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Your ref: Docket No. 71-9297
Our ref: LTR-LCPT-21-01

February 23, 2021

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

Dear Director:

A written report is hereby submitted pursuant to 10 CFR 71.95(a)(3). The event was identified on December 15, 2020 and this report is submitted in accordance with the reporting requirements in 10 CFR 71.95(c).

The written report is for an identification in which a Westinghouse working procedure was found to define torque values outside the range approval in the Certificate of Compliance (CoC) for Liqui-Rad (LR) Transport Unit Package (USA/9291/B(U)F-96) Revision 11.

(1) Abstract / Background

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

The Liqui-Rad package is used to transport low enriched Uranyl Nitrate solutions for repurposing.

The CoC 71-9291 Rev. 11, condition 6.(a) requires “the package must be prepared for shipment and operated in accordance with the Operating Procedures in Chapter 7”, which specifies torque values in Safety Analysis Report (SAR) Rev. 9 Section 7.1.2(f) as follows:

All outer lid stud nuts shall be tightened to 30 [+10 -0] ft-lb, alternating stud nuts on opposing sides of the lid.

The torque value of Section 7.1.2(f) was changed in SAR Rev. 9 and approved by issuance of CoC Rev. 11. The outer lid torque value change was incorrectly transcribed due to human error in Westinghouse operations by revision of handling procedure for Uranyl Nitrate offloading from LR-230 Containers in July 2019. Upon discovery on December 15, 2020 further shipments were halted until the handling procedure was corrected on December 18, 2020.

(2) Narrative of the Event

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

On December 15, 2020, Westinghouse Transport Operations in Columbia, South Carolina determined that there was a deviation between current revision of the Westinghouse handling procedure for Uranyl Nitrate offloading from LR-230 Containers, and that of Liqui-Rad Transport SAR Rev. 9. Specifically, the outer lid torque value tolerance in the handling procedure did not align with SAR Rev. 9 Section 7.1.2(f).

The SAR Rev. 9 Section 7.1.2(f) states in part that, all outer lid stud nuts shall be tightened to 30 [+10 / -0] ft-lb. This defines the license upper limit of 40 ft-lb, and a lower limit of 30 ft-lb. The outer lid torque limit change among others were incorporated in SAR Rev. 9 and approved by issuance of CoC Rev. 11 on February 13, 2019. The previous outer lid torque limits of SAR Rev. 8 and CoC Rev. 10 remained valid until July 31, 2019.

Handling procedure, current at the time of determination, instructs user to torque the outer lid nuts to 30 [+10 / -10] ft-lb. This tolerance range allows for a maximum torque value of 40 ft-lb, and a lower value of 20 ft-lb. The lower tolerance bound potentially allows for Liqui-Rad packages to be shipped outside of the operating license requirements. While, handling procedure requirements set the torque value at 30 ft-lb, the torque wrench tolerance had a potential limit below the 30 ft-lb SAR Rev. 9 requirement. The outer lid torque limit change among others was initially incorporated in Westinghouse handling procedure issued on July 25, 2019.

While no shipments were known to be out of compliance with the Section 7.1.2 of the SAR Rev. 9, immediate actions were taken. Upon identification on December 15, 2020, shipments of Liqui-Rad packages were halted until a corrected handling procedure could be issued. The handling procedure was issued December 18, 2020 correcting the outer lid torque values per SAR Rev. 9.

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

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

No known release of contents was experienced. As described in SAR Section 1, the outer lid uses a flat silicone gasket to secure the outer vessel and provide a weather/debris seal; it is not part of the containment boundary. All shipments made between July 25, 2019, incorporation of SAR Rev. 9 changes, and December 15, 2020, identification of issue, were completed without any release of contents. Therefore, Westinghouse's assessment is that there were no significant safety consequences or implications from this event.

(4) Corrective Actions

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

This event has been entered into the Westinghouse Corrective Action Program (CAP Issue Report-2020-13878), and an extent of condition analysis was conducted to identify corrective actions which are warranted. The following actions have been taken:

- Handling procedure for Uranyl Nitrate offloading from LR-230 Containers was revised and issued on December 18, 2020, updating outer lid torque value to be compliant to the SAR Rev. 9 outer lid torque requirement.

- A review of Liqui-Rad offloading processes was performed to ensure no other non-conforming issues or conditions existed.
- Coaching to staff that perform procedure updates was provided by the Manufacturing Engineering Manager.

(5) Extent of Condition

This information is provided pursuant to 10 CFR 71.95(c)(5).

Approximately 150 shipments, each containing nine packages, were made from the Columbia plant since July 25, 2019 when the handling procedure was issued to incorporate the SAR Rev. 9 outer lid torque value changes. However, it was confirmed that no known issues resulted from the deviation of the outer lid lower torque value in the handling procedure.

(6) Contact

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

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

(7) Extent of Exposure to Radiation

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

There was no exposure to radiation due to this event.

Sincerely,

**Electronically approved*

Wes Stilwell
Westinghouse Electric Company, LLC
Director, Nuclear Fuel Transport

cc
Elise Malek, Licensing Manager, Columbia Fuel Operations
Mike Annacone, Vice President, Columbia Fuel Operations

**Electronically approved records are authenticated in the Westinghouse Electronic Document Management System.*