DOE/EIS-380-SA-04

SUPPLEMENT ANALYSIS FOR TREATMENT, REPACKAGING, AND STORAGE OF NITRATE SALT WASTE DRUMS AT LOS ALAMOS NATIONAL LABORATORY, LOS ALAMOS, NEW MEXICO

U. S. DEPARTMENT OF ENERGY
Environmental Management Los Alamos Field Office (EM-LA)
Pueblo Complex, 1900 Diamond Drive
Los Alamos, NM 87544

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Acronyms

ALARA	as low as reasonably achievable
CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
EIS	environmental impact statement
EM	Environmental Management
HEPA	high-efficiency particulate air
LANL	Los Alamos National Laboratory
LANS	Los Alamos National Security, LLC
MEI	maximally exposed individual
NEPA	National Environmental Policy Act
NMED	New Mexico Environment Department
NNSA	National Nuclear Security Administration
RCRA	Resource Conservation and Recovery Act
RNS	remediated nitrate salts
SA	Supplement Analysis
SEIS	Supplemental Environmental Impact Statement
SER	Safety Evaluation Report
SWEIS	Site-Wide Environmental Impact Statement
TA	Technical Area
TRU	transuranic
UNS	unremediated nitrate salts
WCRRF	Waste Characterization, Reduction, and Repackaging Facility
WIPP	Waste Isolation Pilot Plant

INTRODUCTION

The U.S. Department of Energy (DOE) proposes to treat, repackage, transport onsite, and store 89 transuranic (TRU) waste[1] drums. These drums contain nitrate salts waste generated from 1979 through 1991 at Los Alamos National Laboratory (LANL). 60 of these drums were improperly treated during the 2012 to 2014 processing campaign (3706 Campaign). These wastes are referred to as remediated nitrate salts (RNS) drums. There are also 29 drums of unremediated nitrate salts (UNS) included in this proposed action.

In the 2008 *Site-Wide Environmental Impact Statement for Continued Operations at Los Alamos National Laboratory, Los Alamos, New Mexico* (2008 SWEIS; DOE 2008), DOE analyzed treatment, repackaging, onsite transportation, and storage of legacy TRU waste. However, the radiological release event[2] that occurred on February 14, 2014, at the Waste Isolation Pilot Plant (WIPP) was unanticipated and resulted in the need to further evaluate these actions to determine if the 2008 SWEIS provides adequate National Environmental Policy Act (NEPA) coverage for the proposed action.

In September/October 2016, Subject Matter Experts from DOE's National Nuclear Security Administration (NNSA) and DOE's Office of Environmental Management (DOE-EM), reviewed and provided approval of the relevant Los Alamos National Laboratory (LANL) safety basis documents that support denesting, cooling, loading, transportation, and processing of containers with RNS remaining at (LANL). The resulting Safety Evaluation Report (SER) (DOE 2016c), prepared and executed by the National Nuclear Security Administration (NNSA)& DOE-Environmental Management (EM) on October 6, 2016, concluded that the supplemental pressure relief device and other requisite controls identified within the SER would ensure that the maximally exposed individual (MEI) doses from any potential runaway event would not exceed the 25 rem Evaluation Guideline cited within DOE Standard 3009-94 (Preparation Guide for U.S. Department of Energy Non-Reactor Nuclear Facility Documented Safety Analyses) and would remain below the MEI doses evaluated within the 2008 SWEIS (Table 1).

The DOE concluded that the SER and referenced LANL safety basis documents provided an adequate basis to understand the proposed RNS activities, sufficiently analyzed the hazards associated with planned activities (including a self-heating, wildfire and various operational fire scenarios), and issued sufficient controls to adequately protection for the public, workers and the environment. Pursuant to DOE NEPA implementing procedures in 10 Code of Federal Regulations (CFR) 1021.314(c), this Supplement Analysis (SA) contains information to determine whether (a) the 2008 SWEIS should be

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[1] TRU waste containing more than 100 Nano curies of alpha-emitting transuranic isotopes per gram of waste with half-lives greater than 20 years, except for (a) high-level radioactive waste, (b) waste that the Secretary of Energy has determined, with concurrence of the Administrator of the Environmental Protection Agency, does not need the degree of isolation required by the disposal regulations, or (c) waste that the Nuclear Regulatory Commission has approved for disposal on a case-by-case basis in accordance with 10 Code of Federal Regulations Part 61.

