November 3, 2009

MEMORANDUM TO: Eric Benner, Acting Deputy Director
Licensing and Inspection Directorate
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

FROM: John Goshen, Project Manager **/RA/**
Licensing Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

SUBJECT: SUMMARY OF OCTOBER 6, 2009, APPLICATION MEETING WITH HOLTEC INTERNATIONAL, INC., TO DISCUSS THE HI-STORM FW CASK SYSTEM SUBMITTAL (TAC NO. L24321)

PURPOSE:

To provide Holtec International, Inc. (Holtec), the opportunity to discuss the submittal of the HI-STORM FW (Flood/Wind) Dry Cask Storage System.

MEETING SUMMARY:

The meeting took place on October 6, 2009, from 1:00 p.m. to 4:00 p.m., at the Nuclear Regulatory Commission's (NRC) Executive Boulevard Building in Rockville, MD. Attendees included Holtec staff, NRC's Division of Spent Fuel Storage and Transportation (SFST) staff, and three members of the public. The attendance list is enclosed (Enclosure 1). The 1:00 to 2:30 p.m. part of the meeting was proprietary and the public was excluded. The meeting began with introductions, introductory remarks by SFST staff and Holtec staff, and then moved into Holtec's proprietary presentation (Enclosure 2) of the HI-STORM FW system.

During the public meeting Holtec stated that the system represents the culmination of two decades of the company's development effort to refine and improve vertical ventilated storage technology to achieve a higher plateau of ALARA [as low as reasonably achievable], much greater safety margins (than has been achievable in the current design), increased storage capacity, minimized site modifications, and confirmed transportability. The HI-STORM FW Multi-Purpose Canister (MPC) Storage System consists of the HI-STORM FW storage overpack, the HITRAC Variable Weight transfer cask, and two high capacity MPC models. The MPC-37 for PWR fuel, and the MPC-89 for BWR fuel, both of which will be qualified to store failed canisterized fuel. The MPC external diameters are identical to allow the use of a single overpack design. The height of the MPC, as well as the overpack, is variable based on the spent fuel that is loaded in it. Eight large inlet ducts at the bottom allow air flow from the ambient through the annulus between the overpack and the MPC. An outlet vent circumscribes the entire lid of the FW to provide a pathway for heated air to escape the overpack. This is an engineered feature to resist the wind effects on thermal conductivity. The MPC internal space is filled with pressurized helium. The basket is constructed of thick Metamic-HT panels, with flow

holes at the bottom end. The MPC-89 BWR fuel basket will be able to store fuel assemblies with initial enrichment as high as 4.8 weight percent (wt. %) U-235 without any burnup or gadolinium credit, which Holtec expects will facilitate faster licensing for both storage and transport. Holtec also noted that this feature will be needed by dry storage users because BWR fuel currently in spent fuel pools at several sites has a greater initial enrichment than is allowed in our currently licensed MPC-68s in the HI-STORM 100 docket. The MPC-37 fuel basket will be qualified for transport of 5.0 wt. % U-235 with burnup credit that has already been approved in the transport docket (71-9261). Holtec said that the burnup credit requirement under Part 71 for the PWR basket will be reduced, making transport of 5 wt. % U-235 fuel with moderate burnup with no additional credit beyond that approved in the HI-STAR 100 docket in 2006. Design basis heat loads for the canisters are over 47 kW for PWR fuel and over 46 kW for BWR fuel using regionalized loading to maximize self shielding to minimize dose from the canister. Holtec noted that these high heat loads will allow even high burnup fuel with just three years cooling time in the spent fuel pool to be placed into dry storage. For reactors undergoing decommissioning, these high heat loads will reduce decommissioning time by at least two years. The maximum burnup is the same as in the HISTORM 100, which is 68,200 MWd/MTU for PWR fuel or 65,000 MWd/MTU for BWR fuel.

Holtec noted other characteristics of the system include storage cells with extra large openings to enable even severely distorted irradiated fuel to be loaded in the MPC without physical interference. The range of allowable fuel types include extra long assemblies such as those at South Texas Project and the AP1000s, as well as the shorter fuel such as those found at Fort Calhoun without sacrificing ALARA or requiring expensive crane upgrades. The system is compatible with the HI-STORM 100 system, so that users of that system can easily switch to the HI-STORM FW if desired, with minimal change in their loading procedures and few new ancillaries.

Dr. Kris Singh requested that the NRC assemble a “dedicated team” to review the application so that it might not be delayed by changes in project managers or reviewers. Dr. Singh also said their clients, two of whom were present at the meeting, needed to be able to use this system. He also requested a “timely” review, since the HI-STORM FW system utilizes approved materials and methodologies from other NRC approved dockets (72-1014 and 71-9325). The staff replied they did not anticipate any of the reviewers who have already been assigned to this application being rotated off in the near future, and believed that the same team could see the review from start to finish. The staff stated that that the acceptance review had begun, and the staff anticipates beginning a technical review November 21, but they may need additional conversations prior to beginning the technical review.

The members of the public in attendance did not have any questions or comments.

No regulatory decisions were made at the meeting.

If you have any questions or comments, please contact John Goshen at (301) 492-3325 or John.goshen@nrc.gov.

Docket No. 71-9325, 71-9261, 72-1014, 72-1032
TAC No. L24321

cc: Tammy Morin (Holtec International)

Enclosures:
As stated

If you have any questions or comments, please contact John Goshen at (301) 492-3325 or John.goshen@nrc.gov.

Docket No. 71-9325, 71-9261, 72-1014, 72-1032
TAC No. L24321

cc: Tammy Morin (Holtec International)

Enclosures:
As stated

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OFC:	SFST	SFST	SFST
NAME:	*JGoshen	*LCooper	SBaggett
DATE:	10/28 /2009	11/ 2 /2009	11/03/2009

*See previous concurrence

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ENCLOSURE 1

October 6, 2009
ATTENDANCE LIST

Name	Affiliation
Ray Lorson	NRC/SFST
Gordon Bjorkman	NRC/SFST
Christopher Regan	NRC/SFST
Lionel Rodriguez	NRC/SFST
Jimmy Chang	NRC/SFST
Geoff Hornseth	NRC/SFST
Bob Tripathi	NRC/SFST
Jason Piotter	NRC/SFST
Michael Waters	NRC/SFST
Steven Baggett	NRC/SFST
David Tang	NRC/SFST
Eric Benner	NRC/SFST
Christy Fisher	NRC/SFST
Jorge Solis	NRC/SFST
Alexis Sotamayor	NRC/SFST
Pierre Oneid	Holtec
Debu Mitra-Majundar	Holtec
Chuck Bullard	Holtec
Tammy Morin	Holtec
Rick Springman	Holtec
Stefan Anton	Holtec
Kris Singh	Holtec
Matt Eyre	PSEG Nuclear
Randolph Bunt	Southern Co.
Carlyn Greene	Ux Consulting

ENCLOSURE 2

HI-STORM FW

HOLTEC PROPRIETARY PRESENTATION

ENCLOSURE 3

HI-STORM FW

HOLTEC NON-PROPRIETARY PRESENTATION