



AFS-10-0185

May 24, 2010

ATTN: Document Control Desk
Director, Spent Fuel Projects Office
Office of Nuclear Material Safety and Safeguards
Nuclear Regulatory Commission
Washington D.C. 20555-0001

RE: TIMELY RENEWAL OF CERTIFICATE OF COMPLIANCE NO. 9295 (MFFP)

AREVA Federal Services LLC (AFS) hereby submits this request for a Timely Renewal of the Certificate of Compliance No. 9295, Revision No. 2, for the MOX Fresh Fuel Transportation Package (MFFP), identification no. USA/9295/B(U)F-96. Revision 2 of this certificate expires on June 30, 2010.

The Safety Analysis Report (SAR) has been updated to Revision 8, and all pages show this revision level. As a part of the document update, some changes have been made which are summarized below and further discussed in detail in the attachment to this letter.

The principal change is a revision to the HAC thermal fire analysis. The calculational technique used prior to Revision 8 of the SAR utilized an equivalent hypothetical fire heat flux based on a flame emissivity of 1.0 and a flame temperature of 1,425 °F. The revised analysis utilizes a flame emissivity of 1.0 and the full fire temperature of 1,475 °F. AFS agreed to this change during a teleconference with the NRC staff on June 17, 2009. Since emissivity will be equal to 1.0 instead of the required value of 0.9, the resulting package HAC fire temperature predictions are somewhat higher than they would be if a more exact calculational technique were used. This change had no effect on the NCT temperatures, and a relatively modest effect on HAC peak temperatures. Margins of safety on component temperature allowables are still large.

In addition to the fire analysis, several changes to the SAR drawings, operations, and acceptance test sections were made. These changes reflect the experience gained in the fabrication of the essentially identical Hanford Irradiated Fuel Package (HUIFP) for the DOE during 2009. Each change is detailed in the attachment to this letter, and it is demonstrated that there are no safety consequences in each case.

Since this SAR revision consolidates all prior revisions, there is no need to replace pages in your existing documents. The changes made to the SAR in Revision 8 are marked by a change bar in the right margin. Changes to the SAR drawings are marked with a cloud symbol.

LIMSSOJ

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Included with this letter are the following documents:

- ATTACHMENT A detailing each change made to the SAR.
- One paper copy of the MFFP SAR, consisting of two volumes.
- One CD labeled "MFFP Docket 71-9295, Electronic Copy of Documents, Revision 8, June 2010", containing the files listed in the table below:

File or Folder Name	Description
MFFP SAR Rev. 8 Complete.pdf	Complete Safety Analysis Report, including all appendices
Calc 99008-25 computer runs (folder)	Computer files for the HAC thermal analysis

In addition, one paper copy of the complete SAR and one CD have been sent to the Document Control Desk, as specified in Part 71.1.

If there are any comments regarding this submittal, please contact Charles Temus at (253) 552-1367 or by email at charles.temus@areva.com.

Sincerely,

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

Charles J. Temus
Project Manager
AREVA Federal Services LLC

Encl: as noted

Cc: Mr. Eric Benner

Richard H. Clark, Shaw AREVA MOX Services

ATTACHMENT A

Description of Changes Made to the MFFP SAR

1. The HAC fire analysis has been revised to use a flame temperature of 1,475 °F and a flame emissivity of 1.0. This will conservatively apply slightly more heat to the package than required by 10 CFR 71.73(c)(4), which specifies a flame emissivity of 0.9. Prior to this change, the analysis used an equivalent heat flux of 1,425 °F and a flame emissivity of 1.0. This change affects Chapter 3 of the main SAR, as well as Appendix sections A3.0, B3.0, and C3.0.
2. The increased fire event temperatures which resulted from the revised fire analysis required minor revisions to the corresponding structural sections 2.7.4, A2.7.4, B2.7.4, and C2.7.4.
3. Table 2.2-1 and Table 2.2-2 have been revised slightly to correct errors in the elastic modulus at high temperature for XM-19 and ASTM Type 304 steels. Of note, the elastic modulus at these temperatures is not used in any analysis, and there is consequently no effect on any other part of the SAR.
4. The equivalency of butyl rubber specification RR-0405-70 and the ASTM D2000 specification 'M4AA710 A13 B13 F17 F48 Z Trace Element' has been removed. Containment O-ring material must now be fabricated according to the Rainier Rubber specification RR-0405-70 only. In addition, the material must still meet the ASTM D2000 specification. Specifically, the changes are:
 - a. SAR dwg 99008-20, FN 14:

