



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

March 15, 2017

Mr. Barry K. Miles
Division of Naval Reactors
U.S. Department of Energy
Washington, D.C. 20585

SUBJECT: AMENDMENT REQUEST FOR THE MODEL NO. M-140 TRANSPORT PACKAGE
– REQUEST FOR ADDITIONAL INFORMATION (TAC NO. L25128)

Dear Mr. Miles:

By letter dated June 10, 2016, you submitted an application for amendment to Certificate of Compliance No. 9793, for the Model No. M-140 transport package. The application requests approval of reduced decay heat level and criticality safety index.

In connection with our review, we need the information identified in the enclosure to this letter. Additional information requested by this letter should be submitted in the form of revised safety analysis report pages.

Please reference Docket No. 71-9793 and Cost Accounting Code (CAC) No. L25128 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, please contact me at (301) 415-6577.

Sincerely,

/RA/

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

Docket No. 71-9793
TAC No. L25128

Enclosure: Request for Additional Information

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Division of Naval Reactors
U.S. Department of Energy
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NAVAL REACTORS

DOCKET NO. 71-9793

REQUEST FOR ADDITIONAL INFORMATION

MODEL NO. M-140 APPLICATION

By application dated June 10, 2016, Naval Reactors submitted an amendment to Certificate of Compliance No. 9793, for the Model No. M-140 transportation package. This request for additional information identifies information needed by the U.S. Nuclear Regulatory Commission (NRC) staff in connection with its review of the application. The requested information is listed by chapter number and title in the safety analysis report (SAR). The staff used the guidance provided in NUREG-1617, "Standard Review Plan for Transportation Packages for Spent Nuclear Fuel," in its review of the application.

Each question 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 regulatory requirements.

Chapter 3 – Thermal Evaluation

1. Provide justification for the hypothetical accident conditions which describe not applying solar insolation before or after the fire. Note that this question was previously asked by NRC (question 3-4) in an RAI dated March 3, 1998 (Agencywide Documents Access and Management System (ADAMS) ML023110083). It is not clear whether or how the temperature increase provided in your response dated June 11, 1998, was included in the methodology in Appendix 3.5.1.

Section 3.4.2.1 of the application describes not applying solar insolation before or after the fire. Section 3.5.6.1, "Initial Conditions," of NUREG-1617 states "Verify that the initial steady-state temperature distribution is consistent with the results from the thermal evaluations under normal conditions of transport." The regulations in Title 10 of the *Code of Federal Regulations* (10 CFR) 71.71(c)(1) includes solar insolation. Section 3.5.6.2, "Fire Test," of NUREG-1617 states "Verify that after the fire the package is subjected to full insolation."

This information is needed to determine compliance with 10 CFR 71.73(c)(4).

2. Demonstrate that the data in Table 3.5.1-4 meets the performance criteria in Section 3.5.1 for the normal conditions of transport evaluation for a period of 365 days.

It appears that Table 3.5.1-4 was not extended to a 365 day shipment period based on the number of days listed in the table.

Also, note that it appears that American National Standards Institute/American Nuclear Society (ANSI/ANS)-5.1-1994, "Decay Heat Power in Light Water Reactors," described in Section 3.1.2 of the application is used to determine the decay heats used in Section 3.5 of the application. Staff notes that this standard was revised in 2005 and again in 2014.

This information is needed to determine compliance with 10 CFR 71.71(c)(1).

3. Clarify whether the title of Table 3.5.2-3 is accurate.

It appears that the table should refer to the prototype fuel rather than the S6W fuel.

This information is needed to determine compliance with 10 CFR 71.33.

4. Clarify the accuracy of the second sentence in the last paragraph on page 1.2-14 of the application.

The numerical values and associated cores did not appear to be consistent with the information in Chapter 3 of the application.

This information is needed to determine compliance with 10 CFR 71.33.

Chapter 4 – Containment

1. Confirm that the fuel assembly crud concentration listed in Section 4.3.2 of the current application is bounded by the crud concentrations listed in Revision No. 14 of the core independent safety analysis report.

It appears that the crud concentration listed in the 4th paragraph of Section 4.3.2 is significantly larger than the crud concentration listed in Revision No. 14 the core independent SAR. Therefore, a direct comparison of the fuel assembly crud concentration and the previous analyses' "worst case" fuel assemblies crud concentration cannot be made.

This information is needed to confirm compliance with 10 CFR 71.51.