LA-UR-11-11501
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Title:	2011 Radioactive Waste Management Basis for TA-55 FOD
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Intended for:	DOE DOE Waste management Reading Room DOE

Los Alamos
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EST. 1943

Waste and Environmental Services Division
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Date: September 14, 2011
Refer To: WES-DO-11-016

Mr. George J. Rael, Field Element Manager
Nuclear National Security Administration
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2011 Radioactive Waste Management Basis for TA-55 FOD

The Waste Certification Program (WCP) has reviewed the TA-55 FOD Radioactive Waste Management Basis (RWMB) submittal for TA-55 and TA-50 Radioactive Liquid Waste Treatment Facility (RLWTF). The facility has requested RWMB approval for a 6 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 6 year period, a revision will be submitted. Radioactive waste generating operations are not projected for the Radiological Laboratory/Utility/Office Building (RULOB) facility during this timeframe. The referenced safety and facility documents cover the TA-55 facility, RLWTF and future operations for the RULOB facility. Documents can be obtained through the Waste Certification Program office; some documents require a need to know. We are able to arrange a site visit to review facility information, if requested.

Sincerely,

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

Enc: Radioactive Waste Management Basis TA-55 2011-07, Rev 0
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Form 2107

Los Alamos NATIONAL LABORATORY EST.1943

Radioactive Waste Management Basis Report Form

Rev 9/13/11 TA55 2011-07, REV#0

☐ Extension Requested (Detailed letter must be attached.)

FOD YR-MO, Rev. # ~~e~~

Reporting Organization	Report Date	Facility Hazard:
NPI-7	07/29/2011	☒ High ☐ Moderate ☐ Low

Purpose

The purpose of this report form is to document the radioactive activities at Technical Area(s) 55, which are operated by the NHHO 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 6 year(s) Rev 9/13/11

Report Authorization

	Name	Signature	Date
Facility Operations Director (FOD)/Division Leader:	Robert Mason	[signature]	7-28-11
Report Preparer:	Robert L. Dodge	Robert L. Dodge	7-29-2011
Waste Certification Specialist:	Randy J. Mantiner	[signature]	9/13/11

Waste Certification Program (WCP) Annual Review

	Name	Signature	Date
Waste Certification Specialist:			

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
☒ Waste Management Plan	TA-55-RD-539, R4-IP	12/16/2010	NPI-7
☒ Facility Waste Certification Plan (FWCP). *Do not complete pg. 3*	TA55-PLAN-055,R0	11/23/2010	NPI-7
☒ Operation Record	TA55-AP-116, R2	01/24/2011	TA-55 FOD
☒ Documented Safety Analysis (DSA)	TA55-DSA-2008 Rev	05-11-2011	TA-55 FOD
☒ Technical Safety Requirement (TSR)	TA-55 TSRs Rev 1.7	04/29/2011	TA-55 FOD
☒ Safety Evaluation Report (SER)	SER PF4.01, Rev 5	May, 2011	TA-55 FOD
☒ Health & Safety Plan/Job Hazard Analysis	SD100, Rev 2	11/04/2010	ADESH&Q
☒ Site Treatment Plan	LA-UR 06-1922	03/16/2006	ADESH&Q ENV-RCP
☐ DOE O 435.1 Exemption for Disposal at a Non-DOE Facility			
☒ Closure Plan	LANL RCRA Permit	November, 2010	ADESH&Q ENV-RCP
☒ Monitoring	LANL RCRA Permit	November, 2010	ADESH&Q ENV-RCP
☒ Site-wide Environmental impact statement	DOE/EIS-0380	May, 16, 2008	DOE Rev 9/13/11
☐			

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

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AS 9/13/11 TA55 2011-07 Rev #0

