



**DEPARTMENT OF ENERGY**  
National Nuclear Security Administration  
Los Alamos Site Office  
Los Alamos, New Mexico 87544



**OCT 15 2012**

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. John Kieling, Chief  
New Mexico Environment Department  
Hazardous Waste Bureau  
2905 Rodeo Park Drive East, Building 1  
Santa Fe, NM 87505-6303

Dear Mr. Kieling:

Subject: Temporary Authorization Request for Waste Repackaging Operations at Technical Area (TA) 55, Los Alamos National Laboratory (LANL), EPA ID NM 0890010515-1

The purpose of this letter is to request approval of a temporary authorization by the New Mexico Department of Environment-Hazardous Waste Bureau (NMED-HWB) submitted by the U.S. Department of Energy/National Nuclear Security Agency, Los Alamos National Security, LLC (LANS) (collectively DOE/LANS) under Hazardous Waste Facility Permit NM0890010515-1. As we discussed during meetings on June 21 and August 20, 2012, this request will support waste repackaging processing at Technical Area-55 (TA-55) to allow a one-time, short-term campaign to work-off a backlog of nine drums of Site Treatment Plan (STP) Mixed Transuranic (MTRU) waste.

This temporary authorization request will support the processing (sorting, segregation, and repackaging) of nine MTRU waste drums as necessary to meet U.S. Department of Transportation (DOT) and Waste Isolation Pilot Plant (WIPP) Waste Acceptance Criteria (WAC) to enable shipment at WIPP. TA-55 does not have a permitted unit with the necessary safety authorizations or capabilities to perform the required processing; nor has it been possible to transport and process the waste at another facility within Los Alamos National Laboratory (LANL) or elsewhere. DOE/LANS has identified a one-time opportunity at TA-55 - between November 2102 and March 2013 - to process these MTRU wastes to meet DOT and WIPP- WAC criteria. Approval of this request will support efforts to reduce STP waste inventory, and enable shipment of these wastes to WIPP. If DOE/LANS are unable to utilize this unique opportunity, there will be no alternative but to continue to safely store these MTRU wastes at TA-55 as STP inventory under the Federal Facility Compliance Order.

Enclosure 1 contains the temporary authorization request, along with a detailed explanation and supporting documentation. DOE/LANS believe that the request fully meets all applicable requirements of 40 CFR § 270.42(e)(2)(i)(A), and is consistent with Environmental Protection Agency (EPA) guidance which specifies that temporary authorizations are appropriate to "address a one-time or short-term activity at a facility for which the full permit modification process is inappropriate." See 53 *Fed. Reg.* 37912, 37919 (Sept. 28, 1988). Enclosure 1 was modeled according to the format and content requirements for a Class 2 permit modification request. Please note that DOE/LANS propose to *complete* processing of the MTRU waste drums well within the 180-day time frame. DOE/LANS have made every effort to ensure that the

information provided is appropriate and sufficient for an NMED-HWB decision approving the temporary authorization under 40 CFR §270.42(e)(3).

Enclosure 2 provides a draft public notice. In compliance with 40 CFR §270.42(e), within seven days of submitting this request, DOE/LANS will forward the enclosed public notice to all persons on the facility mailing list and local and state agencies.

Also enclosed with this request is a manila envelope containing Unclassified Controlled Nuclear Information (UCNI). The information, while not classified, is sensitive and is not to be publicly distributed for review with the rest of the temporary authorization request. When separated from enclosures, this transmittal document does not contain UCNI and can be distributed publicly. The manila envelope is labeled UCNI and its contents consist of LA-CP 12-01191. It is now the responsibility of the NMED-HWB to maintain control of that information and keep it secured during times when it is not being used.

For the reasons explained above, DOE/LANS respectfully request your expedited review and are hopeful that we may receive approval to proceed with this project. We appreciate your consideration and do not hesitate to contact us at your earliest opportunity with questions, so we can begin this work. Contact Gene Turner of my staff at (505) 667-5794 or Mark Haagenstad, LANS, at (505) 665-2014.



Kevin W. Smith  
Manager

Enclosures:

1. Temporary Authorization Request - Technical Area 55 Site Treatment Plan Transuranic Waste Work-Off
2. Draft public notice
3. LA-CP 12-01191 (Unclassified Controlled Nuclear Information)

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# **ENCLOSURE 1**

## **Temporary Authorization Request Technical Area 55 Site Treatment Plan Transuranic Waste Work-Off**

LAUR-12-25052

Date: **OCT 15 2012**

**Temporary Authorization Request  
Technical Area 55 Site Treatment Plan Transuranic  
Waste Work-Off**

**LA-UR-12-25052**

October 2012

Los Alamos, New Mexico 87545

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## Table of Contents

1.0	INTRODUCTION .....	6
1.1	Request for Temporary Authorization .....	6
1.2	Proposed Activities .....	7
1.3	Need for a Temporary Authorization .....	7
1.4	Compliance with 40 CFR Part 264 standards .....	8
1.5	Temporary Authorization Objectives .....	8
2.0	DESCRIPTION OF ACTIVITIES TO BE CONDUCTED AND COMPLIANCE WITH PART 264 STANDARDS .....	14
2.1	TA-55 Description.....	14
2.1.1	Location of Temporary Authorization Activities .....	14
2.2	Schedule .....	15
2.3	Description of Wastes to be Managed.....	15
2.4	Storage Activities in Room 432 .....	15
2.4.1	Storage Configuration and Aisle Space.....	15
2.4.2	Condition of Containers .....	16
2.4.3	Compatibility of Waste with Containers .....	16
2.4.4	Management of Containers.....	16
2.4.5	Labeling .....	16
2.4.6	Transportation of Containers .....	16
2.5	Proposed Activities .....	16
2.5.1	Glove bag Containment System .....	17
2.5.2	Sorting, Segregation, and Repackaging Operations .....	17
2.6	Authorized Wastes and Waste Acceptance .....	18
2.6.1	Visual Examination for WIPP Certification.....	18
2.7	Security and Access Control in Room 432 .....	18
2.8	Hazards Prevention (procedures, structures, and equipment) in Room 432 .....	19
2.8.1	Waste Handling .....	19
2.8.2	Preventing Hazards in Unloading/Loading .....	19
2.8.3	Mitigating Effects of Power Outages .....	19
2.8.4	Preventing Undue Exposure .....	19
2.9	Preparedness and Prevention in Room 432 .....	19
2.9.1	Required Equipment.....	20
2.9.2	Testing and Maintenance of Equipment .....	20
2.9.3	Access to Communications or Alarm Systems.....	20
2.9.4	Space Requirements .....	20
2.10	Contingency Plan.....	20
2.11	Containment Systems .....	21
2.12	Ignitable, Reactive, and Incompatible Wastes.....	21
2.13	Inspections.....	21
2.14	Recordkeeping Requirements.....	21



2.15	Reporting .....	22
3.0	TRAINING REQUIREMENTS .....	24
4.0	CORRECTIVE ACTION .....	24
5.0	DEMOLITION PLAN .....	24
5.1	Introduction .....	24
5.2	Estimate Of Maximum Waste Processed .....	24
5.3	General Demobilization Information .....	24
5.3.1	Performance Standard .....	24
5.3.2	Schedule .....	24
5.3.3	Amendment of the Plan .....	24
5.4	Demobilization Procedures .....	24
5.4.1	Records Review And Structural Assessment .....	24
5.4.2	Decontamination and/or Removal of Structures and Equipment .....	25
5.4.3	Equipment Used During Decontamination Activities .....	25
5.5	Sampling and Analysis Plan.....	25
5.5.1	Decontamination Verification Sampling Activities.....	25
5.5.2	Sample Collection Procedures.....	25
5.5.3	Sample Management Procedures .....	26
5.5.4	Packaging and Transportation of Samples .....	27
5.5.5	Sample Analysis Requirements.....	28
5.6	Analytical Laboratory Requirements .....	28
5.6.1	Quality Assurance/Quality Control .....	28
5.6.2	Field Quality Control.....	28
5.6.3	Analytical Laboratory Quality Control Samples .....	28
5.7	Data Reduction, Verification, Validation, and Reporting .....	29
5.7.1	Data Reporting Requirements .....	29
5.8	Waste Management .....	29
5.9	Demobilization Report .....	29
6.0	REFERENCES .....	33
7.0	CERTIFICATION .....	34

#### List of Tables

Table 1-1	Crosswalk of 40 CFR § 270.42(e) with Temporary Authorization Request
Table 1-2	Compliance with 40 CFR Part 264 Standards - Temporary Authorization Crosswalk
Table 1-3	Site Treatment Plan Wastes to be Repackaged
Table 2-1	Temporary Authorization Project Schedule
Table 2-2	TA-55-4-432 Emergency Equipment
Table 5-1	Hazardous Waste Constituents of Concern: Temporary Authorization Wastes
Table 5-2	Summary of Analytical Methods
Table 5-3	Sample Containers, Preservation Techniques, and Holding Times
Table 5-4	Quality Control Sample Types, Applicable Analyses, Frequency, and Acceptance Criteria

## List of Figures

- Figure 2-1 TA-55, Building 4, Project Location (adapted from Figure 39 in Permit)  
Figure 2-2 TA-55-4, Room 432 (UCNI – provided under separate cover)  
Figure 2-3 Glove Bag Operational Schematic

## 1.0 INTRODUCTION

*Hazardous Waste Facility Permit NM080010515* (hereinafter referred to as “the Permit”) was issued by the New Mexico Environment Department to the U.S. Department of Energy (DOE) and the Los Alamos National Security, LLC (LANS) (collectively “DOE/LANS” or “the Permittees”). As discussed below, the Permittees are requesting approval from the New Mexico Environment Department, Hazardous Waste Bureau (NMED-HWB) for a temporary authorization to approve a short-term repackaging campaign for mixed transuranic waste (MTRU) stored at LANL destined for disposal at the Waste Isolation Pilot Plant (WIPP).

For several years, a number of MTRU waste items have been safely stored at Technical Area (TA)-55 to meet the requirements of the LANL’s Permit and the Federal Facility Compliance Order, Site Treatment Plan (STP). These items are stored in compliance with the Permit and the STP. The waste packages either do not meet Department of Transportation (DOT) shipping requirements or the Waste Isolation Pilot Plant Waste Acceptance Criteria (WIPP-WAC); so they cannot be shipped off-site for disposition. The waste packages require processing in order to meet the WIPP-WAC and to be transported to WIPP. For purposes of this request, **“processing” is defined as sorting, segregating, and repackaging (SSR) only**. No on- or off-site processing options have been available to date, so DOE/LANS has had no alternative but to continue storing these items at LANL and identify them in the STP inventory.

