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Docket No. 71-9291  
Our ref: LTR-LCPT-17-06

April 21, 2017

SUBJECT: Event Report - Docket 71-9291, Certificate of Compliance USA/9291/B(U)F-96,  
LIQUI-Rad (LR) Transport Unit Package

Dear Mr. Layton:

A written report is hereby submitted pursuant to 10 CFR 71.95(b). The event occurred on February 21, 2017 and this report is submitted in accordance with the reporting requirements in 10 CFR 71.95(c).

The written report is for an instance in which a condition of the certificate of compliance for Liqui-Rad (LR) Transport Unit Package (USA/9291/B(U)F-96) was not followed during 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 systems to protect the containment vessel and prevent the contents from being released. The primary structural components of the LR packaging consist of a stainless steel containment vessel, a carbon steel outer vessel and a carbon steel framing system.

The Certificate of Compliance 9291, revision 9, specifies condition 5 (a) (3) as follows:

- 5 (a) (3) The package is constructed and assembled in accordance with Columbiana Hi Tech Drawing Nos. LR-SAR, sheets 1 through 4, Rev. 9.

Columbiana Hi Tech Drawing No. LR-SAR sheet 4 rev 9 note 3 includes a list of materials which includes washers for the containment vessel. It can also be seen on sheet 3 in the detail section labeled "Closure at Primary Lid Detail "J".

Westinghouse has identified two instances (serial numbers: LR011 and LR026) where a required washer on the containment vessel closure lid was missing. These instances occurred due to human error. The operator failed to install or verify installation of the washer. As a result, procedures have been revised to state the installation and inspection of these washers.

This information is provided pursuant to 10 CFR 71.95 (c)(1).

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

Annual maintenance was performed on all LR-230 packages on February 14-15, 2017 by Columbia Fuel Fabrication Facility (CFFF) personnel. LR Package serial number LR011 was inspected and tested on February 15, and returned empty to Nuclear Fuel Services (NFS) on February 17. On February 21, NFS discovered that one of the primary studs on package serial number LR011 was missing a washer. The nut was placed on one stud without a washer at CFFF prior to transport to NFS. The package successfully passed the leak test prior to shipment even though the washer was missing.

All LR-230 packages owned by Westinghouse were inspected and documented in CAPAL 100455877. One additional package (serial number LR026) was identified with a missing washer on one stud and one stud with two washers installed.

In both instances, human error was the cause of the missing washer. The operator failed to install or verify installation of the washer.

This information is provided pursuant to 10 CFR 71.95 (c)(2).

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

The shipment was received at NFS without incident. There was no loss of containment. The nut was torqued to the appropriate level and successfully passed the leak test prior to shipment. Therefore, there was no safety consequence.

This information is provided pursuant to 10 CFR 71.95 (c)(3).

## **(4) Corrective Actions**

This incident has been entered into the Westinghouse corrective action program (CAPAL #100455877), and a causal analysis was conducted to identify corrective actions which are warranted. The following actions have been taken:

- The remaining LR-230s owned by Westinghouse were inspected for missing washers. The inspections started from first identification of the issue and were completed on March 10, 2017
- The procedure for offloading Uranyl Nitrate from the LR-230 (COP-836047) was revised to add a step to identify damaged, deteriorated, or missing washers during the initial inspection prior to offloading. Also, a provision was added to verify the washers are in place before the lids are re-installed.
- The annual maintenance and inspection of LR-230 shipping packages procedure (COP-836052) was revised to add a provision to verify washers are in place on each lid before it is re-installed.

This information is provided pursuant to 10 CFR 71.95 (c)(4).

**(5) Extent of Condition**

A search of previous notifications of similar events involving the LR-230 package was conducted and no such reports have been made. In addition, an extent of condition inspection was performed on all LR-230 packages owned by Westinghouse per CAPAL 100455877. One additional package (LR026) was identified with a single missing washer.

This information is provided pursuant to 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 pursuant to 10 CFR 71.95 (c)(6).

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

There was no exposure to radiation due to the missing washer on the primary lid.

This information is provided pursuant to 10 CFR 71.95 (c)(7).

Sincerely,

*\* Electronically approved*

Wes Stilwell  
WESTINGHOUSE ELECTRIC COMPANY, LLC  
Nuclear Fuel Transport Director

cc  
Nancy Parr, Environment, Health, and Safety  
Mike Annacone, Vice President, Columbia Fuel Operations  
Doug Weaver, Vice President, Regulatory Affairs  
Don Olson, Columbian Hi Tech