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JUN 13 2016

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New Mexico Environment Department
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Santa Fe, NM 87508-6303

Ms. Kathryn Roberts, Director
Resource Protection Division
New Mexico Environment Division
Harold Runnels Building
1190 Saint Francis Drive, Room 4050
Santa Fe, NM 87502-5469

Subject: Request for Additional Extension of Storage Time at the Waste Isolation Pilot Plant Facility, Hazardous Waste Facility Permit Number NM4890139088-TSDF

Reference: New Mexico Environment Department correspondence from Kathryn Roberts, Director, Resource Protection Division to Jose Franco, CBFO and Robert L. McQuinn, NWP, dated May 1, 2015, subject: Request for Additional Extension of the Waste Handling Building Storage Time at the Waste Isolation Pilot Plant EPA I.D. Number NM4890139088

Dear Mr. Kieling and Ms. Roberts:

In accordance with the above-referenced letter, the Permittees are requesting an extension of storage time for the transuranic (TRU) mixed waste currently stored in the Waste Handling Building (WHB) at the Waste Isolation Pilot Plant (WIPP) facility. The enclosed proposal addresses: new or updated information related to potential impacts to human health and the environment; information about alternative storage options that includes a thorough analysis of the Permittees issues with returning the waste to the generator storage sites; and a description of any options or plans for emplacement of waste in the underground.

The May 1, 2015, extension to the storage time for TRU mixed waste currently stored in the underground will expire on June 30, 2016. Waste disposal operations are currently projected to resume in December 2016. It is anticipated that, since emplacement of waste in the underground will be gradual at first, the downloading of the waste into Panel 7 will take three months to complete once emplacement operations resume. However, the Permittees are requesting an additional three months, as a contingency, should the emplacement process proceed slower than anticipated. Therefore, consistent with this schedule, the Permittees request an extension of storage time for CH TRU mixed waste stored in the WIPP Waste Handling Building until June 30, 2017.

We certify under penalty of law that this document and all attachments were prepared under our direction or supervision according to a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on our inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of our knowledge and belief, true, accurate, and complete. We are aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions, please contact Mr. George T. Basabilvazo at (575) 234-7488.

Sincerely,
Original Signatures on File

Todd Shrader, Manager
Carlsbad Field Office

Philip J. Breidenbach, Project Manager
Nuclear Waste Partnership LLC

Enclosure

cc: w/enclosure
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Proposal for Request for Extension of the Waste Handling Building Storage Time at the Waste Isolation Pilot Plant, EPA I.D. Number NM4890139088, June 10, 2016

1.0 Introduction

In accordance with the May 1, 2015, letter from the New Mexico Environment Department (NMED), the Permittees are requesting an extension of storage time for the transuranic (TRU) mixed waste currently stored in the Waste Handling Building (WHB) at the Waste Isolation Pilot Plant (WIPP) facility. The 155 containers of waste in storage originated from 19 shipments of contact-handled (CH) TRU mixed waste from generator/storage sites and from replacement of filters in the underground ventilation system at the WIPP facility.

The current approved deadline for storage of waste in the WHB is June 30, 2016. Since waste disposal operations will not resume by June 30, 2016, this proposal to extend the storage time for waste stored in the WHB has been prepared, pursuant to the requirements listed in the May 1, 2015, letter from the NMED, to address the following:

- Any new or updated information related to potential impacts to human health and the environment
- Information about alternative storage options that includes a thorough analysis of the Permittees' issues with returning waste to generator sites
- A description of any options or plans for the emplacement of the waste in the underground

Much of the above information has been provided in previous extension requests demonstrating that continued storage of waste in the WHB CH Bay is protective of human health and the environment and is the best alternative. This request provides updates to the information in the previous extension of storage time requests submitted to the NMED on August 29, 2014, November 3, 2014, and April 22, 2015.

The current WIPP recovery and restart schedule indicates that commencement of waste emplacement activities is anticipated to occur in December 2016. The emplacement process will be gradual at first to ensure safe operations. Once emplacement operations resume, it is anticipated that the waste that is currently in storage in the WHB will take three months to download into the underground. However, the Permittees are requesting an additional three months as a contingency should the emplacement process proceed slower than anticipated. Therefore, consistent with this schedule, the Permittees request an extension of storage time for CH TRU mixed waste stored in the WHB until June 30, 2017.

