

LA-UR-11-11729

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Title: 2011 Radioactive Waste Management Basis for STO FOD

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Intended for: DOE
RWMB
Waste management
Reading Room
DOE



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Waste and Environmental Services Division

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Date: October 11, 2011
Refer To: WES-DO-11-018

Mr. George J. Rael, Field Element Manager
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3747 West Jemez Rd., MS A316
Los Alamos, New Mexico 87544

2011 Radioactive Waste Management Basis for STO FOD

The Waste Certification Program (WCP) has reviewed the STO FOD Radioactive Waste Management Basis (RWMB) submittal. The facility has requested RWMB approval for a 2 year timeframe. WCP concurs with the waste generation and operation information provided. Operations planned during the period are routine; however, if non-routine operations are identified during the 2 year period, a revision will be submitted. WCP is planning on assisting the STO FOD in development of radioactive waste management documentation to support certification of waste process at individual facilities. WCP will evaluate by facility operations. Documents can be obtained through the Waste Certification Program office.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Alison M. Dorries'.

Alison M. Dorries
Division Leader
Waste and Environmental Services
AMD:mlc

Enc: Radioactive Waste Management Basis STO 2011-07, Rev 0

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Radioactive Waste Management Basis Report Form

STO-2011-7, Rev # 0 2/11

FOD YR-MO, Rev. # 0/11

Extension Requested (Detailed letter must be attached.)

Reporting Organization STO-FOD	Report Date 7/29/11	Facility Hazard: <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low
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Purpose
The purpose of this report form is to document the radioactive activities at Technical Area(s) STO-FOD, which are operated by the STO-FOD organization at Los Alamos National Laboratory (LANL or the Laboratory). This Radioactive Waste Management Basis (RWMB) Report Form constitutes compliance with the applicable requirements of Department of Energy (DOE) Order 435.1, *Radioactive Waste Management*, and in DOE Manual 435.1, Chapter IV, *Low-Level Waste Requirements*, and Chapter III, *Transuranic Waste Requirements*. The organization must submit an RWMB Report Form to the Waste and Environmental Services-Waste Generator Services Group (WES-WGS), Waste Certification Program (WCP) by July 30 upon expiration or when a significant waste stream change has occurred. WCP must compile the LANL Organization RWMB Reports and submit this package for DOE reporting before August 30 in order to maintain approval.

Time Requested for RWMB Approval 2 year(s) **Report Authorization**

Facility Operations Director (FOD)/Division Leader:
 Name: Judith Huchton Signature: [Signature] Date: 8/1/11

Report Preparer:
 Name: Marc R. Gallegos Signature: [Signature] Date: 7/29/11

Waste Certification Specialist:
 Name: Kandy J. Martinez Signature: [Signature] Date: 9/29/11

Waste Certification Program (WCP) Annual Review

Waste Certification Specialist:
 Name: _____ Signature: _____ Date: _____

Waste Authorization Basis

List all facility/operations authorization basis documents and include specific facility waste management documents.

Nuclear-Facility Non-Nuclear Facility TSDF Accelerator An attached list is provided

Safety or Facility Document Name	Document Number	Last Rev. Date	Document Owner
<input type="checkbox"/> Waste Management Plan			
<input type="checkbox"/> Facility Waste Certification Plan (FWCP). Do not complete pg. 3			
<input type="checkbox"/> Operation Record			
<input type="checkbox"/> Documented Safety Analysis (DSA)			
<input type="checkbox"/> Technical Safety Requirement (TSR)			
<input type="checkbox"/> Safety Evaluation Report (SER)			
<input type="checkbox"/> Health & Safety Plan/Job Hazard Analysis			
<input type="checkbox"/> Site Treatment Plan			
<input type="checkbox"/> DOE O 435.1 Exemption for Disposal at a Non-DOE Facility			
<input type="checkbox"/> Closure Plan			
<input type="checkbox"/> Monitoring			
<input type="checkbox"/>			
<input type="checkbox"/>			