~~FOD YR-MO, Rev. #~~

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 700m3 / Destination	Waste Matrix	MLLW Activity	Estimated Annual Volume 10m3 / Destination	Waste Matrix	TRU Activity	Estimated Annual Volume 80 m3 / Destination	Waste Matrix	Mixed TRU Activity	Estimated Annual Volume 100m3 / Destination	Waste Matrix
55-4	Stage	Off-site Disposal	Solid	Stage	Off-site Disposal	Solid/Liquid	Store	WIPP	Solid	Store	WIPP	Solid
Comment:												
55-4	Treat	TA-50 RLWTF	Liquid	None	N/A	N/A	None	N/A	N/A	Treat	N/A	N/A
Comment: This is liquid industrial waste waste and												
50-1	Stage	Off-site Disposal	Solid	Stage	Off-site Disposal	Solid/Liquid	Store	WIPP	Solid	None	N/A	N/A
Comment:												
55-RUL	Stage	Off-site Disposal	Solid	Stage	Off-site Disposal	Solid/Liquid	None	N/A	N/A	None	N/A	N/A
Comment:												
	None	N/A	N/A	None	N/A	N/A	None	N/A	N/A	None	N/A	N/A
Comment:												
	None	N/A	N/A	None	N/A	N/A	None	N/A	N/A	None	N/A	N/A
Comment:												
	None	N/A	N/A	None	N/A	N/A	None	N/A	N/A	None	N/A	N/A
Comment:												
	None	N/A	N/A	None	N/A	N/A	None	N/A	N/A	None	N/A	N/A
Comment:												
	Treat	N/A	N/A	None	N/A	N/A	None	N/A	N/A	None	N/A	N/A
Comment:												
	None	N/A	N/A	None	N/A	N/A	None	N/A	N/A	None	N/A	N/A
Comment:												
	None	N/A	N/A	None	N/A	N/A	None	N/A	N/A	None	N/A	N/A
Comment:												

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

DOE O/M 435.1 Facility/Organization Specific Summaries
Facility Scope Provide a brief description of organization activities and operations including waste generation, management, tracking, reporting and preliminary disposal characterization.
See Attached Information
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: **See Attached Information**
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: **See Attached Information**
Packaging and Transportation Specify organization specific procedures for packaging operations and preparations for transportation. Laboratory personnel are required to meet P151-1, "Hazardous Material (HAZMAT) Packaging and Transportation" to ensure compliance with DOT. 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: **See Attached Information**
Staging/Storage Describe the accumulation and holding of radioactive waste that is treated, or transported to or from the organization. The organization generation process and management trail into a registered waste area.
Response: **See Attached Information**
Quality Assurance Program Describe the organization procedures that ensure the traceability of waste characterization records, container procurement, and the document control process.
Response: **See Attached Information**
Training and Qualification All waste management personnel (WMCs, 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: **See Attached Information**
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 prior to generation of waste. Refer to WPF Guidelines in Appendix A, "Waste Profile Form Completion Instructions."
Response: **See Attached Information**

Facility Scope:
The Los Alamos National Laboratory (LANL) Plutonium Facility at TA-55, a Hazard Category 2 nuclear facility, was approved by the U.S. Department of Energy for plutonium operations in April 1978. Since that time, TA-55 has been operating in a safe and effective manner while performing its principle mission:

- Conducting basic special nuclear material (SNM) research and technology development;
- Processing a variety of plutonium-containing materials;
- Building and dismantling nuclear weapon components; and preparing reactor fuels, heat sources, and other SNM devices.

Building Plutonium Facility 4 (PF-4) is the main operational building within TA-55 and provides a safe and secure work environment for operations involving Special Nuclear Material (SNM) including Plutonium and Uranium. TA-55 is operated by the TA-55 Facility Operations Division (FOD). The Plutonium Science and Manufacturing Directorate (ADPSM) provides world-class, safe, secure, and reliable special nuclear material research, process development, technology demonstration, and manufacturing capabilities that support the nation's defense, energy, and environmental needs by using the facilities within PF-4.

Four divisions within ADPSM manage and perform operations within PF-4.

