July 19, 2007

MEMORANDUM TO: Robert J. Lewis, Acting Deputy Director
Licensing and Inspection Directorate
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

FROM: Meraj Rahimi, Senior Project Manager **/RA/**
Licensing Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

SUBJECT: SUMMARY OF JULY 11, 2007, MEETING WITH HOLTEC INTERNATIONAL ON THE HI-STAR 60 TRANSPORTATION PACKAGE (DOCKET NO. 71-9336, TAC NO. L24101)

On July 11, 2007, the Nuclear Regulatory Commission (NRC) staff and the Holtec International (Holtec) representatives held their first pre-application meeting to discuss the Holtec's new HI-STAR 60 spent fuel transportation package. The attendance list and the meeting handouts are provided in Enclosures 1 and 2, respectively.

HI-STAR 60 is a smaller version of HI-STAR 100 but with fixed basket. HI-STAR 60 weighs about 60 metric tons empty. Holtec indicated that the need for this cask is at some sites such as Indian Point 1 where the crane capacity is limited in terms of lifting weight. At the meeting, Holtec provided an overview of the design followed by design criteria and description in each of the disciplined areas.

For structural evaluation, Holtec is planning to use LS-DYNA numerical simulation to calculate rigid-body decelerations of the overpack. The applicable decelerations are then used in a ANSYS finite element analysis of the packaging components, including the overpack, containment boundary, and fuel basket, to meet the requirements of normal conditions of transport and hypothetical accident conditions. Holtec stated that no scale-model impact limiter drop tests would be performed of the packaging. Instead, similar to the recently proposed approaches to evaluating the performance of impact limiters for HI-STAR HB and HI-STAR 180. Holtec believed that it could rely on properly benchmarked LS-DYNA models alone for demonstrating adequate structural performance for the conditions and tests associated with the regulatory package drops. In response, the staff noted that the comprehensive data on drop tests performed on the 1/4-scale HI-STAR 100 packaging have only been made available recently and a review is on going for its applicability for ensuring adequate LS-DYNA model benchmarking. Recognizing that failures of the impact limiter attachment bolts had been observed in some drop orientations during the first and second drop test series performed in August and December 1997, respectively, the staff indicated that a 1/4-scale LS DYNA model should be used with the 1/4-scale HI-STAR 100 test results for benchmarking purposes. As to the acceptance criteria, the staff indicated that the model should also be able to show failures of the impact limiter attachment bolts, which had been observed in some of the drop orientations.

The staff suggested a second pre-application meeting to discuss the benchmarking of the structural computer code in greater detail if needed prior to the submission of the application in August 2007 as planned by Holtec.

With regard to the containment design, Holtec indicated that the design will be based on a maximum leakage rate criteria of 2.8×10^{-4} atm cm^3/sec. The staff mentioned that since Holtec has opted for a leakage rate which is less than the leak-tight criteria, the staff will examine carefully the source term that Holtec will be using in calculating the above leakage rate.

No regulatory decisions were made at the meeting.

Docket No. 71-9336
TAC No. L24101

Enclosures:
1. Attendance List
2. Meeting Handout

cc: Meeting Attendees

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G:\SFPO\Rahimi\71-9336\HI-STAR 60-Handouts.pdf

OFC:	SFPO	E	SFPO	E	SFPO	
NAME:	MRahimi		MDeBose		GBjorkman	
DATE:	7/18/07		7/18/07		7/18 /07	

OFC:	SFPO	E	SFPO	E	SFPO	
NAME:	MWaters		LCampbell		RNelson	
DATE:	7/19/07		7/19/07		7/ /07	

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Meeting Between Holtec International and the Nuclear Regulatory Commission Staff
July 11, 2007

ATTENDANCE LIST

Name	Affiliation	E-mail
Meraj Rahimi	NRC/NMSS/SFST	mxr2@nrc.gov
Ed Hackett	NRC/NMSS/SFST	emh1@nrc.gov
Robert Nelson	NRC/NMSS/SFST	ran@nrc.gov
Gordon Bjorkman	NRC/NMSS/SFST	gsb3@nrc.gov
Charles Interrante	NRC/NMSS/SFST	cgi@nrc.gov
David Tang	NRC/NMSS/SFST	dtt@nrc.gov
Jerry Chuang	NRC/NMSS/SFST	tjc@nrc.gov
Andrew Barto	NRC/NMSS/SFST	abbz@nrc.gov
Larry Campbell	NRC/NMSS/SFST	llc3@nrc.gov
Mathew Panicker	NRC/NMSS/SFST	mmp1@nrc.gov
Zahira Cruz Perez	NRC/NMSS/SFST	zlc@nrc.gov
Zhian Li	NRC/NMSS/SFST	zxl1@nrc.gov
Michel Call	NRC/NMSS/SFST	mxc4@nrc.gov
Bob Triapathi	NRC/NMSS/SFST	bpt@nrc.gov
Stefan Anton	Holtec	S.anton@holtec.com
John Zhai	Holtec	John-zhai@holtec.com
Debu Mitra-Majumdour	Holtec	Debabrata-majumdour@holtec.com
Tammy Morin	Holtec	tammy-morin@holtec.com
Everett Redmond	NEI	elr@nei.org
Wayne Hodges	H322 Consulting	wayne@h322.com
Marie-Anne Braudieu	Transnuclear	marie-anne.brudieu@transnuclear.com
Maureen Conley	Platz/McGraw-Hill	maconley@yahoo.com
Carlyn Greene	UX Consulting	carly.greene@uxc.com

Enclosure 1

Enclosure 2