

November 29, 2013

MEMORANDUM TO: Anthony H. Hsia, Deputy Director  
Division of Spent Fuel Storage and Transportation, NMSS

FROM: Pierre Saverot, Project Manager */RA/*  
Licensing Branch  
Division of Spent Fuel Storage and Transportation, NMSS

SUBJECT: SUMMARY OF NOVEMBER 20, 2013, MEETING WITH  
ENERGYSOLUTIONS

### Background

EnergySolutions requested this meeting to present an approach that would restructure the current shielding evaluation of the Model No. 8-120B package. Compliance with the NRC Regulatory Issue Summary 2013-04, "Content Specification and Shielding Evaluations for Type B Transportation Packages" (ML13036A135) led to more restrictive radiological payload qualifications conditions in Certificate of Compliance (CoC) No. 9168 for the Model No. 8-120B package, and some shipment campaigns are significantly affected. In particular, shipments of activated metal from the Zion decommissioning project have stopped, as well as shipments of reformed residues from Studsvik. The meeting was noticed on October 22, 2013. The meeting attendance list and the presentation slides are provided as Enclosure Nos. 1 and 2, respectively.

### Discussion

Shipments used to be made based on pre-shipment measurements, not really knowing what may happen to the geometry of the contents during transport with, in some cases, doses being higher at the end of the shipment. Revision No. 19 of the CoC changed the way how radiological qualifications of the contents were performed: bounding evaluations are done for all contents and assumptions are conservatively applied to all shipments. For example, EnergySolutions estimated that conservative MCNP mass attenuation properties "artificially" increased dose rates by about 20%, while taking credit for the polyethylene in the secondary container contributed about 8%.

Representatives from ZionSolutions, in charge of the Zion decommissioning project, and Studsvik described how their operations had been affected: Zion Solutions would have to double the number of shipments by using the TN-RAM package, while Studsvik said that doses, overestimated due to conservatism, limit now shipments to 2,000 Ci. EnergySolutions is proposing a new payload specification concept, to restructure the shielding evaluation of the package, with each specification describing specific contents in addition to the characteristics of the secondary container, or liner, credited in the shielding analysis.

Three main payload specifications will be developed for (i) resins, (ii) reformed residues and (iii) activated steel. For reformed residues, the applicant will model the chemical composition of the

constituents in MCNP to obtain the mass attenuation coefficients for the contents. EnergySolutions said that it will “combine” all holes of the secondary container into one square hole opening in the middle of the container for the modeling, and also specify parameters for the liner that impact safety. Responding to a question from staff on loose crud or “dust size” piece of crud getting out of the hole, EnergySolutions said that everything is bagged at Zion.

EnergySolutions will submit a specific authorization request for shipments of activated metals from the decommissioning of Zion. Staff said that it can respond quickly to such a request and grant an authorization, provided that the number of shipments is specified in a defined timeframe. Staff also said that a letter authorizing shipments is tied to a CoC, with authorized contents, and that all other conditions of the CoC remain in effect. Thus, the applicant was advised to address such conditions in its request.

The applicant said that it is planning to submit an amendment request at the end of February 2014. Staff made no regulatory commitments during the meeting.

Docket No. 71-9168  
TAC No. L24808

Enclosure 1: Meeting Attendees  
Enclosure 2: Presentation

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Enclosure 1: Meeting Attendees  
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Distribution: Attendees, M. Lombard

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**Meeting Between EnergySolutions and the  
Nuclear Regulatory Commission  
November 20, 2013  
Meeting Attendees**

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