- The Integrated Program Management Division (IPM) is responsible for providing directorate interface, negotiating program requirements and budgets with external customers, providing programmatic oversight of production, scientific operations and equipment installation, assuring that ADPSM commitments are met and resolving any priority conflicts that arise between programs.

- The Nuclear Component Operations Division (NCO) performs most of the hands-on work in PF-4 including building New Pits, Preparing surveillance Reports, Purifying Pu Oxide and Metal, preparing material for eventual Disposition, disassembling Pits and developing nuclear fuels and heat sources.

- Manufacturing Engineering and Technologies Division (MET) collaborates with Program Management and Manufacturing Operations to establish and track Customer requirements for Scope, Cost and Schedule. MET provides Technical Support for Manufacturing Operations to develop and maintain safe and secure production activities that yield products meeting all Customer expectations

- The Nuclear Process Infrastructure (NPI) Division provides the necessary business process and support functions to ensure ADPSM successfully executes it mission assignments involving nuclear and explosive materials science, technology, and weapons components. Four of the core business functions within NPI support waste operations including shipping/receiving (NPI-1), NDA measurements (NPI-1), decontamination services (NPI-3) and waste management NPI-7).

The ADPSM Directorate performs most SNM activities at LANL. These activities are controlled in accordance with the approved Safety Basis, TSR and RCRA permit. Technical Area 55 remains the only full-service, operating plutonium facility in the nation. The ASPSM Directorate

Timely management of wastes generated by TA-55 activities is essential for maintaining the facility capability. There is minimal storage capacity for wastes at TA-55. Without timely disposition of waste out of TA-55, programmatic impacts and facility standdown are experienced quickly as shown in Table 1. The goal of the TA-55 waste management program is to implement systems and processes that will minimize the risk of programmatic or facility impacts.

Waste management is a highly regulated activity and must be conducted in compliance with a multitude of federal and state environmental statutes, regulations, permits, and DOE and Laboratory requirements. These requirements address proper handling, transport, and disposal of waste and control the release of regulated contaminants and pollutants to protect workers, the public and environmental resources. Failure to comply with these requirements can result in civil and criminal penalties and result in shutdown of facility operations. A comprehensive listing of regulatory and LANL requirements for the management of wastes is documented in P409, Waste Management and P930-2, Waste Certification Program. Additionally, waste generated at LANL must comply with P930-1, LANL Waste Acceptance Criteria (WAC) requirements.

TA-55 radioactive waste management activities are planned and estimated through three Work Packages (WPs). A fourth work package is used to plan and estimate hazardous waste management activities. The work packages are funded through a combination of RTBF funding and waste recharge. The WPs maintain adequate staffing levels of qualified and authorized personnel and capabilities to perform the work scope including procurement of waste containers and operational equipment. Required support functions include QA, Document Control, Records Management, Data Collection/Interpretation/Storage/Reporting, Procurement, Training, and Fiscal Management. A summary scope of the WPs for radioactive waste management operations is provided below:

Low Level Radioactive Waste: Identify, characterize, handle, package, certify, safely and securely store, and transport low level radioactive wastes (LLW) generated (or previously generated) from activities at TA-55. LLW is managed in registered radioactive waste areas. Manage radioactive liquid waste (RLW) discharges from TA-55 to the TA-50 Rad Liquid Waste Treatment Facility (RLWTF), to include ensuring all discharges meet the RLWTF Waste Acceptance Criteria. Inspect and manage waste storage sites including Treatment, Storage, and Disposal Sites (TSDs) throughout TA-55 and ARTIC. This activity produces waste packages that meet LANL, State, and Federal criteria for handling and storage and ensure waste items/packages meet TA-54 and offsite waste acceptance criteria.

Hazardous Waste: Identify, characterize, handle, package, certify, and safely and securely store hazardous and mixed wastes generated (or previously generated) from activities at TA-55. Inspect and manage waste storage sites to include Treatment, Storage, and Disposal Sites (TSDs), Satellite Accumulation Areas (SAAs), <90 day storage areas, NM Special Waste storage areas, Universal Waste storage areas and PCB storage areas throughout TA-55. This activity produces waste packages that meet LANL, State, and Federal criteria for handling and storage and ensure waste items/packages meet TA-54 and offsite waste acceptance criteria.