DOE/LANS has recently identified a one-time limited opportunity at TA-55 to process the majority of its STP backlog, i.e., nine (9) drums of STP MTRU waste, during a limited time window - between November 2012 and March 2013. This will enable their shipment to WIPP.

### 1.1 Request for Temporary Authorization

The Permittees are requesting NMED-HWB approval of a temporary authorization pursuant to 20.4.1.900 NMAC, incorporating 40 CFR § 270.42(e)(2)(i)(A), to conduct a short-term waste repackaging campaign at TA-55. Beginning in November of 2012, DOE/LANS will have a limited window of opportunity to access the space (Building PF-4 (TA-55-4), Room 432), manpower, and safety features needed for the required processing. This has not been possible previously because: (1) TA-55 does not have a permitted unit with the necessary safety authorizations or capabilities to perform the required procedures; and (2) the waste could not be transported to another facility within LANL or elsewhere for the required processing, because the containers, as-stored, do not meet internal TA-55 and/or DOT requirements.

NMED-HWB’s temporary authorization rules are specified at 40 CFR §270.42(e) and require Permittees to submit a request that (1) describes the activities to be conducted; (2) explains why the temporary authorization is necessary; and (3) provides sufficient information to ensure the activity’s compliance with 40 CFR Part 264 standards. Further, within seven days of submitting the formal request, the Permittees must notify all persons on the facility mailing list and local and State agencies about the temporary authorization request.

As described below, this temporary authorization request fully meets these criteria. Table 1-1 provides a crosswalk that identifies where each of the temporary authorization request requirements specified in 40 CFR §270.42(e) is addressed in this document.

## 1.2 Proposed Activities

The STP-listed waste at TA-55 to be processed under the temporary authorization simply requires sorting, segregation and repackaging to meet the WIPP-WAC, either because the waste containers exceed the Special Nuclear Material limit (150 Pu-239 gram equivalents), or the current packaging configuration does not meet the WIPP-WAC or DOT requirements. The required processing of the STP-MTRU waste varies by waste item.

- The total volume of TA-55 STP waste to be repackaged is approximately 1.9 cubic meters, currently packaged in nine 55-gallon drums.
- This is an inventory of STP-listed waste that has been maintained in permitted RCRA storage for several years; therefore, this project will not increase LANL's RCRA-permitted storage capacity.
- The repackaged waste and containers must be visually examined by a certified examiner in order to be certified to be shipped to WIPP.
- None of the containers to be processed contain free liquids.
- In this campaign, TA-55 will process only those waste items that can be managed within the approved safety basis for the facility. If items are identified that cannot be safely processed during this campaign, they will be returned to RCRA-permitted storage.

## 1.3 Need for a Temporary Authorization

The STP-MTRU wastes to be repackaged either exceed the Special Nuclear Material limit or are not in DOT approved containers, and cannot be shipped for processing or disposal outside of TA-55. Nor is there a viable on-site option, as the waste cannot be transported as packaged and the seven RCRA-permitted storage units at TA-55 do not have the necessary safety features for sorting and segregation, and repackaging of MTRU waste.

The requested temporary authorization will allow these activities to be performed in an appropriate location so that these STP-MTRU wastes can be safely processed and shipped to WIPP. Resources will become available during a limited time window - between November 2012 and March 2013 - to conduct the required processing activities at TA-55. This includes the space (TA-55-4, Room 432), manpower, and safety features required for processing these particular wastes, including the High Efficiency Particulate Air (HEPA) filtration system, containment, and safety basis authorizations.

DOE/LANS intend to complete the project within the 180 days allowed under a temporary authorization. If the project does not begin by November 30, 2012, this opportunity will no longer be available due to other projects scheduled in these facilities (see below at 2.2). The time required for DOE/LANS to complete a formal permit modification process in order to conduct this operation would cause the opportunity to process these STP-MTRU wastes to be lost for several years. As a result, these STP-MTRU wastes would have to remain in storage at TA-55.

Due to the limited, one-time and short-term nature of this waste processing campaign, along with the relatively simple nature of the planned waste management activities, this project is an ideal candidate to be approved under the temporary authorization process. EPA has clarified that a temporary authorization is appropriate to address a "one-time or short-term activity for which the full permit modification process is inappropriate." [see U.S. EPA, *Permit Modifications for Hazardous Waste Facilities*, 53 Fed. Reg. 37912, 37919 (Sept. 28, 1988)].



#### **1.4 Compliance with 40 CFR Part 264 standards**

The Permittees have ample information demonstrating that this temporary authorization request will meet the standards under 40 CFR Part 264. As explained in detail below, DOE/LANS will meet these requirements through the renewed Permit and specific information provided in this document. The renewed Permit contains many of the conditions addressing the requirements of the New Mexico Hazardous Waste Act (HWA) and 40 CFR Part 264 that are common to all LANL hazardous waste management units. Table 1-2 provides a list of these regulatory references and the corresponding location for the information addressed in this request. Many of the generally applicable 40 CFR Part 264 standards will be met by managing this project according to all applicable requirements contained in the renewed Permit, including Part 1 – General Permit Conditions; Part 2 – General Facility Conditions; Part 3 – Storage in Containers; Attachment C – Waste Analysis Plan; Attachment D – Contingency Plan; Attachment E – Inspection Plan; and Attachment F – Personnel Training Plan. Specifics of how each provision will be met are discussed further below.

#### **1.5 Temporary Authorization Objectives**

The temporary authorization must achieve at least one of the following objectives specified in 40 CFR § 270.42(e)(3)(ii):

- A. To facilitate timely implementation of closure or corrective action activities;
- B. To allow treatment or storage in tanks or containers, or in containment buildings in accordance with 40 CFR Part 268;
- C. To prevent disruption of ongoing waste management activities;
- D. To enable the permittees to respond to sudden changes in the types or quantities of the wastes managed under the facility permit; or
- E. To facilitate other changes to protect human health and the environment.

This temporary authorization request will specifically achieve the objective specified in 40 CFR §270.42(e)(3)(ii)(B) above, by allowing processing of these STP wastes in tanks or containers, or in containment buildings in accordance with 40 CFR Part 268. Completion of these SSR activities will also support other temporary authorization objectives by minimizing disruption of ongoing waste management activities at TA-55 [40 CFR §270.42(e)(3)(ii)(C)], and by facilitating protection of human health and the environment via the removal of MTRU waste from TA-55 storage [40 CFR §270.42(e)(3)(ii)(E)].

**Table 1-1 Crosswalk of 40 CFR §270.42(e) with Temporary Authorization Request**

Regulatory Citation (40CFR)	Description of Requirement	Document Location/Comment
<b>Sufficiency Criteria</b>		
40 CFR 270.42(e)(2)(ii)	Request must include:	
40 CFR 270.42(e)(2)(ii)(A)	Activities to be conducted	1.2, 2.0 through 2.15
40 CFR 270.42(e)(2)(ii)(B)	Why it is necessary	1.3
40 CFR 270.42(e)(2)(ii)(C)	Compliance with 40 CFR Part 264	1.4, Table 1-2
40 CFR 270.42(e)(2)(iii)	Send a notice to all persons on the facility mailing list	Will be sent within 7 days of temporary authorization request
<b>Approval Criteria</b>		
40 CFR 270.42(e)(3)	To issue the temporary authorization, NMED must find:	
40 CFR 270.42(e)(3)(i)	Activities are compliant with 40 CFR Part 264	1.4, Table 1-2
40 CFR 270.42(e)(3)(ii)	Temporary authorization is necessary to achieve project objectives before action likely on a modification request	1.3 – It is likely that a modification could not be approved before the scheduling opportunity expires.
40 CFR 270.42(e)(3)(ii)(B)	Allows treatment or storage in tanks or containers, or in containment buildings in accordance with 40 CFR Part 268	1.2, 2.0 through 2.15 – NOTE: no treatment will be performed; only sorting, segregating, repackaging and short-term storage.
40 CFR 270.42(e)(3)(ii)(C)	Prevent disruption of ongoing waste management activities	Preparation of waste for shipment to WIPP will free up space in permitted units and facilitate facility operations.
40 CFR 270.42(e)(3)(ii)(E)	Facilitate other changes to protect human health and the environment	Facilitates shipment of TRU waste to WIPP and reduces potential exposures at the facility.

**Table 1-2 Compliance with Permit and 40 CFR Part 264 Requirements**

<b>Permit/ Regulatory Citation(40 CFR)</b>	<b>Description of Requirement</b>	<b>Compliance Approach</b>
§264.13(b)	Development and implementation of waste analysis plan	The project will comply with Permit Section 2.4 and Attachment C.
§264.14	Security	The project will comply with Permit Section 2.5. TA-55 is a secure facility and meets all security requirements of 40 CFR § 264.14 and the Permit.
§264.15(b)	General inspection requirements	The project will comply with Permit Section 2.6 and Attachment E. An inspection program for the permitted units at TA-55 is in place and in compliance with the operating schedule, recordkeeping, and response action commitments in Attachment E ( <i>Inspection Plan</i> ) and 40 CFR § 264.15(b)(i). This program will be extended to Room 432 during the duration of the temporary authorization.
§264.174	Container inspections	The project will comply with Permit Sections 2.6 and 3, and Attachment E.
§ 264.15(c),	Inspections, Preparedness and prevention	Any deterioration or malfunction of equipment or structures discovered during an inspection which may lead to an environmental or human health hazard shall be mitigated within 24 hours of discovery of the problem. The Permittees shall immediately implement remedial action where a hazard is imminent or has already occurred (see Permit Section 2.10)
§ 264.16	Personnel Training	TA-55 personnel have successfully completed all training programs in compliance with the training requirements in Attachment F ( <i>Personnel Training Plan</i> ) of the Permit.
§264.17	General requirements for ignitable, reactive, or incompatible wastes	The project will comply with Permit Section 2.8. All wastes to be dispositioned under the temporary authorization will be managed in compliance with the requirements of

