November 10, 2016

Dr. James Shuler
Manager, DOE Packaging Certification Program
U.S. Department of Energy
Office of Packaging and Transportation
EM-33, 270CC-Rm3113
Washington, DC 20575

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR REVIEW OF THE MODEL NO. ATR FFSC PACKAGE

Dear Dr. Shuler:

By letter dated July 21, 2016, the Department of Energy submitted an amendment request for approval of the Model No. ATR FFSC package for transportation by air of all authorized payloads, including a new type of proposed contents known as “Conversion of BR-2 Alternative” (COBRA) fuel assemblies.

The staff has determined that additional information is needed to complete its technical review. The information requested is listed in the enclosure to this letter. We request that you provide this information by December 20, 2016. If you are unable to meet this deadline, you must notify us in writing no later than December 12, 2016, of your new submittal date and the reasons for the delay. The staff will then assess the impact of the new submittal date and notify you of a revised schedule.

Please reference Docket No. 71-9330 and CAC No. L25133 in future correspondence related to this licensing action. If you have any questions regarding this matter, I may be contacted at (301) 415-7505.

Sincerely,

/RA/

Pierre Saverot, Project Manager
Spent Fuel Licensing Branch
Division of Spent Fuel Management
Office of Nuclear Material Safety
and Safeguards

Docket No. 71-9330
CAC No. L25133

Enclosure: Request for Additional Information

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Enclosure: Request for Additional Information

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Request for Additional Information
U.S. Department of Energy
Docket No. 71-9330
Certificate of Compliance No. 9330
Model No. ATR FFSC Package

By application dated July 21, 2016, the Department of Energy submitted an amendment request for approval of the Model No. ATR FFSC package for transportation of "Conversion of BR-2 Alternative" (COBRA) fuel as authorized contents of the package and the addition of air transport as an authorized mode of transport for all payload types.

This request for additional information (RAI) identifies information needed by the U.S. Nuclear Regulatory Commission (NRC) staff in connection with its review of the Safety Analysis Report "Advanced Test Reactor Fresh Fuel Shipping Container (ATR FFSC)," Revision 11, dated July 2016. The requested information is listed by chapter number and title in the applicant's Safety Analysis Report (SAR).

Each individual RAI section describes information needed by the staff to complete its review of the application and to determine whether the applicant has demonstrated compliance with the regulatory requirements.

Chapter 6: Criticality Evaluation

6-1 Provide additional benchmark experiments to demonstrate that the most reactive air transport case is within the range of applicability of the proposed benchmark or provide additional justification for not including intermediate and fast benchmark experiments.

On page 6-68 of Section 6.7, the applicant states that the modeled system is "closer to an intermediate or fast system" and, as a result, is outside the bounds of the plate-fuel benchmark experiments and the thermal benchmark experiments provided in the application (ref. Sections 6.8 and 6.11.8).

It is not clear, from the description in this section, that the modeled system is bounded by the current benchmark analysis, and that the addition of intermediate and fast benchmark experiments is not warranted. Additional details are necessary to make this determination, similarly to what is presented in Section 6.11.8.1, Applicability of Benchmark.

This information is required to determine compliance with 10 CFR 71.55.

6-2 Justify the limit of 4000g of hydrogenous packing materials for the transport of small quantity payloads.

In Section 6.11, Appendix C, the applicant states that the packing materials of neoprene and cellulosic material may be ignored in the calculations because they are less effective at moderating the fissile fuel mixture than the water that is displaced.

However, in Section 6.7, the applicant indicates that reactivity is maximized above 1500 grams of neoprene and 3000 grams of cellulosic material. An additional justification is necessary to resolve this discrepancy.

This information is required to determine compliance with 10 CFR 71.55.