Before a new activity or change to an existing activity can be performed in PF-4 it must be vetted through TA55-AP-122, TA55 New/Revised/Restarted Activity Approval Process. The intent of the Activity Approval Process is to streamline work planning and to bring certainty to schedule and cost by ensuring that new, changed, or restarted activities have been properly reviewed for all applicable facility level requirements. From a waste management perspective the Activity Approval Process ensures each activity is reviewed for its potential impact to waste management including the types and volumes of waste to be generated. As such before waste can be generated, the waste originator must work with the TA-55 Waste Management Coordinator (WMC) to plan the life cycle for the wastes generated from his/her project or programmatic operations. Waste streams with no identified path to disposal may be generated only after gaining approval based on the following conditions: programmatic need to generate the waste; characteristics and issues preventing the disposal of the waste; safe storage of the waste until disposal can be achieved; and activities and plans for achieving final disposal of the waste. The approval process is described in TA-55 Waste Management Requirements (TA-55-RD-539) and P409 Waste Management.

The TA-55 WMC works with waste originators to complete Waste Profile Forms (WPF) and Waste Disposal Requests (WDR), and compile waste characterization documentation [including acceptable knowledge (AK) documentation] for all waste streams to ensure compliance with TSDF WAC requirements. Waste Profile Forms, CWDR, and all related waste characterization documentation [e.g., Health Physics].

Radioactive Material Survey (HPRMS) Tags are submitted to the NPI-7 records manager in accordance with PMT-AP-003, Records Management and NMT7-AP-012, Waste Records Management. Acceptable knowledge is documented according to LANL guidance Acceptable Knowledge Tool 208 and NMT7-AP-020, Documenting Acceptable Knowledge for Legacy Waste Items.

LLW characterization addresses the physical, chemical, and radiological characterization of the waste. TA-55 Waste Management Requirements (TA55-RD-539) instructs waste originators on how to properly characterize their waste and document the characterization information. Although data quality objectives (DQOs) are not specifically documented for LLW characterization, the waste characterization described in the facility procedures guarantees that data of sufficient type, quality, and quantity are collected to ensure that the LLW complies with the applicable TSDF waste acceptance criteria. This satisfies the objective of establishing DQO, which is to define the most appropriate type of data to collect and to determine the most appropriate conditions from which to collect the data. When LLW is characterized sufficiently to be accepted at a TSDF, the implied DQO have been met.
The following waste management forms are used to identify the waste streams and to document their characterization:

- Waste Profile Form
- Waste Disposal Request (WDR)
- HPRMS Tag
- Radioactive Waste Box Inspection Checklist
- Waste Acceptance Form (WAF)
- Acceptable Knowledge Form

- 350 FGE SNM Limit for waste items packaged in a SWB
- 10% by weight SNM concentration limit
- 80 PECi per drum limit
- Additional limits based upon NDA equipment efficiencies.

Once packaging is complete, the drums and POCs are returned to Room 433 for a confirmation assay. Once the contents of the drums/POCs are confirmed, the drums/POCs are moved to the PF-4 elevator for transport to one of the two permitted waste storage areas. All drums/POCs are placed on wheeled dollies for movement by hand to the storage areas. Evaporator operations in Room 401 generate an Evaporator Bottoms waste stream that is solidified with cement into 55-gallon drums in Room 401. The cemented drums are pushed to Room 431 for assay and then pushed to the PF-4 basement for storage in a non-permitted storage area adjacent to the PF-4 vault. As currently configured approximately 1000 drums/POCs of solid TRU waste can be processed on a yearly basis.

Items too large to be packaged in either a drum or POC are packaged in an open area of the PF-4 basement. The large items are either packaged into a standard waste box (SWB) or in metal overpack containers until they can be transported offsite for decontamination or size reduced.

