

April 11, 2007

Mr. Luis Hinojosa, Project Manager
Holtec International
Holtec Center
555 Lincoln Drive West
Marlton, NJ 08053

SUBJECT: SUMMARY OF APRIL 3, 2007, TELEPHONE CALL WITH HOLTEC
INTERNATIONAL (HOLTEC) TO DISCUSS THE MODEL NO. HI-STAR 180
TRANSPORTATION PACKAGE

Dear Mr. Hinojosa:

A telephone call was held with Holtec on April 3, 2007, to discuss the Model No. HI-STAR 180 transportation package. By application dated January 10, 2007, a Certificate of Compliance (CoC) was requested for the Model No. HI-STAR 180 package. Three pre-application meetings were held prior to this submittal. An information public meeting for the review team was held on February 13, 2007. This application was withdrawn by letter dated March 9, 2007. Staff acknowledged receipt of this withdrawal by letter dated March 20, 2007. A pre-application meeting for a resubmittal of the Model No. HI-STAR 180 transportation package was held on March 27, 2007. The purpose of this telephone call was to summarize and reiterate issues that had previously been discussed with Holtec in pre-application meetings before resubmittal.

The meeting attendees were:

NRC: Bill Ruland, Robert Nelson, Gordon Bjorkman, Michael Waters, Kim Hardin, Drew Barto, Geoff Hornseth, David Tang, and Chris Bajwa

Holtec: Stefan Anton, Alan Soler, and Luis Hinojosa

The telephone discussion is described below:

The agenda (Enclosure) was generally followed. The primary reason for the meeting was to discuss the application for CoC No. 71-9325 for the Model No. HI-STAR 180 package. Holtec plans to resubmit an application on April 9, 2007. NRC staff summarized a detailed list in the agenda of previous discussions that need to be detailed in the resubmittal. Holtec plans to enhance detail throughout the Safety Analysis Report, provide all references not generally available, and provide all calculation packages except for criticality and shielding sections. A sample input file for each of these chapters will be provided.

Although all items on the agenda list were discussed, the conversation focused on certain issues, particularly the basis for Holtec to request moderator exclusion under ISG-19. Holtec stated that the plan is to provide "extra protection" by having a dual lid closure and detailed analyses for fuel reconfigured with moderator present. Staff reiterated that the dual lid closure is not considered a redundant barrier under IAEA regulations. The first option of ISG-19 (not moderator exclusion) allows for analyzing the flooded cask system reactivity, assuming reconfigured fuel within each fuel cell. This is, however a difficult option to utilize for high burn-up fuel because of a lack of materials data. Holtec stated that they were under the

impression from previous pre-application meetings that their approach would probably be acceptable. The staff reiterated, that because of a lack of physical testing for the HI-STAR 180 package, Holtec needs to provide detailed rationale with supporting documentation to justify their approach.

Some discussion was had regarding the material properties (minimum elastic modulus, minimum yield point, and minimum ultimate strength) of METAMIC that needs to be provided, and the fact that the fuel basket must meet ASME Code Section III, Subsection NG specifications.

Additionally, it was reiterated that the benchmarking of codes for impact limiter qualification needs to be demonstrated in detail in the application.

You may contact me at 301-492-3301 if you have any questions.

Sincerely,

/RA/

Kimberly J. Hardin, Project Manager
Licensing Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

Docket No. 71-9325
TAC No. L24070

Enclosure: Agenda

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Enclosure: Agenda

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OFC	SFPO	E	SFPO	C	SFPO	E
NAME	KHardin		MDeBose		RNelson	
DATE	4/10/07		4/11/07		4/11/07	

"C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy
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Holtec HI-STAR 180 Teleconference
April 3, 2007
11:30a.m.-12:30 p.m.

Purpose:

Review issues that have been identified in pre-application meetings with Holtec regarding the Model No. HI-STAR 180 transportation package.

Expected Outcomes:

Common understanding of the issues for Holtec to decide how to address.

Discussion:

- | | | |
|--------------------------------------|------------|--------------|
| 1. Opening remarks and agenda review | 5 minutes | Hardin |
| 2. Discussion of the attached issues | 45 minutes | Hardin/Group |
| 3. Summary | 10 minutes | Hardin |

ENCLOSURE

ATTACHMENT

Holtec needs to make a decision on how to address these issues prior to submitting a new application for the HI-STAR 180. These concerns have been identified previously in pre-application meetings:

1. Bases for moderator exclusion and interpretation of ISG-19. Holtec wants to rely on the dual lid closure system for assuming moderator exclusion under HAC without performing any physical tests as recommended by ISG-19. IAEA regulations require a redundant exclusion boundary, not just two closure lids. The requested burn-up is 66 MWD/MTU. As was clarified in the October 24 meeting, the structural integrity of the high burn-up fuel may be demonstrated by utilizing the first option of ISG-19. This option allows for analyzing the flooded cask system reactivity, assuming reconfigured fuel within each fuel cell. (See meeting summary dated 10/27/06 for more details.)
2. Basket structural elements and the materials used (METAMIC, borated aluminum) and their ability to maintain configuration control under the environmental conditions present, i.e., temperature and duration.
3. The material properties (minimum elastic modulus, minimum yield point, and minimum ultimate strength) of METAMIC need to be demonstrated through testing data. The basket evaluated to "deformation limits" needs to be shown to meet ASME Code Section III, Subsection NG specifications.
4. Benchmarking of codes for impact limiter qualification. Details of the connectivity of the impact limiter with the overpack need to be described as well as the HI-STAR 100 physical tests that were conducted. How does what was tested compare to the HI-STAR 180?
5. The gaps between the basket and overpack, if any, need to be considered in the drop analysis as they affect loads on the fuel basket.
6. The mesh in the containment boundary needs to be adequate. Holtec has mentioned using the PFS model, which would not be acceptable for the containment boundary.
7. SAR Chapter 3, Table 3.2.10 lists design temperature limits which do not appear to be supportable by the ASME Code. Some of these design margins probably need to be revised downward.
8. SAR page 2.2-4 mentions that an aluminum oxide coating will be employed for some of the components. However, it says the application procedures "shall be developed." These need to be submitted with the application.
9. SAR page 2.1-11 mentions "global average permanent lateral deformation of a fuel basket shall not exceed 0.5 mm." Details need to be provided regarding how this will be shown, given that the basket assembly fabrication tolerances would likely be difficult to hold to those tolerance limits. How would the difference be accounted for between assembly tolerance and in-service distortion?