<b>Permit/ Regulatory Citation(40 CFR)</b>	<b>Description of Requirement</b>	<b>Compliance Approach</b>
		40 CFR §§ 264.17, 264.176, 264.177, and 264.198.
§264, Subpart C	Preparedness and prevention	The project will comply with Permit Section 2.10 and Attachment E. For the duration of the temporary authorization, Room 432 will be maintained and operated in a manner that minimizes the possibility of fire, explosion or any unplanned sudden or non-sudden release of hazardous waste or hazardous constituent that could threaten human health or the environment (40 CFR § 264.31). Additional equipment will be added to Room 432 as necessary for compliance with Permit Section 2.10.1
§ 264.32(b),	Internal communication and alarm system devices, fire control equipment, spill control equipment, and decontamination equipment	Internal communication and alarm system devices, fire control equipment, spill control equipment, and decontamination equipment listed in the tables in Attachment A ( <i>Technical Area Unit Descriptions</i> ) and Attachment D ( <i>Contingency Plan</i> ) of the Permit will be maintained in compliance with 40 CFR § 264.32(b)(2).
§264, Subpart D	Contingency plan and emergency procedures	The project will comply with Permit Section 2.11 and Attachment D.
§ 264.51(b),	Contingency Plan	TA-55 will immediately implement Attachment D ( <i>Contingency Plan</i> ) if there is an incident (such as a fire, an explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous constituents) unit that threatens human health or the environment
§§ 264.71, 264.72, and 264.76.	Recordkeeping and reporting requirements	TA-55 will maintain operating records, and comply with the recordkeeping and reporting requirements associated with manifests, in accordance with 40 CFR §§ 264.71, 264.72, 264.76 and Permit Sections 1.9 and 2.12.
§264, Subpart I	Use and Management of Containers	Containers of hazardous waste will be



Permit/ Regulatory Citation(40 CFR)	Description of Requirement	Compliance Approach
		stored and managed in accordance with 40 CFR Part 264, Subpart I, 40 CFR § 264.173, and Permit Section 3.. All containers used for repackaging of hazardous wastes during the temporary authorization will be in good condition (e.g., no severe rusting or apparent structural defects) in accordance with 40 CFR § 264.171, and LANL will only use containers that comply with 40 CFR Part 264 Subpart I ( <i>Use and Management of Containers</i> ) for storage of hazardous waste. Only containers made of, or lined with, materials that are compatible with and will not react with the hazardous waste to be sorted, treated and/or repackaged will be used, so that the ability of the container to contain the waste is not impaired (40 CFR § 264.172).
§264.175	Secondary containment	No free liquids are planned to be processed during this activity. However, if encountered, secondary containment will be used to store wastes which contain free liquids in compliance with 40 CFR § 264.175 and Permit Section 3.
§264 Subpart CC	Air pollutant emissions	40 CFR Part 264 Subpart CC requirements do not apply to MTRU or mixed low-level waste.
§264.112	Amendment of closure plan	The project will comply with Permit Section 9 and Attachment G, to the extent applicable [see below].
§264.178	Closure/containers	The project will comply with Permit Section 9 and Permit Attachment G, to the extent applicable. The demobilization plan in Section 5.0 this request presents the procedures for removal and decommissioning of the glove bag based on DOE radiation protection requirements, peer-reviewed techniques, and industry-standard protocols. This approach will allow the room to be returned to other TA-55

Permit/ Regulatory Citation(40 CFR)	Description of Requirement	Compliance Approach
		operational uses (including housing a <90 day RCRA area) at the end of the processing campaign, while ensuring compliance with applicable closure requirements in 40 CFR §§ 264.110 through 264.116, and §264.178.
§264.178	Closure/containers (cont.)	<p>The glove bag to be used for treating and repackaging wastes and related equipment will be containerized and disposed in accordance with 40 CFR § 264.114 and DOE guidance for proper decommissioning of a radiologically-contaminated glove bag for disposal as a non-surface-contaminated radioactive waste..</p> <p>A report will be submitted to the Department no later than 60 days after completion of authorized STP waste work-off, in accordance with 40 CFR § 264.115.</p>

Table 1-3 TA-55 Site Treatment Plan Wastes to be Processed

Treatability Group	Waste Item Description	EPA codes	Approx. Volume (gal.)	Approx. Volume (cu. meters)
Combined Combustible and Noncombustible (solids)	Heterogeneous debris, Contaminated plastics, Organic/ inorganic debris	D004-D011, D018, D019, D021, D022, D035, D038, D039, D040, F001, F002, F003 , F005	495	1.87

## 2.0 DESCRIPTION OF ACTIVITIES TO BE CONDUCTED AND COMPLIANCE WITH PART 264 STANDARDS

### 2.1 TA-55 Description

TA-55 is located in the north central portion of Los Alamos National Laboratory on a mesa between a branch of Mortandad Canyon on the north and Two Mile Canyon on the south (see Figure 38 in Permit Attachment N). TA-55 is a plutonium processing facility, which began operating in 1978.

Hazardous and mixed waste container storage at TA-55 currently is conducted at seven permitted units. TA-55-4 has five permitted units, B40, B05, K13, B45, and the Vault, located in the basement of the building. Two other permitted units, the Container Storage Pad and TA-55-185, are located to the west and southwest of TA-55-4. The B05, B45, and TA-55-185 permitted units are used only to store containers with non-liquid-containing waste (i.e., solid form). In the event of a water leak from facility systems, the TA-55-4 basement has sumps to contain the liquid.

#### 2.1.1 Location of Temporary Authorization Activities

All temporary authorization activities will take place within the TA-55 Plutonium Facility (PF-4 or TA-55-4), in Room 432. This room is shown on Figures 2-1 and 2-2 (note: Figure 2-2 is provided under separate cover). It is approximately 35 feet long and 25 feet wide. The maximum storage capacity within the room will be 220 gal, the equivalent of approximately four 55-gal drums. In TA-55-4-432, the MTRU waste will be visually examined, sorted, segregated, repackaged, relabeled, and sealed in 55-gallon waste containers. Only DOT-certified 55-gal drums will be used. Waste documentation will be captured on two electronic systems, the Waste Compliance and Tracking System (WCATS) and Los Alamos Material Control and Accountability System (LANMAS).

As discussed in Section 2.9, safety equipment will include continuous air and fixed head radiation monitors, ventilation alarm(s), fire alarm, telephone, and public address system, as currently in place at TA-55, according to Permit requirements. Waste items will be processed within a portable confinement structure, called a glove bag, to mitigate the potential hazards of specific wastes or operations (see Section 2.5.1). The type and degree of risk, and the short duration of the proposed task, do not warrant installation of a hard-sided confinement structure such as a glovebox.

## **2.2 Schedule**

As shown in Table 2-1, this short-term project is expected to take approximately three months to complete. At this time, our understanding is that the project must be completed, and Room 432 returned to normal operations, by March 2013. This opportunity will no longer be available after that time, due to other projects scheduled for Room 432. Therefore, DOE/LANS would like to begin glove-bag setup, complete any specialized training and operational readiness reviews, and begin dry runs of the operations in November 2012, in order to use its window of opportunity effectively.

## **2.3 Description of Wastes to be Managed**

The total volume of TA-55 STP waste to be managed is approximately 1.9 cubic meters, which is currently packaged in nine 55-gallon drums. This is an inventory of already-existing STP-listed waste that has been maintained in permitted RCRA storage for several years; therefore, this project will not increase LANL's RCRA-permitted storage capacity. These are contact-handled TRU wastes, as defined in the LANL WAC, Attachment 2 (LANL, 2010). As described in Table 1-3, they include both combustible and heterogeneous debris. None of the wastes to be processed contain free liquids.

- Combustible debris includes: greater than 50% by volume combustible decontamination waste, cellulose, plastics, rubber, and/or other combustibles; including trace amounts of organics (oils and solvents not in free liquid form).
- Heterogeneous debris includes: greater than 50% by volume noncombustible waste, metal scrap, glass, metal waste, metal crucibles, rubber, graphite waste, oxide, slag, and porcelain, and/or other noncombustible waste.

Only those STP waste items that can be managed within the approved safety basis for the facility will undergo sorting, segregation and repackaging. If items are identified that cannot be safely processed during this campaign, they will be returned to RCRA-permitted storage. After completion of SSR activities, the waste that has undergone SSR and WIPP characterization will be returned to RCRA-permitted storage and managed as MTRU waste. The empty 55 gallon containers will be managed as RCRA-empty (per 40 CFR §261.7) and disposed as appropriate according to applicable Permit requirements and LANL waste management procedures.

There may also be small quantities of low-level or nonradioactive waste generated from SSR operations (e.g., PPE, packaging materials, etc.). All wastes will be managed according to applicable Permit requirements and LANL procedures.

## **2.4 Storage Activities in Room 432**

Waste containers to be processed occasionally may have to be stored in Room 432 for more than 24 hours, in order to complete SSR activities before being returned to a permitted unit. All short-term storage in Room 432 will be in compliance with the conditions of Parts 2 and 3 of the Permit. This short-term storage in Room 432 will not increase the storage capacity of the LANL facility, as all the wastes to undergo SSR are currently stored in permitted units at TA-55-4.

### **2.4.1 Storage Configuration and Aisle Space**

The Permittees will meet all storage configuration and aisle spacing requirements as set forth in Permit Section 3.5.1.



#### **2.4.2 Condition of Containers**

The Permittees shall ensure that all containers used to store hazardous wastes for this project are in good condition (e.g., no severe rusting or apparent structural defects) in accordance with Permit Section 3.2 and 40 CFR § 264.171. If a container is not in good condition or begins to leak, the Permittees shall transfer the waste from such a container into a container that is in good condition within 24 hours of discovery of the problem. All containers used for repackaging will meet all Department of Transportation (DOT) specifications under 49 CFR § 178 and requirements of the WIPP-WAC. They will be new, DOT-certified containers appropriate for their contents.

#### **2.4.3 Compatibility of Waste with Containers**

The Permittees shall use containers made of, or lined with, materials that are compatible with and will not react with the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired, in accordance with Permit Section 3.4 and 40 CFR § 264.172.

#### **2.4.4 Management of Containers**

During storage and processing, containers will be managed to meet the requirements of Permit Section 3.5. Empty outer parent containers will be monitored by a radiological control technician (RCT), and managed according to Permit and LANL requirements.

#### **2.4.5 Labeling**

The Permittees shall ensure that all containers storing hazardous or mixed waste meet the labeling requirements set forth in Permit Section 3.6.

