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PETER MAGGIORE
SECRETARY

VIA OVERNIGHT DELIVERY

May 16, 2002

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

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

SUBJECT: NOTICE OF DEFICIENCY
TA-55 PART B RCRA PERMIT APPLICATION
JANUARY 2002, REVISION 1.0
LOS ALAMOS NATIONAL LABORATORY EPA ID# NM0890010515
HWB-LANL-99-051

Dear Dr. Browne and Mr. Gurulé:

The New Mexico Environment Department (NMED) has reviewed the above-referenced Application for technical adequacy, as required under 20.4.2.201.3 NMAC.

NMED requires additional information from the Permittees in order for the Application to be considered technically adequate. This additional information that must be addressed is described in Attachment A.

The Permittees must submit the requested information to NMED within ninety days of receipt of this letter.



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Dr. Browne and Mr. Gurulé
May 16, 2002
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If you have any questions or need additional information please contact Carl Will of my staff at 505-428-2542.

Sincerely,



James P. Bearzi
Chief
Hazardous Waste Bureau

attachment

cc: J. Kieling, NMED HWB
D. Cobrain, NMED HWB
C. Will, NMED HWB
A. Ortiz, NMED OGC
P. Walton, Techlaw
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J. Ellvinger, LANL ESH-19, MS K490
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G. Turner, DOE LAAO, MS A316

file: Reading and LANL TA-55

**ATTACHMENT A
NOTICE OF DEFICIENCY
TECHNICAL ADEQUACY REVIEW**

**RCRA PART B PERMIT APPLICATION
TA-55, REVISION 1.0, JANUARY 2002**

**LOS ALAMOS NATIONAL LABORATORY
EPA ID NO. NM0890010515**

May 16, 2002

GENERAL COMMENTS

1. The Application lacks sufficient detail, especially in regard to the container storage units (CSU's). The Application does not provide detail as to how specifically the CSU's and the other waste storage and treatment activities and equipment will meet regulatory requirements. Revise the Application to include details on how the hazardous waste management units and the hazardous waste management activities will comply with requirements of the regulations.
2. The Application does not specifically and consistently identify hazardous waste management units which are requested to be permitted. The Application refers variously to eight and nine CSU's. Page 1-1 states that there are nine CSU's; Page 2-1, paragraph 1, states that there are eight CSU's; Section 2.1 states there are nine CSU's; and page 2-1, Sections 2.1 and 2.1.1 list eight CSU's. Page 4-4, Section 4.1.2.3, identifies TA-55-4, Room 401, that "may be used to store hazardous waste," and is not identified elsewhere in the Application text. Figure G-1, "Basement Container Storage Units," includes Room B38, which is not identified elsewhere as a CSU to be permitted. Page 4-4, Section 4.1.2.3, states that B38 is an inactive CSU "that is scheduled for closure under interim status," though no schedule for closure is provided and B38 is not included in the TA-55 Closure Plan. The number of tanks in the storage tank system is not identified. NMED requests that Permittees review for internal consistency and accuracy all documents submitted to NMED. Revise the Application to include a list and description with identifiable locations of all hazardous waste management units included in the Application.
3. The Application does not address the radiological components of the wastes. Radiological characterization is required for storage, treatment, transportation and packaging of treated waste, disposal, decontamination, and verification for closure. The Application should address these issues or provide adequate references to documents that do address the radiological components of the waste.
4. Attachments B.1 and B.2, the waste analysis plans for the cementation unit and vitrification unit, respectively, only provide information related to the waste analysis

plan for the hazardous waste component of the mixed wastes and not the radiological component.

5. In the event that there is leak or spill from one of the storage tanks (e.g., storage tank system, cementation unit tank component and/or vitrification unit tank component), the tank must be removed from service until the requirements of 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.196) have been met. If major repairs are warranted, the tank system cannot be returned to service until certification by an independent, qualified, registered, professional engineer has been obtained demonstrating that the repaired system is capable of handling hazardous wastes without a release for the intended life of the system. This certification must be submitted to NMED within seven days after returning the tank system to use. Revise the Application to discuss repair issues for each of the tank systems and include a discussion of the certification of major repairs.
6. The Application references the definition for a solid waste management unit (SWMU) in Section 4.0. However, hazardous waste management units and regulated units are not addressed. Closure of hazardous waste management units must be addressed in the Application, not under general LANL corrective action, and compliance must be demonstrated with all requirements under 40 C.F.R. Part 264, Subpart G.

SPECIFIC COMMENTS

1. Section 1.0, Table 1-1

Delete or indicate as NA references to "post-closure plans," "post-closure," "post-closure care," "Post-closure notices," and "Post-closure cost estimate." Treatment, storage, and miscellaneous units at TA-55 must be closed by removal or decontamination of hazardous waste and hazardous waste residues, and post-closure care with waste left in place is not an option at those units.

Delete or indicate as NA references to "Closure cost estimate," "Post-closure cost estimate," "Liability insurance," and "Proof of financial coverage." Permittees as state and federal governments are exempt from those requirements under 20.4.1.500 (incorporating 40 C.F.R. § 264.140(c)).

2. Section 2.1, Container Storage (40 C.F.R. §§ 270.15 and 264.170 through 264.178)

The Application refers to eight and nine CSU's. Revise the Application to accurately describe the hazardous waste management units for which a permit is being requested.

3. Section 2.1.2, Storage Containers (40 C.F.R. § 264.172)

- a) The Application must discuss each type of waste container that will be used to store each type of waste at each CSU. Revise the Application to strike vague descriptors such as the words "may be," "may have," and "not limited to" and revise the Application to include all types of waste containers that will be used to store waste at all CSU's.
- b) Several types of containers are mentioned in the Application including "various small containers." These various small containers are not described in Section 2.1.2 or anywhere else in the Application. Revise the Application to include a detailed description of all containers to be permitted for use for storage of any hazardous waste.
- c) For each type of container listed, the maximum number of each type of container allowed at each CSU must be provided. In addition, the type of waste placed in each container should also be provided. Revise the Application to include this information.

4. Section 2.1.3, Minimum Aisle Space and Storage Configuration (40 C.F.R. § 264.35)

- a) The requirements for aisle space as outlined in 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.35) state that aisle space must be maintained that will allow the

unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of the facility in an emergency. The Application indicates that, for all storage locations, a minimum aisle space of two feet will be used. It is questionable whether an aisle space of two feet will be adequate to meet the above stated requirements. Standard industry practice is to use an aisle space of three feet. Either provide adequate justification for the use of an aisle space of two feet in all storage locations within TA-55 or revise the Application to specify a minimum of three feet of aisle space.

- b) A container layout figure for each of the CSU's within TA-55 must be provided. The figure must contain a layout of the storage location, location of each type of storage container, location of aisles, and containment systems. Revise the Application to include container layout figures for each of the CSU's.
 - c) Six CSU's are requested to be permitted in the April 1998 General Part A Application. There are eight or nine proposed CSU's in the TA-55 Permit Application. The numbering scheme for the container storage, vitrification, and cementation units must provide a cross reference to the numbering scheme found in the General Part A Application. Additionally, the capacities found in the General Part A are inconsistent with the TA-55 Permit Application. For example, the Building 185 CSU has a maximum storage capacity of 55,000 gallons in the TA-55 Application and a maximum storage capacity of 27,500 gallons in the General Part A Application. Revise the Applications to be accurate and consistent with one another.
 - d) The Application states that large containers may be stacked to a maximum of two high unless size and weight restrictions prohibit it for safety reasons. Revise the Application to include a discussion of specific criteria and methods that will be used to determine the maximum stacking height for each type of container.
5. Section 2.1.5, Condition of Containers (40 C.F.R. § 264.171)
- a) The Application states that any waste container not in good condition will be overpacked or the waste will be repackaged in a container in good condition. The materials of the overpack container must be compatible with both the waste and the other container. In addition, the overpack container and/or new container must be compatible and resistant to environmental conditions (e.g., corrosion). Revise the Application to include a discussion of this information.
 - b) Containers must be shown to be free of surface contamination. Revise the Application to discuss how containers will be examined or surveyed to determine if the outside surfaces are free of contamination.

- c) Container liners are not discussed, although it is mentioned in Section 2.1.2 that some drums may have liners. These liners are typically procured to a specification describing the functional requirements of fitting inside the drum, material thickness and tolerances, and quality controls and required testing. Also, a quality control program is established to ensure liners meet the specifications. Revise the Application to discuss liners for all containers, requirements (including waste and container compatibility) and quality control procedures to ensure compliance with the requirements.

6. Section 2.1.6 Compatibility of Waste with Containers (40 C.F.R. § 264.172)

The Application states that only containers made of, or lined with, materials that will not react with wastes stored in them will be used. Revise the Application to provide a discussion of the documentation of waste compatibility for each of the containers and liners to be used. In addition, discuss what types of waste will be used in each type of container.

7. Section 2.1.7, Management of Containers (40 C.F.R. §§ 264.173(a) and (b))

- a) The Application states that waste containers will be opened when waste is added or removed or if the container's contents require repackaging. The Application does not discuss whether containers will be opened within a work enclosure that provides confinement, preventing any release of waste constituents. A detailed description of the waste enclosure, including any special ventilation systems, waste containment systems, and special handling requirements should be provided in the Application. Revise the Application to outline specific waste handling requirements for opening waste containers and the work enclosure area for handling each type of waste container and waste type.
- b) In addition to containers being closed, 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.1086(c)(ii)) also requires that the cover and closure devices form a continuous barrier over the container openings such that when the cover and closure devices are secured in the closed position, there are no visible holes, gaps or other open spaces into the interior of the container. Revise the Application to clarify that in addition to containers being closed, the closing devices will be secured in a manner that there are no visible holes, gaps, or other open spaces into the interior of the container.

8. Section 2.1.7.2, Labeling, Recording and Sampling System

- a) The Application indicates that, where necessary, a "Radioactive Material/Radioactive Waste" label will be attached to waste containers. Revise the Application to include the specific criteria that is used to determine whether

containers require radioactive labeling. Include whether the radioactive criteria applies to levels of activity of the waste inside the container and if it applies to external radiological container activity readings.

- b) Revise the Application to include a copy or example of the Waste Profile Form (WPF) that will accompany all wastes.

9. Section 2.1.8, Containment Systems (40 C.F.R. §§ 270.15(a-b) and 264.175(a-b))

- a) The Application states that LANL databases may be used initially to verify the absence or presence of free liquids in containers. The Application must provide the methodologies that will be used in addition to acceptable knowledge (AK) to determine the presence and amount of or absence of free liquids. Revise the Application to include these methodologies.
- b) The containment requirements as outlined in 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.175(b)(1)) are not addressed in the Application. Specifically, the Application must discuss the underlying base of the containment systems and demonstrate that the base will be free of cracks or gaps and will be sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed. Revise the Application to discuss the base of the containment systems and to demonstrate compliance with the appropriate regulation.
- c) The Application should provide calculations showing the requirements for secondary containment at each CSU. The calculations should demonstrate the amount of liquid and necessary containment requirements. Revise the Application to include containment calculations.
- d) The description of secondary containment must also include a calculation of the surface area and the quantities of liquid that would cover the area for each CSU. Revise the Application to include this calculation.
- e) The Application states that accumulated liquids will be removed from containment areas. However, 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.175(b)(5)) specifically states that spilled and leaked waste and all accumulated liquids must be removed in a timely manner to prevent overflow of the collection system. Revise the Application to state that all accumulated liquids will be removed in a timely manner to prevent overflow of the collection system.
- f) Provide a discussion that demonstrates how containers will be kept from contact with any potentially accumulated liquids.

10. Section 2.1.10. Special Requirements for Ignitable, Reactive, and Incompatible Wastes (40 C.F.R. §§ 270.14(b)(9), 270.15(b-c), 264.17(a-b), 264.176, and 264.177)

- a) The Application must include engineering drawings or other data that show the storage location for containers of ignitable and/or reactive wastes and which demonstrate that the containers are located 50 feet from the TA boundary. Revise the Application to include this figure(s).
- b) The Application states ignitable and reactive waste containers are protected from the possibility of accidental ignition or reaction. Revise the Application to include a discussion of these specific policies. Precautions to be taken should include prevention of ignition, spontaneous ignition, and radiant heat.
- c) The Application must also describe all processes that will be used to prevent reactions that may generate extreme heat, pressure, fire, explosions, or violent reactions; produce uncontrolled flammable fumes, dust, or gases in sufficient quantities to threaten human health or the environment; produce uncontrolled flammable fumes, dust, or gases in sufficient quantities to pose a risk of fire or explosions; damage the structural integrity of the facility; or be a threat to human health or the environment. Revise the Application to include a discussion of these preventative processes.
- d) Under 20.4.1.500 NMAC (incorporating 40 C.F.R. § 246.1101(a)(3)), the Application must ensure the management of incompatible wastes within a CSU where secondary containment systems will be used and show that the presence of incompatible wastes will not cause the secondary containment system to leak, corrode, or fail. Revise the Application to discuss safeguards that are in place to ensure the compatibility of incompatible wastes with the secondary containment systems.