Institutional Document	Document Number	Institutional Document	Document Number
<input checked="" type="checkbox"/> Waste Management	<u>P409</u>	<input checked="" type="checkbox"/> LANL Waste Acceptance Criteria	<u>P930-1</u>
<input checked="" type="checkbox"/> Radioactive Waste Certification Program	<u>P930-2</u>	<input type="checkbox"/> Off-Site Shipment of Chemical, Hazardous, or Radioactive Waste	<u>P930-3</u>
<input checked="" type="checkbox"/> NMED LANL Hazardous Waste Facility Permit	<u>NM0890010515-1</u>	<input checked="" type="checkbox"/> LANL Packaging and Transportation Program Procedure	<u>P151-1</u>
<input checked="" type="checkbox"/> Environmental Management System	<u>SD400</u>	<input checked="" type="checkbox"/> National Environmental Policy Act (NEPA)	42 U.S.C. 4321

Waste and Activity by Building and Destination

For any building/location managing radiological materials, enter the TA-Bldg No. (e.g., 55-0078 or 55-outside) then click on waste activity and destination box and select the appropriate descriptors for the management activity type (see key below) and waste destination. Identify total organization estimated annual volume above destination box.

TA-Bldg. No.	LLW Activity	Estimated Annual Volume		Waste Matrix	MLLW Activity	Estimated Annual Volume 1.5 cubic meters Destination	Waste Matrix	TRU Activity	Estimated Annual Volume		Waste Matrix	Mixed TRU Activity	Estimated Annual Volume		
		140 cubic meters Destination	Off-site Disposal						Solid	SS			Off-site Disposal	Solid/Liquid	None
3-32	SS	Off-site Disposal	Solid	Solid	SS	Off-site Disposal	Solid	None	None	N/A	N/A	None	N/A	N/A	
Comment: SM 30 Staging area NOTE: All LLW will be disposed of off-site, except for a case by case approval to TA-54.															
3-34	SS	Off-site Disposal	Solid	Solid/Liquid	SS	Off-site Disposal	Solid/Liquid	None	None	N/A	N/A	None	N/A	N/A	
Comment:															
3-40	SS	Off-site Disposal	Solid	N/A	None	N/A	N/A	None	None	N/A	N/A	None	N/A	N/A	
Comment:															
3-40-133	SS	Off-site Disposal	Solid	Solid/Liquid	SS	Off-site Disposal	Solid/Liquid	None	None	N/A	N/A	None	N/A	N/A	
Comment:															
3-66	Store	Off-site Disposal	Solid	N/A	None	N/A	N/A	None	None	N/A	N/A	None	N/A	N/A	
Comment:															
3-102	SS	Off-site Disposal	Solid/Liquid	Solid/Liquid	SS	Off-site Disposal	Solid/Liquid	None	None	N/A	N/A	None	N/A	N/A	
Comment:															
3-1698	SS	Off-site Disposal	Solid	N/A	None	N/A	N/A	None	None	N/A	N/A	None	N/A	N/A	
Comment:															
3-2322	SS	Off-site Disposal	Solid	Solid	SS	Off-site Disposal	Solid	None	None	N/A	N/A	None	N/A	N/A	
Comment:															
33	SS	Off-site Disposal	Solid	N/A	None	N/A	N/A	None	None	N/A	N/A	None	N/A	N/A	
Comment:															
33-113	SS	Off-site Disposal	Solid	N/A	None	N/A	N/A	None	None	N/A	N/A	None	N/A	N/A	
Comment:															
35-2	SS	Off-site Disposal	Solid	N/A	None	N/A	N/A	None	None	N/A	N/A	None	N/A	N/A	
Comment:															

Activity: Recyc = Recycling. Stage = Staging. Store = Storage. SS = Storage & Store. Treat = Waste Treatment. SR = Stage & Repack. All = All Activities.