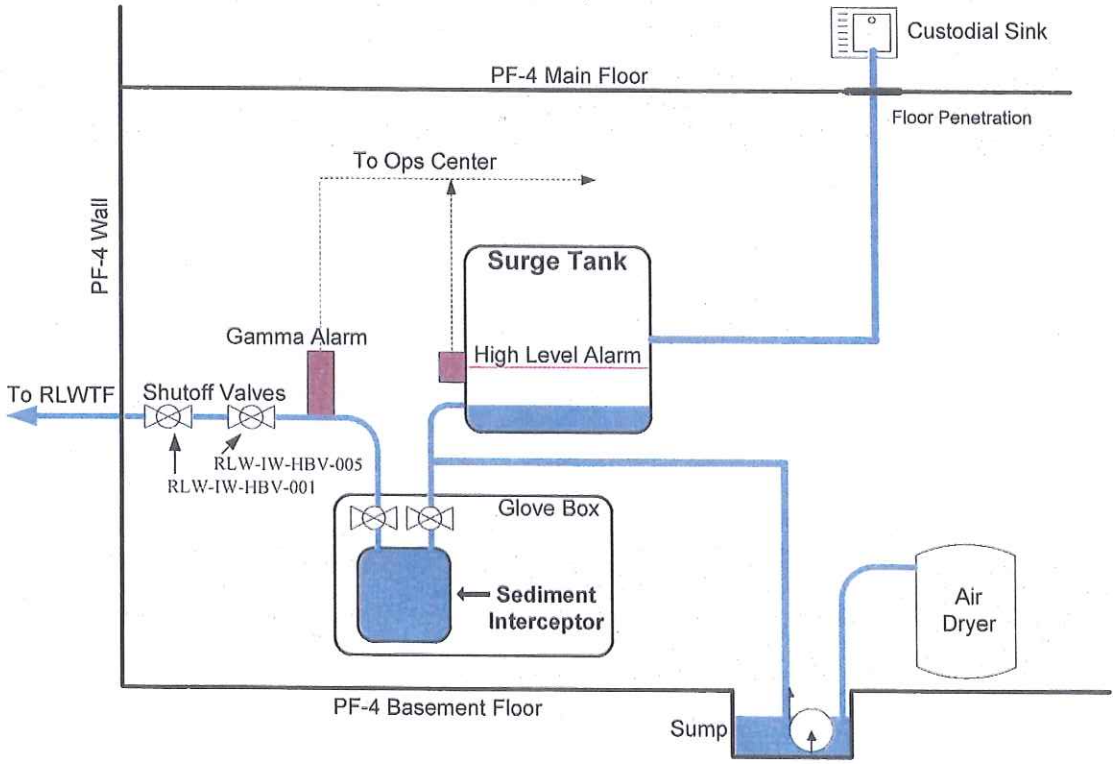
Solid TRU wastes are managed in accordance with FFS-DOP-004, Inspecting, Packaging, and Remediating Transuranic Waste for WIPP and for TA-54 Safe Storage and P930-2 Waste Certification Program. All waste areas at TA-55 have limited access due to their location in TA-55. In addition the TRU and LLW rad waste areas are further restricted by the PF-4 access controls.

Low-Level Waste (LLW) Waste Processing/Packaging

LLW is packaged in several areas of the PF-4 basement. Compactable LLW, which is primarily room trash, is stage on the southeast side of the basement in aluminum transfer carts. When enough material is accumulated, it is moved to the northeast side of the PF-4 basement for packaging into reusable 4' x 4' x 6'metal boxes. A wide corridor on the northeast side of the basement is used to package compactable and non-compactable LLW. Only four waste containers are in use at any one time to avoid congestion in the corridor. LLW operations are spread throughout the PF-4 basement with waste being moved between the north and south basements, east and west ends, for packaging, radiological assay, weighing and staging. Despite the current space limitations, approximately 20,000 cubic feet of LLW can be processed on a yearly basis.