11. Section 2.1.11. Closure (40 C.F.R. §§ 264.111 and 264.178)

Revise the Application to state that at closure of a CSU all hazardous waste will be removed from the CSU and all hazardous waste and hazardous waste residues will be removed or decontaminated in compliance with 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.178).

Refer to specific comments on Attachment F.1 of the Application.

12. Section 2.2. Storage Tank System (40 C.F.R. §§ 270.15 and 264.191 through 194)

- a) Identify the number of tanks in the storage tank system.

- b) The Application indicates types of wastes that "may" be stored in the tank system. The Application must include all types of wastes to be permitted for the tank system. Either remove the word "may" or revise the Application to include a discussion of all the specific types of wastes to be permitted for the tank system.
 - c) More detailed information on the storage tank system was provided in Attachment H of the Application. Refer also to comments related to Attachment H.
13. Section 2.2.2, Containment Systems (40 C.F.R. §§ 270.16(g) and 264.193(a-d))
- a) The secondary containment areas in TA-55-4, rooms 401 and 434A, consist of 10-inch thick, steel reinforced concrete floors. While the concrete appears to have sufficient strength and thickness to prevent containment failure, it is not clear how the surface of the concrete will be decontaminated in the event of a system or tank failure. The overall decontamination plan was presented, however this plan does not address periodic decontamination of secondary containment systems in the event of a leak. The Application also does not address whether the concrete floors have an epoxy or similar coating to aid in removal of contaminants and to prevent contaminants from seeping into the concrete. Revise the Application to address these issues.
 - b) The Application must include calculations to show that the external liner system is designed to contain 100 percent of the capacity of the largest tank within its boundary. Revise the Application to include these calculations.
 - c) The reinforced concrete floor that will serve as the containment system must be demonstrated to be free of cracks or gaps. Provide this information.
 - d) Revise the Application to include a statement that the containment system is designed to completely surround the tanks.
14. Section 2.2.4, Special Requirements for Ignitable, Reactive, and Incompatible Wastes (40 C.F.R. §§ 270.16(j), 264.198 (a-b) and 264.199(a-b))

In the event that ignitable or reactive waste is stored in any part of the storage tank system, the following must be either provided or demonstrated. Revise the Application to address these issues:

- a) Provide the operating pressure and temperature specifications for the tanks;
- b) Demonstrate that waste is treated, rendered, or mixed before or immediately after placement in the tank systems so that it is no longer ignitable or reactive;
- c) Demonstrate that the wastes are not placed in the same tank system unless there is compliance with 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.17(b));

- d) Demonstrate that the waste is stored or treated in a manner such that it protects against ignition or reaction;
- e) Demonstrate that the requirements for the maintenance of protective distances between waste management areas and any public ways, streets, alleys, or adjoining property lines;
- f) Provide procedures assuring that hazardous waste will not be placed in a tank that previously held an incompatible waste or material unless it has been decontaminated or unless precautions have been taken per 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.17(b)) to prevent reactions; and
- g) Indicate whether the tank system is used solely for emergencies.

15. Section 2.2.5, Closure (40 C.F.R. § 264.111)

Revise the Application to specify that partial closure means closure of all of a tank and its associated piping and underlying containment system, and that closure of parts of a hazardous waste management unit is not permitted.

Revise the Application to specify that at closure of a tank all hazardous waste will be removed from the tank and all hazardous waste and hazardous waste residues will be removed or decontaminated in compliance with 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.197).

Refer to the specific comments on the Storage Tank Closure Plan, Attachment F.2.

16. Section 2.2.6, Control of Runoff (40 C.F.R. §§ 270.14(b)(8)(ii) and 264.193(e)(i-ii))

- a) The prevention of runoff from the storage tank system is based upon the assumption that the secondary containment system is sufficient to contain 100 percent of the volume of the largest tank. Provide calculations demonstrating that each secondary containment system is sufficient to contain 100 percent of the volume of the largest tank within the containment.
- b) The Application states that any accumulated liquids will be removed as soon as possible. Pursuant to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.193(c)(3)), all hazardous wastes and/or accumulated liquids must be removed from the secondary containment system within 24 hours to prevent harm to human health and the environment. If adequate information is provided to NMED that removal of released waste or accumulated liquids cannot be accomplished within 24 hours, then the liquids and waste may be removed in as timely a manner as possible. Either revise the Application to state that accumulated wastes and liquids will be removed within 24 hours or provide adequate justification as to why removal of liquids cannot be accomplished within 24 hours.

17. Section 2.3, Miscellaneous Unit – Cementation Unit

More detailed information on the cementation unit was provided in Attachment I of the Application. Refer also to specific comments related to Attachment I.

18. Section 2.3.2, Containment Systems (40 C.F.R. §§ 270.16(g) and 264.193(a-d))

- a) The Application must include calculations to show that the external liner system is designed to contain 100 percent of the capacity of the largest tank within its boundary. Revise the Application to include these calculations.
- b) The reinforced concrete floor that is designated as the containment system must be demonstrated to be free of cracks or gaps. Provide this information.
- c) Revise the Application to include a statement that the containment system is designed to completely surround the cementation unit.

19. Section 2.3.4, Special Requirements for Ignitable, Reactive, and Incompatible Wastes (40 C.F.R. §§ 270.16(j), 264.198 (a-b) and 264.199(a-b))

- a) In the event that ignitable or reactive waste is stored in any part of the storage tank system, the following must be either provided or demonstrated. Revise the Application to address these issues:
 - Provide the operating pressure and temperature specifications for the tanks;
 - Demonstrate that waste is treated, rendered, or mixed before or immediately after placement in the tank system so that it no longer is ignitable or reactive;
 - Demonstrate that the wastes are not placed in the same tank system unless 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.17(b)) is complied with;
 - Demonstrate that the waste is stored or treated in a manner such that it protects against ignition or reaction;
 - Demonstrate that the requirements for the maintenance of protective distances between waste management areas and any public ways, streets, alleys, or adjoining property lines;
 - Provide procedures assuring that hazardous waste will not be placed in a tank that previously held an incompatible waste or material unless it has been decontaminated or unless precautions have been taken per 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.17(b)) to prevent reactions; and
 - Indicate whether the tank system is used solely for emergencies.
- b) In addition, the containment system for the cementation unit is the same system to be used for the storage tanks and vitrification unit. The Application must address

the potential for incompatible wastes commingling as a result of a leak or spill from either the storage tanks, vitrification units, and/or the cementation unit.

20. Section 2.3.5, Closure (40 C.F.R. § 264.111)

Revise the Application to specify that at closure of the cementation unit all hazardous waste will be removed from the cementation unit and all hazardous waste and hazardous waste residues will be removed or decontaminated in compliance with 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.197).

Refer to specific comments on the cementation unit Closure Plan, Attachment F.3.

21. Section 2.3.6, Control of Runoff (40 C.F.R. § 270.14(b)(8)(ii))

- a) The prevention of runoff from the cementation unit is based upon the assumption that the secondary containment system is sufficient to contain 100 percent of the volume of the largest tank. Provide calculations demonstrating that each secondary containment system is sufficient to contain 100 percent of the volume of the largest tank within the containment system.
- b) The containment system for the cementation unit is also the same containment system to be used for the storage tank system and the vitrification unit. In the unlikely event that a leak occurs in both the storage tank system and/or the vitrification unit and the cementation unit, the containment system will have to be sufficient to contain liquids from all units. Provide a discussion of how the containment system will handle a leak in the storage tank system, the vitrification unit, and/or the cementation unit.
- c) The Application states that any accumulated liquids will be removed as soon as possible. Pursuant to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.193(c)(3)), all hazardous wastes and accumulated liquids must be removed from the secondary containment system within 24 hours to prevent harm to human health and the environment. If adequate information is provided to NMED that removal of released waste or accumulated liquids cannot be accomplished within 24 hours, then the liquids and waste may be removed in as timely a manner as possible. Either revise the Application to state that accumulated wastes and liquids will be removed within 24 hours or provide adequate justification as to why removal of liquids cannot be accomplished within 24 hours.

22. Section 2.4, Miscellaneous Unit – Vitrification Unit

Revise the Application to include a definition of the vitrification unit that describes all the ancillary piping and equipment and other components that are included as part of the unit.

More detailed information on the vitrification unit was provided in Attachment J of the Application. Refer to specific comments related to Attachment J.

23. Section 2.4.2, Containment Systems (40 C.F.R. §§ 270.16(g) and 264.193(a-d))

- a) The Application must include calculations to show that the external liner system is designed to contain 100 percent of the capacity of the largest tank within its boundary. Revise the Application to include these calculations.
- b) The reinforced concrete floor that will serve as the containment system must be demonstrated to be free of cracks or gaps. Provide this information.
- c) Revise the Application to include a statement that the containment system is designed to completely surround the vitrification unit.

24. Section 2.4.4, Special Requirements for Ignitable, Reactive and Incompatible Wastes (40 C.F.R. §§ 270.16(j), 264.198 (a-b) and 264.199(a-b))

While reactive, ignitable, and incompatible wastes will not be treated in the vitrification unit itself, the containment system to be used by the vitrification unit is the same as that to be used for the storage tanks and cementation unit, which may be used to store or treat reactive, ignitable, and incompatible wastes. The Application must address the potential for the vitrification unit to come into contact with these wastes as a result of a leak, rupture, spill, etc. from either a storage tank or the cementation unit. Revise the Application to include this discussion.

25. Section 2.4.5, Closure (40 C.F.R. § 264.111)

Revise the Application to specify that partial closure means closure of all of the vitrification unit, and that closure of parts of a hazardous waste management unit is not permitted.

Revise the Application to specify that at closure of the vitrification unit all hazardous waste will be removed from the vitrification unit and all hazardous waste and hazardous waste residues will be removed or decontaminated in compliance with 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.197).

Refer to specific comments on the vitrification unit Closure Plan, Attachment F.4.

26. Section 2.4.6, Control of Runoff (40 C.F.R. § 270.14(b)(8)(ii))

- a) The prevention of runoff from the vitrification unit is based upon the assumption that the secondary containment system is sufficient to contain 100 percent of the volume of the largest tank. Provide calculations demonstrating that each secondary containment system is sufficient to contain 100 percent of the volume of the largest tank within the containment.
- b) The containment system for the vitrification unit is also the same containment system to be used for the storage tank system and cementation unit. In the unlikely event that a leak occurs in the storage tank system, the cementation unit, and the vitrification unit, the containment system will have to be sufficient to contain liquids from all units. Provide a discussion of how the containment system will handle a leak in the storage tank system, the cementation unit and the vitrification unit.
- c) The Application states that any accumulated liquids will be removed as soon as possible. Pursuant to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.193(c)(3)), all hazardous wastes and accumulated liquids must be removed from the secondary containment system within 24 hours to prevent harm to human health and the environment. If adequate information is provided to NMED that removal of released waste or accumulated liquids cannot be accomplished within 24 hours, then the liquids and waste may be removed in as timely a manner as possible. Either revise the Application to state that accumulated wastes and liquids will be removed within 24 hours or provide adequate justification as to why removal of liquids cannot be accomplished within 24 hours.

27. Section 4.2, Releases (40 C.F.R. § 270.16(d)(2))

- a) Revise the Application to reference the SWMU Reports that will be submitted to comply with the requirements of 20.4.1.900 NMAC (incorporating 40 C.F.R. § 270.14(d)).
- b) Provide an explanation for why active and closing hazardous waste management units are included in this Section and not in the Closure Plan for TA-55. Section 4.1.2 states that these active units "will be closed in accordance with an applicable RCRA closure plan." The "applicable RCRA closure plan" is the TA-55 Closure Plan, which is Attachment F to the Application. Section 4.1.2.3 identifies "storage location B38" that is "scheduled for closure under interim status." B38 is not included in the Closure Plan. B38 and other hazardous waste management units must be either permitted or closed prior to issuance of the Permit. Provide a

schedule for closure of B38, revise the Closure Plan to include B38, and provide an explanation for why B38 was not included in the Closure Plan.

