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SNL 2004



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**RETURN RECEIPT REQUESTED**

June 25, 2004

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**SUBJECT: NOTICE OF DEFICIENCY # 3**  
**PERMIT RENEWAL APPLICATION**  
**SANDIA NATIONAL LABORATORIES EPA ID NO. NM5890110518**  
**TASK #: HWB-SNL-02-002**

Dear Ms. Wagner and Mr. Blanton:

The New Mexico Environment Department (NMED) has reviewed for administrative completeness and technical adequacy the U. S. Department of Energy/Sandia National Laboratories' (DOE/SNL, or Permit Applicants) responses to the October 10, 2003 notice of deficiency (NOD) issued by the NMED, as required under the New Mexico Hazardous Waste Management Regulations 20.4.1 NMAC.

Pursuant to its authority under the New Mexico Hazardous Waste Act, N.M.S.A. 74-4-1 et seq., and regulations promulgated pursuant thereto, NMED has found the responses to the subject NOD to be administratively and technically incomplete. The enclosed Attachment contains a list of the issues that DOE/SNL should address more fully, and the additional information the Permit Applicants must submit to complete the application.

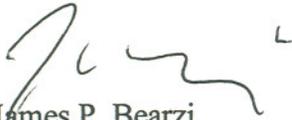
Please submit the requested information within sixty (60) calendar days from the date you receive this NOD. NMED may consider a petition for deadline extension, provided that a written justification and the expected submittal time are given. In addition, provide the required

Ms. Wagner and Mr. Blanton  
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information in four hard copies and on four CDs or 3.5" diskettes compatible with Microsoft Word.

If you have any questions, please contact Steve Pullen or Cornelius Amindyas of my staff at (505) 428-2544 and (505) 841-9488, respectively or at the above address.

Sincerely,



James P. Bearzi  
Chief  
Hazardous Waste Bureau

JPB/ca

Enclosure

cc:

John Kieling, HWB NMED  
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File: SNL 04 and Reading

**ATTACHMENT  
NOTICE OF DEFICIENCY # 3  
THE U.S. DEPARTMENT OF ENERGY/SANDIA NATIONAL LABORATORIES, NEW  
MEXICO.**

**June 25, 2004**

The following are comments on The U.S. Department Of Energy/Sandia National Laboratories (DOE/SNL's) response to the notice of deficiency (NOD) issued by NMED on October 10, 2002. The first 48 comments relate to waste characterization issues. The remaining non-waste characterization comments are based on SNL's response to the second NOD dated October 10, 2003. DOE/SNL must response to this NOD by providing to NMED the required information and incorporate the responses into the permit application text.

This evaluation will reference the U.S. EPA's waste characterization guidance document, *Waste Analysis at Facilities that Generate, Treat, Store and Dispose of Hazardous Waste* as "EPA 1994".

NM Hazard Waste Regulations referenced in this NOD simply reference the adopted federal regulation for brevity.

**1. NOD Comment 15(b), The Site-Wide WAP must discuss waste generator written documentation.**

**DOE/SNL's Response:** "Revised Sections B.3.1 and B.3.2 of the WAP include additional information on documentation provided by initial waste generators."

Response Evaluation The response regarding documentation provided by initial waste generators is partially adequate in that considerable additional information is included at WAP Sections B.3.1 and B.3.2. NMED is concerned however that there is insufficient commitment in the WAP to demonstrate compliance with the documentation retention time requirements of the regulations.

40 CFR § 264.73(b)(3) requires that information must be recorded, as it becomes available, and maintained in the operating record until closure of the facility. That information must include the records and results of waste analyses and waste determinations performed to satisfy, among other things, the general waste characterization requirements of § 264.13, the air emission determinations of Part 264, Subpart CC, and the LDR status determinations of § 268.7. The regulation at § 268.7(a)(6) includes in its description of relevant documentation all supporting data used to determine whether a waste is restricted from land disposal based solely on the generators knowledge of the waste. The regulation at § 268.7(a)(8) requires that a generator retain pertinent waste analysis data and other documentation for a period of at least three years. This retention period applies to waste generators, and does not supercede the document retention requirement at § 264.73(b) which requires owner and operators of permitted hazardous waste management facilities to retain records and results of waste analysis and waste determinations until closure.

WAP Section B.3.1.1, paragraph 5 states that “Acceptable knowledge documentation will be maintained at the Unit (unless otherwise specified in the Unit operating record) for at least three years.” However General Part B Section 9, *Record Keeping*, Section 9 does commit to maintaining in the operating record records and result of RCRA-regulated waste analysis and determinations (presumably until closure of the facility, though this is not stated).

NMED requires that the WAP Section B.3.1.1 statement be altered to clarify that the documentation will be maintained until closure of the unit. Furthermore, the WAP must be altered to specifically commit to maintaining all acceptable knowledge documentation, including all applicable process knowledge documentation as listed at WAP Section B.3.1.1.1. NMED is requiring this because, other than being a regulatory requirement, recent inspections at NM permitted facilities have demonstrated either poor retention or the unavailability of AK documentation.

WAP Section B.3.1.1.1, 2<sup>nd</sup> paragraph states “process knowledge for each RCRA-regulated waste or waste stream is kept in a file or a waste/waste stream reference file.” The paragraph implies that this information will be/is kept at the relevant permitted hazardous waste management unit, but does not specifically commit to this. To fully understand how SNL is maintaining its hazardous waste operating record, in particular the process knowledge information, NMED requires SNL clarify where the this information is kept.

**2. NOD Comment 15(c), The Site-Wide WAP must discuss waste generation processes and control.**

**DOE/SNL’s Response:** “Waste generation processes are already described in Sections B.1.1 and B.1.3 (formerly B.1.2) of the WAP.”

Response Evaluation The response regarding the waste generation processes and control is partially adequate in that generation processes are discussed in a general manner at WAP Section B.1.2 and twelve waste streams are described at WAP Section B.1.3. The issue of the level of control over a process that generates a waste is not addressed in the response.

The issue of the control of the waste generation process is significant with regard to the regulation at 40 CFR § 264.13(a)(3)(i), which requires waste analysis (or characterization) to be repeated when the owner or operator has reason to believe that the process or operation generating the waste has changed. The control over the waste generation process is particularly important for characteristic hazardous wastes whose concentrations are near the level that make them hazardous and with UHC concentrations near or at their respective universal treatment standards. SNL recognizes the significance of control over the waste generation process and its relevance to waste characterization in Section B.1.3 of TTF Permit Renewal Request, Revision 1.0. This Section was omitted from Revision 2.0. Revision 1.0 states “waste that are treated at the TTF are generated as a result of specific procedures and activities that are well defined and well controlled, enabling SNL/DOE to characterize waste streams on the basis of their KOP and the raw materials used.” Section B.2.1 of Revision 1.0 provides NMED with confidence that the wastes treated at the TTF are generated under controlled conditions through the statement

“wastes treated at the TTF are produced according to documented formulation processes or are known, commercially-manufactured explosives. The composition of the waste is well known. Variability occurs only in the relative amounts of non-explosive waste (e.g., water, alcohol, solvents) contaminated with explosives.”

Due to the above reasons and SNL’s reliance on the use of KOP (a.k.a., acceptable knowledge) in the waste characterization process, NMED requires that the WAP reference a procedure for evaluating the amount of “control”, or conversely the amount or variability, in the waste generation process. The WAP shall also specify how the results of this evaluation procedure will become part of the operating record for particular wastes.

Furthermore, though the WAP addresses the waste generation processes associated with the wastes treated at the RMWMF and AHCF by describing at Section B.1.4.2 the wastes to be treated and by describing at Sections B.3.2.2 and B.3.3.2 the characterization processes both pre and post treatment respectively, the WAP fails to fully describe the parameters that the wastes managed by these processes will be analyzed for and the rationale for the selection of these parameters as is required by 40 CFR § 264.13(b)(1). NMED requires that, at a minimum, SNL incorporate into the WAP the description of the treatment operations provided at the RMWMF Application, Revision 2.0, Section 8.1.

**3. NOD Comment 15(d), The Site-Wide WAP must discuss waste characterization using knowledge of process (KOP) and justifying the use of KOP.**

**DOE/SNL’s Response:** “Knowledge of process and justification for its use are already discussed in Section B.3.1.1.1 of the WAP.”

Response Evaluation SNL’s response is inadequate. KOP, or the rationale for using KOP in association with reactive wastes, is discussed in detail at Section B.2.1 of the TTF Permit Renewal Request, Revision 1.0, but is not discussed in the WAP. SNL must rectify this omission. NMED’s overall evaluation of SNL’s proposed use of KOP (or process knowledge which is a portion of acceptable knowledge) is located at Comments 30 and 31.

**4. NOD Comment 15(e), The Site-Wide WAP must discuss waste variability.**

**DOE/SNL’s Response:** “Waste variability is already included in Table B-1 of the WAP, as indicated by the term “Potential” in the last two columns of that table. A discussion of waste variability and a reference to Table B-1 are included in new Section B.1.2 to further address waste variability.”

Response Evaluation The response regarding waste variability is inadequate because it addresses the variability of waste “types” (i.e., general category used to describe one or more wastes or waste streams that share key features) instead of the variability of wastes or waste streams themselves. The issue of waste variability is the same issue as control of the waste generation process addressed at Comment 2.

**5. NOD Comment 15(f), The Site-Wide WAP must discuss “derived from” wastes.**

**DOE/SNL’s Response:** “Wastes “derived from” containment systems and from treated wastes are discussed in new Sections B.1.3.12 and B.3.3.”

The discussions in Sections B.1.3.12 and B.3.3 fail to reiterate the important characterization requirements for residues derived from treating or storing hazardous wastes specified at 40 CFR § 261.3(c-d). The issue is partially addressed at Section B.3.3.2, *Treated Wastes at the RMWMF and AHCF*, last paragraph, where it states “ Treatment residue derived from listed wastes will be handled as RCRA-regulated waste contained with the listed constituents of the original waste...” This language is also applicable for wastes treated at the TTF, as evidenced by Section B.2.2, 3<sup>rd</sup> paragraph, of the TTF Permit Renewal Request, Revision 1.0, which states “ash residue ‘derived from’ treated explosive wastes containing spent solvents will be handled as RCRA-regulated waste contaminated with the listed constituents of the original waste.” Therefore, the above general language regarding derived from wastes should more appropriately be located in the more general WAP Section, B.3.3.

**6. NOD Comment 18, Replace discretionary terms such as "may" with mandatory terms such as "will," "must," or "shall".**

**DOE/SNL’s Response:** “In the revised WAP, discretionary terms (such as “may”) have been replaced with mandatory terms (such as “will”), but only where appropriate (e.g., “RCRA waste characterization will occur ...”). An asterisk is shown wherever the term “may” ought to remain (e.g., “Debris may be contaminated with or contain ...”).

Response Evaluation SNL’s response is adequate. The necessity of utilizing the term “may” under certain circumstances is understood, however NMED requires removal of the asterisk due to it being unnecessary and distracting.

**7. NOD Comment 19(g), Discuss the physical distinction between wastewater and non-wastewater.**

**DOE/SNL’s Response:** “The descriptions of the wastes provided in Section B.1.3 (formerly Section B.1.2) of the revised WAP have been modified slightly, where appropriate, to further address the RCRA-regulated “physical” characteristics (or waste forms) listed in a-q of this comment.

In addition, a new Section B.1.4 has been added to the revised WAP to describe the wastes to be treated at SNL.

The content and format of information included in the 2001 Biennial Report for Sandia National Laboratories is specified by the instructions for the Report. For example, the following information is required for RCRA-regulated wastes in Form GM in the Report:

- Quantity of wastes that were generated and shipped in 2001, generated in 2001 but not shipped, shipped in 2001 but generated earlier.
- Waste “form,” EPA Hazardous Waste Numbers, waste name, general source code, units of measure, and on-site and off-site management methods used.

This information is required in the Report and is accurate for DOE/Sandia operations during 2001. However, it is not useful as a general or specific description of the sorts of RCRA-regulated wastes that are, or are expected to be, generated and managed at SNL/NM Units during the life of the permit. Nor does it provide sufficient information for characterizing wastes for on-site storage and treatment at SNL/NM Units included in the comprehensive Part B permit request.”

