



Department of Energy
Carlsbad Field Office
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Hazardous Waste Bureau

Mr. John E. Kieling, Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303

Subject: Overpacking of Multiple Waste Streams in a Single Payload Container

Dear Mr. Kieling:

The purpose of this correspondence is to provide the U.S. Environmental Protection Agency (EPA) and the New Mexico Environment Department (NMED) notice that the U.S. Department of Energy (DOE) plans to instruct generator sites that they may begin overpacking multiple waste streams into a single payload container. To date, the practice has been to overpack containers from one waste stream into a single payload container. The DOE believes this change could improve shipping efficiencies by as much as 5 percent, which is critical to our mission.

The DOE's decision has been analyzed through a review of Waste Isolation Pilot Plant regulatory documents, and a review prepared by the Regulatory Environmental Services (RES) (see Attachment A). These reviews were conducted to ensure a change to the WIPP overpacking practice would not violate any regulatory requirements. The reviews concluded that overpacking of multiple waste streams into a single payload container, with one exception, is not prohibited by regulation. The exception applies to payload management of TRU alpha activity concentration. The WIPP WAC, Appendix E, establishes the policy for management of TRU alpha activity concentration, and allows waste containers belonging to one waste stream to be overpacked into a single payload container to allow for averaging the total alpha activity concentration of a waste stream. This policy is still in effect and is separate from the decision addressed in the correspondence.

If you have any questions, please contact Tom Morgan of the Carlsbad Field Office, National TRU Program office, at (575) 234-7462.

Sincerely,


for J. R. Stroble, Director
Office of the National TRU Program

Enclosure



Mr. John Kieling

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AUG 1 2013

cc: w/enclosure

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RCRA Chronology Record	ED
WIPP Operating Record	ED
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*ED denotes electronic distribution

Regulatory Evaluation for Overpacking Multiple Containers from Different Waste Streams into One Overpack Container

Scope, Purpose and Background

The WIPP Hazardous Waste Facility Permit (Permit) and DOE/WIPP-02-3122 Revision 7.3, Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant (WIPP-WAC) each define a waste stream as follows:

Waste materials that have common physical form, that contain similar hazardous constituents, and that are generated from a single process or activity.

This definition of a waste stream is similar to the following definition given in Revision 3 of DOE/WIPP-02-3214, Remote-Handled TRU Waste Characterization Program Implementation Plan (WCPiP):

Waste material that is (1) generated from a single process/activity and (2) similar in material, physical form, and radiological properties.

The Permit pertains to both contact-handled (CH) and remote-handled (RH) TRU waste as regulated by the New Mexico Environment Department (NMED) and is oriented towards compliance with the Resource Conservation and Recovery Act (RCRA). The WCPiP pertains specifically to RH waste and is oriented towards compliance with Title 40 Code of Federal Regulations (CFR) part 191 (Subparts B and C) and Part 194. The WIPP-WAC incorporated the definition from the Permit by reference.

Permit Part 3, Section 3.3.1 Acceptable Storage Containers, specifies that only containers that comply with the requirements for U.S. Department of Transportation shipping container regulations (49 CFR §173 – Shippers – General Requirements for Shipment and Packaging, and 49 CFR §178 – Specifications for Packaging) shall be used for storage of TRU mixed waste at WIPP and prohibits the Permittees from storing TRU mixed waste in any container not specified in Permit Attachment A1, Section A1-1b as follows:

- Standard 55-Gallon (208-liter) Drum
- Standard Waste Box (SWB)
- Ten-drum Overpack (TDOP)
- 85-gallon (322-liter) Drum
- 100-gallon (379-liter) Drum
- RH TRU Canister
- Standard Large Box 2 (SLB2)
- Shielded Container

Permit Part 4, Section 4.3.1 Acceptable Disposal Containers, specifies the same container requirements for disposal of TRU mixed waste that Permit Part 3, Section 3.3.1 specifies for storage of TRU mixed waste. The same list of containers is also specified for transport, use and/or acceptance at the WIPP facility by the WIPP-WAC and applicable transportation requirements documents (see next section).

WIPP Project requirements (e.g., WIPP-WAC, Permit and Transportation requirements) allow overpacking of containers (such as standard 55-gallon drums) into larger containers, so long as the larger containers are approved for transport to and storage/disposal at the WIPP facility. For example, as stated in Permit Attachment A1, Section A1-1b(1), a ten-drum overpack (TDOP) container may contain up to ten standard 55-gal drums or one Standard Waste Box (SWB) and TDOPs may be used to overpack drums or SWBs containing CH TRU mixed waste.

Use of overpacking of smaller containers (such as 55-gallon drums) into larger containers has been a standard TRU waste management technique used throughout the complex for years. To date, only containers from the same waste stream are overpacked into a single, larger container. The purpose of this regulatory evaluation is to determine if regulatory requirements specifically prohibit the overpacking of containers from different waste streams into a single overpack container (hereafter referred to as overpacking of multiple waste streams).

