



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

May 3, 2019

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

**SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR REVIEW OF THE
CERTIFICATE OF COMPLIANCE NO. 9355, REVISION 3, FOR THE MODEL
NO. 435-B PACKAGING (EPID L-2018-LLA-0314)**

Dear Mr. Al-Daouk:

By letter dated November 19, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19038A112), the U.S. Department of Energy, National Nuclear Security Administration (NNSA or the applicant), requested a revision to the Certificate of Compliance (CoC) for the Model No. 435-B packaging. Among the changes to the design of the Model No. 435-B package, the applicant proposes adding contents, changing the version of the ANSI N14.5 (from 1997 to 2014), and additional changes to Chapters 7, 8, and 9 of the application. The package is designed with a leaktight containment that can be transported singly by air, ground, or water in non-exclusive use. For the content in disposal canisters, the package is transported in quantities of one or two in a closed conveyance as exclusive use.

In connection with our review, we need the information identified in the enclosure to this letter. To assist us in scheduling staff review of your response, we request that you provide this information by the beginning of June 2019. Inform us at your earliest convenience, but no later than early May 2019, if you are not able to provide the information by that date. If you are unable to provide a response by the beginning of June 2019, our review may be delayed.

Please reference Docket No. 71-9355 and EPID L-2018-LLA-0314 in future correspondence related to this request. The staff is available to meet to discuss your proposed responses. If you have any questions regarding this matter, you can contact me at (301) 415-6999.

Sincerely,

/RA/

Norma Garcia Santos, Project Manager
Spent Fuel Licensing Branch
Division of Spent Fuel Management
Office of Nuclear Material Safety
and Safeguards

Docket No. 71-9355
EPID L-2018-LLA-0314

Enclosure:
Request for Additional Information

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR REVIEW OF THE
CERTIFICATE OF COMPLIANCE NO. 9355, REVISION 3, FOR THE MODEL
NO. 435-B PACKAGING (EPID L-2018-LLA-0314), DOCUMENT
DATE: May 3, 2019

DISTRIBUTION:

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http://fusion.nrc.gov/nmss/team/sfst/sfst-licensing/10_cfr_71/435B_pkg/Shared Documents/435-B-Rev_3_RAls_Ltr.docx

ADAMS No.: ML19126A141

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Request for Additional Information
U.S. Department of Energy
National Nuclear Security Administration
Docket No. 71-9355
Certificate of Compliance No. 71-9355
Revision 3
Model No. 435-B

By letter dated November 19, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19038A112), the U.S. Department of Energy, National Nuclear Security Administration (NNSA or the applicant), requested a revision to the Certificate of Compliance (CoC) for the Model No. 435-B packaging.

This request for additional information (RAI) identifies information needed by the U.S. Nuclear Regulatory Commission staff (the staff) in connection with its review of the application. NUREG-1609, "Standard Review Plan for Transportation Packages for Radioactive Material," was used by the staff in its review of the application.

This RAI describes information needed by the staff for it to complete its review of the application and to determine whether the applicant has demonstrated compliance with the regulatory requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 71.

CONTAINMENT EVALUATION

RAI-Co-1 Provide the following descriptions in the Model No. 435-B safety analysis report:

- a. standards used to certify personnel that develops and approves written leakage rate testing procedures;
- b. qualifications of personnel that develops and approves written leakage rate testing procedures;
- c. standards used to certify personnel that performs leakage rate testing; and
- d. qualifications of personnel that performs leakage rate testing.

Sections 7.4, 8.1.4, and 8.2.2 of the Model No. 435-B application include a description of leakage rate testing procedures. In these sections, the staff noted that the applicant does not mention the following regarding nondestructive testing (NDT) personnel:

1. if only personnel certified as an American Society for Nondestructive Testing (ASNT) Level III examiner for leakage testing shall develop and approve written leakage rate testing procedures, and;
2. if personnel performing leakage rate testing shall be qualified and certified in accordance with Recommended Practice No. SNT-TC-1A, "Personnel Qualification and Certification in Nondestructive Testing."

