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VIA OVERNIGHT DELIVERY

May 16, 2002

Dr. John C. Browne, Director
Los Alamos National Laboratory
P.O. Box 1663, MS A100
Los Alamos, NM 87545

Mr. David A. Gurule, Area Manager
Los Alamos Area Office
Department of Energy
528 35th Street, MS A316
Los Alamos, NM 87544

RE: NOTICE OF DEFICIENCY
GENERAL PART A, APRIL 1998, REVISION 0.0
GENERAL PART B , OCTOBER 1998, REVISION 1.0
RCRA PERMIT APPLICATIONS
LOS ALAMOS NATIONAL LABORATORY EPA ID# NM0890010515
HWB-LANL-01-006

Dear Dr. Browne and Mr. Gurule:

The New Mexico Environment Department (NMED) has reviewed the Los Alamos National Laboratory and U.S. Department of Energy (Permittees) response to a Request for Supplemental Information (RSI) issued by NMED on June 25, 2001, for the above-referenced Applications. The Permittees' response is dated November, 2001.

Attachment A to this Notice of Deficiency (NOD) specifies information that was not adequately addressed in the RSI response. The requested information must be submitted to NMED within 90 days of receipt of this letter, and incorporated into the final revision of the Applications.

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If you have any questions or need additional information, please contact Carl Will of my staff at 505-428-2542.

Sincerely

James P. Bearzi
Chief
Hazardous Waste Bureau

Attachment

cc: J. Kieling, NMED HWB
D. Cobrain, NMED HWB
C. Will, NMED HWB
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file: Reading and LANL Permit

ATTACHMENT A
NOTICE OF DEFICIENCY
TECHNICAL ADEQUACY REVIEW

RCRA PERMIT APPLICATION
GENERAL PART A, APRIL 1998, REVISION 0.0
GENERAL PART B, OCTOBER 1998, REVISION 1.0

LOS ALAMOS NATIONAL LABORATORY
EPA ID NO. NM0890010515

May 16, 2002

1. (NMED 6/25/01 RSI Comment Nos. 1 and 2) The New Mexico Environment Department (NMED) is reviewing the form submitted by the Permittees on January 16, 2002 for completeness and accuracy.

GROUNDWATER

2. (Comment 15) Revise the Application to include the most recent data.

3. (Comment 16) The response states that, "[T]he Hydrogeologic Workplan (HWP) does not contain specific scope regarding determination of vertical or lateral extent of either the perched zones or the alluvial aquifers." The determination of the extent of perched zones and alluvial aquifers will be included in the Permit as a Permit condition.

The response states that "LANL has already satisfied NMED's May 30, 1995, letter regarding the request for a groundwater monitoring program." NMED disagrees, as explained in new Comment No. 4 below.

4. (Comment 35) NMED requested that Permittees include in the Application a description of their groundwater monitoring program, or a schedule for installation of the program, that fulfills the requirements of 20.4.1.500 NMAC (incorporating 40 C.F.R. Part 264, Subpart F) for regulated units and solid waste management units (SWMU's). This is mandated by 20.4.1.900 (incorporating 40 C.F.R. § 270.14(c)).

Permittees' response is incomplete, inaccurate, and misrepresents NMED's positions. Permittees' response is contained in their November, 2001, Response to Request for Supplemental Information, and their February, 2001, Response to Request for Additional Information.

NMED has provided notice to Permittees that Permittees are required to have and do not have a groundwater monitoring program compliant with 20.4.1.500 NMAC (incorporating 40 C.F.R. Part 264, Subpart F). (See May 30, 1995 letter; August 17, 1995 letter; November 20, 2000 Request for Additional Information; June 25, 2001 Request for Supplemental Information (RSI); December, 2001 letter). NMED has provided notice to Permittees since 1992, at the latest, that Permittees' groundwater monitoring is not adequate to detect and monitor releases of contaminants to groundwater at the Facility. Because Permittees have not

submitted a groundwater monitoring program or a schedule for completion of a program compliant with regulatory requirements, Permittees' have not provided an adequate response to NMED's May 30, 1995, letter denying Permittees' groundwater monitoring waiver request under 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.90(b)(4)).

NMED is again providing notice to Permittees that Permittees are not in compliance with the requirement to have a groundwater monitoring program meeting the requirements of 20.4.1.500 NMAC (incorporating 40 C.F.R. Part 264, Subpart F) for regulated units and SWMU's at the Facility.

Permittees claim in their RSI response that the Groundwater Protection Management Program Plan (GPMPP), Appendix F, dated October, 1995, describes a groundwater monitoring program compliant with Subpart F. Among other deficiencies, all wells in the uppermost aquifer included in the GPMPP are test wells and production wells, are not RCRA-compliant, are not constructed or located to assess the nature and extent of releases from either regulated units or SWMU's, are not located to determine the extent or flow direction of known contaminant plumes, and were not approved by NMED.

Also cited by Permittees is the Hydrogeologic Work Plan (HWP). The HWP does not describe a groundwater monitoring program compliant with regulatory requirements. The HWP describes the installation of characterization wells intended to collect groundwater depth, flow, and other characterization information that will support establishment of an adequate groundwater monitoring program. Wells installed under the HWP may support a monitoring network, but will not be sufficient in themselves to determine nature and extent of contamination. The HWP states that 32 groundwater characterization wells will be installed in the uppermost aquifer, with 28 completed by the end of 2002 and all 32 completed by the end of 2003. Well installation began in 1997, and 11 wells have been completed. At the current rate of installation, the 32 proposed wells will be completed in approximately 2012, at which time, according to the HWP, an unspecified groundwater monitoring program will begin to be implemented.

NMED is not disputing the Permittees' ability to submit another groundwater monitoring waiver request under 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.90(b)(4)). NMED does not foresee approving such a request. The point of NMED's comment is that until the waiver request is approved, the Permittees are required to institute a groundwater monitoring program meeting all requirements of 20.4.1.500 NMAC (incorporating 40 C.F.R. Part 264, Subpart F).

In Permittees' RSI response, Permittees express an apparent belief that the waiver is in effect after denial by NMED while Permittees collect additional data to support future waiver requests. In their February, 2001, Response to Request for Additional Information, Permittees refused to submit requested groundwater monitoring data obtained during the interim status period, as required by 20.4.1.700 NMAC (incorporating 40 C.F.R. § 270.14(c)), "because groundwater monitoring waiver demonstrations were in place until they were denied in 1995," thus expressing an apparent belief that the waiver was in effect prior to denial as well.

