

From: Barto, Andrew  
Sent: Wednesday, February 22, 2017 11:09 AM  
To: 'akhila.wijayaratne@navy.mil'  
Cc: Goel, Anne; Tate, Travis  
Subject: Response from "Contact the Public Document Room Staff"

Hi Akhila,

Transportation packages for radioactive material are required to meet the external radiation dose rate requirements of 10 CFR 71.47, and package users must demonstrate by measurement that these dose rates are not exceeded prior to each shipment.

An applicant for a Certificate of Compliance for a radioactive material transportation package design must demonstrate, typically by computer analysis, that the package external dose rates will be within the limits of 10 CFR 71.47 when loaded with the most limiting radioactive contents. NUREG/CR-6802, "Recommendations for Shielding Evaluations for Transport and Storage Packages" (<https://www.nrc.gov/docs/ML0313/ML031330514.pdf>), summarizes several analysis methodologies that can be used by applicants to demonstrate that their package design meets the requirements of 10 CFR 71.47, as well as measurement techniques for conducting pre-shipment dose rate determination. Typically, applicants (and NRC staff performing confirmatory calculations) use full three-dimensional Monte Carlo radiation transport simulation codes to model the package design and its contents. Examples of these codes are the Monaco/MAVRIC sequence of the SCALE code package (<http://scale.ornl.gov/>), and MCNP (<https://mcnp.lanl.gov/>).

Thanks for contacting us through the NRC public document room. If you need any further assistance, feel free to contact me directly at (301)415-6941.

Best regards,

Drew Barto  
U.S. Nuclear Regulatory Commission  
Office of Nuclear Material Safety  
And Safeguards  
Division of Spent Fuel Management

-----Original Message-----

From: Akhila Wijayaratne [mailto:akhila.wijayaratne@navy.mil]  
Sent: Tuesday, February 21, 2017 2:24 PM  
To: PDR Resource <PDR.Resource@nrc.gov>  
Subject: Response from "Contact the Public Document Room Staff"

Below is the result of your feedback form. It was submitted by

Akhila Wijayaratne (akhila.wijayaratne@navy.mil) on Tuesday, February 21, 2017 at 14:24:09

through the IP 148.184.182.44

using the form at <https://www.nrc.gov/reading-rm/contact-pdr.html>  
and resulted in this email to [pdr.resource@nrc.gov](mailto:pdr.resource@nrc.gov)

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PDR Category: Find info at this Web Site

comments: Where can I find the equation or methodology to calculate the  
radiation exposure (mrem/hr) listed in § 71.47.a

<https://www.nrc.gov/reading-rm/doc-collections/cfr/part071/part071-0047.html>

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