NUCLEAR FUEL SERVICES, INC.
a BWX Technologies, Inc. company

1205 banner hill road ■ erwin, tn 37650 ■ phone 423.743.9141
www.nuclearfuelservices.com

71-9291

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

38G-15-0029
GOV-01-55-04
ACF-15-0231

5 October 2015

Director, Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, D.C. 20555

Reference: 1) Docket No. 70-143: SNM License 124
2) U.S. NRC Certificate of Compliance No. 9291

Subject: 60-Day Written Notification of Event

Dear Sir:

On August 11, 2015, Nuclear Fuel Services, Inc. (NFS) identified an instance in which the conditions in a certificate of compliance (Reference Attachment) had not been followed during a shipment from the Westinghouse Columbia Fuel Fabrication Facility in South Carolina to NFS' facility in Erwin, Tennessee. This letter provides the 60-day written notification of that event as required by 10 CFR 71.95.

If you or your staff have any questions, require additional information or wish to discuss this matter further, please contact me or Mr. Brad McKeehan, Transportation and Waste Unit Manager, at (423) 743-1773. Please reference our unique document identification number (38G-15-0029) in any correspondence concerning this letter.

Sincerely,

NUCLEAR FUEL SERVICES, INC.

Richard J. Freudenberger

Richard J. Freudenberger
Director, Safety and Safeguards

RJF/BAM/psp
Attachment

Copy:

IE72

Regional Administrator
U.S. Nuclear Regulatory Commission
Region II
245 Peachtree Center Avenue, NE, Suite 1200
Atlanta, GA 30303-1257

Mr. Marvin Sykes
Chief, Projects, Branch II
Division of Fuel Facility Inspection
U.S. Nuclear Regulatory Commission
Region II
245 Peachtree Center Avenue NE, Suite 1200
Atlanta, GA 30303-1257

Mr. David Hartland
Division of Fuel Facility Inspection
U.S. Nuclear Regulatory Commission
Region II
245 Peachtree Center Avenue NE, Suite 1200
Atlanta, GA 30303-1257

Mr. Kevin Ramsey
Senior Project Manager
Fuel Manufacturing Branch
Division of Fuel Cycle Safety and Safeguards
U.S. Nuclear Regulatory Commission
Two White Flint North
11555 Rockville Pike
Rockville, MD 20852-2738

Mr. Charles R. Stancil
Senior Resident Inspector
U.S. Nuclear Regulatory Commission

Attachment

60-Day Notification of Reportable Event

(3 pages to follow)

Attachment

60-Day Notification of Reportable Event

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.**

After being emptied, closed, and prepared for shipment by Westinghouse, nine (9) Liqui-Rad (LR) Transport Unit Packages were shipped to NFS on Tuesday, August 11, 2015. After receipt at NFS it was discovered that security seals were not properly applied to one (1) Liqui-Rad (LR) Transport Unit Package, container LR-016. This is in violation of NRC CoC, USA/9291/B(U)F-96 revision 9 section 6 (a). No issues were identified with the security seals of the other eight (8) Liqui-Rad (LR) Transport Unit Packages. On August 12, 2015, a verbal notification was sent to Westinghouse. Investigations by Westinghouse indicated human failure as the cause. Additional administrative controls are being established to ensure compliance with security seal application requirements. Specifically, independent verification will be required to verify/confirm that the seals are installed.

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.**

(i) **Status of components or systems that were inoperable at the start of the event and that contributed to the event;**

After receiving the Liqui-Rad (LR) Transport Unit Packages from Westinghouse, NFS personnel observed there were no security seals physically applied to Package LR-016 as required by the Safety Analysis Report for Packaging (SARP) for the Liqui-Rad Transport Unit. Upon receipt at NFS, one security seal was observed to be lying on the transport trailer (4907) and the second security seal was observed to be lying on the top of Package LR-016. The security seal numbers were verified with the Packing List provided for the shipment. NFS verified with Westinghouse that Package LR-016 was empty prior to the transport trailer of Liqui-Rad Transport Unit Packages departing Westinghouse's facility.

(ii) **Dates and approximate times of occurrences;**

Westinghouse delivered the shipment from Columbia, SC to NFS' Erwin, TN facility on August 11, 2015. NFS made the observation on August 11, 2015 at approximately 1944 hours upon receipt inspection of the shipment.

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

Human error.

(iv) **The failure mode, mechanism, and effect of each failed component, if known;**

Failure to physically apply security seals as required. There was no adverse effect on the shipment, no contamination was discovered and there was no evidence of unauthorized entry.

(v) **A list of systems or secondary functions that were also affected for failures of components with multiple functions;**

Not applicable to this event.

(vi) **The method of discovery of each component or system failure or procedural error;**

The Westinghouse investigation team discussed the procedure for physically applying security seals with the Westinghouse Operators and any previous experiences with similar failures. There were no issues previously identified with the Liqui-Rad (LR) Transport Unit Packages.

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

Human Error – the security seals were not physically applied. It is a procedural requirement to physically apply the security seals. However, the applicable procedure did not clearly specify a requirement for two people to verify/confirm that the seals were installed. There was no required independent verification of the seal installation.

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

The reference for the Liqui-Rad (LR) Transport Unit Package is identified by the NRC CoC, USA/9291/B(U)F-96 revision 9 section 6 (a).

(ix) **For events occurring during use of a packaging, the quantities and chemical and physical form(s) of the package contents.**

The empty package LR-016 contained approximately 36 ml of residual Low Enriched Uranyl Nitrate in Aqueous Solution during transport from Westinghouse to NFS.

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.**

Following is an excerpt from Section 2.4 of the SARP for the Liqui-Rad (LR) Transport Unit.

> 2.4.2 "The LR has two tabs for tamper-proof seals located on the outer lid and the primary lid. These seals utilize individually numbered faces, and any unauthorized entry into the package is visible at the tamper-proof seal locations."

2.4.3 "The LR outer lid is closed with a total of twelve (12) 5/8" diameter studs and nuts. The primary lid is closed with a total of sixteen (16) 5/8" diameter studs and nuts. The secondary lid is closed using a total of twelve (12) 5/8" diameter bolts and nuts or, as a design option the secondary lid flange is threaded and the secondary lid is secured to it using twelve (12) 5/8" diameter bolts. All of these studs/bolts and nuts represent positive closure of the package."

Package LR-016 was secured by the respective studs and nuts as required by 2.4.3 such that under Normal Conditions of Transport, the contents of the LR would not be compromised.

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.

1. Westinghouse completed an Extent of Condition to evaluate the strength of the tamperseal portion of the LR tampersafing operation.
2. Westinghouse revised the Process Information Form to include a space for both operators to initial the tamperseal verification.
3. Westinghouse revised the procedure to include a requirement for independent overcheck.
4. Westinghouse held a stand-down workplace meeting to discuss the tamperseal issue and consequences.
5. Westinghouse formalized Management Oversight; URRS Management or designee is required to verify tamperseal installation on each LR shipment and document by initialing the Process Information Form.

5. Reference to any previous similar events involving the same packaging that are known to the licensee or certificate holder.

NFS has not had previous events with meeting the security seal requirements for the Liqui-Rad (LR) Transport Unit Package. Westinghouse, an authorized user of the Liqui-Rad (LR) Transport Unit Package, also has historically met the security seal requirements for the Liqui-Rad (LR) Transport Unit Package.

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.

Brad McKeehan, NFS Transportation & Waste Unit Manager, (423) 743-1773.

7. The extent of exposure of individuals to radiation or to radioactive materials without identification of individuals by name.

Not applicable to this event.