



Department of Energy
Washington, DC 20585

July 19, 2016

Attention: Document Control Desk
Mark Lombard, Director
Division of Spent Fuel Storage and Transportation,
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Mark Lombard:

The U.S. Department of Energy (DOE) requests an amendment of U. S. Nuclear Regulatory Commission Certificate of Compliance (CoC) Number 9330, for the Model ATR-FFSC package (NRC Docket 71-9330) to add "Conversion of BR-2 Alternative" (COBRA) fuel assemblies as authorized contents (payload), and to add air transport as an authorized mode for all payloads. The Idaho National Laboratory has subcontracted AREVA Federal Services (AFS) to prepare a revision to the Safety Analysis Report (SAR) in support of this request. AFS will express mail a paper copy of the SAR revision and one copy on compact disk (CD) media to the Document Control Desk, and one paper copy and six CDs to Project Manager Pierre Saverot. Enclosed to this letter is a table describing each of the changes made to the SAR in support of this request.

This proposed amendment to the CoC supports the DOE/National Nuclear Security Administration, Office of Material Management and Minimization in their European Reactor Conversion work. The amendment is critical path to making shipments of Low Enriched Uranium experiments to the Belgium Rector in the spring of 2017; therefore, DOE requests an expedited review by NRC to support these shipments.

DOE also requests NRC, for the benefit of the package users, to include on the CoC in the References section the "SAR document number and revision" corresponding to the application date in block 3.b., page 1, of the CoC.

If you have any questions or need more details please call at 301-903-5513 or james.shuler@em.doe.gov.

A handwritten signature in black ink, reading "James M. Shuler", is positioned above the typed name.

James M. Shuler
Manager, DOE Packaging Certification Program
U.S. Department of Energy
Office of Packaging and Transportation
EM-33, 270CC – Rm 3113
Washington, DC 20575

Enclosure: ATR FFSC COBRA SAR Amendment - Table of changes for ATR FFSC SAR
Revision 11 (COBRA Fuel)

ATR FFSC COBRA SAR Amendment

Table of changes for ATR FFSC SAR Revision 11 (COBRA Fuel)

Section or page no. of change	Material changed	Reason for change
Entire SAR	Double-sided pages	Reduce bulk of printed copy.
1.1	Completely revised to improve clarity. Same information is included.	One-by-one adding of fuels over the years, plus COBRA, made the section unwieldy and potentially confusing.
1.2.1.1	Removed list of specific fuels and added air transport	Refer to Section 1.2.2
1.2.1.1.7	Updated figure no.	Update. (Note: updated all figure nos. in Chapter 1 after this point).
1.2.1.1.8	<ul style="list-style-type: none"> Clarified dunnage configuration Included mention of cellulosic material Added maximum gap 	<ul style="list-style-type: none"> To broaden the possible configurations of dunnage To acknowledge paper (to separate loose fuel plates) or cardboard (as dunnage) Gap limitation based on recent BRR experience.
1.2.1.1.9	Added section	Describe COBRA FHE.
1.2.2	<ul style="list-style-type: none"> Added reference to COBRA Added adhesive tape to the poly mass, and added limit for cellulosic materials plus neoprene 	<ul style="list-style-type: none"> Update Added limits are consistent with criticality analysis.
1.2.2.4	Added COBRA loose plates to small quantity payload	Update.
1.2.2.4.5	Acknowledged paper and tape	Update.
1.2.2.4.6	Added section	Describe COBRA loose plates.
1.2.2.6	Added section	Describe COBRA fuel element.
Figure 1.2-10	Added figure	Depict COBRA FHE.
Figure 1.2-22	Added figure	Depict COBRA fuel element.
SAR drawings	Added drawing 60501-90	Depict COBRA FHE.
2.0	Removed list of specific fuels	Refer to Section 1.2.2
2.1.2.1.2	Remove list of specific FHEs	The list was too long, and is not necessary.
2.1.3	Add COBRA fuel to the weight table	Update.
Figure 2.1-7	Added figure	Depict COBRA FHE.

ATR FFSC COBRA SAR Amendment

Section or page no. of change	Material changed	Reason for change
Table 2.2-2	Revised aluminum temper designations	Correct the listed tempers to those that are available, no change to properties.
2.7	Added note about COBRA	Gives rationale why a structural evaluation is not required.
2.9	Added section on air transport	Update for new transport mode.
3.0	Removed list of specific fuels, add COBRA to last paragraph	Refer to Section 1.2.2
3.4.5	Added section	Required for air transport of fissile.
3.6	Add reference to COBRA fuel	Update.
3.6.1	Add COBRA and change LFPB to “fully loaded”	Update, and clarification/simplification.
3.6.2	Completely revised to improve clarity	Removes redundancy, adds a small table of data for clarity. No substantial change.
3.6.4	Add COBRA references	Update.
3.6.6.1	Add paragraph describing COBRA fuel	Update.
3.6.7 & 3.6.7.1.1	Add COBRA references	Update.
3.6.8 & 3.6.8.1 & 3.6.8.3.1	Add COBRA references	Update.
3.6.9.2.5	Add section	Adds discussion of the reason why COBRA fuel does not need to be explicitly analyzed thermally.
4.2	Removed list of specific fuels	Refer to Section 1.2.2
Chapter 5	No changes.	
6.0	Added callouts for new COBRA fuel element analysis. Clarified callouts for the other fuel types.	The COBRA analysis is new.
6.1	Modified section to provide results for all payload types rather than just the ATR fuel element.	Revised for clarity.
6.7	Added air transport analysis.	The air transport analysis is new.
6.11	Added COBRA plates as an allowed small quantity content.	COBRA plates will be transported as a small quantity payload.

ATR FFSC COBRA SAR Amendment

Section or page no. of change	Material changed	Reason for change
6.11.2, 6.11.3, 6.11.4	Added cellulosic material and fiberglass reinforced tape.	Cellulosic material (kraft paper) is used between the COBRA fuel plates, and the plates are bound with tape.
6.11.5	Added an analysis including cellulosic material and aluminum structural materials. Added 100 g neoprene cases.	Cellulosic material is new. The cases with aluminum are added to demonstrate that it is conservative to ignore structural materials. The 100 g neoprene cases are added for consistency.
6.11.7	Added pointer to Section 6.7	Air transport is now allowed.
6.13	Added COBRA fuel element analysis	The COBRA analysis is new.
7.1.4	Add COBRA	Update.
7.1.5	<ul style="list-style-type: none"> Moved requirements for dunnage to a new numbered step Add restriction of gap to $\frac{1}{4}$ in. or less Moved weight verification to new numbered step 	<ul style="list-style-type: none"> Provide necessary detail for dunnage for loose plates. Required to address similar NRC concern in BRR. For clarity.
7.2.2	Add COBRA	Update.
8.2.3.4	Revised and consolidated	One-by-one adding of fuels over the years, plus COBRA, made the section extremely repetitive. No substantive changes.
Chapter 9	No changes.	Not applicable