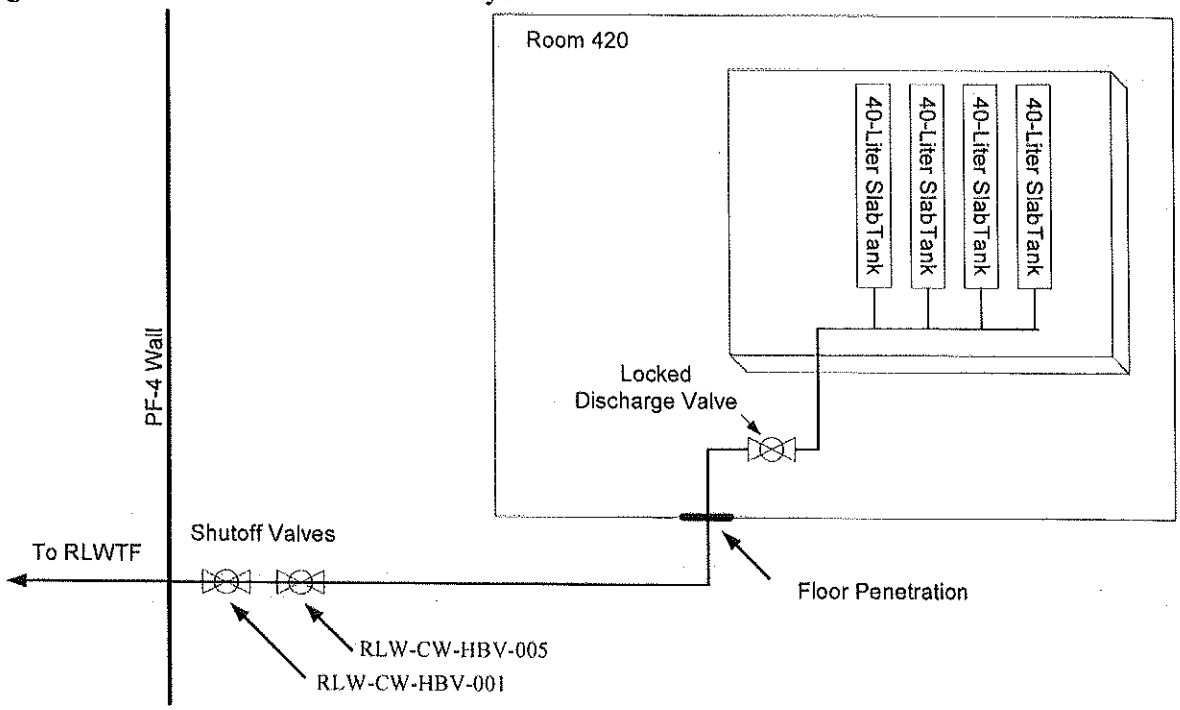
The controls placed on waste being held prior to transport or disposal depends on the type of waste. Low Level Radioactive Waste are managed in accordance with procedure FFS-DOP-014, *Low Level Radioactive, Mixed Low Level Radioactive, Nonradioactive Chemical, Hazardous and Non Hazardous Waste Management at TA-55.* Solid TRU wastes are managed in accordance with four procedures depending on the type of packaging required. FFS-DOP-004, *Visual Inspection of TRU Waste* applies to all TRU waste items being processed for disposal. FFS-DOP-011, *Packaging TRU Waste in Drums* and FFS-DOP-012, *Packaging TRU Waste in POC Drums* govern the packaging of TRU waste items in drums and Pipe Overpack Containers (POC) respectively

Figure 2: Generalized Industrial Waste Water System



Waste nitric acid is discharged from tank LA19 located in Room 401. In addition to the discharge valve on LA19, the acid waste line has a control valve near the point where the line exits the PF-4 basement. Valve RLW-AW-HBV-001 is maintained in a closed and locked status except during the actual discharge. The key to the lock on the discharge valve is controlled through the TA-55 operations center and only specific NPI-7 personnel are authorized to check out the key per a memo from the TA-55 Facility Waste Manager. A generalized schematic of the acid waste discharge system is shown in Figure 3.

