



March 9, 2015  
E-41224

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

Subject: Application for Revision 13 to Certificate of Compliance No. 9233 for the Model No. TN-RAM Transportation Packaging, Docket No. 71-9233

References: Revision 12 to Certificate of Compliance No. 9233 for the Model No. TN-RAM Packaging

Document E-10621, Safety Analysis Report for the TN-RAM, Revision 12

In accordance with 10 CFR 71.31(b) and 71.38, AREVA Inc. herewith submits its application for renewal and revision to the Certificate of Compliance (CoC) 9233 for the TN-RAM packaging. In support of this application, a consolidated copy of the safety analysis report (SAR), Revision 13, with both a proprietary and a non-proprietary version, is included.

The substantive changes in this revision are as follows:

1. An increase in the maximum allowable activity from 1272 A<sub>2</sub> to 30,000 Ci cobalt-60 or equivalent.
2. An increase in the maximum allowable decay heat load from 300 watts to 500 watts.

This submittal contains the following enclosures:

- Enclosure 1 provides a description of the safety analysis report (SAR) proposed changes and includes the reason for the change.
- Enclosure 2 provides a copy of the SAR changed pages resulting from changes described in Enclosure 1. This enclosure is proprietary.
- Enclosure 3 provides a consolidated copy of Revision 13 of the SAR. This enclosure is proprietary.
- Enclosure 4 provides a consolidated copy of a public version of Revision 13 of the SAR. This enclosure is non-proprietary.
- Enclosure 5 provides a listing of thermal and shielding computer files that are contained in Enclosure 6.
- Enclosure 6 provides the computer files supporting the thermal and shielding analysis. This enclosure is proprietary.
- Enclosure 7 provides a markup of Revision 12 for CoC No. 9233 for the proposed changes discussed in Enclosure 1.
- Enclosure 8 provides an affidavit, in accordance with 10 CFR 2.390, specifically requesting that you withhold proprietary information included in Enclosures 2, 3, and 6 of this submittal

**AREVA TN**

AREVA Inc.  
7135 Minstrel Way • Suite 300 • Columbia, MD 21045  
Tel: 410-910-6900 • Fax: 410-910-6902  
[www.areva.com/AREVATN](http://www.areva.com/AREVATN)

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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 TN-RAM CoC.

The changed areas in the SAR are marked as follows:

- New or changed pages show "Revision 13" in the header.
- Changed areas are indicated using revision bars in the right-hand margin. Newly inserted text is shown by italics.

Should the NRC staff require additional information to support review of this application, please do not hesitate to contact Mr. Glenn Mathues at 410-910-6538, or me at 410-910-6820.

Sincerely,



Paul Triska  
Vice President, Technical Services

cc: John A. Vera, U.S. Nuclear Regulatory Commission

- One electronic copy (DVD) of this letter and Enclosures 1, 2, 3, 5, 7 and 8.
- One electronic copy (DVD) of Enclosure 6.

Enclosures:

1. List, Description, and Justification of Changes
2. Changed Pages, TN-RAM SAR, Revision 13 (Proprietary)
3. TN-RAM SAR, Revision 13 (Proprietary)
4. TN-RAM SAR, Revision 13 (Non-Proprietary)
5. Listing of Computer Files Contained in Enclosure 6
6. One DVD Containing Thermal and Shielding Computer Files (Proprietary)
7. Proposed Changes to CoC 9233, Revision 12
8. Affidavit Pursuant to 10 CFR 2.390

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7135 Minstrel Way • Suite 300 • Columbia, MD 21045  
Tel: 410-910-6900 • Fax: 410-910-6902  
[www.areva.com/AREVATN](http://www.areva.com/AREVATN)