Response Evaluation SNL’s response is adequate for all physical characteristics except wastewater versus non-wastewater. These two characteristics are a critical aspect of making an appropriate LDR status determination.

Regulations at 40 CFR § 268.7 require TSDFs conduct waste analysis to determine the regulatory status of waste with respect to the treatment standards in Part 268, Subpart D (EPA 1994, Section 2.3.6). SNL must alter its WAP to recognize the importance of making a determination whether a hazardous waste is either a wastewater or non-wastewater, reference the criteria for making that determination, and recognize all other waste characteristics relevant to making an appropriate LDR status determination.

**8. NOD Comment 20, The section on proposed analytical parameters and methods should identify specific parameters and methods, and not simply state broad categories of hazardous constituents.**

**DOE/SNL’s Response:** “Section B.2.1 of the revised WAP has been modified to add “Hazardous characteristics (i.e., ignitability, reactivity, corrosivity)” and to add “(i.e., toxicity characteristic)” to each specification for “RCRA-regulated metals”.

Table B-2 summarizes the parameters and characterization methods, and Table B-3 specifies the various test methods to be used in analyses for each parameter. Both of these tables were revised to include the additional parameters discussed above.

DOE/Sandia note that the site-wide WAP (Appendix B) includes information applicable to all Units. Further, DOE/Sandia have deleted all Unit-specific waste analysis information and incorporated it all into the revised site-wide WAP in response to NMED’s global comment and Comment 15 (both NMED comments are included in this response).”

Response Evaluation SNL’s response is partially adequate in that the hazardous characteristics of ignitability, reactivity, corrosivity are now referenced in Section B.2.1. However, adding the caveat “constituents of characteristic and listed waste as defined in 20 NMAC 4.1.100/40 CFR 261.24” behind RCRA-regulated metals, VOCs and SVOCs is both confusing and inappropriate. First, the citation is wrong; it should be 20 NMAC 4.1.200. Second, constituents of listed wastes are not defined at the particular regulatory citation. And third, the bulleted list of parameters at Section B.2.1 fails to include parameters necessary to make an appropriate LDR status determination. To do that for both characteristic and listed wastes, the parameters list (and Table B-2) should include reference to all constituents of concern for the particular waste listed at 40 CFR § 268.40, and for just characteristic wastes, all reasonably expected underlying hazardous constituents (UHCs) included in the table of Universal Treatment Standards at § 268.48. SNL recognizes its responsibility to characterize for these constituents elsewhere in the WAP, specifically at Sections B.1.4, B.3.2.2 (second paragraph), B.3.3 (second paragraph), and B.5.2.

**9. NOD Comment 25, The WAP must address how it will ensure that storage and treatment units will only receive allowable wastes.**

**DOE/SNL's Response:** "All RCRA-regulated wastes generated by Sandia Corporation are listed in the Part A. Section 1.2 of each Unit-specific module indicates which wastes are accepted at that Unit. Section B.1.1 in the revised WAP includes a reference to the Part A; all of the wastes listed in the Part A are acceptable for management at every Unit except the TTF. The TTF is used for management of a RCRA-regulated waste from nearby operations, as described in Module II.

RCRA-regulated activities at SNL/NM Units are addressed in the comprehensive Part B permit request. DOE/Sandia may choose to use the Units for activities that are not subject to NMHWA. DOE/Sandia note that 20 NMAC 4.1.500/40 CFR 264.13 does not prohibit a facility from managing non-RCRA-regulated waste. Such activities are outside the scope of a permit issued under NMHWA and are not addressed in the permit request."

Response Evaluation SNL's response is inadequate. SNL's Part A does not suggest that all wastes listed on that portion of the application are to be treated at every Unit except the TTF. Pages 15-17 of the Part A identify specific wastes that are to be treated by specific processes and presumably at specific units, however it is not possible to determine which. Section 1.2 of each Unit-specific module inappropriately indicates which wastes are accepted at that Unit simply by referring to the Part A.

SNL must alter the Part A so that it is possible to determine which wastes are to be treated by specific processes and at which specific units. SNL must also alter the WAP to recognize that only certain wastes may be treated at certain units and address how it will ensure that treatment units will only receive allowable wastes.

SNL must also describe the procedure used to comply with 40 CFR § 264.177(c), which requires that storage containers holding a hazardous waste that is incompatible with any other "material" stored nearby in other containers must be either separated or protected from the other material. To comply with this regulation SNL must have a procedure for evaluating the compatibility characteristics of any other "materials" managed in the RCRA-regulated unit, and that procedure must be described in the WAP. If non-hazardous wastes or other materials managed at the unit are potentially incompatible with hazardous wastes managed at the unit, the permit application must describe and commit to the procedures necessary to separate or protect the hazardous wastes.

SNL must also respond to this NOD comment by specifying the non-RCRA activities it intends to conduct at the RCRA regulated units, including a brief description of any non-hazardous wastes and the intended management practices. The Department is requiring SNL to submit this information to determine if it is necessary to establish a permit condition under 20.4.1.900 (incorporating 40 CFR 270.32(b)(2)). The Department may use its omnibus authority to impose permit conditions regulating materials that are not hazardous waste or activities tangential to hazardous waste management when proper regulation of hazardous waste management requires

it, pursuant to 20.4.1.900 (incorporating 40 CFR 270.32), NMSA 1978, §74-4.2(C) (2002) and 42 U.S.C. § 6925(c)(3).

**10. NOD Comment 26, The WAP must address if and how different wastes streams will be blended or mixed, and how the resultant blended waste will be characterized.**

**DOE/SNL's Response:** "DOE/Sandia activities include mixing and blending RCRA-regulated wastes on a limited basis, as discussed in revised Section B.3.1 of the WAP. The resulting waste is characterized according to the process described in revised Section B.3 of the WAP."

Response Evaluation SNL's response is partially adequate. Revised Section B.3.1 does describe the mixing/blending of photographic process wastes and aerosol can residuals, but implies that these are simply examples of mixed or blended wastes. SNL must recognize that this mixing/blending process occurring at the "Units" (i.e., storage units) generates new hazardous wastes with new wastes codes, and that these new wastes must also undergo a complete waste characterization, including a hazardous and LDR status determination. WAP Section B.5.2 must be altered to address these LDR considerations.

**11. NOD Comment 30(b), Training process considerations necessary to meet applicable permit-established performance standards. (40 CFR Section 264.16)**

**DOE/SNL's Response:** "Training is discussed in Appendix D and in Section 4.0 (formerly Attachment D) of each Module."

Response Evaluation SNL's response is inadequate. SNL's WAP at Sections B.3 and B.3.1 describe how integral initial waste generators are in the waste characterization process, yet nowhere in the application, including at the General Part B Appendix D, is there a commitment to train these individuals to properly perform this activity. If SNL wishes to rely on initial waste generators to partially fulfill its obligation for waste characterization under § 264.13, SNL must ensure the initial waste generators have the necessary training to supply adequate characterization information.

The training of initial waste generators is justified to be within the scope of a permit due the regulatory language at both 40 CFR § 264.16 and § 270.2. The regulation at § 264.16(a)(1), a general facility requirement and not a unit specific requirement, requires that "Facility personnel must successfully complete a program of classroom instruction of on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements of this part." The term "facility" is defined at § 270.2 as "any HWM (Hazardous Waste Management) facility or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the RCRA program." NMED therefore requires that SNL alter General Part B, Appendix D to include "initial-waste-generator" as a job title, and describe the training commitments for that title.

**12. NOD Comment 30(c), Record keeping process considerations necessary to meet applicable permit-established performance standards. (40 CFR Section 264.73 (b)(1))**

**DOE/SNL's Response:** "Descriptions and quantities of each RCRA-regulated waste treated or stored are part of the operating record, as indicated in Section 9.0 of the General Part B (formerly Appendix H)."

Response Evaluation SNL response regarding waste characterization information maintained in the operating record (OR) is partially adequate. SNL must resolve whether acceptable knowledge (AK) documentation will be incorporated into the OR.

WAP Section B.3.1.1, final paragraph, states "Acceptable knowledge documentation will be maintained at the Unit (unless otherwise designated in the Unit operating record) for at least three years." Though there is a general reference to maintaining written or electronic "records and results of RCRA-regulated waste analyses and determinations" at General Part B, Section 9.0, *Record Keeping*, there is no specific reference to AK documentation in the Section or elsewhere in the Permit Renewal Request.

WAP Section B.3.1.1.1, second paragraph states, "Process knowledge documentation for each RCRA-regulated waste or waste stream is kept in a file or a waste/waste stream reference file that includes the documents or identifies them and their locations." This Section does not specify whether these files are considered part of a unit-specific OR.

The regulation at 40 CFR § 264.73(b)(3) requires that records and results of waste analyses and waste determinations must be maintained in the OR until closure of the facility. NMED stresses the importance of clarifying whether and how AK documentation will be incorporated into the OR because during a 2002 inspection of the facility SNL was unable upon request to produce sufficient AK for specific wastes.

**13. NOD Comment 30(e), LDR notice/record keeping considerations necessary to meet applicable permit-established performance standards. (40 CFR Section 264.73 (b)(12) and (16))**

**DOE/SNL's Response:** "Notices and certifications, including those required by 20 NMAC 4.1.500/40 CFR 264.73(b)(12) and (16), are part of the operating record, as addressed in Section 9.0 (formerly Appendix H)."

Response Evaluation Regarding the notices and certifications required at 40 CFR §§ 264.73(b)(12) and (16), which references §§ 268.7 and 268.9, SNL's response is partially adequate. Section 9.0 of the General Part B, first paragraph, third bullet, ninth dash, commits only to maintaining in the OR the notices and certifications associated with treated wastes, but fails to commit to maintaining similar documentation for on-site generated wastes as required by the regulations.

The regulation at 40 CFR § 264.73(b)(16) specifically requires that an on-site storage facility must maintain in its OR until closure "the information contained in the notice (except the manifest number), and the certification and demonstration if applicable, required by the generator or the owner or operator under § 268.7 or § 268.9." The regulation at § 264.73(b)(12)

addresses on-site treatment facilities and has been sufficiently addressed by SNL. SNL must revise Section 9.0 of the General Part B to include a commitment to maintain in the OR the generator documentation referenced in the regulations.

Furthermore, SNL must clarify whether the certification statement committed to in WAP Section B.3.1, 8<sup>th</sup> paragraph, 5<sup>th</sup> bullet, will be used to satisfy the above referenced certification statement requirement.

**14. NOD Comment 30(m), LDR requirement to provide treatment or storage facility certification statement regarding listed wastes in contaminated soils. (40 CFR Section 268.7 (a)(2)(i))**

**DOE/SNL's Response:** "DOE/Sandia will make the applicable notifications and certifications specified in 20 NMAC 4.1.800/40 CFR 268.7(a) for RCRA-regulated wastes treated at the TTF, RMWMF, or AHCF. Text addressing this issue has been incorporated into Section B.5.2.3 (formerly Section B.5.3) of the revised WAP."

Response Evaluation SNL's response is partially adequate. WAP Section B.5.2.2 does reference a certification process, but no reference is made to soils and the commitment is only for those wastes that have been treated, neglecting hazardous soils that have not undergone treatment. This WAP language reflects SNL's apparent contention that the LDR status of wastes not generated at a hazardous waste storage unit is not relevant to that unit and thus should not be addressed in an application or permit associated with that unit.

The regulation at 40 CFR § 268.7 (a)(2) requires generators of wastes or contaminated soils that do not meet their respective LDR treatment standard, to provide specific LDR related information to *each* (emphasis added by NMED) treatment or storage facility. SNL must alter WAP Section B.5.2 to commit to having the notification and certification documents referred to in the above referenced regulation in waste specific files in the operating records of storage and treatment facilities. For additional discussion regarding NMED's position on generator LDR waste characterization see the evaluation at Comments 40.

**15. NOD Comment 30(o), Notice of waste process changes. (40 CFR Section 268.7 (a)(3)(iii))**

**DOE/SNL's Response:** "Please see response to Comment 30(m)."

Response Evaluation SNL's response is partially adequate. WAP Section B.5.2 does not address the regulation in question but Section B.3.1.3.2 does suggest that when there is any information suggesting there has been a change in the waste, unit personnel will perform a reevaluation of the waste. The WAP does not address how changes in wastes are identified, how this information is transferred from the initial generator to unit personnel, nor does it commit to transferring information regarding changes in the waste generated at hazardous waste management units (i.e., treated or combined wastes) to off-site facilities the receive the waste.

