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

August 3, 2016

Ms. Kimberly Manzione, Licensing Manager
Holtec International
One Holtec Drive
Marlton, NJ 08053

SUBJECT: ACCEPTANCE REVIEW OF REQUEST FOR AMENDMENT NO. 4 TO CERTIFICATE OF COMPLIANCE NO. 1032 FOR THE HI-STORM FLOOD/WIND CASK SYSTEM – REQUEST FOR SUPPLEMENTAL INFORMATION

Dear Ms. Manzione:

By letter dated March 11, 2016, Holtec International (Holtec) submitted an amendment request to the U.S. Nuclear Regulatory Commission (NRC) to revise Certificate of Compliance (CoC) No. 1032 for the HI-STORM Flood/Wind (FW) Multipurpose Canister Storage System.

The staff has performed an acceptance review of your application to determine if the application contained sufficient technical information to begin a detailed technical review. The staff has determined that the amendment application does not provide sufficient technical information to begin a detailed review and that supplemental information is needed. The information needed to continue our review is described in the enclosed request for supplemental information (RSI).

In order to schedule our technical review, responses to the enclosed RSIs should be provided by September 16, 2016. If the information described is not received by this date, the application may not be accepted for review. If you are unable to meet this date, please notify us at least one week in advance, of your new submittal date and the reasons for the delay.

Please reference Docket No. 72-1032 and CAC No. L25102 in future correspondence related to this licensing action. If you have any questions, please contact me at (301) 415-0606.

Sincerely,

/RA/

Jose R. Cuadrado, Project Manager
Spent Fuel Licensing Branch
Division of Spent Fuel Management
Office of Nuclear Material Safety
and Safeguards

Docket No.: 72-1032
CAC No.: L25102

Enclosure: Request for Supplemental Information

Ms. Kimberly Manzione, Licensing Manager
Holtec International
One Holtec Drive
Marlton, NJ 08053

SUBJECT: ACCEPTANCE REVIEW OF REQUEST FOR AMENDMENT NO. 4 TO CERTIFICATE OF COMPLIANCE NO. 1032 FOR THE HI-STORM FLOOD/WIND CASK SYSTEM – REQUEST FOR SUPPLEMENTAL INFORMATION

Dear Ms. Manzione:

By letter dated March 11, 2016, Holtec International (Holtec) submitted an amendment request to the U.S. Nuclear Regulatory Commission (NRC) to revise Certificate of Compliance (CoC) No. 1032 for the HI-STORM Flood/Wind (FW) Multipurpose Canister Storage System.

The staff has performed an acceptance review of your application to determine if the application contained sufficient technical information to begin a detailed technical review. The staff has determined that the amendment application does not provide sufficient technical information to begin a detailed review and that supplemental information is needed. The information needed to continue our review is described in the enclosed request for supplemental information (RSI).

In order to schedule our technical review, responses to the enclosed RSIs should be provided by September 16, 2016. If the information described is not received by this date, the application may not be accepted for review. If you are unable to meet this date, please notify us at least one week in advance, of your new submittal date and the reasons for the delay.

Please reference Docket No. 72-1032 and CAC No. L25102 in future correspondence related to this licensing action. If you have any questions, please contact me at (301) 415-0606.

Sincerely,
/RA/
Jose R. Cuadrado, Project Manager
Spent Fuel Licensing Branch
Division of Spent Fuel Management
Office of Nuclear Material Safety
and Safeguards

Docket No.: 72-1032
CAC No.: L25102
Enclosure: Request for Supplemental Information
File location: G:\SFST\Cuadrado\Holtec\HI-STORM FW Amd 4\HI-STORM FW Amd 4 RSIs.docx
ADAMS No.: ML16216A321

OFC:	DSFM	DSFM	DSFM	DSFM	DSFM	DSFM
NAME:	JCuadrado	WWheatley	BTripathi via e-mail	JSolis via e-mail	EGoldfeiz via e-mail	ZLi via e-mail
DATE:	7/6/16	7/12/16	7/7/16	7/7/16	7/7/16	7/8/16
OFC:	DSFM	DSFM	DSFM	DSFM		
NAME:	JPiotter	MRahimi		BHWhite for JMcKirgan		
DATE:	7/14/16	7/14/16		8/3/16		

Request for Supplemental Information

Docket No. 72-1032
Certificate of Compliance No. 1032
Amendment No. 4 to the HI-STORM Flood/Wind (FW) Multipurpose Canister Storage System

By letter dated March 11, 2016, Holtec International (Holtec) submitted an amendment request to the U.S. Nuclear Regulatory Commission (NRC) to revise Certificate of Compliance (CoC) No. 1032 for the HI-STORM FW Multipurpose Canister Storage System.