Enclosure

Please specify whether the written leakage rate testing procedures are developed, approved, and performed by qualified and certified NDT personnel for leakage testing in accordance with industry standards to ensure that the package is designed, constructed, and prepared for shipment to comply with the requirements in 10 CFR Part 71.

This information is needed to determine compliance with the requirements in 10 CFR 71.31(c), 71.51(a)(1), and 71.51(a)(2).

STRUCTURAL EVALUATION

RAI-St-1 Provide a complete structural evaluation for the disposal canister.

The application presents one sentence in Section 2.7.1.7 in which the disposal canister is identified as similar to the LTSS (and IBL 437) for the purposes of lodgment design and evaluation, but no structural evaluation of the disposal canister, similar to the IBL 437 evaluation in Section 2.7.1.6.4, was presented by the applicant. Since the disposal canister was not tested, an evaluation should be performed demonstrating structural capacity and performance of the disposal canister.

This information is needed to ensure compliance with 10 CFR 71.73(c)(1).

PACKAGE OPERATIONS

RAI-OP-1 Use the correct term “vent port” instead of “lid port” in Items 17 and 18 of Section 7.1.5.2 of the application when describing the drying or evacuation of the Disposal Canister cavity.

Section 7.1.5.2, “Procedural Requirements,” Item No. 17 describes that the Disposal Canister cavity is vacuum dried by connecting a vacuum pump and a shutoff valve to the lid port and evacuating the cavity until the internal pressure is 1-2 torr. Then, the vacuum pump is isolated from the canister cavity. Item No. 18 also describes the term lid port plug.

The vent port and test port are located on the lid. Therefore, it is not clear if the lid port refers to the vent port or test port. The vent port is connected to the vacuum pump during the drying process of the Disposal Canister cavity. The applicant needs to use the term “vent port” instead of “lid port” to prevent an operator error when connecting the vacuum pump and shutoff valve to the vent port and ensure that the Disposal Canister cavity is properly dried.

This information is required to determine compliance with 10 CFR 71.33(a)(5)(iv) and 71.37(b).

RAI-Co-2 Provide a description that the containment boundary sealing washer and vent port plug are tightened to an appropriate torque value prior to performing the pre-

shipment leakage rate test. Include this information in Sections 7.1.2.1, 7.1.2.2, 7.1.2.3, and 7.1.2.4.2

Section 7.1.2.3, "Loading the Disposal Canisters into the 435-B," step No. 27, and Section 7.1.2.4.2, "Loading the IBL 437 into the 435-B," step No. 30, of the application describe the pre-shipment leakage rate testing of the main containment O-ring seal and vent port sealing washer. Section 7.1.2.3, step No. 28, and Section 7.1.2.4.2, step No. 31, the applicant explains that the vent port plug is tightened to 48 – 60 inch-pound (in-lb) torque after the pre-shipment leakage rate test. However, the applicant did not include in the application's operating procedures chapter a step to describe the vent port plug is tightened to 48 – 60 in-lb torque prior to performing the pre-shipment leakage rate test.

The American National Standards Institute (ANSI) N14.5-2014, "American National Standard for Radioactive Materials – Leakage Tests on Packages for Shipment," describes that the purpose of the pre-shipment leakage rate test is to confirm that the containment system is properly assembled prior to shipment. Providing the vent port plug torque value in the operating procedures prior to performing the pre-shipment leakage rate test ensures the containment system is properly assembled.

To ensure consistency throughout the application, this concept also applies to the pre-shipment leakage rate tests and vent port plug torque value in Sections 7.1.2.1, "Loading the LTSS into the 435-B," and 7.1.2.2, "Loading the Inner Container (IC) into the 435-B," (which includes the new Hopewell Devices contents) of the application.

This information is needed to determine compliance with the requirements in 10 CFR 71.51(a)(1) and 71.51(a)(2).