- c) The Application must identify all releases that may have occurred from all of the SWMU's identified in Section 4.1 of the Application or provide documentation that no release occurred from a particular SWMU. Releases may include spills, leaks, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing to the environment. In addition, the date of the release(s), type of waste released, quantity or volume released, nature of the release(s), and groundwater monitoring and other analytical data available to describe the nature and extent of the release(s) should be provided. Other data may include physical evidence of distressed vegetation or soil contamination, historical evidence of releases, state, federal, or local enforcement actions, public complaints, and any other information showing the incidence of or migration of a release. Revise the Application to include this information.
- d) The incinerator complex, SWMU 42-001(a), was shut down due to operational problems. Discuss whether these operational problems (e.g., system failures, startup or shutdown releases, and/or filtration breakthrough) resulted in releases of contaminants to the atmosphere. Also discuss the waste feed system and any potential releases associated with it.
- e) The discussion of SWMU Nos. 42-001(b) and (c) does not address whether there were any leaks from the underground drainlines or the tanks, which could have led to contamination of surface soils, subsurface soils, and potentially groundwater and the environment. Revise the Application to address potential leaks from the underground drainlines and tanks.
- f) The sumps, pumps, and tanks, drains, and drainlines associated with SWMU 55-008 are not addressed as having any releases. Provide documentation that no releases occurred, or provide a discussion of potential releases from these systems.
- g) Provide a discussion of whether there were any releases from the concrete enclosure, SWMU 55-009.
- h) The Application does not address releases from any of the active hazardous waste management units. Revise the Application to discuss whether there have been any releases from these active units.

28. Section 4.3, Characterization of Release

Information related to the characterization of releases is referenced to documents not provided with the Application, such as the 1990 SWMU Report and the RFI Work Plan for Operable Unit 1129. However, the Application states that, at a minimum, the corrective action process will include investigations to verify whether or not a release has occurred. However, for a RCRA Part B Permit Application, characterization of releases must include the following types of available information concerning prior or current releases:

- a) Date of the release;
- b) Type of waste or constituent released;
- c) Quantity or volume released;
- d) Nature of the release: (e.g., spill, overflow, ruptured tank or pipe, construction failure, etc.);
- e) Groundwater monitoring and other analytical data available to describe nature and extent of release;
- f) Physical evidence of distressed vegetation or soil contamination;
- g) Historical evidence of releases such as tanker truck accidents;
- h) Any state, local, or federal enforcement action that may address releases;
- i) Any public citizen complaints about the facility that could indicate a release; and
- j) Any information showing the migration of the release.

Revise the Application to include, at a minimum, the above-listed information.

29. Section 4.4, Corrective Actions (40 C.F.R. § 264.101)

The Application states that corrective action will be conducted in accordance with approved NMED and LANL ER corrective action activities and that the corrective action will generally follow the RCRA Facility Investigation/Corrective Measures Study (RFI/CMS) process. However, 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.101) and proposed 40 C.F.R. Part 264, Subpart S, language, requires that the Application specify corrective actions and how they will be implemented for each SWMU. The Permittees must include a summary of completed corrective action activities and a schedule for future corrective action activities in the Application rather than only reference the corrective action program of the LANL ER Project. Revise the Application to specify corrective action investigation and remediation for releases from SWMU's at TA-55. The corrective actions must include implementation beyond area boundaries where necessary to protect human health and the environment.

30. Attachment A.1, TA-55 General Description (40 C.F.R. § 270.14(b)(1))

The description of the Facility must briefly describe the processes involved in the generation of hazardous wastes, including mixed wastes. Revise the Application to include this discussion as part of the general Facility description.

31. Attachments B.1 and B.2, Waste Analysis Plans for the Cementation Unit and Vitrification Unit

Incorporate Attachments B.1 and B.2, the Waste Analysis Plans (WAP's) for the TA-55 cementation unit and vitrification unit, into the Facility-wide WAP included with the Facility-wide General Application. Address Comment Nos. 32 through 43 in the Facility-wide WAP.

32. Attachment B.1.2, Description of Waste (40 C.F.R. §§ 270.14(b)(2) and 264.13(a)(1))

- a) The Application uses several vague descriptors (e.g., primarily, generally, and typically) as to the source of waste, type of waste, and components of the waste. The Application must discuss all waste streams that will be treated at the cementation unit, and Table B.1-1 should reflect all the waste streams and waste descriptions. Revise the Application accordingly.
- b) The WAP does not address the radiological component of the waste. The radioactivity of the waste is critical in determining health and safety measures, packing, labeling and transportation requirements, and decontamination and verification processes. Revise the Application to include a description of the radiological components of the waste.

33. Attachment B.1.3.1, Proposed Analytical Parameters and Methods (40 C.F.R. §§ 270.14(b)(2) and 264.13(b)(1-2))

Pursuant to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.13(b)(2)), the Application must include all of the test methods that will be used for the chosen parameters and not just methods that may be used. These parameters should be for both hazardous and radiological components. Revise the Application to include all the test methods that will be used for the chosen parameters.

34. Attachment B.1.3.2, Criteria and Rationale for Parameter Selection (40 C.F.R. § 264.13(b)(1))

The Application indicates that acceptable knowledge (AK) will be used for waste characterization where possible. AK is acceptable only when adequate documentation

and data from the process generator is available which shows consistency of the waste streams. However, where there is variability in waste streams, sampling must occur on a regular basis. A schedule of the frequency of sampling and sampling methods (pursuant to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.13(b)(3) and (4)) must be included in the WAP, as well as a specific decision-making process that describes when AK is acceptable and when sampling should be conducted. Revise the Application to include this information.

35. Attachment B.1.4, Characterization Procedures (40 C.F.R. §§ 270.14(b)(2), 264.13(a)(1-3) and 264.13(b)(2))

The Application indicates that most of the waste characterization will be based on AK. However, there is no decision tree to indicate when AK will not meet characterization requirements and when sampling is required, or the frequency at which sampling will be conducted. Also, the Application must address how often sampling of waste streams will be conducted to ensure that the waste streams are consistent, indicating that AK is applicable. Revise the Application accordingly.

36. Attachment B.1.4.1, Characterization Procedures for Waste to be Treated (40 C.F.R. §§ 270.14(b)(2) and 264.13(b)(2-4))

The Application must include a decision tree indicating how it will be determined that AK is sufficient to define waste streams and specifically when sampling will be required. In addition, if sampling is necessary, the sampling frequency and analytical parameters must be clearly identified. The sampling methods to be used to obtain a representative sampling of each waste stream and the appropriateness of these methods must also be provided. If LANL-specific protocol is to be used for sample collection, preservation, QA/QC and health and safety issues, then either this information must be contained within the Application or a specific reference to the protocol to be followed must be provided in the Application. Revise the Application to include this information.

37. B.1.4.2, Characterization Procedures for Treated Waste (40 C.F.R. §§ 270.14(b)(2) and 264.13(b)(2-4))

The characterization processes to be used on the treated waste are referenced to the "LANL Transuranic Waste Certification Plan," the "Waste Isolation Pilot Plant (WIPP) Waste Analysis Plan" permit conditions, and LANL-specific protocol. The LANL-specific protocol to be used for sampling techniques should be either included in the Application or specifically referenced by document and/or protocol number, so that the applicability and appropriateness of the methods can be determined. Revise the Application to include this information on the LANL-specific protocols.

38. Attachment B.1.4.5, Reevaluation Frequencies (40 C.F.R. §§ 264.13(a)(3) and 264.13(b)(4))

The Application is vague as to how waste stream verification will be conducted and when waste stream verification will be conducted for non-routinely generated wastes. No decision criteria are provided for the frequency of reevaluation of non-routinely generated wastes. Revise the Application to discuss how and when waste stream verification for non-routinely generated wastes will be conducted. Also provide a decision tree outlining when and how reevaluation for non-routinely generated wastes will be done.

39. Attachment B.2.2, Description of Waste (40 C.F.R. §§ 270.14(b)(2) and 264.13(a)(1))

The WAP does not address the radiological component of the waste. The radioactivity of the waste is critical in determining health and safety measures, packing, labeling and transportation requirements, and decontamination and verification processes. Revise the Application to include a description of the radiological components of the waste.

40. Attachment B.2.3.2, Criteria and Rationale for Parameter Selection (40 C.F.R. §§ 264.13(b)(1-4))

The Application indicates that AK will be used for waste characterization where possible. AK is acceptable only when adequate documentation and data from the process generator is available which shows consistency of the waste streams. However, where there is variability in waste streams, sampling must occur on a regular basis. A schedule of the frequency of sampling and sampling methods (pursuant to 20.4.1.500 NMAC, incorporating 40 C.F.R. § 264.13(b)(3) and (4)) must be included in the waste analysis plan as well as a specific decision-making process for when AK is acceptable and when sampling should be conducted. Methods for radiological screening of samples to determine whether health and safety issues are a concern should also be provided as part of characterization. Revise the Application to address these issues.

41. Attachment B.2.4.1, Characterization Procedures for Waste to be Treated (40 C.F.R. §§ 270.14(b)(2) and 264.13(b)(2-4))

The sampling methods to be used to obtain a representative sampling of each waste stream and the appropriateness of these methods must be provided. Sample collection frequency must also be discussed. If LANL-specific protocol is to be used for sample collection, preservation, QA/QC, and health and safety issues, then a specific reference to the protocol to be followed must be provided in the Application. Revise the Application to include this information.

42. B.2.4.2, Characterization Procedures for Treated Waste (40 C.F.R. §§ 270.14(b)(2) and 264.13(b)(2-4))

The characterization processes to be used on the treated waste are referenced to the "LANL Transuranic Waste Certification Plan", the "Waste Isolation Pilot Plant (WIPP) Waste Analysis Plan" permit conditions, and LANL-specific protocol. The LANL-specific protocol to be used for sampling techniques should be specifically referenced so that the applicability and appropriateness of the methods can be determined. Revise the Application to include these references.

43. Attachment B.2.4.5, Reevaluation Frequencies (40 C.F.R. §§ 264.13(a)(3) and 264.13(b)(4))

The Application is vague as to how and when waste stream verification will be conducted for non-routinely generated wastes. No decision criteria are provided for the frequency of reevaluation of non-routinely generated wastes. Revise the Application to discuss how and when waste stream verification for non-routinely generated wastes will be conducted. Also provide a decision tree outlining when and how reevaluation for non-routinely generated wastes will be done.

44. Attachment F.1.1, Closure Performance Standard

Delete "and post-closure" from the third bullet.

45. Attachment F.1.1.2, Partial and Final Closure Activities (40 C.F.R. §§ 270.14(b)(13), 270.14(b)(15-18), 264.110 through 264.151 and 264.178)

Revise the Application to discuss which structure(s) within the CSU's may be left in service during closure activities.

46. Attachment F.1.1.9, Survey Plat and Post-Closure Requirements (40 C.F.R. §§ 270.14(b)(13), 270.14(b)(15-18), 264.110 through 264.151 and 264.178)

Any criteria used to demonstrate compliance for closure that is not permitted in this Application will require a permit modification. Revise the Application to indicate that the requirements for a permit modification pursuant to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.112(c)), will be followed in the event that an amendment to the closure plan is warranted.

47. Attachment F.1.2, Closure Procedures

The Application states that, if necessary, the closure plan will be modified and that the modified closure plan will be submitted to the NMED for review and approval. Pursuant

to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.112(c)), a written notification of, or request for, a permit modification to authorize a change in operating plans, facility design, or the approved closure plan must be submitted to NMED. In addition, the requirements for a permit modification, also outlined in 40 C.F.R. § 264.112(c), must be met. Revise the Application to address the written notification requirement.

48. Attachment F.1.2.1, Estimate of Maximum Waste in Storage (40 C.F.R. § 264.112(b)(3))

The Application must provide an estimate of the maximum inventory for each type of waste and within what types of containers that waste is contained. In addition, the Application must include a discussion of how much waste and the type of wastes that are located at each CSU. Revise the Application to include, for each CSU, the maximum quantity of waste, waste type, maximum capacity based on area, and the maximum number of containers by container type.

49. Attachment F.1.2.3, Removal of Waste (40 C.F.R. §§ 264.112(b)(3) and 264.178)

According to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.112(b)(3)), the types(s) of off-site hazardous waste management facilities to be used must be identified. Revise the Application to discuss the types of waste that will be shipped to each specific off-site facility.

50. Attachment F.1.2.4, Closure Procedures and Decontamination

- a) As outlined in 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.112(b)(4)) a detailed description for the closure of each CSU must include the steps needed to remove or decontaminate all hazardous waste residues and contaminated containment system components, equipment, structures, and soils during partial and final closure, including, but not limited to, procedures for cleaning equipment and removing contaminated soils, methods for sampling and testing surrounding soils, and criteria for determining the extent of decontamination required to satisfy the closure performance standard. Revise the Application to provide detailed descriptions of the closure procedures and decontamination techniques for each CSU.
- b) The Application does not address methods for sampling and testing surrounding soils and removing contaminated soils during either partial closure or closure. Revise the Application to address surrounding soils and soil that underlies CSU's, particularly the outdoor storage pad.

