



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

August 14, 2015

Mr. Phil Noss
Licensing Manager
AREVA Federal Services LLC
505 S. 336th Street, Suite 400
Federal Way, WA 98003

SUBJECT: APPLICATION FOR REVISING THE MODEL NO. BRR TRANSPORT
PACKAGE – ACCEPTED FOR REVIEW (TAC NO. L25031)

Dear Mr. Noss:

By letter dated June 26, 2015, you submitted an application for revising Certificate of Compliance No. 9341, for the Model No. BRR transport package. The application requests to add 21 additional types of fuels as new authorized contents for the Model No. BRR transportation package and using the approved or new basket designs.

The staff performed an acceptance review of your application to determine if the application contained sufficient technical information in scope and depth to allow the staff to complete a detailed technical review. The enclosure includes staff's observations related to the criticality safety evaluation. The staff included observations to allow you to start earlier on items containing the potential to be asked at a later date. Responses to observations are not required for staff to begin a detailed technical review. Observations are not the result of a detailed technical review and may be resolved once staff begins a detailed review.

This letter acknowledges acceptance of your application. The application appears to contain the information needed for our technical review. We have established a schedule for the review. The schedule allows for the staff to complete its technical review and issue the first request for additional information in November 2015 and, if a second request for additional information is not needed, a certificate of compliance in March 2016, based on you responding to the first RAI in January 2016. In general, no additional changes to the application should be submitted except for changes resulting from your response to an RAI.

Please reference Docket No. 71-9341 and TAC No. L25031 in future correspondence related to this action. The staff is available to meet and discuss your proposed responses. If you have any questions regarding this matter, please contact me at (301) 415-6999.

Sincerely,

/RA/

Norma Garcia-Santos, Project Manager
Spent Fuel Licensing Branch
Division of Spent Fuel Management
Office of Nuclear Material Safety
and Safeguards

Docket No. 71-9341
TAC No. L25031

Enclosure: Observations Related to the Proposed Revision to Model No. BRR.

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| OFC | SFM | E | SFM | | SFM | | SFM | | SFM | |
| NAME | NGarcia-Santos | | MDeBose | | ZLi | | ABarto for MRahimi | | MSampson | |
| DATE | 8/4/15 | | 8/4/15 | | 8/5/15 | | 8/5/15 | | 8/14/15 | |

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AREVA Federal Services LLC

Docket No. 71-9341

OBSERVATIONS

RELATED TO THE PROPOSED REVISION TO MODEL NO. BRR

Criticality Safety Evaluation

OBS-6-1 Provide drawing(s) for the loose plate basket to show how the loose plates are held in the basket in an evenly distributed pattern.

The application includes the following information regarding the package design for transport of loose fuel plates in a loose plate basket placed inside the square fuel basket:

- ***Licensing Drawing 1910-01-03-SAR, Revision 5, Sheet 4 of 4*** - The internal cavity of the loose plates basket is 7.62 centimeters (cm) long and 6.35 cm wide;
- ***Table 6.2-11*** - The U-Florida fuel is 6.2738 cm wide and 0.0762 cm thick and the channel spacing is 0.29718 cm; and
- ***Page 6.2-1*** - Each loose plate basket (LPB) can hold up to 31 loose fuel plates.

On page 6.4.2 of the safety analysis report, the applicant states the following:

“The LPB payload is modeled with 31 plates per box, and a box in each compartment of the SFB¹. The structure of the box is conservatively ignored. However, the plates are restricted to a region corresponding to the inner dimensions of the box, where they are evenly distributed.”

“The plates are shifted axially to the top of the package cavity and are centered within their respective SFB compartments.”

10 CFR 71.55(d)(2) requires “the geometric form of the package contents would not be substantially altered.” Based on the information provided in the application, the total thickness of the 31 plates is 2.3622 cm (without channel) and 11.57478 cm (with channel). Therefore, there will be a significant gap in the basket to allow the fuel plates to move if they are simply stacked together without channels. If the fuel plates include a channel, the basket does not have sufficient space to load all 31 plates. However, the application did not provide drawing(s) to show how the loose plates are held in the loose plate basket. This drawing(s) for the loose plate basket should include details showing how the loose fuel plates are evenly held in the basket during normal conditions of transport as modeled.

¹ SFB means spent fuel basket.

This information is needed to determine compliance with 10 CFR 71.55(d)(2).

OBS-6-2

Demonstrate that the package meets the requirement of 10 CFR 71.55(b) and justify the model used for the criticality safety analysis, which assumed no moderator intrusion under normal operations.

On page 6.1-1 of the safety analysis report, the applicant states: "The packaging design is shown to meet the requirements of 10 CFR 71.55(b). No credit is taken for fuel element burnup in any models. In the single package normal conditions of transport (NCT) models, credit is taken for the leaktight performance of the cask, ..."

On page 6.1-1, the applicant also states: "...the system is undermoderated." On page 6.2-1, the applicant further states: "Up to 31 U-Mass (aluminide), U-Florida, and Purdue plates may also be transported in a Loose Plate Box (LPB)."

In addition, the Operating Procedures, Section 7.1.2.1, "Wet Loading," described the Model No. BRR package for wet loading. However, the criticality safety analyses presented in the application for the package does not include evaluation of package with moderator and various content loading. . It was not clear how the package met the regulatory requirements of 10 CFR 71.55(b) without evaluating the package configurations with moderator, particularly under wet loading operations.

As required in 10 CFR 71.55(b), "Except as provided in paragraph (c) or (g) of this section, a package used for the shipment of fissile material must be so designed and constructed and its contents so limited that it would be subcritical if water were to leak into the containment system, or liquid contents were to leak out of the containment system so that, under the following conditions, maximum reactivity of the fissile material would be attained:

- (1) the most reactive credible configuration consistent with the chemical and physical form of the material;
- (2) moderation by water to the most reactive credible extent; and
- (3) close full reflection of the containment system by water on all sides, or such greater reflection of the containment system as may additionally be provided by the surrounding material of the packaging."

This information is needed to determine compliance with 10 CFR 71.55(b).