

From: Karsten Mueller <karsten.mueller@bam.de>
To: <nrcprep@nrc.gov>
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Subject: Response from "Comment on NRC Documents"

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

Karsten Mueller (karsten.mueller@bam.de) on Wednesday, May 28, 2003 at 10:51:46

Document_Title: Draft NUREC-1768

Comments: Karsten Müller, Thomas Quercetti, Federal Institute for Materials Research and Testing, Laboratory III.31 Testing of Containers, D-12203 Berlin, Germany

Dear Madams and Sirs,

We read your draft NUREG-1768 with great interest. We are pleased to have the opportunity to give some comments concerning the draft report:

The NUREG-1768 describes a very extensive test program and a detailed study concerning the verification of finite element analysis on the impact behavior of casks for the transport of spent fuel. Beside many interesting investigations described in the PPS we would like to highlight the implementation of the effect of bolt threads to the stress distribution in the bolt to the finite element model. Another very interesting part is your development of an accurate finite element material model for the honeycomb impact limiter material basing on experimental data as a function of loading rate and sample size.

The PPS is focused on casks with a shell- layer wall structure equipped with very special shock absorbers of an aluminum honeycomb structure. We already mentioned the importance of developing an accurate finite element material model to calculate stresses during impact more realistic. Wouldn't it be also a point of interest to develop material models especially for the common used impact limiter material wood or foam ? What about monolithic cask walls ?

The GA-4 cask is intended for a back- breaker impact, a flat surface impact and a corner impact. Beside these impacts the slap- down impact could be another important impact position for this cask because of its high ratio between length and diameter.

When physically testing a package concerning IAEA regulations the measured leak rate of the lid closure system is one of the safety criteria which have to be fulfilled. Based on calculated tensions in the closure bolts and the displacement of the lid a correlation for the leaktightness of the lid closure system will be studied in the PPS. Does the PPS also include an investigation on a lid closure system with metal sealing showing a relation between horizontal lid displacement and leaktightness ?

Thank you for the possibility to give some remarks,

Yours sincerely

Karsten Müller and Thomas Quercetti

organization: Federal Institute for Materials Research and Testing

E-IDS = ADM-03
 Call = A-Snyder (HMSB)
 A.J. Murphy (HSHI)

Template = ADM-013

address1: Unter den Eichen 44-46

address2:

city: Berlin

state: ---

zip: 12205

country: Germany

phone:
