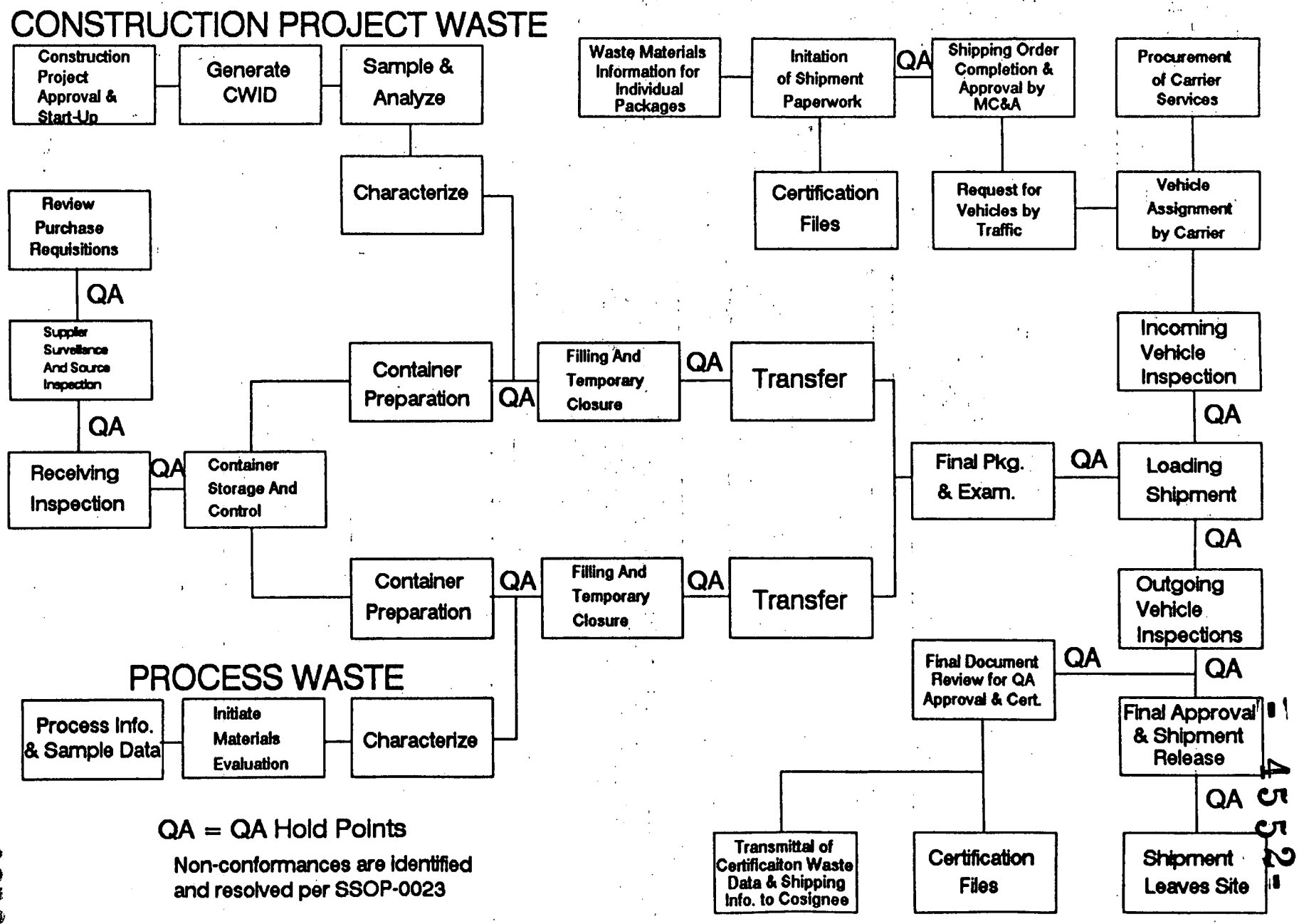
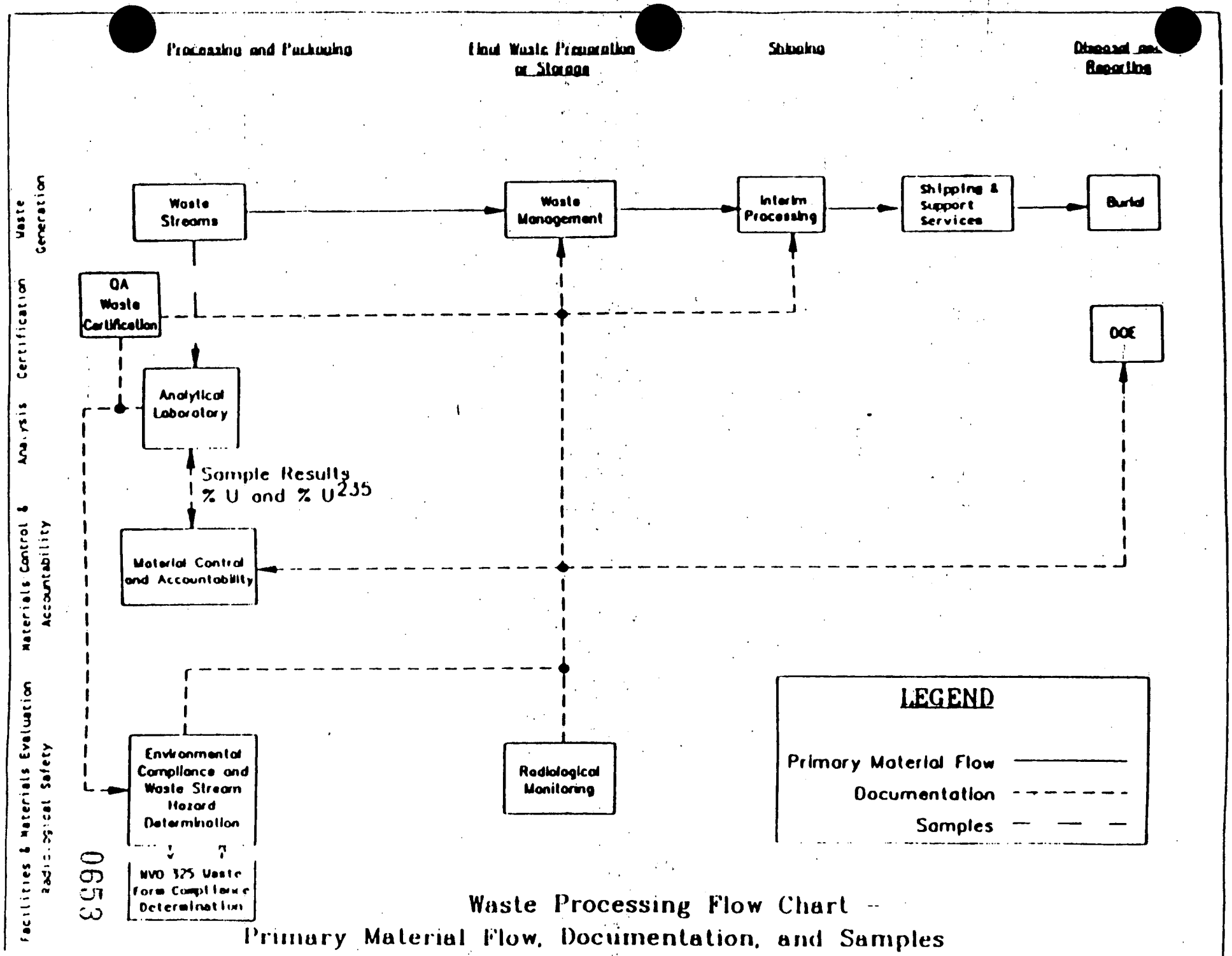
LOW LEVEL WASTE FLOW DIAGRAM



QA = QA Hold Points

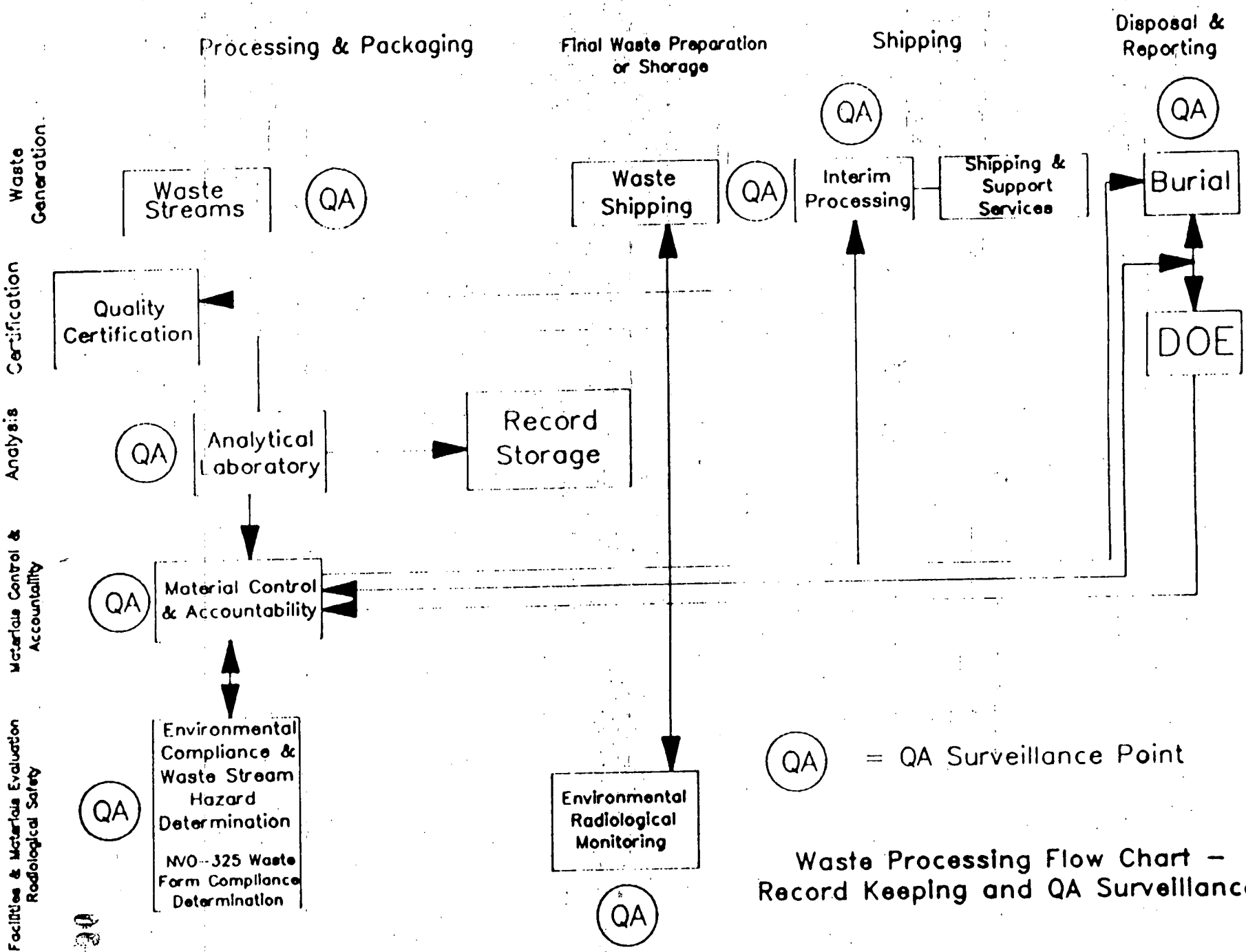
Non-conformances are identified and resolved per SSOP-0023

0922



Waste Processing Flow Chart –
Primary Material Flow, Documentation, and Samples

0653



Waste Processing Flow Chart – Record Keeping and QA Surveillance

If Seal is broken or package damaged check contents before signing receipt.

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******** CHAIN-OF-CUSTODY ********

ANALYSIS_NUMBER :
CUSTOMER_NUMBER :
CUSTOMER :
DATE_SAMPLED :
SAMPLED_FROM :
MATL_DESCRIPTION :

COMPUTER GENERATED

FMPC-SAMPLE LABEL/RCRA MATERIAL-NORMAL

SAMPLE NO./LOCATION	P.O. NO./ENRICHMENT
COLLECTOR	
TYPE OF MATERIAL	
TYPE OF SAMPLE	
LOT NUMBER OR CONT	
DATE TIME NET WT	

FMPC FORM [illegible]

TYPICAL PREPRINTED

FERNALD SITE
SITE SERVICES - ANALYTICAL

Form Number ____ - ____ - ____

SITE-WIDE ANALYSIS REQUEST/CUSTODY RECORD

Page ____ of ____

PROJECT:

[ ] PLAN NO.: OR [ ] PROJECT NO.:

PROJECT MANAGER/ENGINEER:

FOR SAMPLE RELATED PROBLEMS, CONTACT:

ORGANIZATION:

NAME: PHONE:

SAMPLER: PHONE:

SAMPLER REMARKS:

CHARGE NUMBER: LOT MARKING CODE:

SAMPLER SIGNATURE(S):

SEND RESULTS TO:

CHECK FOR: [ ] S R LAB [ ] BIO LAB [ ] WTP LAB

SAMPLE SOURCE, DESCRIPTION/IDENTIFICATION, ANALYSIS REGIMEN

	SAMPLE NUMBER	CUSTOMER NUMBER	SAMPLE POINT	MATRIX CODE	COLLECTED DATE	COLLECTED TIME	CONTAINER/ VOLUME	COMPOSITE	GRAB	NO. OF CONTAINERS	ANALYTES CODE - (UNITS CODE)												REMARKS
1																							
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							

ITEM/REASON	RELINQUISHED BY	RECEIVED BY	DATE	TIME	ITEM/REASON	RELINQUISHED BY	RECEIVED BY	DATE	TIME

NO.	DISTRIBUTION OF COPIES
1	LABORATORY
2	REQUESTER
3	SAMPLER

FMPC 00 3301 (7/10/91)

0657

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Revision 6
Figure 8

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Westinghouse
Environmental
Management
Company of Ohio

P.O. Number: _____

Receiving
Report No.: _____

Inspection
Report No.: _____

Date Inspected: _____

Badge No.: _____

QUALITY ACCEPTED

FS-F-2707 (REV 9/3/91)

4552-

Westinghouse
Materials Company
of Ohio

DCAR No.: _____

DATE: _____

QUALITY NONCONFORMANCE

TO BE REMOVED BY AUTHORIZED PERSONNEL ONLY

SIDE 1

QUALITY NONCONFORMANCE

SHIPMENT LOT PACKAGE CONTAINER I.D. No. _____

INSPECTION REPORT NO. _____

DESCRIPTION OF NONCONFORMANCE _____

NAME _____ BADGE No. _____ PHONE No. _____

TO BE REMOVED BY AUTHORIZED PERSONNEL ONLY

SIDE 2

- 4552-

Westinghouse
Materials Company
of Ohio

QUALITY
HOLD FOR INSPECTION

TO BE REMOVED BY QUALITY PERSONNEL ONLY

-4552-

FMPC
SECURITY ACQUISITION & MATERIALS LOGISTICS DEPARTMENT - TRANSPORTATION SECTION

OFFSITE LOADING — TIE DOWN INSPECTION — VEHICLE INSPECTION

Date: _____

COMMODITY	CARRIER	TRAILER NO.	SEAL NO.
			FA-WMCO

BALE/BOX/DRUM/SEA LAND CONTAINER NUMBERS:

	DISCREPANCIES DETECTED	CORRECTED		SHIPMENT REJECTED	
		YES	NO	YES	NO
LSA _____					
LSA-RO _____					
LC _____					
LC-RO _____					
TOTAL _____					

Checked By _____
SIGNATURE - CHECKER

TIE-DOWN INSPECTION AND CHECK-OFF SHEET

INSPECTION ITEM	YES	NO
Wood shoring installed to prevent longitudinal or lateral movement		
Steel strapping around the cargo securing as a stable shipment		
When weight dictates, containers divided into two units, one front and one rear of trailer not exceeding approximately 20,000 pounds each		
1½" steel strapping utilized (5460 lbs. minimum tensile strength)		
____ each anchor plates or "U" bolts fastened to underframe (____ each side of unit) placed and secured for ____ transverse bands over unit		
Four each brisseman plates or "U" bolts fastened to underframe (two for each band) placed under each unit and secured for two longitudinal bands, securing the boxes/skids into one tight unit, anchored to the floor of the trailer		
Two Signode seals No. 107 crimped whenever two bands are used on an end over end lap joint		
Anchor and brisseman plates secured with eight each 2" nails		
Sea Land Containers ..... 4 each nylon straps		
..... Chains		
..... 2 X 4s		

VEHICLE INSPECTION REPORT

CONDITION	PASS	FAIL	CONDITION	PASS	FAIL	CONDITION	YES	NO
Condition of Floor			Condition of Sides			Detected Sabotage Devices		
Condition of Interior			Condition of Exterior					
Condition of Roof			Condition of Rear Doors			Detected Evidence of Sabotage		

Oversize shipments: _____

General Comments: _____

Accepted: _____ Rejected: _____

Checked By: _____
SIGNATURE - TRANSPORTATION SUPERVISOR

NO.	DISTRIBUTION OF COPIES
1	Transportation Section - RECORD COPY

FMPC-SAML 2 PB - REV 4-5-89

0001

- 4552-

Fernald Site
PRELIMINARY VISUAL TRAILER INSPECTION

CARRIER	TYPE TRAILER	TRAILER NUMBER

CHECKLIST			DISCREPANCIES—COMMENTS
1. Inspect the following on trailer prior to driver unhooking			2. Discrepancies that need to be brought to the attention of the Garage Supervisor and FSAS.
ITEM	ACCEPT	REJECT	
Lights			
Cross Member			
U Bolts & Springs			
Torque Arms			
Rims & Nuts			
Brake Lines & Shoes			
Tires			
Wheel Seals			

Comments: _____

Signed: _____ Badge No.: _____ Date: _____

DISTRIBUTION: QA VERIFICATION
Facility Services & Support

- 4552-

CARD XX **ITEM PRODUCTION/CERTIFICATION/IDENTIFICATION** 129545

P. O. NO.	SOURCE	CLASS	MATERIAL TYPE	LOT SEQUENCE NO.	DATE MO	DATE DAY	DATE YEAR	SHIFT	BADGE NO.	PACKAGE NO

SEAL NUMBER	SEAL DATE MONTH DAY YEAR	PACKAGE PHYSICAL CERTIFICATION	YES	NO	PLANT	PROD MBA
		EMPTY CONTAINER AT START				
		RUST-FREE OR DENTS				
		MATERIALS CODED			PLANT TO	MBA TO
WASTE DESCRIPTION AND COMMENTS		PROHIBITED MATERIALS				
		LIQUIDS IN CONTAINER				
PACKAGE TYPE		MINIMUM OF VOID SPACE				
PACKAGE SIZE		PACKAGE SECURED				
		DRAIN PLUG SECURED				

GROSS WEIGHT

TARE WEIGHT

NET WEIGHT

GENERATOR SIGNATURE

SUPERVISOR SIGNATURE DATE

FMPC-CONT-1945-XX (REV 12/19/88)

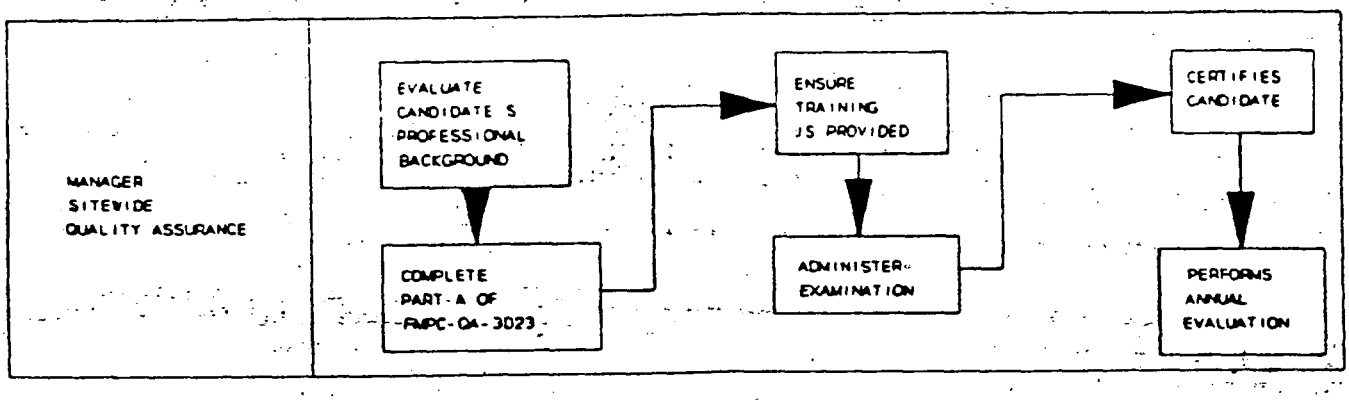
*U.S. GPO: 1990 749 181

NON-CONTROLLED COPY

WESTINGHOUSE ENVIRONMENTAL MANAGEMENT COMPANY OF OHIO - FEMP		DOCUMENT NUMBER: EQP-6.04
ENVIRONMENTAL QUALITY PROCEDURE	SUBJECT: QUALIFICATION OF WASTE PACKAGE CERTIFIERS	REVISION: 1
		Page 1 of 5
	AUTHORIZED: (Manager, Environmental Compliance & Quality Assurance) Kelley D. Savage	Effective Date: 06/26/92

1.0 SCOPE

To define the system utilized by the Westinghouse Materials Company of Ohio for evaluating and documenting the certification of individuals as Waste Package Certifiers. This procedure covers FMPC personnel who certify that individual packages of radioactive, hazardous, and mixed waste which are consolidated to compose an off-site shipment, comply with all applicable requirements and meet the acceptance criteria of the receiver. Qualification to perform other specialized verification activities is also documented using this procedure.



2.0 PROCEDURE

2.1 General:

2.1.1 Certification of individuals under this procedure is accomplished through review and consideration of professional expertise, demonstrated skills, required training, and proficiency examination. This review will be conducted by the Manager of Sitewide QA with the assistance of the Manager, Quality Certification and documented on form FMPC-Q&S-3024 (Attachment A).

2.1.2 Part B of Form FMPC-Q&S-3024 is specific to waste package type, point of origin and repository or disposal facility. Only one Part A is completed per candidate. More than one Part B may be required for an individual.

2.1.3 For abbreviations, acronyms and definitions see EQP-1.05.

2.2 Evaluation of Candidate

Manager Sitewide QA/Designee:

2.2.1 Evaluate the candidate's professional background to determine if it is sufficient to provide the general knowledge and experience required and documents this evaluation on form FMPC-Q&S-3024 Part A.

2.2.2 Utilize the following point system to evaluate the candidate in four areas: The prospective candidate shall have verifiable evidence that a minimum of five (5) points have been earned.

a. Education: (3 points maximum)

- Associate degree from an accredited institution - 1 point. If in engineering, physical science, QA or math - 2 points.

- Bachelors degree from an accredited institution - 2 points. If in engineering, physical science, QA or math - 3 points.

b. Experience (5 points maximum)

Technical experience in engineering, operations, or laboratory analysis: Score (one) 1 point for each full year to a maximum of three (3) points for this aspect of experience.

- If two (2) or more years of this experience have been in the nuclear field, score one (1) additional point; or

- If two (2) or more years of this experience have been in the radioactive or hazardous waste field, score two (2) additional points.

c. Management Judgement (2 points maximum)

Award up to two (2) points for other performance factors applicable to waste operations which may not be explicitly called out in this section. Examples of these factors are leadership, sound judgement, maturity, analytical ability, tenacity, past performance, waste training courses.

d. Surveillance Skills

Perform an evaluation of a candidate's ability to observe waste packaging and loading operations, identify nonconforming conditions, and obtain resolution to prevent recurrence.

2.2.3 Complete Part A of Form FMPC-Q&S-3024.

2.3 Specific Certification Authority

2.3.1 General

a. In order to be certified for a waste package type the candidate must understand and be able to verify the requirements unique to that package type and the acceptance criteria unique to the repository, treatment, or disposal facility.

b. Specific verification skills include specialized areas of expertise, such as vehicle inspection. Understanding of applicable standards and FMPC requirements is necessary.

2.3.2 Required Training

Manager, Sitewide QA/Designee:

a. Ensure required training is consistent with the scope of authority. The following as applicable, will be covered as a minimum:

1. Receiver Waste Acceptance Criteria
2. Applicable SOP's
3. Applicable QAP's

2.3.3 Specific Examination

Manager, Sitewide QA/Designee:

a. Administer a closed book, proctored exam to each prospective candidate prior to certification. The exam will consist of questions selected from the documents listed under the REQUIRED TRAINING section of Part B Form FMPC-Q&S-3024 (Attachment A). A grade of 80% will be considered as passing.

2.3.4 CERTIFICATION

Manager, Sitewide QA/Designee:

a. Certify candidate only after satisfactory completion of qualification requirements and examination by signing and dating the Certified by block of Part B Form FMPC-Q&S-3024.

2.4 MAINTENANCE OF QUALIFICATION

Manager, Sitewide QA/Designee:

2.4.1 Perform an annual reevaluation of each Package Certifier. Qualification may be extended, retraining may be required, or requalification may be necessary. This reevaluation shall consist of a review of the original certification documentation and additional supporting documentation accumulated during the annual period.

2.4.2 Document the annual reevaluation by initialing and dating the annual reevaluation block on Part B of Form FMPC-Q&S-3024.

