



ENVIRONMENTAL PROTECTION AGENCY

6560-50-P

[EPA-HQ-OAR-2017-0231; FRL-9964-70-OAR]

Proposed Approval of the Central Characterization Project's Transuranic Waste Characterization Program at Los Alamos National Laboratory and Elimination of Distinction Between Retrievably-stored and Newly-generated Transuranic Waste Destined for Disposal at the Waste Isolation Pilot Plant

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of availability; request for public comments.

SUMMARY: The Environmental Protection Agency (EPA or the Agency) is announcing the availability of, and soliciting public comment on, two actions.

February 7-9, 2017, the Agency conducted a new baseline inspection of the Los Alamos waste characterization program, in accordance with the WIPP Compliance Criteria and Condition 3 of the EPA's May 13, 1998 initial WIPP certification. The inspection evaluated the technical adequacy of this program's characterization of contact-handled (CH) TRU debris and solid waste. The EPA is proposing to approve a new LANL baseline that includes the significant changes the U.S. Department of Energy's (DOE's) Central Characterization Program (CCP) is implementing at Los Alamos. The TRU waste characterization program changes, particularly to the Acceptable Knowledge process, referred to as "enhanced AK", address deficiencies identified by the DOE as among the root causes of the February 2014 radiation release at the WIPP. The EPA's baseline inspection report is available for review in the public dockets listed in the **ADDRESSES** section of this document. Until the EPA finalizes its baseline approval decision, the DOE Carlsbad Field Office (CBFO) may not recertify LANL-CCP's TRU waste characterization program and LANL-CCP may not ship any TRU waste to the WIPP for

disposal.

The EPA is also proposing to eliminate the distinction between retrievably-stored and newly-generated TRU waste characterized to meet the EPA's regulatory requirements for disposal at the WIPP. Since the July 2004 revisions to the WIPP Compliance Criteria (specifically the site inspection and approval process), the EPA has identified characterization of newly-generated waste as a Tier 1 change when issuing the site-specific baseline approvals. Elimination of any Tier 1 change requirement is subject to public comment.

DATES: Comments must be received on or before [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: Submit your comments, identified by Docket ID No. **EPA-HQ-OAR-2017-0231**, to the *Federal eRulemaking Portal*: <https://www.regulations.gov>. Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or withdrawn. The EPA may publish any comment received to its public docket. Do not electronically submit any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (i.e., on the web, cloud or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit:

<https://www2.epa.gov/dockets/commenting-epa-dockets>.

FOR FURTHER INFORMATION, CONTACT: Rajani Joglekar (202-343-9462) or Edward

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SUPPLEMENTARY INFORMATION:

I. Background

The DOE operates the WIPP facility near Carlsbad in southeastern New Mexico as a deep geologic repository for disposal of TRU radioactive waste. TRU waste consists of waste generated as part of the DOE's weapons programs with radioactive materials having atomic numbers greater than 92 (with half-lives greater than twenty years), in concentrations greater than 100 nanocuries of alpha-emitting TRU isotopes per gram of waste. Much of the existing TRU waste, which may be contaminated with hazardous chemicals, consists of items contaminated during the production of nuclear weapons, such as debris waste - rags, equipment, tools and solid waste - sludges and soil.

Section 8(d)(2) of the WIPP Land Withdrawal Act (LWA) of 1992 provided that the EPA would certify whether the WIPP facility will comply with the Agency's final disposal regulations, later codified at 40 CFR part 191, subparts B and C. On May 13, 1998, the EPA announced its final compliance certification to the Secretary of Energy (published May 18, 1998; 63 FR 27354), certifying that the WIPP will comply with the disposal regulations. The EPA's certification of the WIPP was subject to various conditions, including conditions concerning quality assurance and waste characterization and relating, among other things, to EPA inspections, evaluations and approvals of the site-specific TRU waste characterization programs to ensure compliance with various EPA regulatory requirements, including those at 40 CFR

194.22(a)(2)(i), 194.22(c)(4), 194.24(c)(3) and 194.24(c)(5).

The EPA's inspection and approval processes for waste generator sites, including quality assurance and waste characterization programs, are described at 40 CFR 194.8. Between November 2005 and April 2012, the EPA inspected waste characterization programs of previously approved sites per the above requirements. The WIPP compliance certification and the aforementioned regulations, as well as these inspection and approval processes, give the EPA discretion in establishing technical priorities; the ability to accommodate variation in the site's waste characterization capabilities; and flexibility in scheduling site waste characterization inspections.