#### **2.4.6 Transportation of Containers**

Containers will be transported from their current location in a permitted unit at TA-55 to Room 432 for SSR processing. Repackaged waste and empty containers will be returned to a permitted unit at TA-55 for storage, until they can be shipped to WIPP or other disposal facility as appropriate.

### **2.5 Proposed Activities**

Each container of STP-MTRU waste will be brought to Room 432 from the RCRA-permitted storage unit for repackaging. The contents of each container will be sorted, segregated, and repackaged according to their composition, characteristics, compatibility, reactivity, and compliance with the WIPP-WAC.

All SSR activities will be conducted in a commercially available portable glove bag (described in Section 2.5.1). Depending on the specific parent container and its waste items, one or more of the following activities may be performed:

- volume/size reduction;
- repackaging;
- waste segregation;
- waste consolidation;
- prohibited item removal;
- transfer of waste from one container to another;
- visual inspection;

- lid replacement; and
- decontamination, if necessary.

No hazardous waste treatment will be performed as part of the temporary authorization activities in Room 432. The repackaged wastes will be returned to a permitted unit for interim storage until they are shipped to the appropriate waste disposal facility. Empty outer parent containers will be monitored by a radiological control technician and managed according to LANL waste management requirements.

### **2.5.1 Glove bag Containment System**

A glove bag is a commercially available, portable, flexible containment structure used to establish an enclosure around a waste item, allowing personnel to work in a totally isolated and controlled environment. Workers can accomplish repairs or manipulations via gloved sleeves without directly contacting the waste or its environment. Glove bags are used in countless industrial applications and at various sites throughout the DOE Complex (including LANL facilities) as an effective and proven method of contamination control for many moderate- and high-risk tasks, where there is a risk of contamination spreading.

By conducting all planned SSR activities within the glove bag system (Figure 2-3), TA-55 personnel will keep the drums' contents isolated from the Room 432 environment as the items are being sorted, segregated, and repackaged into appropriate containers. This will allow them to conduct the SSR operations in a manner similar to ongoing operations conducted at the Waste Characterization, Reduction and Repackaging Facility (WCRRF) and elsewhere at LANL. The use of a glove bag will provide TA-55 with an inexpensive, portable, disposable alternative to a glove box that is well suited to the materials to be managed in this SSR operation.

Glove bags are typically constructed of military-specification transparent polyethylene or similar materials. The material type and thickness is selected by the user, based on the chemical and physical properties of the materials to be managed in each specific application or project. Contamination control and personnel safety are the key considerations when designing, selecting, and using a glove bag containment system. Contamination levels, temperature, area configuration, isotope(s), and the radiological characteristics of the immediate vicinity are all considered when designing any containment system.

All containment systems at LANL must be approved by the LANL radiological protection organization and the appropriate line organization, as well as appropriate facility safety and DOE representatives, to ensure they comply with the approved safety basis for the facility and operation. All work in the glove bag will be performed in strict accordance with internal TA-55 procedures, which have been developed based on facility and DOE worker safety and radiation protection requirements, peer-reviewed techniques, and industry-standard protocols.

Specific tests are required to verify a glove bag's ability to contain contamination. Pressure testing is used to confirm the integrity of glove bags at TA-55. Tests will be run after installation at the project site prior to start-up of operations, and daily when the glove bag is used.

### **2.5.2 Sorting, Segregation, and Repackaging Operations**

The planned temporary authorization activities consist entirely of sorting, segregation and repackaging non-shippable STP MTRU waste, as described above. SSR involves opening a waste parent container; sorting and separating the waste items as necessary; dividing the drum contents into several daughter containers if necessary due to weight or radiological limits or other considerations; removing prohibited or noncompliant items; and

placing compliant waste into one or more compliant daughter containers. All waste will undergo visual examination as it is being repackaged into daughter containers to meet WIPP requirements.

All sorting, segregation and repackaging operations in Room 432 will be conducted within the glove bag containment system. TA-55 operating procedures governing the required activities will be followed.

Following SSR processing, the newly-filled daughter containers will be transported to a permitted unit in TA-55 for storage until they can be shipped to WIPP for disposal. Containers will be prepared for WIPP shipment and appropriate administrative steps will be taken to ship the waste for disposal as soon as feasible. Empty parent containers will be managed according to the Permit and LANL waste management requirements.

All work performed in Room 432 under the temporary authorization will be performed in strict accordance with the Permit and internal LANL operating procedures and safety requirements. They have been developed based on TA-55 facility and DOE worker safety and radiation protection requirements, peer-reviewed techniques, and DOE- and industry-standard protocols for glove bag operations.

## **2.6 Authorized Wastes and Waste Acceptance**

Room 432 will be used only to process the nine drums of currently-stored TA-55 STP waste items that were discussed in Section 2.3 of this request. If WIPP-prohibited waste items are found during SSR processing (for example, ignitable, corrosive or reactive wastes, or aerosol cans containing compressed gases), they will be removed from parent containers, and repackaged for appropriate management elsewhere.

Wastes to undergo SSR in Room 432 will be subject to the characterization requirements of Permit Section 2.4, *Waste Analysis*, and Attachment C, *Waste Analysis Plan* (WAP), as applicable. A summary of the wastes being managed was provided in Table 1-3 of this submittal. These routine waste characterization procedures will be applied to any hazardous or mixed waste that may be generated or managed as a result of SSR operations. Wastes undergoing SSR will be subject to the waste verification requirements of Permit Section 2.4.7, *Waste Characterization Review*, and Permit Attachment C, *Waste Analysis Plan*.

### **2.6.1 Visual Examination for WIPP Certification**

During repackaging, all items will be visually examined by a WIPP Central Certification Project (CCP) waste certification official according to internal LANL procedures and applicable WIPP requirements. No further RTR of the repackaged wastes will be necessary. The CCP certification process will ensure no prohibited items are present in the repackaged containers.

## **2.7 Security and Access Control in Room 432**

Room 432 is located inside TA-55 and will be subject to the current requirements of Permit Sections 2.5, *Security*, and A.5.10, *Security and Access Control*. Security at TA-55 is maintained with both manmade and natural barriers. These barriers prevent the unknowing entry and minimize the possibility for unauthorized entry of persons or livestock into TA-55.

Multiple 12-foot (ft) high chain-link security fences with razor wire at the top surround the entire perimeter of TA-55. Two primary entry gates allow access to TA-55. The Entry Control Facility (ECF) designed for personnel entry is located on the east side and a vehicle entry station is located on the west side of TA-55. The ECF is manned 24 hours a day by security personnel. Unescorted access to TA-55, and to specific buildings therein, is granted only to persons possessing appropriate security clearance and meeting specific training

requirements. Only properly identified employees authorized to enter the facility or individuals under their escort will have access to Room 432.

## **2.8 Hazards Prevention (procedures, structures, and equipment) in Room 432**

Descriptions of the preventive procedures, structures, and equipment at TA-55-4 are presented in the Permit Sections 2.10 and 2.11, and Permit Attachment D, *Contingency Plan*, in accordance with the requirements of 40 CFR §§264.50-56 and 270.14(b)(8). Adherence to the procedures and proper use of the structures and equipment will help to prevent hazards, prevent undue exposure of personnel to hazardous waste, and prevent releases to the environment. Details specific to Room 432 operations are presented in the following section.

### **2.8.1 Waste Handling**

Containers to undergo SSR will be transported from a permitted unit in the basement of TA-55-4 to Room 432 using manual lifts or dollies.

### **2.8.2 Preventing Hazards in Unloading/Loading**

The use of trained waste management personnel and proper handling equipment appropriate to a container's size and weight will help to prevent hazards while moving containers. Waste management personnel will be trained for safe handling operations in accordance with Attachment F, *Personnel Training Plan*, of the Permit. Refer to Section 3.0 of this document for a discussion of training specific to this project.

### **2.8.3 Mitigating Effects of Power Outages**

Electrical power is supplied at TA-55-4 to operate building heating systems, the Public Address (PA) system, various instruments, and other electrical equipment. Evacuation alarms, equipped with a battery backup, are located throughout TA-55-4. During a power outage, operations in Room 432 will be discontinued until power is restored. No internal contamination would be released from the glove bag, since the bag would be under neutral pressure and the bag is sealed.

At permitted units where equipment is necessary to mitigate the effects of a power outage, the Permittees shall maintain batteries, generators, or some other form of backup power supply capable of operating equipment including evacuation alarms, emergency communication equipment, automatic fire suppression systems, and emergency lights (See 40 CFR §§ 270.14(b)(8)(iv) and 270.32(b)(2)). The backup power supplies will be used to meet the requirements of Permit Section 2.10.1, *Required Equipment*.

### **2.8.4 Preventing Undue Exposure**

Leak detection for the glove bag will be provided by continuous air monitors (CAMs) at various locations throughout Room 432. CAMs will detect any airborne alpha contamination that would be present if a leak were to occur at any point in the glove bag. Additionally, radiological control technicians will periodically monitor for radioactive contamination and will detect any leaks during monitoring. Personnel will wear personal protective equipment as needed for the operations performed.

## **2.9 Preparedness and Prevention in Room 432**

Buildings at TA-55 are equipped with multiple audible and visual safety-alarm systems to alert personnel in the event of an emergency and to evacuate the area. Fire-alarm pull boxes and/or drop box push-button alarms may

be used by personnel to activate a local fire alarm when a fire or other emergency is discovered. The alarm systems are located both inside and outside buildings at TA-55, and are monitored and controlled by the facility monitor and control system (FMCS). The FMCS is in operation 24 hours a day, and is located in the Operations Center at TA-55-4, with access through TA-55-3. A TA-55 computer system monitors smoke and heat sensors, fire-alarm pull boxes, and drop box push-button alarms located throughout TA-55. Material Safety Data Sheets (MSDS) also provide useful exposure information, and are available in Room 432.

### **2.9.1 Required Equipment**

In accordance with Permit Section 2.10.1, *Required Equipment*, Attachment D, *Contingency Plan*, and LANL requirements, Room 432 is specifically equipped with internal communication and alarm system devices, fire control equipment, and spill control equipment consistent with similar equipment in the TA-55 permitted units. Decontamination equipment such as portable eyewash stations and safety showers is available in numerous locations in TA-55-4. Table 2-2 provides a list of the specific equipment located in or near Room 432.