The regulation at 40 CFR § 268.7 (a)(3)(iii) requires that, "If the waste changes, the generator must send a new notice and verification to the receiving facility, and place a copy in their files." This regulation identifies information critical to the waste characterization required of all wastes stored at hazardous waste management units and required to be maintained in the unit's operating record by § 264.73(b)(3).

NMED therefore requires that SNL revise the permit application to describe how, as a "receiving facility", all SNL hazardous waste storage units will ensure that information regarding changes to wastes managed at the unit are in the unit's operating record. SNL shall also revise the permit application to describe the mechanisms used to insure SNL's generators provide this information in a timely basis.

**16. NOD Comment 30(p),** Process considerations necessary to keep waste analysis information for three years. (40 CFR Section 268.7 (a)(7))

**DOE/SNL's Response:** "It is not clear whether NMED is referring to 20 NMAC 4.1.800/40 CFR 268.7(a)(7) or (a)(8). DOE/Sandia interpret it as (a)(8). Please see response to Comment 30(m)."

Response Evaluation SNL's response is inadequate. SNL is correct that the focus of the comment is 40 CFR § 268.7(a)(8). However, SNL response referencing the response to Comment 30(m) is inappropriate because the issue is the retention of all LDR related characterization documentation, not just the certification and notification documents referenced at § 268.7(a). Furthermore, the response fails to address the issue of LDR related characterization documentation for stored waste.

NMED's position on documentation retention is addressed at the response evaluations at Comments 12, 13, and 14.

**17. NOD Comment 30(q),** Process considerations necessary to maintain treatment facilities record of notice to disposal facility of proper treatment and no dilution. (40 CFR Section 268.7 (b)(4))

**DOE/SNL's Response:** "Text addressing this issue has been incorporated into Section B.5.2.3 (formerly Section B.5.3) of the revised WAP."

Response Evaluation SNL's response is inadequate. The response points to revised WAP language at Section B.5.2.3 which, when addressing waste generated on-site, points to language in Section B.5.2.2. This Section simply commits to meeting the requirements of the off-site TSDF. NMED reiterates its requirement that the WAP describe how SNL will abide with the 40 CFR Section 268.7 (b)(4) requirement that treatment facilities provide notice to disposal facility of proper treatment and no dilution. This regulatory requirement does not consider off-site TSDF waste acceptance criteria.

18. **NOD Comment 30(r), Process considerations necessary to maintain treatment facilities record of notice to disposal facility of underlying hazardous constituent status (40 CFR Section 268.7 (b)(4)(iv) and (v))**

**DOE/SNL's Response:** "Text addressing this issue has been incorporated into Section B.5.2.3 (formerly Section B.5.3) of the revised WAP."

Response Evaluation SNL's response is inadequate. The response points to revised WAP language at Section B.5.2.3 which, when addressing waste generated on-site, points to language in Section B.5.2.2. This Section simply commits to meeting the requirements of the off-site TSDF. NMED reiterates its requirement that the WAP describe how SNL will abide with the 40 CFR §§ 268.7 (b)(4)(iv) and (v) requirements that treatment facilities maintain record of notice to disposal facility of waste UHCs. This regulatory requirement does not consider off-site TSDF waste acceptance criteria.

19. **NOD Comment 30(s), Special treatment standards if waste is both listed and characteristic. (40 CFR Section 268.9 (b))**

**DOE/SNL's Response:** "DOE/Sandia will make the applicable notifications and certifications specified in 20 NMAC 4.1.800/40 CFR 268.9(b) for RCRA-regulated wastes treated at the TTF, RMWMF, or AHCF. Text addressing this issue has been incorporated into Section B.5.2.3 (formerly Section B.5.3) of the revised WAP."

Response Evaluation Regarding the 268.9 (b)) special treatment standards if waste is both listed and characteristically hazardous, Section B.5.2.3 does not address the issue, therefore SNL's response is inadequate. SNL appears to have addressed 268.7(b) instead of 268.9(b). SNL must revise the WAP to recognize the special LDR status considerations of a waste that is both listed and characteristically hazardous.

20. **NOD Comment 30(t), Process considerations regarding de-characterized waste's underlying hazardous constituents. (40 CFR Section 268.9 (d))**

**DOE/SNL's Response:** "Text addressing this issue has been incorporated into Section B.5.2.2 (formerly Section B.5.3) of the revised WAP."

Response Evaluation SNL's response is inadequate. The WAP must be revised to address the applicable regulations associated with wastes that have been de-characterized yet continue to be LDR prohibited.

21. **NOD Comment 30(u), Process considerations regarding treatment attainment of the lowest applicable standard for land disposal. (40 CFR Section 268.40 (c))**

**DOE/SNL's Response:** "Text addressing this issue has been incorporated into Section B.5.2.2 (formerly Section B.5.3) of the revised WAP."

Response Evaluation SNL's response is inadequate. WAP Section B.5.2.2 commits only in a general sense to complying with 40 CFR Part 268. The WAP must be revised to commit to complying with the § 268.40(c) requirement to identify the lowest applicable LDR treatment standard for all wastes and to attain the lowest applicable standard if the treatment goal is to attain standards.

- 22. NOD Comment 32(a), Generator Characterization - the WAP must elaborate on generator characterization procedures for determining whether a waste is hazardous, and if so, what its appropriate waste codes are. (40 CFR Sections 262.11, 268.7 (a)(2) and 268.9 (a))**

**DOE/SNL's Response:** "DOE/Sandia will make the applicable notifications and certifications specified in 20 NMAC 4.1.800/40 CFR 268.7(a) and 268.9(a) for treatment residues that are newly generated as a result of treatment of RCRA-regulated wastes at the TTF, the RMWMF, or the AHCF. Text addressing this issue has been incorporated into revised Section B.5.2.3 (formerly Section B.5.3)."

Response Evaluation SNL's response is partially adequate. The WAP must be revised to include documentation procedures for treated characteristic wastes that are no longer hazardous, which must have a one-time notice and certification placed in the files and sent to NMED in accordance with 40 CFR § 268.9(d).

- 23. NOD Comment 32(b), Generator Characterization - the WAP must elaborate on generator characterization procedures for determining all underlying hazardous constituents. (40 CFR Sections 268.7 (a)(2) and 268.9 (a))**

**DOE/SNL's Response:** "Please see response to Comment 32(a)."

Response Evaluation SNL's response is inadequate. The response addresses documentation associated with residues of waste treatment but fails to address all characterization procedures for determining all underlying hazardous constituents (UHCs). 40 CFR § 264.13 requires WAPs address all facility waste characterization procedures to treat, store, or dispose of hazardous wastes. To dispose of characteristic waste properly, it is important to have in place a procedure for determining all UHCs in accordance with § 268.9(a). See Comment 40 response evaluation addendum for additional discussion regarding compliance with LDR requirements.

- 24. NOD Comment 32(c), Generator Characterization - the WAP must elaborate on generator characterization procedures for providing notice of waste process changes. (40 CFR Section 268.7 (a)(3)(iii))**

**DOE/SNL's Response:** "Please see response to Comment 32(a)."

Response Evaluation SNL's response is inadequate. The response addresses documentation associated with residues of waste treatment but fails to address how SNL will ensure proper notice of waste process changes for stored wastes. See the addendum to this evaluation below at Comment 26.

25. **NOD Comment 32(d), Generator Characterization - the WAP must elaborate on generator characterization procedures for determining what constitutes acceptable knowledge (AK) and when AK is sufficient to fully characterize wastes. (40 CFR Section 268.7 (a)(1))**

**DOE/SNL's Response:** "Please see response to Comment 32(a)."

Response Evaluation SNL's response is inadequate. The response addresses documentation associated with residues of waste treatment but fails to address how SNL will determine what constitutes acceptable knowledge (AK) and when AK is sufficient to fully characterize wastes, including stored wastes.

26. **NOD Comment 32 (addendum)**

**Generator Characterization - Addendum** The WAP fails to sufficiently describe how SNL will perform generator required waste characterization procedures to support wastes stored, treated, and generated at its hazardous waste management units. Though the WAP appropriately describes how SNL initial waste generators collaborate with unit personnel to characterize waste destined for storage, and the WAP partially describes the generator characterization requirements for treated wastes, the WAP fails to fully describe the procedures generators must follow to make a LDR status determination, and the WAP fails to recognize that waste may be newly generated during the mixing/blending process described at Section B.3.1.

The WAP Introduction states that because SNL does not dispose of hazardous wastes, "this WAP does not address waste characterization necessary or disposal." This reference to waste characterization necessary for disposal appears to refer to the requirement to determine a waste's LDR status. The WAP Section on LDR compliance (B.5.2) addresses treated and off-site wastes but fails to address the 40 CFR 268.7(a) generator LDR status determination requirements for stored on-site wastes. The LDR issues as they relate to generator characterization are addressed separately in an addendum to the response evaluation at Comment 40.

SNL will be generating new wastes at the permitted storage facility during the mixing/blending process referenced above. The WAP must therefore describe the waste characterization process for these newly generated wastes, particularly regarding their change in LDR status. WAP Section B.3.1, last paragraph, describes how "unit personnel" combine, mix or blend hazardous and non-hazardous wastes resulting in wastes that can have varying hazardous characteristics. The WAP commits in a very general manner to characterizing the waste (i.e., "as needed for on-site management"). SNL must significantly expand on the process generators of waste must undergo to determine whether a new waste has been formed, whether the waste is hazardous, and the determination of all applicable EPA Hazardous Waste Numbers (a.k.a., waste codes). The permit renewal request must be revised to ensure adherence to the mixture requirements at 40 CFR §§ 261.3(a)(2)(iii) and (iv), 261.3(b) and (g) when hazardous wastes are mixed with solid wastes, and EPA's Contained-In Policy when hazardous wastes are mixed with non-solid wastes.

The permit renewal request must also be revised to ensure adherence to the RCRA dilution prohibition during the mixing/blending process. The WAP must be revised to commit to and describe the LDR status determination characterization process for stored wastes to avoid unlawful dilution. The example of mixing photographic fixers and developers provided at WAP Section B.3.1 may constitute unlawful dilution dependent upon the reason for the mixing and whether any of the underlying hazardous constituent concentrations are reduced to below their respective universal treatment standards. Recall that the LDR status determination process must be performed at the waste's point of generation in conformance with 40 CFR §§ 268.9(c) and 268.2(i).

27. **NOD Comment 34(a), Re-evaluation (40 CFR § 264.13(a)) - Site-Wide WAP Section B.3.1.3 must be revised for quality assurance purposes to include a commitment to perform comprehensive real-time laboratory analysis on all wastes streams originally characterized without comprehensive laboratory analysis (i.e., using process knowledge) at a rate of ten percent of all such waste streams received in a year selected on a rotational basis. Furthermore, the WAP must be revised for quality assurance purposes to include a commitment to perform annual, comprehensive, real-time laboratory analysis on all routinely generated waste streams (definition required). Revise all other Section language accordingly. Re-evaluation must also occur when there is a non-conformance report associated with a particular waste stream.**

**DOE/SNL's Response:** "Waste stream' is defined in revised Section B.1.1. Routine generation is one of the criteria included in the definition, and is one of the criteria used in differentiating wastes from waste streams.

DOE/Sandia generate wastes and waste streams for which characterization through sampling and analysis is not appropriate for one or more of the reasons described in Section B.3.1.1. Therefore, DOE/Sandia believe it is not useful (or even feasible) to perform "comprehensive real-time laboratory analysis" of wastes or waste streams for which sampling and analysis is/was not appropriate.

Revised Section B.3.1.3 discusses the verification/reevaluation criteria that DOE/Sandia use for wastes (verification of 1% of incoming wastes through various methods) and for waste streams (re-evaluation of 10% annually). If acceptable knowledge, or knowledge of process as a subset of acceptable knowledge, was used for the initial waste characterization, then DOE/Sandia will continue to use acceptable knowledge or knowledge of process for verification and/or reevaluation of the waste."

Response Evaluation SNL's response is partially adequate. NMED withdraws its suggestion that SNL perform comprehensive real-time laboratory analysis on all wastes streams originally characterized without comprehensive laboratory analysis (i.e., using process knowledge) at a rate of ten percent of all such waste streams received in a year selected on a rotational basis. NMED recognizes that many wastes can be appropriately characterized using acceptable knowledge as described in EPA's WAP guidance (EPA 1994).

