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Attn: Document Control Desk  
Director, Division of Spent Fuel Storage and  
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Your ref: Docket No. 71-9291  
Our ref: LTR-LCPT-11-14

July 12, 2011

SUBJECT: Event Report - Docket 71-9291, Certificate of Compliance USA/9291/B(U)-F96,  
Liqui-Rad Transport Unit Package

Dear Mrs. Vonna Ordaz:

A written report is hereby submitted in compliance with 10 CFR 71.95. The written report is for an instance in which a condition of approval in the Certificate of Compliance for Model Liqui-Rad Transport Unit (USA/9291/B(U)F-96) was not observed in making a shipment.

**(1) Abstract / Background**

The LR Package is designed to transport Type B quantities of fissile uranyl nitrate solutions. The package uses thermal and impact limiting to protect the containment vessel and prevent the contents from being released.

Double O-ring seals on the containment vessel's primary and secondary lids provide a leak tight seal which is leak testable. A closed-cell phenolic foam or polyurethane foam surrounds the top and bottom head area of the containment vessel and ceramic fiber blanket and board insulation are used in the sidewalls and outer lid for thermal insulation and impact absorption. The maximum volume of the contents is limited to 230 gallons which maintains a minimum ullage of 33 gallons.

The Certificate of Compliance 9291, revision 6, specifies condition 6.(a) as follows:

6. In addition to the requirements of Subpart G of 10 CFR Part 71:
  - (a) The package must be prepared for shipment and operated in accordance with the Operating Procedures in Chapter 7 of the application.

Chapter 7.0 Package Operations specifies the following steps for preparation of empty LR for transport:

**7.3 Preparation of Empty LR for Transport**

- a. After initial usage, all applicable steps set forth in Section 7.1.2 are required for transpiration of the empty packaging, with the exception that the leak test required by

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7.1.2 (d) can be waived if the heal contains less than an A2 quantity. A newly fabricated package that has never carried UN solution is exempted from the requirements of Section 7.

Section 7.1.2 (h) specifies:

h. Complete contamination survey in accordance with 10 CFR Part 71.87 (i) and 0).1.

This information is provided in compliance with 10 CFR 71.95 (c)(1).

## **(2) Narrative of the Event**

LR230 containers are used to transport uranyl nitrate (<5.0 wt % U-235) from Nuclear Fuel Services (NFS) to Westinghouse.

On May 13, 2011 at approximately 7:45 AM, while unloading a LR-230 container, approximately 2-3 quarts of UN liquid was spilled inside the inner and outer domed area. The operators did not notice that an o-ring in the UN connection hose used to empty the LR-230 was missing and when the system was pressurized the connection leaked. The liquid was cleaned up and the area was decontaminated. At approximately 1:15, HP surveyed the area after decontamination and did not detect elevated removable contamination. The rest of the unload operation proceeded without incident.

Nuclear Fuel Services (NFS) conducted regular surveys upon receipt of the incoming trailer #4906. Container #LR002 showed loose surface contamination in the wells and on top of the container. The contamination of highest concern is on top of the container where the results were 7788 dpm/100cm<sup>2</sup> Alpha and 13,299 dpm/100cm<sup>2</sup> Beta, above the applicable DOT limit.

This information is provided in compliance with 10 CFR 71.95 (c)(2).

## **(3) Assessment of Safety Consequences and Implications of the Event**

Radioactive shipment left CFFF with removable surface contamination above DOT limits but where not enough to pose a safety threat to the workers or the public.

This information is provided in compliance with 10 CFR 71.95 (c)(3).

## **(4) Corrective Actions**

Immediate actions taken:

- a. Workplace script written on 5/19/11 to discuss spills and contamination control issues around the LR-230 unload operation. Presented to URRS area workers.
- b. HP requiring more thorough surveys including using masselin cloths beginning on 5/16/11 for all outgoing empty container shipments prior to exiting the CAA.
- c. Benchmark survey practices with NFS on 6/7/11 by talking with NFS personnel. We will likely adopt some of their strategy for performing more intensive surveys when contamination surveys are elevated. Benchmarking of survey practices with NFS occurred on 6/7/11 via a teleconference with NFS personnel. It was discovered that their survey practices are similar but did include a more systematic process for investigating elevated contamination levels. As a result, we will adopt a similar strategy in our procedures for performing more intensive surveys when elevated contamination is found.

Additional Corrective Actions:

- a. HP revise current or prepare new procedure to describe in detail how to handle a contamination event during UN offloading operations to include details for surveys when a leak occurs and when and how to perform more intensive surveys. – Due in our corrective action process August 31, 2011.
- b. Revise URRS procedure for UN offloading operations to address how to handle a contamination event to include how to clean up a leak and to require HP/Management notification and HP oversight of cleanup operations. – completed June 30, 2011.

This information is provided in compliance with 10 CFR 71.95 (c)(4).

**(5) Extent of Condition**

There have been previous occurrences of contamination in the inner wells of the LR230 containers that were above the contractual limits but never a case of contamination above the limits on the outside of the container out of 260 shipments.

This information is provided in compliance with 10 CFR 71.95 (c)(5).

**(6) Contact**

Please contact Wes Stilwell at 803 647-3438 for any additional information about this event.

This information is provided in compliance with 10 CFR 71.95 (c)(6).

**(7) Extent of Exposure to Radiation**

It is highly unlikely that any individuals were exposed to radiation as a result of this incident due to low levels, small surface area in question, limited access on top of one Ir-230 container and exclusive use trailer traveling 4 hours between Columbia, SC and Erwin, Tenn.

This information is provided in compliance with 10 CFR 71.95 (c)(7).

Sincerely,

*\* Electronically approved*

William (Wes) E. Stilwell III  
WESTINGHOUSE ELECTRIC COMPANY, LLC  
Licensing, Compliance and Package Technology

cc

Mark Rosser, Manager, Environment, Health, and Safety  
Dave Precht, Plant Manager, Columbia Fuel Fabrication Facility

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