2.0 Potential Impacts to Human Health and the Environment Associated with Current Storage Configuration

In April 2015, the US Department of Energy (DOE) Accident Investigation Board (AIB) concluded that only one breached container, LA00000068660 from Los Alamos National Laboratory (LANL) waste stream LA-MIN02-V.001, was the source of the radioactive contamination released during the February 14, 2014, radiological event at the WIPP facility. This conclusion is consistent with information previously reported to the NMED. The AIB identified that the cause of the accident was an exothermic reaction between incompatible

materials in waste drum LA00000068660 that led to thermal runaway which subsequently resulted in over-pressurization of the drum. The over-pressurization led to a breach of the drum and a release of a portion of the contents into the WIPP underground.

Following extensive investigation into the packaging of nitrate salt bearing waste at LANL, a total of 683 waste containers disposed at the WIPP facility from waste streams LA-MIN02-V.001, LA-MIN04-S.001, LA-MHD01.001, and LA-CIN01.001 have been provisionally assigned the EPA Hazardous Waste Number (HWN) D001 (ignitable waste). Of these 683 containers, 88 containers have also been provisionally assigned the EPA HWN D002 (corrosive waste). These provisional assignments of HWNs D002 and/or D001 have been reported previously to the NMED. None of these containers are located in the WHB; these waste containers have been emplaced in the underground in Panel 5, Room 1; Panel 6, Rooms 1 through 6; and Panel 7, Room 7. Therefore, continued storage of the waste that is currently being stored in the WHB poses no additional hazards to human health or the environment relative to the presence of nitrate salts or the characteristics of ignitability or corrosivity.

The Permittees have determined that continuing to store the waste in the WHB minimizes risk to human health and the environment since the waste will not need to be transported to another location. This determination is based on the following factors:

- Waste is being stored in accordance with WIPP facility standard operating procedures that implement the Permit requirements and WIPP facility safety requirements.
- The WIPP facility is permitted and secure. Storage area inspections are conducted weekly as required by the Permit, and surface storage areas were not adversely impacted by the fire and radiological incidents at the WIPP facility.
- The storage time limits in the Permit were negotiated at the time the Permit was originally issued and renewed. The storage time limits were based on operational expectations and do not represent any physical limitations imposed by the facility. The Part A Permit Application for the 2009 Renewal Application identifies a 25-year WIPP operational life. It was anticipated that the CH Bay would frequently be at or near its permitted capacity throughout the 25-year life. Waste would be downloaded from the CH Bay while waste in the Parking Area Unit was being taken into the CH Bay for storage prior to processing for disposal. Moreover, the Permit allows for surge storage under certain conditions. Therefore, a WHB at or near capacity has always been part of the normal permitted operations.
- The Permittees have demonstrated that they can successfully manage the waste over longer storage times with no impact to human health and the environment. The waste in the WHB has been safely stored for more than two years.
- Emissions from the WHB are continuously filtered through high-efficiency particulate air filters. The WHB filtration system protects on-site workers and the public from airborne particulate releases, should there be any.
- Leaving the waste in storage minimizes the number of times it has to be handled and moved, further reducing risk from accidental spills or releases. There are no additional costs associated with this option.
- Access to the CH Bay is restricted as suggested in the September 10, 2014, and November 7, 2014, letters from the NMED, except for required activities, such as routine inspections and preventative maintenance activities.

The technical requirements in the Permit, Part 3, Section 3.1.1., based on 20.4.1.500 NMAC (incorporating 40 CFR §§264.170 through 264.178, *Container Management Practices*), are applied to the operation of the WHB unit in order to protect human health and the environment. The following summarizes the status of the weekly inspections and inspection requirements demonstrating that the waste stored in the WHB poses no potential impacts to human health and the environment:

- The waste containers presently stored in the WHB are in good condition. Waste containers are free from physical damage (such as severe rusting, apparent structural defects, or signs of pressurization and leakage).
- The waste containers are compatible with the waste. No evidence of incompatibility (such as bulging, corrosion, or increased temperature) has been observed.
- The waste containers are closed and are not stored in a manner that may rupture the container or cause it to leak. No evidence of open containers or improper storage has been observed.
- The CH Bay Storage and Surge Storage Areas have a containment system that is free from cracks and gaps. Inspections confirm that the concrete floors are in good condition and meet the requirements of 20.4.1.500 NMAC (incorporating 40 CFR §264.175(b)(1)).
- Inspections confirm that waste containers are elevated 6 inches to prevent potential contact with liquids.
- Secondary containment has sufficient capacity to contain 10 percent of the volume of containers presently stored in the CH Bay Storage and Surge Storage Area, as described in Attachment A1, Section A1-1f(1) of the Permit.
- Run-on into the containment system is prevented as a result of the building design. There is no evidence of run-on into the CH Bay Storage and Surge Storage Area.
- There is no evidence of spilled or leaked waste or accumulated precipitation.

