



Global Nuclear Fuel

A Joint Venture of GE, Toshiba, & Hitachi

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November 1, 2010

US Nuclear Regulatory Commission
ATTN: Document Control Desk
Director, Spent Fuel Project Office
Office of Nuclear Material Safety and Safeguards
Washington, DC 20555-0001

Subject: 10 CFR 71.95 - 60-Day Report – TNF-XI Certificate Conditions Not Followed

References: 1) DOT Certificate USA/0653/AF-96, Rev 4 (Revalidation of French Competent Authority Certificate F/381/AF-96, dated 7/4/2007)
2) NRC Certificate of Compliance (COC) USA/9301/AF-85, Rev 3 - Docket 71-9301

Dear Sirs:


Global Nuclear Fuel, Americas – LLC (GNF-A) in Wilmington, NC hereby submits a report pursuant to 10CFR 71.95(c) for discovery of shipments involving the TNF-XI package that we believe were not in conformance with conditions of the USDOT certificate (Reference 1). Specifically, International shipments of the TNF-XI were made using the USDOT certificate with the package contents (uranium dioxide powder) placed in polyethylene bags in the inner pails. The use of these bags is not mentioned in the certification.

Our evaluation has determined there was no reduction in effectiveness of the TNF-XI packaging. On site storage of the containers in this configuration is covered under our site criticality analysis and allowed. Other than the use of polyethylene bags, all other requirements of the USDOT and French Certificates were met.

While GNF-A believes that the event is not technically reportable to the NRC since no NRC Certificate of Compliance was involved for these International shipments, GNF-A has chosen to conservatively report this condition in recognition of NRC's interest in the transportation of fissile materials within the United States. Additional information regarding this event is provided in the attachment to this letter.

I am the individual knowledgeable about this event and can provide additional information as needed. If you wish to contact me, please call me on (910) 819-5950.

Sincerely,



Scott P. Murray,
Manager, Licensing & Liabilities

Attachment

Cc: SPM 10-044
L.A. Reyes, NRC RII Atlanta, GA
M.T. Adams, NRC NMSS Washington, DC
M. Sampson, NRC SFPO Washington, DC
M. Thomas, NRC RII Atlanta, GA

Attachment

Abstract

On September 17, 2010 a registered package user notified GNF-A of an apparent issue with the use of polyethylene bags inside the primary metal pails of the TNF-XI package. Upon further review, GNF-A agreed that there was no reference in either the USDOT or French Certificate that allowed the use of polyethylene bags. The event did not involve a component or system failure.

Details

Since 2005, shipments of low-enriched uranium dioxide powder have been sent from Global Nuclear Fuel, Americas – LLC (GNF-A) Wilmington, NC fuel fabrication plant (NRC License No. SNM-1097) to customer fuel fabrication plants in Japan. The shipments are made using Model TNF-XI fissile radioactive material packages licensed under U.S. Department of Transportation (USDOT) Competent Authority Certification USA/0653/AF-96.

The TNF-XI package consists of a package body with four inner wells. The package contents are enclosed in primary metal pails with three pails stacked inside the four inner wells of the package for a total of 12 inner pails per TNF-XI package.

GNF-A has routinely used polyethylene bags to contain the uranium powder inside the TNF-XI metal pails. The uranium powder is double bagged in polyethylene bags to minimize the spread of contamination. However, the use of polyethylene bags inside the metal pails is not specifically mentioned or authorized in either the USDOT or French certificates of approval. GNFA is currently working with the package owner to authorize use of poly bags for contamination control inside each pail.

Assessment of Safety Consequences

Actual safety consequences of the event are low. The total weight of polyethylene bags used by GNF-A in each pail is limited to ~90 grams (1,080 grams low density poly per package) and has no effect on package test results.

The low-density polyethylene bags have a hydrogen density slightly greater than water and the small amount of polyethylene in the bags has a small positive effect on reactivity. Since the TNF-XI package is evaluated in the SAR for optimal inner pail moderation conditions, the mass of poly used for containment has a small overall effect on reactivity for the damaged 2N package array. A GNF-A evaluation has determined there is no reduction in effectiveness of the TNF-XI packaging. On site storage of the containers in this configuration is covered under our site criticality analyses and allowed.

Other than the use of polyethylene bags, all other requirements of the USDOT and French Certificates were met.

Corrective Actions

GNF-A has issued an internal corrective action report and shipments of the TNF-XI using polyethylene bags have been temporarily discontinued pending resolution of the use of low density poly bags with the owner of the package.

Further evaluation and actions are required to enable shipments of the TNF-XI in this configuration. GNF-A is working with the customer, certificate holder (Transnuclear, Inc.) and another domestic fuel fabricator on potential resolutions.

Similar Events

Areva Richland has submitted a similar event report involving the TNF-XI to NRC dated 10/29/10.