- c) The Application states that all sampling will be done in accordance with Quality Assurance/Quality Control (QA/QC) procedures. Revise the Application to include these QA/QC procedures.
- d) The schedule for closure activities for the CSU's are presented in Table F.1-1. However, the schedule does not appear to allow for the sampling, analysis, and potential removal of contaminated soils surrounding the CSU's. It is not apparent that the schedule allows time for proper data validation, time to treat wastes, time for additional leaching tests for the asphalt, or adequate time for transporting wastes to disposal sites, if warranted. In addition, some structures in the CSU's may be left in service during partial closure. Revise the schedule to be comprehensive of all potential activities for closure and partial closure.
- e) The Application states that all workers will have proper training and medical monitoring. Reference the appropriate section(s) of the Application that discuss the training requirements and medical monitoring requirements for workers.
- f) Revise the Closure Plan for the closure of CSU's to include the sampling of potential contaminated areas using swipe sampling rather than sampling the rinse water to determine if a release has occurred and to determine if contamination has been remediated.
- g) There is no discussion of how background levels for soils will be determined. At closure of a CSU, Permittees must demonstrate that hazardous waste and hazardous waste residues have been removed from all soils surrounding the CSU. Revise the Application to reference "Inorganic and Radionuclide Background Data for Soils, Canyon Sediments, and Bandelier Tuff at Los Alamos National Laboratory," Rytí et al., 1998, for determination of background soil levels.
- h) The Application states that each storage structure will be inspected for any cracks or conditions that would potentially lead to loss of decontamination liquids, and that, if any defects affecting containment are found, appropriate remedial actions, for example repairs, maintenance, or replacement, will be conducted. It is unclear from the Application whether the cracks or other flaws will be monitored for contamination prior to sealing or other treatment. Contamination could be sealed within a crack of a structure. Revise the Application to discuss how these defects in storage structures will be investigated to ensure that no contamination has migrated into the defect prior to remedial action.

51. Attachment F.1.2.4.1, Indoor Storage Area (40 C.F.R. § 264.112(b)(4))

- a) The Application states that a wash water solution will be used in the decontamination of portable equipment. Discuss what will comprise the wash

- solution and discuss the appropriateness of this solution for organics, inorganics, and radionuclides.
- b) The description of portable equipment also includes wooden pallets. The use of a wash water solution on wood, which is known to absorb water, could result in additional contamination of the pallet. Discuss mitigative measures that will be used to ensure the pallets do not absorb any potentially contaminated wash water, becoming contaminated by the decontamination procedure.
 - c) The Application states that a portable berm may be used to collect and contain wash water. Discuss what alternate methods may be used, if the portable berm is not used, for containment of wash water.
 - d) The Application indicates that wash water will be allowed to accumulate in the bottom of recessed areas (e.g., sumps), where the water will be removed and tested for potential contamination. The Application does not discuss how the recessed area where the wash water was allowed to collect will be decontaminated if the results from the wash water indicate contamination. Revise the Application to discuss how the entire recessed area will be decontaminated and verified.
 - e) Sumps are often connected to a central drainage system. Include in the Application a discussion of how drain lines connected to sumps and other recessed areas will be investigated and decontaminated.
 - f) The Application infers that the decontamination procedures are only for loose contamination and that any item that is shown to have fixed contamination will be removed and disposed of properly. Clarify the Application accordingly.
 - g) The Application states that the wash water will only be analyzed for hazardous constituents. At closure of a CSU, Permittees must determine that there is no fixed radiological contamination. Revise the Application to address radiological contamination and decontamination.

52. Attachment F.1.2.4.2, Vault (40 C.F.R. § 264.112(b)(4))

The Application must contain a description of all measures of decontamination (i.e., decontamination measures will be initiated to accomplish chemical decontamination, as well as to satisfy ALARA requirements for mixed waste in accordance with applicable DOE Orders) that will be applied in decontaminating the vault. Revise the Application to include a detailed description of the alternative decontamination measures.

53. Attachment F.1.2.4.3, Outdoor Storage Pad (40 C.F.R. § 264.112(b)(4))

- a) The Application states that "potential closure activities . . . include . . . future remediation under RCRA corrective actions," "[a] final option may be to remediate the asphalt storage pad as part of LANL's RCRA corrective actions," and "[t]he final assessment and remediation of the container storage pad and the soil at this CSU location will be integrated and coordinated under a corrective action program at LANL." The meaning of these terms is uncertain, but seem to state that Permittees will choose whether or not to comply with the closure regulations at 20.4.1.500 NMAC (incorporating 40 C.F.R. Part 264, Subpart G and § 264.178) when closing the outdoor storage pad. Revise the Application to demonstrate compliance with 20.4.1.500 NMAC (incorporating 40 C.F.R. Part 264, Subpart G and § 264.178).
- b) The Application states that decontamination procedures similar to those described in Application Section F.1.2.4.1 may be used for the storage pad. It is not clear what other procedures may be used in lieu of those listed in Application Section F.1.2.4.1 or described in this Section. It is also unclear what deviations from the procedure may be applied. Revise the Application to include a discussion of all procedures that will be used to decontaminate the storage pad.
- c) The Application states that a wash water solution will be used in the decontamination of equipment. Discuss what will comprise the wash solution and discuss the appropriateness of this solution for organics, inorganics, and radionuclides.
- d) If decontamination verification of asphalt cannot be determined, the Application indicates that the material will be removed from the site. If the asphalt is removed, sampling of the soil underlying the removed asphalt must be conducted in accordance with 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.112 (b)(4)). In addition, all contaminated underlying soil must also be removed and verification sampling conducted. Revise the Application to include a discussion of sampling the underlying soils, removal methods for any contaminated soils, and verification procedures for the remaining soils.
- e) 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.112(b)(4)) requires that all surrounding soils be sampled and tested for potential contamination. The Application does not discuss how soils surrounding the storage pad will be sampled, how many samples will be taken, what sampling methods will be applied, and how contaminated soils will be removed. Revise the Application to discuss these issues regarding surrounding soils.

- f) The Application states that additional testing may be used to determine if leaching of contaminants from the asphalt is contributing to elevated readings in the wash water. Revise the Application to include what sampling and analytical methods will be used to determine if leaching from the asphalt is the source of contamination in the wash water.
- g) The Application states that, if verification cannot be demonstrated, an alternative demonstration of decontamination will be used. Provide, discuss, and justify the alternative demonstration of decontamination.

54. Attachment F.1.2.5, Decontamination Equipment (40 C.F.R. § 264.112(b)(4))

The Application discusses cleaning of equipment, but neither this Section of the Application nor Section F.1.4.2.1 discusses how the decontamination of equipment used during decontamination procedures of other equipment will be verified. Revise the Application to include procedures for the verification of decontamination of equipment and how levels of residual contamination will be determined.

55. Attachment F.1.2.6, Decontamination Verification (40 C.F.R. §§ 264.112(b)(4-5) and 264.178)

- a) The Application states that sampling and analysis will be used to demonstrate that hazardous constituents are not present above regulatory limits after closure. However, the Application does not address radiological decontamination or acceptable levels of radiological contamination for closure. Revise the Application to include a discussion of radiological decontamination verification.
- b) The Application should provide a listing of expected contaminants (parameters) that may be present at each CSU. Revise the Application to include a listing of potential contaminants at each CSU.
- c) The Application states that the significance of an increase in contaminant levels in wash down waters is to be determined using statistical methods defined in SW-846. The specific statistical methods that are to be applied must be discussed and provided in the Application. Revise the Application to include the specific statistical methods that will be used to determine if wash down waters show a significant increase in analytical parameters when compared to clean wash water solutions. Also, define numerically a significant increase.
- d) The practice of testing wash water for determination of decontamination can result in significant dilution of constituents. This method also does not allow for the detection of potential hot spots. Revise the Application to discuss the potential uncertainties associated with this method of decontamination

verification and to address the investigation methods for detecting hot spots and the methods for verification of decontamination.

- e) Decontamination verification for radionuclides must include swipe sample analyses of CSU surfaces, structures, and equipment that is to be left on site, in accordance with NRC Regulatory Guide 1.86, to verify that radioactive contamination has been adequately removed and that there are no remaining hot spots of unacceptable levels. Revise the Application to include the use of swipe sampling methods and to discuss how many swipes will be taken, the amount of coverage of the area requiring swipe sampling, and the method of analysis.
- f) In addition, surveying, using appropriate radiation instruments, should be conducted in areas where radiological contamination may have been present. If radiological contaminants exist as fixed contamination, analysis of the wash down water will not indicate the presence of fixed radiological contamination. Revise the Application to provide for surveying of each CSU where radiological contamination is a suspected contaminant to verify that no fixed contamination above acceptable levels remains and that there are no unacceptable hot spots.
- g) Decontamination verification of CSU surface areas for hazardous waste residues must also be verified using swipe analysis, similar to that as outlined in Comment e) above. Revise the Application to include swipe sampling and analysis for hazardous waste residues. The discussion should include how many swipes will be taken, percent surface coverage, and the method of analysis.
- h) The Application does not discuss how surrounding soils will be sampled to ensure that no cross contamination as a result of decontamination activities have occurred. Revise the Application to include a discussion of how soils around areas to be decontaminated will be sampled and verified for potential cross contamination as a result of decontamination procedures.
- i) The Application does not discuss soils under or around a CSU, in particular the outdoor pad, that are to be decontaminated. 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.112(b)(4)) requires that the Application include methods for sampling and testing surrounding soils and verification that these soils meet closure performance standards. Revise the Application to include the methods for sampling and testing surrounding soils at each CSU.

56. Attachment F.1.3, Sampling and Analytical Procedures (40 C.F.R. § 264.112(b)(4))

The Application states that sampling and analysis will be conducted in accordance with procedures outlined in SW-846 or other approved procedures or methods. Revise the

Application to include references for all proposed procedures and methods that will be used. Revise Tables F.1-1, F.1-2, F.1-5 and F.1-6, as necessary.

57. Attachment F.1.3.1, Soil and Sediment Sampling

- a) Discuss when soil or sediment sampling is appropriate and required as well as the criteria that will be used to determine when soil or sediment sampling will be conducted.
- b) The soil sampling protocol does not address how many samples will be taken and how soil sample locations will be determined. Revise the Application to include this information.

58. Attachment F.1.3.2, Liquid Sampling

Samples of used wash water are to be collected and analyzed to determine when a structure or piece of equipment is deemed sufficiently decontaminated. However, this method appears to lead to uncertainty, as contamination can become diluted as wash water volume increases. Include a discussion regarding the frequency of analysis of the used wash water and provide the minimum and maximum surface area that will be cleaned using one volume of wash water.

59. Attachment F.1.3.4, Sampling Handling and Documentation

- a) The Application states that sample container surfaces will be screened for radiological contamination and decontaminated if necessary. Provide the methodology and proposed instrumentation for screening of samples. Also provide the criteria for determining if decontamination is necessary.
- b) Discuss special labeling and shipping requirements for radiological samples.

60. Attachment F.2.1.1, Closure Performance Standard

Delete "and post-closure" from the performance standard third bullet.

61. Attachment F.2.1.2, Partial and Final Closure Activities (40 C.F.R. §§ 270.14(b)(13), 270.14(b)(15-18), 264.110 through 264.151 and 264.197)

- a) Define what is included in the storage tank system, including ancillary equipment and secondary containment, and use the term consistently throughout.
- b) Discuss the structure(s) within the storage tank system that may be left in service during closure activities.

62. Attachment F.2.1.9, Survey Plat and Post-Closure Requirements

Any criteria used to demonstrate compliance for closure that is not permitted in this Application will require a permit modification. Revise the Application to indicate that the requirements for a permit modification pursuant to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.112(c)), will be followed in the event that an amendment to the closure plan is warranted.

63. Attachment F.2.2, Closure Procedures

The Application states that, if necessary, the closure plan will be modified and the modified closure plan will be submitted to the NMED for review and approval. Pursuant to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.112(c)), a written notification of or request for a permit modification to authorize a change in operating plans, facility design or the approved closure plan must be submitted to NMED. In addition, the requirements for a permit modification, also outlined in 40 C.F.R. § 264.112(c), must be met. Revise the Application to address the written notification requirement.

64. Attachment F.2.2.1, Estimate of Maximum Waste in Storage (40 C.F.R. § 264.112(b)(3))

The Application must provide an estimate of the maximum inventory for each type of waste and within what components of the storage tank system that waste is contained. Revise the Application to include, for each component of the storage tank system, the maximum quantity of waste, waste type, and maximum capacity.

65. Attachment F.2.2.3, Removal of Waste (40 C.F.R. §§ 264.112(b)(3-4) and 264.197)

- a) The Application must address the requirements in 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.112(b)(4)), which states that a detailed plan of how waste is to be removed shall be included in the closure plan. Revise the Application to include a detailed discussion of how waste will be removed from each of the components of the storage tank system.
- b) The Application must also address how removed waste will be handled. Pursuant to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.112(b)(3)), the types of off-site hazardous waste management facilities to be used must be identified. Revise the Application to describe the handling and disposal of removed waste and, if waste is to be shipped to an off-site location, the types of waste that will be shipped to each specific off-site facility.