"Material: Butyl per RR0405-70, Rainier Rubber Co. Seattle, WA, (delete: "or equivalent") meeting ASTM D2000 M4AA710 A13 B13 F17 F48 Z Trace Element."
 - b. Revise Section 3.2.2 to read as follows (first sentence of 2nd paragraph):

"The butyl rubber O-ring seals used for the containment seals are fabricated from Rainier Rubber compound RR0405-70 material meeting the requirements of ASTM D2000 M4AA710 A13 B13 F17 F48 Z Trace Element."

This change will make the MFFP consistent with other recent packaging applications which no longer rely on the ASTM D2000 specification to be equivalent to RR-0405-70 compound.
5. Some operation steps in Chapter 7 of the SAR have been revised due to changes in the design of the auxiliary equipment, or to increase the utility of the procedure. The changes, together with the individual reasons for change, are as follows:
 - a. The following sentence has been added to the end of Section 7.1.1.2.2, step #5:

"Optionally, the impact limiter may be removed prior to loading the MFFP into the upending frame (Step 2)." *Reason:* This adds a little freedom to the procedure.
 - b. The second sentence of Section 7.1.1.3.1, step #8, has been deleted. *Reason:* insertion/extraction station is now power driven.
 - c. Section 7.1.1.3.1, step #9 has been revised to read: "Use the insertion/extraction station to upend the strongback." *Reason:* insertion/extraction station is now power driven.
 - d. In Section 7.1.1.3.2, step #1, the word 'Optional' has been removed. *Reason:* This step is not optional.
 - e. Section 7.1.2.2.1, step #5 has been deleted. *Reason:* This step no longer applies, since the insertion/extraction station is now power driven.
 - f. Section 7.1.2.2.1, step #6 has been revised to read: "Use the insertion extraction station to lower the strongback to a horizontal orientation." *Reason:* This step no longer applies, since the insertion/extraction station is now power driven.