3.0 REFERENCES

3.1 EQP-1.05, Abbreviations, Acronyms, and Definitions

4.0 ATTACHMENTS

4.1 Attachment A, Page 1 of 2 - Waste Package Certifier Qualification, Form FMPC-Q&S-3024 Part A (8/31/89)

4.2 Attachment A, Page 2 of 2 - Waste Package Certifier Qualification Form Specific Certification Authority, Form FMPC-Q&S-3024 Part B (8/31/89)

ATTACHMENT A
PAGE 1 OF 2

WASTE PACKAGE CERTIFIER QUALIFICATION FORM

Westinghouse Materials Company of Ohio
WASTE PACKAGE CERTIFIER QUALIFICATION FORM
PART A

EMPLOYEE NAME:	BADGE NUMBER:

PROFESSIONAL		
EDUCATION		(3 POINTS MAX)
EXPERIENCE		(5 POINTS MAX)
SPECIAL TRAINING		(3 POINTS MAX)
MANAGEMENT JUDGEMENT		(2 POINTS MAX)
TOTAL POINTS	PACKAGE CERTIFIER MINIMUM - 5 POINTS	TOTAL POINTS

SURVEILLANCE SKILLS

EVALUATED BY:	NAME & TITLE:	DATE:

PMPC-065-3SM PART A (5/31/89)

ATTACHMENT A
PAGE 2 OF 2

WASTE PACKAGE CERTIFIER QUALIFICATION FORM
SPECIFIC CERTIFICATION AUTHORITY

Westinghouse Materials Company of Ohio
WASTE PACKAGE CERTIFIER QUALIFICATION FORM
SPECIFIC CERTIFICATION AUTHORITY (PART B)

EMPLOYEE NAME:	BADGE NUMBER:
PACKAGE TYPE:	
LOCATION(S) OR SPECIAL AREA EXPERTISE:	

REQUIRED TRAINING

TOPIC	DATE	TOPIC	DATE

SPECIFIC EXAMINATION

	NAME:	GRADE:	DATE:
ADMINISTERED BY:			

QUALIFICATION CERTIFIED

	NAME & TITLE:	DATE:
CERTIFIED BY:		

ANNUAL RE-EVALUATION

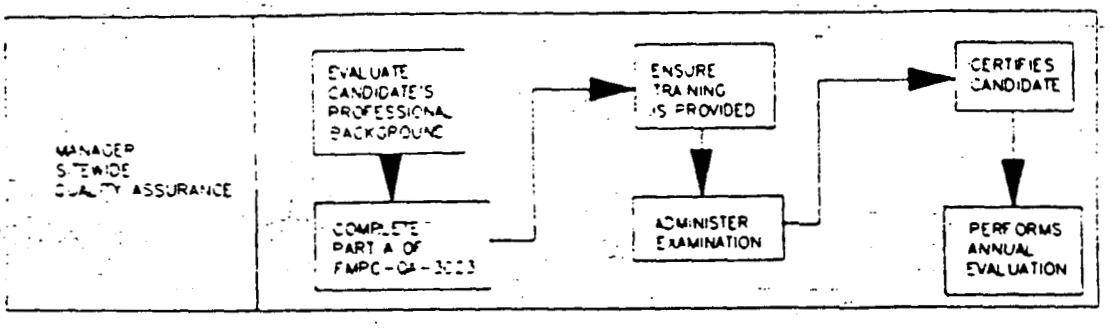
/ /		/ /		/ /	

FWPC-QSS-3024 PART B (8/31/88)

WESTINGHOUSE MATERIALS COMPANY OF OHIO - FMPC NON-CONTROLLED COPY		DOCUMENT NUMBER: EQP-6.05
ENVIRONMENTAL QUALITY PROCEDURE	SUBJECT: QUALIFICATION OF WASTE CERTIFICATION OFFICIALS	REVISION: 0
		Page 1 of 5
	AUTHORIZED: (Manager, Environmental Compliance & Quality Assurance) Ellery D. Savage	Effective Date: 05/30/91

1.0 SCOPE

To define the system utilized by the Westinghouse Materials Company of Ohio for evaluating and documenting the certification of individuals as Waste Certification Officials. This procedure covers FMPC personnel who certify that outgoing radioactive, hazardous, and mixed waste shipments comply with all applicable requirements and meet the acceptance criteria of the receiver.



2.0 PROCEDURE

2.1 General:

2.1.1 Certification of individuals under this procedure is accomplished through review and consideration of professional expertise, demonstrated skills, required training, and proficiency examination. This review will be conducted by the Manager of Sitewide QA with the assistance of the Manager of Quality Certification and documented on form FMPC-QA-3023 (Attachment A).

2.1.2 Part B of Form FMPC-QA-3023 is specific to waste type, point of origin and repository or disposal facility. Only one Part A is completed per candidate. More than one Part B may be required for an individual.

2.1.3 For abbreviations, acronyms and definitions see EQP-1.05.

2.2 Evaluation of Candidate

Manager, Sitewide QA/ Designee:

2.2.1 Evaluates the candidate's professional background to determine if it is sufficient to provide the general knowledge and experience required and documents this evaluation on form FMPC-QA-3023 Part A.

2.2.2 Utilizes the below point system to evaluate the candidate in four areas: The prospective candidate shall have verifiable evidence that a minimum of ten (10) points for a Certification Official have been earned

a. Education: (4 points maximum)

- o Associate degree from an accredited institution - 1 point
  If in engineering, physical science, QA or math - 2 points
- o Bachelors degree from an accredited institution - 2 points
  If in engineering, physical science, QA or math - 3 points
- o Masters degree from accredited institution - 1 additional point

b. Experience (9 points maximum)

- o Technical experience in engineering, operations, or laboratory analysis: Score (one) 1 point for each full year to a maximum of five (5) points for this aspect of experience.
- o If two (2) or more years of this experience have been in the nuclear field, score one (1) additional point; or.
- o If two (2) or more years of this experience have been in the nuclear waste field, score three (3) additional points; or.
- o If two (2) or more years of this experience have been in the waste certification field (i.e. as a package certifier) score four (4) additional points.

c. Surveillance Skills

Performs an evaluation of a candidate's ability for observing waste packaging and loading operations, identifying nonconforming conditions and in achieving resolution to prevent recurrence.

d. Rights of Management (2 points maximum)

Awards up to two (2) points for other performance factors applicable to waste operations which may not be explicitly called out in this section. Examples of these factors are leadership, sound judgement, maturity, analytical ability, tenacity, past performance, waste training courses.

2.2.3 Complete Part A of Form FMPC-QA-3023.

2.3 Specific Certification Authority

2.3.1 General

In order to be certified as a Waste Certification Offical the candidate must understand and be able to apply the requirements unique to the waste type and the acceptance criteria specific to the repository, treatment, or disposal facility.

2.3.2 Required Training

Manager, Sitewide QA/ Designee:

a. Ensure required training is consistent with the scope of authority. The following as applicable, will be covered as a minimum:

1. Receiver Waste Acceptance Criteria
2. Applicable QAP's
3. Applicable DOT Standards

2.3.3 Specific Examination

Manager, Sitewide QA/ Designee:

a. Administer a closed book, proctored exam to each candidate prior to certification. The exam will consist of questions selected from the documents listed under the REQUIRED TRAINING section of Part B Form FMPC-QA-3023 (Attachment A). A grade of 80% will be considered as passing.

2.3.4 CERTIFICATION

Manager, Sitewide QA/ Designee:

a. Certify candidate only after satisfactory completion of qualification requirements and examination by signing and dating the Certified by block of Part B Form FMPC-QA-3023.

2.4 MAINTENANCE OF QUALIFICATION

Manager, Sitewide QA/ Designee:

2.4.1 Perform an annual reevaluation of each Certifying Official. Qualification may be extended, retraining may be required, or requalification may be necessary. This reevaluation shall consist of a review of the original certification documentation and additional supporting documentation accumulated during the annual period.

2.4.2 Document the annual reevaluation by initialing and dating the annual reevaluation block on Part B of Form FMPC-QA-3023.

3.0 REFERENCES

3.1 EQP-1.05, Abbreviations, Acronyms, and Definitions

4.0 ATTACHMENTS

4.1 Attachment A - Waste Certification Official Qualification Form Part A & B.

ATTACHMENT A
PAGE 1 OF 2

Westinghouse Materials Company of Ohio

WASTE CERTIFICATION OFFICIAL QUALIFICATION FORM

PART A

EMPLOYEE NAME	BADGE NUMBER

PROFESSIONAL		
EDUCATION		(4 POINTS MAX)
EXPERIENCE		(9 POINTS MAX)
SPECIAL TRAINING		(2 POINTS MAX)
MANAGEMENT JUDGEMENT		(2 POINTS MAX)
TOTAL POINTS	CERTIFICATION OFFICIAL MINIMUM - 10 POINTS	TOTAL POINTS

SURVEILLANCE SKILLS

	NAME & TITLE	DATE
EVALUATED BY:		

Westinghouse Materials Company of Ohio
WASTE CERTIFICATION OFFICIAL QUALIFICATION FORM
SPECIFIC CERTIFICATION AUTHORITY (PART B)

EMPLOYEE NAME	BADGE NUMBER
WASTE TYPE	
DESTINATION	

REQUIRED TRAINING

TOPIC	DATE	TOPIC	DATE

SPECIFIC EXAMINATION

	NAME	GRADE	DATE
ADMINISTERED BY.			

QUALIFICATION CERTIFIED

	NAME & TITLE	DATE.
CERTIFIED BY.		

ANNUAL RE-EVALUATION

/ /		/ /		/ /	

Westinghouse Materials Company of Ohio

WASTE CERTIFICATION OFFICIAL QUALIFICATION FORM
SPECIFIC CERTIFICATION AUTHORITY (PART B)

EMPLOYEE NAME:	BADGE NUMBER:
WASTE TYPE:	
DESTINATION:	

REQUIRED TRAINING

TOPIC	DATE	TOPIC	DATE

SPECIFIC EXAMINATION

ADMINISTERED BY:	NAME:	GRADE:	DATE:

QUALIFICATION CERTIFIED

CERTIFIED BY:	NAME & TITLE:	DATE:

ANNUAL RE-EVALUATION

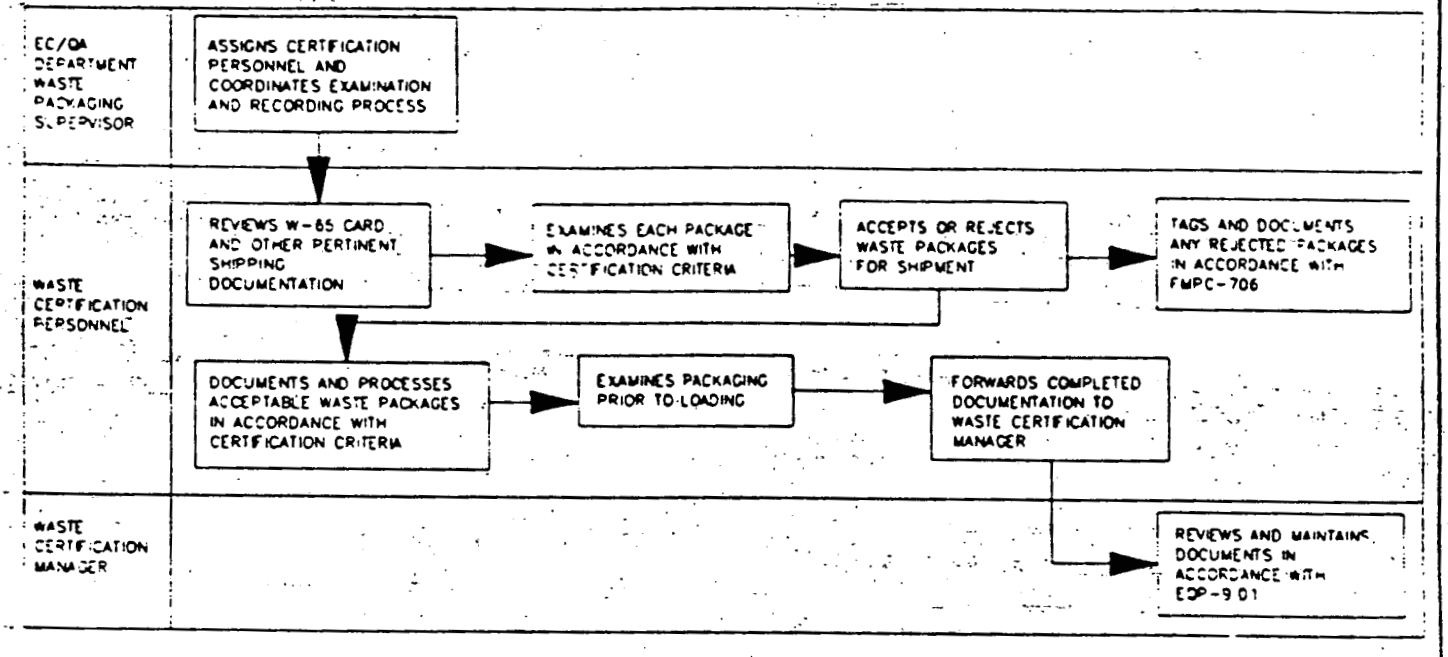
/ /		/ /		/ /	

0673

WESTINGHOUSE MATERIALS COMPANY OF OHIO - FMPC	NON-CONTROLLED COPY	DOCUMENT NUMBER: EQP-12.03
ENVIRONMENTAL QUALITY PROCEDURE	SUBJECT: CERTIFICATION OF WASTE PACKAGE EXAMINATION AND SEALING FOR OFF-SITE SHIPMENT	REVISION: 0
		Page 1 of 19
	AUTHORIZED: (Manager, Environmental Compliance & Quality Assurance) Allery D. Savage	Effective Date: 05/30/91

1.0 SCOPE

This procedure outlines the method for the certification of waste materials at the Feed Materials Production Center (FMPC) (for additional abbreviations, acronyms, and definitions refer to EQP-1.05) prior to offsite shipment, and is applicable to Low-Level Radioactive Waste (L-LRW) only.



2.0 PROCEDURE

2.1 Industrial Health and Safety Requirements

2.1.1 Leather palm gloves shall be worn by when handling sharp-edged or abrasive materials, containers, lids, and banding materials.

2.1.2 Safety glasses shall be worn by all personnel at all times in the process area, except when another type of eye protection equipment is specified.

2.1.3 A half-mask respirator equipped with radionuclide (purple) cartridges as specified by the Radiological Safety (RS) Technician shall be available for each person working with waste material and shall be used at the direction of the RS Technician.

2.1.4 Any circumstances of event which could have resulted in an intake of radioactive materials by inhalation, ingestion or absorption shall immediately be reported to a supervisor. The supervisor shall immediately report the circumstance of possible radioactive materials intake RS for evaluation. The involved personnel shall report to Medical Services at the end of their shift or as directed to submit a urine sample and again report at the start of their next shift to submit another urine sample.

2.1.5 Spill incidents involving RCRA materials shall be reported to the Spill Reporting Advisor in Environmental Compliance in accordance with Site Procedure FMPC-503, "FMPC Spill Incident Reporting and Cleanup."

2.2 General Requirements for Packaging L-LRW

2.2.1 All certification personnel verifying packaging and shipment of L-LRW to the Nevada Test Site (NTS) be trained and qualified on this procedure, NVO-325, and the Waste Certification Program Plan in accordance with EQP-6.04, Qualification of Waste Package Certifiers, or on EQP-6.05, Qualification of Waste Certification Officials.

2.2.2 Materials prohibited by NVO-325 and listed on the Prohibited Materials List (Attachment A) shall not be packaged for shipment.

2.2.3 Only materials approved by the NTS, Solid Waste Compliance and Waste Management shall be shipped. The Waste Certification Manager is responsible for making this information available to all personnel performing verification and certification work.

2.2.4 Only container designs approved for shipment by the NTS that meet the requirements of NVO-325 shall be used. For the purpose of this procedure only those container types verified as acceptable by the Waste Certification Manager, or another Certification Official, are to be used.

2.2.5 All packaging shall be in strong, tight containers that do not leak under normal transport and handling conditions, and which meet the criteria of Title 49 CFR 173.431 and 173.425.

2.2.6 Marking and labeling shall be in accordance with Title 49 CFR 172, Subparts D & E, as follows:

a. Container Number
b. Shipment Number
c. Gross Weight
d. Radioactive markings
e. Other marking and labeling as required for the packaged material

2.2.7 Packages certified and held for shipment must be secure and protected from weather and other adverse conditions having the potential to create an unacceptable condition. Covered or enclosed storage, which includes covering with plastic or tarpaulin are appropriate protective measures. If appropriate measures have not been taken, all packages concerned shall be reexamined by Certification personnel and recertified on the basis of the reexamination results.

2.3 Examination of Metal Drums Prior to Filling

Metal drum examination by Certification prior to filling is not a routine requirement, but may be performed on an audit basis as follows:
Physical Inspection - 50% of lot
W-65 Card comparison - 10% of lot
W-65 Card check for completeness and accuracy - 100% of lot
Results of examination shall be documented with an appropriate check list and signed by Certification personnel performing the examination. Criteria for examination shall include as a minimum:

2.3.1. Except for light rust, drum must be clean and empty.

2.3.2. Examine all surfaces of the drum and lid and reject for any of the following conditions.

a. A breach (a hole, crack, gash, etc.)
b. A dent or bulge which has creased, gouged, or may have otherwise significantly weakened the metal.
c. A dent greater than 1" in depth or extending over 6" in any direction.
d. A significant dent in the bottom rim. A significant dent is one that compromises the integrity of the container.
e. A significant dent in a rolling hoop. Each deficiency is to be evaluated for affect on the integrity of the container.
f. Rust causing exfoliation (scale), sever pitting, or other conditions having a detrimental effect on the serviceability of the waste container. (Small areas of exposed base metal, minor to moderate scratches, and slightly rusted spots are acceptable.)
g. Any deformation or out-of-round condition affecting the integrity of the sealing surface.

2.4 Examination of Metal Drum Filling

The filling of drums with low level radioactive waste materials shall be monitored by Certification personnel. The results of examination shall be documented on the "Waste Certification Examination Report 'Drum Filling'", QAC-881115-5 (Attachment B), and signed by those performing the examination. As a minimum, the examination shall include:

2.4.1 Visual verification that the materials packaged conform in appearance to the materials listed on the waste generator's certification record (currently W-65 card, FMPC-CONT-1945-XX, Attachment C).

2.4.2 If material is a respirable fine, verify that double containment is used in packaging.

2.4.2.1 Plant 8 residues shall be packaged in 48-gallon jug head type lever lock drum, sealed with a sequentially numbered wire seal, and contained in a 55-gallon bolt closure type overpack drum.

2.4.2.2 Other miscellaneous materials may be overpacked with double containment, provided neither container will leak in normal handling and transport.

NOTE: As of the date this procedure is issued, approval has not been received to resume shipment of asbestos to the NTS. Also, there is no assurance that when and if shipment is resumed that asbestos in drums will be acceptable.

2.4.3 Verify that numbered seals are being used to secure inner containers.

2.4.4 Verify that bolt ring closure is used on outer drum, flange is in down position, and lid is secure. (If in doubt, grasp bolt ring with gloved hand and generate movement to determine if ring is loose.)

2.5 Examination of Metal Drums Prior to Loading Trailers For Transfer to Plant 1 (Waste Operations)

Examine packaged drums prior to loading on trailers for transfer to the Plant 1 Area. These drums are to be examined 100% on a best effort basis, and responsibility shall not be waived without the approval of Sitewide QA who shall notify Operations and Waste Management supervision of Certification's inability to perform the examination.

2.5.1. Receives the "Item Production/Certification/Identification" card FMPC-CONT-1945-XX (W-65 Card, Attachment C)

2.5.2 The lid shall be properly seated on the drum and held in place by a bolt ring closure. If bolt and flanges are not lower than rest of ring, then ring is positioned upside down.

2.5.3 Examine all surfaces of the drum and lid and reject for any of the following conditions.

a. A breach (a hole, crack, gash, etc.)
b. A dent or bulge which has creased, gouged, or may have otherwise significantly weakened the metal.
c. A dent greater than 1" in depth or extending over 6" in any direction.
d. A significant dent in the bottom rim. A significant dent is one that compromises the integrity of the container.
e. A significant dent in a rolling hoop. Each deficiency is to be evaluated for affect on the integrity of the container.
f. Rust causing exfoliation (scale), sever pitting, or other conditions having a detrimental effect on the serviceability of the waste container. (Small areas of exposed base metal, minor to moderate scratches, and slightly rusted spots are acceptable.)

g. Any deformation or out-of-round condition affecting the integrity of the sealing surface.

2.5.4 Complete "Waste Certification Examination Report 'Prior to Transfer'", QAC-881115-3 (Attachment D).

2.6 Examination of Wood Boxes Prior to Filling

On an occasional basis, wood boxes will be examined prior to filling to verify compliance. The examination shall be documented on a checklist, and shall include verification of the following:

2.6.1 The box design is approved for shipment to NTS.

2.6.2 The box is not damaged or seriously deteriorated (i.e. rot).

2.6.3 The box is free of holes, splits, or voids between plywood panels and framework.

2.6.4 The box is free of protruding fasteners.

2.6.5 The box is labeled, on opposite sides, with the manufacturer's name and shipping box serial number.

2.6.6 Lids, if in place, fit securely into the top recesses of the box and are free of severe warping, and voids.

2.6.7 Each box has three (four if the large 124 cu. ft. box) 1-1/4" width straps equidistant and horizontally around the perimeter.

2.6.8 Each box has a preformed plastic or 6-mil (0.006") sheet plastic liner. A preformed liner is required if box is to be filled with loose material such as scrap wood, metal, soil, or masonry.

2.6.9 Each box has a minimum of one 50 lb. bag of uncalcined diatomaceous earth (Dicalite) spread evenly in the bottom of the box, or an absorbent pad, covering the liner in the bottom of the box.

2.7 Monitoring of Wood Box Filling Prior to Closure

Wood box filling is to be monitored occasionally to verify compliance. Observance may include the filling process, or may only include observance after filling prior to closure. The results of the monitoring shall be documented on a checklist and shall verify the following:

2.7.1 A prohibited materials list is displayed in the loading area.

2.7.2 Box has a 6 mil (0.006") sheet plastic or a preformed plastic liner. A preformed liner is required if box is to be filled with loose material such as scrap wood, metal, soil, or masonry.

NOTE: A plastic liner is not required if box is being loaded with heavy metal items.

2.7.3 When loading with heavy items, floor seams and one foot up each corner are caulked.

2.7.4 Box contents agrees with documentation on FMPC-CONT-1945-XX (W-65 card, Attachment C).

2.7.5 No prohibited items are being or have been packaged.

NOTE: Depending on the contents, all materials in a filled package may not be visible. The examiner should view as much of the contents as possible by looking into the box from different angles, and making use of inspection equipment such as mirrors, boroscopes, etc. as available.

2.7.6 Verify that visible internal structure of box is undamaged.

2.7.7 Sheets of wet-strength polypropylene/pulp super absorbent fabric have been placed in the bottom of the box or that one 50 lb. bag of uncalcined diatomaceous earth has been added and spread evenly in the bottom of the box.

2.7.8 If the box contains soil, wet-strength polypropylene/pulp super absorbent fabric or one 50 lb. bag of uncalcined diatomaceous earth has been added in alternating layers accounting for moisture level of soil.

2.7.9 Complete "Waste Certification Wood Box Examination Filling," QAC-881206-1 (Attachment E).

2.8 Monitoring Wood Box Closure Activities

Wood box closure activities shall be monitored occasionally to verify compliance. Results of the monitoring shall be documented on a check list and shall verify the following:

2.8.1 Plastic is folded over contents of box.

2.8.2 Form FMPC-CONT-1945-XX, "Item Production/Certification/Identification" card (W-65 Card, Attachment C) is filled out properly.

2.8.3 No moisture is visible on either the inside or the outside of the box.

2.8.4 RTW Silicone Adhesive, or equivalent, has been applied in a continuous bead (1/4 inch minimum) between lid and box.

2.8.5 Box is banded vertically with three 1-1/4 inch metal bands, one band on each end of the box and one in the middle of the box.

2.8.6 Box lid shall be fastened using ten penny nails on 3 inch centers and two sixteen penny galvanized nails on each side panel into two inch by four inch on top panel (8 places) providing proper closure.

2.8.7 Box does not exceed 5000 pounds gross weight.

2.8.8 Check for damage to the box and lid. No holes, cracks, or deterioration (i.e. rot) which would permit leakage or lessen the structural integrity of the box are acceptable.

2.8.9 Complete "Waste Certification Wood Box Examination Filled Box," QAC-881206-2 (Attachment F).

2.9 Examination of Metal Boxes Prior to Filling

2.9.1 Metal box examination by Certification prior to filling is not required but should be performed on a monitoring basis. Criteria for examination shall include as a minimum:

a. Metal box must be a light color, usually white for Uranium contaminated rubble, gray for Thorium contaminated rubble.
b. Containers must be clean and empty.
c. Each container shall be well constructed of steel with all seams adequately welded.
d. The containers shall be free of holes, severe gouges, and significant deformations causing structural weakness or improper sealing.
e. The containers shall be free of rust causing exfoliation (scale), severe pitting, or other conditions having a detrimental effect on the serviceability of the waste container.

