AREVA

October 11, 2013
E-36596

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

Subject: Application for Revision 1 to Certificate of Compliance No. 9358 for the Model No. TN-LC Transportation Packaging, Docket No. 71-9358

Reference: NRC Certificate of Compliance No. 9358, Docket No. 71-9358, Revision 0, dated December 31, 2012

In accordance with 10 CFR 71.31(b), Transnuclear Inc., (TN) herewith submits its application to revise Certificate of Compliance (CoC) 9358 for the TN-LC Transportation Package. This application proposes to modify the trunnion attachment block to shell inner weld size, clarify licensing drawings, and revise the criticality safety index for TRIGA, 1FA BWR and 1FA 25 pin can baskets.

Enclosure 1 provides an affidavit pursuant to 10 CFR 2.390, specifically requesting that you withhold proprietary information included in Enclosure 3 from public disclosure. That information may not be used for any purpose other than to support the review of the application. Enclosure 2 provides a listing of TN-LC Safety Analysis Report (SAR) changed drawings and pages and describes the reason for the changes. Enclosure 3 provides the replacement drawings and pages for the proprietary version of the SAR. Enclosure 4 provides the replacement drawings and pages for the non-proprietary version of the SAR. Enclosure 5 contains a listing of the computer files contained on a computer disk (Enclosure 6). Since Enclosure 6 is a computer disk containing entirely proprietary information, no public version is provided.

The changed areas are marked as follows:

- New or changed pages show "Revision 7, 10/13" in the header area.
- Changed areas are indicated using revision bars in the right-hand margin. Newly inserted text is shown by italics.

As such, TN submits the SAR replacement pages in conjunction with the application for revision to the CoC. Should you have any questions regarding this submittal, please do not hesitate to contact Mr. Glenn Mathues at 410-910-6538 or me at 410-910-6820.

Sincerely,

Paul A Triska

Paul Triska
Vice President - Operations

NMSS01

TRANSNUCLEAR INC.

7134 Minstrel Way - Suite 300 - Columbia, MD 21045
Tel.: 410 910 0900 - Fax: 410-910-0902 - www.transnuclear.com

cc: Ms. Michele M. Sampson (NMSS/DSFST), in a separate mailing, as follows, to the address below:

- One hard copy of this cover letter only

Ms. Michele M. Sampson
Branch Chief, Licensing Branch
M/S 3WFN-14 A44
Division of Spent Fuel Storage and Transportation
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

301-287-9077

Pierre Saverot (NMSS/DSFST/LB MS 14 A44), as follows

- One hardcopy of this letter
- Four proprietary electronic copies (computer disks) containing this cover letter and Enclosures 1, 2, 3, and 5, and the CoC 9358 SAR Revision 7
- Two copies of Enclosure 6

Enclosures:

1. Affidavit Pursuant to 10 CFR 2.390
2. Listing, Description and Reason for Changes to the TN-LC SAR Pages and Drawings
3. Replacement Pages to the TN-LC SAR, Revision 7 (Proprietary version)
4. Replacement Pages to the TN-LC SAR, Revision 7 (Non-Proprietary version)
5. Listing of Computer Files Contained in Enclosure 6
6. Criticality Computer Files Associated with Application for Revision 1 to Certificate of Compliance No. 9358 (one computer disk) (Proprietary)

AFFIDAVIT PURSUANT
TO 10 CFR 2.390

Transnuclear, Inc.)
State of Maryland) SS.
County of Howard)

I, Paul Triska, depose and say that I am a Vice President of Transnuclear, Inc., duly authorized to execute this affidavit, and have reviewed or caused to have reviewed the information that is identified as proprietary and referenced in the paragraph immediately below. I am submitting this affidavit in conformance with the provisions of 10 CFR 2.390 of the Commission's regulations for withholding this information.

