

FFCO



*Environmental Protection Division
Risk Reduction Office (ENV-RRO)
P.O. Box 1663, Mail Stop K404
Los Alamos, NM 87545
(505) 667-4348/FAX: (505) 667-0731*

*National Nuclear Security Administration
Los Alamos Site Office, MS A316
Los Alamos, NM 87544
(505) 667-7203/FAX: (505) 665-4504*

Date: September 8, 2009
Refer To: ENV-RRO-09-061

***VIA HAND DELIVERY AND CERTIFIED MAIL
RETURN RECEIPT REQUESTED***

Mr. Steve Zappe
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303

Dear Mr. Zappe:

SUBJECT: PROPOSED DELETION OF WASTE FROM THE SITE TREATMENT PLAN, FEDERAL FACILITY COMPLIANCE ORDER, LOS ALAMOS NATIONAL LABORATORY

Los Alamos National Laboratory (LANL) proposes to remove ten experimental test vessels of mixed transuranic (MTRU) waste inventory from the Site Treatment Plan (STP) in accordance with Section IX of the Federal Facility Compliance Order (FFCO). LANL requests New Mexico Environment Department (NMED) concurrence with the process proposed to remove each vessel from the STP before recovering programmatic materials from the vessel.

As discussed in the classified meeting with Art Volmer of NMED and as described in the presentation given on July 8, 2009, the Department of Energy (DOE) has determined that these vessels contain important programmatic materials that can be recovered and used in current DOE National Security programs. When the vessels were placed on the STP, the materials were not identified as having programmatic value. Ongoing evaluations of the nation's national security posture have now identified a programmatic use for materials in the vessels.

The first vessel is scheduled to be processed in 2011. LANL will notify NMED in writing at least 45 calendar days prior to the start of recovery operations. LANL will also notify NMED that a vessel is to be removed from the STP at least 15 calendar days before that vessel is transferred to the



Mr. Steve Zappe
ENV-RRO-09-061

September 8, 2009

recovery facility at the Chemistry Metallurgy Research (CMR) building to be emptied as described in Attachment A (*Execution of the Bolas Grande Project at Los Alamos National Laboratory, LA-UR 09-04780*). As soon as a vessel is removed from the TA-55 treatment/storage/disposal facility (TSDF) for transfer to the recovery facility, LANL will no longer consider the vessel and its contents to be hazardous waste and, therefore, will cease to manage the vessel and its contents as hazardous waste. Each vessel, and its contents, remaining in the TSDF at TA-55 will continue to be part of the STP inventory and will continue to be managed as hazardous waste until it is removed from the TSDF for transfer to the recovery facility. The deletion of the waste contained in each vessel will be reported in LANL's Annual Update of the STP (Compliance Plan, Deletion of Waste) for the fiscal year in which a vessel is removed from the TSDF.

Because of the lead time needed to prepare the facility to process the first vessel in 2011, as scheduled, LANL requests NMED's concurrence in the process for removing these vessels from the STP within 30 calendar days of your receipt of this letter. If you have any questions or need additional information in order to respond to this request, LANL will be glad to expedite that information.

Please contact Peggy Powers at (505) 665-5717 or by email at peggy.powers@lanl.gov or George Henckel at (505) 606-0960 or ghenckel@doeal.gov if you have any questions.

In accordance with the requirements of Section XX, "*Documents, Information, and Reporting Requirements*," of the FFCO, we certify, as the project managers responsible for overseeing the implementation of the Site Treatment Plan for the Los Alamos National Laboratory and for Los Alamos Site Office/National Nuclear Security Administration, that, to the best of our knowledge and belief, the information in this document is true, accurate, and complete.

Sincerely,

Sincerely,



Margaret A. Powers
STP Project Manager
Risk Reduction Office (ENV-RRO)
Los Alamos National Laboratory



George C. Henckel, III
STP Project Manager
Los Alamos Site Office
National Nuclear Security Administration

Mr. Steve Zappe
ENV-RRO-09-061

September 8, 2009

MP/mcm

Attachment: a/s

Execution of the Bolas Grande Project at Los Alamos National Laboratory, LA-UR 09-04780.

Cy: James Bearzi, NMED/HWB, Santa Fe, NM, w/attachment
John E. Keiling, NMED/HWB, Santa Fe, NM, w/o attachment
Milton L. Bishop, LASO-EO, w/attachment, A316
Andrew Worker, LASO-NSM, w/attachment, A316
Juan Griego, LASO-NSM, w/o attachment, A316
George C. Henckel III, LASO-EO, w/attachment, A316
Silas De Roma, LASO-OC, w/o attachment, A316
Michael B. Mallory, PADOPS, w/o attachment, A102
Joel D. Leeman, PADWP, w/o attachment, A107
J. Chris Cantwell, ADESHQ, w/o attachment, K491
James Blankenhorn, WDP-DO, w/o attachment, J595
Paul Newberry, WDP-HMWO, w/o attachment, J598
Ellen Louderbough, LC-LESH, w/o attachment, A187
Dennis Hjeresen, ENV-RRO, w/o attachment, K404
A.R. Grieggs, ENV-RCRA, w/attachment, K490
Peggy Powers, ENV-RRO, w/attachment, K404
Robert W. Margevicius, PADWP, w/attachment, A107
William J. Crooks, C-IIAC, G730
ENV-DO, File, w/o attachment, J978
ENV-RRO, File, w/attachment, K490
IRM-RMMSO, w/attachment, A150

Attachment A
Execution of the Bolas Grande Project at Los Alamos National Laboratory
LA-UR 09-04780

Execution of the Bolas Grande Project at Los Alamos National Laboratory

Robert W. Margevicius, PADWP
William J. Crooks, C-IIAC
Margaret A. Powers, ENV-RRO

The Confinement Vessel Disposition Project, commonly referred to as Bolas Grande, has been established at LANL to deal with a substantial quantity of special nuclear material (remnants of high energy experiments) contained in nine, six-foot diameter steel spherical vessels currently listed on the Site Treatment Plan (STP), and one additional vessel with residual content listed on the STP, that are currently located within the security perimeter on the outside RCRA interim status storage pad in the Treatment/Storage/Disposal Facility (TSDF) at TA-55. The volume of each of the ten STP six-foot vessels is 845 gallons (3.196 m³), for a total of 8450 gallons (31.96 m³); this is the volume that will be removed from LANL's STP. The STP vessels included in this process are listed in Table 1.

