

August 28, 2013

MEMORANDUM TO: Anthony H. Hsia, Deputy Director  
Division of Spent Fuel Storage and Transportation, NMSS

FROM: Pierre Saverot, Project Manager **/RA/**  
Licensing Branch  
Division of Spent Fuel Storage and Transportation, NMSS

SUBJECT: SUMMARY OF AUGUST 21, 2013, MEETING WITH  
TRANSNUCLEAR, INC.

### Background

Transnuclear, Inc. (TN) requested a second pre-application meeting to discuss a planned amendment request for the Model No. TN-LC package. Proposed modifications include licensing drawings, welding and structural changes, as well as a change from a Criticality Safety Index (CSI) of 100 to 0 for TRIGA, 1 Fuel Assembly (FA) Boiling Water Reactor (BWR) and 1FA pin can baskets.

The first pre-application meeting was held on May 29, 2013. This meeting was noticed on July 16, 2013. The meeting attendance list and the presentation slides are provided as Enclosure Nos. 1 and 2, respectively.

### Discussion

TN took into account staff's input from the May 29, 2013, meeting and discussed a new weld configuration of the trunnion attachment block to the cask shell that will meet regulatory requirements. TN clarified that (i) the outer groove weld size will be reduced from  $\frac{3}{4}$ " to  $\frac{1}{2}$ ", (ii) the inner groove weld will be changed to a fillet seal weld, and (iii) root, mid and final multilayer liquid penetrant tests (PT) will be specified to ensure adequate PT examination of the weld. TN also explained that the total stress intensity in the outer weld remains below the allowable stresses under either 6 g or 10 g loads.

Staff noted that Interim Staff Guidance No. 15 "Materials Evaluation" invokes flaw size analysis for full penetration welds while the weld in question does not provide containment but is a Code NF groove weld. Staff said that the amendment request should include a complete "design change justification" to demonstrate compliance with Title 10 of the *Code of Federal Regulations* Section 71.45(a). Staff also had either questions or some initial concerns on (i) code requirements due to the fact that Code NB requires a volumetric test, (ii) control of metal deposition, (iii) possible exceptions taken to standards, (iv) reductions considered in the stress evaluation, (v) hand calculations for stress intensity, (vi) derating per Code NF for weld inspection, and (vii) identification of periodic or visual inspections in the application.

The licensed criticality analysis is for a normal condition of transport array of three packages, resulting in a CSI of 100. TN is proposing to reduce the CSI to 0 for the TRIGA, 1FA BWR, and 1 FA pin can baskets, for cost and shipment scheduling reasons, with no CSI change for NRUX, 1FA PWR and MTR baskets. TN presented its new methodology, i.e., increase of boron content in the TRIGA basket poison plates, no credit taken for the neutron shield and shell either for geometry or materials reasons, which looks acceptable to staff. Staff discussed specific issues related to TRIGA fuel (Zirconium hydride, reactivity control mechanisms, methodology to treat cross-sections) but also said that TN appears to have now a good technical basis for this amendment request.

An application may be submitted by October 1, 2013. Staff made no regulatory commitments during the meeting.

Docket No. 71-9358

TAC No. L24740

Enclosure 1: Meeting Attendees

Enclosure 2: Presentation

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Enclosure 1: Meeting Attendees  
 Enclosure 2: Presentation

Distribution: Attendees, M. Sampson  
 G:\SFST\Saverot\71-9358 TN-LC\meeting summary August 21 2013.doc;  
 G:\SFST\Saverot\71-9358 TN-LC\CoC9358August 21\_2013Preapplication mtg presentation slides.ppt

**ADAMS Accession No.: ML13240A393**

**ADAMS P8 Package No.: ML13240A389**

<u>Distribution:</u>								
NRC Attendees: <b>OFC</b>	SFST	E	SFST	C	SFST			
<b>NAME</b>	PSaverot		MDeBose		KBanovac for MSampson			
<b>DATE</b>	08/27/2013		08/27/13		8/28/13			

C=Without attachment/enclosure E=With attachment/enclosure N=No copy

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**Meeting Between TN and the  
Nuclear Regulatory Commission  
August 21, 2013  
Meeting Attendees**

**NRC/NMSS/SFST**

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