66. Attachment F.2.2.4, Closure Procedures and Decontamination (40 C.F.R. §§ 264.112(b)(3-4) and 264.197)

- a) Pursuant to 20.4.1.500 NMAC (incorporating 40 C.F.R. §§ 264.112(b)(3) and (4)) a detailed description for the closure of each component of the storage tank system must include the steps needed to remove or decontaminate all hazardous waste residues and contaminated containment system components, equipment, structures, and soils during partial and final closure, including, but not limited to, procedures for cleaning equipment and removing contaminated soils, methods for sampling and testing surrounding soils, and criteria for determining the extent of decontamination required to satisfy the closure performance standard. Subsections F.2.2.4.1 through F.2.2.4.3 do not provide information to fulfill the requirements. Revise the Application to adequately address the requirements for closure, decontamination, and verification.
- b) The Application states that all sampling will be done in accordance with Quality Assurance/Quality Control (QA/QC) procedures, however, the procedures are not provided. Revise the Application to include these QA/QC procedures.
- c) The schedule for closure activities for the storage tank system is presented in Table F.2-1. However, it is not apparent that the schedule allows time for proper data validation, time to treat wastes, or adequate time for transporting wastes to disposal sites, if warranted. In addition, some structures in the storage tank system area may be left in service during partial closure. Revise the schedule to be comprehensive of all potential activities for closure and partial closure.
- d) The Application states that all workers will have proper training and medical monitoring. Reference the appropriate portions of the Application that discuss the training requirements and medical monitoring requirements for workers.

67. Section F.2.2.4.1, Storage Tank System Components

- a) Pursuant to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.112(b)(4)), a detailed description of all the steps needed to remove all hazardous waste residues and contaminated containment system components, equipment, and structures must be provided. The Application does not delineate how the storage tank system will be disassembled, broken down into containerizable pieces, and managed. Revise the Application to include a detailed discussion of all the steps for removing all hazardous waste residues and contaminated containment system components, equipment, and structures of the storage tank system.
- b) Provide the regulations that will be applicable for managing the containerized components of the storage tank system.

68. Section F.2.2.4.2, Ancillary Equipment

- a) The Application states that ancillary equipment will be either decontaminated, decommissioned, or dismantled depending on anticipated disposition or use after closure. Clarify whether this statement means that certain pieces of ancillary equipment may be decontaminated for future use.
- b) Pursuant to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.112(b)(4)), a detailed description of all the steps needed to remove all hazardous waste residues and contaminated containment system components, equipment, and structures must be provided. The Application does not delineate how ancillary equipment will be disassembled, broken down into containerizable pieces, and managed. Revise the Application to include a detailed discussion of all the steps for removing all hazardous and radiological waste residues and contaminated ancillary equipment components of the storage tank system.
- c) Revise the Application to reference the regulations that will be applicable for managing the containerized ancillary equipment components.
- d) The Application states that sampling and analysis will be used to demonstrate that hazardous constituents are not present above regulatory limits after closure. However, the Application does not address radiological decontamination or acceptable levels of radiological contamination for closure. Revise the Application to include a discussion of radiological decontamination verification.
- e) The Application should provide a listing of expected contaminants (parameters) that may be present in the ancillary equipment. Revise the Application to include a listing of potential contaminants in the ancillary equipment.
- f) The practice of testing wash water for determination of decontamination can result in significant dilution of constituents. This method also does not allow for the detection of potential hot spots. Revise the Application to discuss the potential uncertainties associated with this method of decontamination verification and to address the investigation methods for detecting hot spots and the methods for verification of decontamination.
- g) Decontamination verification for radionuclides must include swipe analyses of structures or other equipment that are to be left on site, in accordance with NRC Regulatory Guide 1.86, to verify that radioactive contamination has been adequately removed and that there are no remaining hot spots of unacceptable levels. Revise the Application to include the use of swipe sampling methods and

to discuss how many swipes will be taken, the amount of coverage of the surface requiring swipe sampling, and the method of analysis.

- h) Decontamination verification of hazardous waste management unit surfaces for hazardous waste residues must be verified using swipe analysis, similar to that as outlined in Comment g) above. Revise the Application to include swipe sampling methods and analysis for hazardous waste residues. The discussion should include how many swipes will be taken, percent surface coverage, and the method of analysis.
- i) The Application states that the wash cycles will continue until equipment has been cleaned to established levels. Provide the methodology for determining the prescribed established levels and provide these levels. Include contaminant-specific levels where applicable.

69. Section F.2.2.4.3, Areas Adjacent to the Storage Tank System

- a) The Application states that random swipes will be taken from the area adjacent to the storage tank system. Revise the Application to include how many swipes will be taken, what percentages of area will be swiped, and the size of the swipe samples. Also, indicate that swipe samples will be taken for both hazardous and radiological constituents.
- b) Clarify whether swipe samples will be taken from secondary containment systems.
- c) The Application states that swipe samples will be taken from sumps and drains. Discuss how the extent of contamination, for example to the trap or past the trap into the drain system, will be determined. If the swipe analysis indicates the presence of contamination, discuss how sumps and drains past the trap will be sampled. Also, if drains are found to be contaminated, discuss how drain systems will either be removed or decontaminated. Also, for any decontaminated drain system, soils surrounding the drain system must be sampled to ensure that soils have not been contaminated as a result of leakages. Revise the Application to address these issues.
- d) The Application indicates that drains will be washed down. Clarify how a drain is washed down and clarify how wash water will be prevented from entering the drain lines.
- e) The Application states that the wash cycles will continue until equipment has been cleaned to established levels. Provide the methodology for determining the

prescribed established levels and provide these levels. Include contaminant-specific levels where applicable.

70. Attachment F.2.2.5, Decontamination Equipment (40 C.F.R. §§ 264.112(b)(3-4) and 264.197)

The Application discusses cleaning of equipment, but it does not discuss how the decontamination of equipment used during decontamination procedures of other equipment will be verified. Revise the Application to include procedures for the verification of decontamination of equipment and how levels of residual contamination will be determined.

71. Attachment F.2.2.6, Decontamination Verification (40 C.F.R. §§ 264.112(b)(3-5))

- a) Sampling and analysis will be used to demonstrate that hazardous constituents are not present above regulatory limits after closure. However, the Application does not address radiological decontamination or acceptable levels of radiological contamination for closure. Revise the Application to include a discussion of radiological decontamination verification.
- b) The Application should provide a listing of expected contaminants (parameters) that may be present within the storage tank system. Revise the Application to include a listing of potential contaminants within the storage tank system.
- c) The Application states that the significance of increased constituent concentrations in contaminated wash down waters is to be determined using statistical methods defined in SW-846. The specific statistical methods that are to be applied must be provided in the Application. Revise the Application to include the specific statistical methods that will be used to determine if wash down waters show a significant increase in analytical parameters when compared to clean wash water solutions. Also, define numerically a significant increase.
- d) The practice of testing wash water for determination of decontamination can result in significant dilution of constituents. This method also does not allow for the detection of potential hot spots. Revise the Application to discuss the potential uncertainties associated with this method of decontamination verification and to address the investigation methods for detecting hot spots and the methods for verification of decontamination.
- e) Decontamination verification for radionuclides must include swipe analyses of storage tank system surfaces and structures or other equipment that are to be left on site, in accordance with NRC Regulatory Guide 1.86, to verify radioactive contamination has been adequately removed and that there are no remaining hot

spots of unacceptable levels. Revise the Application to include the use of swipe sampling methods and to discuss how many swipes will be taken, the amount of coverage of surfaces requiring swipe sampling, and the method of analysis.

- f) In addition, surveying, using appropriate radiation instruments, must be conducted in areas where radiological contamination may have been present. If the radiological contaminants exist as fixed contamination, analysis of the wash down water will not indicate the presence of potential fixed radiological contamination. Revise the Application to provide for surveying ancillary equipment and adjacent areas where radiological contamination is a suspected contaminant to verify that no fixed contamination above acceptable levels remains and that there are no unacceptable hot spots.
- g) Decontamination verification of storage tank system surfaces for hazardous waste residues must be verified using swipe analysis, similar to that outlined in Comment e) above. Revise the Application to include swipe sampling methods and analysis for hazardous waste residues. The discussion should include how many swipes will be taken, percent surface coverage, and the method of analysis.
- h) The Application states that an alternative demonstration of decontamination may be proposed and justified at the time of closure. Using an alternative method from that outlined in the Application for demonstrating decontamination would constitute a modification of the closure plan. The modified closure plan, outlining the alternative demonstration of decontamination, must be submitted to NMED for review and approval. Pursuant to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.112(c)), a written notification of or request for a permit modification to authorize a change in operating plans, facility design, or the approved closure plan must be submitted to NMED. In addition, the requirements for a permit modification, also outlined in 40 C.F.R. § 264.112(c), must be met. Revise the Application to address the written notification requirement.

72. Attachment F.2.3.2, Liquid Sampling

The Application states that samples of used wash water are to be collected and analyzed to determine when a structure or piece of equipment is deemed sufficiently decontaminated. However, this method appears to lead to uncertainty, as contamination can become diluted as wash water volume increases. Include a discussion regarding the frequency of analysis of the used wash water and provide the minimum and maximum surface area that will be cleaned using one volume of wash water.

73. Attachment F.2.3.4, Sampling Handling and Documentation

- a) The Application states that sample container surfaces will be screened for radiological contamination and decontaminated if necessary. Provide the methodology and proposed instrumentation for screening of samples. Also provide the criteria for determining if decontamination is necessary.
- b) Discuss special labeling and shipping requirements for radiological samples.

74. Attachment F.3.1.1, Closure Performance Standard

Delete "and post-closure" from the performance standard third bullet.

75. Attachment F.3.1.2, Partial and Final Closure Activities (40 C.F.R. §§ 270.14(b)(13), 270.14(b)(15-18), and 264.110 through 264.151)

- a) Page F.3-1 states that the cementation unit includes the glovebox and associated structures and piping. Section F.3.1.2 refers to the cementation unit, ancillary equipment, and glovebox. Section F.3.2.4 is titled cementation unit and glovebox. Define what is included in the cementation unit and use the term consistently throughout.
- b) Discuss which structure(s) within the cementation unit may be left in service during closure activities.

76. Attachment F.3.1.9, Survey Plat and Post-Closure Requirements

Any criteria used to demonstrate compliance that is not permitted in this Application will require a permit modification. Revise the Application to indicate that the requirements for a permit modification pursuant to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.112(c)), will be followed in the event that an amendment to the closure plan is warranted.

77. Attachment F.3.2, Closure Procedures

The Application states that, if necessary, the closure plan will be modified and that the modified closure plan will be submitted to NMED for review and approval. Pursuant to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.112(c)), a written notification of or request for a permit modification to authorize a change in operating plans, facility design, or the approved closure plan must be submitted to NMED. In addition, the requirements for a permit modification, also outlined in 40 C.F.R. § 264.112(c), must be met. Revise the Application to address the written notification requirement.

78. Attachment F.3.2.1, Estimate of Maximum Waste in Storage (40 C.F.R. § 264.112(b)(3))

The Application must provide an estimate of the maximum inventory for each type of waste and within what components of the cementation unit that waste is contained. Revise the Application to include the maximum quantity of waste, waste type, and maximum capacity for the cementation unit.

79. Attachment F.3.2.2, Description of Waste (40 C.F.R. § 264.112(b)(3))

The description of the waste includes several generalities, such as “typically,” “generally,” and “may.” Revise the Application to remove these generalities and discuss all of the waste streams and waste types that will be treated in the cementation unit.

80. Attachment F.2.2.3, Removal of Waste (40 C.F.R. §§ 264.112(b)(3-4))

- a) The Application must address the requirements in 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.112(b)(4)), which requires submittal of a detailed plan for waste removal. Revise the Application to include a detailed discussion of how waste will be removed from each of the components of the cementation unit.
- b) The Application must also address how removed waste will be handled. Pursuant to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.112(b)(3)), the types of off-site hazardous waste management facilities to be used must be identified. Revise the Application to discuss the management and disposal of removed waste. If waste will be shipped to an off-site location, describe the types of waste that will be shipped to each specific off-site facility.

81. Attachment F.3.2.4, Closure Procedures and Decontamination (40 C.F.R. §§ 264.112(b)(3-4))

As outlined in 20.4.1.500 NMAC (incorporating 40 C.F.R. §§ 264.112(b)(3) and (4)) a detailed description for the closure of each hazardous waste management unit must include the steps needed to remove or decontaminate all hazardous waste residues and contaminated containment system components, equipment, structures, and soils during partial and final closure, including, but not limited to, procedures for cleaning equipment and removing contaminated soils, methods for sampling and testing surrounding soils, and criteria for determining the extent of decontamination required to satisfy the closure performance standard. Subsections F.3.2.4.1 through F.3.2.4.3 do not provide information sufficient to fulfill these requirements.

