



AFS-10-0480

December 15, 2010

ATTN:
Document Control Desk
Spent Fuel Projects Office
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: AMENDMENT REQUEST FOR THE BRR PACKAGE, DOCKET No. 71-9341

Dear Sirs:

AREVA Federal Services LLC hereby submits responses to the NRC requests for additional information (RAI) and the corresponding revised Safety Analysis Report (SAR) pages, which constitute Revision 4 of the SAR. The individual responses to each RAI are given in Attachment A to this letter. Instructions for updating a paper copy of Revision 3 of the SAR are given in Attachment B. Included with this letter are the following documents:

- One paper copy of the revised pages of the Safety Analysis Report for updating the three ring binders to Revision 4.
- One electronic copy of Revision 4 of the SAR (filename: BRR Package SAR R4 Complete.pdf) is provided in PDF format on one CD.

The CD is contained within an envelope labeled "BRR Package Docket 71-9341, Electronic Copy of Documents, Revision 4, December 2010." A description of the contents of the CD is given below:

File or Folder Name	Description
001 BRR Package SAR R4 Complete.pdf	Entire BRR Package SAR, Revision 4
O-ring Seal References (folder)	Reference for O-ring Seal Life Extrapolation
BRRC SAR Cover Letter R4 Staab.pdf	Cover letter to NRC PM
BRRC SAR Cover Letter R4 Doc Control Desk.pdf	Cover letter to NRC Document Control Desk

AREVA Federal Services LLC

1102 Broadway Plaza, Suite 300, Tacoma, WA 98402-3526 – USA – Tel: 1 253.383.9000 – Fax: 1 253.383.9002

Am5501
Received on 2/10/12
w/o CD



In addition, seven paper copies of the changed pages and a duplicate CD have been sent Mr. Chris Staab.

If there are any questions or comments please contact me at (253) 552-1367 or by email at charles.temus@areva.com.

Very Truly Yours,
AREVA Federal Services LLC

A handwritten signature in black ink, appearing to read 'Charles J. Temus'.

Charles J. Temus
Project Manager

Encl: as noted

cc: Chris Staab, NRC-NMSS

ATTACHMENT A

Docket No. 71-9341, Model No. BRR Package

Changes Included in Revision 4 of the SAR

This document contains AFS responses to questions raised by the NRC staff. In addition, there are three changes requested by AFS. These issues are addressed in order as follows.

Structural

- 1-1 Clarify the temperature of the elastomer O-ring seals responsible for containment under Normal Conditions of Transport and Hypothetical Accident Conditions.

Table 3.1-1 of the Safety Analysis Report provides temperature of the Closure/Vent Seals, but it is unclear if this refers to the elastomer O-rings used to seal the package.

Response: The seals mentioned in Table 3.1-1 refer to the containment elastomer seals used to seal the package. The thermal analysis shows the bounding temperature of the closure seal, vent port sealing washer, and drain port sealing washer. The notation in Table 3.1-1 of "Seals" was updated to "Elastomer Seals." Similarly, page 1.2-2, and Tables 3.3-1, 3.3-2, and 3.4-1 were also updated.

- 1-2 Justify that the elastomer O-rings can be used to maintain containment under Normal Conditions of Transport over prolonged periods of time.

The acceptance tests require that the O-ring have a compression set of 25% or less after exposure to 70°C for 22 hours. The NCT temperature and anticipated time of use are significantly higher and longer, respectively, than the acceptance tests for the seal material.

Generic data regarding classes of elastomers from supplier handbooks are not adequate to make a safety finding.

Response: Section 2.12.7 has been revised to include an analysis of Rainier Rubber butyl compound R-0405-70 test data and a conservative determination of the acceptable long-term (one year) NCT temperature.

- 1-3 Require that only unused elastomer O-rings are permitted for sealing the cask in Sections 7.1.2.1-19 and 7.1.2.2-15 of the Safety Analysis Report.

Under Normal Conditions of Transport, the temperature of the elastomer seals is sufficient to cause permanent loss of elasticity in the sealing materials.

Response: Section 7.1.2 has been revised to allow only new (unused) elastomer O-rings and sealing washers. This revision resulted in substantial changes to the procedure. Since Section 7.4 (preshipment leakage rate testing using the pressure rise technique) is invalid for new O-rings, it has been deleted. Additionally, Reference [4] of Chapter 7 is no longer required, and therefore has also been removed.

ATTACHMENT A

Operating Procedures, Acceptance Criteria, and Maintenance Tests

- 2-1 Provide a process for protective measures to minimize worker dose in the dry loading operations of 7.1.2.2.

Supplement the dry loading process with personnel protective measure actions when the cask is disconnected from the hot cell (step 12) and before the lid is fastened (step 18) or explain how worker dose rates is to remain as low as reasonably achievable (ALARA) and within regulatory limits.

It is unclear, when the cask is loaded in a horizontal position, what personnel protective measures are expected to be in place when the cask is disconnected from the hot cell and a survey of external surfaces is performed before the closure lid is installed.

Response: It is not the intention of the operating procedure to allow for horizontal loading or unloading of the package. The package shall remain upright during all operations. Both the dry loading and unloading procedures (Section 7.1.2.2 and Section 7.2.2.2) have been revised to clarify this issue.

Additional SAR Change Requested by AFS:

In order to reduce the possibility of water accumulation in the lower impact limiter, Drawing 1910-01-01-SAR, Sheet 1 has been revised by adding General Note 35. This note allows the installation of an optional weather seal between the cask body and the lower impact limiter. This change will have no effect on the safety function of the BRR Package Assembly.

Additional SAR Change Requested by AFS:

In order to reduce possible water accumulation in the lower impact limiter, Drawing 1910-01-02-SAR, Sheet 2 has been revised in Zone C1 to add an optional drain tube to the lower impact limiter. An analysis of the drain tube has been added to Appendix 2.12.5, Page 10 to address this modification. This analysis shows that this change will have no effect on the safety function of the BRR Package Assembly.

Additional SAR Change Requested by AFS:

Drawing 1910-01-03-SAR, Sheet 1, List of materials has been revised to include an additional material specification for Item number 7. This change will have no effect on the safety function of the BRR Package Fuel Baskets.

ATTACHMENT B

Revised Pages

Page Changes	
Remove Rev. 3	Insert Rev. 4
Cover page & spine	Cover page & spine
i to v	i to v
1.2-2 – 1.2-3	1.2-2 – 1.2-3
1910-01-01-SAR R3	1910-01-01-SAR R4
1910-01-02-SAR R0	1910-01-02-SAR R1
1910-01-03-SAR R3	1910-01-03-SAR R4
2.12.5-10	2.12.5-10
2.12.7-2 – 2.12.7.-7	2.12.7-2 – 2.12.7.-12
3.1-5	3.1-5
3.3-7 – 3.3-8	3.3-7 – 3.3-8
3.4-4	3.4-4
4.4-1	4.4-1
7.1-1 – 7.1-7	7.1-1 – 7.1-6
7.2-1 – 7.2-4	7.2-1 – 7.2-4
7.4-1 – 7.4-2	7.4-1
7.5-1	N/A