Permittees continue to misrepresent NMED's position regarding the HWP. NMED's letter dated May 30, 1995, titled "Denial of the Los Alamos National Laboratory's Ground-Water Monitoring Waiver Requests," states that "groundwater monitoring program plans will

be required for LANL to be in compliance with . . . Subpart F requirements." The letter states that groundwater monitoring program plans are not required for each closure of RCRA-regulated sites at the Facility, and that instead a comprehensive plan may be developed addressing both site-specific and site-wide groundwater monitoring objectives. The letter states that the comprehensive plan may be part of a modified GPMPP. As explained above, the GPMPP has not been modified to include a monitoring program compliant with Subpart F.

The Permittees' February, 2001, Response to Request for Additional Information, states that "NMED requested the development of the Hydrogeologic Workplan in order to address perceived waiver demonstration inadequacies." NMED has no interest in whether or not Permittees address the waiver inadequacies. NMED requested the HWP in order to obtain data that will support establishment of an adequate groundwater monitoring program meeting RCRA ground-water monitoring requirements, as is stated in NMED's August 17, 1995, letter requesting the HWP.

In Permittees' February 2001 Response to Request for Additional Information, Permittees state on page 8, last paragraph, that "There is currently no known groundwater contamination from regulated units at LANL." Permittees have detected groundwater contamination that may be from TA-54, and have detected groundwater contamination that may be from MDA P at TA-16.

Permittees do not have in place a groundwater monitoring program compliant with 20.4.1.500 NMAC (incorporating 40 C.F.R. Part 264, Subpart F). NMED requires that Permittees include in the Application all information required by 20.4.1.900 NMAC (incorporating 40 C.F.R. § 270.14(c)(3)); a schedule for submittal of all information required by 20.4.1.900 NMAC (incorporating 40 C.F.R. § 270.14(c)(2)); a schedule for submittal of all information required by 20.4.1.900 NMAC (incorporating 40 C.F.R. § 270.14(c)(5)); and a schedule for installation of a groundwater monitoring program meeting the requirements of 20.4.1.500 NMAC (incorporating 40 C.F.R. Part 264, Subpart F).

WASTE ANALYSIS PLAN

General Comments

5. The Waste Analysis Plan (WAP), Attachment B to the General Application, does not include waste characterization procedures in sufficient detail to demonstrate compliance with 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.13). Each waste stream must be characterized to determine if it is a hazardous waste, to determine its waste code under 20.4.1.200 NMAC (incorporating 40 C.F.R. Part 261), and to determine all other properties of the waste necessary to properly manage the waste in compliance with NMAC 20.4.1, including the requirements specified in Comment No. 6 below.

Permittees must obtain a detailed chemical and physical analysis of a representative sample of a waste stream prior to treatment or storage of the waste. The waste analysis procedures must be described in the WAP.

The required analysis must be in the form of sampling and analysis of the waste stream, unless waste stream-specific reasons are provided sufficient to justify the use of Acceptable

Knowledge (AK). United States Environmental Protection Agency (EPA) guidance, "Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Waste," April 1994 (EPA 1994), and U.S. Nuclear Regulatory Agency (NRC) 1997 guidance indicates that the use of AK is appropriate under certain conditions, for example for mixed waste in order to address worker safety concerns, and where matrices are not amenable to sampling. However, the use of AK must be justified for each waste stream. EPA 1994 states that "wherever feasible, the preferred method to meet the waste analysis requirements is to conduct sampling and laboratory analysis because it is more accurate and defensible than other options." The WAP must include specific and mandatory criteria for determining when AK is acceptable and sampling and analysis is not required for a specific waste stream.

The WAP must include sampling and analysis procedures, including type of samples collected, sampling device, method for selecting the location of a sample within a waste stream, and frequency.

Revise the WAP to replace discretionary terms such as "may" with mandatory terms such as "will," "must," or "shall." Characterization procedures demonstrating compliance with 264.13 must be mandatory Facility-wide, and all procedures must be included in the WAP.

Revise the WAP to include all waste analysis requirements for the Facility as a whole, including treatment. As presently arranged, waste analysis requirements for treatment at TA-55 is contained in the TA-55-specific application. Separating WAP requirements in this manner is unnecessarily confusing.

Revise the WAP to specify that records of waste analyses will be maintained in the operating record in compliance with 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.73(b)(3)).

Specific Comments on Permittees' November, 2002, Responses to NMED June 25, 2001, RSI

6. (NMED 6/25/01 RSI Comment No. 37) Revise the WAP as requested by NMED to include a summary of procedures for complying with waste analysis requirements for handling of ignitable, reactive, and incompatible wastes in compliance with 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.17); determining compliance with Land Disposal Restrictions (LDR's) under 20.4.1.500 NMAC (incorporating 40 C.F.R. Part 268); determining compliance with 40 C.F.R. Part 264, Subparts AA, BB, and CC standards; receipt of waste from off-site; and shipment of waste to off-site facilities. The procedures contained in the LANL Standard Operating Procedures (SOP's) submitted by Permittees are sometimes not complete or sufficiently detailed. Because SOP's, for example Detailed Operating Procedures (DOP's), Laboratory Implementation Requirements (LIR's), and Laboratory Implementation Guidelines (LIG's), will not be included in the Permit, a summary of the above procedures must be included in the WAP.

Revise the WAP to specify how waste analysis requirements will be met, and not only reference waste management requirements. For example, WAP Section B.5, Special Procedural Requirements, must address waste analysis requirements for ignitable, reactive, or incompatible wastes, and not only reference waste management procedures for those wastes.

Land Disposal

Revise the WAP to specify waste characterization procedures required to comply with LDR's under 20.4.1.800 NMAC (incorporating 40 C.F.R. Part 268), including storage prohibitions at 20.4.1.800 NMAC (incorporating 40 C.F.R. § 268.50) and characterization requirements at 20.4.1.800 NMAC (incorporating 40 C.F.R. §§ 268.7 and 268.9). The WAP does not adequately specify what are Permittees' LDR requirements and how Permittees will comply with those requirements. The WAP LDR procedures at WAP Section B.5.3 focus on off-site shipment of waste, do not provide sufficient detail on waste analysis for treatment, and do not address Permittees' storage prohibitions under 20.4.1.800 NMAC (incorporating 40 C.F.R. § 268.50).

WAP Section B.5.3 states that Permittees will comply with 20.4.1.800 NMAC (incorporating 40 C.F.R. § 268.7(b)) for off-site waste received at the Facility for treatment. 20.4.1.800 NMAC (incorporating 40 C.F.R. § 268.7(b)) applies to all waste treated at the Facility, not just off-site waste.

