

October 21, 2013

Dr. Stefan Anton
Acting Licensing Manager
Holtec International
Holtec Center
555 Lincoln Drive West
Marlton, NJ 08053

SUBJECT: NRC STAFF EVALUATION OF RESPONSES TO REQUESTS FOR
ADDITIONAL INFORMATION FOR THE HOLTEC INTERNATIONAL HI-STORM
UMAX CANISTER STORAGE SYSTEM CERTIFICATE OF COMPLIANCE NO.
1040 - (TAC NO. L24664)

Dear Dr. Anton:

By letter dated June 29, 2012, as supplemented July 16, November 20, 2012, and January 30, April 2, April 19, and August 28, 2013, Holtec International (Holtec) submitted an application to the U.S. Nuclear Regulatory Commission for the HI-STORM UMAX Canister Storage System, Certificate of Compliance No. 1040. The proposed application intends to provide an underground storage option compatible with the Holtec HI-STORM Flood/Wind System.

The NRC staff (staff) has reviewed your responses to the requests for additional information (RAI) and has found two of the RAI responses unacceptable. The staff evaluations are provided in the enclosure to this letter. We request that you provide RAI responses addressing the staff's concerns by November 18, 2013. Please inform us in writing at your earliest convenience, but no later than November 4, 2013, if you are not able to provide the information by the requested date. You should also include a new proposed submittal date and the reasons for the delay to assist us in re-scheduling your review.

The NRC is additionally informing Holtec that it is withdrawing RAI 6-1 from its July 5, 2013, letter.

S. Anton

-2-

Please reference Docket No. 72-1040 and TAC No. L24664 in future correspondence related to this licensing action. If you have any questions, please contact me at (301) 287-9250.

Sincerely,

/RA/ W. C. Allen for

John Goshen, P.E., Project Manager
Licensing Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

Docket No.: 72-1040

TAC No.: L24664

Enclosure: As stated

HOLTEC INTERNATIONAL

DOCKET NO. 72-1040

NRC STAFF EVALUATION OF RESPONSES TO

REQUESTS FOR ADDITIONAL INFORMATION FOR THE

HI-STORM UMAX CANISTER STORAGE SYSTEM APPLICATION

By letters dated January 30, and August 28, 2013, Holtec International (Holtec) submitted to the U.S. Nuclear Regulatory Commission (NRC) responses to the requests for additional information (RAI) for the application to the HI-STORM UMAX Canister Storage System, Certificate of Compliance (CoC) No. 1040. The NRC staff (staff) has reviewed the RAI responses and has found that two of the responses did not acceptably address the RAIs. The staff's evaluation is provided below.

RAI 4-5

This evaluation refers to Holtec's RAI 4-5 response from the Holtec letter dated August 28, 2013.

The response states that the air mass flow rate through the cooling passages of a loaded UMAX vertical ventilated module will be determined by direct measurements of the air mass flow velocity at the air flow outlets using a calibrated thermal gauge. The response also states that a thermal acceptance test will be performed in accordance with Section 10.3 of the HI-STORM UMAX Final Safety Analysis Report (FSAR) on the first loaded MPC whose aggregate heat load is equal to 80% of the design basis MPC heat load and that the measured thermal performance of the storage system will be used to benchmark the computational fluid mechanics model used in the safety analysis in Chapter 4 of the HI-STORM UMAX FSAR.

The proposed test does not provide a response to RAI 4-5. It merely postpones the validation of the analytical methods after the CoC is issued. This practice put into question the validity of the design since the applicant should fully demonstrate and document in the safety analysis report the adequacy of the design so the staff can make a safety determination to issue the CoC. The staff realizes that the applicant does not have experimental data obtained from a geometry that resembles the HI-STORM UMAX design. Unless the applicant can provide such validation in advance, the staff will issue the CoC at 80% of the total heat load being requested in the application. The staff determined that 20% reduction in the total decay heat will compensate for the uncertainties in the calculations and lack of experimental data to validate the analysis. In cases where data has become available, the staff has found that errors as large as 25% were associated with analytical results. The 20% reduction combined with the available margin in the vendor's result would provide adequate justification for the thermal design.

Once a cask is loaded to 80% of the design basis heat load, the applicant could perform the proposed test to obtain the necessary data which could be used to validate the analysis. At that point the applicant could amend the CoC for higher heat loads. These issues were discussed in an August 28, 2013, conference call with Holtec.

Enclosure

RAI 6-1

This evaluation refers to Holtec's RAI 6-1 response from Holtec letter dated January 30, 2013.

The applicant's initial response to RAI 6-1, although very detailed, was insufficient to form a safety finding for the HI STORM UMAX storage system due to the potential for water to challenge the integrity of the MPC during a flood event and other credible sources. Additionally, the staff finds that Holtec has not provided acceptable contingency actions to address removing water from the CEC after incursion. These issues were discussed in a September 13, 2013, conference call with Holtec.

Please reference Docket No. 72-1040 and TAC No. L24664 in future correspondence related to this licensing action. If you have any questions, please contact me at (301) 287-9250.

Sincerely,

/RA/ W. C. Allen for

John Goshen, P.E., Project Manager
Licensing Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

Docket No.: 72-1040

TAC No.: L24664

Enclosure: As stated

Distribution: SFST r/f, MLombard

File location:G:\SFST\HI-STORM UMAX\RAI2\HI STORM UMAX evaluation of RAIs.docx

ADAMS P8 Accession No.: ML13294A504

OFC:	SFST	SFST	SFST	SFST	SFST	SFST	SFST
NAME:	JGoshen	WWheatley	JSolis	JSmith	MRahimi	CAraguas	MSampson
DATE:	9/25/2013	9/25 /2013	9/26/2013	10/17/2013	10/17/2013	10/17/2013	10/21/2013

OFFICIAL RECORD COPY