RWMB Waste and Activity Continuation Sheet

Waste and Activity by Building and Destination For any building/location managing radiological materials, enter the TA-Bldg No. (e.g., 55-0078 or 55-outside) then click on waste activity and destination box and select the appropriate descriptors for the management activity type (see key below) and waste destination. Identify total organization estimated annual volume above destination box.												
TA-Bldg. No	LLW Activity	Estimated Annual Volume 140 Cubic meters Destination	Waste Matrix	MLLW Activity	Estimated Annual Volume 1.5 Cubic meters Destination	Waste Matrix	TRU Activity	Estimated Annual Volume 23.37 Cubic meters Destination	Waste Matrix	Mixed TRU Activity	Estimated Annual Volume Destination	Waste Matrix
35-27	SS	Off-site Disposal	Solid	None	N/A	N/A	None	None	N/A	None	N/A	N/A
Comment:												
35-34	SS	Off-site Disposal	Solid	None	N/A	N/A	None	None	N/A	None	N/A	N/A
Comment:												
	None	N/A	Solid	None	Off-site Disposal	N/A	None	None	N/A	None	N/A	N/A
Comment:												
35-125	SS	Off-site Disposal	Solid	None	N/A	N/A	SR	WIPP	Solid	None	N/A	N/A
Comment:												
39-213	SS	Off-site Disposal	Solid	None	N/A	N/A	None	None	N/A	None	N/A	N/A
Comment:												
39-2	Stage	Off-site Disposal	Solid	None	N/A	N/A	None	None	N/A	None	N/A	N/A
Comment:												
43-49	SS	Off-site Disposal	Solid	None	N/A	N/A	None	None	N/A	None	N/A	N/A
Comment:												
43-102	SS	Off-site Disposal	Solid	SS	Off-site Disposal	Solid/Liquid	None	None	N/A	None	N/A	N/A
Comment:												
46-30	SS	Off-site Disposal	Solid	SS	Off-site Disposal	Solid/Liquid	None	None	N/A	None	N/A	N/A
Comment:												
46-31	SS	On-site Disposal	Solid	SS	Off-site Disposal	Solid/Liquid	None	None	N/A	None	N/A	N/A
Comment:												
48	SS	Off-site Disposal	Solid	None	N/A	N/A	None	None	N/A	None	N/A	N/A
Comment: Outside												

RWMB Waste and Activity Continuation Sheet

Waste and Activity by Building and Destination
For any building/location managing radiological materials, enter the TA-Bldg No. (e.g., 55-0078 or 55-outside) then click on waste activity and destination box and select the appropriate descriptors for the management activity type (see key below) and waste destination. Identify total organization estimated annual volume above destination box.

TA-Bldg. No	LLW Activity	Estimated Annual Volume		Waste Matrix	MLLW Activity	Estimated Annual Volume		Waste Matrix	TRU Activity	Estimated Annual Volume		Waste Matrix	Mixed TRU Activity	Estimated Annual Volume		Waste Matrix
		Destination	Volume			Destination	Volume			Destination	Volume			Destination	Volume	
48-1	SS	Off-site Disposal	Solid	N/A	None	N/A	None	N/A	None	None	N/A	N/A	None	N/A	N/A	N/A
Comment: Outside																
48-1	SS	Off-site Disposal	Solid	N/A	None	N/A	None	N/A	SS	WIPP	N/A	N/A	None	N/A	N/A	N/A
Comment: Basement																
54	SS	Off-site Disposal	Solid	N/A	None	N/A	None	N/A	SS	WIPP	N/A	N/A	None	N/A	N/A	N/A
Comment:																
55	SS	Off-site Disposal	Solid	N/A	None	N/A	None	N/A	SR	WIPP	N/A	N/A	None	N/A	N/A	N/A
Comment:																
59-1	SS	Off-site Disposal	Solid	N/A	None	N/A	None	N/A	None	None	N/A	N/A	None	N/A	N/A	N/A
Comment:																
	None	N/A	N/A	N/A	None	N/A	None	N/A	None	None	N/A	N/A	None	N/A	N/A	N/A
Comment:																
	None	N/A	N/A	N/A	None	N/A	None	N/A	None	None	N/A	N/A	None	N/A	N/A	N/A
Comment:																
	None	N/A	N/A	N/A	None	N/A	None	N/A	None	None	N/A	N/A	None	N/A	N/A	N/A
Comment:																
	None	N/A	N/A	N/A	None	N/A	None	N/A	None	None	N/A	N/A	None	N/A	N/A	N/A
Comment:																
	None	N/A	N/A	N/A	None	N/A	None	N/A	None	None	N/A	N/A	None	N/A	N/A	N/A
Comment:																
	None	N/A	N/A	N/A	None	N/A	None	N/A	None	None	N/A	N/A	None	N/A	N/A	N/A
Comment:																