2.9.2 For all box designs having drain plugs, verify that box has been checked for a drain plug, and if found the drain plug has been tightened.

a. A red dot on the lower left hand front of the box shall indicate that the plug has been tightened.
b. A black dot on the lower left hand front of the box shall indicate that there is no drain plug.
c. All metal boxes shall have either a red or black dot marked.

2.10 Examination of Metal Boxes at Closure After Filling

2.10.1 Metal box must be a light color, usually white for Uranium contaminated rubble, gray for Thorium contaminated rubble.

2.10.2 Containers must be clean.

2.10.3 Each container shall be well constructed of steel with all seams adequately welded.

2.10.4 The containers shall be free of holes, severe gouges, and significant deformations causing structural weakness or improper sealing.

2.10.5 The containers shall be free of rust causing exfoliation (scale), severe pitting, or other conditions having a detrimental effect on the serviceability of the waste container.

2.10.6 For all box designs having drain plugs, verify that box has been checked for a drain plug, and if found the drain plug has been tightened.

a. A red dot on the lower left hand front of the box shall indicate that the plug has been tightened.
b. A black dot on the lower left hand front of the box shall indicate that there is no drain plug.
c. All metal boxes shall have either a red or black dot marked.

2.10.7 If container has been observed during loading operation ensure that wet-strength polypropylene/pulp super absorbent fabric or uncalcined diatomaceous earth is properly placed in and around the container so that all moisture is absorbed and no free liquid is visible.

2.10.8 If steel boxes are used as overpack containers for previously inspected containers, no further inspection of the contents is required.

2.10.9 Examine container at closure as follows :

a. Verify form FMPC-CONT-1945-XX (W-65 Card, Attachment C) is completed accurately.
b. Verify that Radioactive material markings (2 sides) and FMPC container number markings are present and legible.
c. Verify that all unnecessary marking have been removed or covered.
d. Verify that gross weight does not exceed 6,000 pounds.
e. Verify marked gross weight value is consistent with shipment paperwork.
f. Verify that a foam rubber or similar type gasket is on the sealing surface of the lid, or the lid is sealed with a durable sealant.
g. Verify that lid is properly placed on the box.
h. Verify locking pins required for the container are in place with the locking notches below the straps and fully engaged to full thickness of strap over entire locked surface edge of notch.
i. If bolted retainer ring is on, verify all bolts are securely in place.
j. Verify the lid is secured with two 1-1/4" steel straps.

2.10.10 For boxes filled with construction rubble, complete the "Construction Rubble Examination Metal Boxes" checklist, QAC-881206-3 (Attachment G).

2.11 <u>Examination of Sea/Land Cargo Containers Prior to Filling</u>

2.11.1 Sea/Land container examination by Certification prior to filling is not required but should be performed on a monitoring basis. Criteria for examination shall include as a minimum:

2.11.1.1 Containers must be clean and empty.

2.11.1.2 Each container shall be well constructed of steel with all seams adequately welded.

2.11.1.3 The containers shall be free of holes, severe gouges, and significant deformations causing structural weakness or improper sealing.

2.11.1.4 The containers shall be free of rust causing exfoliation (scale), severe pitting, or other conditions having a detrimental effect on the serviceability of the waste container.

2.11.1.5 Verify a tare weight is marked on the container.

2.11.1.6 Verify that a 1/4" minimum continuous bead of RTW Silicone Adhesive Sealant, or equivalent, has been applied on all seams and corners of the container interior.

2.11.1.7 Verify that the container floors have been lined with wet-strength polypropylene/pulp super absorbent fabric, blotter paper, or uncalcined diatomaceous earth.

2.11.1.8 Verify that the absorbent fabric, blotter paper or uncalcined diatomaceous earth has been covered with a 0.006 mil thick plastic sheet that extends at least 36 inches up each side of the container.

2.11.1.9 Verify that plywood has been placed on the container floor and up to four feet in height on all sides. If container is top loading Sea/Land container, verify that the entire floor and sides are lined with plywood.

2.11.1.10 Verify that all container outside markings not related to the load have been removed.

2.11.1.11 Verify that a prohibited materials list has been attached to the container in a visible location.

2.11.1.12 After the container has been filled, verify that the back ledge of the container is clean.

2.11.1.13 Verify that the lid/door opening has been lined with 0.006 mil thick plastic or similar material to a height of 18 inches.

2.11.1.14 Verify that the load inside the container has been secured with plywood and 2" X 4" wood, or other similar type materials.

2.11.1.15 Verify that all doors and around all sealing surfaces have been caulked with RTW Silicone Adhesive Sealant, or the equivalent.

2.12 <u>Examination of Sea/Land Cargo Containers at Closure After Filling</u>

2.12.1 Each container shall be well constructed of steel with all seams adequately welded.

2.12.2 The containers shall be free of holes, severe gouges, and significant deformations causing structural weakness or improper sealing.

2.12.3 The containers shall be free of rust causing exfoliation (scale), severe pitting, or other conditions having a detrimental effect on the serviceability of the waste container.

2.12.4 If Sea/Land container has been observed during loading operation ensure that wet-strength polypropylene/pulp super absorbent fabric or uncalcined diatomaceous earth is properly placed in and around the container so that all moisture is absorbed and no free liquid is visible.

2.12.5 Examine Sea/Land containers at closure as follows :

a. Verify form FMPC-CONT-1945-XX (W-65 card, Attachment C) is completed accurately.
b. Verify that all unnecessary marking have been removed or covered.
c. Verify that caulking is around all doors and around all sealing surfaces, and that the metal doors are securely closed, and two metal bands secure the two door latches together.
d. If Sea/Land container is top loading, verify that a foam rubber or similar type gasket is on the sealing surface of the lid, or the lid is sealed with a durable sealant.
e. Verify that a prohibited materials list has been attached to the container in a visible location.

2.13 <u>Examination of Baled Trash</u>

2.13.1 Examine baled trash as follows:

a. Each bale shall have minimum of six (6) bands or straps for binding.
b. Free liquids are prohibited. Be watchful of liquids in pockets of water in a bags. Condensation in plastic bags is acceptable unless excessive.
c. Prohibited materials are not allowed in accordance with "Prohibited Materials List" (Attachment A).

<u>NOTE</u>: Reject bale if prohibited materials or suspicious items (i.e. asbestos) are present, and mark W-65 card accordingly.

d. "Bale Examination" checklist (Attachment H) is completed.
e. Using a barrel grab lift and turn the bale to check underside.
f. Ensure that form FMPC-CONT-1945-XX (W-65 card, Attachment C) is complete and accurate for each bale.
g. Initial and date the W-65 card after examining the card and bale.

NOTE: If bale is designated wet (to be sent to Plant 1 for drying) initial card but note that bale is wet (unacceptable for shipment). Wet bales will be recertified at Plant 1 prior to packaging for shipment.

h. Make entry in log book at the baler.
i. Enter bale inspection on computer in Waste Packaging Office.

3.0 REFERENCES

3.1 NVO-325, Nevada Test Site Defense Waste Acceptance Criteria, Certification, and Transfer Requirements
3.2 FMPC-503, FMPC Spill Incident Reporting and Cleanup
3.3 FMPC-704, Minor Event Reporting System
3.4 EQP-1.05, Abbreviations, Acronyms, and Definitions
3.5 FMPC-706, Deviation and Corrective Action Reporting
3.6 EQP-9.01, Designation, Preparation, Storage and Maintenance of Quality Documents
3.7 EQP-12.04, Certification of Loading and Shipment of Low-Level Radioactive Waste

4.0 ATTACHMENTS

4.1 Attachment A - Prohibited Materials List
4.2 Attachment B -Waste Certification Examination Report, "Drum Filling"
4.3 Attachment C -Item Production/Certification/Identification Card
4.4 Attachment D -Waste Certification Examination Report, "Prior to Transfer"
4.5 Attachment E -Waste Certification Wood Box Examination Filling
4.6 Attachment F -Waste Certification Wood Box Examination Filled Box
4.7 Attachment G - Construction Rubble Examination Metal Boxes
4.8 Attachment H -Bale Examination

PROHIBITED MATERIALS

- Nonradioactive Material
- Pressurized Vessels
- Explosives
- Radioactive Gases
- High-Level Waste
- Pyrophoric Materials
- Toxic or Poisonous Materials
- Liquid Metals
- Flammable Substances
- Alkaline Metals
- Reactive Materials (could cause fire)
- Liquid Organic Waste or Waste that contains any free liquid
- Ashes, Dry Powders or Respirable Fines (unless immobilized or a double containment package is used)
- If the Waste is Ionized or Immobilized the pH must be greater than 4

Attachment B
Page 1 of 1

WASTE CERTIFICATION EXAMINATION REPORT
"DRUM FILLING"

WASTE CERTIFICATION
EXAMINATION REPORT
"DRUM FILLING"

DATE: _____ LOCATION: _____

CERTIFICATION SPECIALIST _____ MATERIAL: _____

LOT NO.: _____

DRUM #	INSIDE DRUM	OUTSIDE DRUM	NO LIQUIDS	I.S. LID	MTL. OK	SEAL OK	W-65 COMP.	INITIAL ALL OK

Deviations Noted: Yes_____ No_____

Deviation Corrective Action Completed :

Production Supervisor: _____ Date:_____

Waste Certification Specialist:_____ Date:_____

Attachment C
Page 1 of 1

ITEM PRODUCTION/CERTIFICATION/IDENTIFICATION CARD

CARD XX ITEM PRODUCTION/CERTIFICATION/IDENTIFICATION 129702

P. O. NO.	SOURCE	CLASS	MATERIAL TYPE	LOT SEQUENCE NO.	DATE MO	DAY	YEAR	SHIFT	BADGE NO.	PACKAGE NO.

SEAL NUMBER	SEAL DATE MONTH	DAY	YEAR

WASTE DESCRIPTION AND COMMENTS

PACKAGE TYPE	
PACKAGE SIZE	

PACKAGE PHYSICAL CERTIFICATION	YES	NO
EMPTY CONTAINER AT START		
RUST HOLES OR DENTS		
MATERIAL IS AS CODED		
PROHIBITED MATERIALS		
LIQUIDS IN CONTAINER		
MINIMUM OF VOID SPACE		
PACKAGE SECURED		
DRAIN PLUG SECURED		

PLANT	PROD. MBA
PLANT TO	MBA TO

GROSS WEIGHT

TARE WEIGHT

NET WEIGHT

GENERATOR SIGNATURE SUPERVISOR SIGNATURE DATE

FMPC-CONT-1045-XX (REV 12-19-88)

*U.S. GPO: 1990-749-781

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Attachment D
Page 1 of 1

WASTE CERTIFICATION EXAMINATION REPORT "PRIOR TO TRANSFER"

WASTE CERTIFICATION
EXAMINATION REPORT
"PRIOR TO TRANSFER"

(Rev. 8/31/88)

DATE:_____ LOCATION:_____

CERTIFICATION SPECIALIST MATERIAL:_____

_____

LOT NO.:_____ _____

DRUM #	O.S. DRUM	O.S. LID	BOLT	RING	DRUM I.D.	WTS. OK .	W-65 (10%)	ALL OK

Deviations Noted: Yes_____ No_____

Deviation Corrective Action Completed :

Production Supervisor: _____ Date:_____

Waste Certification Specialist:_____ Date:_____

WASTE CERTIFICATION WOOD BOX EXAMINATION FILLING

WASTE CERTIFICATION
WOOD BOX EXAMINATION
FILLING

INFORMATION

MTL. TYPE: _____ BOX S/N(): _____

REQUESTOR: _____ LOCATION : _____

EXAMINATION (Waste Certification)

DATE CHECKED	STATUS	INITIALS

CERTIFICATION (Waste Certification)

Deviation Reportable: YES_____ NO_____

Nonconformance Record Number:_____

Date Deviation Corrected:_____

I hereby certify the above woodbox has been examined to the best of my knowledge, as defined by the above criteria, requirements of this procedure, & SOP 20-C-601.

Signed:_____
(Waste Certification)

Date: _____

QAC-881206-1, Rev. 1 (12/15/88)

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Attachment F
Page 1 of 1

WASTE CERTIFICATION WOOD BOX EXAMINATION FILLED BOX

WASTE CERTIFICATION
WOOD BOX EXAMINATION
FILLED BOX

INFORMATION

MTL. TYPE: _____ BOX S/N(): _____

GENERATOR: _____ LOCATION : _____

EXAMINATION

	INITIALS
1. Check for damage to the box and lid. Verify no holes, cracks or defects which would permit leakage or lessen the structural integrity of the box.	_____
2. Verify clarity of shipment number and container number.	_____
3. Verify Gross Weight is marked on each box.	_____
4. Verify three metal bands are secure and located vertically with one in the center of the box and the remaining two equidistant from the center, one on each side, or verify that large boxes are secured with four evenly spaced bands.	_____
5. Verify no standing water on the box.	_____
6. Verify W-65 card information matches information marked on box.	_____
7. Verify the existence of the Low Specific Activity (LSA), Reportable Quantity (RQ), label identification, as applicable.	_____
8. Verify the existence of durable sealant compound between the lid and the box.	_____
9. Verify the existence of nails, attaching the lid to the box.	_____

CERTIFICATION (Waste Certification)

Deviation Reportable: YES_____ NO_____

Nonconformance Record Number:_____

Date Deviation Corrected:_____

I hereby certify the above woodbox has been examined to the best of my knowledge, as defined by the above criteria, requirements of this procedure, & SOP 20-C-601.

Signed:_____
(Waste Certification)

Date: _____

QAC-881206-2, Rev. 2 (12/15/88)

CONSTRUCTION RUBBLE EXAMINATION METAL BOXES

CONSTRUCTION RUBBLE EXAMINATION METAL BOXES

RECORD :

Container S/N : _____ Date : _____

PRIOR TO LOADING:

1. Verify that the container has no holes, tears or creases. _____
2. Verify drain plug is installed, if applicable _____
3. Verify the container lid is not damaged (including the gasket). _____
4. Verify that one bag of Uncalcined diatomaceous earth or absorbent pad is placed on top of soil. _____
5. Only correct materials are placed in container. _____
6. No free liquids are visible in the container. _____
7. Verify only unsaturated wood is used as topping-off material. _____
8. Verify gross weight of container does not exceed 6000 lbs. _____
9. Verify caulking/gasket, banding (2) and pins are all in place. _____
10. Verify the data record (W-65) is filled out correctly. _____

Note : Any deviations from the checklist will require a deviation report to be issued and a Nonconformance tag placed on the container. The deviation must be resolved prior to removal of the Nonconformance tag.

Deviation Noted: Yes_____ NO_____

I hereby certify that the above checklist has been completed and witness that the above items are correct to the best of my knowledge.

Signed : _____ Date : _____
(Waste Certification)

QAC-881206-1, Rev. 1 (12/08/88)

BALE EXAMINATION

BALE NUMBER_____ DATE_____

EXAMINATION:

1. Verify correct materials are placed in bale where visible. _____

2. No visual evidence of free liquids or seepage from bale, nor is material in bale saturated to the extent that seepage could be expected during bundling, handling and transport. _____

3. Verify the data record (W-65) is filled out correctly. _____

NOTE: Any deviations from the checklist will require a deviation report to be issued and a Nonconformance tag placed on the container. The deviation must be resolved prior to removal of the Nonconformance tag.

Deviation Noted: Yes_____ No_____

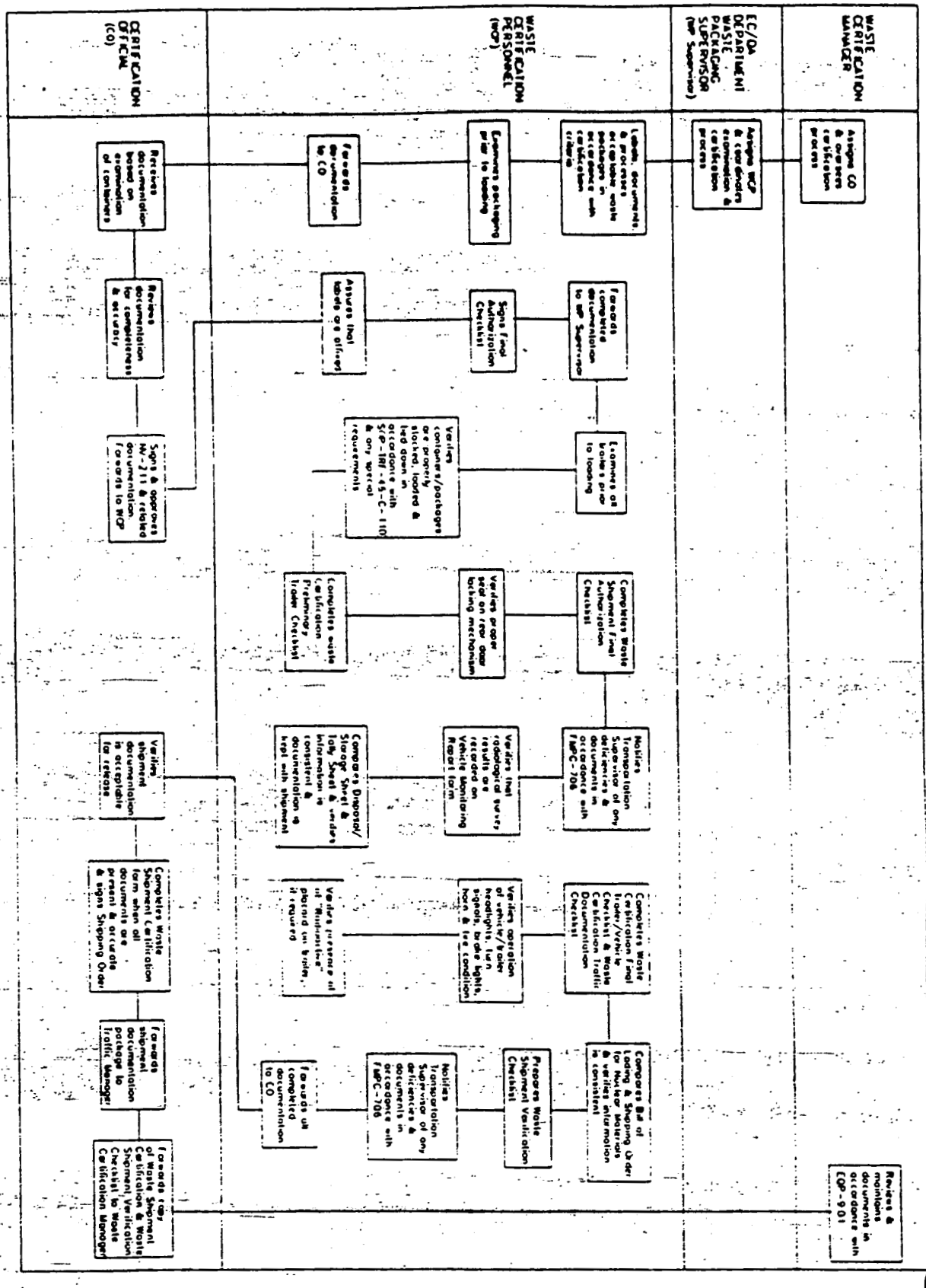
I hereby certify that the above checklist has been completed and witness that the above items are correct to the best of my knowledge.

Signed:_____ Date:_____
(Waste Certification)

WESTINGHOUSE MATERIALS COMPANY OF OHIO - FMPC	NON-CONTROLLED COPY	DOCUMENT NUMBER: EQP-12.04
ENVIRONMENTAL QUALITY PROCEDURE	SUBJECT: CERTIFICATION OF LOADING AND SHIPMENT OF LOW-LEVEL RADIOACTIVE WASTE	REVISION: 0
		Page 1 of 39
	AUTHORIZED: (Manager, Environmental Compliance & Quality Assurance) Allery D. Savage	Effective Date: 05/30/91

1.0 SCOPE

This procedure establishes a detailed method for the certification of Low-Level Radioactive Waste (L-LRW) packages (for additional abbreviations, acronyms, and definitions refer to EQP-1.05), the loading of L-LRW materials and the examination of highway transport vehicles for exclusive use shipments only at the Feed Materials Production Center (FMPC) to ensure compliance with applicable federal regulations.


WASTE CERTIFICATION MANAGER
EC/QA DEPARTMENT WASTE PACKAGING SUPERVISOR (WP Supervisor)
WASTE CERTIFICATION PERSONNEL (WCP)
CERTIFICATION OFFICIAL (CO)
Assigns CO & oversees certification process
Assigns WCP & coordinates documentation & certification process
Labels, documents, & prepares acceptable waste packages in accordance with certification criteria
Examines packaging prior to loading
Forwards documentation to CO
Receives documentation based on examination of containers
Forwards completed documentation to WP Supervisor
Signs Final Authorization Checklist
Assures that labels are affixed
Reviews documentation for completeness & accuracy
Signs & approves NV-211 & related documentation. Forwards to WCP
Examines all trailers prior to loading
Verifies containers/packages are properly stacked, loaded & tied down in accordance with SWP-TRF-45-C-110 & any special requirements
Completes Waste Shipment Final Authorization Checklist
Verifies proper seal on rear door locking mechanism
Completes waste Certification Preliminary Trailer Checklist
Notifies Transportation Supervisor of any deficiencies & documents in accordance with FMPC-706
Verifies that radiological survey results are recorded on Vehicle Monitoring Report form
Compares Disposal/Storage Sheet & Tally Sheet & verifies information is consistent & documentation is kept with shipment
Verifies shipment documentation is acceptable for release
Completes Waste Certification Final Trailer/Vehicle Checklist & Waste Certification Traffic Documentation Checklist
Verifies operation of vehicle/trailer headlights, turn signals, brake lights, horn & tire condition
Verifies pressure of all "Rubbrstone" placed on trailer, if required
Compares Bill of Lading & Shipping Order for Nuclear Materials & verifies information is consistent
Prepares Waste Shipment Verification Checklist
Notifies Transportation Supervisor of any deficiencies & documents in accordance with FMPC-706
Forwards all completed documentation to CO
Completes Waste Shipment Certification form when all documents are present & accurate & signs Shipping Order
Forwards shipment documentation package to Traffic Manager
Forwards copy of Waste Shipment Certification & Waste Shipment Verification Checklist to Waste Certification Manager
Reviews & maintains documents in accordance with EQP-901

2.0 PROCEDURE

2.1 Event Notification and Reporting Requirements

2.1.1 All unplanned or unwanted events or incidents shall be immediately reported to supervision. In the supervisor's absence the Assistant Emergency Duty Officer (AEDO) shall be notified for proper notification and reporting in accordance with topical manual, FMPC-2182, "Emergency and Non-Routine Event Notification and Reporting."

2.1.2 Supervision shall evaluate all unplanned or unwanted events or incidents for determination of reportability as a Minor Event in accordance with site procedure, FMPC-704, Minor Event Reporting System.

2.1.3 Any circumstance of event which could have resulted in an intake of radioactive materials by inhalation, ingestion or absorption shall immediately be reported to supervision. The supervisor shall immediately report the circumstance of possible radioactive materials intake to Radiological Safety (RS) for evaluation.

2.2 Industrial Health and Safety Requirements

2.2.1 Leather palm gloves shall be worn when handling sharp-edged or abrasive materials, containers, lids and banding materials.

2.2.2 Safety glasses shall be worn by all personnel at all times posted areas, except when another type of eye protection equipment is specified.

2.2.3 Supervisors shall be responsible for contacting Industrial Hygiene for chemical air contaminants, or RS for radioactive contaminants, to determine appropriate respiratory protection. Determination of requirements shall be made in accordance with topical manual, FMPC-2128, Industrial Hygiene and Safety Manual.

2.2.4 Respirators, as determined required per 2.2.3, shall be available by supervision for each person working with waste material and shall be used in accordance with topical manual, FMPC-2084, Radiation Control Manual.

2.2.5 Any personnel involved with circumstances of an event which could have resulted in an intake of radioactive materials by inhalation, ingestion or absorption shall report to Medical Services to submit a urine sample at the end of their shift, or as directed by their supervision, and again at the start of their next shift.

2.3 General Requirements For Transporting L-LRW and LSA Waste

NOTE: EQP-12.03 must be completed prior to implementation of this procedure.

2.3.1 All certification personnel verifying packaging and shipment of L-LRW to the Nevada Test Site (NTS) shall be trained and qualified on this procedure, EQP-12.03, NVO-325, and the Waste Certification Program Plan in accordance with Quality Assurance Procedure EQP-6.04, Qualification of Waste Package Certifiers, or on Quality Assurance Procedure EQP-6.05, Qualification of Waste Certification Officials.

2.3.2 Materials prohibited by NVO-325 and/or listed on the "Prohibited Materials List" (Attachment A) shall not be packaged for shipment.

2.3.3 Only materials approved by NTS, Solid Waste Compliance and Waste Management shall be shipped. The Quality Department Waste Certification Manager is responsible for making this information available to all personnel performing verification and certification work.

2.3.4 Only container designs approved for shipment by the NTS that meet the requirements of NVO-325 and CFR 49 shall be used. For the purpose of this procedure only those container types verified as acceptable by the Waste Certification Manager, or another Certification Official, are to be used.

2.3.5 All packaging shall be in strong, tight containers that do not leak under normal transport and handling conditions, and which meet the criteria of Title 49 CFR 173.421 and 173.425.