[2] The radiological release event is described in DOE's Phase 2 Accident Investigation Report (DOE 2015).

supplemented, (b) a new environmental impact statement (EIS) should be prepared, or (c) that no further NEPA documentation is required.[3] In preparation of this SA, DOE reviewed various environmental and technical documents, NEPA analyses, and updated accident analyses. Based on these reviews and additional analyses, DOE has determined that the evaluation and analysis within the 2008 SWEIS sufficiently bounds the potential environmental impacts from the proposed action and no further NEPA documentation is required.

[3] In addition, 10 CFR 1021.314(c) states the SA "shall discuss the circumstances that are pertinent to deciding whether to prepare a supplemental EIS, pursuant to 40 CFR 1502.9(c)." The Council on Environmental Quality NEPA regulations (40 CFR 1502.9(c)) require Federal agencies to prepare supplements to either draft or final EISs if "(i) the agency makes substantial changes in the proposed action that are relevant to environmental concerns" or "(ii) there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts."

BACKGROUND

LANL, managed and operated by Los Alamos National Security, LLC (LANS) under contract to the DOE-NNSA, is a multidisciplinary, multipurpose research institution in north-central New Mexico about 60 miles north-northeast of Albuquerque and about 25 miles northwest of Santa Fe. LANL extends over approximately 40 square miles of DOE-owned property. There are about 2,000 structures totaling approximately eight million square feet that house LANL operations and activities; about half the square footage is used as laboratory or production space and the remainder for administration and offices, storage, service, and other purposes.

LANL plutonium operations from 1979 through 1991 generated nitrate salt waste derived from evaporator bottom solutions (Figure 1; LANL 2015a). This waste has since been managed as TRU waste and is stored in containers at the Technical Area (TA) 54 waste storage domes. These nitrate salt wastes possess the Resource Conservation and Recovery Act (RCRA) hazardous waste characteristics of ignitability and corrosivity and require treatment.

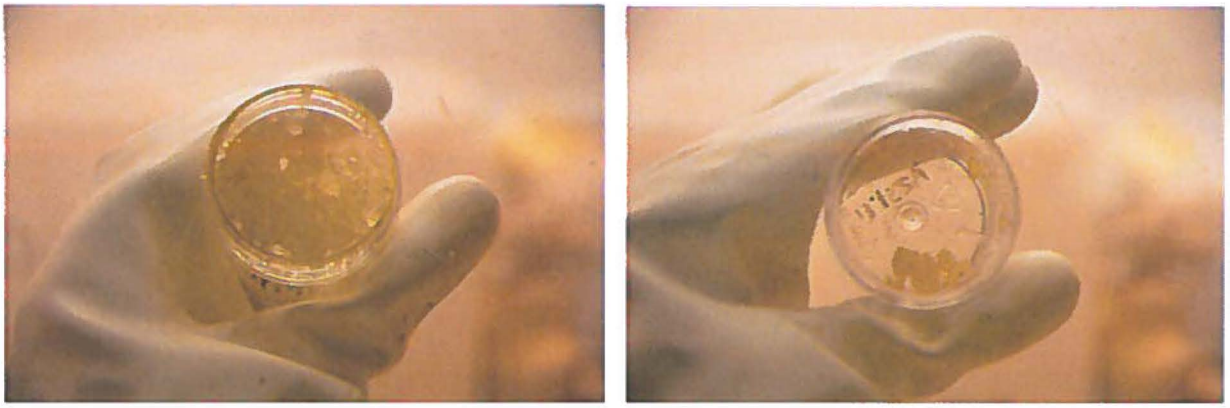

Figure 1: Evaporator bottoms—hydrated nitrate salts of sodium, potassium, calcium, magnesium, and aluminum

The 2011 Las Conchas wildfire burned near LANL heightened concerns about TRU waste stored aboveground at TA-54. If exposed to a wildfire, the TRU waste containers could potentially rupture and cause an unplanned release of the radioactive contents. In 2011, the State of New Mexico requested DOE accelerate removal of the aboveground TRU waste, leading to the 2012 Framework Agreement.[4] As a result, the 3706 Campaign was initiated to transport LANL's aboveground TRU waste inventory (3,706 cubic meters) to WIPP for disposal.