20.4.1.800 NMAC (incorporating 40 C.F.R. § 268.7(b)) requires that the frequency of testing treated waste must be specified in the WAP. Revise WAP Section B.5.3 to specify the frequency of testing or to reference where in the WAP the frequency is specified.

WAP Section B.3.1.1 states that AK will be used to determine LDR status. WAP Section B.5.3 states that attainment of treatment standards will be determined by sampling or AK. Revise the WAP to include criteria for determining AK acceptability.

Revise the WAP to specify waste analysis procedures sufficient to demonstrate compliance with storage prohibitions at 20.4.1.800 NMAC (incorporating 40 C.F.R. § 268.50), including ensuring that hazardous waste not included in the Federal Facility Compliance Order (FFCO) Site Treatment Plan (STP) is removed from the Facility within one year. If the Permittees intend to store hazardous waste not listed in the STP for longer than one year, the WAP must address how attainment of LDR treatment standards will be verified for that waste.

Revise the WAP to specify compliance with the 20.4.1.800 NMAC (incorporating 40 C.F.R. § 268.9(a)) requirement that all wastes determined to be characteristic hazardous waste must also be evaluated for the presence of underlying hazardous constituents.

Revise the WAP to specify how LDR's apply to treatment of hazardous waste. HE waste residues from OB may have LDR limitations based on underlying constituents under 20.4.1.800 NMAC (incorporating 40 C.F.R. § 268.40(e)).

Permittees' statement in their November 2001 RSI response that "requirements in . . . Part 268 . . . are followed" is not sufficient.

Ignitable, Reactive, And Incompatible Wastes

Revise WAP Section B.5.1 to specify who makes the compatibility determination, what waste analysis is required to make the determination, and at what stage of the waste management process the analysis and the determination occur.

WAP Section B.5.2 only addresses treatment by open burning (OB) and open detonation (OD). Revise to include waste analysis requirements for treatment of hazardous wastes by cementation, virtrification, and all other treatment at the Facility.

Subpart CC

WAP Section B.5.4 is unacceptably vague. Revise WAP Section B.5.4 to include specific criteria for when sampling and analysis will be performed to ensure compliance with 20.4.1.500 NMAC (incorporating 40 C.F.R. Part 264, Subpart CC), for example if AK indicates that management of Volatile Organic Compounds (VOC's) occurred. Section B.5.4 states that generators are responsible for determining Subpart CC compliance and may do so based on AK. However, the WAP does not specify when sampling and analysis will be required and when AK alone is sufficient to identify 500 ppm VOC concentrations.

Mixed waste is not exempt from Subpart CC requirements, as is stated in Permittees' November 2001 RSI response. A hazardous waste management unit used solely for mixed waste in accordance with all applicable regulations under the Atomic Energy Act and the Nuclear Waste Policy Act is exempt from Subpart CC requirements under 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.1080(b)(6)).

Generator Characterization

7. (Comment 38) Revise the WAP as requested by NMED to include procedures for generator waste characterization, including Facility-wide criteria for when AK is adequate and when sampling and analysis is required. The procedures in the submitted LANL SOP's are not sufficiently detailed, and do not include criteria for generator waste characterization, including criteria for AK adequacy. Because DOP's, LIR's, and LIG's will not be included in the Permit, a summary of the procedures must be included in the WAP.

Generator waste characterization procedures must include sampling and analysis procedures, including sampling methodologies and analytical parameters.

WAP Section B.3.1 includes somewhat general waste analysis information, relying primarily on AK for waste characterization, but does not specify the decision criteria under which sampling and analysis will be performed. Revise the WAP to include this criteria.

Verification

8. (Comment 39) Revise the WAP as requested by NMED to include a summary of verification procedures for sampling and analysis and for AK for all waste management locations at the Facility, including locations other than TA-54. Include sample methods, including sample selection, frequency, and analytes. Because DOP's, LIR's, and LIG's cannot be included in the Permit, a summary of the procedures must be included in the WAP.

20.4.1.500 NMAC (incorporating 40 C.F.R. §§ 264.13(a)(3) and 264.13(b)(4)) requires that Permittees verify waste analysis meeting the requirements of 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.13) when necessary and that the WAP specify the frequency

that initial analysis will be reviewed or repeated to ensure its accuracy. WAP Section B.3.1.3 states that verification of AK may be performed to confirm the initial accuracy of waste characterization, to verify that applicable treatment standards have been met, when there is a change in a waste-generating process, when the generator requests a review, or when analytical results indicate a change in a waste stream. The WAP states that random selection of waste for verification will take place at a rate of one per cent per year of waste streams received at a storage unit and characterized by AK, and states that verification of factory sealed containers and original containers and lab packs will not take place. The WAP states that "all routinely generated waste streams will be re-evaluated annually to verify that they have not changed," and that this will be accomplished through "review and recertification of applicable waste characterization documentation." The WAP also states "any information that indicates a change in the process that generates the waste and may affect the waste shall cause the waste to be re-characterized no later than the next time the waste is generated." Revise the WAP or explain the above statement as follows:

a. Revise the WAP to specify all criteria triggering mandatory verification. Verification is not discretionary, as use of the word "may" indicates.
b. Explain how the one per cent value was determined. The number is very low. Revise the WAP to specify random verification based on a percentage of containers received rather than waste streams and to specify a minimum number of containers that will be verified. The language submitted could be interpreted to mean that if, for example, 90 waste streams are received at a storage unit in one year, no random verification would be required.
c. LANL's DOP-FMU64-026, R.0, MLLW, Chemical, and Hazardous Waste Sample Verification, Section 8.1, references a database used for identifying the waste stream that serves as the one per cent to be verified. Revise the WAP to specify how Permittees will determine the one per cent of the waste streams that will undergo verification.
d. Specify what actions are taken if verification shows AK to be inaccurate.
e. The WAP states that re-verification of "routinely generated" waste is to occur through review and recertification of documentation, not actual sampling and analysis. This approach requires justification and clarification, if that is Permittees' intent. Address Permittees response if this review indicates that a process change occurred in the past. If so, additional characterization of waste generated in the past after this process change is warranted.

WAP Section B.3.1.3 commits to re-characterizing waste when the waste generating process changes. Section B.3.1.3 also commits to a one per cent verification of waste characterization based on AK and an annual verification of all routinely generated waste streams. Revise the WAP to specify how non-routinely generated waste characterization is verified.