2.3.6 White Metal box containers may not exceed 6000 lbs. maximum gross weight, wood box containers may not exceed 5000 lbs., 48 or 55 gallon drums may not exceed 1200 lbs. maximum gross weight, 85 gallon drums may not exceed 1000 lbs. maximum gross weight, 85 gallon overpacks may not exceed 1280 lbs. maximum gross weight, or as specified in EQP-12.03.

2.3.7 Marking and labeling shall be in accordance with Title 49 CFR 172, Subparts D & E, as follows:

a. Container Number
b. Shipment Number
c. Gross Weight
d. Radioactive markings
e. Other marking and labeling as required for the packaged material

2.3.8 Packages certified and held for shipment must be secure and protected from weather and other adverse conditions having the potential to create an unacceptable condition. Covered or enclosed storage, which includes covering with plastic or tarpaulin are appropriate protective measures. If appropriate measures have not been taken, all packages concerned shall be reexamined by Waste Certification Personnel and recertified on the basis of the reexamination results.

2.3.9 Beta/Gamma radiation levels shall not exceed 200 millirem/hour measured externally at the surface or 10 millirem/hour measured externally at one (1) meter in accordance with 49 CFR 173.441.

Alpha emitters	220 DPM/100 cm^2
Beta/Gamma emitters	2200 DPM/100 cm^2

2.3.10 No container leakage is permitted under normal transport conditions in accordance with 49 CFR 173.425.

2.4 Examination of Packages in Staging Area

This examination will be performed at the loading area by Waste Certification Personnel who have been properly trained in this procedure and NVO-325 prior to loading any packages into trailers for shipment to NTS. Results shall be documented on "Waste Shipment Final Authorization Checklist" (Attachment B).

2.4.1 Examination of Drums Prior to Loading

Examines sealed drums prior to loading on trailers for shipment to NTS. These drums are to be examined 100% by Waste Certification Personnel.

2.4.1.1 The lid shall be properly seated on the drum and held in place by a bolt ring closure. If bolt and flanges are not lower than rest of ring, then ring is positioned upside down.

2.4.1.2 Checks for red paint on ring bolt to indicate it has been tightened to 45 (± 5) ft-lbs. using torque wrench (Attachment B).

2.4.1.3 Checks for safety wire threaded through hole in with the bolt head or threaded portion of bolt and around threaded portion of bolt ring and fastened (Attachment C). Check that jam nut is locked to opposite side of bolt head or threaded with flat side against ring harness.

2.4.1.4 Examines all surfaces of the drum and lid and reject for any of the following conditions.

a. A breach (a hole, crack, gash, etc.)
b. A dent or bulge which has creased, gouged, or may have otherwise significantly weakened the metal.
c. A dent greater than 1" in depth or extending over 6" in any direction.
d. A significant dent in the bottom rim. A significant dent is one that compromises the integrity of the container.
e. A significant dent in a rolling hoop which may affect the integrity of the container.
f. Rust causing exfoliation (scale), severe pitting, or other conditions having a detrimental effect on the serviceability of the waste container (small areas of exposed base metal, minor to moderate scratches, and slightly rusted spots are acceptable).

g. Any deformation or out-of-round condition affecting the integrity of the sealing surface.

2.4.1.5 Checks exterior of container for exposed bare metal requiring touch-up painting.

2.4.1.6 Checks exterior of drums for moisture.

2.4.1.7 Checks that the gross weight does not exceed 1200 lbs. and that it is marked in two inch (minimum) letters on each drum.

2.4.1.8 Checks labels and markings against "Storage & Disposal Data Sheet" (Attachment D), "Tally Sheet" (Attachment E) , and computer printout (Attachment F) "Circle Copy" for the particular shipment for weight and labels accuracy.

2.4.1.9 Notify Waste Operations Supervisor of any nonconformance found and checks that they are corrected prior to loading.

2.4.1.10 Apply "NV-211 Packaging Certification Label" to each package upon satisfactory examination (Attachment G).

2.4.2 <u>Examination of Wood Boxes Prior to Loading</u>

Examines wood boxes at the loading area prior to loading on trailers for shipment to NTS. These boxes are to be examined 100% by Waste Certification Personnel. Results shall be documented on "Waste Shipment Final Authorization Checklist" (Attachment B).

2.4.2.1 Checks for damage to the box and lid. No holes, cracks, or deterioration (i.e. rot) which would permit leakage or lessen the structural integrity of the box are acceptable.

2.4.2.2 No moisture is visible on either the inside or the outside of the box.

2.4.2.3 RTW Silicone Adhesive, or equivalent, has been applied in a continuous bead (1/4 inch minimum) between lid and box.

2.4.2.4 Box is banded vertically with three 1-1/4 inch metal bands, one band on each end of the box and one in the middle of the box.

2.4.2.5 Box lid shall be fastened using ten penny nails on 3 inch centers and two sixteen penny galvanized nails on each side panel into two inch by four inch on top panel (8 places) providing proper closure.

2.4.2.6 Box does not exceed 5000 pounds gross weight and that it is marked in two inch (minimum) letters on each box.

2.4.2.7 Checks labels and markings against "Storage & Disposal Data Sheet" (Attachment D), "Tally Sheet" (Attachment E), and computer printout (Attachment F) "Circle Copy" for the particular shipment for weight and labels accuracy.

2.4.2.8 Notifies Waste Operations Supervisor of any nonconformance found and checks that they are corrected prior to loading.

2.4.2.9 Apply "NV-211 Packaging Certification Label" to each package upon satisfactory examination (Attachment G).

2.4.3 Examination of Metal Boxes Prior to Loading

Examines metal boxes at the loading area prior to loading on trailers for shipment to NTS. These boxes are to be examined 100% by Waste Certification Personnel. Results shall be documented on "Waste Shipment Final Authorization Checklist" (Attachment B).

2.4.3.1 Metal box must be a light color, usually white for Uranium contaminated rubble, gray for Thorium contaminated rubble.

2.4.3.2 Containers must be clean.

2.4.3.3 Each container shall be well constructed of steel with all seams adequately welded.

2.4.3.4 The containers shall be free of holes, severe gouges, and significant deformations causing structural weakness or improper sealing.

2.4.3.5 The containers shall be free of rust causing exfoliation (scale), severe pitting, or other conditions having a detrimental effect on the serviceability of the waste container.

2.4.3.6 For all box designs having drain plugs, verify that box has been checked for a drain plug, and if found the drain plug has been tightened.

a. A red dot on the lower left hand front of the box shall indicate that the plug has been tightened.
b. A black dot on the lower left hand front of the box shall indicate that there is no drain plug.
c. All metal boxes shall have either a red or black dot marked.

2.4.3.7 Examines container for proper closure as follows :

a. Verifies that Radioactive material markings (2 sides) and FMPC container number markings are present and legible. Shipment number, log number and container identification number shall be clearly marked in one inch (minimum) letters using black waterproof ink.

b. Verify that all unnecessary marking have been removed or covered.
c. Verify that gross weight does not exceed 6,000 pounds and that it is marked in two inch (minimum) letters on each box.
d. Verify that a foam rubber or similar type gasket is on the sealing surface of the lid, or the lid is sealed with a durable sealant.
e. Verifies that lid is properly placed on the box.
f. Verifies locking pins required for the container are in place with the locking notches below the straps and fully engaged to full thickness of strap over entire locked surface edge of notch.
g. If the bolt type utilizes a bolted retainer ring, verify all bolts are securely in place.
h. Verifies the lid is secured with two 1-1/4" steel straps.

2.4.3.8 Checks labels and markings against "Storage & Disposal Data Sheet" (Attachment D), "Tally Sheet" (Attachment E), and computer printout (Attachment F) "Circle Copy" for the particular shipment for weight and labels accuracy.

2.4.3.9 Checks exterior of container for exposed bare metal requiring touch-up painting.

2.4.3.10 Notifies Waste Operations Supervisor of any nonconformance found and checks that they are corrected prior to loading.

2.4.3.11 Applies "NV-211 Packaging Certification Label" to each package upon satisfactory examination (Attachment G).

2.4.4 Examination of Sea/Land Cargo Containers Prior to Loading

Examines sea/land containers at the loading area prior to loading on trailers for shipment to NTS. These containers are to be examined 100% by Waste Certification Personnel. Results shall be documented on "Ready to Ship" Checklist (Attachment H).

2.4.4.1 Each container shall be well constructed of steel with all seams adequately welded.

2.4.4.2 The containers shall be free of holes, severe gouges, and significant deformations causing structural weakness or improper sealing.

2.4.4.3 The containers shall be free of rust causing exfoliation (scale), severe pitting, or other conditions having a detrimental effect on the serviceability of the waste container.

2.4.4.4 Verifies that the exterior of the sea/land is in good condition.

a. Verifies that all unnecessary markings have been remo or covered.

CHANGE NOTICE

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AUTHORIZED: [illegible] for Ellery D. Gurney

Revise section 2.4.3.7 (a) as follows:

2.4.3.7 Examines container for proper closure as follows:

a. Verifies that Radioactive material markings (top and two sides) and FEMP container number markings are present and legible. Shipment number, lot number and container identification number shall be clearly marked in one inch (minimum) letters using black waterproof ink.

b. Verifies that caulking is around all doors and around all sealing surfaces, and that the metal doors are securely closed, and two metal bands secure the two door latches together.

c. Verifies gross weight of sea/land and that it is marked in two inch (minimum) letters on each sea/land.

d. Verifies that Radioactive material markings (2 sides) and FMPC container number markings are present and legible. Shipment number, log number and container identification number shall be clearly marked in one inch (minimum) letters using black waterproof ink.

e. If Sea/Land container is top loading, verifies that a foam rubber or similar type gasket is on the sealing surface of the lid, or the lid is sealed with a durable sealant.

f. Verifies that the sea/land container has been painted.

2.4.4.5 Checks labels and markings against "Storage & Disposal Data Sheet" (Attachment D), "Tally Sheet" (Attachment E), and computer printout (Attachment F) "Circle Copy" for the particular shipment for weight and labels accuracy.

2.4.4.6 Apply "NV-211 Packaging Certification Label" to each package upon satisfactory examination. (Attachment G)

2.4.5 <u>Examination of Bales Prior to Loading</u>

Examines bales at the loading area prior to loading on trailers for shipment to NTS. Bales are to be examined 100% by Waste Certification Personnel. Results shall be documented on "Waste Shipment Final Authorization Checklist" (Attachment B).

2.4.5.1 Verifies that each bundle of trash is properly constructed:

a. Consists of two bales of trash covered with Flex-Iron Bulk Bags or equivalent.

b. Each bag covered bale is mounted on a wood pallet.

c. Two of these subparts are stacked one on top of each other and a third wood pallet is positioned on top.

d. Two 1-1/4 inch straps of banding are wrapped around to secure the bundle and tightened with banding clips.

e. Cardboard strips are positioned to keep the metal banding strips from cutting into the bales.

f. Checks baled trash package for holes, tears, water leaks, and defects.

2.4.5.2 Verifies the top wood pallet is labeled with the shipment number and bundle number in one inch letters.

2.4.5.3 Verifies that markings are legible and waterproof ink has been used.

2.4.5.4 Verifies that the gross weight is marked on the top wood pallet

2.4.5.5 Checks labels and markings against "Storage & Disposal Data Sheet" (Attachment D), "Tally Sheet" (Attachment E), and computer printout (Attachment F) "Circle Copy" for the particular shipment for weight and labels accuracy.

2.4.5.6 Notifies Waste Operations Supervisor of any nonconformance found and Checks that they are corrected prior to loading.

2.4.5.7 Applies "NV-211 Packaging Certification Label" to each package upon satisfactory examination (Attachment G).

2.5 Examination of Package Markings and Labels

Immediately prior to transport loading, Waste Certification Personnel verify that the required markings and labels are applied to containers and grouped together. Marking and labeling in accordance with Title 49 CFR 172 Subparts D & E, is required as follows:

a. Each acceptable package shall have a "Radioactive LSA" label as required, form FMPC-T-1623 (Attachment I), if the surface dose rate exceeds 0.5 mR/hr. or the U-235 content exceeds 15 grams.
b. Each acceptable package shall have a "RADIOACTIVE-LIMITED QUANTITY" Label, FMPC-REST-1623-1 (Attachment I) if the surface dose rate is equal to or less than 0.5 mR/hr. and the U-235 content is less than or equal to 15 grams.
c. Each package which contains 0.1 Curries or greater of Uranium must be labeled "RQ" in conjunction with the requirements of sections 2.5.a. and 2.5.b. (Attachment I).
d. Each acceptable package will have the letters "WML" and the shipment number on the package exterior. This may be either stenciling in one inch block or legible letters using black waterproof ink on bar code label.
e. Each acceptable package shall have a separate package number on the exterior. This may be either stenciling in one inch block or legible letters using black waterproof ink on bar code label.
f. Each acceptable package shall have the gross weight marked on the exterior. This may be either stenciling in two inch block or legible letters on bar code label.
g. Each package certified as acceptable for NTS disposal shall have a required "NV-211 Packaging Certification Label," FMPC-Q&S-234 or FMPC-Q&S-234-1 (Attachment G), affixed after examination of the package and shortly before or during loading. The label shall be displayed on the side of the package in a group pattern with other labels and markings.

2.6 Documentation of Examination and Deviations

Immediately prior to transport loading, Waste Certification Personnel assure that all examinations are properly documented on the applicable checklist, as required; assures that nonconforming conditions are documented and processed as follows:

2.6.1 Any deviations observed should be documented on the appropriate checklist.

CHANGE NOTICE

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AUTHORIZED: Alley D. Savage

Revise Section 2.5 as follows:

2.5 Examination of Package Markings and Labels

Immediately prior to transport loading, Waste Certification Personnel verify that the required markings and labels are applied to containers and grouped together. Marking and labeling in accordance with Title 49 CFR 172, Subparts D & E, is required as follows:

a. Each acceptable package shall have a "Radioactive LSA" label as required, form FMPC-T-1623 (Attachment I), if the surface dose rate exceeds 0.5 mR/hr. or the U-235 content exceeds 15 grams.

b. Each acceptable package shall have a "RADIOACTIVE-LIMITED QUANTITY" Label, FMPC-REST-1623-1 (Attachment I) if the surface does rate is equal to or less than 0.5 mR/hr. and the U-235 content is less than or equal to 15 grams.

c. Each package which contains 0.1 Curries or greater of Uranium must be labeled "RQ" in conjunction with the requirements of sections 2.5.a. and 2.5.b. (Attachment I).

d. Each acceptable package will have the letters "WML" and the shipment number on the package exterior. This may be either stenciling in one inch block or legible letters using black waterproof ink on bar code label.

e. Each acceptable package shall have a separate package number on the exterior. This may be either stenciling in one inch block or legible letters using black waterproof ink on bar code label.

f. Each acceptable package shall have the gross weight marked on the exterior. This may be either stenciling in two inch block or legible letters on bar code label.

g. Each acceptable package shall have the lot marking code marked on the exterior. This may be either stencilling in two inch block or legible letters on bar code label.

h. Each acceptable package shall have the waste stream number marked on the exterior. This may be either stenciling in two inch block or legible letters on bar code label.

i. Each package certified as acceptable for NTS disposal shall have a required "NV-211 Packaging Certification Label," FMPC-Q&S-234 or FMPC-Q&S-234-1 (Attachment G), affixed after examination of the package and shortly before or during loading. The label shall be displayed on the side of the package in a group pattern with other labels and markings.

2.6.2 Any waste package rejected due to non-acceptable or non-authorized contents or physical damage to the containers shall have a nonconformance tag attached to it as identification (See FMPC-706). Deviations shall be corrected prior to affixing "NV-211 Packaging Certification Label." Uncorrectable deviations or lack of prompt or appropriate action, or chronic and/or systematic errors must be documented on a Deviation or Corrective Action Report in accordance with FMPC-706.

2.6.3 Any waste packages rejected due to improper labeling or identification shall be corrected prior to affixing a "NV-211 Packaging Certification Label." If no acceptable solution can be defined, a nonconformance tag shall be attached and a Deviation Report shall be issued in accordance with FMPC-706.

2.6.4 Forwards appropriate forms and documentation to Certification Official for review, approval, and certification.

NOTE: Disposal of any rejected containers, lids, bolt rings, or lever rings shall be the responsibility of Waste Operations or the generator of the package.

2.7 Preliminary Certification

Waste Certification Personnel examine the transport trailer prior to loading and completes the appropriate checklist.

2.7.1 Examines the transport trailer/vehicle as follows:

2.7.1.1 Verifies that the RS Technician has surveyed each trailer/vehicle prior to loading and has recorded results on the "Vehicle Radiation Monitoring Report," form FMPC-ES&H-1596-1 (Attachment J), to ensure that radiation and contamination levels do not exceed the requirements listed in 49 CFR 173.441.

2.7.1.2 Determines the condition of the trailer/vehicle by examining the trailer/vehicle floor, interior, roof, roof interior, rear door, rear door gasket, and tires. Any of the following conditions shall be brought to the attention of the Traffic Manager:

a. holes or "soft" areas in floor or roof which would allow possible leakage and/or jeopardize the structural integrity of the trailer/vehicle
b. liquid or oily substances on interior surfaces
c. non-securing or poor sealing rear doors
d. tires
   1. insufficient tread (2/32" min. trailer, 4/32" min. tractor)
   2. separation of tread
   3. punctures
   4. bulges
   5. underinflated (use manufacturer's recommended pressure, cold)
   6. flats

2.7.1.3 Examines the lining of trailer/vehicle for compacted baled trash and verifies that the floor and approximately three (3) feet up the side and rear walls are covered with plastic sheet, and that the floor is covered with single-faced cardboard or approved equivalent.

2.7.1.4 Completes the "Waste Certification Preliminary Trailer Checklist" (Attachment K) or the "Waste Certification Preliminary Trailer Checklist (Sea/Lands)" (Attachment L).

2.8 Examination of Drums

Waste Certification Personnel examine drums at loading and verifies that drums have been properly stacked, loaded and tied down in accordance with SOP-TRF-46-C-110 and that the following requirements have been met:

2.8.1 Drummed materials requiring proper weight distribution have been placed into the vehicle split into two groups:

a. the front unit is encircled with 1-1/4" steel strapping, connected with two clips, double-crimped, and 2 x 4 wood shoring nailed to the floor behind the unit.
b. the rear unit is placed so as the proper weight distribution is maintained and a wood picket brace is constructed at the front of the group. Drums behind the picket brace are encircled with 1-1/4" steel strapping connected with two clips, double-crimped, and providing no metal plate is directly behind the group, 2 x 4 wood shoring is nailed to the floor behind the group.

2.8.2 Double-decked drummed material has been loaded in a similar manner as paragraph 2.8.1, except for the following:

a. the floor is loaded solid,
b. a piece of plywood has been placed on the top of the first deck and the second deck of drums has been loaded from the front to the rear. Both rows of drums have been encircled with 1-1/4" steel strapping, with two clips, double-crimped,
c. two-by-four wood shoring has been nailed to the floor behind the first deck of drums, if no metal plate is directly behind the drums.

2.9 Examination of Metal Boxes

Waste Certification Personnel examine metal boxes at trailer loading and verifies they are not damaged, that metal boxes have been loaded and tied down in accordance with SOP-TRF-46-C-110 and that the following requirements have been met:

2.9.1 Metal Boxes have been placed into the vehicle correctly for proper weight distribution. Normally, these shipments contain either seven (7) to ten (10) containers. With seven (7) containers a split of three (3) in the front unit and four (4) in the rear unit is required. Ten (10) containers are to be loaded straight down the center of the vehicle floor. When the number of containers making up the shipment are not seven (7) or ten (10), they are to be loaded them in the same manner as for seven (7).

2.9.2 Front Unit (2-5 boxes) were shored using two sets of brakeman plates nailed to the floor of the vehicle (prior to loading) with 1-1/4" steel strapping threaded through each plate. Two of these units are used to encircle each load unit (2 bands) and shall be tightened and fastened with two clips, double-crimped. The bands have plastic protectors on the edges of the first and last container to keep the bands from breaking.

2.9.3 Rear Unit (2-5 boxes) has been shored using 2" X 4" brace in front of the containers. Use same method of steel banding as on the front unit.

2.9.4 The shoring of ten (10) metal boxes has been accomplished using the same steel banding method as used for seven (7). The first five (5) have been banded as one unit, and the last five (5) as one unit.

2.10 Examination of Wooden Boxes

Waste Certification Personnel examine wooden boxes at loading and verifies they are not damaged and that wooden boxes are properly stacked, loaded and tied down in accordance with SOP-TRF-46-C-110 and that the following requirements have been met:

2.10.1 Wooden boxes have been placed into the vehicle for proper weight distribution. Normally, these shipments consist of sufficient numbers to require partial double-decking. When double-decking is required the double stacks shall be banded together prior to loading.

2.10.2 Two sets of brakeman plates have been nailed to the floor (set on top of the plastic and cardboard) in the front and rear section of the vehicle with 1-1/4" steel strapping threaded through each plate.

2.10.3 Boxes are loaded straight down the center of the vehicle floor.

2.10.4 Two (2) bands have been used to encircle the first six (6) boxes as one unit and the last five (5) as one unit.

2.11 Examination of Compacted Baled Trash

2.11.1 Waste Certification Personnel examine compacted baled trash at loading and verifies that compacted baled trash has been properly stacked, loaded and tied down in accordance with SOP-TRF-46-C-110 and that the following requirements have been met:

2.11.1.1 Compacted bales of trash placed for proper weight distribution have been double stacked and loaded straight down the center of the vehicle floor. Normally, these shipments consist of twenty-two (22) bales (11 packages) of compacted trash.

2.11.1.2 Two sets of brakeman plates have been nailed to the floor (set on top of the plastic and cardboard) in the front and rear section of the vehicles with 1-1/4" steel strapping threaded through each plate. Six side cleats with 1-1/4" steel strapping have been nailed to the floor on both sides of the vehicle for cross banding of the bales.

2.11.1.3 After the first five double stacks of bales have been loaded, the front unit has been encircled with steel strapping and the bands tightened and fastened with two clips, double-crimped.

2.11.1.4 Cross bands have been placed over stack numbers one, three, and five. Single-faced cardboard has been folded for a minimum of 4-ply protection and placed under the bands of the top bales plastic enclosure. The bands have been tightened and fastened with two clips double-crimped.

2.11.1.5 The rear section has been banded in the same manner as the front section except that cross bands have been placed over bale numbers seven, nine and ten.

2.12 Examination of Sea/Land Cargo Containers

Waste Certification Personnel examine Sea/Land container at loading, checks the maximum gross weight on container with actual gross weight, and verifies that container has been loaded and tied down in accordance with SOP-TRF-46-C-110 and that the following requirements have been met:

2.12.1 Sea/Land containers have been placed onto a flat bed truck for proper axle-weight distribution. For a shipment consisting of one container, the doors of the container shall be facing the rear of the truck. For a shipment consisting of two containers the doors of the front unit shall be facing to the rear and the rear unit shall be facing the front of the truck.

2.12.2 If the container or shipment exceeds 42,000 gross pounds, a waiver must be approved by the Manager, Transportation Regulatory Compliance and Certification Official as to whether or not it may be shipped. A copy of the appropriate letter will be attached to the "Ready to Ship" Checklist when it is prepared during the check of incoming paperwork.

2.12.3 Containers have been secured to the flatbed truck with four (4) nylon straps over each unit secured to the frame of the trailer, chains have been placed and secured in front of and behind the bottom of each container fastened to the trailer bed, and a 2 x 4 has been nailed to the trailer floor at the rear of each unit.

2.13 General Examination Activities After Loading

Waste Certification Personnel shall conduct the following activities after the trailer has been loaded:

NOTE: Two (2) photographs of the packages shall be taken prior to closing the doors of the trailer. Photos are also required of flat bed loads. Include information on shots to be taken.

2.13.1 Verifies that the trailer is locked or a numbered tamper-indicating seal is applied to the rear door locking mechanism whenever the trailer is unattended overnight or for any other extended period. If a seal or lock is not used prior to resumption of loading or closure of the van, an examination shall be made to verify that the packages previously loaded were not disturbed and no unauthorized packages or materials were placed in the shipment.

2.13.2 Completes the examination of the loaded trailers for NTS shipments and completes the "Waste Shipment Final Authorization Checklist" (Attachment B).

2.13.3 Reports, by copy of the appropriate checklist, any deficiencies to the Transportation Supervisor for correction. Checklists which include deficiencies are recorded and tracked on a deficiency log. Documents any repetitive or uncorrected deficiencies in accordance with FMPC-706.

2.13.4 Forwards all completed documentation to the the individual who will be making the final inspection at Traffic prior to release of the trailer.

2.14 Final Trailer/Vehicle Examination

Waste Certification Personnel conduct a final examination of the vehicle/trailer after closure as follows:

2.14.1 Verifies that the shipment, associated paperwork and transport vehicle is acceptable for release.

2.14.2 Verifies that RS Technician has surveyed the trailer/vehicle and recorded the results on the "Vehicle Radiation Monitoring Report," form FMPC-ES&H-1596-1 (Attachment J), and that these results are within specification.

2.14.3 Compares the "Storage & Disposal Data Sheet" (Attachment D) with the "Bill of Lading" (Attachment M) to verify that the following information is correct:

a. Number and type of containers
b. Total curie content
c. Shipment gross and net weight
d. Shipment number

2.14.4 Verifies that an envelope containing copies of the "Tally Sheet," "Storage & Disposal Data Sheet" (refer to EQP-12.03), and LSA/RQ, LQ (Limited Quantity) documentation of the shipment is fastened to the rear container when possible or stapled to the trailer wall inside of the trailer doors for NTS use upon opening the trailer at the destination. If the shipment is not in a closed van, verifies that the "Tally Sheet" and "Storage & Disposal Data Sheet" are in the envelope which is to be delivered by the driver.

