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Department of Energy
Albuquerque Operations Office
Los Alamos Area Office
Los Alamos, New Mexico 87544

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Benito Garcia, Bureau Chief
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
2044 Galisteo Street, Building A
P. O. Box 26110
Santa Fe, NM 87505

Dear Mr. Garcia:

Subject: Los Alamos National Laboratory (LANL) Response to Notice of Deficiency (NOD) - Technical Adequacy Review of RCRA Closure Plan, Technical Area (TA) 21, Building 61 Mixed Waste Container Storage Areas, EPA ID No. NM890010515-1

The enclosed information is the Department of Energy's (DOE) response to the NOD issued by the Hazardous and Radioactive Materials Bureau of the New Mexico Environment Department (NMED) on July 10, 1996, and received by DOE on July 11, 1996. The NOD was developed by NMED following review of the LANL Proposed RCRA Closure, TA-21, Building 61, Container Storage Area, submitted March 22, 1996.

This submittal consists of a response to each of the ten listed deficiency items contained in the NOD, attached supplementary information as requested, and a revised copy of the closure plan incorporating suggested new text in "bold/strikeout" and "clean" format. A certification statement is provided for the revisions presented in this submittal. Electronic copies of the submittal have also been included.

I hope this submittal has addressed your concerns. If you should have any questions, please feel free to contact me at (505) 665-5042.

Sincerely,

FOR
H. L. "Jody" Plum
Office of Environment and Projects

LAAMEP:3JP-012

Enclosures

cc w/o enclosures:
H. Haynes, Office of Counsel, LAAO
J. Matzke, CST-5, LANL, MS-J593
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Introduction

The following information is the Los Alamos National Laboratory's (LANL) response to the Notice of Deficiency (NOD) issued by the Hazardous and Radioactive Materials Bureau of the New Mexico Environment Department (NMED) on July 10, 1996, and received by the Los Alamos Area Office of the Department of Energy (DOE) on July 11, 1996. The NOD requests additional information supplementing the Resource Conservation and Recovery Act (RCRA) "Interim Status Closure Plan for Mixed Waste Units, Technical Area 21, Building 61, Mixed Waste Container Storage Areas, Los Alamos National Laboratory." This closure plan was originally developed September 16, 1992, in accordance with the New Mexico Hazardous Waste Management Regulations, (HWMR-6), Part VI, incorporating the Code of Federal Regulations, Title 40 (40 CFR) Part 265, Subpart G, Closure and Post-Closure. The closure plan was submitted to NMED on March 22, 1996, as part of the Technical Area 21, Building 61 (TA-21-61) Closure Proposal.

The document consists of responses to the ten information comments or requests contained in Attachments A and B of the NOD, and includes supplementary attachments and a revised closure plan incorporating new text as suggested by the information requested. The responses to comments below contain explanatory discussions as necessary and present the new text to be added to the closure plan. The discussion does not include all changes made to the text of the original closure plan. Simple changes such as citations have been proposed to update the closure plan and text edits have been performed to include the language discussed below or amend other sections as altered by the new language. The new text incorporated into the revised closure plan is highlighted in "bold/strikeout" format in the first version and in incorporated "clean text" format in the second.

Discussion of Comments

Attachment A, Technical Compliance Deficiencies

1. The closure plan indicates the inside storage area has an impervious floor. Clarification is needed regarding the construction of the "impervious" floor and specify how the constituents of concern are unable to penetrate the floor.

The floor of the inside storage area consists of a painted epoxy covering (Plasite 7100) over a 4 to 6 inch thick concrete layer underlain by 2 inches of compacted fill. The epoxy covering consists of a primer layer and a high resistance protective coating on top with a nominal suggested thickness of 6-7 mils. The attached Technical Bulletin for the Plasite covering (Attachment 1, "Technical Bulletin, Plasite 7100 Hi-Resistant Protective Coating") states that the material has an excellent chemical resistance for solvents and aqueous solutions. As shown by the attached waste manifests (Attachment 2, Waste Manifests and Waste Data Forms), solvents are the only liquid waste of concern to have been stored in the inside container storage area.

There are two primary mechanisms that could allow hazardous constituents of concern to penetrate the floor in the event of a spill. A material incompatible with the epoxy layer may penetrate the epoxy coating through degradation of the layer. Plasite epoxy is compatible with the wastes stored at TA-21-61 based upon the manufacturer's literature. Secondly, cracks might develop in the floor layer that could, in conjunction with a spill, allow potential hazardous constituents to penetrate the floor. As a condition of the LANL inspection plan for mixed waste, waste spills are

noted and remediated immediately upon discovery as is any evidence of containment problems such as cracks in the floor covering. The inspection records for this facility (Attachment 4, Inspection Records) do not document such an occurrence.

