

December 7, 2010

Mr. Richard W. Boyle
U.S. Department of Transportation
Pipeline and Hazardous Materials Safety Administration
1200 New Jersey Avenue, SE
Washington, DC 20590

SUBJECT: APPLICATION FOR F-257 (SERIAL NO. 2) TRANSPORTION PACKAGE-
REQUEST FOR ADDITIONAL INFORMATION

Dear Mr. Boyle:

This is in response to your letter dated October 20, 2010, requesting our assistance in evaluating Model No. F-257 (Serial No. 2) transportation package, authorized by Canadian Certificate of Approval No. CDN/2048/B(U)F, Revision 7.

In connection with our review, we need the information identified in the enclosure to this letter. To assist us with scheduling staff review of your response, we request that you provide this information by 60 days of the date of this letter. If you are unable to provide a response by that date, our review may be delayed.

If you have any questions regarding this matter, please contact me at 301-492-3273.

Sincerely,

/RA/

Huda Akhavannik
Licensing Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

Docket No. 71-3054
TAC No. L24482
Enclosure: Request for Additional Information

Mr. Richard W. Boyle
 U.S. Department of Transportation
 Pipeline and Hazardous Materials Safety Administration
 1200 New Jersey Avenue, SE
 Washington, DC 20590

SUBJECT: APPLICATION FOR F – 257 (SERIAL NO. 2) TRANSPORTION PACKAGE–
 REQUEST FOR ADDITIONAL INFORMATION

Dear Mr. Boyle:

This is in response to your letter dated October 20, 2010, requesting our assistance in evaluating Model No. F-257 (Serial No. 2) transportation package, authorized by Canadian Certificate of Approval No. CDN/2048/B(U)F, Revision 7.

In connection with our review, we need the information identified in the enclosure to this letter. To assist us with scheduling staff review of your response, we request that you provide this information by 60 days of the date of this letter. If you are unable to provide a response by that date, our review may be delayed.

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Docket No. 71-3054
 TAC No. L24482
 Enclosure: Request for Additional Information
 Distribution: RParkhill, MRahimi, CHrabal, BWhite
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NAME	HAkhavannik		MDeBose	CHrabal	MRahimi	RJohnson
DATE	12/2/2010		12/2/2010	____/____/10	____/____/10	12/3/2010 12/7/2010

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PREAMBLE TO REQUEST FOR ADDITIONAL INFORMATION (RAI) ON THE MODEL NO. F-257 PACKAGE

By application dated October 20, 2010, the Department of Transportation requested that we review the Canadian Certificate of Approval No. CDN/2048/B(U)F, Revision 7 for the Nordion F-257 package and make a recommendation regarding revalidation of the Certificate. This RAI identifies additional information needed by the U.S. Nuclear Regulatory Commission staff in connection with its review of the application. The requested information is listed by chapter number and title in the applicant's Safety Analysis Report. NUREG-1609, "Standard Review Plan for Transportation Packages for Radioactive Material" and IAEA Safety Series 6, 1985 edition (as amended 1990), was used by the staff in its review of the application. Each individual 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.

5.0 SHIELDING

- 5.1 Provide the methodology used for both the source term and shielding evaluations. The shielding assessment, based on the description provided in Appendix II of the SAR, is insufficient for NRC staff to confirm its adequacy. The appendix references the document NYO-10721, "Radioisotope Shielding Design Manual," by W.H. Steigelman, which is used as the basis for calculating the dose rate on contact with and one meter from the package surface. Provide a copy of this reference document along with any other necessary information to justify the source term and shielding evaluation presented in the application.

Package source terms must be described in sufficient detail to enable the staff to confirm that it meets the external radiation standards of paragraph 542 of IAEA, "Regulations for Safe Transport of Radioactive Materials," Safety Series 6, 1985 edition (as amended 1990).

- 5.2 Justify that the source term described in the SAR bounds the fuel for the Dalhousie University SLOWPOKE-2 Reactor (DUSR). The previous revalidation for the F-257 package was for transport of the University of Toronto SLOWPOKE-2 research reactor core, which had a total burnup of 297,208 kWh. The current revalidation is for transport of the DUSR research reactor core, which is similar in design to the University of Toronto core. DOESRAAF-10-096, Appendix A, of the current revalidation describes the fuel irradiation history of the DUSR fuel as a total burnup exceeding ~313,000 kWh over 23 years with the reactor operating for ~40,000 hours. However, the SAR associated with the DUSR is the same from the previous revalidation for the lower burnup University of Toronto core.

Package source terms must be described in sufficient detail for staff to confirm that it meets the external radiation standards of paragraph 542 of IAEA,

"Regulations for Safe Transport of Radioactive Materials," Safety Series 6, 1985 edition (as amended 1990).

- 5.3 Clarify if the irradiation history parameters used for the source terms were used in shielding analyses presented in Appendix II, which served as the basis for bounding the dose rates from the University of Toronto core in the previous revalidation. Section II of the SAR uses an irradiation history of 2 kW for five years, 20 kW for ten hours, and a cooling period of 11.5 days to calculate the activity from fission product sources. It is not clear whether this irradiation history was also used in Appendix II, since the total burnup (i.e., 87,800 kWh) is significantly less than that reported for the DUSR of ~313,000 kWh or even the University of Toronto core of 297,208 kWh.

Package source terms must be described in sufficient detail for staff to confirm that it meets the external radiation standards of paragraph 542 of IAEA "Regulations for Safe Transport of Radioactive Materials," Safety Series 6, 1985 edition (as amended 1990).