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August 17, 2007

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Reference:
1. USNRC Docket No. 71-9325 (HI-STAR 180 Model)
2. USNRC TAC No. L24076
3. USNRC Letter to Holtec Dated July 20th, 2007
4. Holtec Letter to USNRC Dated May 10th, 2007 (Doc. ID 1553012)

Subject: License Application for the HI-STAR 180 Type B(U) Transportation Package

Dear Sir or Madam:

Pursuant to SFST's letter of July 20th, we are pleased to submit revision 1 of the HI-STAR 180 SAR in support of a CoC under the provisions of 10CFR71. This SAR edition contains all of the enhancements identified by the Staff in the course of the Acceptance Review process on this submittal and also from our internal parsing of the RAIs recently received on our HI-STAR 100 ("HI-STAR HB", LAR 9261-5) transport docket.

In particular, the following major SAR changes have been made:

1. A definitive proof based on test data that *creep* is not a credible mechanism to degrade the performance of the Metamic-HT fuel basket structures (designed for use in the HI-STAR 180 cask) has been included in Chapter 2. As stated in Chapter 2 the creep test data acquired at elevated stress and temperature levels reported in the vendor's qualification document (Metamic LLC report no. HTA06911) equates to 4 years of creep under normal transport conditions which exceeds one year of creep test data requirement suggested by the SFST staff. The creep tests at elevated stress & temperature conditions, however, are continuing and Holtec has asked the material supplier that the testing continue until data for at least one full year of accumulated creep is obtained. We will not discontinue the creep tests without conferring with SFST. When one year worth of test data at elevated stress and temperature level (the one year anniversary for the first test is reached in October end) is obtained, then HTA06911 will be updated and resubmitted to SFST.

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2. A comprehensive description of the benchmarking of LS-DYNA by rigorously simulating the AL-STAR scale model (quarter-scale) test conducted by Holtec in the late '90s is provided in a new Holtec report and summarized in Appendix 2.B of the SAR. In this new report, the LS-DYNA simulation of the quarter-scale model has been used to simulate both successful and unsuccessful (broken impact limiter fasteners) tests. The new validation report, referred to as Stage 3 benchmarking, is provided along with an updated version of the previously submitted report (Stage 2 report which compares LS-DYNA predictions with the HI-STAR 100 performance data derived from scale model tests). Drawings referenced by these and other reports are also provided to facilitate the SFST staff review.

3. The SFST thermal reviewer's verbal observations on the Chapter 3 material have been pro-actively addressed.

4. The RAIs on our "HI-STAR HB" (LAR 9261-5) submittal have been carefully reviewed and the HI-STAR 180 SAR appropriately amended to pre-emptively answer any Staff queries relevant to HI-STAR 180. For example, the narrative on cask operations (Chapter 7) has been augmented to comply with RAIs on the "HI-STAR HB" submittal.

A List of Affected Sections contains a summary of all changes that differentiate the previously submitted Rev. 0 SAR document from the newly enhanced Rev. 1 SAR document.

Finally, to ensure that the SFST has access to all proprietary documents that may possibly be consulted during their regulatory review, we herewith provide the entire batch of non-public domain documents under the auspices of CFR 2.390, including the LS-DYNA benchmark reports, Metamic-HT qualification report, scale model test data (ca. 1998) and the array of Calculation Packages germane to this SAR. A complete listing of supporting documents and supporting (computer) data files being forwarded to the USNRC document control desk and SFST staff as a part of this submittal is presented in Attachment A to this letter.

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We trust that the above mentioned efforts at aligning our submittal with SFST's expectations would help expedite SFST's review and approval of this package to support our need date of April 10th, 2008 (the basis of which is documented in Ref. 4.).

Sincerely,

Luis Hinojosa

Luis E. Hinojosa
Project Manager

cc (with all attachments): Mr. Stewart Brown, NRC SFST, Licensing Branch
cc (with attachment 1 only): Mr. Pierre Monsigny
cc (without attachments): Dr. Stefan Anton, and Holtec Groups 1 and 2

Attachment A: Contents of License Application
Attachment B: Affidavit on Proprietary Status

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Attachment A – Contents of License Application including Supporting Documents and Supporting (computer) Data Files