### **2.9.2 Testing and Maintenance of Equipment**

In accordance with Permit Section 2.10.2, *Testing and Maintenance of Equipment*, all communications and alarm systems, fire protection, and decontamination equipment will be inspected, tested, and/or maintained as provided according to the inspection schedule. The frequency of inspection will be adequate to ensure proper operation in the event of an emergency. Maintenance, repair and replacement of emergency equipment will be performed as required.

### **2.9.3 Access to Communications or Alarm Systems**

Whenever Room 432 contains hazardous waste, employees will have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee in accordance with Permit Section 2.10.3 (*see* 40 CFR § 264.34(a)). No employee is allowed to work alone in Room 432. Employees will be capable of summoning external emergency assistance via a land-line telephone (*see* 40 CFR § 264.34(b)) without having to enter another building (*see* 40 CFR § 270.32(b)(2)). Table 2-2 provides a list of the specific communications equipment and alarms located in or near Room 432.

### **2.9.4 Space Requirements**

Room 432 has an area of 875 square feet and has sufficient space for the glove bag, the temporary storage of four waste containers, empty daughter containers, and the SSR activities. Figure 2-1, adapted from Permit Figure 39, shows the general location of Room 432 in TA-55-4. Another figure is provided under separate cover that depicts Room 432 and the SSR project layout within the room.

## **2.10 Contingency Plan**

In the unlikely event of a glove bag breach followed by detection of contamination by the CAMs, procedures are in place and personnel are trained to respond in accordance with facility contingency plans, as applicable (per Permit Attachment D). For the wastes in question, it is unlikely that any room contamination resulting from loss of glove bag containment integrity would escape from the room and/or building containment systems to the environment. Therefore, the facility will immediately identify whether the breach will be managed as a contained spill, or a release that threatens human health or the environment (*see* Permit Section 1.9.13).



Hazardous waste spills are managed by type and severity of the incident. If a hazardous waste spill occurs, line management evaluates the type and severity of the spill and determines if assistance from the Facility's Emergency Management and Response Group is required. If not, the spill is managed internally by TA-55 personnel.

Permit Attachment D presents contingency measures applicable to all permitted units. For the SSR project in Room 432, the Permittees shall implement applicable provisions of this Plan and the applicable provisions of Permit Section 2 immediately to minimize hazards if there is a fire, explosion, or release of hazardous or mixed waste or constituents that could threaten human health or the environment.

Emergency equipment currently available for use at TA-55-4-432 is listed in Table 2-2. It may be replaced and/or upgraded with functionally equivalent components and equipment as necessary for routine maintenance and repairs.

### **2.11 Containment Systems**

The glove bag described in Section 2.5.1 is the containment structure that will establish an enclosure around the wastes being sorted and repackaged, allowing personnel to accomplish the processing via gloved sleeves without contacting the waste items. The glove bag provides an effective and proven method of contamination control for this campaign.

No free liquids are planned to be handled or managed in Room 432 during the temporary authorization activities.

### **2.12 Ignitable, Reactive, and Incompatible Wastes**

Ignitable or reactive wastes will not be intentionally processed as part of this temporary authorization activity. However, if they are encountered unintentionally during SSR activities, they will be packaged in sealed containers as prohibited or nonconforming items and will not be exposed to ignition sources. Precautions will be taken to prevent reactions that may generate extreme heat, pressure, fire, or explosion, and minimize the potential for uncontrolled toxic mists, fumes, dusts, or gases. TRU waste containers will have vents to prevent over-pressurization. Containers will only be opened in the glove bag. Incompatible wastes will be segregated and separated during processing in accordance with 40 CFR §264.17(c) and Permit Section 2.8.2, *Incompatible Wastes Precautions*. Together, all these measures will meet the requirements of 40 CFR §§ 264.17(a) and (b) and 264.176.

### **2.13 Inspections**

Room 432 and all equipment associated with the SSR activity will be inspected in accordance with Permit Section 2.6 and Permit Attachment E (*Inspection Plan*). The Inspection Record Form (IRF) will be used on days when wastes associated with SSR operations are present in Room 432. No changes to the IRF are required. In addition to complying with all applicable inspection requirements in Permit Section 2.6 and Permit Attachment E, a glove bag inspection procedure will be implemented each day before use of the glove bag. IRF item 15 (pertaining to containment) will be filled out to document the glove bag system inspections as well as any related findings.

### **2.14 Recordkeeping Requirements**

In accordance with 40 CFR Part 264, Subpart E, recordkeeping requirements applicable to the temporary authorization activities are discussed in the following sections. Room 432 operations will meet the requirements of Permit Section 2.12, *Recordkeeping and Reporting*.

## **2.15 Reporting**

The Permittees shall submit all of the information specified in 40 CFR § 264.75 pertaining to the temporary authorization activities, as appropriate, for inclusion in the Biennial Report. The Biennial Report is provided to NMED-HWB on March 1 of each even numbered year, as specified in Permit Section 2.12.5.

No Unmanifested Waste Report is anticipated, since no containers from off-site will be managed as part of this temporary authorization activity. Likewise, no additional reports are expected to be required. The Waste Minimization Program required by Permit Section 2.9 will be followed for this project, so a separate report is not anticipated.

**Table 2-1      Temporary Authorization Project Schedule**

<b>Activity</b>	<b>Date</b>
Submit temporary authorization request to NMED	September 30, 2012
Inform LANL mailing list of request	By October 6, 2012
Perform pre-start activities	September 30 – November 30, 2012
NMED approval/ Begin SSR operations under temporary authorization	By November 30, 2012
Complete SSR activities/ demobilize Room 432	March 31, 2013



**Table 2-2**

**TA-55-4-432 Emergency Equipment**

**FIRE CONTROL EQUIPMENT**

- Dry-chemical fire extinguishers are located in Room 432. The fire extinguishers are portable, manually-operated units and can be used by any employee in case of fire. The fire extinguishers in Room 432 are for use only in case of fire outside the gloveboxes.
- Fire alarm drop boxes and push button stations are available in Room 432. They can be activated by any employee in the event of fire to notify the TA-55 Central Alarm Station.
- An automatic fire suppression sprinkler system is located in Room 432.
- Fire hydrants are located outdoors on the north, south, and west sides of TA-55-4.

**SPILL CONTROL EQUIPMENT**

- Spill control kits are available in Room 432.

**COMMUNICATION EQUIPMENT**

- Three (3) telephones are located in Room 432 (one is near the exit door). The telephones are capable of handling incoming/outgoing calls and paging.
- Telephones are also located at each of the two west exit doors of TA-55-4.
- Two-way radios are available from the Nuclear Materials Technology Facility Incident Command, located at TA-55-3, Room 179, for personnel working in Room 432.

**ALARMS AT TA-55-4**

- The fire alarm is a zone-wide whooping sound.
- If a drop-box pushbutton station is used, a zone-wide, high-pitched constant tone will be activated and then switch to the standard whooping sound.
- The evacuation alarm is a facility-wide mid-range pulsating tone.
- The continuous air monitor alarm is a local high-pitched pulsating tone.
- The ventilation alarm is a local slow, repeating chime tone.
- The public address system may also be used to announce an evacuation.

**DECONTAMINATION EQUIPMENT**

- Safety showers and eyewash stations are located in Room 433. Eyewashes are also available in Room 432 for decontamination of personnel who receive a chemical splash to the skin or eyes.
- Material Safety Data Sheets (MSDSs) are available in Room 432 and at TA-55-4. Specific MSDSs may be obtained prior to working with any hazardous waste to determine if the application of water is indicated for decontamination.

**PERSONAL PROTECTIVE EQUIPMENT**

- Self-contained breathing apparatus (SCBA) are located in the south-side hallway outside of Room 432, in the north-side hallway of TA-55-4, and in TA-55-3, Room 179. The SCBAs are available for personnel working in or near Room 432.
- Change/decontamination rooms with protective clothing available are located on the first floor of TA-55-4 and in TA-55-3. Protective clothing is also available in a locker located in the hallway near Room 432 for use by personnel working in or near Room 432.
- Respirators located in TA-55-3 (Room 107) and in TA-55-4 (Room 515) are available for all personnel working in or near TA-55-4. Respirators are re-issued on a regular basis to TA-55-4 personnel for radiation work. These respirators are stored in the personnel's individual lockers.
- Combination gas canisters (particulate, organic, and acid) are available in TA-55-4 (Room 515).

**OTHER**

If transportation is needed for evacuation, vehicles may be obtained through the Emergency Management and Response Group.

### **3.0 TRAINING REQUIREMENTS**

The Permittees shall ensure that all personnel who are involved in hazardous waste management activities in Room 432 successfully complete all training programs in compliance with the training requirements of 40 CFR § 264.16, which is incorporated herein by reference, as well as the training requirements in Permit Attachment F, *Personnel Training Plan*. Additionally, personnel will be trained to a specific TA-55 procedure for sorting, segregating and repackaging MTRU wastes using a glove bag.

### **4.0 CORRECTIVE ACTION**

There are no Solid Waste Management Units associated with TA-55-4-432.

### **5.0 DEMOLITION PLAN**

#### **5.1 Introduction**

The temporary authorization area consists of a glove bag and associated equipment installed in Room 432 for the sole purpose of performing SSR on nine drums of MTRU waste that did not meet the WIPP-WAC. Upon completion of the SSR operation, the glove bag will be dismantled, folded, and placed in a container. It will then be certified and managed as mixed waste according to applicable Permit requirements and LANL procedures.

#### **5.2 Estimate Of Maximum Waste Processed**

As stated above, approximately 1.9 cubic meters of STP-MTRU waste that is currently packaged in nine 55 gallon drums and stored at permitted units at TA-55 will undergo SSR.

#### **5.3 General Demobilization Information**

##### **5.3.1 Performance Standard**

No radiological contamination in Room 432 is permitted. Room 432 will be returned to its original state (as it was prior to actions taken under the temporary authorization).

##### **5.3.2 Schedule**

As discussed in Section 2.1, approximately 90 days are available for SSR of nine drums of MTRU. Within this timeframe, mobilization will occur, the glove bag will be installed, the nine drums of MTRU will undergo SSR, the glove bag will be packaged and managed as mixed waste, and demobilization will conclude the effort.

##### **5.3.3 Amendment of the Plan**

This demobilization plan will be amended in the event that the glove bag is breached and CAMs detect radiological contamination.