2.14.5 Verifies the presence of "Radioactive" placard on both sides, front and rear of vehicle/trailer.

NOTE: A shipment containing limited quantity packages exclusively does not require these placards.

2.14.6 Verifies that the following are operational on the vehicle/trailer. Completes the "Waste Certification Final Trailer/Vehicle Checklist" (Attachment N).

a. Headlights
b. Turn signals
c. Brake lights
d. Horn
e. Tire condition, per section 2.7.1.2 of this procedure

2.14.7 Compares the "Bill of Lading" (Attachment M) and the "Shipping Order for Nuclear Material," form FMPC-CONT-558 (Attachment O), to verify the following:

a. Trailer Number
b. Shipment Number
c. Gross Wt. and Net Wt.
d. Bill of Lading Number
e. Shipping Order Number
f. Seal Number
g. Lot Number
h. Container Number (for Sea/Land containers)

2.14.8 Verifies that a seal has been placed on the trailer and that the trailer number and the seal number match the seal number recorded on the "Bill of Lading" (Attachment M), and reviews the "LLW Shipment Checklist" (Attachment Q), and the "Off-Site Loading Tie-Down Inspection-Vehicle Inspection" Form (Attachment S).

2.14.9 Completes the "Waste Certification Final Trailer/Vehicle Checklist" (Attachment N), and "Waste Certification Traffic Shipment Documentation Checklist" (Attachment P).

2.14.10 Verifies that the gross weight on all documentation is within 100 lbs. of actual.

2.14.11 When instructed, completes the "Waste Shipment Verification Checklist" (Attachment T), for the Certification Official by verifying the following information:

a. Radiation Monitoring Sheets
b. Off-Site Tie Down Inspection/Vehicle Inspection Form
c. Weight Ticket
d. Shipping Order
e. Bill of Lading
f. Disposal/Storage Sheet
g. Tally Sheet
h. Radiological Survey Report
i. LLW Shipment Checklist

j. Sea/Land Container "Ready to Ship" (If applicable)
k. Waste Certification Preliminary Trailer Checklist
l. Waste Certification Traffic Shipment Documentation Checklist
m. Waste Certification Final Trailer/Vehicle Checklist
n. Item Production/Certification/Identification Card

2.14.12 Reports all deficiencies on the appropriate checklist. Repetitive or uncorrected deficiencies are documented in accordance with FMPC-706.

NOTE: Uncorrected deviations must be resolved before Quality Department can provide a release of the shipment.

2.14.13 Notifies the Certification Official that shipment paperwork is complete and available for final review.

2.14.14 Forwards completed documentation to Waste Certification Manager who reviews and maintains documents in accordance with WMCO-QAP-9.01.

3.0 REFERENCES

3.1 NVO-325, Nevada Test Site Defense Waste Acceptance Criteria, Certification and Transfer Requirements
3.2 FMPC-503, FMPC Spill Incident Reporting and Cleanup
3.3 FMPC-704, Minor Event Reporting System
3.4 EQP-1.05, Abbreviations, Acronyms, and Definitions
3.5 EQP-6.04, Qualification of Waste Package Certifiers
3.6 EQP-6.05, Qualification of Waste Certification Officials
3.7 FMPC-706, Deviation and Corrective Action Reporting
3.8 EQP-9.01, Designation, Preparation, Storage and Maintenance of Quality Documents
3.9 EQP-12.03, Certification of Waste Package Examination and Sealing for Off-Site Shipment
3.10 SOP-TRF-46-C-110, Preparation and Shipment of Radioactive Material (Low-Level Waste)
3.11 SOP 20-C-601, Packaging Low Level Radioactive Waste (L-LRW) for Offsite Disposal
3.12 SOP 1-C-602, Low Level Radioactive Waste (L-LRW) Shipment Preparations

4.0 ATTACHMENTS

4.1 Attachment A, Prohibited Materials List
4.2 Attachment B, Waste Shipment Final Authorization Checklist
4.3 Attachment C, Bolt Diagram
4.4 Attachment D, Storage & Disposal Data Sheet
4.5 Attachment E, Tally Sheet
4.6 Attachment F, Computer Printout - "Circle Copy"
4.7 Attachment G, NV-211 Packaging Certification Labels

4.8	Attachment H,	"Ready to Ship" Checklist (for Sea/Lands)
4.9	Attachment I,	Radioactive-LSA, Radioactive-Limited Quantity, & "RQ" Labels
4.10	Attachment J,	Vehicle Radiation Monitoring Report
4.11	Attachment K,	Waste Certification Preliminary Trailer Checklist
4.12	Attachment L,	Waste Certification Preliminary Trailer Checklist Sea/Lands)
4.13	Attachment M,	Bill of Lading
4.14	Attachment N,	Waste Certification Final Trailer/Vehicle Checklist
4.15	Attachment O,	Shipping Order for Nuclear Material
4.16	Attachment P,	Waste Certification Traffic Shipment Documentation Checklist
4.17	Attachment Q,	LLW Shipment Checklist
4.18	Attachment S,	Off-Site Loading Tie-Down Inspection-Vehicle Inspection Form
4.19	Attachment T,	Waste Shipment Verification Checklist

PROHIBITED MATERIALS LIST

Nonradioactive Material

Pressurized Vessels

Explosives

Radioactive Gases

High-Level Waste

Pyrophoric Materials

Toxic or Poisonous Materials

Liquid Materials

Flammable Substances

Alkaline Metals

Reactive Materials (could cause fire)

Liquid Organic Waste or Waste that contains any Free Liquid

Ashes, Dry Powders or Respirable Fines (unless immobilized or a double containment package is used)

If the Waste is Ionized or Immobilized the pH must be greater than 4

WASTE SHIPMENT FINAL AUTHORIZATION CHECKLIST

WASTE SHIPMENT FINAL AUTHORIZATION CHECKLIST

SHIPMENT NUMBER: WML- _____

WASTE DESCRIPTION: _____

Waste Package Description:

Package Type _____

Number of Packages _____ Verified by (Initials) _____

VERIFICATION CRITERIA PER QAP 12.09

Verify the following:

1. Information on packages matches REECO Radioactive Waste Management - Storage & Disposal Sheet (Circle Copy) and no inappropriate information present on packages. _____
2. No unauthorized materials loaded. _____
3. No free liquids on or emitting from packages. _____
4. No significant package defects such as dents, rust, holes, cracks, or tears (baled trash). _____
5. Proper closure of container lid. _____
6. Packages are free of adhering or entrapped soil, debris, etc. _____

Verify the following where applicable:

Drums: Presence of safety wire on bolts. _____

Locking nut tightened (red paint on bolt). _____

Lid and ring are seated properly. _____

Wood boxes: Lid nailed and secure, adequate caulking, and three 1 1/4" metal bands present (one on each end and one in middle) and secure. _____

Holes drilled in false bottom, runners secure and no severly bowed sides or liquid seepage. _____

Metal boxes: Required number of wedge type locking pins are fully engaged catching lower edge of locking strap and are at least even with locking strap. _____

Two 1 1/4" metal bands are banded tightly with two banding clips on each band equidistant from center around package. _____

Presence of a red dot (drain plug exists) or a black dot (no drain plug). _____

Attachment B
Page 2 of 2

WASTE SHIPMENT FINAL AUTHORIZATION CHECKLIST (continued)

Existance of gasket around lid when possible. _____

Open holes in runners. _____

Baled trash: Two 1 1/4" metal bands and two banding clips on each band strapped evenly and tightly completely around the outside of the closed sides of the top and bottom pallets. _____

Corrugated cardboard present on top of bale and under banding in area of band/pallet contact. _____

Shipment information located on the top pallet of each bundle. _____

Verify shipment number, FMPC, and package number are stenciled in 1-inch block letters located on top center and on the side of all packages except for baled trash (sides only). _____

LOADING INFORMATION

Verify presence of the following labels:
DOT Radiation Labels, Radioactive LSA and LQ/RQ as applicable. _____

Package containing asbestos require asbestos label, ORM-C. RQ should be stenciled next to ORM-C only when quantity of asbestos meets EPA and 49 CFR reportable quantity limits. _____

NV-211 label dated and signed by an authorized package certifier. _____

Verify the loading of the shipment concurs with the criteria established in SOP TFR-46-C-110, Section 6.1. _____

Shipment Number Loaded:_____ Time:_____ Date:_____

Trailer Number:_____ Seal Number:_____

I hereby certify that the above checklist has been completed and witness that the above items are correct to the best of my knowledge.

Signed:_____ Date:_____
QA Waste Packaging

Comments:_____

_____

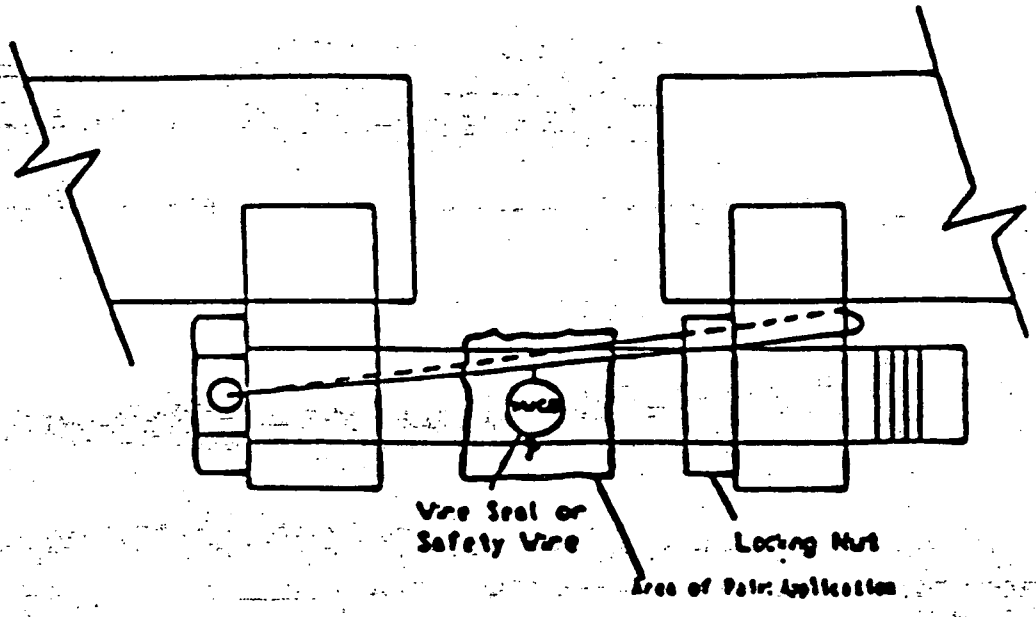
Signed:_____ Date:_____
Waste Operations Supervisor

Copies to :Waste Certification Files
Waste Operations (original)

QAC-881115-1, Rev. 1 (03/01/90)

Attachment C
Page 1 of 1

BOLT DIAGRAM



Attachment D
Page 1 of 1

STORAGE & DISPOSAL DATA SHEET

4552

WNL-90 091

02/27/90
14:50:10

Reynolds Electrical and Engineering Co., Inc.
Radioactive Waste Management-Storage & Disposal

DESCRIPTION: Construction Rubble
Maintenance Rubble

Prepared by: [signature]
Date 2/27/90 Area Code Phone FTS 774-8647

Approved: Responsible Personnel [signature]
Date 2-27-90 Area Code Phone FTS 774-8647

SECTION 1

CARD	SHIPMENT NUMBER (2–9)	O C D S O FT TR (10–17)	NUCLIDE CATEGORY (25–26)	CURIE QUANTITY (26–34)	C (35)	GROSS VOLUME (36–44)	F (45)	GROSS WT(lbs) (46–54)	P (55)	OVERPACKS 0 / BOXES 10 / DRUMS 0 / OTHER 0
2	WNL90091	O N L O B 9 0 2	2	2.795E-04		1.020E+03		2.461E+04		
				0.0002794		1020.00		24605.0		

SECTION 2

CARD	NUCLIDE DESCRIPTION (2–15)	QUANTITY (16–24)	C (25)	S (26)	COMMENTS (27)
3	U-238	2.707E-04	C	1	810 GRAMS
3	U-235	8.754E-06	C	2	4 GRAMS

SECTION 3

CARD	WASTE CODE (23–24)	VOLUME CU.FT. (4–12)	F	S	WEIGHT LBS. (13–17)	F	S	COMMENTS (25–28)
4	00	8.160E+02	F	0	1.804E+04	P	1	835
4	00	2.040E+02	F	0	6.570E+03	P	2	841

SECTION 5

CARD	CONT NUMBER	ASSAY DATE	CLASS CODE	CONT/AT CODE	GROSS WEIGHT LBS	GROSS VOLUME CU.FT.	RADIATION AT SURF mrem/hr	RADIATION AT 3 FT mrem/hr	PRIMARY ELEMENT & ISOTOPIC	PRIMARY CURIE QUANTITY	SECONDARY ELEMENT & ISOTOPIC	SECONDARY CURIE QUANTITY	PRIMARY ISOTOPE WEIGHT GRAMS	SECONDARY ISOTOPE WEIGHT GRAMS
6/7	1	05/09/89	2122	8352122	1674.0	102.00	0.30	0.30	U-238	1.5039E-05	U-235	4.8630E-07	45	0.2
6/7	2	05/09/89	2122	8352122	1875.0	102.00	0.30	0.30	U-238	1.5039E-05	U-235	4.8630E-07	45	0.2
6/7	3	05/09/89	2122	8352122	1674.0	102.00	0.30	0.30	U-238	1.5039E-05	U-235	4.8630E-07	45	0.2
6/7	4	05/09/89	2122	8412122	2930.0	102.00	0.30	0.30	U-238	3.0079E-05	U-235	9.7270E-07	90	0.5
6/7	5	05/09/89	2122	8352122	4293.0	102.00	0.30	0.30	U-238	6.0158E-05	U-235	1.9454E-06	180	0.9
6/7	6	05/09/89	2122	8352122	1537.0	102.00	0.30	0.30	U-238	1.5039E-05	U-235	4.8630E-07	45	0.2
6/7	7	05/09/89	2122	8352122	2923.0	102.00	0.30	0.30	U-238	3.0079E-05	U-235	9.7270E-07	90	0.5
6/7	8	05/09/89	2122	8412122	3640.0	102.00	0.30	0.30	U-238	4.5118E-05	U-235	1.4590E-06	135	0.7
6/7	9	05/09/89	2122	8352122	1300.0	102.00	0.30	0.30	U-238	1.5039E-05	U-235	4.8630E-07	45	0.2
6/7	10	05/09/89	2122	8352122	2759.0	102.00	0.30	0.30	U-238	3.0079E-05	U-235	9.7270E-07	90	0.5

0717

TALLY SHEET

MAR-90 991

02/27/90
14:50:01

TO: Reynolds Electric and Engineering Co., Inc.
U.S. DOE, Nevada Test Site, Zone 2
Mercury, NV 89023
Attention: G. Kendall

NEVADA TEST SITE SHIPMENT
TALLY SHEET
LOT NUMBER U050-100-P003-9023
LOT NUMBER U050-100-P003-A334

FROM: Westinghouse Materials Company of Ohio
P. O. Box 398704
Cincinnati, OH 45239

LOT NUMBER	CONT. NO.	GROSS WT. (POUNDS)	TARE WT. (POUNDS)	NET WT. (POUNDS)	U ASSAY	PERCENT U-235	PERCENT U-238	U POUNDS	ELEMENT WT(gms)	U-235 ISOTOPE WT(gms)	U-238 ISOTOPE WT(gms)	U-235 Ci	U-238 Ci	VOLUME CU FT
A334	1	1674.0	630.0	1044.0	0.010	0.500	99.48	0.1	45	0.2	45	4.8630E-07	1.5039E-05	102.00
A334	2	1875.0	630.0	1245.0	0.010	0.500	99.48	0.1	45	0.2	45	4.8630E-07	1.5039E-05	102.00
A334	3	1674.0	630.0	1044.0	0.010	0.500	99.48	0.1	45	0.2	45	4.8630E-07	1.5039E-05	102.00
9023	4	2930.0	630.0	2300.0	0.010	0.500	99.48	0.2	91	0.5	90	9.7270E-07	3.0079E-05	102.00
A334	5	4293.0	630.0	3663.0	0.010	0.500	99.48	0.4	181	0.9	180	1.9454E-06	6.0158E-05	102.00
A334	6	1537.0	630.0	907.0	0.010	0.500	99.48	0.1	45	0.2	45	4.8630E-07	1.5039E-05	102.00
A334	7	2923.0	630.0	2293.0	0.010	0.500	99.48	0.2	91	0.5	90	9.7270E-07	3.0079E-05	102.00
9023	8	3640.0	630.0	3010.0	0.010	0.500	99.48	0.3	136	0.7	135	1.4590E-06	4.5118E-05	102.00
A334	9	1300.0	630.0	670.0	0.010	0.500	99.48	0.1	45	0.2	45	4.8630E-07	1.5039E-05	102.00
A334	10	2759.0	630.0	2129.0	0.010	0.500	99.48	0.2	91	0.5	90	9.7270E-07	3.0079E-05	102.00
TOTALS		24605.0	6300.0	18305.0				1.8	815	4.1	810	8.7540E-06	2.7071E-04	1020.00
							--- LOT TOTALS ---							
9023	2	6570.0	1260.0	5310.0				0.5	227	1.1	226	2.4317E-06	7.5197E-05	204.00
A334	8	18035.0	5040.0	12995.0				1.3	588	2.9	587	6.3223E-06	1.9551E-04	816.00

Attachment F
Page 1 of 1

COMPUTER PRINTOUT - "CIRCLE COPY" 4552

WML-90 091

Reynolds Electrical and Engineering Co., Inc.
Radioactive Waste Management-Storage & Disposal

PACKAGE NO.	NET WT	TARE WT	GROSS WT	LSA	LQ	RQ
1	1044.00	630.00	1674.00	X		
2	1245.00	630.00	1875.00	X		
3	1044.00	630.00	1674.00	X		
4	2300.00	630.00	2930.00	X		
5	3663.00	630.00	4293.00	X		
6	907.00	630.00	1537.00	X		
7	2293.00	630.00	2923.00	X		
8	3010.00	630.00	3640.00	X		
9	670.00	630.00	1300.00	X		
10	2129.00	630.00	2759.00	X		

NV-211 PACKAGING CERTIFICATION LABELS

NV-211 **PACKAGING CERTIFICATION**

This certifies that this container and its contents are in acceptable condition for transportation and waste disposal according to DOT (49 CFR), EPA (40 CFR), and DOE/NV (NVO-325) requirements.

DATE: _____

CERTIFIED BY: _____

TITLE: CERTIFICATION OFFICIAL

ORGANIZATION: FMPC

FMPC-O&S-234 (REV. 9/7/89)

NV-211 **PACKAGING CERTIFICATION**

This certifies that this container and its contents are in acceptable condition for transportation and waste disposal according to DOT (49 CFR), EPA (40 CFR), and DOE/NV (NVO-325) requirements.

DATE: _____

CERTIFIED BY: _____

TITLE: PACKAGE CERTIFIER

ORGANIZATION: FMPC

FMPC-O&S-234-1 (REV. 9/7/89)

0720

Attachment H
Page 1 of 1

"READY TO SHIP" CHECKLIST (FOR SEA/LANDS)

4552

WASTE CERTIFICATION CHECKLIST
SEA LAND CONTAINER
"READY TO SHIP"

INFORMATION (Waste Operations)

DATE: _____ SHIPMENT NUMBER: _____

MTL. TYPE: _____ BOX ___ S/N: _____

MTL. TYPE: _____ ___ _____

LOCATION : _____ WEIGHTS: Gross _____ BOX 1 _____ BOX 2

_____ Tare _____ _____

_____ Net _____ _____

EXAMINATION CRITERIA (Waste Certification)

Initials

Trailer No.: _____

0. Verify "Item Production/Certification/Identification" XX card is completed accurately. Form Number FMPC-ES&H-1945-XX. _____
1. Radioactive material markings present. (2 sides) _____
2. Container Number-FMPC marking present. _____
3. All unnecessary markings have been removed or covered. _____
4. Marking is complete as follows:
   Proper shipping label(s) identified (LSA, RQ, LQ) _____
   Gross weight identified _____
5. Marked weight values match above values. _____
6. The box door has been sealed by caulking and a metal band is attached to both door latches. _____
7. Seal number _____ affixed to container. _____

PLACE NV-211 ON DOOR OF CONTAINER WHEN ABOVE CRITERIA IS SATISFACTORILY MET.

CERTIFICATION (Waste Certification)

I hereby certify the above items have been examined and the above items are correct to the best of my knowledge.

Signed: _____
(Waste Certification)

Date: _____

DAC-880930-1, Rev. 2 (08/15/89)

Attachment I
Page 1 of 1

RADIOACTIVE-LSA, RADIOACTIVE-LIMITED QUANTITY, & "RQ" LABELS

Radioactive-LSA

RADIOACTIVE-LIMITED QUANTITY

UN-2910

FROM: FMPC

This package conforms to the conditions and limitations specified in 49 CFR 173.421 for excepted radioactive material, limited quantity, n.o.s., UN-2910.

FMPC-REST-1623-1 (REV. 10/23/89)

RQ

0722

Attachment J
Page 1 of 1

VEHICLE RADIATION MONITORING REPORT

FMPC

ENVIRONMENTAL SAFETY & HEALTH - ENVIRONMENTAL & RADIOLOGICAL MONITORING

VEHICLE RADIATION MONITORING REPORT

- 4552-

Date Monitored: _____ Monitored by: _____

Carrier Name: _____

Vehicle Type: Tractor-trailer ☐ Other motor vehicle ☐ Railcar ☐ Open flatbed ☐ Covered ☐

Other ☐ (explain) _____

License no., if motor vehicle: _____ State: _____

Trailer or railcar identification: _____

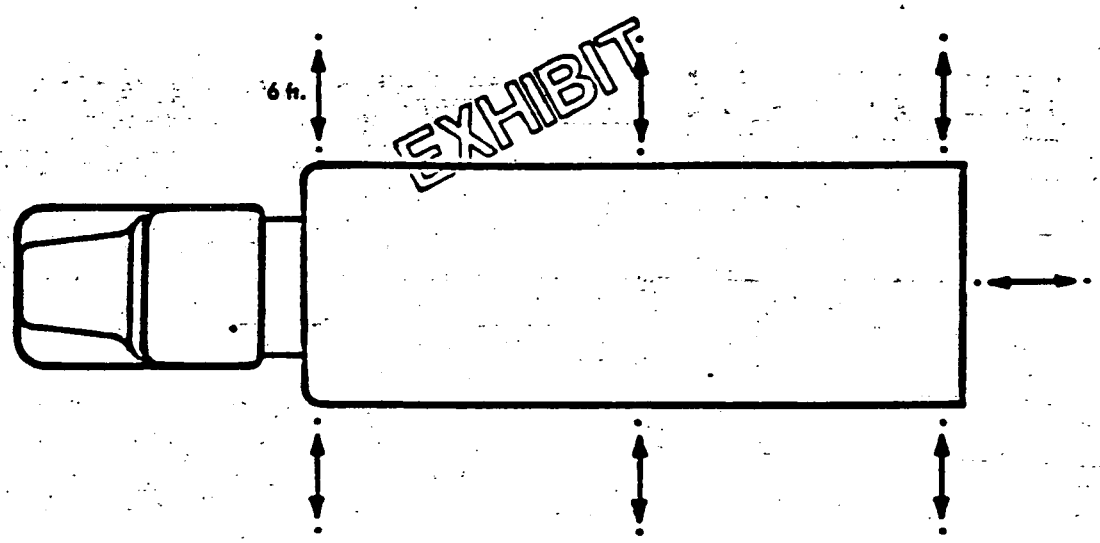
Is this an exclusive use vehicle? Yes ☐ No ☐

Vehicle Status: (a) Outgoing ☐ (b) Incoming ☐ (c) Outgoing empty, not "exclusive use" ☐ (d) Empty, before loading ☐

(e) Outgoing empty, "exclusive use" ☐ (f) If (e) is checked, is vehicle to remain "exclusive use"? Yes ☐ No ☐

Is visible contamination present? Yes ☐ No ☐ If "yes", show on diagram.

Dose rate shown by asterisks in mrem/hr. Surface alpha contamination, circled, in d/m/100cm².



(1) Same locations apply to van-type trucks. For railcars, disregard cab section but show dose rates found at each end.
(2) Measurements at 6-ft. not required if all readings at vehicle surface are not greater than 10 mrem/hr.

