UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

July 12, 2021

MEMORANDUM TO: Christopher M. Regan, Deputy Director
Division of Fuel Management
Office of Nuclear Material Safety
and Safeguards

FROM: Pierre Saverot, Project Manager
Storage and Transportation Licensing Branch
Division of Fuel Management
Office of Nuclear Material Safety
and Safeguards

Signed by Saverot, Pierre
on 07/12/21

SUBJECT: SUMMARY OF JUNE 28, 2021 MEETING WITH HOLTEC INTERNATIONAL

Background

On June 28, 2021, an Observation Public Meeting was held by teleconference between the NRC staff and representatives from Holtec International (Holtec) to discuss a pending application for the Model No. HI-STAR 240 package. This pre-application meeting was noticed on June 9, 2021 (ADAMS Accession No. ML21160A058).

The meeting attendance list and the presentation are provided as Enclosure Nos. 1 and 2, respectively.

Discussion

Holtec is planning to submit an application for a new package, the Model No. HI-STAR 240 (Docket No. 71-9394), designed to transport up to 10,000 lbs of reactor-related solid waste. The package gross weight will be around 90,000 lbs and its exterior dimensions will be approximately 6’ x 6’ x 11’.

The Model No. HI-STAR 240 does share a number of similarities with the Model No. HI-STAR ATB 1T package (Docket No. 71-9375): both are rectangular packages, both have unconventional impact absorbers, both have a special mechanical closure device, and the materials benchmarking testing performed for the HI-STAR ATB 1T will be relevant to the HI-STAR 240 evaluation. Holtec stated that lessons learned from the licensing of the Model No. HI-STAR ATB 1T package were incorporated into the design of this new package.

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However, staff made a number of substantive observations during the presentation that would enable the application to be accepted for review. Staff did not obtain a clear answer on the lifting analysis and understood that the tie-down mechanism has not yet been designed. Staff pointed out that Holtec should pay a particular attention to the attachments for the removable aluminum impact absorbers: these impact limiters are being relied upon to keep the closure in the elastic regime, and thus shall remain attached to the package after the drops. Staff wondered if LS-DYNA results show whether or not these impact absorbers remain attached, after drops which often have multiple rebounds. This aspect will be closely examined during the technical review.

Staff noted that the application should explain how the entire containment boundary is leak-tested with four “corner drain assemblies” penetrating the containment structure. In response to a staff’s question, Holtec said such drain assemblies will have seals, or O-rings, that can be reused. The applicant indicated that they did not consider activated non-dispersible solids as being releasable (independently of their size) but could not justify this during the meeting. The application would need to thoroughly justify such an assumption because a non-dispersible solid content cannot be considered as “equivalent” of a zero-release fraction content. Another way to address the non-dispersible solid content topic would be to include an appropriate release fraction and reperform the confinement calculations, possibly resulting in a different leakage test acceptance rate. Staff left the option open for Holtec to decide the best possible approach. Staff also noted that the Model No. HI-STAR ATB 1T package had a so-called “BFA-Tank” which acted as a “defense in depth” second confinement barrier: the BFA Tank was welded, had a metallic O-ring at the lid, and survived the drops, while such a “ BFA-Tank” is not part of the design of the Model No. HI-STAR 240.

Staff said that the application should clearly show that there is no inelastic deformation at the inner seal or, essentially, the closure. For the Model No. HI-STAR ATB 1T package, the deformation was indeed very local (about two Finite Element cells) and towards the outside of the package. Holtec stated that any inelastic deformation at the closure would be similar; however, staff requested to be able to see such details. Staff also requested that the “optional” shielding be fully addressed in the HAC shielding analysis.

Staff offered to hold a second pre-application meeting to ensure a reasonable alignment in responding to staff’s observations.

No regulatory commitments were made during this meeting.

Docket No. 71-9394
EPIDL-2021-NEW-0005

Enclosures: 1- Meeting Attendees
2- Presentation

Meeting Between Holtec International
and the
Nuclear Regulatory Commission
June 28, 2021
Meeting Attendees

NRC/NMSS/DFM

Pierre Saverot

Patrick Koch

Joe Borowski

Veronica Wilson

Chris Sydnor

HOLTEC INTERNATIONAL

Luis Hinojosa

Chuck Bullard

Robert Mahorter

Debu Majumdar

Abrar Mohammad

Prithvish Gowda

Behrooz Khorsandi

Venkat Prabhala

Raja Maheedhara

PUBLIC

Carlyn Greene

Enclosure 1