In accordance with the conditions in the WIPP compliance certification and relevant regulatory provisions, including 40 CFR 194.8, the EPA conducts "baseline" inspections at waste generator sites, as well as subsequent occasional inspections to confirm continued compliance. As part of a baseline inspection, the EPA evaluates each waste characterization process component (equipment, procedures and personnel training/experience) for its adequacy and appropriateness in characterizing TRU waste destined for disposal at the WIPP. During the inspection, the site demonstrates its capabilities to characterize TRU waste(s) and its ability to comply with the regulatory limits and tracking requirements under §194.24. The baseline inspection can result in approval with limitations/conditions or may require follow-up inspection(s) before approval. The approval specifies what subsequent program changes or expansion should be reported to the EPA.

The EPA also assigns Tier 1 and Tier 2 designations to the reportable changes depending on their impact on the data quality. A Tier 1 designation requires that the site notify the EPA of proposed changes to the approved components of an individual waste characterization process

(such as radioassay equipment or personnel), and that the Agency approve the change before it can be implemented. A waste characterization element with a Tier 2 designation allows the site to implement minor changes to the approved components of individual waste characterization processes (such as visual examination procedures) but requires notification to the EPA. The Agency may choose to inspect the site to evaluate technical adequacy before approval. The EPA inspections conducted to evaluate Tier 1 or Tier 2 changes are under the authority of the EPA's WIPP compliance certification conditions and the EPA regulations, including 40 CFR 194.8 and 194.24(h). In addition to follow-up inspections, the EPA may opt to conduct continued compliance inspections at TRU waste sites with a baseline approval under the authority of §194.24(h).

In accordance with 40 CFR 194.8, the EPA issues a Federal Register action proposing a baseline compliance decision, docket the inspection report for public review, and seeks public comment on the proposed decision for a minimum period of 45 days. The report describes the waste characterization processes the EPA inspected at the site, as well as their compliance with 40 CFR 194.8 and 194.24 requirements.

Currently, the CCP implements TRU waste characterization at three DOE sites: the Idaho National Laboratory, LANL and the Oak Ridge National Laboratory.

May 23-25, 2006, the EPA performed a baseline inspection for characterizing contact-handled TRU waste at Los Alamos, and, on June 21, 2007, issued its final baseline inspection report and approval of Los Alamos waste characterization processes. However, in February 2014, a radiation release occurred at the WIPP from a compromised drum containing contact-handled TRU sludge waste generated at Los Alamos that CCP characterized and certified as meeting the requirements for disposal. This drum contained nitrate salts, processed (treated to

absorb free liquid using an organic material in mid-2013) and emplaced at the WIPP in late 2013. The DOE's Accident Investigation Board determined the cause of the radiation release was an exothermic reaction due to the use of incompatible, organic sorbent material instead of inorganic sorbents. The Investigation Board identified several programmatic and technical violations, including non-compliance with the New Mexico Environment Department (NMED) hazardous waste permit requirements. These findings required corrective actions by Los Alamos (the generator of WIPP-eligible TRU waste), the CCP (responsible for characterization and certification of WIPP-eligible waste containers), the DOE's Carlsbad Field Office (CBFO) and the DOE Headquarters Environmental Management office. The waste characterization-specific corrective actions required improvements in the following two technical areas:

- collection, evaluation, documentation and verification of acceptable knowledge specific to the chemical contents of WIPP-bound TRU waste (especially chemical incompatibility and reactivity);
- evaluation and confirmation that waste treatment procedures completed to render containerized TRU waste chemically-inert remain in compliance with NMED's Los Alamos-specific hazardous waste permit requirements and the WIPP Waste Acceptance Criteria.

Between summer 2014 and spring 2015, CBFO made changes to the WIPP Waste Acceptance Criteria (the DOE requirements for WIPP-bound TRU waste). In June 2015, the CBFO issued Revision 8.0 of the WIPP Waste Acceptance Criteria, modifying the Acceptable Knowledge process. This modified process is referred to as the Enhanced Acceptable Knowledge process. The EPA determined that the changes to the Waste Acceptance Criteria and the Enhanced Acceptable Knowledge process implemented at TRU generator sites are significantly

different from the processes the EPA evaluated during previous site-specific baseline inspections. As a result, the EPA concluded and informed the DOE that a new Los Alamos baseline inspection and approval would be a necessary step to evaluate the technical adequacy of the CCP-implemented Enhanced Acceptable Knowledge process at currently active TRU waste generator sites.

II. Proposed Baseline Compliance Decision

I.

The purpose of EPA's baseline inspection was to:

- 1) verify that contact-handled TRU waste being characterized remains in compliance with regulatory requirements, including the conditions of the EPA's WIPP compliance certification and 40 CFR 194.8 and 194.24; and
- 2) understand how the revised DOE WIPP Waste Acceptance Criteria are incorporated within CCP's TRU waste characterization processes.