The information for which proprietary treatment is sought is contained in Enclosures 3 and 6 and is listed below:

Enclosure 3:

- Portions of CoC 9358 Safety Analysis Report Chapter 6, and Appendices 6.10.3 and 6.10.4
- Portions of the SAR package design drawings in Appendix 1.4.1, as follows:
  - 65200-71-01 R-6
  - 65200-71-20 R-4
  - 65200-71-21 R-1
  - 65200-71-40 R-4
  - 65200-71-50 R-4
  - 65200-71-60 R-4
  - 65200-71-70 R-4
  - 65200-71-80 R-4
  - 65200-71-96 R-4
  - 65200-71-102 R-4

Enclosure 6:

- Certain Computer Files Associated with Application for Revision 1 to Certificate of Compliance No. 9358

These documents have been appropriately designated as proprietary.

I have personal knowledge of the criteria and procedures utilized by Transnuclear, Inc. in designating information as a trade secret, privileged or as confidential commercial or financial information.

Pursuant to the provisions of paragraph (b) (4) of Section 2.390 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure, included in the above referenced document, should be withheld.

1) The information sought to be withheld from public disclosure involves portions of the Model TN-LC transportation packaging safety analysis report related to the design and analysis of the TN-LC transportation packaging, which are owned and have been held in confidence by Transnuclear, Inc.

2) The information is of a type customarily held in confidence by Transnuclear, Inc. and not customarily disclosed to the public. Transnuclear, Inc. has a rational basis for determining the types of information customarily held in confidence by it.

3) Public disclosure of the information is likely to cause substantial harm to the competitive position of Transnuclear, Inc. because the information is related to the design of transportation packaging, the application of which provides a competitive economic advantage. The availability of such information to competitors would enable them to modify their product to better compete with Transnuclear, Inc., take marketing or other actions to improve their product's position or impair the position of Transnuclear, Inc.'s product, and avoid developing similar data and analyses in support of their processes, methods or apparatus.

Further the deponent sayeth not.

Paul Triska
Vice President, Transnuclear, Inc.

Subscribed and sworn to me before this 11th day of October, 2013.

Notary Public

My Commission Expires 10 / 17 / 2014

Patricia Hoch
Notary Public
Howard County, MD
My Commission Expires Nov. 17, 2014

Listing, Description and Reason for Changes to the TN-LC SAR Pages and Drawings

The TN-LC drawings required some updates to support and facilitate fabrication and improve overall drawing clarity. These updates have no impact on the TN-LC design and are purely editorial. The major technical updates include a revised trunnion attachment block welds configuration, allowing equivalent alternate materials for some of the cask ports' elastomer seals and various metal components, and an increase of boron content for the TRIGA basket neutron absorbing plates to support a decrease of CSI from 100 to 0.

Changes to Drawings:

Drawing	Change	Reason for Change
65200-71-01 sheet 1	Change name of item 3G to "LID BOLT WASHER".	Adds consistency with naming convention used for item 8H.
	Change item 3J quantity to 3.	Item 3J is only used 3 times.
	Change Part No. and add reference to note 45 for item 3K.	The seal material specification is controlled by note 17 and this seal material may not be available for an off-the-shelf item, therefore "xx" needs to be specified in the part number and a provision for an alternate seal assembly design must be added.
	Add alloys ASTM A213 or A312 Type TP304 to the possible materials for item 8B.	The mechanical and physical properties of these alloys are identical to ASTM A240 Type 304.
65200-71-01 sheet 2	Add note 44.	Allows the impact limiter attachment bolt holes to interfere with the welds used to attach items 6 and 10 to the outer shell.
	Add ID numbers to impact limiters to note 13.	Impact limiter dimensions are derived from the as-built dimensions of the unique cask they are built for.
	Add CJP to note 14.	Calculations did not analyze welds smaller than the full thickness of item 16. For clarity, complete joint penetration welds shall be specified.
	Add note 45.	The original stat-O-seal may not be possible to procure in the required compound. The O-ring seal material is the same as previously required and the required washer dimensions ensure that the seal is properly compressed.
65200-71-01 sheet 3	Add weld details for pads.	Welding details of nameplate and regulatory plate pads were not provided.
65200-71-01 sheet 5	Modify weld for trunnion attachment blocks to outer shell.	Clarify PT requirements and make item more easily weldable with less distortion. Analyzed in calc TN-LC-0204.
	Add note 44 call out.	Ensure the impact limiter attachment bolt holes are not obstructed by the welds used to attach items 6 and 10 to the outer shell.
	State that trunnion bolts rotated into view.	Add clarity to section cut.
65200-71-01 sheet 6	Remove unnecessary dimensions from top flange section.	Length dimensions are controlled by note 12: flange height varies based on weld location. Dimension for depth of bolt hole not needed for license.
65200-71-01 sheet 7	Add alignment hole to section F-F.	The section goes through the alignment hole location.
	Remove angle of lid lead in chamfer.	Detail not required for license.
65200-71-01 sheet 8	Remove unnecessary dimensions from bottom flange section.	Length dimensions are controlled by note 12: flange height varies based on weld location.

