



U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
One White Flint North  
11555 Rockville Pike  
Rockville, MD 20852

Subject: Application for Revision to Certificate of Compliance No. 9248, Docket 71-9248, for the Model Nos. SP-1, SP-2, SP-3

References: [1] NRC Certificate of Compliance No. 9248, Docket 71-9248, Revision 23, dated March 6, 2014

[2] EMF-1563, Safety Analysis Report (SAR) for Transnuclear, Inc. Model SP-1, SP-2, and SP-3 Shipping Containers, Revision 15, January 2014

In accordance with the requirements of 10 CFR 71.38, AREVA TN Americas LLC (TN) herewith submits an application for revision to the Certificate of Compliance (CoC) No. 9248, Revision 23. This request is for a revision to the specification for the arrangements of closed cell polyethylene (CCP) foam, also described by the tradename Ethafoam, that is used for packing material in the AREVA Model SP-1, SP-2, SP-3 transportation packaging (SP).

The CCP foam arrangement in the SP inner container is important to safety for criticality safety. The quality category for the packaging parts is provided in AREVA document E17-04-001, *EHS&L Document, Transportation – Miscellaneous Transportation Reports, Licensed Packaging Component Classification with Regard to Importance for Safety*. The complete inner container is designated as Quality Category (QC) A and the inner container Ethafoam is QC C.

The engineering drawing for package approval, EMF-304,416 Rev. 14, *SP-1, -2, & -3 Inner Shipping Container Assembly*, that is incorporated by reference as a condition of approval in the U.S. NRC Certificate of Compliance 9248, Rev. 23, currently allows the CCP foam configurations specified in Note 5 on the drawing as:

CLOSED CELL POLYETHYLENE (CCP) OPTIONAL ARRANGEMENT:  
CONTINUOUS OR DISCONTINUOUS STRIPS. THE CONTINUOUS CCP STRIP HAS HOLES MATCHING THE HOLES IN THE METAL. DISCONTINUOUS STRIPS SHALL BE 7 INCHES WIDE MAXIMUM (UP TO 12 STRIPS). DISCONTINUOUS STRIPS MAY BE PERFORATED. THE CCP SHALL BE ATTACHED TO THE METAL BY GLUE OR OTHER MEANS THAT PREVENT SLIPPAGE ON THE METAL SURFACE.

The discontinuous strips are solid CCP without perforation holes. Note 5 is revised to allow CCP without holes that exceed 7 inches in width and specifies only a maximum cumulative length as:

CLOSED CELL POLYETHYLENE (CCP) ARRANGEMENT OPTIONS (INVOKED ONLY FOR FUEL ASSEMBLIES): PERFORATED CCP COVERS THE PERFORATED METAL CHANNEL AND COVER LINER. HOLES IN THE PERFORATED CCP SHALL APPROXIMATELY MATCH PERFORATION HOLES IN

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THE METAL CCP WITHOUT HOLES MAY BE USED, BUT THE CUMULATIVE AXIAL LENGTH OF UNCOVERED METAL CHANNEL SHALL BE AT LEAST 32 INCHES ALONG ANY OF THE CHANNEL OR COVER LINER SURFACES. LOOSE RODS, CONTAINED IN AN APPROVED PIPE OR ROD BOX, MAY BE SHIPPED WITH ANY CONFIGURATION OF CCP.

The fuel channel perforations are a design feature of the SP inner container that allows water flow into void spaces between the fuel channels and outer shell of the container body or cover. The criticality safety evaluations, with the exception of the rod pipe or rod box, evaluate a configuration where the fuel assembly is moderated to the same extent as the void spaces outside the fuel channel, hereafter referred to as uniform flooding. It is not credible for the fuel assembly to flood in preference to void spaces between the fuel channels and outer shell of the container body and cover. Flow through the perforated channels is necessary to support the configuration of uniform flooding assumed for the fuel assembly contents in the criticality safety evaluations.

Uniform flooding assumed for water leaking into the SP inner container is consistent with requirements for fissile material packages to consider that water moderation occurs to the most reactive credible extent consistent with normal conditions of transport and accidental transport conditions. The acceptance criteria for a minimum of 32 inches on the cumulative axial length of open perforated surfaces provides reasonable assurance that uniform flooding would occur if water were to leak into the SP inner container under credible scenarios.

The quantity of CCP allowed by any of the arrangement options is also bounded in the criticality evaluation. Moderation provided by the specified CCP packing material arrangements and water leaking into the inner container is represented in the criticality evaluation as a uniform flooding geometry, and a full range of water densities is considered for the material filling the regions that are uniformly flooded.

The revision to the specification of the arrangement options in Note 5 on drawing EMF-304,416 provides reasonable assurance that the uniform flooding configuration analyzed for criticality safety in the SAR is maintained during transport conditions as required by 10 CFR 71.55(b). Drawing EMF-304,416 is superseded by 02-9264132-000 (Revision 0) in the SAR (Revision 16).

This submittal contains the following enclosures:

- Enclosure 1 provides a consolidated copy of the SP-1, SP-2, and SP-3 SAR Revision 16. This enclosure is proprietary.
- Enclosure 2 provides a non-proprietary consolidated copy of the SP-1, SP-2, and SP-3 SAR Revision 16. This enclosure is non-proprietary.
- Enclosure 3 is a markup of Revision 23 of CoC No. 9248
- Enclosure 4 provides an affidavit, in accordance with 10 CFR 2.390, specifically requesting that the proprietary information included in Enclosure 1 of this submittal be withheld from public disclosure. That information may not be used for any purpose other than to support the review of the application for revision to the SP-1, SP-2, and SP-3 CoC. A non-proprietary version of Enclosure 1 is provided in Enclosure 2.

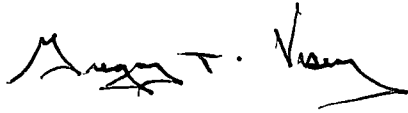
The changed areas in the SAR are marked as follows:

- New or changed pages show "Revision 16" in the header.
- Changed areas are indicated using revision bars in the right-hand margin. Newly inserted or changed text is shown by italics.

TN respectfully requests that a review schedule be planned in order for Revision 24 to CoC 9248 to become effective on or before December 17, 2016 in order to support a late January 2017 shipment.

Should NRC staff have any questions or require additional information to support review of this application, please contact Mr. Glenn Mathues by telephone at 410-910-6538, or by e-mail at [Glenn.Mathues@areva.com](mailto:Glenn.Mathues@areva.com).

Sincerely,



Gregory T. Vesey  
President

cc: Huda Akhavannik, U.S. Nuclear Regulatory Commission  
• One electronic copy (computer disk) of this letter and Enclosures 1 through 4  
M. Conroy, U.S. Department of Transportation (this letter and Enclosure 1, via email)

Enclosures:

1. SP-1, SP-2, and SP-3 SAR Revision 16 (Proprietary Version)
2. SP-1, SP-2, and SP-3 SAR Revision 16 (Non-Proprietary Version)
3. Proposed Changes to CoC 9248 Revision 23
4. Affidavit Pursuant to 10 CFR 2.390

