

January 14, 2022

ATTN: Document Control Desk
Director, Division of Fuel Management
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: REPORT PURSUANT TO 10 CFR 71.95

Dear Mr. McKirgan:

Nuclear Waste Partnership (NWP) LLC, on behalf of the U.S. Department of Energy Carlsbad Field Office (DOE/CBFO), submits this letter to report a condition pursuant to 10 CFR 71.95 regarding the use of the Type B packaging model number TRUPACT-II, serial number 154. This packaging operates under the U.S. Nuclear Regulatory Commission (NRC) Certificate of Compliance (CofC) No. 9218. During a shipment of transuranic (TRU) waste to the Waste Isolation Pilot Plant (WIPP) originating from the Los Alamos National Laboratory (LANL) in Los Alamos, New Mexico, the conditions in 11(a) of CofC No. 9218 were not followed in their entirety.

Following is a description of the event, reported in accordance with 10 CFR 71.95(c):

(1) A brief abstract describing the major occurrences during the event, including all component or system failures that contributed to the event and significant corrective action taken or planned to prevent recurrence:

TRU waste shipment LA210051 originated at LANL bound for delivery to the WIPP in New Mexico. The shipment consisted of one tractor-trailer hauling three TRUPACT-II packages, units 149, 154, and 205. Units 154 and 205 each contained one payload assembly, and unit 149 was an empty package. Both loaded payload assemblies were designated as 60-day general case shipments in accordance with CH-TRU Payload Appendix 3.4. CofC No. 9218, Revision 25, Condition 11(a) specifies, "Each package must be prepared for shipment and operated in accordance with the procedures described in Chapter 7.0, "Operating Procedures," of the application, as supplemented". Section 7.1.5.10 of the TRUPACT-II Safety Analysis Report (SAR) specifies "Install the inner containment vessel (ICV) outer vent port plug; tighten to 55 – 65 lb-in torque." After receipt at the WIPP during the unloading process of unit 154, it was discovered that unit 154 was received without the ICV outer vent port plug installed. This discovery resulted in the non-compliance of CofC No. 9218.

There were no major occurrences during the event, and no component or system failures that contributed to the event. All other conditions for this shipment complied with the applicable requirements for CofC No. 9218. However, due to the failure to fully implement the requirements in the TRUPACT-II SAR Section 7.1.5.10 for TRUPACT-II unit 154, the conditions in CofC No. 9218 were not followed in their entirety for this shipment.

The following interim corrective/preventive actions were implemented to preclude recurrence:

- A standing order was issued that requires an independent verification that the ICV outer vent port plug has been installed and torqued to 55 – 65 lb-in torque has been put in place. This standing order is applicable for all TRUPACT-II and HalfPACT Type B Packages loaded at all shipping sites prior to shipment.
- A standing order was issued that requires an independent verification that the vent port retaining ring/insert assembly has been installed and torqued to 295 +/- 22 lb-ft when operating the TRUPACT-III Type B Package prior to shipment.
- NWP performed an internal investigation relative to human performance improvement elements for this event at both LANL and WIPP.

(2) A clear, specific, narrative description of the event that occurred so that knowledgeable readers conversant with the requirements of part 71, but not familiar with the design of the packaging, can understand the complete event. The narrative description must include the following specific information as appropriate for the particular event:

The NRC issued CofC No. 9218 for the TRUPACT-II specifies in Condition 11(a) "Each package must be prepared for shipment and operated in accordance with the procedures described in Chapter 7.0, 'Operating Procedures,' of the application, as supplemented." Section 7.1.5.10 of the TRUPACT-II SAR specifies "Install the ICV outer vent port plug; tighten to 55 – 65 lb-in torque." Shipment LA210051, consisting of TRUPACT-II units 149, 154 and 205, departed LANL on 11/18/2021 at 1300 hours (MDT) and was received at the WIPP site on 11/18/2021 at 1703 hours (MDT). After receipt at the WIPP during the unloading process of unit 154, it was discovered that unit 154 was received without the ICV outer vent port plug installed. Documentation for TRUPACT-II unit 154 reflects that it successfully passed the required pre-shipment leakage rate tests.