However, the regulations at 40 CFR § 268.7(b) require treatment facilities “test” their wastes to assure that treatment residue meet the applicable treatment standard. NMED interprets this to require that each and every batch of treatment residue be tested. This requirement is partially committed to at WAP Section B.3.3 where it states “ Other treated waste will be subjected to sampling and analysis to determine the effectiveness of the treatment *as appropriate* (emphasis added by NMED)” This ambiguity, and the WAP Section B.3.1.3.2, second paragraph, second bullet commitment to reevaluate the initial characterization information of treatment residuals *as needed* (emphasis added by NMED), leads NMED to believe that SNL will not test each and every batch of treatment residual. NMED believes that there may be circumstances where it may not be necessary to always test a treatment residual (i.e., when statistical analysis demonstrates with reasonable certainty that a standard treatment process associated with a standard waste always de-characterizes a waste and always results in the same LDR status of the waste). But this circumstance is not addressed in the WAP. NMED is prepared to require analytical testing of each and every batch of treatment residual as a permit condition unless SNL can prescribe an appropriate alternative in the WAP.

SNL’s process of performing “verification of 1% of incoming wastes through various methods” does not satisfy the regulatory requirement at 40 CFR § 264.13(b)(4) that a WAP specify the frequency with which the initial analysis of a waste will be reviewed to ensure the analysis is accurate and up to date. NMED interprets this as a requirement to perform quality assurance procedures above and beyond those used for standard, initial waste characterization. WAP Section B.3.1.3.1, third paragraph, second sentence suggests that SNL’s commitment to verify the characterization of 1% of wastes (non-waste stream wastes) may be satisfied by a simple “visual verification of the container’s contents.” The verification process described in this paragraph is a standard process that all wastes should undergo, and in fact is redundant with the process described in WAP Section B.3.1, 13<sup>th</sup> paragraph, *Specify Limits on Decision Errors*, and therefore makes SNL’s seemingly appropriate commitment meaningless. The next paragraph is equally meaningless as a verification process in that all wastes characterized via AK must have that AK reviewed for adequacy and collaborated with laboratory data if necessary, not just 1% of wastes. Furthermore, the final bullet of Section B.3.1.3.1, second paragraph commits to performing verification analysis only to obtain information that is “needed for further management of the waste ... (verification will be limited to necessary information).” This too is not waste characterization verification. NMED would consider a verification process legitimate if 1% of wastes (non-waste stream wastes) per annum are selected on a random basis to undergo a complete re-characterization by a independent SNL organization using the same characterization methodology used in the initial characterization and the results are certified accurate.

28. **NOD Comment 34(b), Re-evaluation (40 CFR § 264.13(a)) - Site-Wide WAP Section B.3.1.3 primarily contains procedures TSFs use to ensure the accuracy of generator waste characterization information. These procedures are already addressed in another section. The second and third paragraphs are simply reiterations of the initial characterization procedures described in Section B.3.1, third paragraph, and can be simply deleted. The fifth paragraph describes waste characterization associated with waste treatment. As Section B.1.2.11 implies, treatment residuals are**

**newly generated wastes that must be characterized as such. Remove the fifth paragraph.**

**DOE/SNL's Response:** "Paragraphs 2, 3, and 5 have been deleted from Section B.3.1.3 of the revised WAP."

Response Evaluation SNL's response is inadequate. WAP Section B.3.1.3 continues to contain procedures described elsewhere in the WAP and used by unit personnel to collaborate with the initial waste generators to perform initial waste characterization. These are not verification procedures. See the response evaluation of Comment 27 (a) directly above.

**29. NOD Comment 34(d), Re-evaluation (40 CFR § 264.13(a)) - To demonstrate compliance with 20.4.1.500 NMAC (incorporating 40 CFR Section 264.13 (a)(3)(i)) and 20.4.1.800 NMAC (incorporating 40 CFR Section 268.7 (a)(3)(iii) and 268.7 (b)(3)(i)), the DOE/SNL must provide a description of established Facility Procedures used to identify when processes or operations change for routinely generating hazardous wastes. If procedures do not exist, one must be created and maintained to identify (and flag) when there are changes to the waste generating process or to the raw materials used in the process.**

**DOE/SNL's Response:** "As discussed in revised Section B.3.1.3, DOE/Sandia will re-characterize waste streams no later than the first time they are generated following a change in processes that generate them. Characterization of treatment residues that are newly generated as a result of treatment of RCRA-regulated wastes at the TTF, RMWMF, or AHCF is discussed in Section B.3.3."

Response Evaluation SNL's response is inadequate. It does not address the issue of having a process for determining when a routine waste generation process changes. NMED is concerned that SNL unit personnel will not know when a waste generation process changes significantly enough to change the LDR status of a waste. This concern is based in part on the WAP's poor description of how a waste's LDR status is determined and the lack of description for training, procedures and verification regarding initial waste generators determination of what constitutes a significant process change.

**30. NOD Comment 35, Acceptable knowledge (AK) commitments do not include 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.**

**DOE/SNL's Response:** "Revised Section B.3.1.1.1 includes additional discussion on the use of acceptable knowledge."

Response Evaluation SNL's response is inadequate. Section B.3.1.1.1 on process knowledge contains no additional or new language that discusses mandatory information and processes that will be followed in determining the adequacy of AK. Therefore the WAP criteria used to determine the adequacy of AK remains insufficient.

An example of the remaining ambiguity in the WAP is at Section B.3.1.1 where it states that one of the criteria for the use of AK is that the waste comes “from specific processes that are well documented.” SNL’s waste characterization quality assurance program is described at WAP Section B.3.1, where at Paragraph 11 it states that unit personnel will determine AK adequacy by using the “criteria listed in Section B.3.1.1.” It remains unclear how AK will be used to make an appropriate LDR status determination. SNL uses AK to characterize the majority of its wastes (perhaps greater than 95%). NMED is therefore prepared to mandate through permit conditions the information and processes that will be followed in determining the adequacy of AK.

The use of AK to characterize hazardous wastes is contemplated by numerous regulations, including 40 CFR §§ 264.13(a)(2), 268.7(a)(1), and 268.7(a)(6). However, ultimately all waste characterization, including AK, must adhere to the § 264.13(a)(1) requirement that “at a minimum, the analysis must contain *all* (emphasis added by NMED) the information which must be known to treat, store, or dispose of the waste in accordance with this Part and Part 268 of this chapter.” Note that the regulation at § 268.7(b) requires that treatment facilities “test” waste for attainment of applicable LDR treatment standards, effectively disallowing the use of AK in this situation. Note also that NMED will require that all wastes use AK, or more specifically process knowledge, as a portion of their characterization (wastes from an unknown source would be excluded from this requirement) and that NMED concurs with EPA’s WAP guidance (EPA 1994) which states that sampling and analysis is the preferred method to meet waste analysis requirements due to its accuracy.

The regulations at 40 CFR § 264.13(a)(2) state that “analysis may include data developed under Part 261 of this chapter, and existing published or documented data on the hazardous waste or on hazardous waste generated from similar processes.” Data developed under Part 261 includes the constituents that cause an F or K listed waste to be either a Toxicity Characteristic or Toxic Waste as identified at Appendix VII of that Part. (Note that AK may often be used to identify hazardous constituents in waste but less often can it be used to determine the relationship of those constituents to their LDR treatment standards). The regulatory language at § 268.7(a)(1) states that the process of determining whether a waste meets its respective LDR treatment standard can be made “using knowledge of the waste.” Clearly AK and not testing is a more appropriate characterization method if a waste’s treatment standard is identified at § 268.40 as a particular treatment technology or method.

The regulations at 40 CFR § 268.7(a)(6) require that if a generator determines that the waste is restricted based solely on his knowledge of the waste, “all supporting data used to make this determination must be retained on-site in the generator’s files.” NMED considers this “AK” type information the “records and results of waste analysis and waste determinations” referenced at § 264.73(b)(3) at thus required to be maintained in the facility’s operating record.

SNL’s propensity to use AK to characterize wastes was demonstrated during a February 2003 NMED inspection that included scrutiny of the Hazardous Waste Management Facility’s operating record, particularly its waste characterization information. When asked to produce all waste analysis laboratory reports for wastes managed at the HWMF, SNL could only provide reports associated with used oils and these only evaluated the concentrations of RCRA metals

but not other possible underlying hazardous constituents. It appears that at the time of the inspection all other hazardous waste characterization for wastes managed at that unit was based on AK.

**31. NOD Comment 37, Revise the Site-Wide WAP to include very specific criteria for determining acceptability when AK is used to determine attainment of the very low concentration LDR treatment standards.**

**DOE/SNL's Response:** "Revised Section B.5.2.2 (formerly Section B.5.3) includes a reference to Section B.3.1.1 regarding acceptable knowledge. Section B.3.3 has also been revised to note when treated wastes will be characterized using acceptable knowledge or other non-analytical methods (e.g. when certain treatment technologies are specified and used to treat a waste)."

Response Evaluation SNL's response is inadequate. NMED's evaluation of Section B.3.1.1 is provided in the response evaluation for Comment 30, which states that the Section contains insufficient discussion of mandatory information and processes that will be followed in determining the adequacy of AK.

Section B.3.3 must be revised to include sufficient information regarding whether AK or sampling and analysis will be used to characterize specific treatment residuals. Section B.3.3.1 refers to a process of "visually screening" explosive residues to ensure the elimination of reactive and ignitable characteristics, but fails to address how residual silver from SASN will be evaluated other than "to meet the requirements of the off-site TSDF." 40 CFR § 268.7(b) requires treatment facilities test wastes with treatment standards expressed in the waste extract (D011, silver) using specific test methods to assure that the residual meets the applicable treatment standard.

Section B.3.3.2 must be revised to explain how wastes treated by chemical deactivation at the RMWMF and AHCF will be characterized to determine their LDR status. The Section (or a separate submittal) must explain why wastes treated by macroencapsulation need only be characterized by visual examination. This explanation must discuss characterization for both a hazardous waste and LDR status determination. The Section must be revised to explain how wastes treated by amalgamation are characterized to determine whether it meets the treatment standard(s).

**32. NOD Comment 40, The treatment section of the WAP must identify all waste streams (or general waste stream types) that will be treated, all possible treatment goals with respect to the chemical and physical characteristics of the waste, and specify what waste treatment residual characterization will be performed to verify that the goal has been accomplished.**

**DOE/SNL's Response:** "New Section B.1.4 includes a discussion of the waste streams to be treated and the treatment goals. New Section B.3.3 includes a discussion of waste characterization for treatment-derived wastes.

Treatment goals are also discussed in Section 8.0 of the Unit-specific modules for each Unit where DOE/Sandia perform treatment."

Response Evaluation SNL's response is partially adequate. Sections are added to the WAP to address treated wastes. However, the WAP continues to fail to commit to comply with the 40 CFR § 268.7(b) requirement to test all treated wastes to determine the LDR status of the waste. SNL must either revise the WAP to commit to characterizing every batch of treated waste, or provide criteria for not doing so (e.g., statistical procedures for demonstrating treatment effectiveness). If the treatment is not intended to attain a LDR standard and the wastes will be further treated off-site SNL will be required to submit the notice and certification requirements of § 268.7(b)(5) and § 268.7(b)(4)(iv). To ensure that the regulatory requirements are followed, NMED must know specifically which treatment processes are intended to attain a LDR standard.

WAP Section B.1.4 states that waste characterization is performed to determine whether treated wastes and treatment residuals "meet treatment standards", and Section B.3.2 states that wastes to be treated will be characterized to determine "subsequent compliance with treatment standards for land disposal." However Section B.3.3 and its related Sections only commit to determining treatment effectiveness "as appropriate" and only commit to analyzing for UHCs those wastes treated by stabilization and thermal deactivation. Section 8.0 for the RMWMF does generally suggest that treatment is meant to meet LDR treatment standards but none of the specific waste descriptions specify whether LDR standard attainment is a treatment goal.

Sections B.1.4.1 and B.1.4.2 suggest that the processes of chemical and thermal deactivation are meant solely to de-characterize a waste. SNL must revise the WAP to clarify whether these processes are ever meant to attain LDR treatment standards and under what circumstances that would be the case.