Two incidents at WIPP resulted in the suspension of WIPP operations in February 2014. The first incident was an underground salt haul truck that caught fire and temporarily suspended operations. During that time, a release of radioactive materials from a ruptured LANL remediated nitrate salts (RNS) drum occurred and WIPP operations were suspended. The remediation of a LANL nitrate salt drum using an organic absorbent

[4] DOE and the New Mexico Environment Department (NMED) entered into a non-binding Framework Agreement in January 2012 (https://www.env.nm.gov/HWB/documents/LANL_Framework_Agreement.pdf).

created the incompatibility that resulted in the exothermic reaction at WIPP. The 3706 Campaign was suspended so this incompatibility could be investigated and remedied.

60 of the 89 nitrate salt drums that remain at LANL contain incompatible materials (nitrates with organics) and require special handling and storage considerations (DOE 2016a). These considerations were evaluated in a May 2016 SA (**DOE 2016b**). Tests previously conducted at LANL indicate that controlling pressure and maintaining cooler temperatures effectively mitigates internal reactions generated from the incompatibility in the RNS drums. Adding pressure relief devices with supplemental filtration on the RNS drums and cooling the storage environment have minimized the risk of exothermic reaction until these drums can be treated (LANL 2016a). The remaining 29 UNS drums do not need pressure relief devices but will required special handling and storage considerations as stated above.

In June 2016, DOE and LANS submitted a draft Hazardous Waste Facility Permit[5] modification request to the New Mexico Environment Department (NMED) to treat nitrate salt waste containers (DOE 2016a). NMED approved this request in July 2016. This permit modification allows for the treatment of the nitrate salt-bearing waste that is necessary to remove the RCRA hazardous waste characteristics of ignitability and corrosivity. Nitrate salt waste would be treated at the Waste Characterization, Reduction, and Repackaging Facility (WCRRF) at TA-50. The permit modification also states that a refrigeration unit (less than 12 feet by 12 feet) at WCRRF would be used to store RNS-bearing waste containers, as needed, before treatment to lower the chemical reactivity and minimize the risk of an exothermic reaction (DOE 2016a).

After treatment, there would be no specific considerations for storage of these waste containers and they will be placed into temporary storage at WCRRF and then stored at TA-54 Area G prior to shipment to WIPP (DOE 2016a).

Purpose and Need for Action

DOE's purpose and need for the proposed action is to treat, repackage, transport onsite, and store 89 nitrate salt waste drums in preparation for transport and ultimate disposition at WIPP.

Description of Proposed Action

DOE would transport the TRU nitrate salt waste from TA-54 Area G to WCRRF for treatment. Once treated, these drums would be returned to TA-54 Area G for storage prior to shipping to WIPP.

Treatment at WCRRF would be conducted in a glovebox equipped with fire suppression (shown in red in Figure 2) to sort, segregate, resize, and treat the TRU nitrate salt waste.

[5] DOE and LANS are joint permit holders for the Hazardous Waste Facility Permit issued by NMED.

