UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

November 10, 2016

Mr. Scott P. Murray
Manager, Facility Licensing
Global Nuclear Fuel – Americas, L.L.C.
3901 Castle Hayne Road
P.O. Box 780
Wilmington, NC 28402

SUBJECT: APPLICATION FOR RAJ–II TRANSPORTATION PACKAGE – SUPPLEMENTAL INFORMATION NEEDED

Dear Mr. Murray:

By letter dated September 30, 2016, you submitted an application for amendment of the Model No. RAJ–II transportation package, Certificate of Compliance No. 9309. You requested approval of changes made to reflect the addition of a GNF3 10x10 fuel assemblies. Staff performed an acceptance review of your application to determine if the application contains sufficient technical information in scope and depth to allow the staff to complete the detailed technical review.

This letter is to advise you that based on our acceptance review, the application does not contain sufficient technical information. The information needed to continue our review is described in the enclosure to this letter. In order to schedule our technical review, this information should be provided by November 30, 2016. If the information described is not received by this date, the application will not be accepted for review.

If you have any questions regarding this matter, please contact me at 301-415-5253.

Sincerely,

/RA/

Huda Akhavannik
Project Manager
Division of Spent Fuel Management
Office of Nuclear Material Safety
and Safeguards

Docket No. 71-9309
TAC No. L25154

Enclosure: Request for Supplemental Information

Mr. Scott P. Murray
Manager, Facility Licensing
Global Nuclear Fuel – Americas, L.L.C.
3901 Castle Hayne Road
P.O. Box 780
Wilmington, NC 28402

November 10, 2016

SUBJECT: APPLICATION FOR RAJ–II TRANSPORTATION PACKAGE – SUPPLEMENTAL INFORMATION NEEDED

Dear Mr. Murray:

By letter dated September 30, 2016, you submitted an application for amendment of the Model No. RAJ–II transportation package, Certificate of Compliance No. 9309. You requested approval of changes made to reflect the addition of a GNF3 10x10 fuel assemblies. Staff performed an acceptance review of your application to determine if the application contains sufficient technical information in scope and depth to allow the staff to complete the detailed technical review.

This letter is to advise you that based on our acceptance review, the application does not contain sufficient technical information. The information needed to continue our review is described in the enclosure to this letter. In order to schedule our technical review, this information should be provided by November 30, 2016. If the information described is not received by this date, the application will not be accepted for review.

If you have any questions regarding this matter, please contact me at 301-415-5253.

Sincerely,

/RA/

Huda Akhavannik
Project Manager
Division of Spent Fuel Management
Office of Nuclear Material Safety
and Safeguards

Docket No. 71-9309
TAC No. L25154

Enclosure: Request for Supplemental Information
Distribution: JWoodfield, YKim, SGhrayeb, ASotomayor-Rivera, JBorowsky, CKenny, JPiotter, TTate, JMcKirgan
G:\SFST\Akhavannik\RAJ-II\2016\Acceptance Review Completed Letter.docx

OFC:	NMSS/SFM	NMSS/SFM	NMSS/SFM	NMSS/SFM	NMSS/SFM	NMSS/SFM
NAME:	HAkhavannik	SFigueroa	ASotomayor-Rivera	JBorowsky	JPiotter	TTate
DATE:	11/08/16	11/08/16	11/08/16	11/08/16	11/08/16	11/09/16
OFC:	NMSS/SFM					
NAME:	JMcKirgan					
DATE:	11/10/16					

OFFICIAL RECORD COPY

GLOBAL NUCLER FUEL – AMERICAS, LLC
DOCKET NO. 71-9309
REQUEST FOR SUPPLEMENTAL INFORMATION

3.0 Thermal

3-1 Describe any changes in the submittal that are consistent (or bounding) with the previously provided thermal analyses and provide an evaluation that justifies the conclusion that those changes are consistent (or bounding).

The information presented in the application's thermal chapter was similar to the previously submitted safety analysis report (SAR), although some details of the text changed and/or are missing. For example, Section 3.3.2 of a previous SAR (ML093020557) described evaluation by test for BWR content; a similar type of evaluation was not included in the present submittal that includes non-BWR (PWR and CANDU) content, and hence, no justification was provided for the statement "… various non-BWR fuel types (PWR and CANDU) have been analyzed to maintain containment up to a temperature of 765 deg C for 30 minutes". Another example is that Section 3.4.3 of a previous SAR (ML093020557) described normal conditions of transportation testing thermal stresses. The description of changes provided with this submittal indicates that this discussion was moved to Section 3.4, "Thermal Evaluation under Hypothetical Accident Conditions," however, this section does not include the normal conditions of transportation discussion. In addition, the current SAR does not clearly state that the change in 10x10 fuel assembly parameters is bounded by the previous thermal analyses for normal conditions of transportation and hypothetical accident conditions. Finally, there is no detailed explanation in Section 3.4.4.1 and Section 3.4.4.2 of the derivation of the thermal effects of the Thermal Performance Criteria listed in Table 3 and Table 4 of the proposed CoC. Since the changes made in this submittal are not clearly marked, staff cannot determine if the changes have safety implications.

This information is needed to determine compliance with 10 CFR 71.35, 71.71, 71.73.

Observations

Shielding

5-1 In Section 5.2.1 of the SAR, the applicant stated that the spectrum and source strength of the gammas emitted due to the decay of the actinides were determined using ORIGEN2 Version 2.1 with the default DECAY, BWRUE and GXUO2BRM libraries. This includes gammas emitted from all decay modes, such as alpha or spontaneous fission, for all the actinides, in addition to the contribution from Bremsstrahlung due to slowing down of beta particles in the fuel. The gamma source strength from actinides is 3.73E+10 photons/s. However, ORIGEN2.1 libraries were developed for fixed enrichments and can give poor results when applied to other enrichments. The BWRUE library was made assuming 3.4 wt% enrichment and burnups up to 40 GWd/tU. This enrichment is low for many modern fuel designs and could lead to large errors in the calculated neutron source (Cm-244).

The applicant should demonstrate that these libraries have been validated against experimental data, that any potential biases and uncertainties have been quantified, and that the code is appropriate for the fuel design proposed in this amendment.

This information is required to determine compliance with 10 CFR 71.47.

Operating Procedures

7-1 The description of changes provided with the updated safety analysis report specifies that Section 7.4 is removed because it is redundant and listed in chapter 8. Staff was unable to locate the components originally listed in Section 7.4 in chapter 8.

This information is needed to determine compliance with 10 CFR 71.87(f).