82. Attachment F.3.2.4.1, Cementation Unit and Glove Box

- a) The Application states that the cementation unit equipment and glove box will be either decontaminated, decommissioned, or dismantled depending on anticipated disposition or use after closure. Clarify whether this statement means that certain pieces of equipment may be decontaminated for future use.
- b) Pursuant to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.112(b)(4)), a detailed description of all the steps needed to remove all hazardous waste residues and contaminated containment system components, equipment, and structures must be provided. The Application does not delineate how equipment and pieces of the cementation unit will be disassembled, broken down into container-sized pieces, and managed. Revise the Application to include a detailed discussion of all the steps for removing all hazardous waste residues and contaminated equipment components of the cementation unit and glove box.
- c) Revise the Application to include a reference to the regulations that will be applicable for managing the containerized components and removed waste.
- d) The Application states that sampling and analysis will be used to demonstrate that hazardous constituents are not present above regulatory limits after closure. However, the Application does not address radiological decontamination or acceptable levels of radiological contamination for closure. Revise the Application to include a discussion of radiological decontamination verification.
- e) The Application should provide a listing of expected contaminants (parameters) that may be present in the cementation unit equipment and glove box. Revise the Application to include a listing of potential contaminants in the cementation unit equipment and glove box.
- f) The practice of testing wash water for determination of decontamination can result in significant dilution of constituents. This method also does not allow for the detection of potential hot spots. Revise the Application to discuss the potential uncertainties associated with this method of decontamination verification and to address the investigation methods for detecting hot spots and the methods for verification of decontamination.
- g) Decontamination verification for radionuclides must include swipe analyses of cementation unit surfaces and structures or other equipment that are to be left on site, in accordance with NRC Regulatory Guide 1.86, to verify that radioactive contamination has been adequately removed and that there are no remaining hot spots of unacceptable level. Revise the Application to include the use of swipe

sampling methods and to discuss how many swipes will be taken, the amount of coverage of the surface requiring swipe sampling, and the method of analysis.

- h) In addition, surveying, using appropriate radiation instruments, must be conducted in areas where radiological contamination may have been present. If the radiological contaminants exist as fixed contamination, analysis of the wash down water will not indicate the presence of potential fixed radiological contamination. Revise the Application to provide for surveying ancillary equipment and adjacent areas where radiological contamination is a suspected contaminant to verify that no fixed contamination above acceptable levels remains and that there are no unacceptable hot spots.
- i) Decontamination verification for hazardous waste residues must be verified using swipe analysis, similar to that outlined in Comment g) above. Revise the Application to include swipe sampling and analysis for hazardous waste residues. The discussion should include how many swipes will be taken, percent surface coverage, and the method of analysis.
- j) The Application states that the wash cycles will continue until equipment has been cleaned to established levels. Provide the methodology for determining the prescribed established levels and provide these levels. Include contaminant-specific levels where applicable.

83. Section F.3.2.4.2, Cementation Unit Ancillary Equipment

- a) The Application states that ancillary equipment will be either decontaminated, decommissioned, or dismantled depending on anticipated disposition or use after closure. Clarify whether this statement means that certain pieces of ancillary equipment may be decontaminated for future use.
- b) Pursuant to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.112(b)(4)), a detailed description of all the steps needed to remove all hazardous waste residue and contaminated containment system components, equipment, and structures must be provided. The Application does not delineate how ancillary equipment will be disassembled, broken down into containerizable pieces, and managed. Revise the Application to include a detailed discussion of all the steps for removing all hazardous waste residue and contaminated ancillary equipment components of the cementation unit.
- c) Revise the Application to include a reference to the regulations that will be applicable for managing the containerized ancillary equipment components.

- d) Sampling and analysis will be used to demonstrate that hazardous constituents are not present above regulatory limits after closure. However, the Application does not address radiological decontamination or acceptable levels of radiological contamination for closure. Revise the Application to include a discussion of radiological decontamination verification.
- e) The Application should provide a listing of expected contaminants (parameters) that may be present in the ancillary equipment. Revise the Application to include a listing of potential contaminants in the ancillary equipment.
- f) The practice of testing wash water for determination of decontamination can result in significant dilution of constituents. This method also does not allow for the detection of potential hot spots. Revise the Application to discuss the potential uncertainties associated with this method of decontamination verification and to address the investigation methods for detecting hot spots and the methods for verification of decontamination.
- g) Decontamination verification for radionuclides must include swipe analyses of surfaces and structures or other equipment that are to be left on-site, in accordance with NRC Regulatory Guide 1.86, to verify that radioactive contamination has been adequately removed and that there are no remaining hot spots of unacceptable level. Revise the Application to discuss how many swipes will be taken, the amount of coverage of the item requiring swipe sampling, and the method of analysis.
- h) In addition, surveying, using appropriate radiation instruments, must be conducted in areas where radiological contamination may have been present. If the radiological contaminants exist as fixed contamination, analysis of the wash down water will not indicate the presence of potential fixed radiological contamination. Revise the Application to provide for surveying ancillary equipment and adjacent areas where radiological contamination is a suspected contaminant to verify that no fixed contamination above acceptable levels remains and that there are no unacceptable hot spots.
- i) Decontamination verification for hazardous waste residues must be verified using swipe analysis, similar to that outlined in Comment g) above. Revise the Application to include swipe sampling and analysis for hazardous waste residues. The discussion should include how many swipes will be taken, percent surface coverage, and the method of analysis.
- j) The Application states that the wash cycles will continue until equipment has been cleaned to established levels. Provide the methodology for determining the

prescribed established levels and provide these levels. Include contaminant-specific levels where applicable.

84. Attachment F.3.2.4.3, Areas Adjacent to the Cementation Unit Glove Box

- a) The Application states that random swipes are to be taken from the area adjacent to the cementation unit glove box. Revise the Application to include how many swipes will be taken, what percentages of area will be swiped, and the size of the swipe samples. Also indicate that swipes will be taken for both hazardous and radiological constituents.
- b) Clarify whether swipes will be taken of secondary containment systems other than the floor.
- c) Revise the Application to address investigation of any cracks or fractures in the floors and walls prior to decontamination activities.
- d) The Application states that the wash cycles will continue until equipment has been cleaned to established levels. Provide the methodology for determining the prescribed established levels and provide those levels. Include contaminant-specific levels where applicable.

85. Attachment F.3.2.5, Decontamination Equipment (40 C.F.R. §§ 264.112(b)(3-4))

The Application discusses cleaning of equipment, but the Application does not discuss how the decontamination of equipment used during decontamination procedures of other equipment will be verified. Revise the Application to include procedures for the verification of decontamination of equipment and how levels of residual contamination will be determined.

86. Attachment F.3.2.6, Decontamination Verification (40 C.F.R. § 264.112(b)(5))

- a) Delete the decontamination criteria. At closure all hazardous waste and hazardous waste residues must be removed or decontaminated.
- b) The Application states that sampling and analysis will be used to demonstrate that hazardous constituents are not present above regulatory limits after closure. However, the Application does not address radiological decontamination or acceptable levels of radiological contamination for closure. Revise the Application to include a discussion of radiological decontamination verification. Also provide the regulatory limits for the hazardous constituents.

- c) The Application must provide a listing of expected contaminants (parameters) that may be present within the cementation unit. Revise the Application to include a listing of potential contaminants within the cementation unit.
- d) The significance of increased constituent concentrations in contaminated wash down waters is to be determined using statistical methods defined in SW-846. The specific statistical methods that are to be applied must be discussed and provided in the Application. Revise the Application to include the specific statistical methods that will be used to determine if wash down waters show a significant increase in analytical parameters when compared to clean wash water solutions. Also, define numerically a significant increase.
- e) The practice of testing wash water for determination of decontamination can result in significant dilution of constituents. This method also does not allow for the detection of potential hot spots. Revise the Application to discuss the potential uncertainties associated with this method of decontamination verification and to address the investigation methods for detecting hot spots and the methods for verification of decontamination.
- f) Decontamination verification for radionuclides must include swipe analyses of surfaces, structures, or other equipment that are to be left on site, in accordance with NRC Regulatory Guide 1.86, to verify that radioactive contamination has been adequately removed and that there are no remaining hot spots of unacceptable levels. Revise the Application to include the use of swipe sampling methods and discuss how many swipes will be taken, the amount of coverage of the surface requiring swipe sampling, and the method of analysis.
- g) In addition, surveying, using appropriate radiation instruments, must be conducted in areas where radiological contamination may have been present. If the radiological contaminants exist as fixed contamination, analysis of the wash down water will not indicate the presence of potential fixed radiological contamination. Revise the Application to provide for surveying equipment and adjacent areas where radiological contamination is a suspected contaminant to verify that no fixed contamination above acceptable levels remains and that there are no unacceptable hot spots.
- h) Decontamination verification of cementation unit surfaces for hazardous waste residues must be verified using swipe analysis, similar to that as outlined in Comment f) above. Revise the Application to include swipe sampling of surfaces and analysis for hazardous waste residues. The discussion should include how many swipes will be taken, percent surface coverage, and the method of analysis.

- i) The Application states that an alternative demonstration of decontamination may be proposed and justified at the time of closure. Using an alternative method from that outlined in the Application for demonstrating decontamination would constitute a modification of the closure plan. The modified closure plan, outlining the alternative demonstration of decontamination, must be submitted to NMED for review and approval. Pursuant to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.112(c)), a written notification of or request for a permit modification to authorize a change in operating plans, facility design, or the approved closure plan must be submitted to NMED. In addition, the requirements for a permit modification, also outlined in 40 C.F.R. § 264.112(c), must be met. Revise the Application to discuss the written notification requirement.

87. Attachment F.3.3.2, Liquid Sampling (40 C.F.R. § 264.112(b)(4))

Samples of used wash water are to be collected and analyzed to determine when a structure or piece of equipment is deemed sufficiently decontaminated. However, this method appears to lead to uncertainty, as contamination can become diluted as wash water volume increases. Include a discussion regarding the frequency of analysis of the used wash water and provide the minimum and maximum surface area that will be cleaned using one volume of wash water.

88. Attachment F.3.3.4, Sampling Handling and Documentation (40 C.F.R. § 264.112(b)(4))

- a) The Application states that sample container surfaces will be screened for radiological contamination and decontaminated if necessary. Provide the methodology and proposed instrumentation for screening of samples. Also provide the criteria for determining if decontamination is necessary.
- b) Discuss special labeling and shipping requirements for radiological samples.

89. Attachment F.4.1.1, Closure Performance Standard (40 C.F.R. § 264.11)

Delete "and post-closure" from the performance standard third bullet.

90. Attachment F.4.1.2, Partial and Final Closure Activities (40 C.F.R. §§ 270.14(b)(13), 270.14(b)(15-18), and 264.110 through 264.151)

- a) Define the vitrification unit and use the term consistently throughout.
- b) Discuss the structures within the vitrification unit that may be left in service during closure activities.

91. Attachment F.4.1.9, Survey Plat and Post-Closure Requirements

Any criteria used to demonstrate compliance that is not permitted in this Application will require a permit modification. Revise the Application to indicate that the requirements for a permit modification pursuant to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.112(c)), will be followed in the event that an amendment to the closure plan is warranted.

92. Attachment F.4.2, Closure Procedures

The Application states that, if necessary, the closure plan will be modified and that the modified closure plan will be submitted to NMED for review and approval. Pursuant to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.112(c)), a written notification of, or request for, a permit modification to authorize a change in operating plans, facility design or the approved closure plan must be submitted to NMED. In addition, the requirements for a permit modification, also outlined in 40 C.F.R. § 264.112(c), must be met. Revise the Application to discuss the written notification requirement.

93. Attachment F.4.2.1, Estimate of Maximum Waste in Storage (40 C.F.R. § 264.112(b)(3))

The Application must provide an estimate of the maximum inventory for each type of waste and identify the components of the vitrification unit where that waste is contained. Revise the Application to include for each component of the vitrification unit, the maximum quantity of waste, waste type, and maximum capacity.

94. Attachment F.4.2.3, Removal of Waste (40 C.F.R. §§ 264.112(b)(3-4))

- a) The Application must address the requirements in 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.112(b)(4)), which requires the submittal of a detailed plan for waste removal. Revise the Application to include a detailed discussion of how waste will be removed from each of the components of the vitrification unit.
- b) The Application must also address how removed waste will be handled. Pursuant to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.112(b)(3)), the types(s) of off-site hazardous waste management facilities to be used must be identified. Revise the Application to discuss the management and disposal of removed waste. If waste will be shipped to an off-site location, describe the types of waste that will be shipped to each specific off-site facility.