LIG 404-00-02.0 (2.0), Acceptable Knowledge Guidance, Section 7.3, recommends to generators that "procedures should be maintained to identify (and flag) when there are changes to the waste generating process or to the raw materials used in the process." Revise the WAP to include these procedures. Waste characterization verification may be variable based upon

unit-specific considerations, and the WAP is not intended to constrain unique characterization appropriate for specific waste streams. However, the WAP must establish general but enforceable verification criteria to ensure that sampling is performed when necessary.

LANL's DOP 26, Section 8.1, states that verification will also occur when there is a non-conformance report associated with a particular waste stream. LIG 2.0, Section 7.6, states that waste streams should be re-evaluated for quality assurance purposes. LIG 404-00-02.3 (2.3) states that waste verification is to be determined by facility-specific waste acceptance criteria. Revise the WAP to include these verification requirements and criteria.

DOP 26 Section 8.6, requires quality assurance sampling. Revise the WAP to include this requirement and procedures.

9. (Comment 40) 20.4.1.500 NMAC (incorporating 40 C.F.R. §§ 264.16(a)(1) and (c)) requires that personnel be trained both initially and annually to perform waste analysis required under 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.13). Include Permittees' November 2001 RSI Response language in the revised Application, with the specification that training will take place initially and annually.

10. (Comment 41) The Installation Work Plan Chapter 6 referenced in Permittees' response contains only general procedures, and is not part of the Permit. Revise the WAP to include specific, mandatory, uniform characterization procedures for remediation waste, including criteria for determining the acceptability of AK.

11. (Comment 42) In the revised Application, insert "presents information on and establishes requirements for." The WAP will be incorporated into the Permit, and the Permit will be an enforceable document containing requirements that the Permittees must follow, not a guidance document just presenting information.

12. (Comment 43) Revise or clarify the term as requested, because NMED requests that all waste characterization requirements for the Facility be included in the Facility-wide WAP. The WAP must specify waste characterization as required under 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.13) for generation, storage, treatment, and all other hazardous waste management that takes place at the Facility.

The term "may be used" implies that other information may be used in addition. Include in the WAP all information used for waste characterization.

13. (Comment 44) NMED recommends revising the description of Section B.1 to refer the reader to Attachment B-1.

14. (Comment 46) Revise as requested. Spent solvent waste streams may be chemically homogenous.

15. (Comments 50, 54 and 68) Revise as requested. The language as submitted may exclude constituents of concern, for example cyanides and PCB's. RCRA may impose

requirements in addition to those under the WIPP Permit. The WAP must address all hazardous waste at the Facility, and is not restricted to characterization required of TRU waste intended for shipment to WIPP.

16. (Comment 51) Revise as requested. NMED requires that Permittees sample, monitor, and report radionuclides to NMED.

17. (Comment 52) The categories used in Section B.3 are confusing because both HE waste and mixed waste are hazardous waste. Having a category called "hazardous waste" separate from "HE waste" and "mixed waste" can be read as meaning that mixed waste and HE waste are not hazardous waste, which is not the Permittees' intended meaning. Section B.3.1 is titled "Hazardous and Mixed Low-level Waste Characterization," but it does not include all hazardous waste characterization procedures, as might be expected. Revise the Application to rename the category called "hazardous waste" as "non-mixed, non-HE hazardous waste," or something equivalent.

The fourth bullet on page B-38 appears to contradict Table B-17 with respect to how homogenous solids will be characterized with respect to HE. The fourth bullet states that "HE concentrations may be directly measured in homogenous materials (e.g. soil or water). This is usually done by High Performance Liquid Chromatography, SW-846 Method 8330. Parameters such as the concentration of HE, its sensitivity, and the media in which it occurs are used to determine whether the waste is likely to be reactive or not." This statement implies that AK may be used to characterize homogenous waste in lieu of sampling and analysis. However, Table B-17 implies that AK will be used to characterize heterogenous waste only. The proposed changes appear to indicate that AK shall be used to characterize heterogenous waste, while sampling and analysis will be used to characterize homogenous waste, but this is very unclear from the proposed language changes. The Permittees must clarify the specific characterization processes with respect to heterogenous and homogenous waste contaminated with HE. The use of AK to characterize debris may be appropriate if adequate AK is available for these wastes.

NMED recommends not inserting the term "heterogeneous" into the second and third bullets on page B-38, as suggested in the RSI response. Homogenous waste could contain visual HE and could come in contact with HE where it cannot be tested or visually examined. Revise the WAP page B-38, fourth bullet, to indicate that heterogeneous waste as well as homogenous waste may be directly measured for HE.

18. (Comment 53) The revision was requested because Permittees are not authorized to dispose of hazardous waste on-site. Revise as requested or specify what future options would be limited by the revision requested by NMED.

NMED recommends the term "disposed of" instead of "disposed."

Acceptable Knowledge

19. (Comment 56) The Permittees' response to NMED's comment is inadequate because the criteria for deciding whether to use sampling and analysis or AK and procedures to determine AK adequacy must be specifically, completely, and consistently described in the WAP for incorporation into the Permit. The Permittees may have an AK process, but if the procedures are not specified in the WAP, NMED and the public cannot review those procedures and have no assurance that the procedures will continue to be implemented. Specifying AK procedures in the WAP also ensures enforceability and ensures that parties at the Facility subject to waste analysis requirements are aware of the procedures and that the procedures are mandatory Facility-wide, in accordance with 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.13) and EPA guidance (EPA 1994).

NMED requires that Permittees use sampling and analysis to characterize waste, unless explicit justification is provided for using AK. The criteria used to select AK instead of sampling and analysis must be well defined, consistently applied, and of sufficient detail to ensure that AK used is technically satisfactory, and NMED requires that these elements be incorporated into the Permit. Revise the WAP to include specific and mandatory criteria to determine when AK will be performed in lieu of sampling and analysis.

20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.13(a)(1)) requires that a detailed chemical and physical analysis of wastes must be obtained prior to treatment or storage. According to EPA guidance, AK means process knowledge and past records of analysis used in place of sampling and analysis for waste characterization. EPA and NMED policy is to prefer characterization by sampling and analysis, because it provides more accurate and defensible information.