Listing, Description and Reason for Changes to the TN-LC SAR Pages and Drawings

Drawing	Change	Reason for Change
65200-71-01 sheet 9	Removal of tolerance on trunnion bolt hole counter-bore and make lip diameter a reference dimension.	Details are not needed for license.
65200-71-01 sheet 10	Make 4.12" dimension a reference dimension.	Dimension is bounded by other dimensions.
65200-71-01 sheet 11	Make item 8C thickness a reference dimension.	Old thickness requirement is above detail needed for license.
	Remove tolerance from o-ring diameters.	Tolerance not needed for license (see sheet 7 detail 4).
65200-71-20 sheet 1	Change part for item 16 to "BOLT."	Size of bolt not required for license.
	Revise material of item 18 to "manufacturer's specification".	Jergens 23426 hoist ring is made from alloy steel with a black oxide coating. Equivalent stainless steel hoist rings have significantly reduced strength from the specified hoist ring.
65200-71-20 sheet 2	Revise welding symbol arrows for impact limiter outer covers.	The welding symbol arrow in View C-C is removed as the indicated weld seam is already controlled by the welding symbol directly above it. The added welding symbol arrow adds clarity to indicate that add walls of item 10 are welded as in view B-B. Adding "TYP" to the two other welding symbols clearly indicates that this weld symbol applies to all seams joining parts 4 to 1 and 10 to 1.
	Remove parenthesis from filet weld symbols.	Parenthesis should not be used to establish the size of a filet weld in accordance with AWS A2.4.
65200-71-21 sheet 1	Make all transport configuration dimensions reference dimensions.	Details of strap, saddle, and lid are not needed for license.
	Add regulatory plate to drawing.	Side View drawing now matches cask assembly drawing.
65200-71-40 sheet 1	Add "TP" to material specification of item 9.	Material is identified at "TP 304" in ASME Section II.
65200-71-40 sheet 2	Make two dimensions reference dimensions.	Specific dimension is not required for license.
65200-71-40 sheet 3	Add arrow to other side of joint between items 2 and 4.	The weld symbol is intended to indicate a weld along the entire joint of items 4 and 2. Because of the lap joint construction, this weld will have a discontinuity at the middle of the joint. As such, the welding symbol shall point to both parts of the lap joint.
	Remove note 20 call-out.	Note 20 is no longer used.
	Make specific dimension reference dimension.	Specific dimension is not required for license.
65200-71-40 sheet 4	Make radius optional.	Joint weld is CJP and weld edge preps can remove presence of radius.
	Make two dimensions reference dimensions.	Specific dimension is not required for license.
	Add parenthesis around weld symbol.	Parenthesis specifies groove weld size which is required for weld.
65200-71-40 sheet 5	Simplify spacer assembly design and drawing.	Removing the recess in item 10 allows the leg buttons (item 7) to completely rest on the spacer. A 7.00" thru hole is added to the spacer base (item 8). The thru hole is needed for water drainage of the spacer during wet loading operations and follows the same design as the TRIGA basket spacer bottom plate (drawing 65200-71-80 sheet 4, part 12).