95. Attachment F.4.2.4, Closure Procedures and Decontamination

As outlined in 20.4.1.500 NMAC (incorporating 40 C.F.R. §§ 264.112(b)(3) and (4)), a detailed description for the closure of each hazardous waste management unit must include the steps needed to remove or decontaminate all hazardous waste residues and contaminated containment system components, equipment, structures, and soils during partial and final closure, including, but not limited to, procedures for cleaning equipment and removing contaminated soils, methods for sampling and testing surrounding soils, and criteria for determining the extent of decontamination required to satisfy the closure performance standard. Subsections F.4.2.4.1 through F.4.2.4.3 do not provide information to fulfill the requirements.

96. Attachment F.4.2.4.1, Vitrification Unit and Glove Box

- a) The Application states that the vitrification unit equipment and glove box will be either decontaminated, decommissioned, or dismantled depending on anticipated disposition or use after closure. Clarify whether this statement means that certain pieces of equipment may be decontaminated for future use.
- b) Pursuant to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.112(b)(4)), a detailed description of all the steps needed to remove all hazardous waste residues and contaminated containment system components, equipment, and structures must be provided. The Application does not delineate how equipment or pieces of the vitrification unit will be disassembled, broken down into containerizable pieces, and managed. Revise the Application to include a detailed discussion of all the steps for removing all hazardous waste residue and contaminated equipment components of the vitrification unit.
- c) Revise the Application to include a reference to the regulations that will be applicable for managing the containerized components and removed waste.
- d) The Application states that sampling and analysis will be used to demonstrate that hazardous constituents are not present above regulatory limits after closure. However, the Application does not address radiological decontamination or acceptable levels of radiological contamination for closure. Revise the Application to include a discussion of radiological decontamination verification.
- e) The Application must provide a listing of expected contaminants (parameters) that may be present in the vitrification unit equipment and glove box. Revise the Application to include a listing of potential contaminants in the vitrification unit equipment and glove box.

- f) The practice of testing wash water for determination of decontamination can result in significant dilution of constituents. This method also does not allow for the detection of potential hot spots. Revise the Application to discuss the potential uncertainties associated with this method of decontamination verification and to address the investigation methods for detecting hot spots and the methods for verification of decontamination.
- g) Decontamination verification for radionuclides must include swipe analyses of surfaces, structures, or other equipment that are to be left on site, in accordance with NRC Regulatory Guide 1.86, to verify that radioactive contamination has been adequately removed and that there are no remaining hot spots of unacceptable levels. Revise the Application to include the use of swipe sampling methods and to discuss how many swipes will be taken, the amount of coverage of the surface requiring swipe sampling, and the method of analysis.
- h) In addition, surveying, using appropriate radiation instruments, must be conducted in areas where radiological contamination may have been present. If the radiological contaminants exist as fixed contamination, analysis of the wash down water will not indicate the presence of potential fixed radiological contamination. Revise the Application to provide for surveying equipment and adjacent areas where radiological contamination is a suspected contaminant to verify that no fixed contamination above acceptable levels remains and that there are no unacceptable hot spots.
- i) Decontamination verification for hazardous waste residues must be verified using swipe analysis, similar to that as outlined in the Comment g) above. Revise the Application to include swipe sampling and analysis for hazardous waste residues. The discussion should include how many swipes will be taken, percent surface coverage, and the method of analysis.
- j) The Application states that the wash cycles will continue until equipment has been cleaned to established levels. Provide the methodology for determining the prescribed established levels and provide these levels. Include contaminant-specific levels where applicable.

97. Section F.4.2.4.2, Vitrification Unit Ancillary Equipment

- a) The Application states that vitrification unit ancillary equipment will be either decontaminated, decommissioned, or dismantled depending on anticipated disposition or use after closure. Clarify whether this statement means that certain pieces of ancillary equipment may be decontaminated for future use.

- b) Pursuant to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.112(b)(4)), a detailed description of all the steps needed to remove all hazardous waste residues and contaminated containment system components, equipment, and structures must be provided. The Application does not delineate how vitrification unit ancillary equipment will be disassembled, broken down into containerizable pieces, and managed. Revise the Application to include a detailed discussion of all the steps for removing all hazardous waste residues and contaminated ancillary equipment components of the vitrification unit.
- c) Revise the Application to include a reference to the regulations that will be applicable for managing the containerized ancillary equipment components.
- d) The Application states that sampling and analysis will be used to demonstrate that hazardous constituents are not present above regulatory limits after closure. However, the Application does not address radiological decontamination or acceptable levels of radiological contamination for closure. Revise the Application to include a discussion of radiological decontamination verification.
- e) The Application must provide a listing of expected contaminants (parameters) that may be present in the vitrification unit. Revise the Application to include a listing of potential contaminants in the vitrification unit.
- f) The practice of testing wash water for determination of decontamination can result in significant dilution of constituents. This method also does not allow for the detection of potential hot spots. Revise the Application to discuss the potential uncertainties associated with this method of decontamination verification and to address the investigation methods for detecting hot spots and the methods for verification of decontamination.
- g) Decontamination verification for radionuclides must include swipe analyses of surfaces, structures, or other equipment that are to be left on site, in accordance with NRC Regulatory Guide 1.86, to verify that radioactive contamination has been adequately removed and that there are no remaining hot spots of unacceptable levels. Revise the Application to discuss how many swipes will be taken, the amount of coverage of the surface requiring swipe sampling, and the method of analysis.
- h) In addition, surveying, using appropriate radiation instruments, must be conducted in areas where radiological contamination may have been present. If the radiological contaminants exist as fixed contamination, analysis of the wash down water will not indicate the presence of fixed radiological contamination. Revise the Application to provide for surveying equipment and adjacent areas where radiological contamination is a suspected contaminant to verify that no fixed

contamination above acceptable levels remains and that there are no unacceptable hot spots.

- i) Decontamination verification for hazardous waste residues must be verified using swipe analysis, similar to that as outlined in the Comment g) above. Revise the Application to include swipe sampling and analysis for hazardous waste residues. The discussion should include how many swipes will be taken, percent surface coverage, and the method of analysis.
- j) The Application states that the wash cycles will continue until equipment has been cleaned to established levels. Provide the methodology for determining the prescribed established levels and provide those levels. Include contaminant-specific levels where applicable.

98. Attachment F.4.2.4.3, Areas Adjacent to the Vitrification Unit Glove Box

- a) The Application states that random swipes are to be taken from the area adjacent to the vitrification unit glove box. Revise the Application to include how many swipes will be taken, what percentages of area will be swiped, and the size of the swipe samples. Also indicate that swipes will be taken for both hazardous and radiological constituents.
- b) Clarify whether swipes will be taken of secondary containment systems other than the floor.
- c) Revise the Application to address investigation of any cracks or fractures in the floors and walls prior to decontamination activities.
- d) The Application states that the wash cycles will continue until equipment has been cleaned to established levels. Provide the methodology for determining the prescribed established levels and provide these levels. Include contaminant-specific levels where applicable.

99. Attachment F.4.2.5, Decontamination Equipment (40 C.F.R. §§ 264.112(b)(3-4))

The Application discusses cleaning of equipment, but the Application does not discuss how the equipment used during decontamination procedures of other equipment will be verified. Revise the Application to include procedures for the verification of decontamination of equipment and how levels of residual contamination will be determined.

100. Attachment F.4.2.6, Decontamination Verification (40 C.F.R. § 264.112(b)(5))

- a) The Application states that sampling and analysis will be used to demonstrate that hazardous constituents are not present above regulatory limits after closure. However, the Application does not address radiological decontamination or acceptable levels of radiological contamination for closure. Revise the Application to include a discussion of radiological decontamination levels and verification. Also provide the regulatory limits for the hazardous constituents.
- b) The Application must provide a listing of expected contaminants (parameters) that may be present within the vitrification unit. Revise the Application to include a listing of potential contaminants within the vitrification unit.
- c) The Application states that the significance of increased constituent concentrations in contaminated wash down waters is to be determined using statistical methods defined in SW-846. The specific statistical methods that are to be applied should be discussed and provided in the Application. Revise the Application to include the specific statistical methods that will be used to determine if wash down waters show a significant increase in analytical parameters when compared to clean wash water solutions. Also, define numerically a significant increase.
- d) The practice of testing wash water for determination of decontamination can result in significant dilution of constituents. This method also does not allow for the detection of potential hot spots. Revise the Application to discuss the potential uncertainties associated with this method of decontamination verification and to address the investigation methods for detecting hot spots and the methods for verification of decontamination.
- e) Decontamination verification for radionuclides must also include swipe analyses of surfaces, structures, or other equipment that are left on site, in accordance with NRC Regulatory Guide 1.86, to verify that radioactive contamination has been adequately removed and that there are no remaining hot spots of unacceptable level. Revise the Application to include the use of swipe sampling methods and discuss how many swipes will be taken, the amount of coverage of the surface requiring swipe sampling, and the method of analysis.
- f) In addition, surveying, using appropriate radiation instruments, must be conducted in areas where radiological contamination may have been present. If the radiological contaminants exist as fixed contamination, analysis of the wash down water will not indicate the presence of potential fixed radiological contamination. Revise the Application to provide for surveying equipment and adjacent areas where radiological contamination is a suspected contaminant to verify that no

fixed contamination above acceptable levels remains and that there are no unacceptable hot spots.

- g) Decontamination verification of the vitrification unit for hazardous waste residues must also be verified using swipe analysis, similar to that as outlined in the Comment e) above. Revise the Application to include swipe sampling of surfaces and analysis for hazardous waste residues. The discussion must include how many swipes will be taken, percent surface coverage, and the method of analysis.
- h) The Application states that an alternative demonstration of decontamination may be proposed and justified at the time of closure. Using an alternative method from that outlined in the Application for demonstrating decontamination would constitute a modification of the closure plan. The modified closure plan, outlining the alternative demonstration of decontamination must be submitted to NMED for review and approval. Pursuant to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.112(c)), a written notification of or request for a permit modification to authorize a change in operating plans, facility design, or the approved closure plan must be submitted to NMED. In addition, the requirements for a permit modification, also outlined in 40 C.F.R. § 264.112(c), must be met. Revise the Application to discuss the written notification requirement.

101. Attachment F.4.3.2, Liquid Sampling (40 C.F.R. § 264.112(b)(4))

The Application states that samples of used wash water are to be collected and analyzed to determine when a structure or piece of equipment is deemed sufficiently decontaminated. However, this method appears to lead to uncertainty, as contamination can become diluted as wash water volume increases. Include a discussion regarding the frequency of analysis of the used wash water and provide the minimum and maximum surface area that will be cleaned using one volume of wash water.

102. Attachment F.4.3.4, Sampling Handling and Documentation (40 C.F.R. § 264.112(b)(4))

- a) The Application states that sample container surfaces will be screened for radiological contamination and decontaminated if necessary. Provide the methodology and proposed instrumentation for screening of samples. Also provide the criteria for determining if decontamination is necessary.
- b) Discuss special labeling and shipping requirements for radiological samples.

103. Attachment G, Container Storage (40 C.F.R. § 270.15 and 264 Subpart I)

The Application does not provide engineering drawings or figures for each CSU showing container layout, including waste placement by waste container type and locations of aisles. In addition, drawings must demonstrate locations of containment systems and flow of liquids to collection areas. Revise the Application to include these drawings for each CSU.

104. Attachment G.1, Container Storage at TA-55 (40 C.F.R. §§ 270.14(b)(1), 264.171, and 264.172)

It is not clear that all types of waste containers to be used for storage of hazardous waste have been identified. The Application must identify all waste containers to be permitted for storage at all CSU's. Revise the Application to remove the term "but are not limited to" and indicate all the types of waste containers that will be used at all CSU's.

105. Attachment G.2, Containment Systems (40 C.F.R. §§ 270.15(a)(1-5), 270.15(b)(1-2) and 264.175)

- a) For containers bearing liquid wastes, the Application does not provide the dimensions for containment systems and the number of containers, by container type, the containment systems are designed for. In addition, the calculations of the capacity of the containment system relative to waste containers must be provided. Revise the Application accordingly.
- b) For containers that will not contain liquid wastes, the Application must provide the test procedures and results or other documentation for demonstrating that containers do not contain free liquids. The Application must also identify each specific type of waste that will be permitted for storage at each of the CSU's storage areas. Revise the Application accordingly.
- c) The Application implies that since wastes to be stored at TA-55-4, B05, B45 and TA-55-185 will not contain liquids, secondary containment requirements are not required. While the secondary containment requirements outlined in 20.4.1.900 NMAC (incorporating 40 C.F.R. § 270.15(a)) are not applicable, the requirements of 20.4.1.900 NMAC (incorporating 40 C.F.R. § 270.15(b)), must be met. This includes demonstrating how the CSU's are designed to drain and remove liquids and how containers will be kept from contact with liquids. Revise the Application to address these issues.
- d) The Application implies that wastes to be stored at TA-55-4, B05, B45, and TA-55-185 include but are not limited to cemented, mixed heterogeneous, and

vitrified wastes. Revise the Application to specify all wastes to be permitted for storage at TA-55-4, B05, B45, and TA-55-185.