Attachment 1 - Proposed SAR and CoC on Standard CD Media				
Item No.	**Document I.D.**	**Title**	**Rev. #**	**Proprietary Status**
1	HI-2073681	Safety Analysis Report on the HI-STAR 180 Package (includes drawing package) See note 2 below.	1	Proprietary
2	Proposed CoC	Proposed Certificate of Compliance 9325	0	Non-Proprietary
Attachment 2 - General Supporting Documents on Standard CD Media				
Item No.	**Document I.D.**	**Title**	**Rev. #**	**Proprietary Status**
3	HI-2063563	Data Definition Document for the HI-STAR 180 System	1	Proprietary
4	HI-2073684	Performance Characterization of Holtite-B as a Neutron Shielding Material	0	Proprietary
5	HTA06911	High Temperature Metamic Metal Matrix Composite for Structural Applications and Criticality Control (a.k.a. Metamic HT Qualification Report)	3	Proprietary
Attachment 3A - Structural Supporting Documents on Standard CD Media				
Item No.	**Document I.D.**	**Title**	**Rev. #**	**Proprietary Status**
6	HI-2063584	Finite Element Analysis Supporting HI-STAR 180 SAR	2	Proprietary
7	HI-2063552	HI-STAR 180 Part 71 Calculation Package	2	Proprietary
8	HI-2063591	Benchmarking of LS-DYNA for Simulations of Hypothetical Accident Conditions of Transport (a.k.a. Stage 2 Report)	1	Proprietary

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9	HI-2073743	Benchmarking of LS-DYNA Impact Response Prediction Model for the HI-STAR Transport Package Using the AL-STAR Impact Limiter Test Data (a.k.a. Stage 3 Report)	0	Proprietary
10	HI-981891	Impact Limiter Drop Test Report – Second Series (a.k.a scale mode test data report)	3	Proprietary
11	Drawing 1546 (Sheet 1)	HI-STAR 100 ¼ Scale Model - Overpack See note 3 below.	9	Proprietary
12	Drawing 1546 (Sheet 2)	HI-STAR 100 ¼ Scale Model - Overpack See note 3 below.	5	Proprietary
13	Drawing 1547	HI-STAR 100 ¼ Scale Model – MPC See note 3 below.	2	Proprietary
14	Drawing 1916	HI-STAR 100 ¼ Scale Model – Dummy Impact Limiter See note 3 below.	5	Proprietary
15	Drawing 3913	HI-STAR 100 Overpack (Licensing Drawings) See note 3 below.	8	Non-Proprietary
16	Drawing C1765 (Sheets 1 – 7)	Impact Limiter Drawing Series (Licensing Drawings referenced by NRC CoC 9261-5 Rev. 5 under Docket 71-9261) See note 3 below		Non-Proprietary

Attachment 3B - Structural Supporting Data Files on Ultrium LT03 Tape

Item No.	Data File Description	Rev. #	Proprietary Status
17	• All input and output computer data files identified in supporting document HI-2063584 • All input and output computer data files identified in supporting document HI-2063591 (a.k.a. Stage 2 report) • All input and output computer data files identified in supporting document HI-2073743 (a.k.a. Stage 3 report)	-	Proprietary

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Attachment 4A – Thermal Supporting Documents on Standard CD Media				
Item No.	**Document I.D.**	**Title**	**Rev. #**	**Proprietary Status**
18	HI-2073649	Thermal Analysis of the HI-STAR 180	3	Proprietary
19	HI-992252	Topical Report on the HI-STAR/HI-STORM Thermal Model and its Benchmarking with Full-Size Cask Test Data	1	Proprietary
Attachment 4B – Thermal Supporting Data Files on Standard DVD Media				
Item No.	**Data File Description**		**Rev. #**	**Proprietary Status**
20	All input and output computer data files identified in supporting document HI-2073649		-	Proprietary
Attachment 5A – Shielding Supporting Documents on Standard CD Media				
Item No.	**Document I.D.**	**Title**	**Rev. #**	**Proprietary Status**
21	HI-2073655	Shielding Analysis for the HI-STAR 180	3	Proprietary
22	HI-2073653	Source Term Analysis for the HI-STAR 180	1	Proprietary
Attachment 5B – Shielding Supporting Data Files on Standard DVD Media				
Item No.	**Data File Description**		**Rev. #**	**Proprietary Status**
23	Selected input and output computer data files identified in supporting documents HI-2073655 and HI-2073653		-	Proprietary
Attachment 6A – Criticality Supporting Documents on Standard CD Media				
Item No.	**Document I.D.**	**Title**	**Rev. #**	**Proprietary Status**
24	HI-2073654	Criticality Analysis for the HI-STAR 180	1	Proprietary
25	HI-2032982	Isotopic Benchmarks for Burnup Credit	2	Proprietary
Attachment 6B – Criticality Supporting Data Files on Standard CD Media				
Item No.	**Data File Description**		**Rev. #**	**Proprietary Status**
26	Selected input and output computer data files identified in supporting document HI-2073654		-	Proprietary

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Attachment A Notes:

1. The license application includes the Safety Analysis Report, the proposed CoC, supporting documents and supporting (computer) data files. Supporting documents include calculation packages, technical reports, test reports, and other documents that are not readily available to the USNRC.

