July 15, 2013

MEMORANDUM TO: Anthony H. Hsia, Deputy Director
Licensing and Inspection Directorate
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 JUNE 26, 2013, MEETING WITH ENERGY*SOLUTIONS* REGARDING THE 10-160B PACKAGE

Background

Energy*Solutions* (ES) will submit, in late July, an amendment request for a new reusable insert in the Model No. 10-160B package to transport radioactive sources of varying sizes and isotopes on behalf of the Off-Site Source Recovery Project (OSRP). ES requested this pre-application meeting to present its proposed schedule and technical approach for the drainless "Shield B Insert" design to be used for dry loaded sources.

The meeting was noticed on May 30, 2013. The meeting attendance list and the presentation slides are provided as Enclosure Nos. 1 and 2, respectively.

Discussion

OSRP intends to use the Model No.10-160B package to remove unwanted, excess, abandoned or orphan sources. ES is planning to submit a stand-alone shielding approach, in compliance with the Regulatory Information Summary (RIS) 2013-04. Specific source isotopes are not specified in the safety analysis report (SAR) but several suites of MCNP runs are done for 10 different energies, from 0.5 to 4.0 MeV, along with two specific runs for ^{60}Co and ^{137}Cs, to qualify nuclides and do the sum of fractions to determine the acceptability of shipments. Pure beta emitters, e.g., ^{90}Sr, can be loaded in the package using the already approved "equivalent gamma" approach. ES does not take any credit for the source self-shielding, does not claim to use Special Form material, and believes the methodology is conservative because it is using forward calculations at "known" energies.

Results from the shielding evaluations performed for the five most common radionuclide sources (^{60}Co, ^{137}Cs, ^{192}Ir, ^{75}Se, ^{90}Sr) show that heat or A_2 governs, not shielding. Preliminary results show peak surface gamma dose rates at about 10% of the regulatory limit. Analyses are now performed with (i) the annular gap modeled at the maximum value, and (ii) the package surface modeled at the impact limiter (instead of the package body).

Clarifications will be made in Chapter 7 of the SAR on the vent port leak test that is required whether the seal is broken or not, and in Chapter 8 of the SAR for the verification test to be

done, when closing an insert, prior to cask loading (similar to Condition No. 7 of the Model No. 8-120B package certificate of compliance (CoC).

Regarding the structural analysis, ES said that the insert is now modeled at the center of the package. Staff noted that ES may want to (i) consider a non-centered case because shielding relies on structural integrity, and (ii) verify the categorization of shoring (which should be Category B) while the dunnage is Category C.

Staff requested that each assumption be properly documented and validated in the application and suggested a reading of NUREG/CR3854 to determine the applicability of the NB and NF codes for the insert.

The staff generally agreed with most of the technical points that will be used by the applicant to meet the requirements of 10 CFR Part 71. Staff did note that the requested schedule, i.e., CoC issuance by the end of the year, is feasible but did not make any regulatory commitments at the meeting.

Docket No. 71-9204
TAC No. L24751

Enclosure 1: Meeting Attendees
Enclosure 2: Presentation

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Distribution: M. Lombard, M. Rahimi, C. Araguas, D. Tang, J. Piotter

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Meeting Between EnergySolutions and the
Nuclear Regulatory Commission
June 26, 2013
Meeting Attendees

NRC/NMSS/SFST

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Enclosure 1