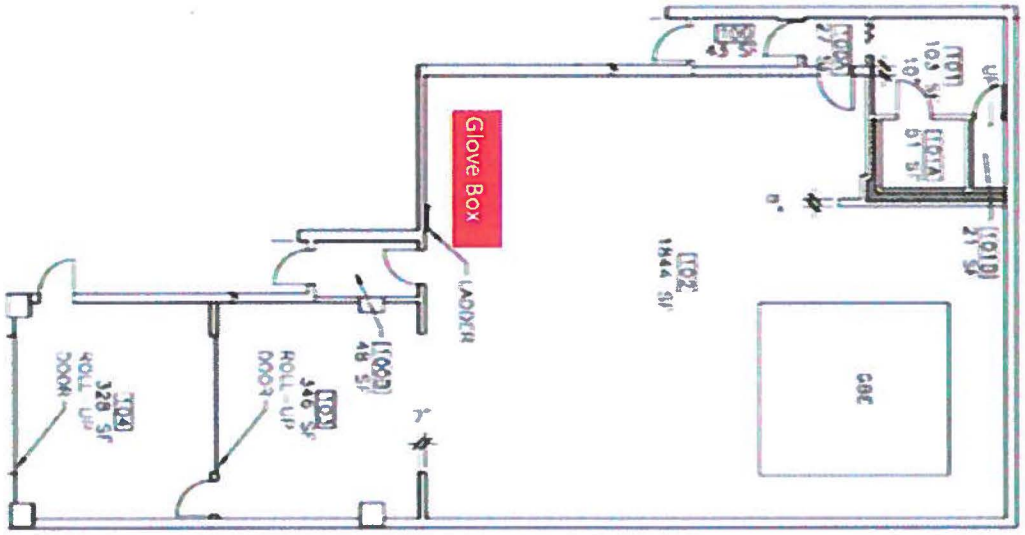

Figure 2: WCRRF floor plan (LANL 2015b)

The 11-feet-long, 3-feet-wide, 30-inch-high glovebox has two 55-gallon daughter[6] drum bag-out ports, a 14-inch-diameter bag-out port, and a single 55-gallon drum waste bag-on port (Figure 3). A liquid catchment basin is located below the parent bag-on port to collect liquid from the parent drum. The glovebox has eight work stations, three on the front side, four on the back, and one at the end. A waste drum would be attached on the front side of the glovebox and accessed from the back of the glovebox. Ventilation for the glovebox is pulled in from the room and exhausted through glovebox high-efficiency particulate air (HEPA) filters and then through facility HEPA filters.

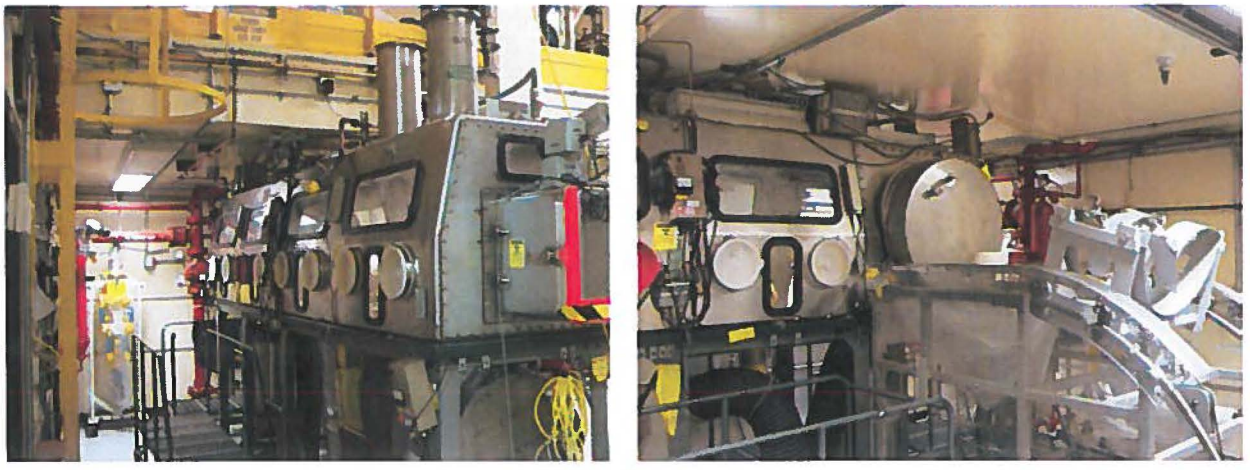

Figure 3: WCRRF glovebox (LANL 2015b)

[6] A colloquial term used, in this instance, to describe the evolution of waste that is transferred from one drum to another. The original drum is the parent drum and, through repackaging, the resulting drum(s) are daughter(s).

The solid nitrate salt-bearing waste would be treated by adding premeasured quantities of waste, water, and zeolite[7] to a mixing bowl. The waste and water mixture will then be blended with zeolite until the liquid is fully absorbed. Mixers and a blender inside the glovebox would be used to ensure the waste being treated is well blended: first with water to reduce viscosity and dissolve the nitrate salts, and then with zeolite to absorb the nitrate solution and provide an inorganic matrix.

Most debris within the waste containers would not require additional treatment and would be placed directly into a daughter container. Nitrate salt or salt-organic absorbent mixture on the debris waste would be wiped off using the glovebox gloves and/or compatible wipes. Debris may be stored temporarily in a container attached to a glovebox and resized as necessary to be packaged in a waste container. Resizing of debris may include tearing or crumpling the debris using shears or other cutting tools and using non-sparking tools or processes. Organic material (such as Kimwipes™) would require additional treatment and would be mixed with water using a high-speed blender and then mixed with zeolite (LANL 2016b).