Survey Instruments Used

Alpha — Type or Model No _____ Serial No. _____

Beta-gamma — Type or Model No _____ Serial No. _____

Additional information attached? (E&RM copy only): Yes ☐ No ☐

NO.	DISTRIBUTION OF COPIES
	Environmental & Radiological Monitoring (RECORD COPY)
	Transportation Supervisor

FMPC-E&RM 1396-1 REV 8/28-86

0723

Attachment K
Page 1 of 1

WASTE CERTIFICATION PRELIMINARY CHECKLIST

WASTE CERTIFICATION PRELIMINARY TRAILER CHECKLIST

TRAILER NUMBER: _____

1. Verify the RST has surveyed trailer prior to loading and recorded results on form ES&H-1596-1 to assure the trailer is not contaminated. _____

2. Verify the condition of trailer floor, interior, roof, sides, exterior, rear doors and tires are acceptable. Any discrepancies must be reported immediately to the Transportation Supervisor. _____

   Comments: _____

   _____

3. Verify the trailer has been lined properly according to SOP-TRF-46-C-110 prior to loading. _____

4. Visually verify that the packages have been properly tied-down according to SOP-TRF-46-C-110. _____

   Shipment Number: _____

5. Visually verify that the loaded trailer rear doors are secured with a tamper indicating seal. _____

   Seal Number: _____

I hereby certify that the above checklist item have been verified and that all the above items are correct to the best of my knowledge.

Signed : _____
(Certification Personnel)

Date : _____

Signed : _____
(Transportation Supervisor)

Date : _____

Attachment L
Page 1 of 1

WASTE CERTIFICATION PRELIMINARY CHECKLIST (SEA/LANDS)

-4552-

WASTE CERTIFICATION PRELIMINARY TRAILER CHECKLIST (SEALANDS)

Rev. 10/10/89

Trailer Number:_____ Shipment Number:_____

1. Verify the ERMT has surveyed trailer prior to loading and recorded results on form ES&H-1596-1 to assure the trailer is not contaminated . _____

2. Verify the trailer floor, exterior and tires are acceptable for loading . Any discrepancies must be reported immediately to the transportation supervisor . Any nonconfomances or outstanding DCAR must be resolved before shipment can be released . _____

Comments: _____

_____

3. Visually verify that the sealand containers have been properly tied down with, four straps on each container, chain and 2X4 on front and back of load . _____

4. Visually verify the sealand containers rear doors are secured with a tamper proof DOT approved seal . _____

Container #1:_____Seal number:_____Box #:_____
Container #2:_____Seal number:_____Box #:_____

I hereby certify that the above checklist has been completed and witness that all above information is correct to the best of my knowledge .

Signed :_____
(Certification Personnel)

Date :_____

Signed :_____
(Transportation Supervisor)

Date :_____

Attachment M
Page 1 of 1

BILL OF LADING

STRAIGHT BILL OF LADING — SHORT FORM — ORIGINAL — NOT NEGOTIABLE

CARRIER	DATE	CARRIER'S I. D.	SHIPPER'S NO.

RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading by the carrier of the property described in the Original Bill of Lading.

AT FERNALD, OHIO

FROM USDOE, c/o Westinghouse Materials Company of Ohio
ACTING UNDER DOE CONTRACT DE-AC05-86OR21600

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Texas Freight Classifications in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

(Mail or street address of consignee — For purpose of notification only.)

Consigned to: _____

Destination: _____ State of: _____ County of: _____

Route: _____

Delivering Carrier: _____ Vehicle No.: Tra. #

Car Initial: _____ Car No.: _____ Seal No.: FA/WMCO

NUMBER PACKAGES	HM	DESCRIPTION OF ARTICLES, SPECIAL MARKS, AND EXCEPTIONS	* WEIGHT (Subject to Correction)	CLASS OR RATE	CHECK COLUMN
		IN THE EVENT OF AN ACCIDENT OR EMERGENCY, NOTIFY THE DOE EMERGENCY OPERATIONS CENTER, OAK RIDGE, TN — 615-576-1005, COLLECT, DAY OR NIGHT.			

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement.
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

WMCO
(Signature of consignor)

If charges are to be prepaid, write or stamp here, "To be Prepaid."

Received $ _____ to apply in prepayment of the charges on the property described hereon.

Agent or Cashier

Per _____
(The signature here acknowledges only the amount prepaid.) _____

Charges Advanced:

$ _____

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether "carrier's or shipper's weight."
NOTE - Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____

_____ Per _____

+ THIS SHIPMENT IS CORRECTLY DESCRIBED.
CORRECT WEIGHT IS
_____ LBS
SUBJECT TO VERIFICATION BY THE E. W. & I. BUREAU NATIONAL WT. AGREEMENT

* Shipper's signature in lieu of stamp not a part of bill of lading approved by Interstate Commerce Commission.

741 NO.: _____

SS - SO NO.: _____

MSO NO.: _____

EQUAL EMPLOYMENT OPPORTUNITY — The nondiscrimination clauses contained in section 202 of Executive Order 11246 relative to equal employment opportunity for all persons without regard to race, creed, color, or national origin, and the implementing rules and regulations of the President's Committee on Equal Employment Opportunity which, to the extent not inconsistent with Executive Order 11246, remain in full force and effect as those of the Secretary of Labor, are incorporated herein.

THIS SHIPMENT is subject to the terms and conditions set forth in the standard form of the U. S. Government bill of lading and to any available special rates or charges.

* This shipment is the property of and the freight charges are assumed by the U. S. Government. Subject to the provisions of Section 10721 Quotation No. (Tender No. _____ Effective _____).

* IT IS UNDERSTOOD AND AGREED THAT THIS SHIPMENT IS MADE BY THE CONSIGNOR FOR AND ON BEHALF OF THE U. S. GOVERNMENT; THAT THE CONSIGNOR IS AUTHORIZED TO AND WILL MAKE ANY PAYMENT DUE HEREUNDER AS CONSIGNOR OR SHIPPER FROM GOVERNMENT FUNDS ADVANCED AND AGREED TO BE ADVANCED TO IT BY THE U. S. DEPARTMENT OF ENERGY AND NOT FROM ITS OWN ASSETS; AND THAT NOTHING HEREIN SHALL PRECLUDE LIABILITY OF THE GOVERNMENT FOR ANY PAYMENT PROPERLY DUE HEREUNDER IF FOR ANY REASON SUCH PAYMENT IS NOT MADE BY THE CONSIGNOR FROM SUCH GOVERNMENT FUNDS.

* THIS IS TO CERTIFY THAT THE ABOVE NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

USDOE, c/o Westinghouse Materials Company of Ohio, shipper

Per _____ _____ Agent

Permanent post office address of shipper.

Per _____

P. O. BOX 398704 CINCINNATI, OHIO 45239
AREA CODE - 513 - 738-6200

WPC-AOMS-462 (REV. 5/13/88)

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Attachment N
Page 1 of 1

WASTE CERTIFICATION FINAL TRAILER/VEHICLE CHECKLIST

- 4552-

WASTE CERTIFICATION FINAL TRAILER/VEHICLE CHECKLIST

(Rev.12/06/89)

Carrier:_____ Trailer No. :_____ Shipment No. :_____

Initials

1. Verify the RST has surveyed the trailer/vehicle and recorded results on Vehicle Radiation Monitoring Report (Form FMPC-ES&H-1596-1). _____

2. Verify the proper placards are in place, as required. _____

3. Verify the driver has performed a safety inspection of vehicle prior to leaving the FMPC: _____

   headlights _____ horn _____
   turn signals _____ tires _____
   brake lights _____ braking check test (optional) _____

4. Verify the envelope with Manifest and Tally Sheets is in trailer. _____

5. Verify that a seal has been placed on the trailer doors and that the trailer number and seal number match the trailer and seal number recorded on the Bill of Lading. Report all discrepancies to the Traffic Manager. _____

   Seal Number: _____

6. Verify all lot markings and weights on the Tally Sheet match the lot markings and weights on the Shipping Order. _____

Date Shipped: _____ Time Shipped: _____

I hereby certify that the above items have been verified and are correct to the best of my knowledge.

Signed:_____ Date:_____
(Waste Certification Personnel)

NOTE: UPON SATISFACTORY COMPLIANCE WITH THE ABOVE CHECKLIST CERTIFICATION PERSONNEL SHOULD SIGN THE SHIPPING ORDER AT THE SPACE MARKED "QUALITY CONTROL APPROVAL".

Attachment O
Page 1 of 1

SHIPPING ORDER FOR NUCLEAR MATERIAL

NOTE Spaces marked "A" are for use of classification stamps when required

Westinghouse Materials Company of Ohio

A

SHIPPING ORDER FOR NUCLEAR MATERIAL

Date Prepared: _____

SHIP TO		ROUTING			SHIPPING AUTHORIZATION NO	SHIPPING ORDER NO.
STREET		PREPAID	CAR OR TRAILER NO.	SEAL NO.	SHIPPED FROM PLANT	ORIGINATOR NO
CITY	STATE	COLLECT	BILL OF LADING NO.	QUALITY CONTROL APPROVAL		DATE SHIPPED
SPECIAL INSTRUCTIONS			COUNTRY CONTROL NO.	PROJECT NO.		TIME SHIPPED

Type of Material _____ FMPC Production Order No _____ Originator's Signature _____

Station RIS _____ DOE 741 No _____ Shipment Authorized By _____

NMC DATA			ORIGINATOR'S DATA						MATERIAL CONTROL DATA								
PROJ CODE	COST CODE	741 NO	PO NO	LOT NUMBER	QUANTITY	WEIGHT (LBS) GROSS	TARE	NET	ANAL CODE	ELE ANAL	ELE LBS	ELE GRAMS OR KGS	LIMIT ERROR %	ISO ANAL	UTH GRAMS OR KGS	LIMIT ERROR %

DISTRIBUTION OF COPIES	
[illegible]-RECORD COPY	5 Cost Accounting
[illegible]pping Group	6 Originator of Shipping Order
[illegible]rity Control	
[illegible]ction Control	

[illegible] 350 (REV 6-68)

I _____ certify that this shipment was made on the above date after complying with all security regulations

A

Audited By _____ Date _____

A

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Attachment P
Page 1 of 1

WASTE CERTIFICATION TRAFFIC SHIPMENT DOCUMENTATION CHECKLIST

4552

Waste Certification Traffic Shipment Document Checklist

	Bill/Lading(B/L)	Shipping Order(S.O.)
Ship #		
B/L#		
S.O.#		
Trailer#		
Date Prep		
Mat.Type		
Gross Wt.		
Tare Wt.		
Net Wt.		
E.T.A.		
Seal #		
MCA sign		
# of cont.		
LSA/LQ/RQ		

	Low Level Checklist		Packaging Information	
Ship #			Hazard Class	
B/L #			Material Form	
S.O.#			Chemical Form	
All Checks			Labels Required	
3 sign			Packaging Type	

Radiation Monitoring Sheets

	Empty	Outgoing	Survey	Cab
Trailer#				
Date/Time				
Survey com.				

*Complete liscense # _____
*Temporary Seal # _____

Container Radiological Sheets

	Date	Time	Data Complete	Ship #
Initials				
Resmears				

	Off Site Tie Down		Contaminated Articles Sheet	
Ship #			Curies	
Trailer #			Signature	
Seal #			Data Complete	
Sup.Sign				

*3 Tally Sheets & 1 Storage/Disposal Sheet present _____
*Driver Inst. Pack complete and numbered _____
*Weight Ticket *Ft. Axle _____ * Rear Axle _____ * GR. Wt. _____
(Maxium weight on front or rear axle 34,000 lbs.)

QAC-880731-1, Rev.1 (10/10/89)

Attachment Q
Page 1 of 1

LLW SHIPMENT CHECKLIST

FMPC
SECURITY-ACQUISITION & MATERIALS LOGISTICS - TRANSPORTATION SECTION
LLW SHIPMENT CHECKLIST & NTS NOTIFICATION

DATE:	SHIPMENT NO.:	B/L NO.:	SS SO NO.:	CARRIER:	TRAILER NO.:

	LSA	DEPARTURE TIME: / ETA: / NOTIFICATION TO N ☐ (FTS. 575-63
	RQ	FROM:
	LTD. QTY.	TO:
	DRUMS	DATE:
	WASTE CERTIFICATION CONTAINER TOTALS, WEIGHTS & CURIES OF LSA/LTD QTY - RQ SHEETS	BY WHOM:
	BOXES	TO WHOM
	SMEAR SHEETS	☐ FACSIMILE SENT / ☐ DRIVER GIVEN DOSIMETER BA
	WASTE MANAGEMENT STORAGE & DISPOSAL SHEETS DELIVERED — PER NTS	MONITORING REPORTS:
	TALLY SHEETS	
	CARRIER/DRIVER INSTRUCTION PACK (2)	
	NEVADA PERMIT	
	INCOMING/EMPTY BEFORE LOADING	
	OUTGOING/LOADED	
	TRACTOR CAB	
	OFFSITE LOADING-TIE DOWN-VEHICLE INSPECTION REPORT	
	WEIGHT TICKET	
	CHECKED TALLY SHEET (BY CHECKER)	

DRIVER RECEIVES:
COPY OF B/L, TALLY SHEET, INSTRUCTION PACK, NEVADA PERMIT, & ENVELOPE FOR CONSIGNEE WITH TALLY SHEET & MEMO B/L

SPECIALIST A/TRAFFIC:	TRANSPORTATION SUPERVISOR: (REVIEW)	TRAFFIC MANAGER: (REVIEW)

	CONDITION OF CONTAINERS	LOADERS:
	CONTAINER PROPERLY LABELED	
	RADIOACTIVE PLACARDS (FOR LSA ONLY)	
	ENVELOPE WITH STORAGE & DISPOSAL SHEETS AND TALLY SHEETS IN TRAILER	
	TRAILER LINED WITH PLASTIC & CARDBOARD ON FLOOR— SCRAP WOODEN PALLETS AND/OR BOXES ENCLOSED WITH PLASTIC AS ONE PACKAGE	
	sportation Supervisor:	

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Attachment S
Page 1 of 1

OFF-SITE LOADING TIE-DOWN INSPECTION - VEHICLE INSPECTION FORM

4552

FMPC
SECURITY, ACQUISITION & MATERIALS LOGISTICS DEPARTMENT - TRANSPORTATION SECTION

OFFSITE LOADING — TIE DOWN INSPECTION — VEHICLE INSPECTION

Date: _____

COMMODITY:	CARRIER:	TRAILER NO.:	SEAL NO.:
			FA-WMCO

BALE/BOX/DRUM/SEA LAND CONTAINER NUMBERS:

LSA _____
LSA-RO _____
LQ _____
LQ-RO _____
TOTAL _____

DISCREPANCIES DETECTED	CORRECTED		SHIPMENT REJECTED	
	YES	NO	YES	NO

Checked By _____
SIGNATURE - CHECKER

TIE-DOWN INSPECTION AND CHECK-OFF SHEET

INSPECTION ITEM	YES	NO
Wood shoring installed to prevent longitudinal or lateral movement		
Steel strapping around the cargo securing as a stable shipment		
When weight dictates, containers divided into two units, one front and one rear of trailer not exceeding approximately 20,000 pounds each		
"½" steel strapping utilized (5450 lbs. minimum tensile strength)		
____ each anchor plates or "U" bolts fastened to underframe (____ each side of unit) placed and secured for ____ transverse bands over unit		
Four each brakeman plates or "U" bolts fastened to underframe (two for each band) placed under each unit and secured for two longitudinal bands, securing the boxes/skids into one tight unit, anchored to the floor of the trailer		
Two Signode seals No. 107 crimped whenever two bands are used on an end over end lap joint		
Anchor and brakeman plates secured with eight each 2" nails		
Sea Land Containers ..... 4 each nylon straps		
..... Chains		
..... 2 X 4s		

VEHICLE INSPECTION REPORT

CONDITION	PASS	FAIL	CONDITION	PASS	FAIL	CONDITION	YES	NO
Condition of Floor			Condition of Sides			Detected Sabotage Devices		
Condition of Interior			Condition of Exterior					
Condition of Roof			Condition of Rear Doors			Detected Evidence of Sabotage		

Overall appearance: _____

General Comments: _____

Accepted: _____ Rejected: _____

Checked By: _____
SIGNATURE - TRANSPORTATION SUPERVISOR

NO.	DISTRIBUTION OF COPIES
1	Transportation Section (RECORD COPY)

FMPC-SAML-2485 (REV. 4/3/88)

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Attachment T
Page 1 of 2

WASTE SHIPMENT VERIFICATION CHECKLIST

WASTE SHIPMENT VERIFICATION

Page 1 of 2

Date _____ Time _____

Shipment No. WML- _____ Trailer No. _____ No./Type Container _____

1. Storage & Disposal Data Sheet

   A. Material Descsription _____
   B. Signed _____ Shipment No. WML- _____
   C. Total Curries _____
   D. Total Weight(Gross) _____
   E. Total Volume _____
   F. Type Container _____
   G. Date _____ Time _____
   H. Check of "G" for all copies _____

2. Tally Sheet

   Shipment No. WML- _____ Date _____ Time _____
   Check of Date & Time of all copies in Pkg. _____

A. Lot Number	Gross Weight	Net Weight
Totals		

   B. Total containers _____ Totals agree with "1" above _____
   C. Field check of Tally Sheet included _____

3. Shipping Order for Nuclear Material (FMPC-ES&H-558-3 REV. 1/29/87)

   A. Shipping Order No. _____ B/L No. _____
   B. 741 No. FVC-VAB _____ Seal No. FA-WMCO _____
   C. Trailer No. _____ MC & A Signed _____
   D. Material Type _____
   E. Lot Nos. agrees with Tally Sheet _____ Total Quantity _____
   F. Gross Weight _____* Element Analysis _____*
   G. Tare Weight _____* Element Ibs. _____*
   H. Net Weight _____* Element Grams or Kgs _____*
   I. Iso Analysis _____* U235 Grams or Kgs _____*
   J. Est. Time of Arrival _____
   K. *Totals (listed) & Individual Lot values (not listed) agree with Tally Sheet. _____

4. Bill of Lading

   B/L No. _____ Trailer No. _____ Seal No.FA/WMCO _____
   741 No.FVC-VAB- _____ SS-SO No. _____
   ETA : _____
   Number of containers:

			Type Container	Gross Wt.	Net Wt.
LSA _____	RQ	_____			
	NON-RQ	_____			
LQ _____	RQ	_____			
	NON-RQ	_____			
Totals		_____			

   _____ Above information agrees with Shipping Order & Tally Sheet.
   _____ Remainder of information of Bill of Lading checked.

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Attachment T
Page 2 of 2

- 4552-

WASTE SHIPMENT VERIFICATION CHECKLIST (continued)

WASTE SHIPMENT VERIFICATION

Page 2 of 2

5. Low Level Waste Shipment Checklist and NTS Notification Form

   A. Shipment No. WML-_____ B/L No. _____
   SS-SO No. _____
   B. Data on line 5A agrees with B/L and Shipping Order _____
   Completed except for Departure Time and Traffic Manager review _____

6. Radiation Monitoring Sheet (FMPC ES&H-1596-1) For:
   A. Trailer Empty _____ Trailer ID _____
   B. Trailer Loaded _____ Trailer ID _____
   C. Cab Only _____ Trailer ID _____ License No. _____
   D. Loaded Vehicle Radiological Survey _____ Trailer ID _____
   E. Temporary Seal Numbers _____

7. Container Radiological Data
   Initial Dose Rate Data _____ 48 Hour Smears: Date_____Time_____
   Equal to or less than 48 hours prior to Load Time _____

8. Weight Ticket
   Load Weight _____ Rear Axle Wt._____ Drive Wt._____

9. Off-Site Tie-Down Inspection Form (FMPC SAML 2495 REV 4/5/89)
   Shipment No. WML-_____Trailer No._____ Seal No. FA/WMCO_____
   A. Checked and signed in two places _____

10. LSA/RQ, IQ documentation
    One copy in Traffic File package _____
    One copy in envelope for Driver _____
    A. Signed if non-computer report _____
    B. Wt. checks with Tally Sheet _____
    C. Curies checks with Disposal Sheet or Tally Sheet _____

11. Driver Instructions Complete (2 sets) _____
    Tally sheet also in envelope _____
    All Written identity & information checks _____

12. Waste Certification Checklist present, signed and in agreement with other documentation.
    A._____ Waste Certification Preliminary Trailer Checklist

    B._____ Waste Certification Traffic Shipment Documentation Checklist

    C._____ Waste Certification Final Trailer/Vehicle Checklist

Shipping Order signed by Certification Official _____

Shipment released on _____ at _____AM/PM

Signed _____

List Nonconformances found:

_____

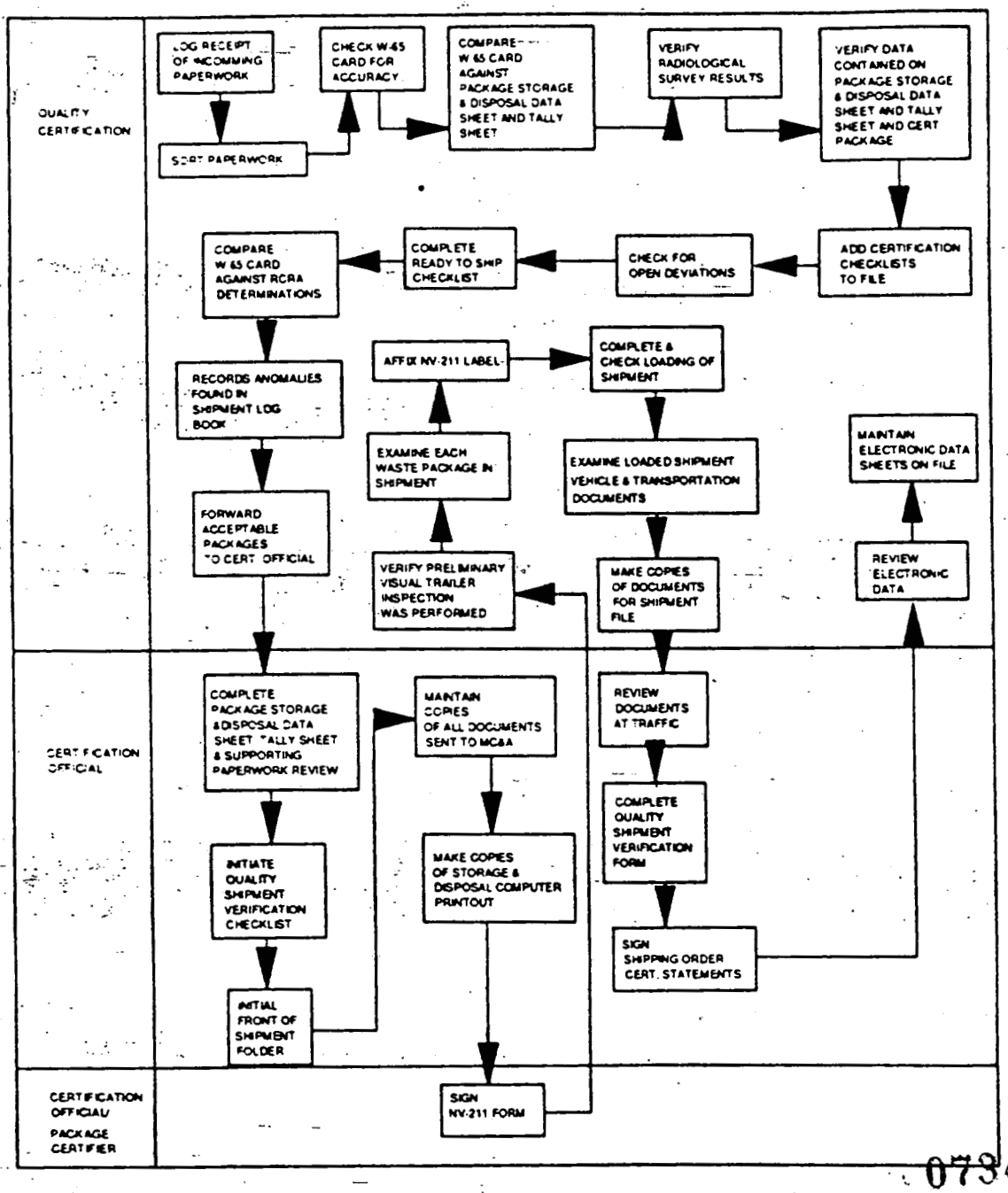
_____

QAC-890601-1, Rev 0

WESTINGHOUSE MATERIALS COMPANY OF OHIO - FMPC NON-CONTROLLED COPY		DOCUMENT NUMBER: EQP-12.07
ENVIRONMENTAL QUALITY PROCEDURE	SUBJECT: CERTIFICATION OF LOW LEVEL WASTE SHIPMENTS TO NTS	REVISION: 0
		Page 1 of 22
	AUTHORIZED: (Manager, Environmental Compliance & Quality Assurance) S. M. Beckman for E. D. Savage	Effective Date: 09/6/91

1.0. SCOPE

This procedures establishes a detailed method for the certification of Low-Level Radioactive Waste packages (L-LRW) for shipment to NTS. For abbreviation, acronyms, and definitions refer to WMCO-EQP-1.05.



2.0. PROCEDURE

2.1 Event Notification and Reporting Requirements

All unplanned or unwanted events or incidents shall be immediately reported to supervision. In the supervisor's absence [illegible] Assistant Emergency Duty Officer (AEDO) shall be notified for proper notification and reporting in accordance with, OM-FMPC-0001, "Event Notification and Reporting."

2.2 Industrial Health and Safety Requirements

All posted safety requirements (such as safety glasses, gloves etc.) and radiological requirements (such as respirators, proper clothing, etc.) shall be complied with in accordance topical manuals FMPC-2128, Industrial Hygiene and Safety Manual and FMPC-2084, Radiation Control Manual.