AK may be used if specifically justified and if there is sufficient quality assurance. EPA guidance (EPA 1994) and U.S. Nuclear Regulatory Agency (NRC) 1997 guidance indicates that the use of AK for mixed waste is appropriate under certain conditions, for example to address worker safety concerns, and where matrices are not amenable to sampling. EPA and NRC guidance support the use of AK for mixed waste to reduce the potential for worker exposure, but NRC guidance recommends alternative sampling strategies to achieve similar ends. However, the use of AK requires justification, particularly since EPA has clearly indicated in its 1994 guidance that "wherever feasible, the preferred method to meet the waste analysis requirements is to conduct sampling and laboratory analysis because it is more accurate and defensible than other options."

The discussion of AK must include at a minimum waste stream identification, determination of hazardous constituents and associated hazardous waste codes, data assembly and documentation requirements, data evaluation and adequacy decision criteria, and discrepancy resolution. The process must be mandatory, with clearly defined trigger points where sampling and analysis will be considered.

WAP Section B.3.1.1.1 presents information on AK, but does not clearly indicate mandatory information and processes that will be followed, how AK will be assessed for usability, and when sampling and analysis will occur if AK is not of sufficient quality.

WAP Section B.3.1.1 states that there are certain circumstances where obtaining a representative sample for analysis may not be possible, but the WAP appears to make the blanket assumption that a representative sample will never be obtainable and therefore AK will be used to characterize waste. As stated in EPA guidance, sampling and analysis is the preferred methodology, and rather than assuming it is "impossible" to collect such information, the Permittees must provide clear justification for the use of AK rather than sampling analysis, and also criteria whereby the "acceptability" of AK will be established.

WAP Section B.3.1.2 states that sampling and analysis is "generally performed when a waste lacks sufficient process information to adequately characterize the waste based on acceptable knowledge." However, AK criteria to make such a determination are not presented in the WAP.

LIG 2.0 does not include the specific elements that would trigger sampling and analysis, and how Permittees will determine whether sampling and analysis alone, or sampling and analysis in combination with AK, will be used. LIG 2.0 does not discuss or reference the type of sampling that will take place or how that sampling will be determined. Also, while LIG 2.0 does attempt to establish an AK process, the procedures are not mandatory.

LIG 2.0, Section 7.0, states the TSDF and/or ESH-19 should be contacted for a case-by-case determination of AK acceptability based on on-site waste acceptance criteria (WAC) and the Permit, but does not specify these criteria, nor does it include or reference sampling methodologies to be employed if AK is unacceptable.

The processes outlined in LIG 2.0 appear incomplete. For example, LIG 2.0 states that the TSDF and/or ESH-19 is responsible for case-by-case determinations of AK acceptability. Revise the WAP to include this procedure, replace the term "TSDF" with a better defined term, and specify the following:

a. whether every generator submits an AK analysis request to the facility or ESH-19;
b. how the decision making responsibility is divided between the facility and ESH-19 and the appropriate authority determined;
c. what specific decision-making criteria the facility and ESH-19 will follow;
d. what information is considered mandatory to this determination;
e. how the facility and ESH-19 will make their AK determination; and
f. how the decision will be documented and reviewed.

The lists in LIG 2.0, Sections 7.4 and 10.0, are partially adequate with respect to AK documentation. The general process presented in Section 7.5 of LIG 2.0 does appear to capture many of the major AK elements that would be of concern, and is particularly good with respect to how AK documentation is referenced and retained, for example items 7, 8, and 9. Revise the WAP to include those procedures and to specify the following:

a. the type of information retained in the waste characterization record, for example summaries of AK information or copies of AK data;
b. the mandatory use of existing sampling and analysis data in AK determinations, and the inclusion of that data in the AK record;
c. criteria for determining whether AK data are "accurate and relevant," and training provided to those examining the information.

LIG 2.0 lists examples stating that AK may be sufficient where F, K, P, and U listed wastes are generated because the physical and chemical makeup of the wastes are generally well known and consistent from one facility to another, when wastes are discarded commercial chemical products, when radiological health concerns preclude sampling, and when the physical form of the waste, for example heterogeneous waste, precludes sampling. These basic categorical listings could be made more complete by including specific chemical constituents in the wastes documented through existing laboratory sample analysis data or process knowledge.

DOP-26, Section 8.2, refers to LIG 402-720-01 for guidance for determining what is ALARA with regard to radiological characterization. Risk associated with the analysis of radioactive waste streams may justify using AK for their characterization. Because the justification affects the characterization of the hazardous component of the mixed waste, Permittees must provide in the WAP the method of characterizing the radioactive component of a waste stream and qualifying or quantifying radiological analytical risks used to justify the use of AK instead of sampling and analysis.

With respect to data assembly in LIG 2.0, Section 7.4, specify in the WAP how the "adequacy of the documentation based on criteria established by the final TSDF" is determined.

20. (Comment 57) Revise as requested. The term "constituents" is defined in RCRA and will be defined in the Permit. "Component" has no certain meaning.

21. (Comment 58) Revise as requested. "VOCs, SVOCs, and metals" does not include all RCRA constituents, for example cyanides. The TRU Waste Certification Plan is not part of the Permit, and may not fulfill all RCRA requirements.

22. (Comment 59) Revise as requested. Revise the WAP to address waste analysis requirements for TRU mixed waste in addition to requirements for waste to be disposed of at WIPP. Waste characterization by generators and to comply with storage requirements may be required by RCRA in addition to requirements imposed by disposal facilities accepting waste. The requested revision does not change the characterization process for waste destined for WIPP, but does allow the option of sampling and analysis characterization if AK information is not sufficient to meet RCRA standards.

23. (Comment 60) Revise as requested. The intent of the comment was to revise the WAP to specify the obligation to review historical sampling and analysis results as part of the AK program. The Permittees' proposed revision does not make this explicit commitment. The Permittees' AK record and AK program must include the mandatory consideration of existing sampling and analysis data, if such data are available.

24. (Comment 63) The Permittees' response is partially adequate. NMED's intent was to remove the statistical basis for sampling of homogenous, treated TRU mixed waste. Statistically based sampling may be appropriate for wastes generated under controlled processes, but the Permittees' proposed revision does not address how waste generated outside

of the controlled process will be sampled. Include the proposed revision in the revised WAP and revise to address how sampling will take place for those treated wastes that are generated via uncontrolled processes.

25. (Comment 64) Revise as requested. "Metals, VOCs, and SVOCs" do not include all RCRA constituents, for example cyanides. The TRU Waste Certification Plan specifies waste characterization requirements for shipment to WIPP, is not part of the Permit, and may not fulfill RCRA requirements. The Certification Plan is separate from the Permit, and the Permit will be based on RCRA-requirements, not consistency with an unrelated internal plan. WIPP does not accept liquid waste, and therefore WIPP Waste Analysis is not applicable to this waste form.