The liquid contents of the nitrate salt-bearing waste containers will be decanted from the parent waste container, captured in a container, added to the mixer, and then absorbed using zeolite. If liquid enters the catchment basin within the glovebox, it will be absorbed in the catchment basin and then moved to the mixer and zeolite will be added and blended until the mixture is free of liquids. (DOE 2016a). The treated zeolite mixture will be placed into a daughter container. The nitrate salt-bearing waste streams require this treatment process for liquids within the parent waste container.

EVALUATION OF IMPACTS

This SA relies upon the description of the affected environment and impacts analysis in the 2008 SWEIS. The sliding-scale approach used in this SA eliminates or minimizes the discussion of resources not affected and focuses the analysis upon resources where changes are anticipated. DOE determined that there were no substantial changes in the proposed action relevant to the environmental concerns listed below or significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts:

- Land Use
- Visual Resources
- Geology and Soils
- Water Resources
- Air Quality
- Noise
- Ecological Resources
- Cultural Resources
- Socioeconomics
- Infrastructure
- Environmental Justice
- Emergency Preparedness and Security

[7] Zeolite is an inorganic absorbent that has a porous structure shown to be effective in absorbing liquid and eliminating the characteristic of ignitability. Zeolite has a durable structure.

Resources that require additional analysis are:

- **human health to the public and involved worker (from routine operations);**
- **waste management (capacity for operations to manage nitrate salt waste drums);**
- **transportation (onsite); and**
- **facility accidents (radiological releases to involved workers, the public, and the environment from off-normal events).**

Analysis of these resources incorporates current and relevant information available since the publication of the 2008 SWEIS.

Human Health–Public

Airborne radionuclide emissions are regulated under Subpart H of 40 CFR 61, which sets a dose limit of 10 millirem[8] per year to any member of the public. The 2008 SWEIS calculated the dose for the offsite maximally exposed individual (MEI) to be 7.8 millirem (DOE 2008). LANL calculated the impact of the proposed action of processing the nitrate salt waste drums. The estimated impact to the MEI was calculated to be 0.0013 millirem (LANL 2016c). A full year of processing the RNS drums in 2013 resulted in a monitored dose to the MEI of 1.52×10^{-8} millirem (LANL 2014a). The emissions and consequences associated with treatment and repackaging of RNS and UNS waste drums are expected to be similar to 2013 operations at WCRRF and are bounded by the 2008 SWEIS analysis. Therefore, there are no substantial changes to public health exposure associated with the proposed action relevant to environmental concerns or significant new circumstances or information relevant to environmental concerns.

Human Health–Involved Worker

Workers supporting the proposed action would be drawn from the existing LANL work force. Worker doses are managed in accordance with as low as reasonably achievable (ALARA) principles. ALARA is achieved through the use and implementation of shielding, safe work practices, procedures, and personal protective equipment. Worker doses are required to be kept below 5,000 millirem per year, as mandated in 10 CFR Part 835. DOE established an agency-wide administrative control limit of 2,000 millirem per year in its *Radiological Control Manual* (DOE 1994). This manual also requires DOE contractors such as LANS to establish a lower administrative control limit, on the order of 500 millirem to 1,500 millirem per year (DOE 1994). LANS has also established action levels, for example 1,000 millirem for whole-body dose[9] (LANL 2014b).

The average individual measurable dose for an involved worker under the 2008 SWEIS Expanded Operations Alternative[10] was projected to be 174 millirem and the collective

[8] Millirem is one-thousandth of a rem (0.001 rem). Rem is an acronym for Roentgen equivalent man, a unit of dose equivalent. The dose equivalent in rem equals the absorbed dose in tissue multiplied by the appropriate quality factor and possibly other modifying factors.

[9] Whole body dose – defined for the purposes of external exposure include head, trunk (including male gonads), arms above and including the elbow, or legs above and including the knee (10 CFR 835).