2.3 Examination and Certification of Incoming Paperwork

Quality Certification

2.3.1 Examine waste shipment paperwork packages prepared by the Waste Shipment Coordinator for accuracy, completeness, and that requirements for compliance with NVO-325 are met prior to forwarding them to MC&A for preparation of Shipping Orders.

2.3.2 Upon receipt of shipment packages from Waste Shipment Coordinator, log receipt of incoming shipment paperwork in the Shipment Log Book, which may be a computer data base. The following minimum data is required to be in the log book or data base:

a. Shipment Number
b. Container Quantity
c. Container Type
d. Material Type
e. Month, Date, and Time of Receipt

2.3.3. Sort paperwork in folder into two groups:

a. Group I is documents that are forwarded to MC&A, which include:

1. Package Storage and Disposal Data sheet.

2. Tally Sheet.

3. Storage and Disposal computer printout (List of the packages with weights and curies for each, grouped by DOT marking category), commonly called the "curie sheet".

4. Storage and Disposal computer printout (List of packages with weights, and required DOT markings), commonly called "circle copy".

5. Radiological Survey Report, form FMPC-IRS&T-1993-1.

6. Shipping Order, Form FMPC-CONT-558.

b. Group II is information pertaining to the shipment but not required by other organizations, which include:

1. Shipment worksheet, and untitled and unsigned document used to collect and process information. This is not part of the official certification record.

2. Waste Shipment Data Special Entry Information. This is not part of the official certification record.

3. Factor Assay data, either a letter or form listing the correct factor assay for a particular shipment.

4. Computer printout data entry sheets.

5. Any worksheets, such as Preparation of Baled Trash Shipment.

6. Item Production/Certification/Identification Card, (W-65 Card) FMPC-Cont-1945-XX.

2.3.4. Check the W-65 Card for accuracy. Check the signatures on the W-65 card to be sure the card has been signed by a properly trained individual. Only original W-65 card, or replacement W-65 cards having verified documentation of required information, are to be accepted for certification.

2.3.5. Compare the W-65 Card against the Package Storage and Disposal Data sheet and Tally Sheet for:

a. material type
b. shipment number
c. package serial number
d. material description
e. lot number
f. package number
g. gross, tare and net weights
h. package description

2.3.6. Verify Radiological Survey Results for packages being shipped are on file, complete and within acceptable limits, and verify accuracy of all entries to extent possible for computer entries made on Data Entry Sheets for items listed above. Radiological Survey Result Limits are:

a. Beta/Gamma radiation levels 200 millirem/hour measured externally at the surface.

b. Alpha emitters 220 DPM/100 cm2

c. Beta/Gamma emitters 2200 DPM/100 cm2

2.3.7. Verify that data contained on the Package Storage and Disposal Data sheet and Tally Sheet correspond with supporting documentation received in the shipment certification package.

2.3.8 Utilizing package serial numbers, obtain completed Quality Certification check lists and add to the file. Verify that all anomalies noted on the check lists have been resolved.

2.3.9 Check to make sure there are no open Deviation Reports, per PP-FMPC-706, against the package (packaging and contents) being shipped.

2.3.10 Compare material descriptions and source information on W-65 card against RCRA determination letters from Environmental Compliance to ensure that only materials approved for release are approved for shipment.

2.3.11 Complete a Ready to Ship Checklist for any Sea/Land containers in the shipment. (Attachment A)

2.3.12 Record anomalies found in the Shipment Log Book, and ensure the respective shipment package is returned to the Waste Shipment Coordinator for resolution.

2.3.13 Forward acceptable shipment packages to a Certification Official.

Certification Official

2.3.14 Complete the "Package Storage & Disposal Sheet, Tally Sheet, and Supporting Paperwork Review Checklist for L-LRW" (Attachment B). This becomes part of the shipment paperwork file retained in Quality Certification. If the shipment is unusually complex or non-routine, a second Certification Official may be asked to check the shipment paperwork, and will either fill out a new check list, or countersign the first Certification Official's checklist. The second check need only include as many checks as deemed necessary to provide confidence that the paperwork package is acceptable.

2.3.15 Sign and date the Package Storage and Disposal Data sheet signifying the paperwork is acceptable and can be forwarded to MC&A to initiate shipment.

2.3.16 Complete sections 1 and 2 of the Quality Shipment Verification checklist (Attachment C). It is filed separately from the shipment file and is kept ready for use at Traffic. A blank copy of the Certification Statement (Attachment D), the Certification Statement Specific to Hazardous Waste (Attachment E), and a copy of the Package Storage and Disposal Data Sheet are attached to this form along with any additional original documents which will accompany the shipment to NTS.

2.3.17 Initial the front of the shipment folder indicating the date and time the package was approved.

2.3.18 Maintain in the shipment certification file copies of all documents sent to MC&A.

NOTE: Documents from the certification paperwork package required by MC&A, are either faxed to MC&A (# 6454), delivered to the recipient within the group, or delivered to a designated pick-up point. The time of transmittal is recorded on the certification file folder and in the Shipment Log book.

2.3.19 Make copies of the Storage and Disposal computer printout (list of packages with weights, and required DOT markings), the Package Storage and Disposal Data sheet, and the Tally Sheet for Quality Certification persons checking packages prior to loading of shipment.

Certification Official/Package Certifier

2.3.20 Either the Certification Official or the Package Certifier can sign NV-211 Certification labels (Attachment F) for the shipment as follows:

a. When Certification Official signs NV-211 labels:

Certification Official

1. Sign NV-211, identify the packet of labels with the shipment number, and enter in the Chain of Custody Log book (Attachment G) the Quality Certification person responsible for affixing them to the containers.

Quality Certification

2. Sign in the log book acknowledging receipt of signed NV-211 labels. Any damaged, replaced, or unused labels (e. g. canceled shipments) are to be returned, and a record of return is to be made in the log book. The Certification Official signing the labels signs to acknowledge receipt, or in their absence, another Certification Official may sign for the labels, but must immediately destroy them.

b. When the Package Certifier signs NV-211 labels:

1. Sign as needed to affix to each package. Any damaged, replaced, or unused labels are to be destroyed.

2.4 Waste Packages and Shipment Vehicle

Quality Certification

2.4.1 Complete examination of waste packages, shipment vehicle, and check loading of shipment.

Note : Detailed instructions for each of the following checklists are found in WMCO-EQP-12.04 "Certification of Loading and Shipment of Low-Level Radioactive Waste".

2.4.2 Verify that a Preliminary Visual Trailer Inspection was performed by WEMCO mechanics. Examine the transport trailer/vehicle and complete either the "Waste Certification Preliminary Trailer Checklist for Flat Beds" (Attachment H) or the "Waste Certification Preliminary Checklist for Vans" (Attachment I) as applicable. The checklist becomes part of the shipment certification file.

2.4.3 Examine each waste package in the shipment. Each package prior to loading is checked for agreement with the information on the approved Package Storage and Disposal Data sheet, the Tally Sheet, and the Storage and Disposal computer printout list of packages, weights, and DOT markings. When this agrees, and criteria listed in EQP-12.04 are met, affix a properly completed and signed NV-211 certification label on each package.

2.4.4 Examine the loaded shipment vehicle after it has been sealed, weighed, monitored, and moved to traffic, take photographs, and complete the "Quality Certification Final Vehicle/Trailer Checklist" (Attachment J) which becomes part of the shipment certification file.

2.4.5 Examine the Transportation documents as listed in EQP-12.04 for accuracy and completeness. Complete the "Quality Certification Traffic Shipment Documentation Checklist" (Attachment K) which becomes part of the shipment certification file.

2.4.6 Make copies of the following documents and make them part of the shipment file:

a. Waste Certification Final Trailer Checklist

b. Waste Certification Traffic Shipment Document Checklist

c. Shipping Order for Nuclear Material

d. Radiological Survey Results (48-Hour Smears) if original is not already in file

f. Out going vehicle Radiation Survey

g. Out going vehicle Radiation Monitoring Sheet

2.5 <u>Shipping Papers</u>

Certification Official

2.5.1 Review the following documents for accuracy and completeness at Traffic :

a. Shipping Order for Nuclear Material
b. Bill of Lading
c. Low Level Waste Shipment Checklist and NTS Notification Form
d. Vehicle Radiation Monitoring Reports
e. Radiological Survey Report for results of smear samples of packages.

0739

f. Weight Ticket
g. Off-Site Tie Down Inspection Form
h. LSA/RQ, LQ Documentation
i. Drivers Instructions
j. Waste Certification checklists

2.5.2 Complete the "Quality Shipment Verification Form" form and list any nonconformances. This becomes part of the shipment certification file.

2.5.3 Sign and date the Shipping Order, in the space provided for Quality Certification, when all documents are complete and accurate.

2.5.4 Sign the Certification Statement. The original and one copy are given to Traffic. One copy is retained and becomes part of the shipment certification file.

2.5.5 Sign the Certification Statement Specific to Hazardous Waste. The original and one copy are given to Traffic. One copy is retained and becomes part of the shipment certification file.

2.5.6 Fax the Certification Statement Specific to Hazardous Waste, the Package Storage and Disposal Data Sheet, and a Facsimile Service form to NTS per the directions on the Facsimile Service form two days prior to the shipment's arrival at NTS. This is to be followed by a phone call to NTS to verify the receipt of this information.

NOTE: The Facsimile Service form or a variation thereof is to be used for faxing. Instructions for faxing to DOE/NV may be found near the fax machine. If problems are encountered in faxing the above information, inform the Quality Certification Manager, or if unable to do so, contact DOE/NV by telephone (number on fax form) for instructions. Make a note on the Facsimile Service form of failure to transmit, and log the date, time, and name of person contacted by telephone at DOE/NV.

2.6 Electronic Data Transfer Sheet

Quality Certification

2.6.1 Receive the electronic transfer data sheet from the Shipping Coordinator.

2.6.2 Review electronic transfer data sheet for accuracy. Data must agree with the approved respective Package Storage and Data Disposal report and comply with the requirements of Reynolds Electrical & Engineering Company's, Inc. (REECO) Defense Low Level Waste Information System Data Transmission Guide. If not acceptable, return it to the shipping coordinator for clarification or correction and resubmittal.

2.6.3 Maintain a file for the electronic data sheet.

3.0 REFERENCES

3.1 NVO-325 "Nevada Test Site Defense Waste Acceptance Criteria, Certification and Transfer Requirements"

3.2 WMCO:EQP-1.05 "Abbreviations, Acronyms, and Definitions"

3.3 PP-FMPC-706 "Deviation and Corrective Action Reporting"

3.4 WMCO-EQP-12.04 "Certification of Loading and Shipment of Low-Level Radioactive Waste

3.5 OM-FMPC-0001 "Event Notification and Reporting"

3.6 FMPC-2128 "Industrial Hygiene and Safety Manual"

3.7 FMPC-2084 "Radiation Control Manual"

4.0 ATTACHMENTS

4.1 Attachment A, Quality Certification Checklist Sea/Land Container "Ready to Ship"

4.2 Attachment B, Package Storage and Disposal Data Sheet, Tally Sheet, and Supporting Paperwork Review Checklist for L-LRW

4.3 Attachment C, Quality Waste Shipment Verification Form

4.4 Attachment D, Certification Statement

4.5 Attachment E, Certification Statement Specific to Hazardous Waste

4.6 Attachment F, NV-211 Certification Labels

4.7 Attachment G, Example of Chain of Custody Log used to issue NV-211 labels

4.8 Attachment H, Quality Certification Preliminary Trailer Checklist For Flat Beds

4.9 Attachment I, Quality Certification Preliminary Trailer Checklist For Vans

4.10 Attachment J, Quality Certification Final Trailer/Vehicle Checklist

4.11 Attachment K, Quality Certification Traffic Shipment Document Checklist

4.12 Attachment L, Facsimile Service Form

Attachment A
Page 1 of 1

QUALITY CERTIFICATION CHECKLIST
SEA/LAND CONTAINER "READY TO SHIP"

INFORMATION
DATE: _____ SHIPMENT NUMBER: _____

MTL. TYPE: _____ BOX ____ Serial No.: _____

MTL. TYPE: _____ ____ Serial No.: _____

LOCATION : _____ WEIGHTS: Gross _____ BOX 1 _____ BOX 2

Tare _____ _____

Net _____ _____

EXAMINATION CRITERIA (Quality Certification)

Initials

Trailer No.: _____

1. Verify "Item Production/Certification/Identification" W-65 card is completed accurately (Form FMPC-ES&H-1945-XX) _____

2. Container does not show evidence of leaking. _____

3. Radioactive placards present (4 sides) _____

4. No holes, serious dents, or excessive rust. _____

5. Marking is complete as follows:
   - Proper shipping label(s) identified on three sides (LSA, RQ, LQ) _____
   - Gross weight identified _____
   - Shipment Number _____
   - Waste Stream Number _____
   - Container Number _____
   - FEMP Marking Code _____

6. Marked weight values match above values. _____

7. The doors are latched, sealed with caulking, and the two latch bars are banded together. _____

8. Seal number Box #1_____ affixed to container. _____

   Box #2_____

9. All unnecessary markings have been removed or covered. _____

PLACE NV-211 ON DOOR OF CONTAINER WHEN ABOVE CRITERIA IS SATISFACTORILY MET.

I hereby certify the above items have been examined and the above items are correct to the best of my knowledge.

Signed: _____ Date: _____
(Quality Certification)

ECQ-880930-1, Rev. 3 (08/26/91)

EXHIBIT

PACKAGE STORAGE & DISPOSAL SHEET, TALLY SHEET, AND SUPPORTING PAPERWORK REVIEW CHECKLIST FOR L-LRW

Shipment No. _____

Review the paperwork for the following requirements:	Approval Check
Shipment No. agrees with LLW shipping report.	_____
Waste Stream number present and correct.	_____
Waste material description present and accurate.	_____
W-65 cards are correct for each container.	_____
Lot No. agree with LLW shipping report.	_____
Lot Code agrees with LLRW shipping report material description.	_____
Lot enrichment code agrees with U-235 analysis.	_____
U Assay, U-235, & U-238 concur with approved values. (from Analytical or approved in writing by MCLA)	_____
No unusual analysis dates (If so, check).	_____
Container type code listed and accurate.	_____
Proper waste code is entered.	_____
Combustibility percent listed and appropriate for contents.	_____
Gross weights agree with LLRW shipping report.	_____
Gross weights do not exceed the maximum gross weight per container type.	_____
Tare weights agree with LLW shipping report.	_____
Net weights agree with LLW shipping report.	_____
Net + Tare = Gross	_____
Inner container identity numbers check.	_____
Outer container identity numbers check.	_____
Total number of containers agrees with LLRW shipping report.	_____

EXHIBIT

ECQ-881115-2, Rev. 2 (07/30/91)

PACKAGE STORAGE & DISPOSAL SHEET, TALLY SHEET, AND
SUPPORTING PAPERWORK REVIEW CHECKLIST FOR L-LRW (Continued)

	Approval Check
Total containers correct on Storage & Disposal Sheet.	_____
Package description correct on Storage & Disposal Sheet.	_____
Correct volume listed for outer container.	_____
Gross volume is correct for shipment.	_____
Checked conversion from English to Metric units.	_____
Radiological Survey results present.	_____
Rad Survey at Contact is not greater than 200 mR/hr.	_____
Rad Survey at 3 ft is not greater than 10 mR/hr.	_____
No unusual values or arrangement indicating computer error.	_____
LQ, RQ, & LSA designations correct on Curie List. (If not, verify correct curie list is issued)	_____
LSA, LQ, & RQ list for loading correct and in agreement with Curie List. (Non-process contaminated materials are always LSA.	_____
Appropriate preparer signature on Storage & Disposal Sheet.	_____
Checked against RCRA letters and found to be non-RCRA.	_____
Partially completed Shipping Order included in folder.	_____

EXHIBIT

I hereby certify the above criteria has been verified to be correct, to the best of my knowledge.

Signature: _____

Date: _____

ECQ-881115-2, Rev. 2 (07/30/91)

Attachment C
Page 1 of 2

QUALITY WASTE SHIPMENT VERIFICATION

Page 1 of 2

Date_____ Time_____

Shipment No. WML-_____ Trailer No._____ No./Type Container_____

1. Storage & Disposal Data Sheet
   A. Material Descsription_____
   B. Signed _____ Shipment No. WML-_____
   C. Total Curries _____
   D. Total Gross Weight (Lbs.)_____ (Kgs)_____
   E. Total Volume (Cu Ft) _____ (Cu Meters)_____
   F. Type Container _____
   G. Date _____ Time _____
   H. Check of "G" for all copies _____

2. Tally Sheet
   Shipment No. WML-_____ Date _____ Time _____
   Check of Date & Time of all copies in Pkg. _____
   A. Lot Number | Gross Weight | Net Weight
   _____ _____ _____
   _____ _____ _____
   _____ _____ _____
   _____ _____ _____
   Totals _____ _____
   B. Total containers _____ Totals agree with "1" above _____
   C. Field check of Tally Sheet included _____

3. Bill of Lading (FMPC PM&A-452 Rev 2/12/91)
   B/L No._____ Trailer No._____ Seal No.FA/WMCO_____
   741 No.FVC-VAB-_____ SS-SO No._____
   ETA : _____
   Number of containers:

		Type Container	Gross Wt.	Net Wt.
LSA _____	RQ _____	_____	_____	_____
	NON-RQ _____	_____	_____	_____
LQ _____	RQ _____	_____	_____	_____
	NON-RQ _____	_____	_____	_____
Totals	_____	_____	_____	_____

   _____ Above information agrees with Shipping Order & Tally Sheet.
   _____ Remainder of information of Bill of Lading checked.

4. Shipping Order for Nuclear Material (FMPC-ES&H-558-3 REV. 1/29/87)
   A. Shipping Order No. _____ Trailer No. _____
   B. Bill of Lading No. _____ Seal No. FA-WMCO_____
   C. 741 No. FVC-VAB _____ MC & A Signed_____ _____
   D. Material Type _____
   E. Lot Nos. agrees with Tally Sheet _____ Total Quantity _____
   F. Gross Weight _____* Element Lbs. _____*
   G. Tare Weight _____* Element Grams or Kgs _____*
   H. Net Weight _____* Iso. Analysis _____*
   I. Element Analysis _____* U235 Grams or Kgs _____*
   J. Est. Time of Arrival _____
   K. *Totals (listed) & Individual Lot values (not listed) agree with Tally Sheet. _____

EXHIBIT

ECQ-890601-1, Rev.1, (08/04/91)

QUALITY WASTE SHIPMENT VERIFICATION

5. Low Level Waste Shipment Checklist and NTS Notification Form
   A. Shipment No. WML-_____ B/L No. _____
      SS-SO No. _____
   B. Data on line 5A agrees with B/L and Shipping Order _____
   Completed except for Departure Time and Traffic Manager review _____

6. Radiation Monitoring Sheet (FMPC ES&H-1596-1) For:
   A. Trailer Empty _____ Trailer ID _____
   B. Trailer Loaded _____ Trailer ID _____
   C. Cab Only _____ Trailer ID_____ License No._____
   D. Loaded Vehicle Radiological Survey _____ Trailer ID _____
   E. Temporary Seal Numbers _____
   F. Garage inspection attached _____

7. Container Radiological Data
   Initial Dose Rate Data _____ 48 Hour Smears: Date_____Time_____
   Equal to or less than 48 hours prior to Load Time _____

8. Weight Ticket
   Load Weight _____ Rear Axle Wt._____ Drive Wt._____

9. Off-Site Tie-Down Inspection Form (FMPC SAML 2195 REV 4/5/89)
   Shipment No. WML-_____Trailer No._____Seal No. FA/WMCO_____
   A. Checked and signed in two places _____

10. LSA/RQ, LQ documentation
    One copy in Traffic File package _____
    One copy in envelope for Driver _____
    A. Wt. checks with Tally Sheet _____
    B. Curies checks with Disposal Sheet or Tally Sheet _____
    C. Tally Sheet also in envelope _____
    D. Weight ticket in/with envelope (2 copies) _____

11. Driver Instructions Complete (2 sets) _____
    All Written identity & information checks _____

12. Waste Certification Checklist present, signed and in agreement with other documentation.
    A._____ Waste Certification Preliminary Trailer Checklist

    B._____ Waste Certification Traffic Shipment Documentation Checklist

    C._____ Waste Certification Final Trailer/Vehicle Checklist

Shipping Order signed by Certification Official _____

Shipment released on _____ at _____AM/PM

Signed _____

List Nonconformances found:

_____

_____

ECQ-890601-1, Rev 1, (08/04/91)

EXHIBIT

Attachment D
Page 1 of 1

CERTIFICATION STATEMENT

Shipment No. WML-91-_____ Trailer No. _____

Bill of Lading No. _____ Seal No. _____

This is to certify that the herein named materials are properly classifies, described, packaged, marked and labeled, are in proper condition for transportation according to the applicable regulations of the Department of transportation, and that the shipment meets DOT and EPA requirements, except for exemptions approved by DOE/Nevada, and data that is being transmitted in the same format and content as that for preceding shipments, this shipment and all packages contained therein meets NVO-325 requirements.

EXHIBIT

_____
FMPC Certification Official

Date: _____

Quality Certification Form

ECQ-900914-1, Rev. 2 (08/06/91)

CERTIFICATION STATEMENT SPECIFIC TO HAZARDOUS WASTE

This is to certify that the packages itemized in the attached list for Shipment No. WML-91-_____ contain no hazardous waste as determined by 40 CFR Part 261.30, and OAC 3745-54.

_____
FMPE Certification Official

Date: _____

EXHIBIT

Quality Certification Form
ECQ-900914-2, Rev. 2 (08/06/91)

NV-211 LABELS

NV-211 **PACKAGING CERTIFICATION**

This certifies that this container and its contents are in acceptable condition for transportation and waste disposal according to DOT (49 CFR), EPA (40 CFR), and DOE/NV (NVO-325) requirements.

DATE: _____

CERTIFIED BY: _____

TITLE: CERTIFICATION OFFICIAL

ORGANIZATION: FMPC

FMPC-OES-234 (REV 8/7/89)

EXHIBIT

NV-211 **PACKAGING CERTIFICATION**

This certifies that this container and its contents are in acceptable condition for transportation and waste disposal according to DOT (49 CFR), EPA (40 CFR), and DOE/NV (NVO-325) requirements.

DATE: _____

CERTIFIED BY: _____

TITLE: PACKAGE CERTIFIER

ORGANIZATION: FMPC

FMPC-OES-234-1 (REV 9/7/88)

Attachment G
Page 1 of 1

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CHAIN OF CUSTODY LOG
FOR
ISSUE & RECEIPT OF SIGNED NV-211 LABELS

DATE	SHIPMENT NUMBER	LABELS ISSUED	ISSUED BY (SIGNATURE)	NUMBER RECD.	RECEIVED BY (SIGNATURE)	LABELS RETURNED	RECEIVED BY (SIGNATURE)

EXHIBIT

QAC-890712-1, REV. 0

Attachment H
Page 1 of 1

QUALITY CERTIFICATION - PRELIMINARY TRAILER CHECKLIST FOR FLAT BEDS
(SEA/LAND SHIPMENTS)

DATE: _____ CARRIER: _____ TRAILER NO.: _____

CHECKLIST ITEM	VERIFIED BY
1. Verify the preliminary trailer inspection completed (on trailer only) prior to driver unhooking from the empty trailer: Accepted ____ Rejected ____	____
2. Prior to loading verify the RS Technician has surveyed the empty trailer, recorded results on form ESBH-1596-1, and that results meet acceptance requirements listed in 49 CFR 173.441. (Note: If over 48 hrs. since smears were made, the trailer must be respeared.)	____
3. Verify that the doors of the sea/land containers are banded closed and secured with a tamper proof DOT approved seal.	____
4. Verify that packages are properly tied-down as specified by SOP-TRF-46-C-110. Sea/Land containers shall be secured with four straps on each container, and shall be both chained and blocked with a 2X4 on front and back of load.	____
5. Record shipping information in the blocks below:	____

Shipment No. WML- _____ -

Container No. 1: Ser. No. _____ Seal No. _____

Container No. 2: Ser. No. _____ Seal No. _____

Signed: _____ Date: _____
(Quality Certification)

Distribution: 1. QA Certification 2. Traffic Manager

QA Certification Form
ECQ-891010-1, Rev. 3 (07/31/91)

EXHIBIT

Attachment I
Page 1 of 1

- 4552 -

QUALITY CERTIFICATION - PRELIMINARY TRAILER CHECKLIST FOR VANS

DATE: _____ CARRIER: _____ TRAILER NO.: _____

CHECKLIST ITEM	VERIFIED BY
1. Verify preliminary trailer inspection completed (on the trailer only) prior to driver unhooking from the empty trailer: Accepted ____ Rejected ____	_____
2. Verify the RS Technician has surveyed the empty trailer, recorded results on Form ES&H-1596-1, and results meet acceptance requirements listed in 49 CFR 173.441.	_____
3. After the survey, verify the RS Technician has sealed the doors with a tamper proof seal. Seal No. _____	_____
4. Prior to loading, verify seal number is same as applied by RS Technician and shows no evidence of tampering.	_____
5. If trailer is to be loaded with baled trash, verify the trailer has been lined properly as specified per SOP-TRF-46-C-110.	_____
6. Verify that packages have been properly tied-down as specified by SOP-TRF-46-C-110.	_____
7. Verify that the loaded trailer rear doors are secured with a tamper proof seal. Shipment No. WHL- _____ Seal No. _____	_____

EXHIBIT

Signed: _____ Date: _____
(Quality Certification)

Distribution: 1. QA Certification 2. Traffic Manager

QA Certification Form
ECQ-880801-1, Rev. 4 (07/30/91)

QUALITY CERTIFICATION FINAL TRAILER/VEHICLE CHECKLIST

Carrier:_____ Trailer No. :_____ Shipment No. :_____

Initials

1. Verify the RST has surveyed the trailer/vehicle and recorded results on Vehicle Radiation Monitoring Report (Form FMPC-ES&H-1596-1). _____

2. Verify the proper placards are in place, as required. _____

3. Verify the driver has performed a safety inspection of vehicle prior to leaving the FMPC: _____

headlights	_____	horn	_____
turn signals	_____	tires	_____
brake lights	_____	braking check test (optional)	_____

4. Verify the envelope with Manifest and Tally Sheets is in trailer. _____

5. Verify that a seal has been placed on the trailer doors and that the trailer number and seal number match the trailer and seal number recorded on the Bill of Lading. Report all discrepancies to the Traffic Manager. _____

Seal Number: _____

6. Verify all lot markings and weights on the Tally Sheet match the lot markings and weights on the Shipping Order. _____

Date Shipped:_____ Time Shipped:_____

I hereby certify that the above items have been verified and are correct to the best of my knowledge.

