Nuclear Fuel Services, Inc.
1205 Banner Hill Road
P.O. Box 337, MS 123
Erwin, TN 37650
www.nuclearfuelservices.com
(423) 743-9141
21G-09-0005
GOV-01-55-04
ACF-09-0005
January 9, 2009

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

References: 1) Docket No. 70-143: SNM License 124
2) US NRC Certificate of Compliance No. 9288

Subject: **60-Day Written Notification of Event**

Dear Sir:

On November 13, 2008, Nuclear Fuel Services, Inc. (NFS) was notified of an instance in which the conditions in a certificate of compliance (Reference 2) had not been followed during a shipment from the NFS Erwin, Tennessee facility to the AREVA Richland, Washington facility. This letter provides the 60-day written notification of that event as required by 10 CFR 71.95(b).

If you or your staff have any questions, require additional information, or wish to discuss this, please contact me, or Mr. Rik Droke, Licensing and Compliance Director, at (423) 743-1741. Please reference our unique document identification number (21G-09-0005) in any correspondence concerning this letter.

Sincerely,

NUCLEAR FUEL SERVICES, INC.

B. Marie Moore
Vice President, Safety and Regulatory

RPD/pdj
Attachment

IE72

Copy:
Regional Administrator
U.S. Nuclear Regulatory Commission
Region II
Atlanta Federal Center
61 Forsyth Street, SW
Suite 23T85
Atlanta, GA 30303

Mr. Manuel Crespo
Project Inspector
U.S. Nuclear Regulatory Commission
Region II
Atlanta Federal Center
61 Forsyth Street, SW
Suite 23T85
Atlanta, GA 30303

Mr. Stephen Burris
Senior Resident Inspector
U.S. Nuclear Regulatory Commission

Mr. Donald W. Olson
Columbiana Hi Tech, LLC
1802 Fairfax Road
Greensboro, NC 27407

Attachment

60-Day Notification of Reportable Event

(4 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.**

Model No. CHT-OP-TU shipping containers are loaded at the NFS Erwin, Tennessee facility and shipped to the AREVA Richland, Washington facility for unloading. On November 12, 2008, while unloading container OPTU-25, AREVA personnel observed that the gasket under one of the outer sleeve lids was missing (Item gd on Drawing OP-TU-A2 Revision 12). While unloading container OPTU-01, it was noted that one of the outer sleeve lids had two gaskets under it. It appears that one outer sleeve lid from OPTU-25 with the gasket attached got switched with another outer sleeve lid from OPTU-01 that was missing the gasket (the gasket remaining in the sleeve). Drawing OP-TU-A2, Revision 12, requires the presence of the gasket. NRC Certificate of Compliance No. 9288, Revision 8, Section 6(b), states that each packaging must be acceptance tested and maintained in accordance with the Acceptance Tests and Maintenance Program in Section 8 of the application, as supplemented. Section 8 of the application requires verification that the gaskets and support pads are present. Therefore, the missing gasket violates the requirements of the certificate of compliance.

An investigation team was assembled to investigate the shipping infraction. The team concluded that, under the right set of conditions with the pieces fitting together well without any extra effort, the OP-TU lid can be assembled with two gaskets, although it is very unlikely this can happen regularly without being noticed by the operator. The team also concluded that assembly without a gasket is possible, but will result in damage to the heli-coils. Since AREVA reported that this was in fact the condition of the containers when they were received, it is undeniable that this event is possible. It was concluded that the cause of this event was human error and was an isolated event. The team did not identify any design changes that would preclude this event. Attaching the gasket to the lid or the OP-TU body would make the required inspection of the container more difficult or impossible. The team recommended that a step be added to the loading procedure requiring a final inspection by a Supervisor or Process Engineer to ensure all gaskets, seals, and hardware are in place.

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;**

NFS was notified that container OPTU-01 arrived at Richland, Washington having two gaskets under one of the lids and that container OPTU-25 arrived with a gasket missing from under one of the lids. The improper gasket configurations during shipment of these two containers resulted in this reportable event.

(ii) Dates and approximate times of occurrences;

The problem with the gaskets was identified on November 12, 2008, by AREVA personnel. NFS was notified on November 13, 2008. The two involved containers were loaded and closed at NFS on October 28, 2008, and shipped from Erwin on November 7, 2008. They arrived in Richland on November 10, 2008.

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

The cause of this isolated event was determined to be human error. The underlying reason for the error is unknown.

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

The investigation team went through the processes of taking off and replacing the lids under normal operations. Then they attempted to place two gaskets under an OP-TU lid and put another lid on with no gasket. The team was able to put an OP-TU lid on with two gaskets, but with some difficulty. Specifically, upon putting the first bolt in, it pulled the opposite side of the lid up too far to engage the threads of the second bolt. In order to get the second bolt to engage, they either had to back the first bolt out some or put the second bolt in beside the first bolt.

When installing the lid without a gasket, all the bolts went in easily but bottomed out before tightening enough to hold the washers in place. Upon torqueing the bolts, they pulled the heli-coils up which did hold the washers in place. It was decided at this time to inspect OPTU-25 for damaged heli-coils. Upon the return of OPTU-25, the inspection revealed several damaged heli-coils on the containers but no more than three damaged heli-coils on any one outer sleeve flange.

(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;

Model No. CHT-OP-TU shipping containers are loaded at the NFS facility and shipped to the AREVA facility for unloading. On November 12, 2008, while unloading container OPTU-25, AREVA personnel observed that the gasket under one of the outer sleeve lids was missing. The same personnel noted that while unloading container OPTU-01 one of the outer sleeve lids had two gaskets under it. At the NFS site, multiple OP-TU outer containers are loaded at the same time by NFS personnel. It appears that one outer sleeve lid from OPTU-25 with the gasket attached got switched with another outer sleeve lid from OPTU-01 that was missing the gasket (the gasket remaining in the sleeve).

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

The cause of this isolated event was determined to be human error. The underlying reason for the error is unknown.

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

The gaskets are shown as Item gd on Drawing OP-TU-A2, Revision 12.

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

The two involved containers held uranium oxide powder enriched to 4.95 weight percent U-235.

OPTU-01: 473.7 kilograms U oxide
OPTU-25: 487.3 kilograms U oxide

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.

There were no safety consequences due to the gasket problems on the two involved containers. The outer sleeve lids were still intact following the shipment.

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.

The investigation team did not identify any design changes that would preclude this event. Attaching the gasket to the lid or the OP-TU body would make the required inspection of the container more difficult or impossible. The team recommended that a step be added to the loading procedure requiring a final inspection by a Supervisor or Process Engineer to ensure all gaskets, seals, and hardware are in place.

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

NFS is not aware of any previous similar events involving the Model No. CHT-OP-TU shipping container.

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.

Rik Droke 423-743-1741
David Hopson 423-735-4003

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

There were no personnel exposures to radiation or to radioactive materials above the levels normally experienced during handling of these containers as a result of this event.