#### **5.4 Demobilization Procedures**

##### **5.4.1 Records Review And Structural Assessment**

Operating records for this temporary authorization campaign will be reviewed for any leaks, spills, or loss of containment integrity during the period of SSR operations. The repackaging activity will occur within the confines of a glove bag which will be used only for this temporary authorization. All work will occur in Room

432, which is physically isolated from the waste addressed by this temporary authorization by the use of the negative-pressure glove bag.

#### **5.4.2 Decontamination and/or Removal of Structures and Equipment**

Under normal operational conditions, it is expected that there will be no need to decontaminate any structure or equipment in Room 432. Following completion of SSR operations, the glove bag will be deflated and placed in a 55 gallon drum, which will be characterized in accordance with the LANL WAP and disposed of as appropriate.

In the unlikely event that the glove bag is breached and contamination is detected by the CAMs, Permit conditions for indoor units in Permit Sections 9.4.3, 9.4.4, and 9.4.5 will generally become applicable. Permit Section 9.4.3.1 requirements will be met by performing at least two consecutive wipe-downs of the surfaces and structures using cheesecloth and Fantastic as the cleaning agent.

#### **5.4.3 Equipment Used During Decontamination Activities**

Any equipment used for decontamination purposes will be managed in accordance with the Permit (Attachment D) and applicable LANL procedures.

### **5.5 Sampling and Analysis Plan**

Pre-start wipe samples will be collected in Room 432 to establish a baseline condition to which the room will be returned at the conclusion of operations. Radiation detection will be used as a surrogate for detection of any hazardous constituent that may be present in wastes processed by SSR should a leak occur. Any leak of transuranic elements from the glove bag will be detected by CAMs in Room 432. CAMs will detect airborne alpha contamination that would be present if a leak were to occur at any point in the glove bag. Additionally, radiological control technicians periodically monitor for radioactive contamination and would detect any leaks during monitoring.

#### **5.5.1 Decontamination Verification Sampling Activities**

Decontamination verification sampling activities for the constituent of concern ((Table 5-1), as described in Sections 5.5.1 through 5.5.5 below, will be conducted within Room 432 only in the event that the glove bag is breached and radioactive contamination is detected. They would be conducted in order to verify that surfaces and related equipment at the permitted unit meet the closure performance standards in Permit Section 9.2. All samples will be collected and analyzed in accordance with the Permit, Section 9.4.

One wipe sample will be collected from each piece of decontaminated equipment at the permitted unit. In compliance with Permit Section 9.4.7.1.i, this plan will ensure the collection of at least one wipe sample from the floor and one from each wall (up to 11 feet in height from floor) of the room. Verification wipe samples will be collected from random locations within the SSR operational area within Room 432. A total of six wipe samples will be collected: one from the floor; one from each of the four walls; and one from the area of the entry door.

#### **5.5.2 Sample Collection Procedures**

Samples will be collected in accordance with Permit Section 9.4.7.1, which incorporates guidance from the United States Environmental Protection Agency (USEPA) (EPA, 2002), DOE (DOE, 1995), and other NMED-approved procedures.

## **Wipe Sampling**

Surface wipe samples will be collected and analyzed to determine if residual hazardous constituents remain on the surfaces and related equipment at Room 432. Samples will be collected in accordance with the National Institute of Occupational Safety and Health (NIOSH) *Manual of Analytical Methods* (NIOSH, 1994). The appropriate wipe sample method will consider the type of surface being sampled, the type of constituent being sampled for, the solution used, and the desired constituent concentration detection limits.

The NIOSH method includes wiping a 100 square centimeter area at each discrete location with a gauze wipe wetted with a liquid solution appropriate for the desired analysis (*e.g.*, deionized water for lead). For wipe sampling, guidance from the analytical laboratory must be obtained prior to wipe verification sampling to confirm that the solution chosen for each analysis is appropriate for the analysis to be conducted and that wipe sampling is a proper technique for the analysis.

## **Cleaning of Sampling Equipment**

Reusable sampling equipment will be cleaned and rinsed prior to use. Sampling equipment rinsate blanks will be collected and analyzed only if reusable sampling equipment is used. Reusable decontamination equipment, including protective clothing and tools, used during closure activities will be scraped as necessary to remove residue and cleaned with a wash water solution. Sampling equipment will be cleaned prior to each use with a wash solution, rinsed several times with tap water, and air-dried to prevent cross-contamination of samples. A disposable sampler is considered clean if still in a factory sealed wrapper.

### **5.5.3 Sample Management Procedures**

The following sections provide a description of sample documentation, handling, preservation, storage, packaging, and transportation requirements that will be followed during the sampling activities associated with the closure.

#### **Sample Documentation**

Sampling personnel will complete and maintain records to document sampling and analysis activities. Sample documentation will include sample identification numbers, chain-of-custody forms, analysis requested, sample logbooks detailing sample collection activities, and shipping forms (if necessary).

#### **Chain-Of-Custody**

Chain-of-custody forms will be maintained by sampling personnel until samples are relinquished to the analytical laboratory. This will ensure the integrity of the samples and provide for an accurate and defensible written record of the sampling possession and handling from the time of collection until laboratory analysis. One chain-of-custody form may be used to document all of the samples collected from a single sampling event. The sample collector will be responsible for the integrity of the samples collected until properly transferred to another person. The EPA considers a sample to be in a person's custody if it is:

- In a person's physical possession;
- In view of the person in possession; or
- Secured by that person in a restricted access area to prevent tampering.

The sample collector will document all pertinent sample collection data. Individuals relinquishing or receiving custody of the samples will sign, date, and note the time on the analysis request and chain-of custody form. A chain-of-custody form must accompany all samples from collection through laboratory analysis. The analytical

laboratory will return the completed chain-of-custody form to the Facility and it will become part of the permanent sampling record documenting the sampling efforts.

### **Sample Labels and Custody Seals**

A sample label will be affixed to each sample container. The sample label will include the following information:

- A unique sample identification number;
- Name of the sample collector;
- Date and time of collection;
- Type of preservatives used, if any; and
- Location from which the sample was collected.

A custody seal will be placed on each sample container to detect unauthorized tampering with the samples. These labels must be initialed, dated, and affixed by the sample collector in such a manner that it is necessary to break the seal to open the container.

### **Sample Logbook**

All pertinent information on the sampling effort must be recorded in a bound logbook. Information must be recorded in ink and any cross-outs must be made with a single line with the change initialed and dated by the author. The sample logbook will include the following information:

- The sample location;
- Suspected composition;
- Sample identification number;
- Volume/mass of sample taken;
- Purpose of sampling;
- Description of sample point and sampling methodology;
- Date and time of collection;
- Name of the sample collector;
- Sample destination and how it will be transported;
- Observations; and
- Name(s) of personnel responsible for the observations.

### **Sample Handling, Preservation, and Storage**

Samples will be collected and containerized in appropriate pre-cleaned sample containers. The requirements in *SW-846* (EPA, 1986) for sample containers, preservation techniques, and holding times will be applicable.

Samples that require cooling to 4 degrees Celsius will be placed in a cooler with ice or ice gel or in a refrigerator immediately upon collection.

#### **5.5.4 Packaging and Transportation of Samples**

All packaging and transportation activities will meet safety expectations, QA requirements, DOE Orders, and relevant local, state, and federal laws (including 10 CFR and 49 CFR). Appropriate Facility documents establish the requirements for packaging design, testing, acquisition, acceptance, use, maintenance, and decommissioning and for on-site, intra-site, and off-site shipment preparation and transportation of general commodities, hazardous materials, substances, wastes, and defense program materials.

Off-site transportation of samples will occur via private, contract, or common motor carrier, air carrier, or freight. All off-site transportation will be processed through the Facility packaging and organization unless the shipper is

specifically authorized through formal documentation by the packaging and transportation organization to independently tender shipments to common motor or air carriers.

#### **5.5.5 Sample Analysis Requirements**

Samples will be analyzed for the hazardous constituents listed in Appendix VIII of 40 CFR Part 261 and in Appendix IX of 40 CFR Part 264 that have been stored in the nine drums undergoing SSR in Room 432, as listed in Table 5-1. Samples will be analyzed by an independent laboratory using the latest revision of SW-846 methods. Analytes, test methods and instrumentation, target detection limits, and rationale for metals and organic analyses are presented in Table 5-2.

#### **5.6 Analytical Laboratory Requirements**

The analytical laboratory will performing detailed qualitative and quantitative chemical analyses will have:

- A documented comprehensive QA/QC program;
- Technical analytical expertise;
- A document control and records management plan; and
- The capability to perform data reduction, validation, and reporting.

The selection of the analytical testing methods (Table 5-3) will be based on the following considerations:

- The physical form of the waste;
- Constituents of concern;
- Required detection limits (*e.g.*, regulatory thresholds); and
- Information requirements (*e.g.*, waste classification).

##### **5.6.1 Quality Assurance/Quality Control**

All sampling and analysis will be conducted in accordance with QA/QC procedures defined by the latest revision of “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods” (*SW-846*) (EPA, 1986) or other Department-approved procedures. Field sampling procedures and laboratory analyses will be evaluated through the use of QA/QC samples to assess the overall quality of the data produced. QC samples evaluate precision, accuracy, and potential sample contamination associated with the sampling and analysis process, and is described in the following sections, along with information on calculations necessary to evaluate the QC results.

##### **5.6.2 Field Quality Control**

The field QC samples that will be collected are trip blanks, field blanks, field duplicates, and equipment rinsate blanks. Table 5-4 presents a summary of QC sample types, applicable analyses, frequency, and acceptance criteria. QC samples will be given a unique sample identification number and submitted to the analytical laboratory as blind samples. QC samples will be identified on the applicable forms so that the results can be applied to the associated sample.

##### **5.6.3 Analytical Laboratory Quality Control Samples**

QA/QC considerations are an integral part of analytical laboratory operations. Laboratory QA ensures that analytical methods generate data that are technically sound, statistically valid, and that can be documented. QC procedures are the tools employed to measure the degree to which these QA objectives are met.



## **5.7 Data Reduction, Verification, Validation, and Reporting**

Analytical data generated by the activities described in this closure plan will be verified and validated. Data reduction is the conversion of raw data to reportable units, transfer of data between recording media, and computation of summary statistics, standard errors, confidence intervals, and statistical tests.

### **5.7.1 Data Reporting Requirements**

Analytical results will include all pertinent information about the condition and appearance of the sample as-received. Analytical reports will include:

- A summary of analytical results for each sample;
- Results from QC samples such as blanks, spikes, and calibrations;
- Reference to standard methods or a detailed description of analytical procedures; and
- Raw data printouts for comparison with summaries.

