



CP:11:01634
UFC:5822.00

Washington TRU Solutions LLC

October 4, 2011

ATTN: Document Control Desk
Director, Spent Fuel Project Office
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 Ms. Hardin:

Washington TRU Solutions LLC (WTS) 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 Transuranic Package Transporter Model HalfPACT number 507. This packaging operates under the U.S. Nuclear Regulatory Commission (NRC) Certificate of Compliance (CofC) Number 9279. During a WIPP bound transuranic (TRU) waste shipment originating from the Advanced Mixed Waste Treatment Project Site (AMWTP) located at Idaho National Laboratory (INL) on August 19, 2011, the conditions in section 11.(a) of CofC 9279 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 number IN110338 originated at the AMWTP Site, located at INL, on August 16, 2011 bound for delivery to the Waste Isolation Pilot Plant (WIPP) in New Mexico. The shipment consisted of one tractor-trailer hauling two TRUPACT-II packages, Units 167 and 136, and one HalfPACT package, Unit 507. Each TRUPACT-II and HalfPACT package contained one payload assembly. During Outer Containment Assembly (OCA) components inspection and cleaning operations at AMWTP for HalfPACT Unit 507, the o-ring seal for the Outer Containment Vessel (OCV) vent port plug was not installed in the o-ring groove (was installed on the wrong side of the flange instead of in the o-ring groove).

There were no major occurrences during the event and no component or system failures that contributed to the event, however, due to loading team personnel failure to follow the applicable operations manual, the conditions in CofC 9279 were not followed in their entirety and resulted in this shipment traveling from AMWTP to the WIPP in a non-compliant condition.

JMS501

Prior to shipment to the WIPP, all required pre-shipment leakage rate test (Helium) were performed on HalfPACT Unit 507 and met the applicable acceptance criteria for these tests.

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

- AMWTP mobile loading team operators and their supervision were notified of the incorrect o-ring installation.
- A review of applicable procedures and applied controls was initiated to ensure there were no deficiencies or discrepancies.

(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 CofC number 9279, Revision 6, issued for the HalfPACT states in Section 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 7.1.6, "Outer Containment Assembly (OCA) Lid Installation" states; in Section 7.1.6.3, "Visually inspect the O-ring seal on the OCV vent port plug. If necessary, remove the O-ring seal and clean the seal and sealing surfaces on the OCV vent port plug and in the OCV vent port to remove contamination."; and in section 7.1.6.4, "As an option, sparingly apply vacuum grease to the O-ring seals and install into the appropriate O-ring seal grooves in the OCV body, OCV seal test port and OCV vent port plug."

As described in section 1.2.1.1.1 of the applicable Safety Analysis Report and the applicable Packaging General Arrangement Drawings; a vent port coupling, a seal welded threaded fitting, and an OCV vent port plug with an O-ring seal defines the containment boundary at the OCV vent port penetration.

On August 15, 2011 HalfPACT Unit 507 was assembled and the pre-shipment leakage rate test (Helium) performed for the OCV vent port plug with the o-ring seal placed incorrectly. All required pre-shipment leakage rate testing met the applicable acceptance criteria for these tests, shipment number IN110338 was then released for shipment to WIPP.

All other conditions required for the operation and shipment of the package in accordance with the certificate of compliance 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;

August 19, 2011; 1300 hours (MST)

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

No components or systems failed. Personnel failed to properly install the OCV vent port plug o-ring seal in the o-ring seal groove.

(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;

The non-compliance was discovered by WIPP personnel during receipt activities for shipment IN110338 at the WIPP Site.

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

The cause of the non-compliance was a failure of the AMWTP personnel to correctly perform the required assembly activities to install the OCV vent port plug o-ring seal in the o-ring seal groove.

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

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.

Payload ID 94978:

Radionuclides:

Nuclide	Activity(ci)	Percent
AM-241	4.297	56.49
CS-137	0.0000008121	0.00
NP-237	0.00006423	0.00
PU-238	0.03537	.46
PU-239	1.116	14.68
PU-240	0.2482	3.26
PU-241	1.909	25.09
PU-242	0.00003294	0.00
SR-90	0.0000008933	0.00
U-233	0.000	0.00
U-234	0.0001627	0.00
U-235	0.000004991	0.00
U-238	0.0005836	0.01
Totals:	7.606	100.00

Physical and Chemical Form:

<u>Description</u>	<u>Weight (kg)</u>
Steel Container Materials	200.20
Solidified Inorganic Materials	438.40
Solidified Organic Materials	3.00
Plastics	42.90
Other Inorganic Materials	27.00
Soils	719.10
Cellulosics	17.60
Rubber	1.20
Total:	1449.40

(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 safety consequences relating to the event. There were no systems or components that failed during 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 completed corrective actions described at the beginning of this letter, the following are additional corrective actions being taken to prevent recurrence:

- Conduct lessons learned "Compliance with Procedures and Attention to Detail" with responsible operators.

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.

Although the following referenced events are similar, since they involve incorrect installation of containment o-ring seals, they involve a completely different area of the packaging and different o-ring configuration requirements.

- Reference Letter PK:07:00020 describing an event on 4/14/07
Shipment IN070209 including TRUPACT-II numbers 139 and 199. During unloading activities at WIPP it was discovered that the upper and lower main containment o-ring seals on both the Outer Containment Assemblies (OCA) and the Inner Containment Vessels (ICV) were installed in the incorrect o-ring grooves respectively.
- Reference Letter PK:08:00005 describing an event on 12/8/07
Shipment SR070118 including TRUPACT-II number 163. During unloading activities at WIPP it was discovered that the Outer Containment Assembly (OCA) had been configured with an Inner Containment Vessel (ICV) upper main o-ring seal incorrectly installed in the OCA upper main o-ring groove.

- Reference Letter CP:11:01408 describing an event on 4/13/11 Shipment IN110106 including TRUPACT-II number 205. During unloading activities at WIPP it was discovered that the upper and lower main o-ring seals were placed in the incorrect o-ring seal grooves on the Inner Containment Vessel (ICV).

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.*

M. L. Sensibaugh, Manager, WTS, CCP, CCP Project Management (575) 234-7122
D.K. Ploetz, Manager, WTS, CCP (575) 234-7125.

(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 the event.

If you have any questions or require additional information regarding this report, please contact me at (575) 234-7396.

Sincerely,



T. E. Sellmer, Manager
Packaging Integration

SVM:yhs

cc: M. R. Brown, CBFO
R. Unger, CBFO
J. C. Rhoades, CBFO