Signed:_____ Date:_____
(Quality Certification Personnel)

NOTE: UPON SATISFACTORY COMPLIANCE WITH THE ABOVE CHECKLIST CERTIFICATION PERSONNEL SHOULD SIGN THE SHIPPING ORDER AT THE SPACE MARKED "QUALITY CONTROL APPROVAL".

ECQ-881115-1, Rev. 3 (07/30/91)

EXHIBIT

4552

Quality Certification Traffic Shipment Document Checklist

	Bill/Lading(B/L)	Shipping Order(S.O.)
Ship #		
B/L#		
S.O.#		
Trailer#		
Date Prep		
Mat.Type		
Gross Wt.		
Tare Wt.		
Net Wt.		
E.T.A.		
Seal #		
MCA sign		
# of cont.		
LSA/LQ/RQ		

	Low Level Checklist		Packaging Information
Ship #		Hazard Class	
B/L #		Material Form	
S.O.#		Chemical Form	
All Checks		Labels Required	
3 sign		Packaging Type	

Radiation Monitoring Sheets

	Empty	Outgoing	Survey	Cab
Trailer#				
Date/Time				
Survey com.				

*Complete liscense # _____

*Temporary Seal # _____

Container Radiological Sheets

	Date	Time	Data Complete	Ship #
Initials				
Resmears				

Off Site Tie Down Contaminated Articles Sheet

Ship # _____ Curies _____

Trailer # _____ Signature _____

Seal # _____ Data Complete _____

Sup.Sign _____

*3 Tally Sheets & 1 Storage/Disposal Sheet present _____

*Driver Inst. Pack complete and numbered _____

*Weight Ticket *Ft. Axle_____* Rear Axle_____* GR. Wt._____

(Maxium weight on front or rear axle 34,000 lbs.)

*Two stick-on Radioactive Placards included for Sea/Land shipments _____

ECQ-880731-1, Rev.3 (07/31/91)

EXHIBIT

FEED MATERIALS PRODUCTION CENTER

WESTINGHOUSE MATERIALS COMPANY OF OHIO
P.O. Box 398704
Cincinnati, Ohio 45239-8704

Equipment: Sharp FO-230

FAX:

FTS: 774-8651
COMMERCIAL NO: (513)-738-8651

VERIFICATION:

FTS: 774-8649
COMMERCIAL NO: (513)-738-8649

EXHIBIT

DATE: _____ TIME: _____

TO: Stacey A. Sorg

ORGANIZATION & LOCATION: DOE/NV

FACSIMILE NO.: FTS 575-1810

VERIFICATION REQUESTED: _____ YES _____ NO

FROM: James E. Clements FMPC/WMCO FTS 774-8648

SUBJECT: CERTIFICATION STATEMENT(S) FOR L-LRW SHIPMENT(S) TO NTS

FAX MACHINE OPERATOR: _____ VERIFICATION CONFIRMED BY: _____

This message consists of _____ pages excluding cover sheets.

NON-CONTROLLED COPY

SITE STANDARD OPERATING PROCEDURE
DOCUMENT NO. SSOP-0049
REVISION NO. 0

- 4552 -

FEMP AUDIT PROGRAM

SSOP-0049

Effective Date: 08-31-92

AUTHORIZED BY: _____ 8/28/92
H. F. DAUGHERTY, PRESIDENT DATE

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

0756

Westinghouse Environmental Management Company of Ohio
P. O. Box 398704
Cincinnati, Ohio 45239-8704

4552-

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LIST OF FIGURES

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RECORD OF ISSUE/REVISIONS

DATE	REV. NO	DESCRIPTION AND AUTHORITY
08-31-92	0	Document describing the FEMP Audit Program per Request No. S92-062, initiated by J. Weissenberg.

1.0 PURPOSE

This procedure describes the responsibilities and requirements for planning, performing, and documenting formal audits of Fernald Environmental Management Project (FEMP) activities and of suppliers of equipment and services to the FEMP.

2.0 SCOPE

This procedure comprises the audit program at the Fernald Environmental Management Project (FEMP), including the audits and appraisals required by Department of Energy (DOE) Orders and Directives.

3.0 DEFINITIONS

Appraisal - A documented review of a specialty discipline performed in accordance with written guidance and criteria to verify that applicable elements of the performing organization's program have been developed, documented, and effectively implemented in accordance with specific departmental requirements and needs.

Assessment - The act of reviewing, inspection, testing, checking, auditing, or otherwise determining and documenting whether items or services meet specified requirements.

Audit - A planned and documented activity performed by investigation, examination, or evaluation of objective evidence to determine the adequacy and compliance with established procedures, instructions, drawings, and other applicable documents and the effectiveness of their implementation.

Deviation - A departure from specified requirements.

Disposition - The action required to correct or resolve the deviation itself without regard to the root cause or action required to prevent recurrence.

Environment, Safety and Health (ES&H) Appraisal - A comprehensive program for internal self appraisal to ensure compliance with DOE 5482.1B.

External Independent Audit - A formal examination (of FEMP activities) planned and conducted by an organization other than the FEMP, such as DOE or Westinghouse Corporate. This includes, for example, the Technical Safety Appraisals (TSA) and Quality Assurance Functional Appraisals.

3.0 DEFINITIONS (cont.)

Internal Independent Audit - A formal examination of a WEMCO organization's activities by representatives of another WEMCO organization to determine the status and assess the effectiveness of FEMP procedures and requirements. An audit may be conducted upon special request or when the quality of an item or services is in question.

Observation - A condition which could result in failure to meet requirements if permitted to continue.

Self-Assessment - An organization's assessment of itself, that is self-initiated and the results of which are documented and reported to the initiating organizations.

Supplier Audit - A formal examination of the quality of materials and services provided to the Fernald Environmental Management Project (FEMP) by outside vendors. This includes the on-site construction contractors of the FEMP, the contractor performing remediation and/or restoration services, contract laboratories supporting the Environmental Management program, and the contractors performing architectural/engineering services.

4.0 RESPONSIBILITIES

Environmental Quality Assurance (EQA) Manager

- Plans and directs a comprehensive audit activity.
- Uses audit results to provide feedback to management concerning the adequacy and effectiveness of FEMP programs and the internal controls used to manage FEMP resources.
- Plans and directs a program of appraisals of ES&H activities that meet the requirements of DOE Order 5482.1B.
- Monitors schedules of self-assessments conducted by other FEMP organizations to assure adequate coverage of FEMP functions with a minimum of duplication.

Staff Managers

- Ensure that the operations of their organizations are conducted pursuant to their departmental procedures in order to assess compliance with appropriate DOE Orders and other governmental regulations applicable to their department.

4.0 RESPONSIBILITIES (cont.)

Staff Managers (cont.)

- When requested by the auditing organization, review and concur with audit plans and schedules, provide staff members for audit teams, and ensure timely approval and implementation of deviation dispositions, corrective action plans, and schedules.

- Cooperate with and be responsive to teams conducting internal and external independent audit/appraisals.

Audit/Appraisal Team Leaders

- Plan, direct, and conduct assigned audit/appraisal to assess implementation and effectiveness of work control systems.

- Report the results of the audit/appraisal to the EQA Manager and identify work practices and procedures that need corrective action.

Commitment Control

- Maintains the central data base for tracking the status of corrective actions.

- Retains official records and files related to the documentation of Corrective Action Reports.

5.0 GENERAL

5.1 Internal and supplier quality assurance audits of the FEMP Quality Assurance Program will be planned, scheduled, and conducted by EQA, with support and participation from other WEMCO departments. Appropriate procedures will be developed by the organization responsible for conducting audits to implement the established responsibilities. Other organizations will make personnel available to EQA as required to assist in conducting audits. Audit Team members shall have access to all records, personnel, and physical facilities relevant to the performance of audits.

5.2 Department self-assessment activities will be performed as required by DOE Orders, governmental organizations, or customer-imposed requirements. These departments will provide EQA with an overview of their respective self-assessment programs to avoid duplication, refine interrelationships, and strengthen overall program performance.

5.0 GENERAL (cont.)

5.3 The Internal Audit Section, which reports to the Office of the President, performs internal audits as required by the DOE/WEMCO contract, DOE orders, DOE Office of Inspector General, DOE Oak Ridge Operations, WEMCO management, and corporate directives. The primary objective of the Internal Audit Section's audit plan is to provide management with evaluations and recommendations to strengthen internal controls, safeguard corporate assets against loss, and improve financial visibility and operating efficiencies.

6.0 PREREQUISITES

None

7.0 PROCEDURE

7.1 AUDIT PLANNING

EQA MANAGER

1. Plan and schedule a comprehensive set of audits on a near-term (quarterly) and long-range (annual) basis.

2. Develop an annual ES&H appraisal schedule, consolidating self-assessment activities performed by IRS&T and Environmental Management Departments with independent overview performed by EQA personnel.

3. Train and qualify audit team leaders and members who perform the independent audits/appraisals.

STAFF MANAGERS

4. As required by DOE Orders, plan and schedule a program of self assessments of department operations to assess compliance with applicable DOE Orders and federal and state laws.

7.2 AUDIT CONDUCT

EQA MANAGER AND STAFF MANAGERS

1. Organize audit/appraisal teams by providing team members and technical specialists from other departments as needed.

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2. Issue to the audited/appraised organization the audit/appraisal plan which defines the scope and expected duration of the audit.

7.2 AUDIT CONDUCT (cont.)

TEAM LEADER

3. Prepare individual audit/appraisal plan per applicable department procedures and provide team orientation and direction.

4. Coordinate internal audits/appraisals with the manager of the audited/appraised organization to ensure that appropriate personnel are contacted.

5. As applicable, coordinate supplier audits with the appropriate WEMCO contract administration personnel.

6. Conduct the pre-audit meeting with the audited organization.

7. Lead the team in conducting the planned audit/appraisal in accordance with the SA, CIP, and QA department procedures.

8. Conduct the post-audit meeting with the audited organization.

9. Per SA, CIP, and QA department procedures, prepare the audit/appraisal report and record the results for submission to the EQA Manager.

EQA MANAGER

10. Per SA, CIP, and QA department procedures, issue the report of Quality Assurance Program Audits to responsible management and request any needed corrective actions.

11. Issue audit/appraisal report within 30 days after performance of the audit/appraisal.

12. Record each finding of deviation on a Corrective Action Report (CAR) (see Figure 1). (The CAR becomes a part of the audit report per SSOP-0023.)

13. Provide a copy of each case to Commitment Control.

7.3 AUDIT FOLLOW-UP AND CLOSEOUT

MANAGER OF AUDITED ORGANIZATION (Quality Assurance Audits and ES&H Appraisals)

1. Plan and implement actions to correct deviations or resolve operational problems.

7.3 AUDIT FOLLOW-UP AND CLOSEOUT (cont.)

MANAGER OF AUDITED ORGANIZATION (Quality Assurance Audits and ES&H Appraisals)

2. Provide a response to the EQA Manager for each finding of deviation by completing the "Corrective Action" section of the CAR per SSOP-0023.

MANAGER OF APPRAISED ORGANIZATION (ES&H Appraisals)

3. Provide a response to the Staff Manager within the required time stated in the audit/appraisal transmittal letter. Specify the corrective action planned for resolution of each deviation and a response to each observation.

EQA MANAGER AND STAFF MANAGERS

4. Evaluate the disposition of deviations or resolution of operational problems identified through audits and appraisals.

5. Provide Commitment Control with a copy of the CAR which indicates acceptance of the proposed corrective action and scheduled completion date.

6. Track deviations on an individual basis until they are completed.

7. Evaluate the accomplishment of corrective actions and upon verification of completion issue a letter closing the audit/appraisal findings.

   NOTE: If further corrective actions are necessary, consult with management.

8. Provide a copy of the closed CAR to Commitment Control.

9. Issue a bimonthly status report to the President, Staff Managers, and other managers responsible for corrective action to identify open action items.

7.4 PROGRAM STATUS, ADEQUACY, AND EFFECTIVENESS FEEDBACK

EC&QA MANAGER

1. Annually report to the WEMCO President and to WEMCO Counsel the status, adequacy, and effectiveness of FEMP operations revealed from audits/appraisals.

8.0 APPLICABLE DOCUMENTS

8.1 DRIVERS

- RM-0012, "Quality Assurance Program Description"
- DOE 5480.1B, "Environmental Protection, Safety, and Health Protection Program for DOE Operations"
- DOE 5482.1B, "Environmental Protection, Safety, and Health Appraisal Program"
- DOE 5700.6C, "Quality Assurance"

8.2 REFERENCES

- SSOP-0023, "Deviation and Corrective Action Reporting"
- SSOP-0602, "Centralized Commitment Control"
- RM-0012, "Quality Assurance Program Description"

Fernald Site

CORRECTIVE ACTION REPORT

CAR NUMBER:	REVISION:

SECTION 1

DATE DISCOVERED:	RESPONSIBLE ORGANIZATION:
RESPONSIBLE ORGANIZATION REPRESENTATIVE:	
ACTIVITY:	LOCATION:

SECTION 2

REQUIREMENTS:

DEVIATION:

VERBALLY NOTIFIED MANAGEMENT:	EVALUATOR:	DATE:
PROVIDE DISPOSITION BY:	EVALUATING MANAGER:	DATE:

SECTION 3 - Response to the Request for Corrective Action

A. REASON FOR THE DEVIATION (ROOT CAUSE):

B. ACTION TAKEN/PROPOSED TO INVESTIGATE SIMILAR WORK:

C. ACTION TAKEN TO PREVENT RECURRENCE:

D. DATE(S) ACTION(S) WILL BE COMPLETE:

RESPONSIBLE ORGANIZATION REPRESENTATIVE:	DATE:

SECTION 4 - Evaluation of Corrective Action Response

EVALUATOR:	DATE:
EVALUATING MANAGER:	DATE:

SECTION 5 - Completion of Corrective Action

RESPONSIBLE ORGANIZATION REPRESENTATIVE:	DATE:

SECTION 6 - Verification of Corrective Action Completion

EVALUATOR:	DATE:

VERIFICATION ACTION:

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CORRECTIVE ACTION REPORT (CAR)
FS-F-2909-1
Figure 1 (Sheet 1 of 2)

WESTINGHOUSE ENVIRONMENTAL MANAGEMENT COMPANY OF OHIO SITE DOCUMENT PROGRAM		SITE STANDARD OPERATING PROCEDURE Page 11 of 11
Title: FEMP AUDIT PROGRAM		DOCUMENT NO: SSOP-0049 REVISION NO. 0
Authorization: H. F. Daugherty, President	Replaces: FMPC-0707, Dated 10-27-89, Rev. 1	Effective Date: 08-31-92

CORRECTIVE ACTION REPORT (CAR) - INSTRUCTIONS

EVALUATOR - COMPLETE SECTION 1 AND 2 AS FOLLOWS	
ITEM	INSTRUCTIONS
DATE DISCOVERED	Enter date that corrective action was discovered to be required.
RESPONSIBLE ORGANIZATION	Enter the organization responsible for the item or activity in which a corrective action is required.
RESPONSIBLE ORGANIZATION'S REPRESENTATIVE	Enter name of the representative responsible for corrective action.
ACTIVITY	Enter activity performed. (Example Audit 189-1)
LOCATION	Location of the activity (Example Plant 6)
REQUIREMENTS	Identify the procedure, instruction, standard, or code which establishes the acceptance criteria for the activity or item being evaluated.
DEVIATION	Fully describe the deviation as it relates to the requirements.
VERBALLY NOTIFIED MANAGEMENT	List the date that the responsible organization's management was verbally notified of the potential deviation.
CAR NO.	Obtain and enter on the CAR Form a CAR Number from Commitment Control.
REVISION	Enter the current revision number 0, 1, etc.
PROVIDE DISPOSITION BY DATE	Request the organization deemed responsible to provide dispositioning action by a certain date outlining steps taken or planned to correct immediate problem.
EVALUATOR	Sign and date Section 2 of the CAR form.
EVALUATING MANAGER	Obtain the concurrence of the Evaluator's Manager.
RESPONSIBLE ORGANIZATION REPRESENTATIVE - COMPLETION OF DISPOSITION ACTION SECTION 3	
A. REASON FOR THE DEVIATION (ROOT CAUSE)	Determine the underlying (root) cause of the problem and document it in Section 3A of the CAR form.
B. ACTION TAKEN/PROPOSED TO INVESTIGATE AND CORRECT SIMILAR WORK	If necessary, perform an investigation to determine if any similar work is affected by the problem and, if so, identify the action taken/proposed and the schedule to correct it in Section 3B of the CAR form.
C. ACTION TAKEN TO PREVENT RECURRENCE	Describe action taken/proposed to correct the root cause and to prevent recurrence of the problem in Section 3C of the CAR form.
D. DATE(S) ACTION(S) WILL BE COMPLETE	Enter the scheduled completion date for corrective action in Section 3D.
EVALUATOR - COMPLETION OF THE EVALUATION OF CORRECTIVE ACTION RESPONSE SECTION 4	
Receive and evaluate the proposed corrective action to determine its adequacy for solving the specific problem identified in the deviation report.	
Document acceptance of the proposed corrective action in Block 4 by signature and date.	
Notify the organization responsible for corrective action of the rejection of the proposed corrective action and coordinate with the organization to obtain a revised response.	
RESPONSIBLE ORGANIZATION REPRESENTATIVE - COMPLETION OF CORRECTIVE ACTION SECTION 5	
Complete Corrective Action sign Block 5 and forward to evaluator.	
EVALUATOR - COMPLETION OF THE VERIFICATION AND CLOSURE OF CORRECTIVE ACTION SECTION 6	
Monitor the corrective action and verify that the actions taken to correct the deviation have been completed satisfactorily.	
Approve acceptance of verified corrective action in Section 6 by signature and date. Enter the verification action performed.	
Ensure the removal of nonconforming item tag(s) only after verifying satisfactory completion of all dispositioning actions	
Forward the closed out corrective action report (CAR) to Commitment Control with a copy to the responsible organization management.	

FS-F-2909-1 (REV. 5/7/92)

CORRECTIVE ACTION REPORT (CAR)
FS-F-2909-1
Figure 1 (Sheet 2 of 2)

CIO NO. C93-017

Effective Date: 02-08-93

Expiration Date: 08-09-93

CHANGE IN OPERATION
REMEDIATION SUPPORT OPERATIONS DOCUMENT PROGRAM

(As identified in Figure 1) DOCUMENT NO.:	AFFECTED DOCUMENT PAGE NO.: 1	ISSUE DATE: (As listed in Figure 1)

TITLE: As identified in Figure 1.

AUTHORIZATION: Per LTR No. M:RSO:93-096, Dated 01-12-93, Nelson K. Weichold to James A. Long

CHANGE:

1) The identified document (See Figure 1) in the Site Services Document Program is now identified as a Fernald Environmental Restoration Management Corporation (FERMCO) Remediation Support Operation (RSO) Division document, for use in the RSO Division by the applicable RSO Department.

NOTE: The document identified in Figure 1 may not reflect the current FERMCO organizational structure.

NON-CONTROLLED COPY

Document No.	Title	Issue Date	Revision No.	Revision Date
01-107	OPERATION OF GENIE LIFT MODEL PL36/DC	09/09/87		
01-108	OPERATION OF AHTRES MODEL RZ-40 ROTO-ZOOM AERIAL LIFT	12/22/87		
01-BE-410-02	DRUM PAINTING AND DRYING	04/18/89		
01-C-101	SAMPLING RESIDUE AND WASTE MATERIALS	06/16/89	2	03/11/91
01-C-301	DRUM CLEANING AND DECONTAMINATION	02/20/90	0	
01-C-302	DRUM PAINTING AND DRYING	01/15/90		
01-C-304	REROLLING 30 GALLON DRUMS AND EXPANDING 55 GALLON DRUMS	01/11/89		
01-C-305	BALING SCRAP METAL DRUMS	03/22/90	0	
01-C-306	CRUSHING SCRAP DRUMS	09/26/89	0	
01-C-602	LOW LEVEL RADIOACTIVE WASTE (LL-LRW) SHIPMENT PREPARATION	11/12/91	2	07/30/92
01-C-604	INSPECTION AND EVALUATION OF CONTAINERIZED LOW LEVEL RADIOACTIVE WASTE (LLRW)	12/05/91	0	12/08/92
01-C-606	HAZARDOUS WASTE SHIPMENT PREPARATION	06/14/89		
01-C-608	STORAGE OF RADIOACTIVE MATERIAL	08/13/90	0	12/09/92
01-C-609	PLANT 1 STORAGE INSPECTION	06/12/90	0	
01-C-701	PLANT 1 DUST COLLECTORS	05/24/89		
01-C-803	PREPARATION OF ENRICHED URANIUM(<20% U235) FOR OFFSITE SHIPMENT	07/20/88		
01-C-902	DISPOSAL OF PLANT 1 EFFLUENT	09/14/90	0	
01-C-905	PRODUCTION NUCLEAR MATERIALS(NM) RECEIVING, STORING, AND HANDLING	09/01/88		
01-C-911	PLANT 1 EMERGENCIES	07/05/91	0	
01-C-915	CLEANING OF CONTAMINATED METAL AND EQUIPMENT	12/28/87	2	05/05/92

DOCUMENT IDENTIFICATION
Figure 1

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CIO NO. C93-034 455

Effective Date: 02-08-93

Expiration Date: 08-09-93

CHANGE IN OPERATION

REMEDIATION SUPPORT OPERATIONS DOCUMENT PROGRAM

(As identified in Figure 1) DOCUMENT NO.:	AFFECTED DOCUMENT PAGE NO.: 1	ISSUE DATE: (As listed in Figure 1)

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Document No.	Title	Issue Date	Revision No.	Revision Date
20-C-602	INSPECTION AND OPERATION OF NILFISK PORTABLE VACUUM UNITS	07/09/90	0	
20-C-603	REMOVAL AND REPLACEMENT OF NILFISK PORTABLE VACUUM UNIT FILTERS AND DUST BAG	06/15/88		
20-C-604	CONTROL AND UTILIZATION OF CONTAMINATED TRASH DUMPSTERS	05/24/88	3	12/08/92
20-C-606	HAZARDOUS MATERIAL SPILL CLEAN-UP	10/12/89	0	
20-C-607	SEGREGATION OF WOODEN PALLETS	10/10/91	0	
20-C-609	INSPECTION OF SAFETY BELTS, HARNESSES, AND LANYARDS	01/14/91	0	
20-C-610	BIRD CARCASS AND DROPPING REMOVAL	10/27/89	0	
20-C-611	ASSEMBLY/DISASSEMBLY OF SCAFFOLDING	02/15/91	0	
20-C-613	EMPTYING LIQUID HAZARDOUS WASTE STORAGE CONTAINERS	03/09/90	1	03/11/91
20-C-614	OPERATION OF GENIE LIFT MODEL PL36PDC	09/21/92	0	
20-C-615	CONTROLLED HOLDING AREA	08/28/91	0	
20-C-619	PACKAGING SOIL BORING MATERIAL FOR TRANSFER TO THE 90-DAY STORAGE AREA	09/26/91	0	
20-C-620	90-DAY STORAGE AREA	09/20/91	0	
20-C-625	EVALUATING LOW LEVEL RADIOACTIVE WASTE (LLRW) BULK WASTE STREAMS FOR SHIPMENT	11/05/92	0	
20-C-630	RECEIPT INSPECTION, STORAGE, AND STORAGE INSPECTION OF HAZARDOUS WASTE	06/05/92	0	
20-C-700	NORCLEAN PORTABLE VACUUM OPERATION	05/30/91	0	
20-C-701	OPERATION OF SPENCER AND HOFFMAN PORTABLE DUST COLLECTORS	07/05/89	2	12/14/92
20-C-704	CHANGING HEPA FILTERS AND PREFILTERS	03/17/89	1	02/19/90
20-C-705	CHANGING DUST COLLECTOR MODULE AND SECONDARY SEPARATOR CARTRIDGE FILTERS	09/24/90	0	
20-C-707	DOP TESTING OF IN-PLACE HEPA FILTERS	05/07/90	1	12/10/92

DOCUMENT IDENTIFICATION
Figure 1