NMED assumes that the process of amalgamation is meant to both de-characterize and meet the process specific LDR treatment standard for elemental mercury contaminated with radioactive materials. SNL must revise the WAP to state this fact if it is accurate.

NMED assumes that the processes of macroencapsulation and stabilization are meant to both de-characterize a waste and attain that waste's applicable LDR treatment standard due to their ability to immobilize constituents. SNL must revise the WAP or Sections 8 of the unit specific chapters to recognize that this may only be true for wastes characteristically toxic for metals and these processes will not attain LDR treatment standards for any waste with a "total waste standard" as described at 268.40(a)(1).

Section 8.0 for the RMWMF states, "Waste treatment may generate secondary waste streams (treatment residues)." The permit application must be revised to recognize that treatment processes, including thermal deactivation, always generates a new waste that must undergo a complete waste characterization including a LDR status determination.

Section B.3.1.3.2 inappropriately states that treated wastes will be "reevaluated" to verify that applicable treatment standards have been met. SNL's uses term "reevaluation" in association with routinely generated wastes that require periodic evaluation to ensure that they have not changed. The regulations at 40 CFR § 268.7(b) require that every batch of treated waste be tested to determine the waste's LDR status (unless the waste has a technology-based standard).

NMED considers the use of the term “reevaluation” inappropriate with regards to treated wastes because NMED considers each batch of treated waste a newly generated waste requiring complete characterization, particularly a LDR status determination. SNL must either revise the WAP to remove this particular reevaluation criterion and commit to characterizing every batch of treatment residue, or provide criteria for not doing so (e.g., statistical procedures for demonstrating treatment effectiveness).

Section B.5.2.2 is incorrect where it states, “If a waste is known to meet applicable LDR treatment standards for certain constituents before treatment, testing the newly-generated waste (treatment residue) to certify LDR compliance for those constituents is not necessary.” Treatment processes that concentrate constituents such as the thermal deactivation process at the TTF that concentrates silver may cause a waste constituent that meets standards before treatment to exceed standards after treatment.

- 33. NOD Comment 41(c), The Site-Wide WAP must address the requirement that treatment facilities specify in a WAP the waste testing frequency and whether the analytical method is performed on treatment residue or on an extract of the residue. (40 CFR Section 268.7 (b))**

**DOE/SNL’s Response:** “Revised Section B.3.1.3 includes a discussion of frequencies for testing treated wastes. Revised Section B.5.2.2 (formerly Section B.5.3) discusses whether the analysis is performed on treatment residue or on an extract of the residue.”

Response Evaluation SNL’s response is partially adequate. Section B.3.1.3 does not sufficiently specify a treated waste testing frequency. See response evaluation at Comment 32. Section B.5.2.2 appropriately discusses whether the analysis is performed on treatment residue or on an extract of the residue.

- 34. NOD Comment 41(e), The Site-Wide WAP must address the requirement specifying particular treatment standards for wastes carrying both listed and characteristic waste codes. (40 CFR Section 268.9 (b))**

**DOE/SNL’s Response:** “Please see response to Comment 30(s)”

Response Evaluation SNL’s response is inadequate. SNL’s response to Comment 30(s) did not address the issue. See NMED evaluation of that response at Comment 19.

- 35. NOD Comment 41(f), The Site-Wide WAP must address the requirement addressing treatment standards in general including the requirement that mixtures of wastes attain the lowest applicable treatment standard. (40 CFR Section 268.40)**

**DOE/SNL’s Response:** “Revised Section B.3.1 includes a discussion of the limited instances in which DOE/Sandia mix RCRA-regulated and non-RCRA-regulated wastes. The resulting mixture is characterized as needed to obtain sufficient information for on-site management. As noted in Revised Section B.5.2.1, DOE/Sandia assume that all RCRA-regulated wastes managed

at SNL/NM Units are restricted from land disposal (i.e., they do not meet the applicable treatment standards) except as described therein.”

Response Evaluation SNL’s response is inadequate. NMED’s concern is SNL’s mixing of wastes and that the process might not abide by the 40 CFR § 268.40(c) requirement that “when waste with differing treatment standards for a constituent of concern are combined for purposes of treatment, the treatment residue must meet the lowest treatment standard for the constituent of concern.” The Section B.3.1 discussion of combining commercial chemical products illustrates SNL’s intent to combine wastes with potentially differing treatment standards. The WAP must be altered to recognize the importance of identifying all constituents of concern for mixed wastes (*not* hazardous/radioactive mixed waste), identifying the appropriate treatment standard for those constituents, and then associating the lowest applicable treatment standard to that waste. Whether this process is sufficient information for on-site management is irrelevant. The final sentence in the response is also irrelevant in that, beyond assuming that all RCRA-regulated wastes managed at SNL/NM Units are restricted from land disposal, SNL must actually identify the applicable treatment standard associated with different waste codes because, for example, if a waste having only concentration-based treatment standards is mixed with a waste having “combustion” as the specified method, the entire mixture must be combusted prior to land disposal.

36. **NOD Comment 47(a), Revise the WAP to address the storage prohibitions at 40 CFR Section 268.50. DOE/SNL must identify in the Site-Wide WAP those wastes it will not characterize for LDR standards in compliance with the Federal Facility Compliance Order mandated Site Treatment Plan (STP). Furthermore, if DOE/SNL does intend to store hazardous waste not listed in the STP for longer than one year, the Site-Wide WAP must recognize the waste characterization requirement to show that the wastes have attained LDR treatment standards.**

**DOE/SNL’s Response:** “RCRA-regulated wastes that do not meet the treatment standards are subject to the prohibition on storage for longer than one year in 20 NMAC 4.1.800/40 CFR 268.50(a). Wastes that are subject to the Federal Facilities Compliance Order between DOE, Sandia, and NMED (October 1995) are exempt from the storage prohibition, as noted in Section B.5.2.1 in the revised WAP (formerly Section B.5.3). Information regarding whether a waste is subject to the FFCO is part of the operating record for the waste and is maintained in the same manner as data for all other wastes, as discussed in Section 9.0 (formerly Appendix H) of the General Part B.

DOE/Sandia note that wastes subject to the FFCO are not exempt from characterization requirements.

Response Evaluation The response regarding compliance with the 40 CFR § 268.50 storage time limitation for prohibited wastes and FFCO/STP related issues is partially adequate. SNL included language in the WAP recognizing the regulatory storage time limitation, but fails to describe how stored wastes will be properly characterized to determine LDR status. See additional comment on the subject at Comment 40.

37. **NOD Comment 47(b), Revise the WAP to address the characteristic waste analysis requirements at 40 CFR Section 268.9. DOE/SNL must specify in the Site-Wide WAP how generators will determine underlying hazardous constituents (UHC)s in compliance with 40 CFR Section 268.9 (a).**

**DOE/SNL's Response:** "DOE/Sandia will characterize treatment residues that are newly generated as a result of treatment of RCRA-regulated wastes at the TTF, RMWMF, or AHCF in accordance with 20 NMAC 4.1.800/40 CFR 268.9(a). Text addressing this issue has been incorporated into Section B.5.2.3 (formerly Section B.5.3) of the revised WAP."

Response Evaluation The response regarding compliance with the 40 CFR § 268.9 requirement that generators determine underlying hazardous constituents (UHC)s is partially adequate because the WAP has been revised to address the issue for newly generated wastes as a result of treatment, but again the WAP fails to describe how stored wastes that were generated outside a hazardous waste management unit will be properly characterized to determine LDR status as required by § 264.13. See additional comment on the subject at Comment 40.

38. **NOD Comment 47(c), Revise the WAP to address the testing frequency of treated waste at 40 CFR Section 268.7(b).**

**DOE/SNL's Response:** "Section B.3.1.3 has been revised to address frequencies for testing treated waste."

Response Evaluation The response regarding the testing frequency of treated waste is partially adequate because Section B.3.1.3.2 appropriately commits to reevaluating the initial characterization of treated wastes (presumably after every treatment process) to verify that applicable treatment standards have been met. However, the term "testing" is not used in the WAP, and instead has been inappropriately interpreted by SNL to allow characterized via acceptable knowledge (AK) instead of actual laboratory analysis.

The regulations at 40 CFR § 268.7(b) require treated wastes undergo laboratory analysis through the clause "Treatment facilities must test their wastes ..." The definition of the term "test" is clarified at § 268.7(a), which requires generators to determine the LDR status of wastes "in either of two ways: testing the waste or using knowledge of the waste." The term "test" is further discussed in the regulation in terms of specific laboratory analytical methods. NMED recognizes that it is only through analysis that it can be determined whether the concentration of constituents of concern or underlying hazardous constituents attain applicable stringent treatment standards

SNL must revise WAP Section B.3.3 to recognize this requirement to characterize treated wastes via testing (i.e., sampling and laboratory analysis). Section B.3.1.3.2 may be altered to propose a procedure for evaluating testing data (e.g., statistically) to determining whether the reevaluation process of treated waste may at some point be performed via AK.

39. **NOD Comment 47 (addendum)** The WAP remains significantly deficient with regard to its description of waste characterization to determine LDR status. Specifically, the WAP fails to

commit to characterizing stored wastes for their LDR status and is inconsistent with regard to its LDR commitments for other categories of wastes (e.g., treated wastes, newly generated wastes and waste received from off-site) SNL appears to have made a concerted effort to remove related commitments that were included in the previous application. SNL's explanation for the omission of these procedures is that "SNL/DOE do not perform disposal of RCRA-regulated waste under the terms of the existing or requested permit. Therefore, this WAP does not address waste characterization necessary for disposal. [Introductory Section, 2<sup>nd</sup> Paragraph] This explanation is itself inconsistent in that the LDR status characterization of treatment residuals is performed to ensure proper disposal of the waste.

The section of the WAP devoted to the LDRs, Section B.5.2, addresses LDR characterization procedures for treated waste and waste received from off-site but fails to address similar procedures for stored wastes. The Section does however recognize that stored wastes have storage time limitations based on their LDR status; a significant factor in NMED's contention that WAPs must address the LDR status of stored wastes as will be discussed below. Section B.3 of the WAP also excludes procedures for determining the LDR status of stored wastes while discussing the process initial waste generators and unit personnel utilize for determining the LDR status of wastes "to be treated."

The requirement that a WAP specify how all managed wastes, including stored wastes, will be characterized for related LDR status is reflected in numerous documents, including; NM's Hazard Waste Management Regulations, EPA's WAP guidance (EPA 1994), and SNL's current RCRA operating permit. The regulatory requirement to characterize stored hazardous waste for its LDR status is at 40 CFR § 270.14(b)(2). This regulation requires that a permit applicant provide the chemical and physical analysis of the hazardous waste to be handled at the facility, including at a minimum the information that must be known to treat, store, or dispose of the waste in accordance with the regulations. NM's regulation at § 264.13(a)(1) requires that the information necessary to treat, store, or dispose of a waste must be obtained "before" arrival at a unit. And the regulation at § 264.13(b) requires that the procedures used to obtain the waste characterization information be described in a WAP. The regulation at § 264.13(b)(6) specifically identifies the LDR characterization requirements at § 268.7 as a potential requirement of the WAP.

A waste's LDR status is particularly relevant to the proper storage of that waste, specifically the storage time limitations of prohibited wastes of 40 CFR § 268.50 and the hazardous waste dilution prohibitions of § 268.3. The regulations at § 268.50(a)(2) prohibit an owner/operator of a hazardous waste storage facility from storing hazardous wastes restricted from land disposal for greater than one year except under certain accumulation circumstances. The regulations at 40 CFR § 268.3 states that "dilution as a substitute for adequate treatment is prohibited." The LDR requirements attach to a hazardous waste at its point of generation as specified at § 268.9(c). EPA's initial pronouncement on LDR/POG came on November 7, 1986. [51 *FR* 40620] EPA stated, "The agency is requiring that applicable Part 268 Subpart D treatment standards for a restricted waste must be determined at the point of generation." This was reaffirmed on July 8, 1987. [52 *FR* 25766] One of the reasons for establishing a waste's LDR status at the POG and maintaining that status through subsequent management, including storage, is to ensure that wastes are not diluted.