Radioactive Waste Management Basis Report Form (Page 3)



STO-FOD-2011-7, Rev #0
FOD-YR-MO-Rev-# *RSU*

DOE O/M 435.1 Facility/Organization Specific Summaries

FOD-YR-MO-Rev-#

Facility Scope

Provide a brief description of organization activities and operations including waste generation, management, tracking, reporting, and preliminary disposal characterization.

Operations that occur within STO-FOD are, weapons production and laser fusion research, production of medical radioisotopes and analysis via radiological and chemical means, bioscience research, material machining, welding, fabrication, inspection and assembly, fabrication of metallic and ceramic items, characterization of materials and process research and development, as well as nuclear non-proliferation activities.

The Off-Site Source Recovery (OSR) Project, N-3 collects and disposes sealed radioactive sources at the direction of NNSA NA-21. These sources include a variety of different nuclides and activities potentially meeting definitions of LLW and/or TRU wastes once declared as waste. Actinide bearing sealed sources are predominately Am-241, Pu-238 and Pu-239, all of which must be managed and stored in accordance with security and accountability requirements of special nuclear material. The Off-Site Source Recovery (OSR) Project, N-3 resides within STO-FOD.

All radioactive waste generators (including tenants, contractors, and management) that generate, handle, treat, recycle, stage, store, visually verify, repackage, dispose of, or transport waste within STO-FOD are covered by this document. Facility waste generation descriptions are documented on a Waste Profile Form (WPF) and may be included in reference documents referenced on the WPF for the WCP. Responsible radioactive waste generators representing the facility are identified by the signatures on the WPF. Individuals involved in the waste generating processes are trained and qualified by the requirements and implementing procedures for the waste certification tasks they perform by the required updated completion of course #23263 "Waste Generation Overview" training and processing of a Waste Profile Form (WPF).

Life-Cycle Waste Management

Describe the waste management process at the organization, security of waste funding, and the cradle to grave management. Specify how applicable procedures address waste management and controls. Utilize Environmental Management System (EMS) support.

Response:

All radioactive waste generators (including tenants, contractors, and management) that generate, handle, treat, recycle, stage, store, visually verify, repackage, dispose of, or transport waste within STO-FOD organization are covered by this document. Radioactive waste streams are identified and characterized by the waste generator. The waste generator works with a Waste Management Coordinator to document the waste characteristics using a Waste Profile Form. If wastes require sampling to fully characterize, the generator works with the Waste Management Coordinator to arrange for sampling. Generated radiological waste is stored in areas designated for radiological wastes and are packaged in WAC approved containers before being sent to TA-54 TDSF or other LANL approved TDSF's. The Waste Management Coordinator utilizes RP-1 personnel to ensure all radioactive wastes are properly manage. Radiological liquid wastes approved through the LANL's WAC process for acceptance at the LANL RLWTF are sent to the facility via a LANL's waste collection system. Detailed requirements for waste generators, Waste Management Coordinators, and waste management responsibilities in the waste management process are documented in LANL's PD 400 Environmental Protection and P409 Waste Management and STO-FOD documents. The supporting documents are attached.