26. (Comment 65) Revise as requested. "Metals, VOCs, and SVOCs" do not include all RCRA constituents, for example cyanides. The TRU Waste Certification Plan specifies waste characterization requirements for shipment to WIPP, is not part of the Permit, and may not fulfill RCRA requirements. The Certification Plan is separate from the Permit, and the Permit will be based on RCRA-requirements, not consistency with an unrelated internal plan. WIPP does not accept liquid waste, and therefore WIPP Waste Analysis is not applicable to all mixed TRU waste.

27. (Comment 66) Revise as requested. NMED requires that alternative methods be reviewed and approved by NMED prior to use. The Permittees' response to NMED's comment is inadequate. NMED's intent is to allow NMED review of alternative methods prior to site use. RCRA does not mandate the spectrum of analysis methods that must be performed, and EPA and authorized states can and do regulate non-SW-846 methods that are included in permits.

28. (Comment 67 and 69) Revise as requested. Method 8330 does not include all HE components.

CLOSURE AND POST-CLOSURE PLANS

29. (Comment 73) The proposed language in the response does not address regulated units that are not situated among SWMU's with a commingled release, for example TA-54 Material Disposal Areas (MDA's) G, H, and L, and therefore not subject to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.110(c)). Alternative requirements under 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.110(c)) must be approved by NMED. Alternative requirements are not applicable to TA-54 MDA's G, H, and L. NMED does not approve 20.4.1.500 NMAC (incorporating 40 C.F.R § 264.110(c)) alternative requirements for TA-54 MDA's G, H, and L.

The proposed language does not address final closure of the Facility. Revise the Application to address these deficiencies.

30. (Comment 74) The response does not address regulated units that are not situated among SWMU's with a commingled release, and therefore not subject to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.110(c)), for example TA-54 MDA's G, H, and L. Revise the proposed language to state that "Closure activities will be completed in accordance with the requirements of 20.4.1.500 NMAC (incorporating 40 C.F.R. Part 264, Subpart G)," and not 264.113(b) only.

31. (Comment 75) At MDA P, Permittees are attempting to remove or decontaminate all hazardous waste and hazardous waste residues, including contaminated soils and groundwater, but have not yet demonstrated achievement of this standard.

32. (Comment 76) The proposed language is not acceptable. The Permittees can choose to leave waste in place at closure and comply with post-closure care requirements only for land disposal units closed as landfills. Container storage units, cementation treatment units, vitrification treatment units, open burn miscellaneous units, and open detonation miscellaneous units will not be permitted by NMED as land disposal units, and must be closed by removal or decontamination of hazardous waste and hazardous waste residues. The Permittees may not choose to leave waste in place and enter into post-closure care for storage, treatment, or miscellaneous units. To the best of NMED's knowledge at this time, the only RCRA-regulated landfills at the Facility are MDA's G, H, and L. Those three landfills are now closed to receipt of hazardous waste, hazardous waste has been left in place, and those landfills are now and have been subject to post-closure care requirements. MDA P is a closed waste pile for which Permittees are attempting to demonstrate closure by removal or decontamination of all hazardous waste and hazardous waste residues including contaminated subsoils.

The June 29, 2000, RSI response states only that post-closure care requirements will be addressed in TA-specific closure plans.

Revise the Closure Plan to state that all post-closure care requirements will be met for land disposal units, including TA-54 MDA's G, H, and L, and all other hazardous waste management units will be closed by removal or decontamination of hazardous waste and hazardous waste residues in compliance with 20.4.1.500 NMAC (incorporating 40 C.F.R. Part 264, Subpart G).

33. (Comment 77) NMED agrees that site-specific activities required to comply with closure and post-closure requirements of 20.4.1.500 NMAC (incorporating 40 C.F.R. Part 264, Subpart G) should be included in the TA-specific closure and post-closure plans.

34. (Comment 78) As a Permit Condition, NMED will require that updated Sampling and Analysis Plans (SAP's) be submitted at the time of partial or final closure, 90 days prior to implementation, in order to ensure that the SAP's reflect the most recent technologies and our understandings of risk at the time of closure. The SAP will specify the use of equipment, methods, and techniques current at the time the SAP is prepared.

ADDITIONAL COMMENTS ON REVISED CLOSURE PLAN AND POST-CLOSURE PLAN SUBMITTED BY PERMITTEES WITH THEIR NOVEMBER 2001 RSI RESPONSE

General Comments

35. The revised Closure and Post-Closure Plans (Plans) do not address requirements for specific types of units. There are seven hazardous waste management unit types for which Permittees are seeking hazardous waste management authority or which are subject to post-closure care requirements under RCRA: container storage; treatment by open burning (OB); treatment by open detonation (OD); treatment by cementation; treatment by vitrification; MDA's G, H, and L, which are closed landfills subject to closure and post-closure care requirements; and MDA P, which is a closed waste pile for which removal and decontamination is being attempted, but if unsuccessful will be subject to post-closure care requirements. The Facility-wide Closure Plan must address all unit types.

36. The Facility-wide Post-Closure Plan must address closed land disposal units. Storage and treatment units must be closed by removal or decontamination of hazardous waste and hazardous waste residues. TA-54 MDA's G, H, and L are closed and are subject to closure and post-closure requirements now, including assessment of releases, not sometime in the future. Revise the Post-Closure Plan to include a general description of how the preceding requirements will be addressed. Revise the Post-Closure Plan to include dates of closure of land disposal units subject to post-closure care, including TA-54 MDA's G, H, and L.

37. The revised Plans do not address closure and post-closure care for RCRA-regulated land disposal units that are not situated among solid waste management units (SWMU's), which includes TA-54 MDA's G, H, and L, and that are therefore not eligible for alternative requirements under 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.110(c)). NMED does not approve 20.4.1.500 NMAC (incorporating 40 C.F.R § 264.110(c)) alternative requirements for MDA's G, H, and L.

38. NMED recommends replacing the term "clean close" with "remove or decontaminate hazardous waste and hazardous waste residues." The term "clean close" is not in RCRA or the Hazardous Waste Act or pursuant regulations, and there are no certain standards for achieving "clean closure." "Remove or decontaminate" is a closure standard specified in the regulations, and there is EPA guidance on meeting that standard.

Closure Plan

39. Page F-1, ¶ 2: Clarify what is meant that detailed partial closure information and procedures are addressed in "permit modification requests, or permit renewal documents." All closure information and procedures should be in the closure plans. If information and procedures change then the plans should be modified to include those changes.