The staff has performed an acceptance review of your application to determine if the application contained sufficient technical information to begin a detailed technical review. The staff has determined that the amendment application does not provide sufficient technical information to begin a detailed review and that supplemental information is needed. The information needed to continue our review is described in the enclosed request for supplemental information (RSI). The staff's requests for supplemental information (RSI) are provided below:

Chapter 3 – Structural Evaluation

3-1 Provide Holtec Report HI-2094353, Revision 10, "Analysis of the Non-mechanistic Tipover Event of the Loaded HI-STORM FW Storage Cask."

Reference 28, of the Attachment 8, to the Holtec Letter 5018043 refers to the above mentioned Holtec report. The staff needs this report to verify the relevance of this report to the current tipover analysis submitted by the applicant, "Holtec Report No: HI-2166998, Rev. 0 for the HI-STORM FW Cask loaded with MPC-32ML and MPC-31C.

This information is needed to verify compliance with 10 CFR 72.236(b).

Chapter 4 – Thermal Evaluation

4-1 Provide a detailed description of the HI-STORM FW thermal models for MPC-32ML and MPC-31C.

The application did not provide a detailed description of the model configuration. Section 4.5.4.1 of NUREG-1536 states that any model used in the thermal evaluation should be clearly described. The staff needs this information to determine the adequacy of the developed thermal models to predict applicable thermal limits.

This information is necessary to verify compliance with 10 CFR 72.236(a) and (f).

Chapter 5 – Shielding Evaluation

5-1 Provide a shielding analysis for the new fuel types (16x16D, V10A, V10B fuel assemblies) with their corresponding canisters (MPC-32ML and MPC-31C) to be stored in the HI-STORM FW System, and an update to the occupational dose estimate analyses to address the new fuel and canister types.

In the amendment application, the applicant requests to authorize storage of 16x16D assemblies in the new MPC-32ML canister, and V10A/V10B assemblies in the MPC-31C canister. The applicant states that the shielding evaluations will be performed on a site-specific basis; therefore, no change to Chapter 5 of the HI-STORM FW FSAR is required. However, 10 CFR 72.236(d) requires the applicant to demonstrate that the radiation shielding and confinement features of the cask system are sufficient to meet the requirements of 10 CFR 72.104 and 72.106. The applicant needs to provide information that demonstrates compliance with 72.236(d) for the new fuel types and their corresponding basket and canister types. In addition, the applicant should update the occupational dose estimate analyses to address the new fuel and canister types.

This information is needed to verify compliance with 10 CFR 72.236(d).

Chapter 6 – Criticality Safety Evaluation

6-1 Provide a specific definition for the term “partial gadolinium credit” and a detailed description of the method used for BWR fuel burnup credit analysis.

The applicant states that it used “partial gadolinium credit” for the MPC-89 BWR fuel cask criticality safety design of the HI-STORM FW system. However, the applicant provided neither a specific definition for the term “partial gadolinium credit”, nor a detailed description for how this method works. The applicant needs to provide a specific definition for the term “partial gadolinium credit.” The applicant also needs to provide a detailed explanation on how this partial gadolinium credit is determined, the technical bases, and justification that it is conservatively applied.

This information is needed to verify compliance with 10 CFR 72.124.

OBSERVATIONS

1. Provide addition code benchmarking analyses for the HI-STORM 100 with the VVER fuel content.

   The applicant selected some critical experiments to benchmark the computer code it used to perform criticality safety analyses for the HI-STORM FW system design for the VVER reactor fuel designs, which have a hexagonal shape. However, it appears that only six of the selected critical experiments are in hexagonal geometry. As such, it is not clear if the set of selected critical experiments are sufficient to support a reliable and accurate bias and uncertainty analysis, including the trends of the k_{eff} value with respect to the key parameters, as identified in NUREG/CR-6361.