Figure 4: Generalized Caustic Waste System



Liquid Waste Solidification

The nitric acid effluent from ion exchange, the filtrate generated by oxalate precipitation, wash streams and vacuum pump water are transferred to the evaporator room, Room 401 where they are concentrated in an evaporator. The evaporator reduces the volume of process-generated nitric acid/salt mixtures to minimize the volume of transuranic (TRU) waste that is sent to immobilization. After concentration, the residue is removed from the evaporator and forwarded to an immobilization unit that uses cement to solidify the liquids. The solutions are acidic and must be pH-adjusted before the addition of cement. After the pH-adjustment, the cement is added. The cement is then mixed and allowed to set. The drum may be removed from the glovebox system before or after the cement has set, but is not finally closed until the cement has set. The drum is then closed and prepared for shipment.

Particulate waste that requires immobilization may be added to the drum before the liquid waste and cement. However, in some cases, particulates that are very dense are added into the cement paste to prevent them from settling out on the bottom of the drum container. To prevent damage to the cement drum due to an accidental drop during transport, cement drums are limited to a gross weight of 852 lbs.

Transportation

Request for shipment of TRU waste from TA-55 to TA-54 are submitted in accordance with PMT3-AP-007, *PMT-3 Transportation Shipping Request (TSR) Management Process*. This Nuclear Material Management Group (NPI-3) Administrative Procedure (AP) documents the

Table 2. Estimated TA-55 Storage Capacities

Waste Type	Physical Capacity	Approximate Time to Shutdown
Liquid (Industrial) LLW	400 Gallons	1 Day
Liquid Caustic Waste	240 Liters	1 Week
Liquid Acid Waste	1200 Liters	1 Month
Solid TRU	190 Drums	3Months
Hazardous/Mixed Waste	1200 Gallons	6 Months
Solid LLW	18,046 ft^3	1 Year (DOE Order 435.1 time limit)

The waste storage areas at TA-55 and their storage capacities are shown in Table 3. The "RCRA Limit" is the volume in gallons allowed to be stored under the LANL RCRA Permit. For those areas used to store TRU waste the "TRU Storage Capacity" is that actual number of drums that can be physically placed in each location. Storage of TRU waste at TA-55 is limited to five specific locations in the PF-4 basement. These locations have the MAR capacity and are permitted RCRA storage units. Storage in a RCRA permitted unit is a requirement for most of TA-55's TRU waste because it is considered mixed waste as documented in the Acceptable Knowledge documents. The outdoor waste storage pad to the west of PF-4 has a RCRA permit (135,000 gallons) and a MAR allocation (3.6 kg Pu equivalent) but is only used for MLLW and LLW storage and is not used for TRU waste storage. The existing Authorization Basis for TA-55 does not include TRU waste storage on that pad. In addition, the TA-55 pad is not covered which could allow moisture from precipitation events to enter the filtered drums in violation of the WIPP WAC. PF-4 Room 432 is a <90-day storage area and is used for packing TRU waste items into drums. Room 432 has a 15-drum limit and is not used for processing waste and not for storage.

Table 3: Current TA-55 Waste Management Areas and Volume Limits

Waste Area	Location	Unit Type	Waste Type	AB Limit (Grams SNM)	RCRA Limit (Gallons)	TRU Storage Capacity (Drums)
B40	PF-4 Basement	TSDF	MTRU/ TRU	30,000	21,500	(double stacked) 80
B45			MTRU/ TRU		11,000	40
B05			MTRU/ TRU		3,6001	40
K13			Mixed LLW		3,400	0
B35		NA	TRU		0	30
Total PF-4				30,000	39,500	190
55-Pad	Outside	TSDF	Mixed LLW and LLW	3,600	135,000	400
Total TA-55				33,600	174,500	590

FFS-DOP-005, Radioactive Liquid Waste Discharges, controls the process for accumulating and discharging Transuranic acid and caustic liquid waste. TA55-RD-539 details the allowable

document control process that is implemented. This process ensures that only current procedures are in use and that all applicable personnel have access to the procedures.