106. Attachment G.3, Special Requirements for Ignitable, Reactive and Incompatible Wastes (40 C.F.R. §§ 270.14(b)(9), 270.15(c-d), 264.17, 264.176 and 264.177)

- a) The Application must include engineering drawings or other data that will demonstrate the containers of ignitable or reactive waste are located 50 feet from the TA boundary. Revise the Application to include this figure(s).
- b) Provide specific policies that are in place to ensure that precautions are taken to include prevention of ignition, spontaneous ignition, and radiant heat.
- c) The requirements for incompatible waste outlined in 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.177(c)) are not addressed. A storage container with incompatible hazardous waste must be separated from other materials or be protected from other materials by means of a berm, dike, wall, or other device. Revise the Application to clarify that incompatible wastes will be separated and segregated from other wastes and materials by means of a berm, dike, wall, or other specific means.
- d) The Application must describe all processes that will be used to prevent reactions that may generate extreme heat, pressure, fire, explosions, or violent reactions; produce uncontrolled flammable fumes, dust, or gases in sufficient quantities to threaten human health or the environment; produce uncontrolled flammable fumes, dust, or gases in sufficient quantities to pose a risk of fire or explosions; damage the structural integrity of the facility; or be a threat to human health or the environment. Revise the Application to include a discussion of these preventative processes.
- e) Pursuant to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.17(b)(4)), the Application must ensure the management of incompatible wastes within a CSU where secondary containment systems will be used and show that the presence of incompatible wastes will not cause the secondary containment system to leak, corrode, or fail. Revise the Application to discuss safeguards that are in place to ensure the compatibility of incompatible wastes with the secondary containment systems.

107. Attachment G.4, Air Emission Standards for Containers

The Application refers to containers meeting the U.S. Department of Transportation (DOT) specifications of 49 C.F.R. Part 178. Revise the Application to include a description of the specific specifications in 49 C.F.R. Part 178 and the criteria for

determining compliance with these specifications for each type of container to be used for storage at each CSU.

108. Attachment H.1, Design, Construction, Materials and Operation (40 C.F.R. §§ 270.16(b-d) and 264.191(b)(1 and 3))

- a) Revise the Application to provide the criteria that will be used to determine whether wastes will be treated in the cementation unit or the vitrification unit.
- b) Revise the Application to provide the radionuclide discard limit that will be used to determine if wastes will be transferred to the cementation unit pencil tank or the pencil tanks.
- c) The Application states that if sample analysis indicates that concentrations are above the discard limit the solutions will be re-circulated. It is not clear from the Application how they will be re-circulated and what the re-circulation process does to lower concentrations, for example by dilution into other solutions. Provide a discussion of the re-circulation process and how this process will affect radionuclide concentrations in solutions.

109. Attachment H.3, Secondary Containment (40 C.F.R. §§ 270.16(g) and 264.193)

- a) Information must be included in the Application that demonstrates, using calculations, that the external liner system is designed to contain 100 percent of the capacity of the largest tank within its boundary. Revise the Application to include these calculations.
- b) The Application is not clear whether the floor, which will act as the secondary containment system, is sloped to allow collection of liquids. Discuss this issue.
- c) The reinforced concrete floor that will serve as the containment system must be demonstrated to be free of cracks or gaps. Provide this information.
- d) Revise the Application to include a statement that the containment system is designed to completely surround the storage tank system.
- e) The Application states that any accumulated liquids will be removed as soon as possible. Revise the Application to include the requirements of 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.193(c)(4)) that all hazardous waste and accumulated liquids must be removed from the secondary containment system within 24 hours, unless Permittees demonstrate to NMED that removal of the hazardous waste or accumulated liquids cannot be accomplished within 24 hours.

in which case the hazardous waste and liquids must be removed in as timely a manner as possible to prevent harm to human health and the environment.

110. Attachment H.4, Special Requirements for Ignitable, Reactive and Incompatible Wastes (40 C.F.R. §§ 270.16(g-h), 264.17, 264.198 and 264.199)

In the event that ignitable or reactive waste is stored in any part of the storage tank system, the following must be either provided or demonstrated. Revise the Application to address these issues:

- a) Provide the operating pressure and temperature specifications for the tanks;
- b) Demonstrate that waste is treated, rendered, or mixed before or immediately after placement in the tank systems so that it no longer is ignitable or reactive;
- c) Demonstrate that the wastes are not placed in the same tank system unless there is compliance with 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.17(b));
- d) Demonstrate that the waste is stored or treated in a manner such that it protects against ignition or reaction;
- e) Demonstrate that the requirements are met for the maintenance of protective distances between waste management areas and any public ways, streets, alleys, or adjoining property lines;
- f) Provide procedures assuring that hazardous waste will not be placed in a tank that previously held an incompatible waste or material unless it has been decontaminated or unless precautions have been taken per 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.17(b)) to prevent reactions; and
- g) Indicate whether the tank system is used solely for emergencies.

111. Attachment I.3.3, Protection of the Atmosphere (40 C.F.R. §§ 270.23(b-c) and 264.601(a-c))

The cementation unit has a system of negative pressure zones and high-efficiency particulate filters (HEPA) that are designed to work together to prevent releases of contaminants to the atmosphere. Attachment K.3.4 of the Application states that backup generators are available at TA-55 in the event of a power outage. However, it appears that there is no immediately available backup system for the cementation unit. The Application must address how releases to the atmosphere will be prevented in the event of a power outage causing a temporary shutdown of the negative pressure zones and HEPA filter system. In addition, the Application must address how long the system will be shut down before the backup generators can be activated to operate the cementation unit pressure regulation system. Revise the Application to address these issues.

112. Attachment I.4, Special Requirements for Ignitable, Reactive, and Incompatible Wastes (40 C.F.R. §§ 270.14(b)(9), 264.17, 264.198 and 264.199)

In the event that ignitable or reactive waste is stored in any part of the cementation unit, the following must be either provided or demonstrated. Revise the Application to address these issues.

- a) Provide the operating pressure and temperature specifications for the system and associated tanks;
- b) Demonstrate that waste is treated, rendered, or mixed before or immediately after placement in the system so that it no longer is ignitable or reactive;
- c) Demonstrate that the wastes are not placed in the same system unless there is compliance with 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.17(b));
- d) Demonstrate that the waste is stored or treated in a manner such that it protects against ignition or reaction;
- e) Demonstrate that the requirements are met for the maintenance of protective distances between waste management areas and any public ways, streets, alleys, or adjoining property lines;
- f) Provide procedures assuring that hazardous waste will not be placed in a system that previously held an incompatible waste or material unless it has been decontaminated or unless precautions have been taken per 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.17(b)) to prevent reactions; and
- g) Indicate whether the system is used solely for emergencies.

113. Attachment J.1.4, Off-Gas System (40 C.F.R. § 270.23(a))

- a) This Section describes a caustic scrubber column for cleaning the off-gas. The rationale for the choice of a caustic scrubber is not provided. Identify and provide measured or estimated concentrations of all contaminants in the off-gas that are to be controlled by the caustic scrubber column. Also provide the scrubber's design removal efficiency and the outlet concentrations for each contaminant.
- b) The description of the scrubber is incomplete in that it does not identify the type or size of the packing nor the concentration of caustic (or pH) of the scrubber solution. Provide this information.
- c) The second paragraph indicates that the off-gas will be cooled by a quencher before entering the scrubber. This quencher is not described and the temperature to which the gas will be cooled is not given. Revise the Application to provide a description of the quencher and indicate the design outlet temperature.
- d) The scrubber is stated to exhaust to the building wet/dry vacuum system. This system is not described. Revise the Application to provide a brief description of

this system, oriented towards its ability to control any contaminants remaining in the scrubber exhaust.

- e) Once the off-gas system has been constructed, a performance evaluation must be completed to determine the effectiveness of the system. The evaluation must include a determination of the actual control efficiency of the scrubber, emission rates, and whether any additional controls to supplement the efficiency of the scrubber are required.
- f) As it is unlikely that a 100 percent control efficiency for mercury can be obtained, measurements of the actual control efficiency must be made. Also, the amount of mercury that is actually vaporized must be determined. Include these in the performance evaluation.
- g) In addition, provide a detailed plan for how the performance evaluation will be conducted, including how and where within the system influent and effluent samples will be taken, how these samples will be evaluated and against what performance criteria, and the specific constituents that will be monitored.
- h) During start up and shut down of the system, waste must not be fed into the vitrification unit unless it is demonstrated that the off-gas system is operating within the parameters specified in the Application. Revise the Application to discuss start up and shut down procedures.
- i) Discuss monitoring that will be conducted to ensure continued operational effectiveness of the off-gas system.

114. Attachment J.1.5, Glove Box (40 C.F.R. § 270.23(a))

The Application states that a small cooling system for the glove box will be used if necessary to maintain temperatures within specification. This cooling system is not addressed in any of the supporting engineering information provided with the Application. Revise the Application to include a description and design of the cooling system, operating conditions, and the location of the cooling system in the glove box.

115. Attachment J.2, Vitrification Unit Demonstration of Treatment Effectiveness (40 C.F.R. § 270.23(d))

The Application states that the Permittees will implement appropriate waste management options for mercury in the scrubber solution. Revise the Application to provide these waste management options.

116. Attachment J.3.3, Protection of the Atmosphere (40 C.F.R. §§ 270.23(b-c) and 264.601(c))

- a) The vitrification unit has a system of negative pressure zones and HEPA filters that are designed to work together to prevent releases of contaminants to the atmosphere. Attachment K.3.4 of the Application states that backup generators are available at TA-55 in the event of a power outage. However, it appears that there is no immediately available backup system for the vitrification unit to ensure there will be no downtime in the operation of the off-gas system. The Application must address how releases to the atmosphere will be prevented in the event of a power outage causing a temporary shutdown of the negative pressure zones and the off-gas system. In addition, the Application must address how long the system will be shut down until the backup generators can be activated to operate the vitrification unit pressure regulation system. Revise the Application to address these issues.
- b) This Section describes the fugitive emission prevention system. It does not appear that a fan in the off-gas system is used and that the building wet/dry vacuum system provides the suction to move the gas. Revise the Application to specify that the system will keep the off-gas system at a pressure below that of the glove box and describe how this is achieved.
- c) It appears that cascaded levels of negative pressure are being used to collect fugitive emissions. Revise the Application to include the methods that the facility glove box exhaust system will employ to control what is collected.
- d) The HEPA filter on the glove box will not control NO_x emissions that might get into the glove box. Discuss whether NO_x will be controlled and if NO_x will be vented to the atmosphere.

117. Attachment J.4, Special Requirements for Ignitable, Reactive, or Incompatible Wastes (40 C.F.R. §§ 270.14(b)(9), 264.17, 264.198 and 264.199)

While no ignitable, reactive, or incompatible wastes will be treated in the vitrification unit, the unit is located in the same room and utilizing the same secondary containment system as the storage tanks, which may be used for ignitable, reactive, or incompatible wastes. Therefore, the Application must address the potential for contact of these wastes with the vitrification unit and associated waste streams in the event of a leak of either ignitable, reactive, or incompatible waste from either the storage tank system, cementation unit, or vitrification unit.

118. Attachment K.2.4, Aisle Space Requirements (40 C.F.R. § 264.35)

The requirements for aisle space as outlined in 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.35) state that aisle space must be maintained that will allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of the facility in an emergency. It is not apparent that the proposed aisle space meets this requirement. Revise the Application to indicate that a minimum aisle space of three feet will be used, or provide adequate justification for the use of a smaller aisle space.

119. Attachment K.3.4, Mitigating Effects of Power Outages (40 C.F.R. § 270.14(b)(8) and 264 Subpart C)

The Application states that, in the event of a power outage, portable generators are available. This statement allows that there is no immediate backup generator system that would provide immediate power in the event of an outage. This is especially a concern for the off-gas system of the vitrification unit. Provide a discussion regarding the prevention of process upsets and system failures in the vitrification unit off-gas system in the event of a power failure.

120. Attachment K.3.6, Preventing Releases to the Atmosphere (40 C.F.R. § 270.14(b)(8) and 264 Subpart C)

As discussed in previous comments, a performance evaluation demonstrating the effectiveness of the vitrification system's off-gas unit must be provided to demonstrate that there will be no releases of either hazardous or radiological constituents to the atmosphere. Include a reference to the vitrification off-gas system performance evaluation.

121. Attachment K.4.1, Hazardous Waste Report (Biennial Report)

Pursuant to 20.4.1.500 NMAC (incorporating 40 C.F.R. § 264.75), the biennial report must cover activities during the previous calendar year only. The Application indicates that more than one calendar year may be covered by the report. While some activities may overlap into more than one year, the report should focus on one calendar year. Clarify that the report will primarily address only the previous calendar year.