[10] DOE selected the Expanded Operations Alternative to manage the legacy waste at LANL (FR 2008).

worker dose 543 person-rem[11] (DOE 2008). In calendar year 2014, LANS reported an average LANL individual worker dose of 68 millirem (LANL 2016d). The anticipated dose to workers from implementation of the proposed action is expected to be similar to WCRRF operations where TRU waste containers were repacked to meet the WIPP waste acceptance criteria. The dose to workers from implementation of the proposed action is not expected to be different from that analyzed in the 2008 SWEIS. Therefore, there are no substantial changes to worker health exposure associated with the proposed action relevant to environmental concerns or significant new circumstances or information relevant to environmental concerns.

Waste Management

The 2008 SWEIS analyzed retrieval and transport of legacy TRU waste from TA-54 Area G to WCRRF, repackaging at WCRRF, and transport back to TA-54 Area G for assay and storage before transport to WIPP (DOE 2008). Treatment of TRU waste stored at TA-54 Area G containing RCRA hazardous constituents was also analyzed in the 2008 SWEIS, Appendix I (DOE 2008). Since the 2014 WIPP event, DOE and LANS have conducted numerous studies (DOE 2015; LANL 2016b; LANL 2015c) to determine how the event occurred; the knowledge from those studies has been incorporated into updated storage, treatment, and packaging procedures.

For operations at TA-54 Area G, adequate storage space exists to safely store the 60 RNS drums and 29 UNS drums[12] of nitrate salts once treated at WCRRF. After treatment, these drums can be stored in the Area G storage domes (Figure 4; LANL 2012) and would be managed in the same manner as other TRU waste. Treated drums would be similar to those analyzed in the 2008 SWEIS. There are no substantial changes to waste management activities associated with the proposed action relevant to environmental concerns or significant new circumstances or information relevant to environmental concerns.

Transportation

Under the proposed action, the waste drums would be transported from TA-54, where they are currently stored, to WCRRF at TA-50 for treatment and repackaging. One to four drums would be transported in a single shipment to TA-50 where the drums would be placed in short-term storage in a refrigeration unit to await treatment and repackaging. Following treatment and repackaging, the drums would be returned to TA-54 for storage to await shipment to WIPP. TA-54 and TA-50 are approximately five miles apart and both are located along Pajarito Road at LANL. Onsite waste transfers occur on restricted roads that are not accessible to the general public.

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[11] Person-rem is a unit of collective radiation dose applied to populations or groups of individuals; that is, a unit for expressing the dose when summed across all persons in a specified population or group.

[12] Based on previous experience, the total number of drums will increase during repackaging RNS and UNS by a factor of 2.5 to 3.0 due to waste packaging factors required to meet the WIPP Waste Acceptance Criteria. Thus, 89 parent drums being repackaging could result in nearly 300 daughter drums following repackaging.

The 2008 SWEIS analyzed an estimated 10,750 annual onsite shipments for all LANL operations with the transport crew receiving a one millirem dose per shipment (DOE 2008). There would be about 200 onsite shipments under this proposed action.

Figure 4: TRU waste storage Dome at TA-54 Area G[13]

The individual worker dose would be managed as discussed for worker health. There are no substantial changes to onsite transportation activities associated with the proposed action relevant to environmental concerns or significant new circumstances or information relevant to environmental concerns.

Facility Accidents

Representative and bounding accidents were analyzed in the 2008 SWEIS and the 1997 WIPP Supplemental Environmental Impact Statement (SEIS)-II (WIPP 1997). The 2008 SWEIS did not explicitly consider impacts of incompatible materials in waste operations; however, the 2008 SWEIS did consider impacts to involved workers and the public from a radiological release during TRU waste operations. In addition, the 1997 WIPP SEIS-II considered a scenario involving incompatible TRU waste at LANL. These analyses established bounding conditions for waste management and waste disposition operations at LANL. Several accident scenarios were considered in this process and fire (initiated by operational events or lightning), seismic, and wildfire were considered to represent operational or natural events. Consequences for facility accidents under the 2008 SWEIS No Action Alternative and Expanded Operations Alternative are the same for both WCRRF and TA-54. Table 1 summarizes the facility accident consequences analyzed in the 2008 SWEIS. Projected dose to the MEI, population, and noninvolved worker from these analyses are presented for lightning/fire, seismic, and wildfire accidents.