**Enclosure 1 to E-41224**

**List, Description, and Justification of Changes**

**List, Description, and Justification of Changes**  
(Safety Analysis Report, TN-RAM, Revision 13)

<u>Item</u>	<u>Chapter- Section</u>	<u>Description and Justification</u>
1	Revision Log	Revised the Revision Log. Justification: Revision 13 to the SAR.
2	TOC	Revised the Table of Contents (TOC) for the following:  Changed the following page numbers: "2-13" to "2-12", "2-14" to "2-13", "2-24" to "2-23", "2-26" to "2-25", and 2-72" to "2-74." There were not any changes to Chapter 2 of the SAR resulting from this editorial review.  Justification: Editorial review of the master TOC against Chapter 2.  Changed the title "Hypothetical Accident Thermal Evaluation" to "Thermal Evaluation for Hypothetical Accident Conditions". See Justification for Item 7 below for further information.  Justification: Editorial review of the master TOC against Chapter 3  Changed section number "4.5" to "4.4". There were not any changes to Chapter 4 of the SAR resulting from this editorial review.  Justification: Editorial review of the master TOC against Chapter 4 TOC.  Changed the descriptions and associated page numbers for Chapter 5.  Justification: This chapter revision is to demonstrate that with the increase in the curie content, the shielding analysis demonstrates compliance to the regulatory requirements.  Changed page numbers "7-9" to "7-13" and "7-11" to "7-16".  Justification: Editorial review of the master TOC against Chapter 7 TOC.
3	1 (All)	Revised this chapter to delete unnecessary section and page breaks and to update the header for the current revision number and the document number. Justification: Editorial enhancements
	1.1 Page 1-1	Deleted the sentence "All references to 10 CFR 71 in this Safety Analysis Report consider the current revision at the time of submittal, October 2007." Justification: Deletion of duplicating statement.  Deleted "3,785 curies/shipment which is equivalent to about".
	1.2.3 Page 1-7	Justification: Deletion of this statement. See Justification for Item 9 below for further information.
4	1.2.3 Page 1-6	Changed from "1272 A <sub>2</sub> " to "30,000 Ci cobalt-60 or equivalent. Equivalency to other radionuclides is determined by the total energy in its spectrum." Justification: See Justification for Item 9 below for further information.
5	1.2.3 Page 1-6	Changed from "300 watts" to "500 watts." Justification: See Justification for Item 7 below.

**List, Description, and Justification of Changes**  
(Safety Analysis Report, TN-RAM, Revision 13)

<u>Item</u>	<u>Chapter- Section</u>	<u>Description and Justification</u>
6	2.1	<p>Changed from "1272 times Type A<sub>2</sub> quantities" to "or equal to 30,000 Ci cobalt-60 or equivalent."</p> <p>Justification: See Justification for Item 9 below.</p>
7	3 (All)	<p>Revised the thermal analysis chapter to accommodate an increase in the maximum decay heat load from 300 watts to 500 watts.</p> <p>Justification: This chapter revision is to demonstrate that with the increase in the heat load, the thermal analysis demonstrates compliance to the regulatory requirements</p>
8	4 TOC Page 4-ii	<p>Changed from "B" to "A" for the page number for Table 4-1 and Table 4-2.</p> <p>Justification: Incorrect page number.</p>
	4.2.1 Page 4-5B	<p>Changed "roads" to "rods" in the first sentence in the first paragraph.</p> <p>Justification: Typographical error.</p>
	4.2.2 Page 4-6	<p>Changed "23.8 psia" to "21.08 psia."</p> <p>Justification: The cavity pressure calculation in Chapter 3, Section 3.4.4 was revised to demonstrate that with the increase in the heat load, the revised cavity pressure and resulting confinement analysis demonstrates compliance to the regulatory requirements.</p>
9	5 (All)	<p>Revised the shielding analysis chapter to accommodate an increase in the maximum activity from 14,000 Curies to 30,000 Curies of cobalt-60 or equivalent.</p> <p>Justification: This chapter revision is to demonstrate that with the increase in the curie content the shielding analysis demonstrates compliance to the regulatory requirements. This includes addressing RIS-2013-04, Content Specification and Shielding Evaluations for Type B Transportation Packages, as applicable to the TN-RAM.</p>
10	7.1.2 Page 7-8	<p>Inserted a new step, 7.1.2.40, which states to "<i>perform a temperature survey to verify compliance with 10 CFR 71.43(g) and 10 CFR 71.87(k)</i>", and renumbered what was previously step 7.1.2.40 and all subsequent steps.</p> <p>Justification: Ensure that the maximum temperature of accessible packaging surfaces remains below the regulatory requirements</p>
11	7.1.3 Page 7-12	<p>Inserted a new step, 7.1.3.33, which states to "<i>perform a temperature survey to verify compliance with 10 CFR 71.43(g) and 10 CFR 71.87(k)</i>", and renumbered what was previously step 7.1.3.33 and all subsequent steps.</p> <p>Justification: Ensure that the maximum temperature of accessible packaging surfaces remains below the regulatory requirements</p>

**Enclosure 2 to E-41224**

**Changed Pages, TN-RAM SAR, Revision 13  
(~~Proprietary~~)**