3.0 Evaluation of Alternative Storage Options

Although evaluating alternative storage options is necessary, there are risks to human health and the environment associated with any handling or transportation of waste containers. During waste handling this would include container drop, lid failure, or puncture; during the transporting of waste in the Type B packages, it could include releases due to a severe transportation accident. Although the probabilities associated with these scenarios are very low they do exist. These risks were addressed in the Waste Isolation Pilot Plant Final Disposal Phase Supplemental Environmental Impact Statement, Chapter 5, which addressed the environmental impacts associated with the transportation of waste from generator/storage sites to the WIPP facility for disposal. Accordingly, keeping the waste in a stable and secure location while in a permitted storage facility such as the WIPP facility poses less risk to human health and the environment than transporting the waste containers to another permitted storage facility.

3.1 Alternative Storage Option 1: Shipping the Waste to the Waste Control Specialists Facility in Andrews, Texas

There are currently 230 containers from LANL and Idaho National Laboratory (INL) stored at Waste Control Specialists (WCS). Of these 230 containers, 116 containers have been provisionally assigned the HWN of D001.

Waste Control Specialists has a permit-specified storage time limitation of 365 days. A total of 42 shipments of waste from INL/LANL were sent to WCS for storage between April 2, 2014, and April 30, 2014. All containers from INL/LANL at WCS have exceeded the 365-day permit mandated storage time limit. On December 9, 2015, the Texas Commission on Environmental Quality issued an Enforcement Action against WCS (Docket Number 2015-0514-RAW-E), for exceeding their storage time limit on the INL/LANL containers and indicating that all containers were to be shipped to the WIPP facility as soon as waste emplacement activities resume. No additional containers were to be accepted.

The option of using WCS for storage of any additional waste is not viable.

3.2 Alternative Storage Option 2: Returning the Waste to the Generator/Storage Sites

This option involves returning the waste to the three generator/storage sites (INL, LANL, and Savannah River Site (SRS)) that originally shipped the waste to the WIPP facility. This option is not currently available. Due to state regulatory agreements in place for each site, negotiations will be required with the individual state regulatory agencies and state governments prior to returning waste to each generator/storage site or shipping the waste to a single DOE generator/storage site. The complexities of state-specific negotiations render it unlikely that arrangements can be made to ship the waste back to the generator/storage sites prior to the June 30, 2016, deadline. There are significant costs associated with this option, including administrative, handling, and transportation costs. Therefore, the Permittees have concluded that storing the waste at the WIPP facility until the underground is available for the resumption of disposal activities is the favored option, and it provides the least risk to human health and the environment with minimal additional cost.

3.2.1 Returning Waste to Idaho National Laboratory

Formal agreements in place at INL make return shipments to INL very difficult. The August 29, 2014, request for extension provides an analysis of these agreements. Specifically, these agreements limit storage of off-site waste at the INL to six months. Furthermore, although shipments of waste to the WIPP facility have been halted, INL has continued to certify and stage waste pending shipment. The certified waste takes up some of the available storage capacity. Storage space for returned shipments at INL is also extremely limited. At INL, work has shifted to characterization and off-site disposal of low-level waste. Personnel must be re-directed and preparations made to receive and unload TRU mixed waste.

3.2.2 Returning Waste to Los Alamos National Laboratory

The shipment of waste in the WHB to LANL is extremely complex. The August 29, 2014, request for additional extension of storage time provides an analysis of LANL Consent Orders that impact returning shipments. Furthermore, the LANL loading/unloading facility (RANT) is currently shut down. To resume operations, documented safety analysis work must be completed. This is unlikely to be completed prior to June 30, 2016.

3.2.3 Returning Waste to the Savannah River Site

Although there are no consent or administrative orders against SRS that preclude shipment of TRU waste from the WIPP facility, the SRS has suspended its TRU mixed waste shipping operations. To resume operations, significant preparations must commence. This would include mobilizing required personnel, personnel training, moving and setting up mobile loading

equipment, and readiness/restart activities as directed by the DOE. Any shipment of waste back to SRS would require the approval of the South Carolina Department of Health and Environmental Control. The security profile of the SRS waste stream has changed since the waste was shipped. An examination of the ring bolt to the drum lids is required to determine if the tamper-indicating devices (TIDs) are still intact. This will require breaking down existing payloads, performing verification, then rebuilding prior to shipment. In conclusion, shipping waste from New Mexico to South Carolina would be less protective of human health and the environment for the reasons stated under Section 3.0 above.