Characterization

Provide a description of how the organization implements the radioactive waste characterization process at the organization and the document support. Detail the routine method of waste characterization for the organization.

Response:

Characterization is either performed using Acceptable Knowledge per P930 or through analysis. Characterization documentation is maintained by the generator, the Waste Management Coordinator, and by Waste Services, Waste Acceptance group. The routine method used throughout STO-FOD is Acceptable Knowledge and is applied through generator process knowledge and/or recordkeeping such as logs and/or process documents such as the Intergrated Work Documents (IWD) or Hazard Control Plans. Radiological support is provided by RP-1 by means of direct reading measurements, swipes, and surveys. Additional characterization, such as gamma spectroscopy is provided by organizations as needed.

Packaging and Transportation

Specify organization-specific procedures for packaging operations and preparations for transportation. Laboratory personnel are required to meet the requirements of P151-1, LANL Packaging and Transportation Program Procedure, to ensure compliance with Department of Transportation (DOT) requirements. Identify the controls that will be implemented to prevent contents from being added

to waste containers or tampered with while in a registered waste area.

Response:

Generators implement the requirements of P151-1 "Hazardous Material (HAZMAT) Packaging and Transportation" to ensure DOT compliance. All packaging and transporting of radioactive waste meets DOT and LANL WAC requirements and is stored and transported in DOT-approved sealed and verified waste containers. Process owners ensure unauthorized personnel can not add material to waste containers by the use of locks and/or administrative controls while the waste is within a radiological control area. The Waste Management Coordinator ensures that waste containers are sealed and are under their control up to the point of transport by a DOT approved shipper. When radiological waste is staged in a radioactive staging area or temporary storage radiological controlled area, they are under the full control of the Waste Management Coordinator by use of locked containers, or administrative controls.

Staging/Storage

Describe the accumulation and holding of radioactive waste that is treated, or transported to or from the organization. Describe the organization's generation process and management trail into a registered waste area.

Response:

Waste is packaged at the point of generation. Once full, the containers are sealed and placed in either a waste storage area or in a temporary storage area designated as controlled areas, then shipped for treatment/disposal. From the storage areas, the wastes are shipped given the time frame delineated for the type of waste which it is being managed in.

Quality Assurance Program

Describe the organization-specific procedures that ensure the traceability of waste characterization records, container procurement, and the document control process.

Response:

Shipping containers are purchased from Waste Services Division, and all container procurement records are maintained by the same organization. The generator maintains AK documents for each waste stream. Original records sent with the waste profiles, disposal request, shipping documentation, etc. are archived by the Waste Services Program Document Control group. Quality is assured through the Waste Services Verification Program, PLAN-SWO-014

Training and Qualification

All waste management personnel (Waste Management Coordinators [WMCs]; Environment, Safety, Health, and Quality [ESH&Q]; Environmental Tech; etc.) are required to maintain qualification standards. Describe how the organization implements any other radioactive waste management specific training required by the organization.

Response:

All waste generators and Waste Management Coordinators have course #23263 in their training plan as a generator of RCRA hazardous waste and/or radioactive waste. Refreshers are required every three years. Waste Profile forms require updating every year and if a generator's training has lapsed, the waste profile form will not be processed. Additionally, specific waste generation requirements can be specified in Integrated Work Documents for processes.

Waste Minimization and Pollution Prevention

Document the implementation of waste minimization and pollution prevention programs for radioactive waste management facilities, operations, and activities. Provide assurance of waste stream evaluation before generation of waste.

Response:

Utilization of the Green-is Clean program, consolidation of RCA's, source reduction, and substitution of non radiological process are areas that waste minimization and pollution prevention are implemented. When a waste stream is identified, the Waste Management Coordinator will work with the waste generator to determine if all waste minimization and pollution prevention techniques have been explored. Waste minimization and P2 requirements can be specified in individual Integrated Work Documents.