

July 1, 2013

Mr. Ahmad M. Al-Daouk, Director  
Office of Packaging and Transportation  
Department of Energy  
National Nuclear Security Administration  
P.O. Box 5400  
Albuquerque NM 87185

SUBJECT: APPLICATION FOR THE MODEL NO. 435-B TRANSPORT PACKAGE –  
SUPPLEMENTAL INFORMATION NEEDED

Dear Mr. Al-Daouk:

By letter dated April 18, 2013, the National Nuclear Security Agency (NNSA) submitted an application for approval of the Model No. 435-B transport package. The application proposes using the 435-B package to transport radioactive sources. The U.S. Nuclear Regulatory Commission (NRC) staff performed an acceptance review of your application to determine whether the application contains sufficient technical information in scope and depth to allow the NRC staff to complete a detailed technical review.

This letter is to advise you that based on our acceptance review, the application does not contain sufficient technical information. The information needed to begin our review is described in the enclosed request for supplemental information (RSI) and observation. NRC staff included the observation to allow you to start earlier on this item, which contains the potential to be asked at a later date. A response to the observation is not required for staff to begin a detailed technical review. Observations are not the result of a detailed technical review and may be resolved once staff begins a detailed review.

In order to start our technical review, this information should be provided within 2 weeks from the date of this letter. Upon receiving the RSI responses, the NRC staff will evaluate the information to determine whether the supplementary information is responsive to the NRC staff's concerns.

A. Al-Daouk

-2-

The staff is available for a public meeting if you wish to discuss these issues in more detail prior to deciding on your course of action. Please reference Docket No. 71-9355 and TAC No. L24741 in future correspondence related to this action.

If you have any questions regarding these matters, please contact me at (301) 287-0810.

Sincerely,

**/RA/**

Bernard H. White IV, Senior Project Manager  
Licensing Branch  
Division of Spent Fuel Storage and Transportation  
Office of Nuclear Material Safety  
and Safeguards

Docket No. 71-9355  
TAC No. L24741

Enclosure: Request for Supplemental  
Information and Observation

The staff is available for a public meeting if you wish to discuss these issues in more detail prior to deciding on your course of action. Please reference Docket No. 71-9355 and TAC No. L24741 in future correspondence related to this action.

If you have any questions regarding these matters, please contact me at (301) 287-0810.

Sincerely,

**/RA/**

Bernard H. White IV, Senior Project Manager  
 Licensing Branch  
 Division of Spent Fuel Storage and Transportation  
 Office of Nuclear Material Safety  
 and Safeguards

Docket No. 71-9355  
 TAC No. L24741

Enclosure: Request for Supplemental  
 Information and Observation

Distribution: SFST r/f NMSS r/f  
 G:\SFST\Bernie White\Casework\435-B package\RSI letter.doc

**ADAMS P8 Accession No.: ML13183A035**

<b>OFC:</b>	SFST	E	SFST		SFST		SFST		SFST		SFST	
<b>NAME:</b>	BWhite		MDeBose		NDay		Jlreland		HLindsay		CAraguas	
<b>DATE:</b>	6/20/13		6/21/13		6/24/13		6/24/13		6/24/13		6/28/13	
<b>OFC:</b>	SFST		SFST		SFST		SFST		SFST		SFST	
<b>NAME:</b>	BTripathi		MSampson									
<b>DATE:</b>	6/25/13		7/1/13									

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

NATIONAL NUCLEAR SECURITY ADMINISTRATION

DOCKET NO. 71-9355

REQUEST FOR SUPPLEMENTAL INFORMATION AND OBSERVATIONS

RELATED TO THE APPLICATION FOR THE MODEL NO. 435-B PACKAGE

**Structural Evaluation**

1. Justify the discrepancy between the design and fabrication codes for the package containment system.

Sections 2.1.2 and 2.3.1 of the safety analysis report (SAR) identify the codes of construction of the containment system for the Model No. 435-B. The American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (B&PV) Section III, Division 1, Subsection NB, was used for design, whereas ASME B&PV code Section III, Division 1, Subsection NE, was used for the fabrication of the containment system. Paragraphs NCA-1140, NCA-2120 and NCA-2133 of Section III, Division 1, Subsection NCA of the B&PV code, which are applicable to Section III, Divisions 1 and 2 of the B&PV Code, state that all activities (i.e., design, fabrication, acceptance testing, etc.) should follow the same subsection of the B&PV code, according to the class of code (per NCA-2131 of Section III, Division 1, Subsection NCA of the B&PV code). Therefore, it may not be appropriate to use two different subsections of the ASME code, one for design control and one for fabrication, for a single code component.

This information is needed by the staff to determine compliance with the requirements of Title 10, *Code of Federal Regulations* (10 CFR) 71.31(c).

2. Provide additional information regarding the full-scale packages that were tested.

SAR Section 2.12.3.1 states that: "The primary success criterion was that, subsequent to all free drop and puncture testing, the CTU containment boundary, including the main containment seal and vent port seal, be leaktight per ANSI N14.5."

Provide additional information to ensure that the three, full-scale certification test units (CTUs) underwent a leak test measurement prior to being subjected to the tests for normal conditions of transport and hypothetical accident conditions, as specified by the American National Standards Institute (ANSI) in ANSI N14.5-1997, "Radioactive Materials - Leakage Tests on Packages for Shipment." Additionally, provide the as-fabricated drawings of the three, full-scale CTUs for staff review.

This information is needed by the staff to determine compliance with the requirements of 10 CFR 71.71, 10 CFR 71.73, and 10 CFR 71.41.

**Thermal Evaluation**

1. Address the following relevant to the Thermal Desktop model files:

- a. Provide the Thermal Desktop file "ltss-nct\_hot\_240hr.sav" as well as the Thermal Desktop model used to create that file.

When attempting to run the case, "LANL-B\_NCT\_LTSS Hot with Diurnal Solar" within the Thermal Desktop file, "LANL B Cask NCT\_LTSS.dwg" a window states, "The restart filename, ltss\_nct-hot\_240hr.sav, does not exist. This file is used to set the initial temperatures of the run. This input is specified on the Advanced Page of the Case Set Properties."

- b. Provide the Thermal Desktop model used to create the file "sd\_nct-hot.sav" which is used to set the initial temperatures of the case, "LANL-B\_NCT\_SD hot with Diurnal Solar" in the Thermal Desktop file, "LANL B Cask NCT\_SDevice.dwg."

In the case, "LANL-B\_NCT\_SD hot with Diurnal Solar" in the Thermal Desktop file, "LANL B Cask NCT\_SDevice.dwg," the file "sd\_nct-hot.sav" is used to set the initial temperatures of the run at 240 hours and is specified on the Advanced Page of the Case Set Properties.

This information is needed to show compliance with 10 CFR 71.71.

## **Observation**

### **Thermal Evaluation**

1. Address the reason the input files "ltss-nct\_hot\_240hr.sav" and "sd\_nct-hot.sav" have been used to set the initial temperatures of the cases for the heat test for normal conditions of transport.

The staff would not expect an input file to be used to set the initial temperatures for heat test for normal conditions of transport. Alternatively, provide the Thermal Desktop model files and associated output files that do not require the input files, "ltss\_nct-hot\_240hr.sav," and "sd\_nct-hot.sav" to set the initial conditions.

This information is needed to show compliance with 10 CFR 71.71.