



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
WASHINGTON, D.C. 20555-0001

April 1, 2014

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

FROM: Bernard White, Senior Project Manager **/RA/**  
Licensing Branch  
Division of Spent Fuel Storage and Transportation, NMSS

SUBJECT: SUMMARY OF MARCH 19, 2014, MEETING WITH THE NATIONAL  
NUCLEAR SECURITY ADMINISTRATION TO DISCUSS THE  
PROPOSED DESIGN FOR THE 380-B PACKAGE (TAC NO. L24742)

Background

A meeting was held on March 19, 2014, in Rockville, Maryland, between the U.S. Nuclear Regulatory Commission (NRC) and the National Nuclear Security Administration (NNSA) and its contractors, to discuss a proposed package design to transport disused sources for recovery and management efforts related to global threat reduction.

The meeting was noticed on February 26, 2014 (see Agencywide Documents Access and Management System (ADAMS) Accession No. ML14057A826). The meeting attendance list is provided as Enclosure No. 1 and the presentation slides are provided in Enclosure No. 2.

Discussion

AREVA Federal Services (AREVA) provided a description of the proposed packaging design and contents. The package is being designed to safely transport disused sealed sources for disposal. The sources are located in medical, industrial, or research devices, but no credit will be taken for the source device integrity. The shielding evaluation assumes a point source located anywhere within the package. The package will not contain any fissile material. Maximum weight of the package will be approximately 67,000 pounds. The package body will be constructed of 304 stainless steel and lead for shielding, with foam impact limiters. Internal to the package will be a ½-inch-thick security plate to minimize axial movement of the source device and the source itself. Dunnage will be used to block the devices in the package.

The package evaluation will primarily be performed using analysis, except that impact limiter performance will be demonstrated by a half-scale testing program. Test specimen will be a weighted dummy equivalent to the maximum weight of the package. Accelerometers will be placed on the test unit to measure drop test accelerations. Drop tests will be performed at both hot and cold temperatures. Impact limiter attachments will model the size and strength of the full-scale attachments to the package. Any differences between production packages and test specimens will be listed and justified in the application.

Polyurethane foam densities in the impact limiters used for testing will be adjusted to minimize temperature extremes. The polyurethane foam in production packages will have a foam density

of 16 lb/ft<sup>3</sup>. For the cold test, the polyurethane foam with a density of 17 lb/ft<sup>3</sup>, has the same crush stress at 0°F as foam with a density of 16 lb/ft<sup>3</sup> at -40°F. Similarly, foam density reduced by 1 lb/ft<sup>3</sup> to 15 lb/ft<sup>3</sup>, has the same crush stress at 100°F as 16 lb/ft<sup>3</sup> foam at 130°F. Package testing will utilize the density changes to simulate the colder and warmer temperatures, which is the approach taken in the application for the Model No. 435-B package (Docket No. 71-9355.)

The certification testing program will be designed to include maximum impact and maximum crush deformation. The impact and puncture orientations were discussed and are shown on the slides in detail. The acceptance criteria will be to ensure no impact limiter lockup or bottoming out; measured damage from the impact will bound the structural tests and thermal assumptions on package damage; and impact limiter attachments will ensure that they are retained on the package.

Schedule:

AREVA estimates that the tests will occur in the third quarter of 2014, with application being submitted to NRC approximately a year later.

Docket No.: 71-9370  
TAC Number: L24742

Enclosures:

1. Meeting Attendees
2. Presentation Slides

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Distribution: NRC Attendees

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MTG\SUMMARY FOR 3-19-14 MTG.DOCX

**ADAMS P8 Package No.: ML14093A045 ADAMD P8 Memo No.: ML14093A047**

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NAME	BWhite		MDeBose		MSamspon	
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## MEETING ATTENDEES

Meeting Title: Meeting to discuss proposed design for the Model No. 380-B transportation package

Participants: National Nuclear Security Administration (NNSA) and the NRC

Date: March 19, 2014, 9:00 – 11:00 a.m.

Location: U.S. NRC Headquarters, 3WFN 1-D-09

NAME	AFFILIATION
Bernie White	NRC/NMSS/SFST
Bob Tripathi	NRC/NMSS/SFST
Steve Everard	NRC/NMSS/SFST
David Tang	NRC/NMSS/SFST
Al Csontos	NRC/NMSS/SFST
Tom Criddle	AREVA Federal Services
Ron Burnham	AREVA Federal Services
Phil Noss	AREVA Federal Services
Temeka Taplin	NNSA
Kathy Schwendenman	NNSA
Danny Martinez	Los Alamos National Lab.
John Zarling	Los Alamos National Lab