NRC FORM 699
(9-2003)

U.S. NUCLEAR REGULATORY COMMISSION

CONVERSATION RECORD

DATE: 06/05/2009

TIME: 8:00am

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU: Stefan Anton, Chuck Bullard, John Zhai

TELEPHONE NO.: 856-797-0900

ORGANIZATION: Holtec International

SUBJECT: HI-STAR 180 structural RAIs - Docket No. 71-9325

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

SUMMARY *(Continue on Page 2)*

NRC attendees: Jason Piotter, Pierre Saverot

Holtec requested a teleconference call to understand properly the Request for Additional Information received for the HI-STAR 180 package application.

RAI 2-1: Holtec confirmed that it will run the Classical Dynamics Method (CDM) for this package, present arguments, and report results. Holtec stated that everybody should bear in mind that CDM was developed and benchmarked for the HI-STAR 100 1/4 scale tests and that the dynamic impact factor might not be as precise as desired.

RAI 2-2: Holtec said that it understood the question on the puncture evaluation and will make the necessary investigation. The staff said that Holtec may want to check if this might be a "self-contact" issue.

RAI 2-3: The staff clarified the RAI on "in-plane dimension" and said that this an issue that staff is currently pursuing because there may be more damaging orientations than those currently considered. Holtec stated that it had benchmarked a PNNL/NRC report, that it will clarify the value of the interstitial space and look at the "out-of-plane dimension" to see if this gives problems.

RAI 2-4: The staff said that it was "bothered' to see such discrepancy between the peak G loads when extracted from the containment shell or from the shield cylinder and questioned the use of the frequency. The staff asked Holtec to verify that the correct G load is pulled out and wondered if the single pin model was correct.

RAI 2-5: Regarding the 0.5 mm deformation limit, the staff said that it was unclear what the values were, when looking at drawings. Holtec and staff agreed that the 0.5 mm value is not a structural criterion but a criticality criterion.

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ACTION REQUIRED

None

NAME OF PERSON DOCUMENTING CONVERSATION	SIGNATURE	DATE
Pierre Saverot		**06/05/2009**

ACTION TAKEN

TITLE OF PERSON TAKING ACTION	SIGNATURE OF PERSON TAKING ACTION	DATE

CONVERSATION RECORD (Continued)

SUMMARY *(Continue on Page 3)*

RAI 2-6: Holtec stated that it will create an ANSYS model using the same type of elements, give the basket wall elastic material properties, run a separate LS-DYNA model with elastic-plastic properties and apply the pressure load. Holtec will then compare the 0.5 mm deformation limit to the NG level D criterion. Holtec stated that it believes that the 0.5 mm deformation limit is more stringent than the NG criterion.

RAI 2-7: The staff said that this RAI, related to RAI 2-5, will "take care of itself" if the response to RAI 2-5 is complete. Staff believes that the end drop scenario is not the governing case.

RAI 2-8: Holtec stated that it will perform the sensitivity study to show that thick shell elements perform similarly to solid elements.

RAI 2-9: The comparison table showing the relative component stresses, strains, deformations will be provided in the application, as this was the case for the HI-STAR 60.

RAI 2-10: Holtec stated that the internal pressure was not included because the preload on the bolt is set at a high level to balance the internal pressure and the impact load. Staff said that it remains concerned (even if this is not a showstopper) and that the question derives from the pressure static case.

RAI 2-11: Holtec said that it will investigate and provide a rationale why the 9 meter side drop deceleration time history is not influenced by the FSL failure, as was shown in the HI-STAR 60 evaluation. Staff said that it created reruns of the case and could not get a definitive answer; hence the RAI. Holtec said that the FSL does not fail as early as it did on the HI-STAR 60.

RAI 2-12: Holtec said that it will chek the LS-DYNA results and provide an explanation.

RAI 2-13: Holtec will revise that section and provide the same level of details than it did for the HI-STAR 60 to ensure consistency.

As a final comment, staff said that the SAR Rev. 2 of the HI-STAR 60 package is a good model to follow for the future revision of the HI-STAR 80 SAR.

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