The laboratory will describe sample preparations that occur during the analysis in sufficient detail so that the data user can understand how the sample was analyzed.

## **5.8 Waste Management**

All waste generated during the demobilization of temporary authorization work will be controlled, handled, characterized, and disposed of in accordance with Permit Section 9.4.5, Permit Attachment C (*Waste Analysis Plan*), and Facility waste management procedures. Demobilization will generate only waste that will be disposed at WIPP or authorized LLW or MLLW facilities, as appropriate. No attempt will be made to decontaminate the glove bag; it will be dismantled and packaged in a drum for disposal as MTRU at WIPP.

## **5.9 Demobilization Report**

Within 60 days of completion of demobilization activities at Room 432, a demobilization report will be prepared and submitted to the Department.



**Table 5-1 Hazardous Waste Constituents of Concern: Temporary Authorization Wastes**

Category	EPA Hazardous Waste Numbers	Specific Constituents
Toxic Metals	D004, D005, D006, D007, D008, D009, D010, D011,	Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver
Organic Compounds	D018, D019, D021, D022, D035, D038, D039, D040,	Benzene, Carbon Tetrachloride, Chlorobenzene, 1,4,-Dichlorobenzene, Methyl Ethyl Ketone, Pyridine, Tetrachloroethylene, Trichloroethylene
Organic Compounds	F001, F002, F003, F005	1,1,1-Trichloroethane, Carbon tetrachloride, Chlorinated fluorocarbons, Methylene chloride, Tetrachloroethylene, Trichloroethylene, Trichlorofluoroethane, 1,1,1-Trichloroethane, 1,1,2-Trichloro-1,2,2-trifluoroetha, 1,1,2-Trichloroethane, Chlorobenzene, Freon tf, Methyl chloride, Methylene chloride, Orthodichlorobenzene, Tetrachloroethylene, Trichloroethylene, Trichloroflouromethane, Acetone, Ethyl ether, Methanol, Methyl isobutyl ketone, n-Butyl alcohol, Xylene, Cresols, Cresylic acid, Nitrobenzene, 2-Ethoxyethanol, 2-Nitropropane, Benzene, Carbon disulfide, Isobutanol, Methyl ethyl ketone, Pyridine, Toluene

**Table 5-2 Summary of Analytical Methods**

Analyte	EPA <i>SW-846</i> Analytical Method <sup>a</sup>	Test Methods/Instrumentation	Target Detection Limit <sup>b</sup>	Rationale
<b><i>Metal Analysis</i></b>				
Arsenic	7060A <sup>c</sup> , 7061A	FLAA, GFAA	10 ug/L	Determine the metal concentration in the samples.
Barium	7080A <sup>d</sup> , 7081 <sup>c</sup>	FLAA, GFAA	200 ug/L	
Cadmium	7130 <sup>d</sup> , 7131A <sup>c</sup>	FLAA, GFAA	2 ug/L	
Chromium	7190 <sup>d</sup> , 7191 <sup>c</sup>	FLAA, GFAA	10 ug/L	
Lead	7420 <sup>d</sup> , 7421 <sup>c</sup>	FLAA, GFAA	5 ug/L	
Mercury	7470A, 7471A <sup>e</sup>	CVAA	0.2 ug/L	
Selenium	7740 <sup>c</sup> , 7741A	FLAA, GFAA	5 ug/L	
Silver	7760A <sup>d</sup> , 7761 <sup>c</sup>	FLAA, GFAA	10 ug/L	
<b><i>Organic Analysis</i></b>				
Target compound list VOCs plus ten tentatively identified compounds (TIC)	8260B	GC/MS	10 mg/L	Determine the VOCs concentration in the samples.
Target compound list SVOCs plus 20 TICs	8270D <sup>c</sup>	GC/MS	10 mg/L	Determine the SVOCs concentration in the samples.

<sup>a</sup> U.S. Environmental Protection Agency (EPA), 1986 and all approved updates, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," *SW-846*.

<sup>b</sup> Detection limits listed for metals are for clean water. Detection limits for organics are expressed as practical quantitation limits. Actual detection limits may be higher depending on sample composition and matrix type.

<sup>c</sup> Method being integrated into Method 7010, per the May 1998 *SW-846* Draft Update IVA.

<sup>d</sup> Method being integrated into Method 7000B, per the May 1998 *SW-846* Draft Update IVA.

<sup>e</sup> Method being revised to 7471B per the May 1998 *SW-846* Draft Update IVA.

CVAA = Cold-vapor atomic absorption spectroscopy; GFAA= Graphite furnace atomic absorption spectroscopy;

FLAA = Flame atomic absorption spectroscopy; mg/L = milligrams per liter;

GC/MS = Gas chromatography/mass spectrometry; ug/L = micrograms per liter.

Table 5-3 Sample Containers<sup>a</sup>, Preservation Techniques, and Holding Times<sup>b</sup>

Analyte Class and Sample Type	Container Type and Materials	Preservation	Holding Time
Metals			
TCLP/Total Metals: Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver	Aqueous Media: 500-mL Wide Mouth- Polyethylene or Glass with Teflon Liner	Aqueous Media: HNO <sub>3</sub> to pH <2 Cool to 4 °C	180 Days
	Solid Media: 125-mL Glass	Solid Media: Cool to 4 °C	
TCLP/Total Mercury	Aqueous Media: 500-mL Wide Mouth- Polyethylene or Glass with Teflon Liner	Aqueous Media: HNO <sub>3</sub> to pH <2 Cool to 4 °C	28 Days
	Solid Media: 125-mL Glass	Solid Media: Cool to 4 °C	
Volatile Organic Compounds			
Target Compound Volatile Organic Compounds	Aqueous Media: Two 40-mL Amber Glass Vials with Teflon-Lined Septa	Aqueous Media: HCl to pH<2 Cool to 4 °C	14 days
	Solid Media: 125-mL Glass or Two 40-mL Amber Glass Vials with Teflon-Lined Septa	Solid Media Cool to 4 °C Add 5 mL Methanol or Other Water Miscible Organic Solvent to 40-mL Glass Vials	
Semi-Volatile Organic Compounds			
Target Compound Semi-volatile Organic Compounds	Aqueous Media: Four 1-L Amber Glass with Teflon-Lined Lid	Aqueous Media: Cool to 4 °C	Seven days from field collection to preparative extraction. 40 days from preparative extraction to determinative analysis.
	Solid Media: 250-mL Glass	Solid Media: Cool to 4 °C	

<sup>a</sup> Smaller sample containers may be required due to health and safety concerns associated with potential radiation exposure, transportation requirements, and waste management considerations.

<sup>b</sup> Information obtained from "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, U.S. Environmental Protection Agency, 1986 and all approved updates.

°C = degrees Celsius

HCl = hydrochloric acid

mL = milliliter

HNO<sub>3</sub> = nitric acid

L = Liter

TCLP = Toxicity Characteristic Leaching Procedure

**Table 5-4 Quality Control Sample Types, Applicable Analyses, Frequency, and Acceptance Criteria**

QC Sample Type	Applicable Analysis <sup>a</sup>	Frequency	Acceptance Criteria
Trip Blank	VOC	One set per shipping cooler containing samples to be analyzed for VOCs	Not Applicable
Field Blank	VOC/SVOC, metals	One sample daily per analysis	Not Applicable
Field Duplicate	Chemical	One for each sampling sequence	Relative percent difference less than or equal to 20 percent
Equipment Rinsate Blank <sup>b</sup>	VOC/SVOC, metals	One sample daily	Not Applicable

<sup>a</sup> For VOC and SVOC analysis, if blank shows detectable levels of any common laboratory contaminant (e.g., methylene chloride, acetone, 2-butanone, toluene, and/or any phthalate ester), sample must exhibit that contaminant at a level 10 times the quantitation limit to be considered detectable. For all other contaminants, sample must exhibit the contaminant at a level 5 times the quantitation level to be considered detectable.

<sup>b</sup> Collected only if reusable sampling equipment used.

## 6.0 REFERENCES

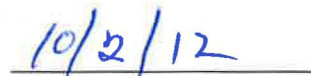
- CCP, 2011. *CCP Standard Contact Handled Waste Visual Examination*, CCP-TP-113, Waste Isolation Pilot Plant, Carlsbad, New Mexico.
- DOE, 2010. *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant*, DOE/WIPP-02-3122, Revision 7.0, US Department of Energy, Carlsbad Field Office, Carlsbad, New Mexico.
- LANL, 2010. *Los Alamos National Laboratory Waste Acceptance Criteria*, P930-1, Los Alamos National Laboratory, Los Alamos, New Mexico, September 2010.
- NMED, 2010. *Los Alamos National Laboratory Hazardous Waste Facility Permit*, New Mexico Environment Department, Santa Fe, New Mexico.

## 7.0 CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Handwritten signature of Alison M. Dorries in blue ink, with the text "for AMD" written in blue ink to the right of the signature.

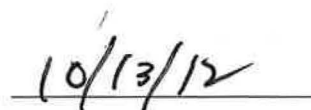
**Alison M. Dorries**  
Division Leader  
Environmental Protection Division  
Los Alamos National Laboratory  
Operator

Handwritten date "10/2/12" in blue ink, underlined.

Date Signed

Handwritten signature of Kevin W. Smith in black ink, underlined.

**Kevin W. Smith**  
Manager, Los Alamos Site Office  
National Nuclear Security Administration  
U.S. Department of Energy  
Owner/Operator

Handwritten date "10/13/12" in black ink, underlined.