In addition to the regulations, NMED relies on the U.S. EPA's waste characterization guidance, EPA 1994, to establish the standard for LDR characterization requirements in storage permits. EPA 1994, illustrates the importance of making an appropriate LDR status determination by devoting a large portion of the introduction to the subject of LDRs. The Introduction, 7<sup>th</sup> paragraph, states, "The LDR regulations dramatically increased the importance of proper waste analysis to ensure that all treatment standards are met prior to land disposal. For example, if you store hazardous waste, you must test the waste, or use knowledge of the waste, to determine if the waste is restricted from land disposal. In addition, you must notify any subsequent facilities that treat, store, or dispose of the waste of its LDR status." These points are reiterated and reinforced at Sections 1.3, 3<sup>rd</sup> paragraph, 2<sup>nd</sup> bullet and 2.1.2, 3<sup>rd</sup> paragraph, and at Table 2-1.

SNL's current operating Permit, a permit strictly for storage of hazardous wastes without a treatment component, both requires and describes how stored wastes are characterized to ensure proper disposal of the wastes and describes how these wastes are characterized for their LDR status. The renewed Permit must contain the same or similar requirements and descriptions. The WAP portion of the Permit, Section 2.2.1.1, Paragraph 4 states, "The characteristics of the waste, as determined by KOP (knowledge of process), are used to determine the proper packaging, storage, segregation, and disposal of the laboratory wastes. In particular, ...the hazardous characteristics and composition of the waste are used to ensure that the waste is packaged in a compatible manner and is disposed of properly, including waste restricted from land disposal." WAP recognition of the importance of proper characterization for waste disposal is reiterated at the following Sections; 2.2, 2.2.1.2 paragraph 4, and 2.2.3. The HSWA Module of the Permit, Section B.6, requires, among other land ban requirements, compliance with all statutory and regulatory requirements restricting or prohibiting the disposal of hazard waste in or on the land, and specifically requires compliance with 40 CFR § 268.7

An earlier version of SNL's permit renewal application includes both commitments to characterize wastes to ensure proper disposal and to characterize stored wastes for their LDR status. SNL's February 2002 General Part B, Revision 1.0, Appendix B (WAP), Section B.2 states, "Waste analysis parameters will be selected to ensure that the characterization documentation will contain information necessary to properly treat, store, or dispose of waste in accordance with RCRA general facility standards and LDR requirements." Section B.5.3 states, "In accordance with LDR requirements, waste to be shipped off site may need to be analyzed to determine whether it meets the applicable LDR treatment standards ...".

NMED stresses the importance of SNL's inclusion of LDR waste characterization commitments for stored wastes in the WAP because a recent inspection of SNL raised significant concerns whether these wastes are being properly characterized. SNL must incorporate and delineate appropriate LDR characterization procedures in the WAP, to improve SNL's waste characterization regulatory compliance.

NMED requires that SNL revise the WAP to reflect the following requirements. That all wastes managed at permitted units, including stored wastes, be appropriately characterized for their LDR status, that the process be performed at the waste's point of generation, that if that point of generation (POG) is not at a hazardous waste management unit then unit personnel will ensure

the accuracy of the LDR status determination prior to its arrival at the unit, and that all documentation related to the LDR status determination be kept in the unit's operating record. The WAP must thoroughly specify how SNL will perform a proper LDR status determination and commit to ensuring that wastes stored under a permit are characterized by these procedures. At a minimum the WAP must address the following;

- Ensuring that waste generators have assigned all of the appropriate wastes codes to the waste. The important implication of this for LDR compliance is that if the waste is both a listed and characteristic waste, 40 CFR § 268.9(b) requires the determination of the treatment standard for the listed waste and then doing one of two things:
  1. If the treatment standard for the listed waste specifically addresses the characteristic exhibited by the waste, only the listed waste code (and treatment standard) applies; or
  2. If the treatment standard for the listed waste does not address the characteristic exhibited by the waste, both the listed and characteristic waste code (and treatment standard) applies.
- Ensure that waste generators have appropriately determined if the waste falls into any "subcategories" established under the LDR program and specified at 40 CFR § 268.40. For example, D008 lead-containing waste can fall into one of four subcategories: 1) radioactive high-level waste generated during the reprocessing of fuel rods, 2) radioactive lead solids, 3) lead-acid batteries, 4) all other waste that exhibit the toxicity characteristic for lead.
- Ensure that waste generators have appropriately classified the waste according to its treatability group (i.e., wastewater or nonwastewater).
- Ensure that waste generators have appropriately identified the waste's treatment standard. A practical implication of this procedure is that if a specific treatment method is identified, the method attaches to the waste at the point of generation and continues in force until that waste is treated by that method.
- Ensure that waste generators have appropriately identified the underlying hazardous constituents (UHC) of some characteristic hazardous wastes at the waste's point of generation (see the definition of UHC at 40 CFR § 268.2).

The WAP does address the following characterization procedures for determining underlying hazardous constituents (UHCs), albeit ostensibly only for treated wastes:

- Section B.2 describes how initial waste generators and unit personnel work together to ensure sufficient information to properly treat and/or store wastes in accordance with LDR standards. The WAP fails to further address what constitutes sufficient information to properly store waste in accordance with LDR standards.
- Section B.2.2 commits to providing the criteria and rationale for selecting waste analysis parameters necessary to properly store and/or treat waste in accordance with 40 CFR Part 268. The WAP fails to entirely accomplish this as is described below.
- Section B.3 describes a process where initial waste generators work cooperatively with unit personnel to complete waste characterization documentation necessary for "identification of underlying hazardous constituents (UHCs) and LDR compliance status

for waste that are to be treated at SNL/NM Units.” This language demonstrates SNL intention not to identify the UHCs in stored wastes.

- Section B.3.1 paragraph 2 describes how initial waste generators complete a disposal request form (DR) that contains the information necessary for identification of the concentration and proportion of “RCRA-regulated constituents.” SNL inappropriately do not identify UHCs as RCRA-regulated constituents.
- Section B.3.1.1 addresses acceptable knowledge (AK) as a waste characterization process and includes considerable information sources that are useful for identifying UHCs.
- Section B.3.1.3.2 appropriately addresses the reevaluation of treated wastes to verify that applicable treatment standards (presumably for UHCs) have been met.
- Section B.3.2.2 appropriately commits to characterizing wastes before treatment “in order to subsequently determine whether a waste has been properly treated and meet LDR treatment stands, including standards for UHCs that are reasonably expected to be present.”
- Section B.3.3 appropriately commits to analyzing treated wastes for any RCRA-regulated constituents (presumably UHCs) added during the treatment process.
- Section B.3.3.1 provides the only WAP example of a specific UHC expected to be present in the residue of a treated waste and that will require further treatment prior to land disposal. The Section suggests elemental silver will remain in the ash when SASN is treated at the TTF. The Section (as well as elsewhere) commits to characterizing treatment residuals “as need to meet the requirements of the off-site TSDF.”
- Section B.4 describes how SNL expects LDR notifications from off-site large quantity generators.
- Section B.5.2 provides the general commitment to comply with LDR requirements for wastes stored or treated at the units “through compliant management of wastes subject to LDR storage prohibitions, and through characterization of treated waste (i.e., RCRA-regulated wastes treated at SNL/NM Units) for LDR compliance, and processing of the applicable LDR certification and notifications for such treated wastes.”

The WAP must be revised to include the following characterization or documentation procedures associated with determining UHCs:

- Section B.2.1 must address the parameters/methods to be used to determine the presence and concentration of the inorganic UHC listed at 40 CFR § 268.48. These parameters and methodologies must also be provided in Table B-2.
- Recognize the requirement to perform a LDR status determination of mixed or blended wastes that create a new waste at the units.
- The regulation at 40 CFR § 264.73(b)(16) requires an on-site storage facility maintain in its operating record the information contained in the notice, and certification and demonstration if applicable, required of generators or the owner or operator under § 268.7 and § 268.9. The regulation at § 268.7(a)(2) references notifications and certifications for waste or contaminated soil that does not meet its LDR treatment standard. The regulation at § 268.7(a)(3) references notification and certification documents associated with waste or contaminated soil that meets its standard.

- Section B.4 must address how wastes from small quantity and small quantity/conditionally exempt off-site generators will be characterized for LDRs.

**40. NOD Comment 49, the application states that mixed wastes will be managed at the Radioactive and Mixed Waste Management Facility and the Auxiliary Hot Cell Facility. If this is the true, the application must categorically state that mixed wastes “will not” be managed at any other permitted location or unit.**

**DOE/SNL’s Response:** “Radionuclides are not regulated under NMHWA or the regulations in 20 NMAC 4.1 that govern the activities that are described in this application. Therefore, DOE/Sandia do not believe it is necessary or appropriate to specify whether radionuclides are present or absent in RCRA-regulated waste managed at any of the Units. The presence of radionuclides is indicated where it is appropriate with respect to compliance with the requirements of 20 NMAC 4.1.500/40 CFR 264, Subpart CC (described in Section 1.2 of the General Part B and each Unit-specific module) and Section B.5 of the WAP (Appendix B).

Response Evaluation SNL’s response is both inadequate and inconsistent. SNL’s response states that radionuclides are not regulated by NMED, yet the last sentence references applicable NM regulations that specifically address radionuclides. Additional applicable NM regulations not mentioned in SNL’s response include 40 CFR § 268.40 which specifies LDR treatment standards for radionuclide contaminated elemental mercury, related hydraulic oil (D009), and lead (D008), and §§ 268.30(b), 268.38(b), and 268.39(d) which all prohibit the land disposal of specific mixed wastes. NM’s regulations at § 268.40 also identify a treatment standard based on the level of radioactivity in a mixed waste, specifically high level mixed waste carrying EPA Hazardous Waste numbers D002, D004, D005, D006, D006, D007, D008, D009, D010, and D011. NMED does not believe SNL is managing such wastes but cannot be certain due to SNL’s reluctance to both identify which wastes are classified as mixed and their level of radioactivity.

In addition to the applicable regulatory requirements referenced above, NMED’s knowledge of radionuclide characterization information is very important to hazardous waste regulation for practical reasons. First, NMED must know which units and containers manage radioactive mixed wastes during inspections for personnel safety reasons. Second, characterization of the radioactive components of radioactive mixed waste may be necessary to understand the potential interactions of radioactive materials with organic materials present in the radioactive mixed waste. Radioactive materials in radioactive mixed waste can affect the chemical behavior of organic material in the waste through radiolysis reactions or because of increased temperatures caused by radioactive decay.

NMED recognizes that “source, special nuclear, and byproduct material” is exempt from the definition of solid waste under RCRA and the NMHWA. RCRA § 1003(27), 42 U.S.C. § 6903(27); NMSA 1978, § 74-4-3.O. However, as explained above, NMED can and must require the identification of radionuclides that are source, special nuclear, or byproduct material to the extent necessary to properly regulate solid and hazardous wastes. NMED can also regulate radionuclides that are not source, special nuclear, or byproduct material and are solid wastes, such as accelerator produced radioactive wastes.

The Atomic Energy Act of 1954 (“AEA”), 42 U.S.C. §§ 2011 to 2297g-4, regulates three different classes of radioactive material: source material, special nuclear material, and byproduct material. *United States v. Kentucky*, 252 F.3d 816, 821 (6th Cir. 2001); see 42 U.S.C. §§ 2014(e), (z), and (aa). The AEA does not regulate naturally occurring or accelerator produced radioactive material (“NARM”). *Gassie v. SMH Swiss Corp.*, 1999 WL 539489 at \*2 (E.D. La. 1999) DOE has long recognized this distinction. In its 1996 Integrated Data Base Report, DOE stated:

NARM wastes are currently not regulated by any federal agency. Responsibility for regulating the disposal of NARM is not addressed in the [AEA]. Regulation of NARM disposal currently rests with the states as part of their authority for ensuring the protection of public health and safety.

DOE, *Integrated Data Base Report – 1996: U.S. Spent Nuclear Fuel and Radioactive Waste Inventories, Projections, and Characteristics* at 7-1 (Revision 13 Dec. 1997). See also DOE M 435.1-1, *Radioactive Waste Management Manual*, p. IV-1 and DOE G 435.1-1, *Implementation Guide*, p. IV-11. Thus, NMED is not preempted from regulating such material.

SNL has the burden of showing that it is entitled to the exemption for source, special nuclear, or byproduct material. SNL has not provided any information to demonstrate that the origin of the radionuclide contaminants in waste at the facility is strictly source, special nuclear, or byproduct material. To claim the exemption, SNL must specifically identify which of its wastes contain NARM and which contain source material, special nuclear material, and byproduct material.