40. P. F-2, ¶¶ 1 and 2 and throughout: All container storage units must be closed by removal or decontamination of hazardous waste and hazardous waste residues. Leaving waste in place and post-closure care are not options for container storage units.

41. P. F-2, ¶1, P. F-5, § F.1.9 and throughout: Address RCRA-regulated land disposal units that are not situated among SWMU's and that are therefore not eligible for alternative requirements under 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.110(c)), for example TA-54 MDA's G, H, and L. NMED does not approve 20.4.1.500 NMAC (incorporating 40 C.F.R § 264.110(c)) alternative requirements for MDA's G, H, and L.

42. P. F-2, line 16 and P. F-5, l. 16: Delete "or portions thereof." Partial closure consists of closure of one or more hazardous waste management units prior to final closure of the Facility. Because there are mandatory standards under 20.4.1 NMAC for partial closure, NMED requires that at partial closure Permittees close one or more hazardous waste management units in their entirety, and that Permittees not close parts of hazardous waste management units.

43. P. F-3, l. 4, P. F-5, § F.1.9, and throughout: Address RCRA-regulated land disposal units, including MDA's G, H, and L, that are closed and therefore are subject to closure and post-closure care requirements now, not sometime in the future. Revise the Closure Plan to include dates of closure of land disposal units that are now closed and which have not completed closure activities, including TA-54 MDA's G, H, and L.

44. P. F-3, l. 11: Insert "or storage" after "treatment or disposal."

45. P. F-5, § F.1.9 and throughout: Replace "clean-close" with "remove or decontaminate."

46. P. F-5, l. 23: Delete "clean-closure equivalency" or explain its meaning with specific reference to 20.4.1 NMAC, federal regulations, or guidance promulgated pursuant thereto.

47. P. F-5, l. 26 and throughout: Distinguish and address all types of units at the Facility. Post-closure care is an option for land disposal units only.

Post-Closure Plan

48. P. G-2, ¶ 4 and throughout: Address RCRA-regulated land disposal units not situated among SWMU's, and therefore not eligible for alternative requirements under 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.110(c)), for example TA-54 MDA's G, H, and L. NMED does not approve 20.4.1.500 NMAC (incorporating 40 C.F.R § 264.110(c)) alternative requirements for MDA's G, H, and L.

49. P. G-2, § G.1.7 and throughout: Revise to address RCRA-regulated land disposal units, including MDA's G, H, and L, that are closed and that are subject to closure and post-closure care requirements now, not sometime in the future. Revise to include dates of closure of land disposal units that are now closed and which have not completed closure activities, including TA-54 MDA's G, H, and L.

50. Table G-1: Revise to indicate that the hazardous waste management units are TA-54 MDA's G, H, and L, and not individual, unlined shafts, trenches, and pits at those landfills.

ADDITIONAL COMMENTS ON WASTE ANALYSIS PLAN

Sampling Methods

51. Revise the WAP to include more specific information regarding potential sampling methodologies, how sample locations will be selected, and selection of representative samples. Revise the WAP to include specific sampling techniques used for the different waste descriptions and specifying how a representative sample will be obtained, type of samples collected, sampling device, frequency, sample selection, and quality assurance.

WAP Sections B.3.1.2.1 and B.3.1.2.2 provide a very general discussion of solid and liquid sampling, but include no specific information regarding sampling methodology, sample location, and selection of representative samples. While SW-846 and ASTM are referenced, the WAP must include more detailed information specific to the waste encountered to ensure that the Permittees have a sufficient understanding of the sampling methodologies and a strategy in place to perform the necessary sampling and analysis. EPA 1994 guidance provides several examples of WAP's, which clearly demonstrate the need for inclusion of this information.

Revise the WAP to address determination of sample analyses based on available sample size and process knowledge, rather than to state that all one gallon or less "unknown" samples will undergo minimal analyses. WAP Section B.3.1 states that "occasionally, chemicals of an unknown nature require disposal." The Permittees state that such waste will be "tentatively" characterized by knowledge of operations and activities that were performed in the specific area in which the waste was generated, and that liquids less than one gallon will be analyzed only for pH, flash point, and reactivity, because full analysis of less than one gallon of a liquid cannot be performed. NMED does not agree with this assertion. At least some additional analyses can be performed. For example, chemical analysis of liquids for SVOC's requires a minimum of one liter of sample, VOC's require a minimum of 40 milliliters, and metals require a minimum of 100 milliliters. Additionally, EPA/NRC 1997 guidance recommends the use of less than 100 gram samples of mixed waste to reduce personnel exposure to radioactivity.

Treatment

52. Revise the WAP to include compliance with all waste analysis requirements for all treatment at the Facility. The WAP in the General Application must specifically address all requirements under 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.13) for the Facility as a whole. The WAP with specific procedures for treatment must include the required detailed chemical and physical analysis of a representative sample of wastes being treated and all the information required to treat the waste for OB, OD, cementation, vitrification, and all other treatment at the Facility, to comply with 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.13) and 20.4.1.800 NMAC (incorporating 40 C.F.R. § 268.7(b)).

Revise the WAP to specify what is the purpose of treatment by stabilization for all treated waste, for example de-characterizing the waste, attaining LDR treatment standards, or removing free liquids for disposal at WIPP or for LANL waste management purposes. Waste analysis must demonstrate treatment success. WAP Section B.1.3 states that mixed TRU waste is treated by cementation to stabilize the waste for storage and to meet the WIPP waste acceptance criteria. The WAP for cementation and vitrification included with the TA-55 specific Part B Application states that mixed TRU waste may be analyzed for toxicity characteristic metals utilizing the Toxicity Characteristic Leaching Procedure (TCLP) to confirm successful treatment and to confirm that the waste is no longer hazardous.

Off-Site Waste

53. Revise the WAP to specify all waste analysis requirements for receipt of off-site wastes. The discussion in Section B.4 and Table B-8 are incomplete because they do not present information about off-site wastes to be received at the Facility. The Application indicates that some sort of plan is to be developed for the acceptance and management of off-site wastes. This information must be included with the Application for receipt of off-site waste to be authorized under the Permit. The WAP must address all requirements in 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.13), including the potential need to sample and analyze each waste stream and waste stream fingerprint analysis. If Permittees are to rely on off-site AK to provide sufficient characterization information, the WAP must reflect how the Permittees will obtain and evaluate AK information from an off-site source, AK sufficiency criteria, how waste will be managed and characterized if sufficient AK is not available, when data analysis will occur, for example before or after shipment, and all other necessary considerations to ensure that only waste that is appropriately characterized is accepted at the Facility. The WAP must also specify what is done with waste after receipt from an off-site source, for example length of storage (more or less than 90 days). All waste accepted from off-site will ultimately be subject to the same management as on-site generated waste, and must therefore meet all WAP criteria.