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- g. A new step after step 3 in Section 7.1.3 has been added which reads: "Install a one-inch cap screw and nut into each impact limiter lifting hole (4X)." *Reason:* The holes are required to be obstructed during transport. This is not a new requirement, but the operational step has been missing.
 - h. Section 7.1.3, (prior step #4, now #5) has been revised to read: "Set the shock indicators affixed to the package shell, if required." *Reason:* This gives freedom to not set the actuators if not required by the fuel vendor.
 - i. The following sentence has been added to the end of Section 7.2.2.2, step #6: "Optionally, the impact limiter may be removed prior to loading the MFFP into the upending frame (Step 3)." *Reason:* This adds a little freedom to the procedure.
 - j. The second sentence of Section 7.2.2.3.1, step #7 has been deleted. *Reason:* insertion/extraction station is now power driven.
 - k. Section 7.2.2.3.1, step #8 has been revised to read: "Use the insertion/extraction station to upend the strongback." *Reason:* insertion/extraction station is now power driven.
 - l. In Section 7.2.2.3.2, step #1, the word 'Optional' has been removed. *Reason:* This step is not optional.
 - m. Section 7.2.2.5.1, step #5 has been deleted. *Reason:* This step no longer applies, since the insertion/extraction station is now power driven.
 - n. Section 7.2.2.5.1, step #6 has been revised to read: " Use the insertion extraction station to lower the strongback to a horizontal orientation." *Reason:* This step no longer applies, since the insertion/extraction station is now power driven.
 - o. Section 7.2.2.5.2, step #3, the word 'Optional' has been removed. *Reason:* This step is not optional.
 - p. A step after step 3 has been added in Section 7.2.2.7 which reads: "Install a one-inch cap screw and nut into each impact limiter lifting hole (4X)." *Reason:* The holes are required to be obstructed during transport. This is not a new requirement, but the operational step has been missing.
6. A small revision to the fabrication leakage rate test procedure has been made to facilitate acceptance testing of the package. The change consists of optionally using a test lid to leakage rate test the MFFP body, and a test body to leakage rate test the MFFP lid. The reason for this option is that during HUFPP fabrication it was found that the production vent port hole was much too small to permit evacuation of the body cavity into test range in a reasonable timeframe. The test body or test lid can have much larger ports and thus enable the boundary leakage rate tests to be completed in a shorter time. Section 8.1.4.2 was revised as follows:
- a. The following text was added to the end of step #2: "Optionally, the MFFP body may be tested using a test lid, and the MFFP closure lid may be tested using a test body. In that case, two separate leakage rate tests are performed."
 - b. The following text was added to the end of step #3: "Optionally, install the test port tool to the test body or test lid, if used."
7. Section 8.2.1 has been revised to read: "No structural or pressure tests are necessary to ensure continued performance of the MFFP." The reason for this change is that it is not necessary to repeat the pressure testing every five years. Since the safety analysis shows (Section 2.1.2.2.2.1, *Normal Operating Cycles*, and Section 2.6.5, *Vibration*) that fatigue is not of concern, no damage to the containment boundary or other package components will occur during normal use.

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8. The Packaging General Arrangement (SAR) Drawings have been revised to incorporate lessons learned from HUFPP packaging fabrication and to correct some errors and omissions. All of the changes are very minor in nature and will have no effect on any analysis result or certification test outcome. The changes are listed in the table below.

SAR Drawing Changes

Dwg No.	Zone	Change	Reason
All	NA	Title block updated	Company name change.
99008-20, sht 1	FN 14	Remove "or equivalent" from note	To ensure adequate performance, the O-ring material must meet the specification RR-0405-70 of Rainier Rubber Co. The material must still also meet the ASTM D2000 specified tests.
99008-20, sht 1	FN 19	Change note to read: "Machine engrave or impression stamp using ½" high low-stress characters 'For Lid Handling Only' approximately as shown, 5 places."	This revision allows machine engraving as well as impression stamping, and more clearly specifies the characters. A paint fill is not necessary.
99008-20, sht 1	FN 21	Replace note with: "Machine engrave or impression stamp test port labels using ½" high low-stress characters. Locate approximately as shown."	This revision allows machine engraving as well as impression stamping, and more clearly specifies the characters.
99008-20, sht 1	Bill of Materials, item # 21	Change callout to read, "O-ring, .081 X Ø.103 Butyl"	This revision is associated with a minor change to the vent port, see below, drawing 99008-20, sht. 4, zone C7. This is not a containment seal.
99008-20, sht 1	Bill of Materials, item # 22	Change part no. to "NAS1523C6N" and callout to read, "Ø3/8 Seal Washer". Replace "Parker or Equiv" with "Butyl". Add FN 14 to item.	This removes the brand-specific "Stat-o-seal" terminology and creates a proper generic callout. Adding FN14 requires Rainier Rubber RR-0405-70 material be used.
99008-20, sht 2	D-3	Add flag note 12 symbol to item 14 bubble	This addition permits using vacuum grease on the main O-rings. This corrects an omission.
99008-20, sht 4	D-3, D-5, D-7	In three places, change the counterbore from .69 DP to .63 DP and the thread depth from 1.0 DP to 1.1 DP	These revisions were found to be necessary during fabrication of the HUFPP packages. They will have no effect on package safety.

