NRC FORM 699 (9-2003) U.S. NUCLEAR REGULATORY COMMISSION

CONVERSATION RECORD

DATE: 03/26/2009

TIME: 1:00pm

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU	TELEPHONE NO.
Tammy Morin	

ORGANIZATION: HOLTEC INTERNATIONAL

SUBJECT: Thermal and Structural RAIs for the HI-STAR 60 transport package

TYPE OF CONVERSATION: ☐ VISIT ☐ CONFERENCE ☑ TELEPHONE ☐ INCOMING ☑ OUTGOING

SUMMARY *(Continue on Page 2)*

NRC Attendees: JoAnn Ireland, Matthew Gordon, Pierre Saverot

As part of an open dialogue and communication with the applicant, staff called Holtec International to listen to Holtec's proposed responses on the HI-STAR 60's thermal RAIs while Holtec called staff later that same day to discuss the seal permeability, Metamic issues and exemptions and additions to the Codes of Construction for welding.

Holtec said that it will provide a definition of Alloy X (RAI 3.1), define temperature limits (RAIs 3.2. and 3.3), revise the the Time-To-Boil calculations (RAI 3.4), put the new Fluent analyses in an updated calculation package and provide a detailed description with the results in the SAR as a response to RAIs 3.5 and 3.6. Regarding RAI 3.7, staff said that it understands that there are margins (optical properties do not have a huge effect on the Impact Limiter bulk material properties) and that it was not necessary to re-do the Fire and Post-Fire models because of the low impact of the temperature increases. However, staff said that it needs some sort of an argumentative response to this RAI. Holtec said that the Table will include clarification statements. Holtec also questioned staff on the interpretation of Part 71.73(4) i.e., if solar heat shall be added to the fire heat, as it could be construed from the regulations. Staff said that it will get back to Holtec within a couple of days with a proper answer. However, staff did say that Holtec must perform the full analysis of the Fire and Post-Fire (using simulation models) per Part 71 for the HI-STAR 180 package application: all surfaces exposed to the fire shall have an emissivity of 0.8 or greater with no solar insolation. Regarding RAI 3.8, Holtec said that the thermal expansion of the basket had been calculated and is about 0.3 mm. Holtec provided a new section 8.1.7 on thermal tests and staff agreed with the write-up of that section provided that Holtec includes a statement that, if the acceptance criteria are not met, root causes shall be determined and corrective actions completed to be able to re-test the package with acceptable results.

Regarding RAI O.5 on the clarifications needed for the welding codes to fabricate the package, Holtec said that, while the proposed langage for the Codes of Construction for Welding is acceptable, it will nevertheless request specific exemptions or exceptions for the basket shims and the basket support welds to the containment boundary. Holtec stated that it does not want to develop a whole set of procedures for that purpose.

Continue on Page 2

ACTION REQUIRED

Provide an answer to Holtec's question on the need to apply a solar heat load during a fire.

NAME OF PERSON DOCUMENTING CONVERSATION	SIGNATURE	DATE
Pierre Saverot		03/30/2009

ACTION TAKEN

Holtec was advised on 03/30/2009 that the review of Part 71.73(4) shows that the applicant must take solar heat into account to calculate the initial conditions for a fire, but that there is no need to apply a solar heat load during a fire because there is no heat source from the sun when the package is fully engulfed.

TITLE OF PERSON TAKING ACTION	SIGNATURE OF PERSON TAKING ACTION	DATE
Pierre Saverot, Project Manager		03/30/2009

CONVERSATION RECORD (Continued)

SUMMARY *(Continue on Page 3)*

Regarding RAI 2.25 on quantifiable data for the critical characteristics of the O-ring gasket, staff said that it was concerned that leak-testing results of the proposed elastomeric seal may not be good because a higher temperature (with a loaded package) affects the permeability of the seal. Staff also said that it wants to know in detail how the permeability will be measured because staff is aware of a permeation time of about 30 mn.

Staff told Holtec that it had a high degree of confidence that there is no specific issue with Metamic and that the material was very well qualified. However, staff said that it needs to have a quantification of the porosity of the material. Holtec answered that the porosity, as determined through a 90-day testing with Metamic coupons subject to soak testing in demineralized water, boric acid and sodium chloride solutions, is essentially zero (i.e. less than 0.5%). Holtec said that Metamic is non-absorbent, i.e. any porosity is not open.

Continue on Page 3