2. Please be informed that supporting documents may reference previous revisions of the latest drawings provided in the drawing package in Section 1.3 of the Safety Analysis Report. Holtec's QA process does not require supporting documents to be revised if they are not materially affected by changes in other project documents. For your convenience, the last two revisions (revisions 1 and 2) of Holtec Drawing 4845 "HI-STAR 180 Cask" are provided in Attachment 1 above.

3. Documents that have been previously submitted to the USNRC are indicated with the applicable Docket Number in each reference section of the Safety Analysis Report, as applicable. The following Holtec documents are no longer considered structural supporting documents and not referenced by revision 1 of the Safety Analysis Report; however, they are listed herein for historical purposes:

   - Holtec proprietary report, HI-971774, Rev. 1, "Impact Limiter Drop Test Report"
   - Holtec proprietary report, HI-971823, Rev. 0, "Improved Correlation of 30' Drop Testing at ORNL – August, 1997 Tests"

   In case the SFST staff is still interested in these specific documents, they have been previously submitted, most recently via Holtec letter ID 1553015 (dated June 29th, 2007) under Docket Number 71-9325, USNRC TAC No. L24076.

   Finally, the drawings indicated as items 11 through 16 have been previously provided under Docket number 71-9261; however, they are resubmitted for the convenience of the SFST staff. Any additional drawings that may be referenced by the supporting documents will be provided promptly upon SFST staff request.

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Attachment A Notes (continued):

4. For those items indicated as proprietary, Attachment B: Affidavit Pursuant to 10CFR2.390 – Affidavit, requests proprietary information be withheld from public disclosure. HI-STAR 180 Safety Analysis Report text, figures or drawings containing proprietary information are either highlighted in gray or indicated as proprietary.

5. Attachment 3B: In lieu of the Ultrium LT03 Tape media provided to the USNRC Document Control Desk, we are providing the SFST staff with a 500GB capacity external hard drive with USB capability. The hard drive has been shipped in its original box with all cables, manual(s), etc included. The hard drive is provided for the convenience of the SFST staff reviewer to facilitate his/her review. It is requested that upon completion of the SFST staff review of the License Application and issuance of the CoC, the hard drive be returned to Holtec International.

6. Attachment 1: In addition to the electronic copy provided to the USNRC Document Control Desk, a paper copy of revision 1 of the SAR is provided to the SFST staff for their convenience.

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Document ID 1553017-NRC

AFFIDAVIT PURSUANT TO 10CFR2.390

I, Luis E. Hinojosa, being duly sworn, depose and state as follows:

(1) I have reviewed the information described in paragraph (2) which is sought to be withheld, and am authorized to apply for its withholding.

(2) The information sought to be withheld is the proprietary information listed in Attachment A of Holtec Letter ID 1553017-NRC. The information is considered proprietary to Holtec International (except information in Report No. HTA06911 is considered proprietary to Metamic LLC) and is appropriately annotated as such.

(3) In making this application for withholding of proprietary information of which it is the owner, Holtec International relies upon the exemption from disclosure set forth in the Freedom of Information Act ("FOIA"), 5 USC Sec. 552(b)(4) and the Trade Secrets Act, 18 USC Sec. 1905, and NRC regulations 10CFR Part 9.17(a)(4), 2.390(a)(4), and 2.390(b)(1) for "trade secrets and commercial or financial information obtained from a person and privileged or confidential" (Exemption 4). The material for which exemption from disclosure is here sought is all "confidential commercial information", and some portions also qualify under the narrower definition of "trade secret", within the meanings assigned to those terms for purposes of FOIA Exemption 4 in, respectively, Critical Mass Energy Project v. Nuclear Regulatory Commission, 975F2d871 (DC Cir. 1992), and Public Citizen Health Research Group v. FDA, 704F2d1280 (DC Cir. 1983).