Listing, Description and Reason for Changes to the TN-LC SAR Pages and Drawings

Drawing	Change	Reason for Change
65200-71-50 sheet 1	Add "TP" to material specification to item 1.	Material is identified at "TP 304" in ASME Section II.
	Specify that items 11 and 14 are not used for transportation.	Add clarity to the note.
	For items 11 and 14, allow CS or SST, make items NITS and Non-code.	These items are not used for transportation and are not accounted for in the analysis performed in the license.
65200-71-50 sheets 3 and 5	Add note 5 call out to bottom cover and tube cap.	Holes are drawn, but the note requiring holes is not given.
65200-71-50 sheet 4	Change name of item 8 to Spacer Plate.	Name was written incorrectly as Back Plate.
65200-71-60 sheet 1	Add to note 9 that "item 13 is optional".	Add clarity.
	Remove details from item 6.	Details not required for license.
65200-71-60 sheet 4	Make widths for items 8 and 9 a reference dimension.	Dimension not crucial for effective use of part, and dependent on the diameter of the rail, which is also a reference dimension.
65200-71-70 sheet 1	Add notes 15 and 16 and make "2x 3/16" and "2x 1/8" minimum dimensions.	Ensure effective fitup of the buckets into each other during stacking in the basket.
	Move position of (3/32) to left of weld symbol.	Dimension is the size of weld and should be on left of weld symbol as per AWS A2.4.
65200-71-70 sheet 2	Make dimension reference dimension.	Dimension is specified on sheet 1, top view.
65200-71-80 sheet 1	Change "AND" to "OR".	Components conform to only one ASME subsection depending on the designation in the parts list. "Or" is the appropriate choice of words because only one code subsection shall be applied to a given part.
	Revise B10 content.	Support revised criticality analysis.
	Remove lengths from items 13 and 15.	Lengths are given elsewhere in the drawings.
	Add "TP" to material specification to items 13 and 15.	Material is identified as "TP 304" in ASME Section II.
	Remove height of lifting lug above assembly.	Dimension not needed for license.
	Revise quantities of items 17 and 19.	Quantity now shows amount required for one basket or one top spacer.
65200-71-80 sheet 4	Make thru hole sizes in spacer assembly reference dimensions.	Specificity not required for license.
65200-71-80 sheet 5	Removal of details and making dimensions reference.	Details are not needed for license. Reference dimensions are not needed for effective use of part.
65200-71-96 sheet 1	Specify minimum quantity of item 5 in note 8.	Additional item 5 may be required for fabrication.
65200-71-96 sheet 2	Removal of part dimensions.	Dimensions are given on sheet 1.
65200-71-102 all sheets	Complete rewrite.	Improve clarity of options.

Listing, Description and Reason for Changes to the TN-LC SAR Pages and Drawings

Drawing	Change	Reason for Change
65200-71-102 sheet 1	Allow option of SA-213/SA-312/A213/A312 Type TP 304 for items 1, 5, and 7A.	Allow use of different source materials (such as pipe or tube) for more flexibility in fabrication. Material properties are equivalent.

The TN-LC SAR required revision to the Section 2.13.5 analysis to support a decrease in the size of the trunnion weld. The TN-LC SAR required changes to Chapter 6 to support the Criticality Safety Index (CSI) modification for the TRIGA and 1FA BWR and 1FA 25 pin can baskets to CSI of 0. The CSI remains unchanged (CSI of 100) for the NRUX, MTR and 1FA PWR baskets.

Changes to SAR pages:

SAR Page #	Change	Reason for Change
Title page	Updates revision level and date	Reflects updated revision level and date
i	New page	Adds a revision history to the SAR
ii	No change	text shift
iii	No change	text shift
iv	No change	text shift
v	No change	text shift
vi	No change	text shift
vii	No change	text shift
viii	Change "25-" to "25"	Consistent use of the term "25 pin can" in the TN-LC SAR
ix	No change	text shift
x	No change	text shift
xi	No change	text shift
xii	No change	text shift
xiii	No change	text shift
xiv	No change	text shift
1-1	Information clarification	Clarification in support of the proposed authorized contents CSI changes
1-8	Information clarification	Clarification in support of the proposed authorized contents CSI changes
1.4.1-1	Update revision numbers	TN-LC drawings updated to facilitate fabrication
2.13.5-i	Updates table of contents	Changed contents
2.13.5-1	Updates analysis	Supports decrease in size of trunnion weld
2.13.5-1a	Updates analysis	Supports decrease in size of trunnion weld
2.13.5-3	Editorial correction	Improves clarity
2.13.5-4	Editorial correction	Improves clarity
2.13.5-6	Adds weld analysis	Supports decrease in size of trunnion weld
2.13.5-6a	Adds weld analysis	Supports decrease in size of trunnion weld
2.13.5-6b	Adds weld analysis	Supports decrease in size of trunnion weld
2.13.5-7	Adds weld analysis	Supports decrease in size of trunnion weld
2.13.5-8	Adds weld analysis	Supports decrease in size of trunnion weld
2.13.5-9	Editorial correction	Improves clarity

Listing, Description and Reason for Changes to the TN-LC SAR Pages and Drawings

SAR Page #	Change	Reason for Change
2.13.5-10	Editorial correction	Improves clarity
2.13.5-11	Editorial correction	Improves clarity
2.13.5-12	Adds new table	Supports decrease in size of trunnion weld
2.13.5-14	Adds reference	Supports decrease in size of trunnion weld
2.13.5-15	Expands table	Supports decrease in size of trunnion weld
2.13.5-16	Revises parameter	Supports decrease in size of trunnion weld
2.13.5-18	Update Table 2.13.5-5	Supports decrease in size of trunnion weld
2.13.5-19	Adds new table	Supports decrease in size of trunnion weld
6-2	Revise sections 6.1.2 and 6.1.3 discussion	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6-6	Revise Section 6.5 discussion	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6-7	Revise Section 6.6 discussion	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6-12	Revises Table 6-1	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.3-i	Updates table of contents	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.3-ii	Updates table of contents	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.3-1	Updates analysis	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.3-2	Updates analysis	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.3-5	Updates analysis	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.3-5a	No change	Text shift
6.10.3-6	Updates analysis	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.3-7	Updates analysis	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.3-8	Updates analysis	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.3-10	Updates analysis	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.3-11	Updates analysis	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.3-11a	Updates analysis	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.3-14	Updates analysis	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.3-17	Editorial correction	Improves clarity
6.10.3-23	Updates analysis	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.3-24	Updates analysis	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.3-25	Updates analysis	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.3-26	Updates analysis	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.3-27	Updates analysis	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.3-28	Updates analysis	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.3-29	Updates analysis	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.3-30	Updates analysis	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.3-31	Updates analysis	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.3-35	Updates table	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.3-37	Adds tables	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.3-37a	Adds tables	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.3-37b	No change	text shift
6.10.3-45	Adds new figures	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.3-45a	Adds new figures	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.3-45b	Adds new figures	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.4-i	Updates table of contents	Changed contents
6.10.4-ii	Updates table of contents	Changed contents
6.10.4-iii	Updates table of contents	Changed contents
6.10.4-1	Updates analysis	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets

Listing, Description and Reason for Changes to the TN-LC SAR Pages and Drawings

SAR Page #	Change	Reason for Change
6.10.4-2	Updates analysis	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.4-3	Updates analysis	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.4-5	Editorial correction	Improves clarity
6.10.4-6a	Editorial correction	Improves clarity
6.10.4-13	Updates analysis	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.4-14	Updates analysis	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.4-15	Updates analysis	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.4-20	Updates analysis	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.4-23	Updates table	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.4-37	Updates analysis	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.4-40	Editorial correction	Improves clarity
6.10.4-43	Updates table	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.4-57	Editorial correction	Improves clarity
6.10.4-66	Adds new figures	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
6.10.4-67	Adds new figures	Revising criticality evaluation for TRIGA, 1FA BWR, 25 Pin Baskets
8-1	Adds AWS reference	Clarification
8-1a	Adds AWS reference	Clarification
8-17	Adds AWS reference	Clarification