



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460



JUL 14 2004

OFFICE OF
AIR AND RADIATION

R. Paul Detwiler, Acting Manager
Carlsbad Field Office
U.S. Department of Energy
P. O. Box 3090
Carlsbad, NM 88221



Dear Dr. Detwiler:

On March 24, 2004, the Environmental Protection Agency (EPA) received a request to review and concur with the addition of a new appendix to the Contact-Handled Transuranic Waste Acceptance Criteria (CH-WAC) (DOE/WIPP-02-3122) from the Department of Energy (DOE). In the letter, DOE stated that the purpose of the revisions is to ensure that Appendix E is consistent with and incorporates all of the applicable requirements pertaining to payload management contained in EPA's August 8, 2003, approval letter to DOE.

Based on a preliminary review of the proposed Appendix E, we identified two areas in which further clarification was necessary to ensure consistency with EPA's policy pertaining to load management of transuranic (TRU) waste. Following a discussion of these issues between EPA and DOE staff, on June 2, CBFO provided a revised version of Appendix E (see enclosure). We have concluded that Appendix E as revised is acceptable; the approved version showing changes is enclosed. Note that for each TRU payload container used for load management, (a) all drums must have measurable TRU alpha activity, (b) all waste must belong to the same waste stream, and (c) the TRU alpha activity concentration averaged across the payload container must be equal to or greater than 100 nCi/g. EPA must be notified of subsequent changes to Appendix E. We request that you inform us of the effective date for revised Appendix E.

We understand that, to date, only the Savannah River Site and Argonne National Laboratory-East have been overpacking TRU waste for disposal at the Waste Isolation Pilot Plant. DOE also notified us that the TRU solid waste at the Advanced Mixed Waste Treatment Project (approved April 8, 2004) will be overpacked for the purpose of load management.

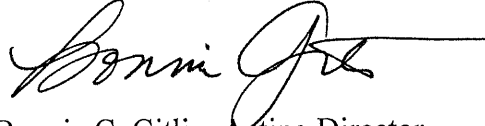
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Note that other TRU waste sites with approved waste characterization programs may not apply this procedure for load management without EPA notification.

If you need further assistance, please contact Rajani Joglekar at (202) 343-9462.

Sincerely,

A handwritten signature in black ink, appearing to read "Bonnie Gitlin", with a long horizontal flourish extending to the right.

Bonnie C. Gitlin, Acting Director
Radiation Protection Division

Enclosure

cc: Ava Holland, DOE/CBFO
Nick Stone, EPA Region VI
Steve Zappe, NMED
Lynne Smith, DOE-EM

APPENDIX E

**Payload Management of
TRU Alpha Activity Concentration**

E.1 Scope

The policies and methods for the management of TRU alpha activity concentration within each TRU waste payload container disposed of at WIPP are set out below. They are based on the definition of TRU waste in the *Waste Isolation Pilot Plant (WIPP) Land Withdrawal Act* (LWA), Public Law 102-579. The LWA defines TRU waste as:

“...waste containing more than 100 nanocuries of alpha emitting transuranic isotopes per gram of waste, with half lives greater than 20 years...” (Sec. 2(18))

This appendix pertains specifically to the payload management of TRU alpha activity concentration of waste containers selected for overpacking.

E.2 Policies

The National TRU Waste Program has established the following policies for managing TRU alpha activity concentration in compliance with the LWA: (References E1, E2, and E3)

- The LWA TRU alpha activity concentration limit for TRU waste (>100 nCi/g) applies to the TRU waste stream as a whole.
- Waste containers belonging to a TRU waste stream may vary in their TRU alpha activity concentration, some containing >100 nCi/g and some containing ≤ 100 nCi/g. Using process knowledge in combination with radioassay measurements to determine the presence of transuranic isotopes within the waste stream, generator sites define a TRU waste stream based on its potential to include waste containers with a TRU alpha activity concentration in excess of 100 nCi/g.
- Waste containers belonging to the same TRU waste stream may be overpacked into a payload container (e.g., SWB or TDOP) provided the TRU alpha activity concentration of the payload container exceeds 100 nCi/g.

E.3 Prerequisites for Implementation

- Each waste container selected for payload management must be part of the TRU waste stream identified in the AK summary report for that waste stream. (References E2 and E3)
- Sites shall submit to the CBFO, for its review and approval, applicable plans and procedures for making TRU waste determinations based on

payload management practices that involve the overpacking of waste containers. (Reference E2)

- CBFO will notify EPA of sites seeking such authorization prior to CBFO's approval of a site to manage TRU alpha activity concentration using payload management. The WIPP will not accept payload managed waste for disposal until EPA has received notice. (Reference E3)

E.4 Implementation and Practice

- Each TRU waste stream selected for payload management must include in its acceptable knowledge summary report an estimate of the total waste volume and the percentage of the waste volume that is above and below 100 nCi/g. (It should be noted that this information, although based on the best available AK information, is preliminary and subject to the performance of WIPP certified NDA measurements and cannot and will not be used as a measure of AK accuracy.) (Reference E3)
- Each waste container selected for payload management must contain at least one TRU isotope (e.g., Pu²³⁸, Pu²³⁹, Pu²⁴⁰, Pu²⁴², etc.) whose activity exceeds the LLD of the radioassay system used to characterize the waste. (References E2 and E3) The applicability of LLD will vary from system to system and may be on a container basis. Sections 3.3.1 and A.3 of this document provide the applicable requirements for determining and reporting LLDs.
- Each waste container selected for payload management may only be overpacked into a payload container (e.g., SWB or TDOP) with other waste containers from the same TRU waste stream. (Reference E4)
- The TRU alpha activity concentration of the payload container is determined according to section 3.3.3 of this document.

E.5 References

- E1. Public Law 102-579, 106 Stat.4777, 1992 (as amended by Public Law 104-201, 1996). Waste Isolation Pilot Plant Land Withdrawal Act.
- E2. Letter to Mr. Frank Marcinowski (Director, Office of Radiation and Indoor Air, U.S. Environmental Protection Agency) from Dr. Ines R. Triay (Manager, Carlsbad Field Office, U.S. Department of Energy), August 4, 2003.
- E3. Letter to Dr. Ines R. Triay (Manager, Carlsbad Field Office, U.S. Department of Energy) from Mr. Frank Marcinowski (Director, Office of Radiation and Indoor Air, U.S. Environment Protection Agency), August 8, 2003.

E4. *Waste Isolation Pilot Plant Hazardous Waste Facility Permit*, NM4890139088-TSDF, New Mexico Environment Department, Santa Fe, New Mexico.