Text has been added to the closure plan requiring that an inspection be made of the storage area containment before the area is washed down during decontamination procedures. LANL personnel will inspect for any potential loss of containment integrity associated with the floor covering. The text amends Section 2 as follows:

> "The inside container storage area **will be inspected for any cracks or conditions that would potentially lead to the loss of liquid containment in the storage area. If any defects, deterioration, damage, or hazards affecting the containment system are discovered during inspection, appropriate remedial actions including repairs, maintenance or replacement will be completed prior to further decontamination activities. The storage area** will then be washed down with a solution of warm water and detergent."

2. The closure plan lacks unit containment system information. LANL should provide additional information regarding the containment system design, including a layout map of each storage area which shows location of floor drains, seams, expansion joints, containment features and any other pertinent information related to the storage areas that would help to determine the extent of mercury and/or wash water accumulation.

There are no floor drains or apparent expansion joints within the inside container storage area at TA-21-61. The containment area is surrounded by a continuous 6 inch high concrete curb placed just within the building walls on the northwest, southwest and southeast sides of the building. An additional curb on the northeast side of the storage area is placed across the floor of the building. The curb skirts a sump and slopes into a ramp through the main access door on the southeast wall. The painted epoxy covering described in the NOD Response to Comment #1 extends over the concrete curb on all sides. (Attachment 3, Facility Design Drawings)

3. A summary of the inspection logs for the storage areas should be provided with the closure plan to document all release information. Waste manifest forms should also be included.

In 1994, storage of fluorescent light bulbs prior to recycling took place in the TA-21-61 inside container storage area. The fluorescent light bulbs were stored periodically through February 29, 1996 (Attachment 4, "Inspection Records"). Inspection records for 1994 and 1995 do not show that any releases occurred from the storage of fluorescent light bulbs in TA-21-61. The waste bulbs and two drums containing solvents are the only hazardous and radioactive mixed wastes known to have been stored at the site. The drums contained pentyl acetate, acetone, and paint contaminated with mercury and radioactive isotopes. They were characterized with D001 and D009 EPA Hazardous Waste numbers for ignitability and mercury characteristics. The shipping records show that the two drums of waste (Drum numbers D905388 and D905763, Attachment 2, Waste Manifests and Waste Data Forms) were stored at the facility from June 25, 1990 through July 23, 1990. No record of inspection was generated previous to the 1994 inspection records.

The attached waste data forms were generated by querying the LANL Waste Database maintained by the Chemical Science and Technology Division. The waste data forms include polychlorinated biphenyl (PCB) contaminated materials and solvents that were received from TA-21-61 prior to the site being designated for mixed waste storage. The forms are included as supporting documentation for the site history discussed in the TA-21 Operable Unit RFI Work Plan for ER, May 1991, (Volume II, Page 14-16) and the Closure Proposal submitted for this unit to NMED, March 22, 1996.

4. A more detailed description, plan or cross section of the outside storage area adjacent to Building 61 is needed to further evaluate the adequacy of the proposed sampling and analysis plan.

An approximately 2,400 square foot portion of the area east of the TA-21-61 building was paved with asphalt and bermed to serve as a storage area for PCB oil awaiting analysis in October, 1981. The storage pad is 58 feet by 41 feet and approximately 4 inches thick based on design practice. The berms are asphalt, approximately 7 inches high and 4 inches wide and are on top of the four edges of the pad. Two asphalt ramps are included over the berm on the northwest side of the pad.

A diagram of the asphalt pad is included as part of Attachment 3, Facility Design Drawings, "As-built Record Floorplan Mixed Waste Storage Facility," of this submittal.

5. Does the facility have any soil monitoring systems in the vicinity of either storage unit? LANL should include information on existing monitoring systems within the closure plan.

There are no existing soil monitoring systems near TA-21-61.

6. The Closure Plan Performance Standards should be more detailed regarding potential hazardous contaminants and specific regulatory standards. LANL should modify this section to address the above issue.

The introductory section of the closure plan has been modified to stipulate closure standards for New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20 NMAC 4.1), as revised November 1, 1995, Subpart VI, 265.111. As container storage areas, closure for these units does not include additional specific container management requirements in 20 NMAC 4.1, as revised November 1, 1995, Subpart VI, Subpart I.