SNL must commit in its application to identifying the radionuclides and their concentrations in mixed wastes to the extent that such identification is incidental to regulation of solid and hazardous waste, and to identifying which containers, tanks and buildings manage radioactive mixed wastes so that NMED can effectively enforce the above regulations and safely inspect hazardous waste operations.

**The following are additional comments on the revised Permit Application, Revision 2.0, dated April 2003.**

41. “RCRA-regulated” WAP Section B.3.1, 2<sup>nd</sup> Paragraph, states, “Initial generator-supplied waste description information used to characterize waste includes ... waste characteristics and components (e.g., ignitability, corrosivity, chemicals or *RCRA-regulated constituents* contained in the waste as well as their concentrations and proportions...)” The term “RCRA-regulated” is used consistently throughout the WAP in place of the term “hazardous”.

NMED believes that SNL’s use of the term “RCRA-regulated waste” in the WAP is an effort to emphasize that NMED only regulates the hazardous portion of mixed wastes. It is not clear whether the term refers to a formerly hazardous waste that has been de-characterized yet must still undergo treatment to meet LDR treatment standards. It is also not clear whether the term refers to solid wastes that are regulated by RCRA. It is also confusing since RCRA regulated constituents could be construed to include regulated substances in underground storage tanks. NMED is also concerned that the phrase “RCRA-regulated constituents” may be too limiting, causing the WAP to be deficient,

and causing wastes to be mischaracterized. NMED is also concerned about the enforceability of a WAP that uses an undefined term in place of a term that is defined (e.g., hazardous waste, hazardous waste constituent, hazardous waste management unit (40 CFR § 260.10)). The WAP must be revised to use terms defined in RCRA, HWA, federal or state regulations. If SNL believes it is necessary to use terms not defined in current law, SNL must include a precise and clear definition of the term.

WAP Section B.2.1 identifies RCRA-regulated metals, volatile organic compounds, and semi volatile organic compounds as parameters to be utilized “to determine the RCRA regulatory status of these wastes.” The Section defines these terms as “the constituents of characteristic and listed wastes as defined in 20 NMAC 4.1.100/40 CFR 261.24.” These terms are used in a similar manner in WAP Table B-2.

NM’s hazardous waste regulations at 40 CFR 264.13(b)(1) requires a WAP identify the parameters each waste will be analyzed for, to properly manage that waste. NMED interprets this to include the parameters necessary to determine the LDR status of a waste, including the applicable treatment standard. As the term “RCRA-regulated” is used in the WAP, it is not clear whether SNL intends to only characterize wastes for the 39 constituents listed at § 261.24 Table-1 to make a hazardous waste determination and whether SNL intends to characterize wastes for the approximately 250 underlying hazardous constituents (UHCs) listed at § 268.48. The WAP must be revised to appropriately use the term “hazardous”.

WAP Section B.3.3 provides another example of the inappropriateness of the term “RCRA-regulated”. The Section states, “RCRA-regulated wastes may be generated during treatment operations at SNL/NM Units. Alternatively, treatment operations may generate waste that are no longer RCRA-regulated.” The only circumstances that would cause a waste to be “no longer RCRA-regulated” would be for non-listed waste to be de-characterized and all of its UHCs to meet their respective universal treatment standard, or for a waste with a technology based LDR treatment standard to have been treated by that technology.

42. **UHCs** WAP Section B.3.3, last sentence states, “The analysis will also include UHCs that are reasonably expected to be present in the treated wastes.” WAP Table B-3 must be revised to address all applicable parameters including all the UHCs identified in the Table of Universal Treatment Standards at 40 CFR § 268.48.
43. **Treatment Standards** WAP Section B.3.2 states, “Wastes to be treated at SNL/NM will be characterized to determine suitability for treatment....” SNL must identify which of the treatment methods discussed in Section B.3.3.2 are suitable for treating wastes with applicable LDR standards specified at 40 CFR § 268.40 as total waste standards as defined at § 268.40(a)(1).
44. **Regulatory citation** SNL inappropriately cites the regulations throughout the WAP by referencing regulations that became effective 6-14-00. These WAP citations may or may not be affected by new regulations that became effective 10-1-03. SNL must revise

the application to reference the appropriate regulations. See the new regulations at NM's web page ([www.state.nm.us](http://www.state.nm.us)) and link through Government/Laws and Statutes/Code.

45. **Authorized wastes** WAP Section B.1.1, 2<sup>nd</sup> Paragraph states, "The General Part A also lists the EPA Hazardous Waste Numbers that may be assigned to the wastes that will be treated in containers or the miscellaneous unit at SNL/NM." The Part A pages 15-17 identify numerous waste codes that can be treated via the six (6) treatment technologies on page 3. The Part A inappropriately does not identify the X02 or X03 process code identified on pages 15-17, the units of measure, nor the description of the process in fields 8 or 9. Is the thermal deactivation process identified on page 3 actually a miscellaneous unit with an X code? NMED requires that the Part A be revised appropriately.
46. **Typographical error** WAP Section B.3.1.3.1, 1<sup>st</sup> Paragraph, second bullet, requires the word "by" between provided and the.
47. **Typographical error** WAP Section B.3.3.2, 1<sup>st</sup> Paragraph, 10<sup>th</sup> bullet uses the word "successive" inappropriately.
48. **Second NOD Comment #325 – List of Active Test Sites.**

Again, Solid Waste Management Units (SWMUs) 83, 84, and 240; and the active septic systems (No. 1004, 1025, and 1094) are unlikely to include all outdoor test sites at SNL. In many cases, there may be no appreciable difference between active sites and inactive sites that are currently recognized as SWMUs. The NMED does not understand the DOE/SNL's reluctance to provide information concerning this issue, given that the NMED can acquire such information during the course of a RCRA Facility Assessment.

DOE/SNL must provide a list of all outdoor active test sites. The list must include the name, location, and a general description of the type or types of testing at each active test site.

49. **Second NOD, Comments #29-55 (except #30) – Corrective Action Management Unit (CAMU)**

As indicated in DOE/SNL's responses, the DOE/SNL have submitted a revised CAMU Post-Closure Care Plan to the NMED, dated June 2003 (hereafter referred to as the June 2003 PCCP). This document is intended to replace the current CAMU Permit, and eventually is intended to replace the original CAMU permit application submitted in February 2002. All but one of the comments #29-55 of the 2<sup>nd</sup> NOD have been either addressed to the NMED's satisfaction in the June 2003 PCCP, or they have been included again in a separate NOD issued by the NMED on December 12, 2003. DOE/SNL must respond to the NOD issued for the June 2003 PCCP by April 9, 2004, the current due date.

**50. Second NOD, Comment # 30 – CAMU.**

The following comment must be addressed in response to this NOD. Section 3.1.1, Physical and Chemical Characteristics of Waste to be Managed, page 3-11, second paragraph, last sentence states:

“Hazardous remediation waste containing Toxic Substances Control Act (TSCA) contaminants ... may also be generated as a result of ER Project corrective action activities; management of these remediation wastes at the CAMU requires compliance with TSCA regulations...and New Mexico Solid Waste Act regulations for asbestos-containing wastes.”

DOE/SNL’s responses to the 2<sup>nd</sup> NOD include a copy of an approval letter for the management of PCBs. Unfortunately this letter does not mention specifically the CAMU. Please provide additional supporting information that this approval letter refers to the CAMU (such as dated correspondence referenced in the approval letter that mentions the CAMU).

**51. NOD Response #5 to Second NOD comments # 64, 65 and 66 regarding inspections and level of detail and quantities of spill control material in general:**

The response states that DOE/SNL maintain sufficient quantities to address release of waste from a container. This response is inadequate. As the authorizing agency, how is NMED supposed to determine whether SNL maintains sufficient resources to deal with spills if no formula is supplied for determining what constitutes an adequate amount. DOE/SNL should incorporate this information into the permit application.

**52. NOD Response #3 to Second NOD comment #61**

20.1.500 NMAC, incorporating 40 CFR §264.17(a) requires that ignitable, reactive and incompatible waste be separated and protected from sources of ignition. One potential source of ignition at the HWMF is an airplane crash into this facility due to the fact that this facility is located directly below the flight path for the main east-west runway of Albuquerque airport. DOE/SNL should acknowledge this fact in their permit application and address the issue concerning its potential as an ignition source.

**53. NOD Response #3 to Second NOD comment #61**

In accordance with 20.1.500 NMAC, incorporating 40 CFR §264.17(a) - Another ignition source at most of the management units are the building electrical systems.

Provide information on how they are designed so that they are not an ignition or fire source.

**54. National Fire Protection Association (NFPA 30) Standards.**

For each waste management area used for the storage of flammable waste, discuss how the waste and storage meet the requirements of the National Fire Protection Association (NFPA 30) standards.

**55. Appendix C, Section C.5** - states that containers are visually inspected at the time of pickup from a generator site or within 24 hours of acceptance at a Unit in accordance with Container Level 1 standards under 20.4.1.500 NMAC, incorporating 40 CFR §264.1086(c)(4)). The general weekly inspection form has a line item for inspection of the covers but this does not demonstrate that the Level 1 Containers were inspected within 24 hours of receipt. In addition, this Unit inspection form will not satisfy a requirement that applies to individual containers.

Please discuss how this inspection is documented? It would appear that this inspection should be addressed as part of the waste acceptance criteria.

**56. The HWMF and RMWMF Modules, Section 1.2.2, Second bullet**, states that ignitable and reactive waste managed at these units buildings after receipt and for treatment are kept apart. Describe how this will be accomplished.

**57. Second NOD, Response # 23 and HWMF Section 1.2.1**

The New Mexico Hazardous Waste Management Regulations 20.4.1.500 NMAC, incorporating 40 CFR §264.175(b)(2) require that the containment system be designed and operated to drain and remove liquids or the containers are elevated or otherwise protected from contact with liquids. Merely inspecting the shelves in Building 959 regularly for accumulation of liquids does not protect or prevent containers from contact with liquids. In addition, it is NMED understanding that containers are stored temporarily in the "Work Space" of the packaging area.

Please review the management practices and present a discussion on how containers are kept from contact with liquids and how the requirements §264.175 are met for these areas.

**58. HWMF Module I, Section 1.3.2.2**

The storage configuration and stacking arrangements for Building 959 are not discussed. Please provide this information under the current section.

**59. General and Unit Specific Closure Plans**

DOE/SNL's Application is required to have a closure plan for full or partial closure of the facility. *See* § 270.14(b)(13). The Application illegally relies on submission of a sampling and analysis plan, at an undefined point in time, to provide the details required in all the closure plans contained in the Application, Appendix F, §§ F.6 & F.7; Module I, Appendix F, §§ 7.4, 7.5 & 7.6; Module II, Appendix F, §§ 7.4, 7.5 & 7.6; Module III, Appendix F, §§ 7.4, 7.5 & 7.6; Module V, Appendix F, §§ 7.4, 7.5 & 7.6; and Module VI, Appendix F, §§ 7.4, 7.5 & 7.6.

The Application must establish those closure details, which can be reasonably specified now. The closure plans must have sufficient detail to perform partial or final closure at any time during the active life of the Facility, as required by 20.4.1.500 NMAC, incorporating 40 CFR § 264.112(b) and (b)(3). There must be sufficient detail to close a unit in the event of unexpected closure. Closure and post-closure plans "should include sufficient detail to allow a third party to conduct closure or post-closure care..." 51 Fed. Reg. 16422, 16426 (May 2, 1986). The closure

plan for the units proposed for permitting must include “a description of the methods for decontaminating the facility, sampling and testing procedures, and criteria to be used for evaluating contamination levels.” 51 Fed. Reg. 16422, 16426 (May 2, 1986).

Where specifics cannot be provided, DOE/SNL must provide general provisions which adequately address the regulatory requirements, (e.g. If it is not feasible to identify the exact number and location of confirmatory samples, general categories could suffice, such as swipe sampling all walls and floors, any visibly stained or discolored area, and underlying soils if the containment integrity of the unit may have been breached (e.g. cracks in the floor)).