Table 1. Vessels Proposed for Removal from the STP

Treatability Group	Container No.	Volume in (m³)
<i>Combined Combustible-Noncombustible Debris</i>	BBP14	3.196
<i>Combined Combustible-Noncombustible Debris</i>	BBP17	3.196
<i>Combined Combustible-Noncombustible Debris</i>	BBP18	3.196
<i>Combined Combustible-Noncombustible Debris</i>	BBP19	3.196
<i>Combined Combustible-Noncombustible Debris</i>	BBP21	3.196
<i>Combined Combustible-Noncombustible Debris</i>	BBP24	3.196
<i>Combined Combustible-Noncombustible Debris</i>	BBP25	3.196
<i>Combined Combustible-Noncombustible Debris</i>	BBP27	3.196
<i>Combined Combustible-Noncombustible Debris</i>	BBP28	3.196
<i>Combined Combustible-Noncombustible Debris</i>	B-MT	3.196
Total Volume		31.96

DOE has determined that a portion of the material within the vessels is programmatically valuable. The goal of the project is to retrieve the valuable material and appropriately disposition the balance as waste.

The project will: 1) empty the vessels of their contents; 2) sort and segregate the programmatically valuable material from the other material in the vessels; 3) decontaminate the vessels to low-level waste (LLW) levels; and 4) disposition the waste in accordance with current radioactive and or hazardous waste disposition requirements. The project will be executed in Wing 9 of the Chemistry and Metallurgy Research (CMR) building. A removable enclosure will be installed for contamination control where the vessels will be emptied. The reporting and procedure include the following steps:

1. Notify NMED 45 days before the start of recovery operations;
2. Notify NMED 15 days before each vessel is transferred to CMR;

3. Transport the vessels and their contents, one at a time, from TA-55 to CMR; and manage the vessels and their contents as material, not hazardous waste, from the time that they leave the Treatment/Storage/Disposal Facility (TSDF) at TA-55;
4. Attach a workstation (glovebox) to one of the vessel's ports;
5. Introduce a robotic arm into another (orthogonal to the first) of the vessel's ports;
6. Using the robotic arm, sort and segregate the contents of the vessel into: the valuable material to retain, and the balance of the unneeded material to waste, either as mixed transuranic (MTRU), LLW, or mixed LLW (MLLW).
7. Remove the emptied vessel from the enclosure and store in an approved storage area as LLW or transuranic (TRU) waste;
8. Decontaminate the empty vessel down to LLW and disposition the resulting decontamination waste;
9. Disposition the vessels as LLW;
10. Annually report deletion of waste from STP in the Annual Update to the STP.

The execution of this project will retrieve material that is vital to DOE's national security programs. Three programs have interest in the material, namely, the Nuclear Forensics program, the Dynamic Materials program, and the Material Recovery and Recycle program. Execution of the program will have positive safety and security benefits as well. The benefits include: 1) the material will be removed from an outside storage location; 2) the robustly engineered controls for the operation will minimize radiation exposure to workers; 3) removal of the material from its current location will improve the security posture at TA-55; and 4) and reuse of the programmatically valuable material and disposal of subsequent wastes would remove a substantial volume of waste from the STP.

Installation of the enclosure at CMR is scheduled to begin in September 2009, and the capability is scheduled to be fully operational in May, 2011. The sort and segregate phase of the project is scheduled to take approximately 18 months, or about one vessel every other month. The decontamination phase of the project is estimated to be completed in two to three years, after the sorting and segregation phase is complete (~2014). The volume of 845 gallons represents the entire volume of the vessel, not the amount of material contained within it. The quantity of programmatically valuable material retrieved will depend on the condition of the material in the vessels, which will not be known until each vessel is opened.

Based on knowledge of process, LANL believes that all resulting waste from this project has a disposition path, namely, the Waste Isolation Pilot Plant (WIPP) for MTRU waste, a DOE or commercial site for LLW disposal, and off site commercial treatment for disposal for MLLW. Based on the projected volumes of recovered programmatic materials, the anticipated volume of TRU or mixed TRU waste going to WIPP is estimated to be approximately 10-30 55-gallon drums in total. Actual waste generation will vary from vessel to vessel. The project plan calls for Central Characterization Project (CCP) support to characterize the newly generated waste eligible for disposal at WIPP and also for coordination with LANL's Waste Disposal Project to facilitate prompt shipping of the waste to off-site facilities.

The sorting and segregation process will produce an average of approximately 3.2 m³ of newly generated MTRU waste for each vessel. Based on the fissile content of the drums, which must meet WIPP criteria, LANL estimates that approximately one to three 55-gallon containers will be required to ship newly generated waste from each of the vessels. In addition, decontamination of a vessel would produce up to two 55-gallon drums (0.416 m³) of potential mixed TRU waste that has been adsorbed or solidified to ensure that no free liquids are present.

Each container of newly generated TRU or MTRU waste will meet criteria for shipment and acceptance at WIPP. Each container of LLW and or MLLW will meet the waste acceptance criteria for the appropriate treatment, storage and disposal facility.