The scope of the baseline inspection for determining technical adequacy of the waste characterization program elements (i.e., systems of controls) as implemented included:

- The Acceptable Knowledge process, focusing on the "Enhanced Acceptable Knowledge" process for contact-handled TRU debris and solid waste.
- The nondestructive assay process, specifically, the High-Efficiency Neutron Counter No. 3 at Technical Area No. 55.
- The visual examination process to identify waste material parameters and the physical form of contact-handled TRU waste as performed at Technical Area No. 55 and the Chemistry and Metallurgy Research facility.

- The WIPP Waste Data System controls that are in place to ensure that only fully characterized and certified TRU waste containers can be emplaced at the WIPP.

The EPA inspection team identified no concerns as a result of this inspection. The EPA concludes that LANL-CCP has implemented a waste characterization program at Los Alamos for contact-handled TRU waste that is compliant with WIPP waste acceptance criteria, and which adequately implements the requirement for an Enhanced Acceptable Knowledge determination for WIPP-destined TRU waste containers. As discussed in the draft Los Alamos Baseline Inspection Report (see EPA Air Docket No. EPA-HQ-OAR-2017-0231), the EPA determines that the waste characterization program complies with regulatory requirements, including the conditions of EPA's WIPP compliance certification and 40 CFR 194.8 and 194.24. As a result, the EPA is proposing to approve the LANL-CCP waste characterization program in the configuration observed during this inspection, consistent with the limitations described in the draft inspection report. In the event of changes to the waste characterization program arising or occurring after the date of the baseline inspection (February 7-9, 2017), the DOE must report those changes and, if applicable, receive EPA approval of such changes according to Table 1, in this preamble. If the EPA approves changes to the waste characterization program, the Agency will post the results of any evaluations relating to such changes through the EPA website/docket and the WIPP-NEWS e-mail listserv. As indicated in Table 1, in this preamble, LANL-CCP must report to EPA Tier 2 changes; such reports must be made four times a year, on a quarterly basis. In addition to evaluations of Tier 1 and Tier 2 changes, the EPA will conduct periodic inspections to verify that TRU waste characterization activities continue to comply with regulatory requirements, including the conditions of EPA's WIPP compliance certification and

40 CFR 194.8 and 194.24, and continue to implement the EPA-approved processes, procedures and equipment as required by the WIPP waste acceptance criteria.

The EPA's final approval decision regarding the contact-handled TRU waste characterization program at Los Alamos will be conveyed to the DOE separately by letter following the EPA's review of public comments. This information will be provided through the EPA website/docket and by emails to the WIPP-NEWS listserv.

Table 1. Tiering of Contact-Handled Transuranic Waste Characterization Processes Implemented by LANL-CCP (Based on February 7–9, 2017 Baseline Inspection)

Process Elements	LANL-CCP Waste Characterization Process – T1 Changes	LANL-CCP Waste Characterization Process – T2 Changes*
Acceptable Knowledge, including Load Management	Characterization of SCG S4000 waste. Any implementation of payload management	Submission of a list of active LANL-CCP CH AKEs and SPMs that performed work during the previous quarter Notification to the EPA upon completion of or substantive modification** to: <ul style="list-style-type: none"> • CCP-TP-005 forms (Attachments 6, 7, 8 and 9) and associated memoranda (i.e., WMP, AK-NDA, add-container memoranda) • AK accuracy reports (annually, at a minimum) • AK reassessment memoranda and Discrepancy Resolution Reports • WSPFs and any associated change notices • AKSRs • Site procedures requiring CBFO approval • Enhanced AK documents such as AKAs (including addition of new figures), CCEMs and BOK memoranda
Nondestructive Assay	New equipment or substantive physical modifications** to approved equipment Extension of or changes to approved calibration ranges for approved equipment	Submission of a list of LANL-CCP NDA operators, EAs and ITRs that performed work during the previous quarter Notification to the EPA upon substantive modification** to: <ul style="list-style-type: none"> • Software for approved equipment • Operating ranges upon CBFO approval • Site procedures requiring CBFO approval
Real-Time Radiography	Any implementation of the real-time radiography process.	None
Visual Examination	Implementation of any visual examination process for SCG S4000 waste.	Submission of a list of LANL-CCP VE operators, VE Experts and ITRs that performed work during the previous quarter Notification to the EPA upon substantive modification** to site procedures requiring CBFO approval, including OSRP visual examination technique procedure

* LANL-CCP will report all T2 changes to the EPA every three months.

** “Substantive modification” refers to a change with the potential to affect LANL-CCP’s CH waste characterization processes or documentation of them, excluding changes that are solely related to the environment, safety and health; nuclear safety; or the Resource Conservation and Recovery Act; or that are editorial in nature or are required to address administrative concerns. The EPA may request copies of new references that DOE adds during a document revision.