Date Signed

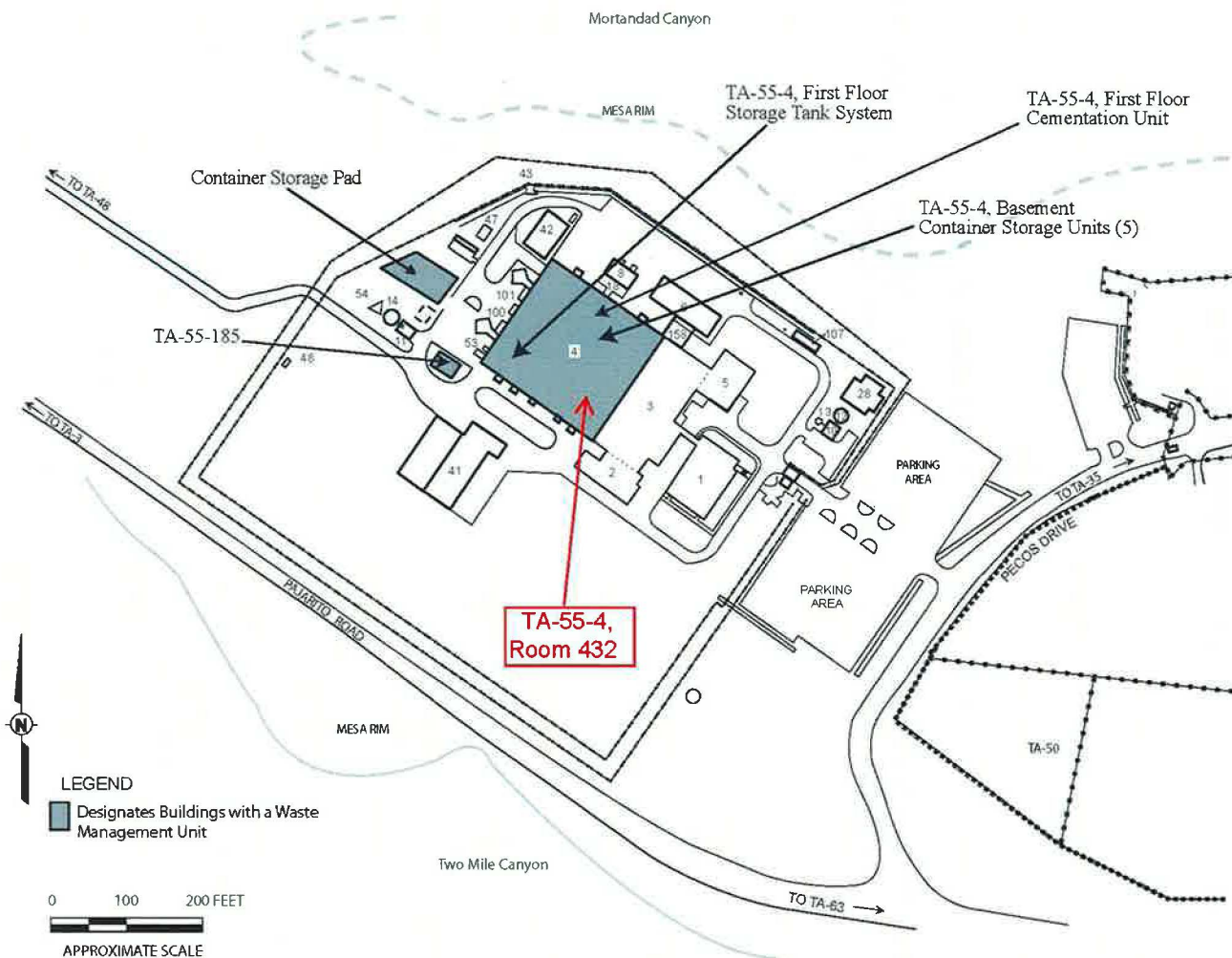


Figure 39  
 Technical Area (TA) 55, Building 4 Location Map

Figure 2-1 TA-55, Building 4, Project Location (adapted from Figure 39 in Permit)

Figure 2-2 - TA-55-4, Room 432

(provided under separate cover)

UCNI

LOS ALAMOS NATIONAL LABORATORY

THIS FIGURE CONTAINS UNCLASSIFIED CONTROLLED NUCLEAR INFORMATION (UCNI) AS  
DEFINED BY SECTION 148 OF THE ATOMIC ENERGY ACT



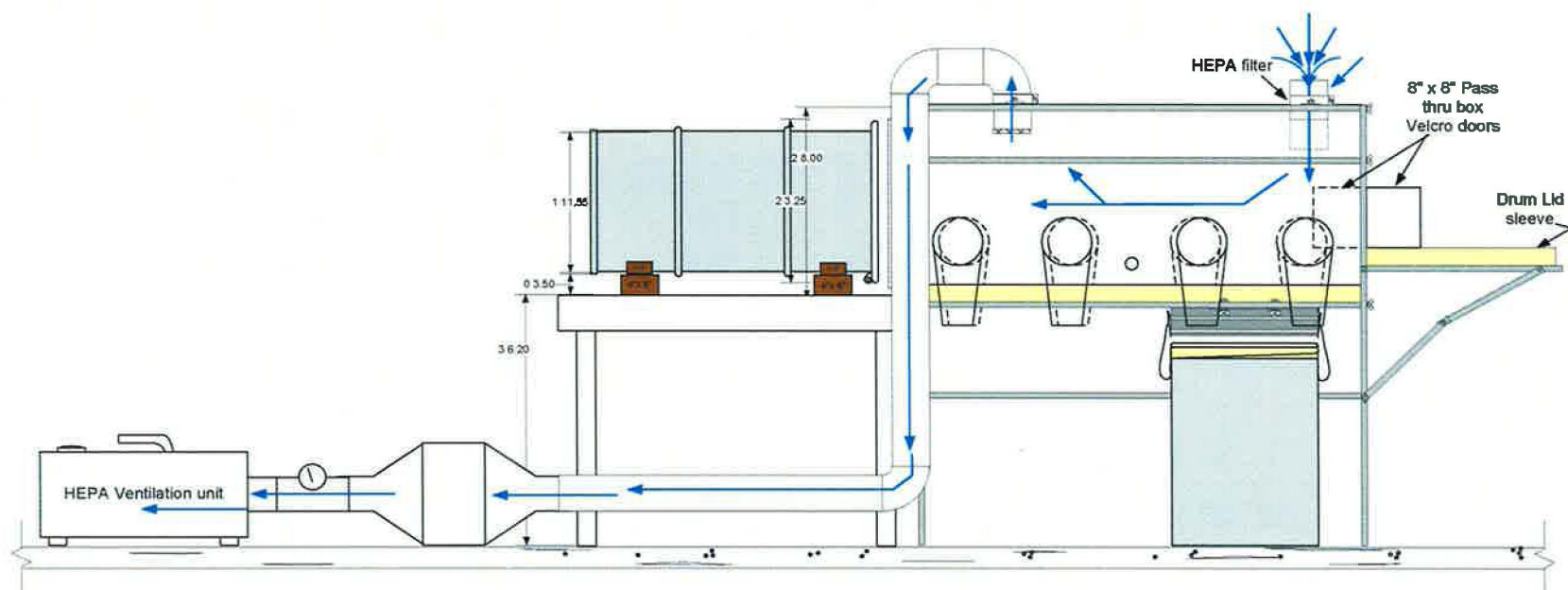


Figure 2-3 Glove Bag Operational Schematic

## **ENCLOSURE 2**

### **Temporary Authorization Request DRAFT Public Notice**

LAUR-12 25052

Date: OCT 15 2012



**Notice of Temporary Authorization Request for Waste Repackaging Operations at  
Technical Area (TA) 55, under Hazardous Waste Facility Permit  
EPA ID No. NM0890010515**

The U.S. Department of Energy/National Nuclear Security Agency (DOE/NNSA), Los Alamos National Security, LLC (LANL) (collectively "DOE/LANS") have submitted a temporary authorization request to the New Mexico Department of Environment-Hazardous Waste Bureau (NMED-HWB) under Hazardous Waste Facility Permit NM0890010515-1. The temporary authorization request supports a one-time, short-term campaign at TA-55 to work-off a backlog of nine (9) drums of Site Treatment Plan (STP) mixed transuranic (MTRU) waste during a limited time window - between November 2012 and March 2013.

This temporary authorization request will support the processing (sorting, segregation, and repackaging) of nine MTRU waste drums as necessary to meet U.S. Department of Transportation (DOT) and Waste Isolation Pilot Plant (WIPP) requirements to enable disposal at WIPP. Previously, it has not been possible to transport and process the waste at another facility within LANL or elsewhere. DOE/LANS identified a one-time opportunity at TA-55 to process these MTRU wastes. Approval of this request will support our efforts to reduce STP waste inventory, and enable shipment of these wastes to WIPP. If the processing cannot begin by November 30, 2012, however, the space, equipment, manpower, will no longer be available, due to other projects scheduled at TA-55. If DOE/LANS are unable to utilize this unique opportunity, these MTRU wastes will continue to be safely stored at TA-55 as STP inventory under LANL's Federal Facility Compliance Order.

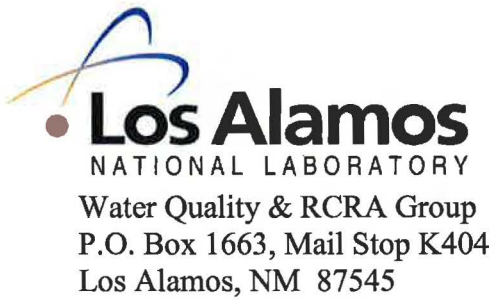
This request meets all applicable requirements of 40 CFR § 270.42(e)(2)(i)(A), and is consistent with EPA guidance which specifies that temporary authorizations are appropriate to "address a one-time or short-term activity at a facility for which the full permit modification process is inappropriate." See 53 *Fed. Reg.* 37912, 37919 (Sept. 28, 1988).

The official permit can be found on the NMED-HWB webpage at:

<http://www.nmenv.state.nm.us/HWB/lanlperm.html#FinalPermit>. The permit modification submittal can be found at LANL's electronic Public Reading Room (<http://eprl.lanl.gov>), and at the hardcopy Public Reading Room located in the Northern New Mexico Citizens' Advisory Board Office, 94 Cities of Gold Road in Pojoaque, NM.

If you have any questions regarding this temporary authorization request please contact Mark Haagenstad at (505) 665-2014 or [mph@lanl.gov](mailto:mph@lanl.gov) or [envoutreach@lanl.gov](mailto:envoutreach@lanl.gov).

**LAUR-12-25052**



**Los Alamos**

NATIONAL LABORATORY

Water Quality & RCRA Group

P.O. Box 1663, Mail Stop K404

Los Alamos, NM 87545

# **ENCLOSURE 3**

(provided under separate cover)

## **Temporary Authorization Request**

LA-CP 12-01191

THIS ENCLOSURE CONTAINS UNCLASSIFIED CONTROLLED NUCLEAR  
INFORMATION (UCNI) AS DEFINED BY SECTION 148 OF THE ATOMIC ENERGY  
ACT

Date: OCT 15 2012