Evaluation

Transportation Requirements

The transportation requirements are specified in the following documents:

- Contact-Handled (CH) Transuranic Waste Methods of Payload Control (TRAMPAC) which covers payload control requirements for the TRUPACT-II and the HalfPACT Type B shipping packages.
- TRUPACT-III TRAMPAC that covers the payload control requirements for the TRUPACT-III Type B shipping package
- Remote-Handled (RH) TRAMPAC that covers the payload control requirements for the RH-TRU 72-B Type B shipping package

There is one other RH-TRU shipping package authorized for use by WIPP and that is the CNS 10-160B. This shipping package has not yet been used to ship waste to WIPP and is only authorized to ship drums of waste (either 30-gallon or 55-gallon drums).

Overpacking of multiple waste streams in drums is not feasible since drums typically represent the smallest containerized unit for packaging and shipping waste by waste stream and if, for instance, a smaller container (such as a 30-gallon drum) were to be overpacked into a 55-gallon drum, there would only be enough volume to accommodate one overpack container in an overpack drum. Therefore, multiple waste streams could not be overpacked into a single drum.

The applicable transportation requirements documents do not specifically define a waste stream and refer to it sparingly primarily with respect to grouping of containers for purposes of representative characterization (e.g., sampling/analysis), if applicable. The transportation requirements for payload control do not categorize waste and waste containers by waste stream and instead categorize it by Waste Material Types, Transuranic Waste Content (TRUCON) codes and shipping categories. Therefore, transportation requirements do not prohibit overpacking of multiple waste streams. Mixing of Waste Material Types, TRUCON codes and shipping categories is allowed per the transportation documents.

WIPP-WAC

There is one instance in the WIPP-WAC where it directly specifies that containers may only be overpacked into a payload container with other waste containers from the same TRU waste stream. This specification is stated in Appendix E, Section E.4, Payload Management of TRU Alpha Activity Concentration (TAAC). This requirement only pertains to the specific case where payload management within a waste stream is being performed for the purpose of averaging TAAC within the waste stream. This particular requirement does not apply for the use of overpacking for other purposes.

Appendix C of the WIPP-WAC defines a payload container as the outermost container (e.g., drum, shielded container, SLB2, SWB, TDOP, or canister) for TRU waste material that is placed in a reusable Type B shipping container (e.g., TRUPACT-II, TRUPACT-III, HalfPACT, RH-TRU 72-B, or 10-160B) for transport. As such, containers (such as drums) that are overpacked into a larger container (such as a TDOP) are not payload containers. Only the outer container is a payload container.

Given this, the WIPP-WAC does state (in Sections 3.1 and 4.1) that: "Before shipping TRU waste payload containers from a WIPP-accepted waste stream, the site shall transmit the required waste characterization, certification, and shipping data via WDS to the WWIS database...The Waste Data System User's Manual provides the information needed by TRU waste sites to perform tasks associated with transmittal of the payload container's characterization, certification, and shipment information to WIPP." WDS refers to the Waste Data System and WWIS refers to the WIPP Waste Information System. These statements do not prevent the overpacking of multiple waste streams; instead they only require that all waste streams contained in a payload container be WIPP-accepted before the transmittal of data and subsequent shipment and disposal of the payload container. Although the WDS is currently set up to perform overpacking based on a shared waste stream profile number by all the inner containers assigned to an overpack, this requirement is specified in the WDS online help function and not in the WDS User's Manual. Regardless, some changes to the WDS/WWIS would be required to implement overpacking of multiple waste streams. However, this is not considered to be a regulatory requirement, but instead an internal National TRU Waste Program adopted policy or management practice.

Permit

Although the Permit does state that certain authorized storage and disposal containers may be used to overpack smaller containers of TRU mixed waste, there are no requirements specified pertaining to overpacking multiple waste streams into a single overpack container. Therefore, the Permit does not prohibit or preclude the overpacking of multiple waste streams so long as all other applicable Permit requirements are complied with. This includes Waste Confirmation described in Permit Attachment C7 where it states: "The Permittees shall randomly select at least 7 percent of each waste stream shipment for waste confirmation. This equates to one container from each fourteen containers in each waste stream in each designated shipment. If there are less than fourteen containers from a waste stream in a particular shipment, a minimum of one container from the waste stream shipped will be selected."

Therefore, Waste Confirmation may have to be performed on the inner overpacked containers in those instances where the shipment consisted of overpack containers of multiple waste streams to ensure that each waste stream was adequately sampled for confirmation. This may entail changes to Waste Confirmation procedures with respect to selection of a representative subpopulation of the waste for confirmation.

WCPIP

The WCPIP addresses characterization requirements for RH TRU waste. The WCPIP mentions that it is acceptable to load waste containers into larger containers (such as drums into canisters), but does not specifically prohibit loading of containers from more than one waste stream into a single, larger container.

Conclusion

There is only one case in which overpacking multiple waste streams into a single overpack container is specifically prohibited. This case is prohibited by the WIPP-WAC and is applicable when the overpacking is being performed as load management for the purpose of averaging the TAAC within a waste stream. Only in this case is it specifically required that each waste container be overpacked into a payload container with other waste containers from the same waste stream. Overpacking multiple waste streams for other purposes is not prohibited, prevented or precluded by any of the other regulatory requirements documents evaluated here. Overpacking of multiple waste streams would require some changes in implementation particularly with respect to the WDS and possibly the Waste Confirmation container selection procedure.