All other conditions required for the operation and shipment of the package in accordance with the CofC were adhered to.

(2)(i) Status of components or systems that were inoperable at the start of the event and that contributed to the event:

This criterion is not applicable to the event because there were no components or systems that were inoperable at the start of the event.

(2)(ii) Dates and approximate times of occurrences:

Time of notification was 11/23/2021 at 1123 hours (MST), dates and approximate times of occurrence is unknown.

(2)(iii) The cause of each component or system failure or personnel error, if known;

No components or systems failed. All shipment documentation applicable to TRUPACT-II unit 154 reflects that all required steps for the operation of the package were adhered to during the loading and preparation of the package for shipment.

(2)(iv) The failure mode, mechanism, and effect of each failed component, if known:

This criterion is not applicable to the event because no components failed.

(2)(v) A list of systems or secondary functions that were also affected for failures of components with multiple functions:

This criterion is not applicable to the event because no components failed.

(2)(vi) The method of discovery of each component or system failure or procedural error:

During the unloading process of TRUPACT-II unit 154 NWP Waste Handling personnel discovered that the ICV outer vent port plug was not present. NWP Waste Handling personnel notified the NWP Packaging & Information Systems Manager via telephone and with subsequent electronic documentation.

(2)(vii) For each human performance-related root cause, a discussion of the cause(s) and circumstances:

This is unknown, as all shipment documentation applicable to TRUPACT-II unit 154 reflects that all required steps for the operation of the package were adhered to during the loading and preparation of the package for shipment.

(2)(viii) The manufacturer and model number (or other identification) of each component that failed during the event;

Manufacturer and model numbers associated with component failure are not applicable because no components failed.

(2)(ix) For events occurring during use of a packaging, the quantities and chemical and physical form(s) of the package contents.

Package Unit 154
Payload LA210051

Radionuclide	Activity (Ci)	Percentage of Total
PU-239	7.26E-01	59.17%
PU-240	1.69E-01	13.77%
AM-241	1.65E-01	13.66%
PU-238	1.51E-01	12.30%
PU-241	8.05E-1	1.10%
PU-242	1.33E-05	0.00%
NP-237	2.09E-06	0.00%
Total:	2.016E00	100.00%

Physical and Chemical Form:

Material Category	Material Type	Weight (lbs)
	Iron Base Metal Alloys	1431.9
	Plastics	33.07
	Rubber	66.14
	Steel Liner Materials	370.38
	Steel Container Materials	1699.72
Total:		3601.21

(3) An assessment of the safety consequences and implications of the event. This assessment must include the availability of other systems or components that could have performed the same function as the components and systems that failed during the event.

There were no systems or components that failed during the event. There were no safety consequences or implications of the event.

(4) A description of any corrective actions planned as a result of the event, including the means employed to repair any defects, and actions taken to reduce the probability of similar events occurring in the future.

In addition to the interim corrective actions identified in (1) above, the following preventative corrective actions are planned:

- NWP will revise the DOE/CBFO CH Packaging Operations Manual (DOE/WIPP 02-3184) to include an independent verification and signoff of the installation of the ICV outer vent port plug and associated O-ring along with verification of the required 55 – 65 lb-in of torque has been applied.

There were no defects requiring repair associated with this event.

(5) Reference to any previous similar events involving the same packaging that are known to the licensee or certificate holder.

There are no known previous similar events.

6) The name and telephone number of a person within the licensee's organization who is knowledgeable about the event and can provide additional information.

T.E. Sellmer, Manager, NWP, Packaging & Information Systems, (575) 302-7583


(7) The extent of exposure of individuals to radiation or to radioactive materials without identification of individuals by name.

There were no exposures to individuals as a result of this event.

If you have any questions or require additional information regarding this report, please contact me at (575) 302-7583.

Sincerely,

TODD SELLMER
(Affiliate)

 Digitally signed by TODD
SELLMER (Affiliate)
Date: 2022.01.13 14:31:23 -07'00'

T. E. Sellmer, Manager
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