The container storage area inside TA-21-61 will be decontaminated to nondetectable or statistically insignificant levels of hazardous constituents as discussed in Section 3.0 of the closure plan. Statistical significance will be determined using SW-846 methods. Based on the review of wastes stored in the inside storage area, Table 1 has been modified to delete non-applicable analytical parameters. These include the references to cyanides, ignitability, reactivity, chlorinated herbicides, organochlorine pesticides and phenols.

The final assessment and potential decontamination of the outside container storage area will be performed under the LANL Environmental Remediation (ER) Project as an existing solid waste

management unit (SWMU 21-003) for contamination resulting from past PCB waste management practices. Potential hazardous contaminants have been identified as PCB contaminated oils and solvents as discussed in the TA-21 Operable Unit RFI Work Plan for ER, May 1991. Sampling results for PCBs indicate that the contamination is nonuniform, ranging from less than 10 ppm to approximately 95,000 ppm. This data is also supported by the Waste Management Data Forms in Attachment 2 of this submittal. Although the outside container storage area was included in the Hazardous Waste Permit Part A Application for Mixed Waste of January 25, 1991, it has not been used for mixed waste storage. The closure of this unit for mixed waste management purposes will involve removal of remaining waste management equipment to abate any potential for further contamination of the site. There are two non-hazardous waste oil storage tanks on the storage pad that will be removed. The area will no longer be used for waste storage of any type.

If an ER Project site is identified as a possible candidate for an accelerated cleanup or corrective measures action based on the initial review of historical information, a Phase I investigation designed to collect data to support this decision is conducted. Phase I surface sampling and analysis activities were conducted at this site in 1988 and in 1993 as discussed in the TA-21 Operable Unit RFI Work Plan for ER, May 1991, (Volume II, Page 14-16) and the Closure Proposal submitted for this unit to NMED, March 22, 1996. ER Project investigation and potential remediation plans for the site are scheduled. The first activity is review of the 1993 sampling data. A Phase I subsurface sampling effort and potential follow-on remediation effort have been set for FY 1999 in the ER Project Baseline Plan as prioritized by LANL with the DOE and NMED. The subsurface sampling activity will be followed by a RCRA Facility Investigation (RFI) report. Suggested language describing the potential source of contamination and the ER Project corrective action applicability has been added to Section 2.0, "Closure Procedure" of the closure plan.

7. Section 2.0, Closure Procedure, Page 3, paragraph 1: "...equipment will be removed and decontaminated." Will the equipment be moved before it is decontaminated? LANL should provide more detailed information regarding the removal and decontamination procedures proposed within the closure plan.

The referenced language is standardized text included in each of the LANL mixed waste management unit closure plans developed for the HWMR-6, Part VI requirements. There is no equipment requiring decontamination in the inside container storage area at TA-21-61. The only equipment present at the outside storage area are two waste oil tanks. The tanks are empty but have been used in the past for storage of waste oils containing less than 50 ppm PCBs. Therefore, as best management practice they will be characterized and transported as PCB contaminated. The tanks will be sent to a commercial PCB storage facility for decontamination and metal recycling using appropriate procedures. This procedure will be documented in the final closure report as described in Section 8.F. of the closure plan.

Attachment B, Administrative Deficiencies

1. DOE/LANL's proposed Closure Plan separates the inside from the outside storage areas and treats them differently. DOE/LANL proposes to clean close the inside storage areas while addressing "surface contamination of the pad" at the outside storage area. In this Closure

Plan, contamination other than on the surface of the pad even if it may have originated from the pad, would be addressed during corrective action activities at TA-21. To achieve "Clean Closure" as described in the closure plan both inside and outside storage areas must be addressed in the same manner and at the same time due to the fact they were listed as a single unit on Part A attaining Interim Status for Mixed Waste in January, 1991. The good of clean closure at storage sites is to leave no materials that require further care. The "Industrial Clean Closure" proposed in the closure plan would require "deed notices" and possible revisiting of the site if the land use changed. NMED recommends that DOE/LANL revise the closure plan to describe removal of the possible source in the TA-21 Building 61 Storage Area. NMED will then certify removal of the source, under the provisions of 20 NMAC 4.1 (revised November 1995) Subpart VI, 265.111, and allow additional contamination to be addressed through Corrective Action of SWMU 21-003 under the provisions of the Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act (RCRA).

As discussed in the answer to NOD comment Number 6 of Attachment A, LANL has proposed a decontamination procedure for the inside storage area involving a washdown to background or statistically insignificant hazardous constituent levels. The decontamination of the outside container storage area will be addressed as part of the ER Project SWMU 21-003 investigation and remediation activity.

