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

CONVERSATION RECORD

DATE: 03/16/2009

TIME: 1:00pm

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU: Tammy Morin, Stefan Anton, Debu Mitra Majumdar

TELEPHONE NO.: 856 797 0900

ORGANIZATION: HOLTEC INTERNATIONAL

SUBJECT: HI-STAR 60 Thermal RAIs

TYPE OF CONVERSATION
- [ ] VISIT
- [ ] CONFERENCE
- [x] TELEPHONE
  - [ ] INCOMING
  - [x] OUTGOING

SUMMARY *(Continue on Page 2)*

NRC attendees: JoAnn Ireland, Pierre Saverot

The NRC called Holtec International (Holtec) to listen to Holtec's comments and proposed resolution of the HI-STAR 60 Request for Additional Information (RAIs) regarding thermal issues.

RAI 3.1: Holtec will clarify that Alloy X is either 304, 304 L, 316 or 316 L stainless steel.

RAI 3.2 and 3.3: Holtec will clarify that the NCT and HAC impact limiter temperatures provided in Tables 3.1.2 and 3.1.4 are indeed bulk temperature limits. After a drop accident followed by a fire, the impact limiters serve no safety function.

RAI 3.4: Holtec claimed that it had already performed a very conservative adiabatic calculation (with no heat escaping from the system) but will expand on this calculation and include, as a response to this RAI, the contribution of the fuel, basket, containment shell, and baseplate to the thermal inertia. In addition, Holtec will include the lid in the new calculation. Holtec will replace the existing calculation with this one in Revision No. 2 of the package application.

RAI 3.5: Holtec explained that the method of attachment of the Impact Limiter to the cask body had been optimized during the package design. Now, the impact limiter covers the full lid and the baseplate under NCT. Holtec will change the model (the overall length of the Fluent models is 0.21 m shorter than the length of the package) and rerun the calculations as requested by staff even if the effect is likely to be very localized.

RAI 3.6: Holtec agrees that the NASA paper referenced by staff is a valid reference even if this paper is more applicable to coatings than to stainless steels. Holtec will change the model, input the new values of 0.42 and 0.11 for absorptivity and emissivity respectively on the Impact Limiter surface, re-perform the calculations and report what the effects are. Holtec told staff that the current conservatism (inclusion of 100% absorptivity for solar heat on the cask surface) will be kept. Holtec will describe appropriate controls in Chapter 7 to clean the impact limiters, e.g. free of any road dirt, etc., before installation.

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ACTION REQUIRED

NAME OF PERSON DOCUMENTING CONVERSATION	SIGNATURE	DATE
Pierre Saverot	Pierre Saverot	03/17/2009

ACTION TAKEN

TITLE OF PERSON TAKING ACTION	SIGNATURE OF PERSON TAKING ACTION	DATE

CONVERSATION RECORD (Continued)

SUMMARY *(Continue on Page 3)*

RAI 3.7: Holtec told staff that it had already included solar heat in the calculations to have solar absorption imposed on the cask surface (100%) and on the impact limiter surfaces during a fire to maximize heat. Holtec proposes to run the solar case at a steady state and see the effect without modeling the fire model because of the already large margins reported from both the fire and post-fire calculations. Staff agreed that this was a reasonable approach.

RAI 3.8: Holtec agreed with staff to include the basket support into the basket to cavity radial growth calculation. Holtec told staff that it did not include it in the application because the basket support width is much smaller than the basket with lower temperatures and that the expansion will be small.

Staff agreed to review proposed detailed responses from Holtec the week of March 23, 2009 to ensure that the applicant is on the same page than staff on those thermal issues.

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