ATTACHMENT 1

SER COMPLIANCE LOG

In this document, Holtec's comments on the Evaluation Findings in NRC's SER (TAC No. L23850) dated Jan. 29 2007 on the HI-STORM 100U VVM are provided to aid the staff in reviewing the revisions made to the FSAR to factor the SER comments. The revised FSAR material is denoted as Revision 4A. The clarifications, in essence, provide the basis for the changes made in the proposed FSAR (Revision 4A) in response to the NRC's SER. Only those Evaluation Findings that warrant an explanatory comment are treated in this document.

Chapter 1, Section 1.4 Evaluation Findings

F1.2 – Holtec believes that this issue is closed and the NRC has accepted the use of supplement sections to add the HI-STORM 100U to the HI-STORM 100 class of storage casks.

F1.3 - Drawing 4501, specific to the HI-STORM 100U, has been relocated to Supplement Section 1.I.5 and expanded in content to include all critical dimensions for ITS itemsas requested by the Staff. The drawings in Section 1.5 are the "licensing drawings". The licensing drawings sit at the apex of the hierarchical order of documents, such as the Manufacturing Drawing Package, the Holtec Standard Procedures, Holtec Project Procedures, Purchasing Specifications, Bill-of-Materials, Shop Travelers, and e-SADs that are utilized to manufacture a "certified" component under the company's configuration control system. The NRC has, in the past, understood the need to keep the extent of information in the licensing drawings relatively sparse to keep them from being labeled proprietary, and to obviate the need for the cumbersome §72.48 process to make even minor changes to the drawings. The level of detail in the licensing drawings in Section 1.5 is premised on this well-established practice in use in Part 50, Part 72, and Part 71 dockets. This graded inclusion of information in the licensing drawing package is essentially consistent with the practice of using the Calculation Packages as the repository of detailed analyses, with the FSAR serving as the controlling synoptic material.

The above said, recognizing the staff's need for access to detailed design information, we provide the Manufacturing Drawing Package (proprietary) as an attachment to this LAR. The Manufacturing Drawing Package is an actionable document on the factory floor: its compliance with the Licensing Drawing Package is maintained at all times under the company's configuration control system (Holtec Quality Procedure HQP-2.0). The veracity of the Company's configuration control system is subject to NRC's invigilation during scheduled (and impromptu) inspections of Holtec's facilities by the NRC.

F1.7 – The incomplete information concerning equivalent materials and the discussion of critical characteristics, specific to the HI-STORM 100U VVMs, is expanded in Supplement Section 2.I.0 and Table 2.I.9 to address NRC concerns.

Chapter 2: Evaluation Findings

F2.1 – References to concrete codes in the HI-STORM 100U has been changed to ACI-318 (05) for plain concrete in all locations in the document to address the Staff's concern.

The MPC bearing support pads have been upgraded to ITS C (see Table 2.I.8).

Chapter 3: Evaluation Findings

F3.1 and F3.2 – The following section-by-section response demonstrates how the specific issues raised in the Staff evaluation comments are addressed. Sections listed refer to the Staff's evaluation sections.

Section 3.0

The seismic analysis of the model includes the Fuel, the Fuel Basket, the MPC, and the MPC Guides so the actual load path is accurately represented in the simulations.

Section 3.1

The total mass of the Top Pad (now designated as the VVM Interface Pad and the Top Surface Pad) mass is included in the dynamic model. The effect of the transporter load on the response of the CEC is evaluated for the worst case when the transporter is adjacent to a VVM; Additional mass is added to the top pad to account for a loaded transporter.

The Foundation Anchor Housings, Foundation Anchor Clips, and the Gussets have been removed from the proposed design, and the restraint of relative lateral movement has been accomplished by recessing the VVM in the Support Foundation. Drawings, analyses models, simulations, and calculations are consistent with this revised configuration.

Subsection 3.1.1

As noted earlier, ACI 318-(05) is now the code referenced for plain concrete.

Section 3.2

To provide justification that results from a single non-linear analysis of a VVM bound the results from a practical array of VVM's, an analysis using SASSI has been performed. The SASSI simulations include multiple VVMs, a flexible Support Foundation and realistic subgrade properties surrounding the VVMs and under the Support Foundation. The control depth for input seismic motions is at bedrock below the engineered fill under the Support Foundation. A new Subsection 3.I.4.7.3 has been added with a discussion of the problem, cases considered, and a summary of results that address the ovality and beam bending of the CEC as a function of cavity location and the pattern of filled vs. empty cavities. A separate calculation package has been prepared with the details of the SASSI results and will be submitted with the application..

The non-linear model of a single VVM has also been upgraded to account for a flexible Support Foundation, a subgrade under the Support Foundation, and a control motion applied at the base of the underlying subgrade. The improved approach to minimizing lateral relative movement between the base of the VVM and the Support Foundation is reflected in the revised LS-DYNA non linear model. The new model is discussed in Subsection 3.I.7.4.2.

Issues with respect to shell vs. solid elements are no longer relevant as the new non-linear simulation uses multiple layers of solid elements through the thickness and does not attempt to justify use of a single layer. The calculation package has been revised to remove the shell vs. solid calculation, and to incorporate all revised or new LS-DYNA information as required.

Textual confusions with regard to the top pads, interfaces, and expansion joints have been addressed by clarifying the text and revising sketches as necessary.

As noted previously, the issues with respect to shear keys are eliminated as the configuration has been revised to restrain lateral relative movement between the CEC base and the Support Foundation by recessing the VVM in the Support Foundation. In lieu of "hold-down attachments", the concern of potential buoyant effects during construction has been addressed by specifying a minimum weight that must be present to prevent uplift.

Statements on page 1.I.7 (concerning SSI and hydrological forces) have been removed.

Licensing drawings 4501, now included in Section 1.I.5 to make the supplement self-contained, have been modified to make sure that all thicknesses and other relevant dimensions of ITS items in the load path are included.

Finally, loading cases and acceptance criteria are clearly identified, and the sample solution addresses the satisfaction of the acceptance criteria for the particular configuration evaluated. Any site-specific analysis will follow the same procedure.

Chapter 4: Evaluation Findings

The axisymmetric thermal models have been completely replaced by full 3-D models to alleviate the Staff's concerns.

Chapter 5: Evaluation Findings

F5.5 – The licensing drawing has been modified to add a defined area, called the Radiation Protection Space, around loaded VVMs. This space cannot be encroached upon during site construction activities. An evaluation of dose rates at the boundary of this space is added to Supplement 5.I. The need to maintain the Radiation Protection Space around loaded VVMs during site construction activities has been added to the Tech Specs.

F5.6 – This application relies upon approval of our LAR 1014-3, which increases both decay heat loads and radiation source strengths.

Chapter 10: Evaluation Findings

F10.9 – The licensing drawing has been modified to add a defined area, called the Radiation Protection Space, around loaded VVMs. This space cannot be encroached upon during site construction activities. An evaluation of dose rates at the boundary of this space is added to Supplement 5.I. The need to maintain the Radiation Protection Space around loaded VVMs during site construction activities has been added to the Tech Specs.