The secondary containment for the inside storage area will be inspected to determine that there is no potential for leakage of hazardous constituents during the decontamination procedure. The decontamination procedure and subsequent sampling and analysis will demonstrate the removal of potential hazardous constituents from the storage area. The building is enclosed and further operations at the site will not involve mixed waste storage. Therefore, the inside storage area will no longer represent a source for potential contamination nor is it likely that it will be recontaminated.

Mixed waste was not stored on the outside container storage area during its use as an identified mixed waste storage area. Contamination at the area may be related to PCB waste management activities discontinued before the area was designated for potential mixed waste storage. The extent of contamination from this source is currently under investigation by ER Project and the final remediation determination and appropriate procedures are scheduled as part of a process requiring LANL, DOE and NMED concurrence. The final decontamination of the outside storage area will occur as part of scheduled ER Project activities and will meet equivalent RCRA or Toxic Substances Control Act waste management clean-up standards as required by the Hazardous and Solid Waste Amendments (HSWA) corrective action process. Therefore, the revisions to this closure plan describe the procedure for removing the only presently remaining source of potential contamination (i.e., the waste oil tanks) and document that additional contamination will be addressed under the corrective action provisions of HSWA.

The following suggested language has been added to Section 2.0, "Closure Procedure," of the Closure Plan:

> **"The outside container storage area has never been used for the storage of hazardous and radioactive mixed waste. The asphalt pad comprising the mixed waste storage area was used for the temporary storage of drums of materials containing PCBs and the storage in two tanks**

of bulk waste oil containing less than 50 ppm PCBs. Decontamination activities will include the characterization of any containers and tanks for subsequent disposal pursuant to applicable requirements.

"Previous sampling on and around the outside container storage area has shown contamination to be present as a result of the PCB waste management activities. The primary contaminant of concern is PCB contaminated oil and other organic compounds. Prior to its designation as a mixed waste storage area, kerosene and petroleum based solvents were used at the storage area to rinse transformers and capacitors after they had been drained of PCB oil. As a result of this information, TA-21-61 has been identified as a solid waste management unit (SWMU) pursuant to the Solid Waste Disposal Act, as amended by RCRA, as amended (U.S.C. 6901, et seq.) and Module VIII, Special Conditions Pursuant to the 1984 Hazardous and Solid Waste Amendments to RCRA for the Los Alamos National Laboratory Hazardous Waste Permit, May 13, 1990. As such, RCRA corrective action for remediation of the site is scheduled for future implementation by the Environmental Remediation Project, LANL.

"Removal of the remaining equipment on the outside storage area at TA-21-61 will elimate any potential source for further contamination of the area prior to this RCRA corrective action. Further procedures for the investigation and possible remediation of the site will proceed pursuant to HSWA."

2. DOE/LANL must provide an Ecological Risk as well as a Human Health Risk Assessment for this unit based on the performance standard addressed in the closure plan. DOE/LANL is reminded that NMED requires a risk assessment based on residential standards for a comparison reference point.

Risk assessment for SWMU 21-003, including the outside storage container area, will be performed during ER Project investigation activities described in the response to comment Number 6, Attachment A of the NOD. The Phase I investigation of this site will result in an RFI report scheduled for FY 1997. The completed Phase I investigation will collect the data necessary for a screening assessment or risk management decision. Current information is not sufficient for the comprehensive evaluation of the outside container storage area to the 20 NMAC 4.1, Part VI closure standard. No specific risk assessment will be performed for the inside container storage area as it will have been clean closed.

The use of Ecological Risk Assessments for ER Project sites and the appropriateness of residential standards is currently being negotiated with NMED. NMED is aware that baseline information necessary for habitat evaluation must be developed as discussed by representatives of the Hazardous and Radioactive Materials Bureau, DOE and the LANL ER Project on July 16, 1996. Residential standards may be required for a comparison reference point for assessment of this site but the applicable land use designation for this site is industrial as described in the LANL Site Development Plan (LANL 1994, 1171).

3. DOE/LANL must provide NMED with a software copy of the amended closure plan on a 3.5" floppy disk in WordPerfect 5.1 for the preparation of the Public Notice and final version for that Public Notice. The disk must be submitted with the written response to this NOD within 30 calendar days of the receipt of this correspondence.

The requested electronic copy of the amended closure plan is included in this submittal. The copy contains a "bold/strikeout" and "clean" text version of the amended closure plan. The Tables and Figures for the closure plan are not currently available in electronic form but are included in the attached hard copy versions of the closure plan without revision.