(4) Some examples of categories of information which fit into the definition of proprietary information are:

a. Information that discloses a process, method, or apparatus, including supporting data and analyses, where prevention of its use by Holtec's (and Metamic LLC's) competitors without license from Holtec International (and Metamic LLC) constitutes a competitive economic advantage over other companies;

b. Information which, if used by a competitor, would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing of a similar product.

c. Information which reveals cost or price information, production, capacities, budget levels, or commercial strategies of Holtec International, its customers, or its suppliers;

d. Information which reveals aspects of past, present, or future Holtec International customer-funded development plans and programs of potential commercial value to Holtec International;

e. Information which discloses patentable subject matter for which it may be desirable to obtain patent protection.

The information sought to be withheld is considered to be proprietary for the reasons set forth in paragraphs 4.a, 4.b and 4.e, above.

(5) The information sought to be withheld is being submitted to the NRC in confidence. The information (including that compiled from many sources) is of a sort customarily held in confidence by Holtec International, and is in fact so (and Metamic LLC) held. The information sought to be withheld has, to the best of my knowledge and belief, consistently been held in confidence by Holtec International (and Metamic LLC). No public disclosure has been made, and it is

not available in public sources. All disclosures to third parties, including any required transmittals to the NRC, have been made, or must be made, pursuant to regulatory provisions or proprietary agreements which provide for maintenance of the information in confidence. Its initial designation as proprietary information, and the subsequent steps taken to prevent its unauthorized disclosure, are as set forth in paragraphs (6) and (7) following.

(6) Initial approval of proprietary treatment of a document is made by the manager of the originating component, the person most likely to be acquainted with the value and sensitivity of the information in relation to industry knowledge. Access to such documents within Holtec International (and Metamic LLC) is limited on a "need to know" basis.

(7) The procedure for approval of external release of such a document typically requires review by the staff manager, project manager, principal scientist or other equivalent authority, by the manager of the cognizant marketing function (or his designee), and by the Legal Operation, for technical content, competitive effect, and determination of the accuracy of the proprietary designation. Disclosures outside Holtec International (and Metamic LLC) are limited to regulatory bodies, customers, and potential customers, and their agents, suppliers, and licensees, and others with a legitimate need for the information, and then only in accordance with appropriate regulatory provisions or proprietary agreements.

(8) The information classified as proprietary was developed and compiled by Holtec International (and Metamic LLC) at a significant cost to Holtec International (and Metamic LLC). This information is classified as proprietary because it contains detailed descriptions of analytical approaches and methodologies not available elsewhere. This information would provide other parties, including competitors, with information from Holtec International's technical database and the results of evaluations performed by Holtec International. A substantial effort has been expended by Holtec International to develop this information. Release of this information would improve a competitor's position because it would enable Holtec's competitor to copy our technology and offer it for sale in competition with our company, causing us financial injury.

(9) Public disclosure of the information sought to be withheld is likely to cause substantial harm to Holtec International's (and Metamic LLC's) competitive position and foreclose or reduce the availability of profit-making opportunities. The information is part of Holtec International's (and Metamic LLC's) comprehensive spent fuel storage technology base, and its commercial value extends beyond the original development cost. The value of the technology base goes beyond the extensive physical database and analytical methodology, and includes development of the expertise to determine and apply the appropriate evaluation process.

The research, development, engineering, and analytical costs comprise a substantial investment of time and money by Holtec International.

The precise value of the expertise to devise an evaluation process and apply the correct analytical methodology is difficult to quantify, but it clearly is substantial.

Holtec International's (and Metamic LLC's) competitive advantage will be lost if its competitors are able to use the results of the Holtec International (and Metamic LLC's) experience to normalize or verify their own process or if they are able to claim an equivalent understanding by demonstrating that they can arrive at the same or similar conclusions.

The value of this information to Holtec International (and Metamic LLC) would be lost if the information were disclosed to the public. Making such information available to competitors without their having been required to undertake a similar expenditure of resources would unfairly provide competitors with a windfall, and deprive Holtec International (and Metamic LLC) of the opportunity to exercise its competitive advantage to seek an adequate return on its large investment in developing these very valuable analytical tools.

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Document ID 1553017-NRC

AFFIDAVIT PURSUANT TO 10CFR2.390

STATE OF NEW JERSEY)
) ss:
COUNTY OF BURLINGTON)

Mr. Luis E. Hinojosa, being duly sworn, deposes and says:

That he has read the foregoing affidavit and the matters stated therein are true and correct to the best of his knowledge, information, and belief.

Executed at Marlton, New Jersey, this 17th day of August, 2007.

Luis E. Hinojosa
Holtec International

Subscribed and sworn before me this 17th day of August, 2007.

MARIA C. MASSI
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires April 25, 2010