



Department of Energy

Washington, DC 20585

December 22, 2010

Attn: Document Control Desk
Director, Spent Fuel Project Office
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

This report is being submitted in accordance with 10CFR71.95 (a)(3) for Model No.: Liqui-Rad (LR) Transport Unit Package, Docket No. 71-9291, USA/9291/B(U)F-96.

SUMMARY

A Savannah River Site (SRS) internal audit of The Liqui-Rad (LR) Transport Unit Package was completed in late September 2010. The audit was performed to evaluate implementation of Code of Federal Regulations and site requirements for the use of Type B Packagings. The audit found three instances where the Certificate of Compliance (USA/9291B(U)F-96 Revision 6) for The Liqui-Rad (LR) Transport Unit Package was not followed. The instances include dual packaging identification markings, use of one versus two required TID seals on the outer lid, and the failure to torque the secondary leak test port plug.

These issues were corrected prior to current shipments leaving the Savannah River Site. However, it was determined that prior shipments beginning in 2007 were made with one or more of the above three Certificate of Compliance conditions not being met. There have been no adverse consequences reported as a result of these omissions (i.e. no leaks, miscommunications) for prior shipments.

BACKGROUND

The Liqui-Rad (LR) Transport Unit Package is used by Savannah River Site to ship Low Enriched Uranium to Nuclear Fuel Services in Tennessee. The shipments have been ongoing since 2006. A shipment typically consists of a trailer with nine Liqui-Rad (LR) Transport Unit Packages with each package containing up to 230 gallons of Low Enriched Uranium liquid. During a recent Savannah River Site internal audit, three instances in which the conditions of approval in the NRC Certificate of Compliance (CoC) were not satisfied and are as follows:

1. Requirement: CoC condition 8 states "Packagings may be marked with Package Identification Number USA/9291/B(U)F-85 until March 31, 2007, and must be marked with Package Identification Number USA/9291/B(U)F-96 after March 31, 2007." Further, 49 CFR 173.471 (b) states: "The outside of each package must be



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durably and legibly marked with the package identification marking indicated in the USNRC packaging approval”.

Finding: Duplicate packaging identification markings were found on the outside of each of the LR-230 canisters. The identification markings were: USA/9291/B(U)F-85 and USA/9291/B(U)F96. The F-85 marking is no longer valid per the current NRC Certificate of Compliance, Revision 6, dated August 3, 2006. The LR-230 packagings are to be marked with the packaging identification number “USA/9291/B(U)F-96” after March 31, 2007.

Corrective action: The USA/9291B(U)F-85 marking has been taped over and the packaging owner (AREVA) has been notified.

2. Requirement: CoC condition 6(a) states “The package must be prepared for shipment and operated in accordance with the Operating Procedures in Chapter 7 of this application.” The SARP for Liqui-Rad Transport Unit, Rev. 6 (dated 2/2006), Section 1.1 specifies that two (2) tamper-proof seals are located on the outer lid. Section 7.1.2, “Loading the Contents and Securing the Package for Shipment”, states: “Install security seals and record their numbers.”

Finding: Contrary to the above requirement, Manual IOP 211-H-LLS-002, Procedure 5.8, Rev. 13, Step 5.8.33 requires the application of a TID seal on only one side of the Outer Lid of the shipping container.

Corrective action: Facility operating procedures have been revised to state 2 TID seals are required on the outer lid and the package owner (AREVA) has been notified.

3. Requirement: CoC condition 6(a) states “The package must be prepared for shipment and operated in accordance with the Operating Procedures in Chapter 7 of this application.” SARP, Revision 6 (Liqui-Rad Transport Unit, dated 2/2006), Section 7.1.2, Step d states in part: “After testing, install the port plug at each leak test port and tighten to a torque of 60 +10 -0 in-lbs.”

Finding: Contrary to the above requirement, LEU Loading Procedure 5.8, Step 19.R does not require a torquing of the secondary leak test port after installation of the test port cap.