III. Availability of the Baseline Inspection Report for Public Comment

I.

The EPA has placed the draft report discussing the results of the inspection of the waste characterization program at Los Alamos in the public docket as described in the **ADDRESSES** section of this document. In accordance with 40 CFR 194.8, the EPA is providing the public 45 days to comment on these documents and the EPA's proposed decision to accept the waste characterization program. The Agency requests comments particularly concerning the Enhanced Acceptable Knowledge process, a major significant change to address the DOE Accident Investigation Board findings. The EPA will accept public comments on this action and supplemental information as described in **Section 1.B** in this preamble. At the closing of the public comment period, EPA will evaluate all relevant public comments and, as the EPA may deem appropriate and necessary, revise the inspection report and the EPA's proposed decision or take other appropriate action. If the Agency concludes that there are no unresolved issues after the public comment period, the Agency will issue an approval letter and the final inspection report. The letter of approval will authorize the DOE to use the approved TRU waste characterization processes to characterize waste at Los Alamos. In addition, as discussed later in this preamble, the Tier 1 designation for newly-generated contact-handled waste will not remain in the new Los Alamos contact-handled TRU waste tiering table.

Information on the approval decision will be filed in the official public docket opened for this action on <https://www.regulations.gov>, Docket ID No. EPA-HQ-OAR-2017-0231 (as listed in the **ADDRESSES** section of this document).

IV. Eliminating Distinction for Retrievably-stored and Newly-generated TRU Waste

The DOE (in its original WIPP Waste Acceptance Criteria) and the NMED (in its 1999

WIPP Hazardous Waste Permit, including the WIPP Waste Analysis Plan [WAP]) identified the TRU waste characterized for WIPP disposal based on its generation time period as follows:

- Retrievably-stored waste was defined as:
 - TRU mixed waste generated after 1970; and
 - That generated before the NMED's notification to permittees indicating that the WIPP WAP-based characterization requirements are appropriately implemented at a generator/storage site.
- Newly-generated waste was defined as waste produced by the generator/storage site after NMED notification that it has appropriately implemented the NMED-approved WIPP WAP-based waste characterization requirements.

The EPA's original WIPP Performance Assessment and subsequent Compliance Recertification Application decisions incorporated the earlier distinction. Also, in connection with its certification of the WIPP's compliance with 40 CFR part 191, subparts B and C, the EPA discussed the distinction between these two categories (63 FR 27354, 27392; May 18, 1998). Additionally, the EPA incorporated the NMED's Waste Analysis Plan as part of the "system of controls" for characterizing WIPP-destined TRU waste for compliance with 40 CFR 194.24(c). Similarly, site-specific waste characterization programs maintained that distinction to remain in compliance with the DOE WAC identification of different characterization pathways. In 2013, NMED approved a hazardous waste permit modification request where AK remained as the sole characterization method for hazardous waste determination, which includes assigning RCRA hazardous waste numbers for chemical contents of the waste containers. This eliminated the need to use separate waste characterization pathways for newly-generated and retrievably-stored waste and the WIPP Waste Acceptance Criteria was revised accordingly. Also, when

characterizing these two categories of wastes, the same EPA-approved TRU waste characterization processes and procedures are used to characterize physical and radiological contents of each waste container, and, thus, there is no technical basis to maintain this distinction.

Pursuant to the 2004 rulemaking changes to 40 CFR 194.8 for all waste, the EPA required characterization of newly-generated waste as a T1 change under AK at all sites where its characterization was not demonstrated as part of the baseline inspections. The 2013 NMED WIPP hazardous waste permit changes discussed above negated this distinction. Therefore, to be consistent with the revised NMED hazardous waste permit and the DOE's revised WIPP Waste Acceptance Criteria, the EPA intends to no longer distinguish, in its waste characterization program inspection, review and evaluation activities, between newly-generated and retrievably-stored waste. Accordingly, the EPA is proposing to remove from the site-specific tiering tables the Acceptable Knowledge T1 change requirement for newly-generated waste at all sites characterizing TRU waste. This proposed action would streamline the need for the DOE to submit duplicative TRU waste approval requests and for subsequent duplicative EPA evaluation and approvals. The EPA seeks comment on this proposed action. After evaluating public comments, if the EPA concludes that there are no unresolved issues, the Agency will issue a letter authorizing the DOE to eliminate the distinction between retrievably-stored and newly-generated TRU waste. The Agency will also revise site-specific tiering tables as necessary to remove the existing Tier 1 change requirement for newly-generated TRU waste when issuing the next site-specific waste characterization program approval, as well as file all official documentation in its public docket (as described in **Section IV in this preamble**).

Dated: June 26, 2017.

Jonathan Edwards, Director,
Office of Radiation and Indoor Air.

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