NMED does not approve of the overall strategy for the closure of the Container Storage Units involving the initial wipe sampling method to verify whether or not contamination exists and therefore, requires decontamination. NMED does not believe that the limited coverage associated with the random wipe sampling method proposed in Phase I: Initial Sampling and Analysis, can demonstrate that the entire unit is clean and therefore does not require any of the decontamination procedures outlined in Section F.5.3 - Phase III: “Decontamination Procedures of the Closure Plan”.

NMED requires that all container storage units and equipment be washed using a high-pressure washer/steam cleaner or scrubbed with mops/sponges and soap and water solution as described in Section F.5.3 of the Closure Plan. NMED recommends that the unit be divided into sections and that the used wash water be sampled for chemicals of potential concern (COPCs) and radiological constituents in order to verify when decontamination is complete.

NMED is currently working with SNL on the High Bay Waste Storage Facility Closure Plan in order to develop an acceptable closure procedure for all container storage units. Once the contents of this plan are worked out, the closure plan may be incorporated into the SNL Permit Application and subsequently the DOE/SNL operating Permit currently undergoing renewal.

#### 60. GLOBAL COMMENT ON THE RMWMF, MSB, and AHCF

- a. **Section 1.2 – Unit Operations** - These sections state that these “WMAs are used to store and/or treat any of the RCRA-regulated wastes bearing U.S. Environmental Protection Agency Hazardous Waste Numbers listed in the SNL/NM General Part A.” These sections should make it clear that they treat and store radioactive mixed waste at the RMWMF and at the AHCF, not just RCRA-regulated wastes.
- b. **“RCRA-regulated” and “Non-RCRA-regulated” Waste.**

NMED believes that DOE/SNL’s use of the term “RCRA-regulated waste” in the Application is an effort to emphasize that NMED only regulates the hazardous portion of mixed wastes. It is not clear whether the term refers to a formerly hazardous waste that has been de-characterized yet must still undergo treatment to meet LDR treatment standards. It is also not clear whether the term refers to solid wastes that are regulated by RCRA. It is also confusing since RCRA regulated constituents could be construed to include regulated substances in underground storage tanks. NMED is also concerned that the phrase “RCRA-regulated constituents” may be too

limiting, causing the Application to be deficient NMED is also concerned about the enforceability of a permit that uses an undefined term in place of a term that is defined (e.g., hazardous waste, hazardous waste constituent, hazardous waste management unit (40 CFR § 260.10)). The Application must be revised to use terms defined in RCRA, HWA, federal or state regulations. If DOE/SNL believe it is necessary to use terms not defined in current law, DOE/SNL must include a precise and clear definition of the term.

- c. **RMWMF, AHCF and MSB Emergency Equipment List** - These lists do not indicate that salvage drums or over pack drums are available at these facilities. This equipment is essential for the timely cleanup of spills. Either include these on the emergency equipment list or provide information on how spilled material will be dealt with. Also, the number of drums available should be indicated in order to determine if a sufficient amount are kept. See also comment #51 above.

### **THE RADIOACTIVE MIXED WASTE MANAGEMENT FACILITY (RMWMF)**

61. **Section 1.1, Designated Waste Management Areas** - For each building in which treatment is performed, identify the areas and the treatment technologies that are performed.
62. **Appendix C and Section 4.0 of each Module, "Inspections"** - The inspection schedule does not indicate that the sumps in building 6920 or the underside of the modular building will be inspected. Incorporate the inspection of the sumps and its frequency into the subject schedule.

### **THE MANZANO STORAGE BUNKERS (MSB)**

63. **MSB and RMWMF Section 1.1**

The second and third paragraphs of Section 1.1 in the RMWMF and second, third and fourth paragraphs in the MSB Modules discuss the containment systems used at these facilities. Consider presenting this information under Section 1.2.1 of their respective Modules.

64. **Section 1.2.2** - Change the RMWMF acronym in the first paragraph to MSB.
65. **Section 1.2.2, first bullet** - How are the ignitable, reactive and water-reactive wastes kept segregated. Change the language regarding signage from "typically place" to "shall place".
66. **Section 1.2.4.1, Preventing hazards in unloading:**

**This section states that personnel are made aware of weather conditions. What types of actions are taken by DOE/SNL to deal with weather situations, and what means do the Permit Applicants use to educate the personnel on weather conditions?**

67. **Section 1.2.4.1, Preventing hazards in unloading**

It is noted in the Inspection Section, Table 2, that spills cleanup equipment, other than absorbents, (i.e. brooms, shovels, etc.) is stored at the RMWMF. There is also no mention of PPE, over pack drums or spare secondary containment pallets available at the MSBs to immediately address a release. DOE/SNL should elaborate on how spills and releases shall be managed or dealt with.

**68. Sections 1.2.4.1, Preventing hazards in unloading and 1.2.4.2, Preventing run-off**

The text states that the paved area used for unloading slopes away from the bunkers. The New Mexico Hazardous Waste Management Regulations 20.4.1.900 NMAC, incorporating 40 CFR §270.14(b)(8)(ii) require a description of the procedures and structures used to prevent run-off from the waste handling areas to the environment.

What are the procedures or structures used by the DOE/SNL to prevent run-off of hazardous waste should a release occur during loading/unloading operations at the MSB?

**THE AUXILIARY HOT CELL FACILITY (AHCf)**

**69. Section 1.1, Designated Waste Management Areas**

The storage capacity for the hot cell and work area are not included in this section. Also, identify the treatment areas and the treatment technologies that are performed in each area. This information should also be discussed in the Section 8.1 – “Treatment Operations”.

**70. Section 1.1.5, Container Storage Area**

This section discusses more of the individual secondary containment systems instead of the storage area itself. This section should discuss the features and construction details of the storage unit. The secondary containment systems should be discussed in Section 1.2.1 under “Operation of Containment Systems”.

**71. Section 1.2.2, first bullet**

This section states, “Water-reactive wastes are not routinely stored at the Unit.” Describe the precautions that are taken when these wastes are stored at the Unit.

**72. Section 4.0, Inspections: Regarding storage in the silos.**

This section states that containers will only be inspected before they are placed in the silos and again when they are removed. This does not meet the requirements of 20.4.1.500 NMAC, incorporating 40 CFR §264.174, which requires weekly inspections of containers.

Provide information regarding the inspection of the silo themselves. Also, provide additional information regarding the construction and storage operations for the silos. Items such as construction material, types of material stored and how long these items are stored in the silos should be addressed. This information should be presented in the Unit Operations section.

**73. Section 6.0, Contingency Plan, 4<sup>th</sup> paragraph, “During an emergency, Unit personnel will evacuate the unit.... In addition, Unit personnel may choose to implement a coordinated evacuation of all of TA-V.”**

Discuss the criteria or circumstances used to determine which evacuation procedures will be implemented during an emergency.

**74. Section 7.0, Pages AHCF-22 through AHCF-30: Closure Plan**

The closure plan for this unit must include decontamination and sampling of the fume hood and exhaust equipment attached to the hot cell since they are part of the treatment operations.

**75. Module V, Page AHCF-24, Treatment Plan, Third sentence from the top:**

“The waste management areas at the AHCF that are used for the treatment of RCRA-regulated wastes include the Hot Cell, the Fume Hood, and the Work Area.”

Provide a description and sketch drawings of the equipment and tools used in the management and treatment processes for the hazardous and mixed wastes at the RMWMF and the AHCF. Explain how DOE/SNL will handle fugitive emissions from the various treatment units. Include what role the “Fume Hood” plays and how emissions are managed.

**76. Module V, Page AHCF-24, Section 8.1, “Treatment Operations”, Third and fourth sentences, “Each type of treatment will be performed on batches of 500 pounds of waste or less. Liquid wastes will be treated in batches of 60 gallons or less.”**

Explain in detail how emissions from the treatment operations handling the above amounts will be handled to protect human health and the environment.

**77. Module V, Page AHCF-25, Section 8.1.1, “Chemical Deactivation”, fourth paragraph: “Common deactivating reagents include, but are not limited to, caustic soda, lime.... calcium or sodium carbonate... and limestone for acid wastes, and hydrochloric, phosphoric, or nitric acids for alkaline wastes.”**

Since most of the above reactions are exothermic, provide information on how the process of mixing the waste in the vessel will be accomplished in a safe manner and the precautions that will be taken to protect the personnel health and related environment at and around the AHCF.

**78. Module V, Page AHCF-26, Section 8.1.3, “Physical Treatment”, second sentence”, “The treatment consists of reducing waste volume by using tools to separate items with RCRA-regulated constituents from larger items.”**

Provide a schedule and related frequency of inspection for the treatment areas at the RMWMF and the AHCF. Include a description of the tools used in physical treatment for volume reduction, and also the frequency of inspection of the overhead cranes at both Units.

**79. Module V, Page AHCF-35, Section 8.2, Treatment Effectiveness, “ Treatment effectiveness will be verified through evaluation of the treated waste in accordance with Appendix B (Section B.3.3.2) of the SNL/NM General Part B.”**

NMED checked the reference given by the Permit Applicants as being in “**Appendix B (Section B.3.3.2) of the SNL/NM General Part B**”, where it is stated that information on treatment effectiveness could be found. The referenced text did not contain any information on treatment effectiveness.

Provide detailed information on the treatment effectiveness both at the AHCF and the RMWMF, both of which contained identical statements.

### **THE THERMAL TREATMENT FACILITY**

**80. Section 8.2.2, Page TTF-35, first complete paragraph from the top of the page, 4<sup>th</sup> sentence, “If the inspection indicates that all the waste has been treated, the contents of the burn pan (i.e., ash) are removed, containerized managed, and characterized as described in Section B.3.3.1 of the WAP.”**

Provide a description of how and when DOE/SNL remove the ash and how they ensure that there are no kicked out explosives remaining after treatment. Provide a description of how complete ash removal is confirmed and whether the Permit Applicants let any significant amounts of ash remain.

**81. Section 7.2, Unit Description, Page TTF-25, 2nd sentence, “The total quantity of RCRA-regulated waste treated in the TTF during its operating life will be estimated at the time of closure.”**

a. Explain why DOE/SNL would not currently provide an estimated amount of the waste that will be treated at the TTF during the term life of the operating permit.

b. Indicate the locations from which DOE/SNL plan to take background soil samples for reference at closure of the TTF. Indicate the sample locations, with the appropriate legend and scale of the map, as well as the north arrow on Figure 10 of the response to the second NOD, which is titled “Thermal Treatment Facility (TTF), Closure Sampling Grid.” It is recommended that the background soil samples be taken in areas not impacted by Open Burning activities.

**82. DOE/SNL’s response to the first NOD Comment 415 stated that it “had determined that the TTF is the most appropriate method for treating the explosive wastes generated” at Building 6715. Further, in response to first NOD Comment 360 stated, “onsite deactivation through open burning/open detonation is the method most protective of human health and the environment.”**

Provide backup documentation for this determination and any evaluation of whether there is a more appropriate technology to meet the performance standards. In addition, provide an evaluation of the feasibility and performance of current treatment and control technology,

specifically enclosed treatment technologies, for treating the wastes generated at Building. 6715, including but not limited to, on-site use of:

- 1) The thermal deactivation device (Application, Mod. III, § 8.1.5), or similar technology,
- 2) A blast chamber (similar to devices used to detonate waste military munitions), or
- 3) An enclosed incineration device.

This information is being required pursuant to 42 U.S.C. 6925(c)(3) and 20.4.1.500 and 900 NMAC (incorporating 40 CFR § 264.601 and § 270.23(e).

**83. Response to First NOD Comment 53: Page SW-11, Section 1.1.2.2, last paragraph of that Section, which states that** “Containers holding ignitable or reactive waste are located at least 50 feet from the SNL/NM facility property line at all time and are protected from sources of ignition or reaction as required by 20 NMAC 4.1.500/40 CFR 264.176.” Because of the large public population at SNL and Kirtland AFB that is not involved in hazardous waste operations, NMED requires that ignitable or reactive waste be stored at least 50 feet from the unit property (e.g. fence) line.

Provide updated scaled unit diagrams or data demonstrating the existence of this 50-foot buffer zone from the security fence around each unit, particularly the HWMF, where the Modular Buildings are only about 2 feet from the KAFB fence line; or if there isn't a fence, then indicate the security fence 50 feet from any area where members of the public could have access. Alternatively, provide a schedule for moving waste from the Modular buildings to storage areas located more than 50 feet from the security fence. (20.4.1.900 NMAC, incorporating 40 CFR §270.32(b)(2), and § 270.10(k).