Corrective action: Facility operating procedures have been revised to require proper torquing of the secondary leak test port.

These issues were corrected prior to current shipments leaving the Savannah River Site. However, it was determined that prior shipments beginning in 2007 were made with one or more of the above three Certificate of Compliance conditions not being met.

EVALUATION

A previous audit of the LEU operation at Savannah River Site had been conducted by Nuclear Fuel Services (NFS) in February 2007. The scope of the NFS audit was limited to those areas that could potentially impact Nuclear Criticality Safety requirements associated with the sampling, testing, loading, and shipping of LEU solution to a processing facility in Tennessee. No Findings or Observations were noted during the audit.

The recently completed internal audit performed by SRS concluded that item 1 above was attributed to personnel error. Cognizant individuals from the Savannah River Site and AREVA failed to recognize the dual packaging identification markings. The packaging was sold to AREVA sometime in 2006 and the CoC had a provision to allow AREVA to remark the packaging. AREVA did remark the packaging but left the old nameplate intact including the out of date packaging identification number. The old nameplate includes other required markings. The identification plate has a Safety Designation of C per Regulatory Guide 7.10

Item 2 was changed from two TIDs to one TID in 2009 through a shipper receiver agreement between AREVA and Savannah River Site. The change was initiated as a cost savings because it was determined that one seal would ensure the package had not been tampered with; however, the SARP was not revised and the requirement is to have two TID seals on the outer lid. The TID seals have a Safety Designation of C per Regulatory Guide 7.10.

For item 3, the packaging has an optional leak test port elbow that is used to perform a leak test between the two o-rings on the secondary lid versus the regular leak test port cap that fits directly into the secondary lid. The purpose of this leak test is to confirm that the secondary lid is installed properly. The test port cap was wrench tightened instead of torqued in accordance with manufacturer instructions. Facility personnel did not torque the cap because they were concerned about damaging the elbow fitting and they believed that the SARP torquing requirement was only required on the regular leak test port cap that fits directly into the secondary lid. Discussions with the certificate holder verified that the optional elbow leak test port cap requires torquing as prescribed in Section 7 of the SARP. The leak test port has a Safety Designation of B per Regulatory Guide 7.10.

The leak test port is considered part of the secondary leak boundary system and is only needed when the primary leak boundary system fails. The identification plate provides packaging information with regards to content and ownership. The TID seals are used for security to ensure the package is not tampered with. There have been no adverse consequences reported as a result of these deficiencies (i.e. no leaks, miscommunications) for prior shipments.

CORRECTIVE ACTIONS

The following corrective actions that have been implemented to prevent future problems:

The USA/9291B(U)F-85 marking has been taped over and the packaging owner (AREVA) has been notified.

Facility operating procedures have been revised to state 2 TID seals are required on the outer lid and the package owner (AREVA) has been notified.

Facility operating procedures have been revised to require proper torquing of the secondary leak test port.

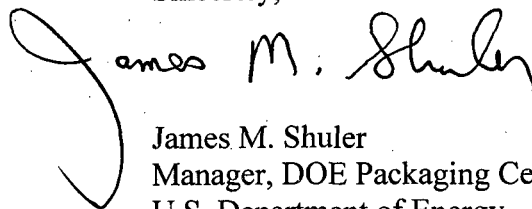
John Flaherty and John Gray of AREVA (packaging owner) and Tom Dougherty and Rod Felts of Columbiana High Tech (certificate holder) have been made aware of these issues.

CONCLUSIONS

The situations reported here were not defects of safety significant systems of the Liqui-Rad (LR) Transport Unit Package. The omissions are considered minor in nature and are attributed to failure by personnel to interpret stated requirements properly. There was no significant reduction to package integrity or safety as a result of these omissions. Corrective actions have been implemented and no further problems are expected.

An electronic copy of this letter has been sent to Kimberly J. Hardin. If you have any questions, please contact me at 301-903-5513.

Sincerely,



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