All records generated at TA-55 are managed according to Records Management (TA55-AP-062). The management of records resulting from implementing the QA program at TA-55 is described in Nonconformance Reporting (P330-6). Records resulting from the training program at TA-55 are managed according to P 781-1, Conduct of Training Manual. Records resulting from waste management operations are identified in each procedure and are managed according to Waste Records Management (FFS-AP-012). All records resulting from the implementation of this program are also managed according to FFS-AP-012.

Training and Qualification

The Worker Qualification Authorization System (WQAS) is used to ensure that all TA-55 workers are properly trained and qulaified to perform their work assignments in a safe and secure manner. The TA-55 FOD ensures that all workers are current on their facility-specific training requirements, and sends notices out when personnel need to update their facility-specific training or take additional training. TA55-AP-059, TA55 Facility-Specific Training, describes the facility-specific training program required to ensure that all personnel are trained to perform their work activities at TA-55. Facility-specific training programs ensure that all personnel are trained to perform work in a safe and secure manner. Before progressing to group-specific and activity-level training for their position and being allowed to independently perform work, personnel receive facility-specific general safety training commensurate with their work assignments. Topics include facility orientation, general operating information, general safety, hazards awareness, emergency response, authorization basis, radiation worker training, waste management and waste minimization, environmental compliance, quality management, and safeguards and security training.

Training to process-specific procedures ensures waste produced from each process is consistent with the WPF and AK for that process. The management of each operating group ensures the training is current for all workers before they perform the assigned activity. The specific training required for each worker is identified in his or her training plan. P 781-1, the Conduct of Training Manual , provides operating groups with guidance to ensure a graded approach to the development, implementation, and administration of on-the-job training. The Conduct of Training Manual also provides an overview of and establishes mechanisms for the identification and development of training, qualification, and evaluation. Qualification by mentoring is an alternative training activity for new employees or employees assigned a new task or set of tasks.

NPI Division procedures and documents identify the specific training, skills, knowledge, or abilities required to perform the activity described in the procedure. P 781-1, Conduct of Training Manual provides ADPSM Division groups with the requirements, provisions, and guidance to develop and implement a graded and systematic approach to training qualification and certification programs as specified in the appropriate and regulations. The Conduct of Training Manual also describes the training analysis process used to examine the complexity of work, consequence of improper task performance, and potential risk in determining appropriate

The overall goal of the P2/Waste Minimization Program is to systematically integrate P2/waste minimization considerations into all planning and decision-making. The following are key elements of the P2/Waste Minimization Program:
Identifying P2 or waste minimization opportunities.

- Eliminating or reducing wastes, effluents, and emissions at the source where possible.
- Ensuring that environmental effluents, emissions, and wastes are as low as reasonably achievable.
- Achieving or exceeding LANL/DOE waste minimization, P2, recycling, and affirmative procurement goals.
- Conserving natural resources and energy.
- Reusing and recycling materials.
- Procuring environmentally preferable products (also known as affirmative procurement).
- Complying with applicable requirements.
- Reducing waste management costs.
- Identifying funding mechanisms for evaluation and implementation of P2/waste minimization opportunities.
- Timely implementation of P2/waste minimization projects.
- Improving employee and community outreach and awareness of P2 goals, plans, and progress.

FOD and tenant division managers guide the organization by promoting pollution prevention, waste minimization, and resource conservation and recognizing and rewarding innovation and efficiency in productivity through the LANL P2 Awards, LAAP Awards, Spot Awards, and Distinguished Performance Awards. TA-55 residents received 45 Pollution Prevention Awards in the 9 years between 2001 and 2009, five Pollution Prevention Awards in 2010 and Six Honorable Mentions and one P2 Award in 2011.