[13] RNS waste is currently stored at Dome 375 along with refrigeration and HEPA filtration equipment.

Table 1: 2008 SWEIS Doses from Facility Accidents (DOE 2008)

Accident	2008 SWEIS		
	Public		Noninvolved Worker
	MEI Dose (rem)	Population (person-rem[14])	Dose (rem)
Fire (operations or lightning)			
WCRRF	46	4,800	1,100
TA-54 Dome	420	4,200	2,000
TA-54 Onsite	190	5,700	760
Seismic			
WCRRF	43	5,400	1,100
TA-54 Onsite	460	7,400	2,200
Wildfire			
WCRRF	27	6,900	440
TA-54 Onsite	1,900	91,000	8,700

The 2011 WCRRF Basis for Interim Operation projected that lightning/operational fire resulted in the greatest impacts to the MEI and noninvolved worker. Under this accident scenario, the MEI would receive 28.3 rem and the noninvolved worker would receive 266.6 rem (LANL 2011). Thus, compared with the lightning/fire accident for TA-50 (WCCRF) in Table 1, the potential environmental impacts at WCRRF are bounded by the analyses in the 2008 SWEIS.

LANS personnel analyzed two accidents that could result in high consequences to the public if no engineered or administrative controls were applied. The two accidents analyzed were 1) a drum rupture due to an exothermic reaction from incompatible materials while stored at Dome 375 in TA-54 and 2) a wildfire in the vicinity of Dome 375 (LANL 2016a). The analysis concluded potential environmental impacts for both the drum rupture and wildfire at Dome 375 require specific engineered and administrative controls to remain bounded by the 2008 SWEIS. DOE prepared a Safety Evaluation Report (DOE 2016c) to review the LANS report and concluded the proposed controls were adequate to protect the public, worker, and environment. The compensatory controls that would be implemented as part of the proposed action are (DOE 2016c):

Engineered Controls:

- Dome 375 fire suppression system
- RNS waste container pressure relief device with supplementary HEPA filtration

[14] A unit of collective radiation dose applied to populations or groups of individuals; that is, a unit for expressing the dose when summed across all persons in a specified population or group. Collective radiation dose is the sum of the individual doses received in a given period of time by a specified population as a result of exposure to a specified source of radiation. It is expressed in units of person-rem.

- Defensible space (wildfire analysis only)
  - Established fire breaks near Area G, Dome 375
  - Fuels reduction – reducing length of vegetation
  - Tree thinning, removal of dead/down trees and invasive species
- Dome 375 HEPA-filtered ventilation system (drum rupture analysis only)
- Dome 375 temperature control (drum rupture analysis only)
- Headspace gas sampling prior to pressure relief device installation (drum rupture analysis only)
- Temperature control in storage

Administrative Controls:

- Waste container visual inspection (drum rupture analysis only)
- Continuous air monitor alarm response (drum rupture analysis only)
- Waste container spacing (drum rupture analysis only)
- Los Alamos Fire Department Pre-Incident Plan
- Facility emergency response actions
- Wildland Fire Management Plan implementation
- Conduct of Engineering Program – facility engineering processes
- Conduct of Maintenance Program

There are additional controls that will be implemented as defense-in-depth actions. For example, LANL has procured and staged fire blankets[15] to provide additional assurance that a wildfire would not affect the waste (LANL 2016a). By covering the RNS-bearing waste containers with fire blankets, the heating of a waste container could be minimized. Also, the steel Perma-Con® structure in Dome 375 will keep fire embers away from the waste containers (LANL 2016a). Fire modeling demonstrates that cutting vegetation is an effective means of limiting a potential wildfire impact on the waste storage area at TA-54-0375 (LANL 2016e). Vegetation is cut on a weekly basis near Dome 375 during the months of May through October (LANL 2016a). With fire modeling and planned controls, it was concluded that the heat flux from a wildfire would not initiate a thermal runaway. The maximum drum content temperature was 83 degrees Fahrenheit (LANL 2016f). Incorporation of comments from a peer review resulted in a revision that raised the maximum drum content temperature to 90 degrees Fahrenheit (DOE 2016c). This modeled temperature is less than the LANS acceptance criteria of 104 degrees Fahrenheit (LANL 2016f).