3.3 Alternative Storage Option 3: Shipping the Waste to a Secondary Generator/Storage Site

On August 8, 2014, and again on October 1, 2014, the Nuclear Regulatory Commission (NRC) was notified by the DOE of a reportable condition pursuant to 10 CFR 71.95. This reportable condition pertained to a process change that occurred to a LANL waste stream (LA-MIN02-V.001) without prior DOE approval, resulting in a noncompliance with the NRC Certificate of Compliance No. 9218 with regard to chemical composition and compatibility requirements. The shipment of any waste stream in the Type B packaging model Transuranic Package Transporter-II (TRUPACT-II) has been curtailed as the notification to the NRC stated that shipments from LANL and to the WIPP facility have been suspended until the AIB investigations and packaging related corrective actions were complete. Both the AIB Report and the NRC decision have now been completed. The AIB report was finalized in April 2015, and the NRC made a determination that no further action was required on March 26, 2015.

3.3.1 DOE Facilities

There are significant challenges associated with this option. Site-specific Resource Conservation and Recovery Act (RCRA) Permits (and associated waste acceptance criteria) may preclude shipping waste to generator/storage sites and/or to a secondary permitted storage facility or require dialog with and notifications to state regulators, permit modifications, issuance of a regulatory order, or potentially sampling and analysis, as follows:

- Hanford Site – Waste must meet waste acceptance criteria and sampling and analysis plan criteria. Discussion with the waste generator is warranted to determine if any characterization beyond the existing acceptable knowledge is needed. At this time, the State of Washington, is not entertaining this option.
- Oak Ridge National Laboratory – The Oak Ridge National Laboratory has some capacity for storage of off-site waste. Approval from the Tennessee Department of Environment and Conservation is required. The State of Tennessee does not believe it can reach a decision prior to June 30, 2016.

3.3.2 Other Non-DOE Facilities

In order to further evaluate alternate storage of the TRU mixed waste in the WHB, the Permittees have considered three commercial radioactive waste management facilities in addition to WCS. TRU mixed waste would be sent to a commercial facility according to that facility's waste acceptance criteria for short term storage. Upon completion of the recovery efforts at the WIPP facility, the TRU waste would be shipped back to the WIPP facility for

disposal. The Permittees would provide for loading and unloading at the supplier's facility. The Permittees would also provide transportation to and from the supplier's facility.

The three facilities under consideration are as follows:

- Energy Solutions Bear Creek Facility, Oak Ridge, TN
- Energy Solutions Clive, Utah Facility
- Perma-Fix Environmental Services Richland, WA Facilities

Some of the containers in the WHB would not qualify as candidates for shipment to a commercial mixed waste facility due to national security concerns over the contents of those containers. It is more prudent to leave all of the containers at the WIPP facility in the WHB in order to reduce national security risks associated with specific containers. There are significant costs associated with this option, including administrative, handling, and transportation costs. Therefore, the Permittees have concluded that storing the waste at the WIPP facility until the underground is available for the resumption of disposal activities is the favored option, and it provides the best option relative to national security concerns, poses the least risk to human health and the environment, and minimizes additional cost.

4.0 Option for Emplacement of Waste in the WIPP Underground

Significant progress has been made in completing prerequisite activities required to begin waste emplacement. The current planning requires other significant milestones to be accomplished over the coming months prior to initial restart.

Since submittal of the last request for extension of storage time on April 22, 2015, the following activities have been completed:

- Significant progress in the completion of ground control in accessible areas of the underground
- Zone recovery required for commencement of waste emplacement in Panel 7, including soot cleaning and radiological rollback
- Underground electrical distribution restoration
- Installation of the Interim Ventilation System
- Development and approval of Revision 5 of the Documented Safety Analysis (DSA)
- Submittal of the *Information Required by Paragraph 31 of the Settlement Agreement and Stipulated Final Order, Dated January 22, 2016, HWB 14-21 (CO)* (Settlement Agreement)

Prior to commencing waste emplacement activities, it will be necessary to complete the following:

- Completion of the RCRA Contingency Plan Permit modification associated with the response to the Settlement Agreement
- Operational Readiness Review to ensure the emplacement activities can proceed as anticipated
- NMED inspection prior to commencement of waste emplacement operations

Waste disposal operations are currently projected to resume in December 2016. It is anticipated that, since emplacement of waste in the underground will be gradual at first, the downloading of the waste into Panel 7 will take three months to complete once emplacement operations resume. However, the Permittees are requesting an additional three months as a contingency for unforeseen delays should the emplacement process proceed slower than anticipated. Therefore, the Permittees respectfully request an extension of storage time for CH TRU mixed waste stored in the WIPP WHB until June 30, 2017.