Application Supplement 6, Off-Site Waste Information, states that Sandia National Laboratory will be sending mixed TRU waste to LANL for further waste certification and preparation for subsequent transport to WIPP. Supplement 6 further states that the mixed TRU wastes will utilize LANL's "capacity to confirm the hazardous component of the wastes."

Revise the WAP to specify how this confirmation will take place, including, if accurate, reference to the sampling and analysis of homogeneous TRU wastes in accordance with WIPP requirements in WAP Section 3.2. Submit an explanation of why ALARA concerns justify AK for non-WIPP mixed wastes, if Permittees can sample and analyze mixed TRU wastes bound for WIPP.

WAP Section B.5.3 addresses LDR standards for waste received at the Facility from off-site. Revise the WAP to provide an explanation of the intention of this provision, for example compliance with storage prohibitions under 20.4.1.500 NMAC (incorporating 40 C.F.R. § 268.50), when on-site disposal of hazardous waste is not authorized.

54. Revise the WAP to include waste characterization requirements for determining the presence of free liquids.

55. Table B-2 is incomplete with respect to waste descriptions. For example, contaminated solid wastes should specify that these include debris waste. Revise Table B-2 to include a more specific waste description where it is not currently included. This is required to understand the proposed basis for characterization and to ensure that the processes generating wastes, resulting wastes, and proposed characterization processes correlate and are appropriate. Revise the WAP Table B-2 to specify the TA where each waste type is generated.

56. Revise the WAP to include a definition of homogenous and heterogeneous waste, and to ensure that the WAP consistently uses the terminology. The distinction between heterogeneous and homogenous waste should indicate whether the heterogeneous or homogenous waste is comprised of liquid, soil, sludge, or debris waste. NMED interpreted the homogenous and heterogeneous nature of waste to be based on physical characteristics, meaning that there may be homogenous debris waste comprised of all metals, and homogenous sludges comprised of all sludges. However, the WAP is inconsistent. For example, the paint and related waste category on Table B-9 implies that all waste would be liquid in nature, but the discussion at page B-4 indicates that the waste is either heterogeneous or homogenous, implying that this designation would be made based on the chemical composition, not physical characteristics, of the waste. This is important because the inference is that homogenous waste can be sampled and heterogeneous waste is not amenable to sampling, but that may not be the case if, for example, a liquid is considered heterogeneous based on chemical composition.

57. WAP Section B.2.1 presents the listing of "analytical parameters and methods" that may be used, and references Tables B-9 through B-12 for additional information. Table B-14 lists characterization methods; however, the language throughout implies that the listed parameters and analytical methods are only examples of parameters, analytes, and methods that may be used. Revise the WAP to include all characterization methods.

58. Revise the WAP to ensure consistency and completeness between different tables and between tables and text. Section B.2.1 states that Tables B-9 through B-12 present analytical parameters and characterization methods that may be used for hazardous, low-level, mixed

TRU and He and HE-contaminated wastes generated at LANL. The Permittees also state that some or all of a listing presented in Section B.2.1 will be used to determine the regulatory status of wastes (i.e. AK, sampling and analysis, headspace gas/physical form, flashpoint, pH, and "additional characterization data"). However, comparison of the listings presented in Tables B-9 through B-12 and these tables indicate that some parameters on the listings are not reflected in the individual parameter discussion (although they may be discussed in the rationale section). Not all hazardous wastes presented in Tables B-2 through B-7 are represented in Tables B-9 through B-12. Revise the WAP so that all hazardous wastes and parameters presented in Section B.2.1 and Tables B-2 through B-7 are represented in Tables B-9 through B-12.

WAP Section B.2.2 and the referenced Tables, together, do not always clearly explain the rationale for parameter selection. For example, Table B-10 states that the parameter of interest for Noncombustible Debris is RCRA-regulated metals, but it is unclear how this will assess reactivity, which is included in the Table as a rationale for the parameter selection. Also, the referenced Tables do not address the sampling method, sample frequency, and sample selection.

59. Delete or explain the statement in WAP Section B.3.2 that characterization by process knowledge is "suitable for safe storage" of mixed TRU waste.

60. Clarify whether untreated HE undergoes sampling and analysis, as this Section implies that this characterization does not occur. While Tables B-17 and B-18 presents sampling methods, but does not address sampling frequency, sampling methodology, and sample selection as required.

61. Revise the WAP to specify that the Permittees will comply with all accepting facility requirements for meeting LDR standards when shipping hazardous waste off-site for disposal.

62. A Federal Facility Compliance Order (FFCO) issued by NMED to Permittees on October 4, 1995, exempts mixed waste storage at LANL from LDR storage time limits under 20.4.1.800 NMAC (incorporating 40 C.F.R. § 268.50), if Permittees have in place and are in compliance with a Site Treatment Plan (STP) for storage and treatment of mixed waste. The exemption applies to mixed waste listed in the STP. The FFCO allows LANL to avoid the 20.4.1.800 NMAC (incorporating 40 C.F.R. §§ 268.7 and 268.50) waste testing or analysis requirements for the wastes listed in the STP. The FFCO has significant impact on waste analysis requirements for the Permittees, yet is insufficiently addressed in the WAP. Revise the WAP to address the FFCO, the STP, and their effect on waste analysis requirements.

63. Revise the WAP to specify where WAP records, required by 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.73 (b)(3)), are stored and that those records shall be made available to NMED upon request. LIR 2.3, General Waste Management Requirements, Section 5.5.3, provides that the Hazardous and Solid Waste Group (ESH-19) will maintain these records. LIG 2.0, Section 8.0, provides that these records will be kept by the generator

for a period of three years and by the TSD unit for the life of the unit. The WAP does not address this issue.

64. Provide an explanation of why Waste Profile Forms (WPF) are listed in WAP Section 8.2 as documents required of the generators, yet Section 8.3 says that the storage facility will not "usually need" the WPF.

ADDITIONAL OTHER COMMENTS

65. (Comments 50, 54, and 58) Add to the list of parameters "RCRA characteristics of hazardous waste under 40 C.F.R. Part 261, Subpart C" and delete "reactivity."