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99008-20, sht 4	C-7	Change the vent port hole to a through hole of \varnothing .28. Remove 3.60 depth of counterbore.	During fabrication of the HUFFP, it was found that the stepped hole was difficult to manufacture. This change has no effect on the vent port plug and sealing washer used for containment.
99008-20, sht 4	A/B-7	Move the \varnothing .198 dimension from the view above to this view, and revert to the block tolerance for this dimension and for the \varnothing .188 dimension.	This change does not alter the vent port stem design. Adequate dimensional control is afforded by the block tolerance.
99008-20, sht 4	B-3/4	Revert to the block tolerance for the .093 groove width and the \varnothing .137 gland diameter.	Adequate dimensional control is afforded by the block tolerance.
99008-20, sht 5	C-3	Change O-ring groove width from .467/.472 to .468 with the block tolerance.	The new nominal dimension of .468 is within the existing range. Adequate dimensional control is afforded by the block tolerance. Note, this groove width change does not affect any O-ring compression.
99008-31, sht 1	Bill of materials, item #9	Change length of SHCS from 1-3/4 to 1.	Corrects error. A 1-3/4 inch long bolt is not compatible with the hole and part dimensions.
99008-40, sht 1	FN 11	Change note to read: "Secure item 46 nut using cotter pin through item 45 bolt."	This revision removes unnecessary detail from the note. The bolt is secured in the same way as previously.
99008-40, sht 1	FN 13	Replace the last three sentences of the note with: "The fillet weld size shall be the full thickness of the joined material, inspected per note 5."	This revision corrects the weld terminology, and does not change any weld sizes or inspections.
99008-40, sht 1	A-8	Show an end view of the bolt which specifies a \varnothing .13 hole through one side of the bolt head, located .50 inches from the underside of the bolt head.	This hole is necessary to permit placement of a tamper-indicating lockwire as described in the MFFP SAR, Section 1.3.2. It was previously omitted.
99008-40, sht 1	Bill of materials, item #17	Add product form ASTM A276 to the part description.	This change permits plate or bar to be used for the impact limiter gussets.
99008-40, sht 1	Bill of materials, item #39	Add quantity 6 for both assembly A1 and assembly A2.	Error correction. These quantities were previously omitted.
99008-40, sht 2	C-7/8	Change 1-5/16 dimension to 1-3/8	Error correction.

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99008-40, sht 2	C-5	Change drill size from 1.312 to 1-5/16	Fraction is correct callout for a drill size.
99008-40, sht 2	D-3/4	Add missing weld.	Error correction.
99008-40, sht 2	D/C-1	Delete weld size from symbol.	A 1/8 (.125) weld cannot be applied to a .120 sheet. An undimensioned symbol indicates full sheet thickness weld.
99008-40, sht 3	C-7/8	Change 1-5/16 dimension to 1-3/8	Error correction.
99008-40, sht 3	C-5	Change drill size from 1.312 to 1-5/16	Fraction is correct callout for a drill size.
99008-40, sht 3	D-3/4	Add missing weld.	Error correction.
99008-40, sht 3	B-2	Delete weld size from symbol.	A 1/8 (.125) weld cannot be applied to a .120 sheet. An undimensioned symbol indicates full sheet thickness weld.



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Invoice To: 05/24/2010cc

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Attn: Dean Lindeman

Customer No:

Phone

Fax 509-438-6110

Invoice Number
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Invoice Date
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Order Number
007068
Payment Terms
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Item	QTY	Description	Price	Amount
1	1	2nd - 8th CPU 6 month LS-DYNA license w/LS-PrePost, LS-OPT (\$16,000/12 = \$1,333.33 x 6 month = \$7,999.98) Term: May 16, 2010 to November 15, 2010 Paid in Full \$0 Balance is Due	7,999.98	\$7,999.98
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