

January 2, 2014

MEMORANDUM TO: Stephanie Coffin, Acting Deputy Director  
Division of Spent Fuel Storage and Transportation  
Office of Nuclear Material Safety  
and Safeguards

FROM: Huda Akhavannik, Project Manager */RA/*  
Licensing Branch  
Division of Spent Fuel Storage and Transportation  
Office of Nuclear Material Safety  
and Safeguards

SUBJECT: SUMMARY OF DECEMBER 16, 2013, PRE-APPLICATION  
MEETING WITH AREVA TRANSNUCLEAR, INC., REGARDING  
NEW APPLICATION FOR THE MODEL NO. TN-B1  
TRANSPORTATION PACKAGE

Background.

On December 16, 2013, a pre-application meeting was held in Rockville, Maryland, at the request of AREVA Transnuclear, Inc. (AREVA-TN) to discuss their new application to be submitted to the Nuclear Regulatory Commission regarding the Model No. TN-B1 transportation package. This meeting was split into public and non-public portions. The first half of the meeting was public and provided a general overview of the application in addition to providing high level information on the ATRIUM 11 BWR fuel design. The second half of the meeting contained proprietary information on the ATRIUM 11 BWR fuel design and so was not publicly available. This meeting was a follow-up to a previous public meeting held on September 30, 2013.

The meeting was noticed on November 26, 2013 [ML13337A409]. AREVA-NP, Inc., and Nuclear Safety Associates, Inc., also participated in the meeting. The list of meeting attendees, including those participating via telephone, is provided as Enclosure 1. The non-proprietary meeting handouts are provided as Enclosure 2. The proprietary meeting handouts are provided as Enclosure 3.

Discussion.

The primary purpose of the meeting was to discuss the future submittal of the new application for the Model No. TN-B1 transportation package. AREVA-TN began by providing a brief background on the current Model No. RAJ-II transportation package. The current certificate of compliance (CoC) for the RAJ-II, CoC No. 9309, Rev. 7, supports AREVA-NP BWR fuel designs. The certificate holder plans to change the content of CoC No. 9309 to remove the AREVA-NP BWR fuel designs, thereby requiring AREVA-NP to ship using another transportation package. Additionally, AREVA-NP requires a transportation package that can be used to ship their next generation BWR fuel design, the ATRIUM 11, which is not part of the current RAJ-II CoC approved contents. AREVA-NP would like to ship ATRIUM 11 lead test assemblies (LTA) in the December 2014 to January 2015 timeframe, and reloads of ATRIUM 11 BWR fuel designs in 2019.

To support the ATRIUM 11 LTA shipments, and to allow for future shipments of ATRIUM 11 BWR fuel assemblies, AREVA-NP proposed a three phase approach to obtain and amend a new CoC for the Model No. TN-B1. The first phase is to obtain a Rev. 0 CoC for the TN-B1 that is based on the current RAJ-II CoC. AREVA-NP indicated that the changes between the safety analysis reports will be administrative and the technical analyses will be the same. The second phase would be to obtain a letter authorization to authorize the ATRIUM 11 LTA shipments. AREVA-NP indicated submitting the request for letter authorization in the February 2014 timeframe. The final phase, phase three, would amend the Rev. 0 CoC for the Model No. TN-B1 to add ATRIUM 11 fuel designs as content. AREVA-NP indicated submitting this amendment in the second half of 2015.

As part of the phase two letter authorization, AREVA-NP indicated that the shipments would be simplified to allow for only a single fuel assembly in each shipping container with a maximum of eight containers per truck. These restrictions are put in place to allow for more simplified calculations. AREVA-NP indicated that for the phase three amendment to the Rev. 0 CoC, two assemblies per shipping container would be requested. As part of the letter authorization, the criticality analyses has resulted in a criticality safety index of 11.2 with the normal conditions of transport and hypothetical accident conditions single package and array k-effectives being well below the upper subcritical limit of 0.94254. For the structural analysis, the same restrictions will be in place and the analyses will be completed using LS-DYNA finite element analysis. Staff commented that as they would be using RAJ-II structural analyses to obtain their initial approval, the benchmarking done for the RAJ-II should be used. The applicant could also provide an argument describing how the TN-B1 structural analyses bounds that done for the RAJ-II.

AREVA-NP also provided both a proprietary and non-proprietary presentation on the ATRIUM 11 BWR fuel design. This presentation provided information regarding the materials, mechanical behavior, filter efficiency, and service and handling of the fuel. The ATRIUM 11 was compared to previous ATRIUM fuel designs where common and new features were discussed. As part of the new features, Chromia doped pellets will be used; but, this feature will not be part of the LTA shipments. Chromia doped pellets have greater reduction in peak cladding hoop stress that is generated during a power ramp. An additional feature is 4-point fuel rod support which will provide positive fuel rod restraint for shipping and through end-of-life and prevent flow-induced fretting, stress corrosion cracking, and distortion of the spacer grid. Another feature is a third generation FUELGUARD which will improve inlet filtering by reducing wire size and by being able to trap flexible wires.

AREVA-NP then proceeded to give the proprietary version of the presentation on the ATRIUM 11 BWR fuel design. Although originally scheduled for 6 hours per the announcement agenda, the meeting was adjourned at 12 p.m. AREVA-NP indicated that they would be requesting a post-submittal meeting after the letter authorization is submitted for staff review.

Docket No. 71-9372

TAC No. L24859

Enclosures:

1. Meeting Attendees
2. Meeting Handouts (non-proprietary)
3. Meeting Handouts (proprietary)

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DISTRIBUTION: CLOSERS TAC NO. L24781

SFST r/f NRC Attendees

G:\SFST\Akhavannik\TN-B1\December Pre-App Meeting\12162013 Public Meeting Summary.docx

G:\SFST\Akhavannik\TN-B1\ December Pre-App Meeting\TN-B1\_Public.pdf

G:\SFST\Akhavannik\TN-B1\ December Pre-App Meeting\BWR Fuel Overview (proprietary).pdf

**ADAMS Package No.: ML14006A063 ADAMS Memo No.: ML14006A065**

<b>OFC:</b>	SFST	E	SFST		SFST		
<b>NAME:</b>	HAkhavannik	MDeBose			B.White for MSampson		
<b>DATE:</b>	12/30/13	12/31/13			1/2/14		

**C = COVER E = COVER & ENCLOSURE N = NO COPY OFFICIAL RECORD COPY**

Meeting Attendees  
AREVA-NP, Inc. and NRC Meeting  
December 16, 2013, 9:00 a.m. – 4:00 p.m.

NAME	AFFILIATION	PHONE NUMBER
Robert Link	AREVA-NP	509-375-8409
Corey Long	AREVA-NP	509-375-8373
Huda Akhavannik	NRC/NMSS/SFST	301-287-9241
Glenn Mathues	AREVA Transnuclear	410-910-6538
Larry Tupper	AREVA-NP	509-375-8926
Michele Sampson	NRC/NMSS/SFST	301-287-9077
David Tang	NRC/NMSS/SFST	301-287-0678
Aladar Csontos	NRC/NMSS/SFST	301-287-9199
Haile Lindsay	NRC/NMSS/SFST	301-287-0665
Christian Araguas	NRC/NMSS/SFST	301-287-9232
Ricardo Torres	NRC/NMSS/SFST	301-287-0755
Mark Lombard	NRC/NMSS/SFST	301-287-0673
David Tarantino	NRC/NMSS/SFST	301-287-9164
David McDaniel	Nuclear Safety Associates, Inc.	208-538-0404
Tony Chung	Nuclear Safety Associates, Inc.	865-300-9019