[15] Fire blankets are a low emissivity (high reflectivity) protective blanket. These blankets would minimize the effects of the radiative heat fluxes to the waste.

Results from headspace gas sampling show reduced concentrations of off-gases (carbon dioxide, carbon monoxide, and nitrous oxide) from ongoing reactions (Funk 2016). The passage of time depletes the low-temperature reactivity and creates a material that requires significantly higher temperatures to induce thermal runaway and a drum rupture (LANL 2016a). The continued recommendation is to store RNS waste in cool temperatures to limit the probability of a thermal runaway (LANL 2016g).

The DOE reviewed the safety documentation and concluded that there is an adequate understanding of the proposed RNS activities, sufficient analysis of hazards associated with planned activities (including self-heating, wildfire, and various operational fire scenarios), and sufficient controls required to protect the public, workers, and the environment.

The resulting SER (DOE 2016d), prepared and executed by DOE, concluded that the supplemental pressure relief device and other requisite controls identified within the report would ensure that the MEI doses from any potential runaway event would not exceed the 25 rem Evaluation Guideline cited within DOE Standard 3009-94 (DOE 2006) and, thus, would remain below the MEI doses evaluated within the 2008 SWEIS (Table 1). The SER provides approval of the referenced LANL safety basis documents that support cooling, loading, transportation, and processing of containers with RNS remaining at LANL.

In addition, the 1997 WIPP SEIS-II provided an analysis of a storage accident at LANL (identified as S-2) for release of the contents of a single drum due to a fire from incompatible materials (WIPP 1997). The consequences of this accident were based on earlier DOE accidents at Hanford Site and Idaho National Laboratory involving TRU waste drums containing nitric acid and organic material. In the S-2 accident scenario, the LANL MEI would receive 1.2×10^{-3} rem, the population dose was estimated to be 0.91 rem, and the noninvolved worker was calculated to receive a dose of 3.8×10^{-3} rem. The consequences of a drum release due to incompatible materials were calculated to be less than lightning/fire, seismic, and wildfire accident scenarios calculated for the 2008 SWEIS. The WIPP SEIS-II also evaluated a single drum fire during treatment at LANL (identified as T-2). The LANL MEI was estimated to receive 3×10^{-4} rem, the population dose was estimated at 0.2 rem, and the noninvolved worker was calculated to receive 7×10^{-4} rem. Comparison of the WIPP SEIS-II safety analysis results with the 2008 SWEIS determined that the bounding conditions established by the 2008 SWEIS are unchanged and the proposed action would have no additional impacts beyond those previously analyzed. Consequently, there are no substantial changes in the proposed action that are relevant to environmental concerns or significant new circumstances or information relevant to environmental concerns.

CONCLUSION

In this SA, DOE considered potential environmental impacts associated with the proposed action. The following resources were given further consideration: human health—radiological impacts to the worker; human health—radiological impacts to the public; waste management, transportation, and facility accidents. DOE has determined that there would be no substantial changes in the proposed action relevant to

environmental concerns or significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts. Although the 2008 SWEIS does not explicitly analyze the treatment activities proposed for TRU waste drums containing incompatible wastes, the 2008 SWEIS did analyze the potential environmental impacts of similar actions under conditions that could result in greater impacts. As a result, the potential environmental impacts associated with the proposed action are bounded by the analyses in the 2008 SWEIS.

DETERMINATION

Based upon the analysis in this SA, DOE determined the proposed action would make no substantial change to the proposed action relevant to environmental concerns, and that there are no significant new circumstances or information relevant to environmental concerns and bearing upon operational activities or their impacts.

Accordingly, DOE determines that the environmental impacts of the proposed actions have been sufficiently considered and are bounded by existing NEPA analysis and there is no need to prepare a supplemental EIS pursuant to 40 CFR 1502.9. Based upon the analysis in this SA and review of the references, per 10 CFR 1021.314 (c) (iii), DOE determines that no further NEPA documentation is required to implement the proposed action.

APPROVAL

Approval:

Douglas E. Hintze

05 Dec 2016

Douglas E. Hintze, Manager
Environmental Management Los Alamos Field Office
U.S. Department of Energy

Date

Concurrence:

12-05-2016

Ben Underwood, Attorney-Advisor
Environmental Management Los Alamos Field Office
U.S. Department of Energy

Date

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