June 7, 2005

Mr. K. P. Singh
President and CEO
Holtec International
555 Lincoln Drive West
Marlton, NJ 08053

SUBJECT: AMENDMENT NO. 2 TO CERTIFICATE OF COMPLIANCE NO. 1014 FOR THE HOLTEC INTERNATIONAL HI-STORM 100 CASK SYSTEM

Dear Mr. Singh:

As requested by your application dated March 4, 2002, as supplemented, enclosed is Certificate of Compliance (CoC) No. 1014, Amendment No. 2 for the HI-STORM 100 System. Changes made to the certificate are indicated by vertical lines in the right margin. As stated in the Federal Register (70 FR 32977, 06/07/05), the effective date of this certificate is June 7, 2005. We request that you update and submit a copy of the final safety analysis report (FSAR) to conform to the certificate, within 60 days.

Amendment No. 2 to CoC No. 1014 constitutes U.S. Nuclear Regulatory Commission (NRC) approval of the following changes to the HI-STORM 100 System:

- Add the use of METAMIC® as an alternate neutron poison material and remove specific reference to BORAL® as the neutron poison material.
- Allow the storage of damaged fuel in the multi purpose canister (MPC) -32 and damaged fuel and damaged fuel debris in the MPC-32F. Additionally, include appropriate values for soluble boron for MPC-32 and MPC-32F based on fuel assembly array/class, intact versus damaged fuel, and initial enrichment.
- Clarify that use of the aluminum heat conduction elements are permitted under Revision 0 or Amendment 1 to the CoC but are prohibited for use under Amendment 2. Clarify in the CoC reference to HI-STORM 100 and 100S nomenclature, and clarify the differences between the two designs. Delete all information in the CoC pertaining to the authorized contents of each MPC and add a statement defining the suffix to the MPC model number.
- Revise the CoC to reflect changes in MPC cavity drying, revise the Technical Specification (TS) to remove the helium leakage test requirement, and relocate the helium backfilling requirements to a new Table 3-2 in the TS.
- Revise requirements for ensuring MPC cavity bulk helium temperature is less than 200EF (93EC) prior to reflooding instead of existing language that reads “helium gas exit temperature” in the event unloading should be necessary and change the completion time requirement from 22 hours to “immediately.” Similarly, add new Limiting Conditions for Operation (LCO) to address use of the “Supplemental Cooling System.”
- Add new TS Program 5.7 for radiation protection. Modify associated LCO.

- Revise the definition of Non-Fuel Hardware to include vibration suppressor inserts and allow for their storage as integral non-fuel hardware that may be stored in an MPC with a fuel assembly.
- Increase the maximum authorized initial enrichment for Pressurized Water Reactor (PWR) damaged fuel and fuel debris to 5.0 wt.%.
- Revise burn-up as a function of cooling time and as a function of fuel array/class.
- Modify associated Completion Times for TS Required Actions to reflect blocked duct accident analysis and Surveillance Requirement acceptance criterion for temperature measurement.
- Revise Appendix B tables to provide new limits for fuel assembly burnup as a function of decay heat, enrichment, cooling time, and fuel array/class and modify associated completion times.
- Revise the maximum allowable uranium masses for certain fuel assemblies to be consistent with revised shielding analyses.
- Revise the maximum allowable burn-up for non-fuel hardware inserts to be consistent with revised shielding analyses.
- Update American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) Edition of record, add new and revised ASME Code alternatives, and incorporate new language into the CoC related to Code alternatives.
- Revise portions of CoC Appendix B to be consistent with CoC Appendix A and revise affected portions of the CoC to incorporate review guidance contained in Interim Staff Guidance (ISG) -11, Revision 3.
- Increase off-normal design pressure from 100 psig to 110 psig and increase the normal temperature limit for the overpack lid top plate from 350EF to 450EF.
- Deletion of Appendices 3.B thru 3.AS of the FSAR and relocate the information to a supporting calculation package.
- Removal of discussion of three-ducts blocked condition in Chapter 11 of the FSAR.
- Revised discussion of the Holtec quality assurance program in Chapter 13 of the FSAR to remove redundant information.
- Revise the CoC to address editorial issues.
- Modify the language in the CoC Condition 11 to address component certification and use to include changes to the discussion regarding aluminum heat conduction elements.
- Modification of the MPC drying acceptance criterion to use the Forced Helium Dehydration (FHD) System.
- Revision of the language pertaining to the list of ASME Code alternatives.
- Modification of the language in the CoC to include a maximum boron carbide content in METAMIC® to 33.0 wt%.

- Add language to the CoC incorporating FSAR Section 9.1.5.3 by reference and adding a note to the FSAR Section stating this Section cannot be modified under the provisions of 10 CFR 72.48.
- Clarification of the manner in which the equation used to determine whether a site may deploy free-standing casks is executed.
- Modification of FSAR Section numbering specified in the TS.
- Modification of the design temperatures of the MPC shell, overpack concrete, and Holtite neutron shield material.
- Modification of FSAR Tables 2.2.6 and 2.2.7 to clarify the Code applicability for the MPC basket and basket angle supports.
- Addition to the FSAR of Forced Helium Dehydration System Failure and Supplemental Cooling System Power Failure as new off normal events and addition of Supplemental Cooling System failure as a new accident event.
- Insertion of a new requirement to address degraded cask/pad interface friction for freestanding casks.

This certificate constitutes the approval and conditions for use of the HI-STORM 100 System for storage of spent nuclear fuel under the general licensing provisions of 10 CFR 72.210. A general license has been granted to all holders of licenses for nuclear power reactors issued under 10 CFR Part 50.

This letter also serves as a reminder for you to notify affected cask users of the effective date for this amendment. If you have any questions regarding this certificate amendment, please contact me or Christopher M. Regan of my staff at 301-415-8500.

Sincerely,

/RA/

Robert Lewis, Chief
Licensing Section
Spent Fuel Project Office
Office of Nuclear Material Safety
and Safeguards

Docket No.: 72-1014

Enclosures: 1. Certificate of Compliance No. 1014, Amendment No.2
2. Safety Evaluation Report

CC: Raymond Shadis, New England Coalition

- Add language to the CoC incorporating FSAR Section 9.1.5.3 by reference and adding a note to the FSAR Section stating this Section cannot be modified under the provisions of 10 CFR 72.48.
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