NRC FORM 464 Part I
(04-2018)

U.S. NUCLEAR REGULATORY COMMISSION

RESPONSE TO FREEDOM OF INFORMATION ACT (FOIA) REQUEST

NRC	RESPONSE NUMBER
2018-000517	1

RESPONSE TYPE ☐ INTERIM ☑ FINAL

REQUESTER:	DATE:
Terry J. Lodge (Don't Waste Michigan)	06/15/2018

DESCRIPTION OF REQUESTED RECORDS:

Any and all records received or exchanged by, the NRC staff, from a meeting convened April 24, 2018 at the NRC, that involved NRC staff and personnel from Holtec International, Inc., from April 24, 2018 to present

PART I. -- INFORMATION RELEASED

☐ The NRC has made some, or all, of the requested records publicly available through one or more of the following means: (1) https://www.nrc.gov; (2) public ADAMS, https://www.nrc.gov/reading-rm/adams.html; (3) microfiche available in the NRC Public Document Room; or FOIA Online, https://foiaonline.regulations.gov/foia/action/public/home.

☑ Agency records subject to the request are enclosed.

☐ Records subject to the request that contain information originated by or of interest to another Federal agency have been referred to that agency (See Part I.D -- Comments) for a disclosure determination and direct response to you.

☐ We are continuing to process your request.

☐ See Part I.D -- Comments.

PART I.A -- FEES

AMOUNT

☐ You will be billed by NRC for the amount indicated.

☐ You will receive a refund for the amount indicated.

☑ Fees waived.

☐ Since the minimum fee threshold was not met, you will not be charged fees.

☐ Due to our delayed response, you will not be charged fees.

PART I.B -- INFORMATION NOT LOCATED OR WITHHELD FROM DISCLOSURE

☐ We did not locate any agency records responsive to your request. *Note*: Agencies may treat three discrete categories of law enforcement and national security records as not subject to the FOIA ("exclusions"). See 5 U.S.C. 552(c). This is a standard notification given to all requesters; it should not be taken to mean that any excluded records do, or do not, exist.

☑ We have withheld certain information pursuant to the FOIA exemptions described, and for the reasons stated, in Part II.

☐ Because this is an interim response to your request, you may not appeal at this time. We will notify you of your right to appeal any of the responses we have issued in response to your request when we issue our final determination.

☑ You may appeal this final determination within 90 calendar days of the date of this response. If you submit an appeal by mail, address it to the FOIA Officer, at U.S. Nuclear Regulatory Commission, Mail Stop T-2 F43, Washington, D.C. 20555-0001. You may submit an appeal by e-mail to FOIA.resource@nrc.gov. You may fax an appeal to (301) 415-5130. Or you may submit an appeal through FOIA Online, https://foiaonline.regulations.gov/foia/action/public/home. Please be sure to include on your submission that it is a "FOIA Appeal."

PART I.C -- REFERENCES AND POINTS OF CONTACT

You have the right to seek assistance from the NRC's FOIA Public Liaison by submitting your inquiry at https://www.nrc.gov/reading-rm/foia/contact-foia.html, or by calling the FOIA Public Liaison at (301) 415-1276.

If we have denied your request, you have the right to seek dispute resolution services from the NRC's Public Liaison or the Office of Government Information Services (OGIS). To seek dispute resolution services from OGIS, you may e-mail OGIS at ogis@nara.gov, send a fax to (202) 741-5789, or send a letter to: Office of Government Information Services, National Archives and Records Administration, 8601 Adelphi Road, College Park, MD 20740-6001. For additional information about OGIS, please visit the OGIS website at https://www.archives.gov/ogis.

NRC FORM 464 Part I
(04-2018)

U.S. NUCLEAR REGULATORY COMMISSION

RESPONSE TO FREEDOM OF INFORMATION ACT (FOIA) REQUEST

NRC	RESPONSE NUMBER
2018-000517	1

RESPONSE TYPE ☐ INTERIM ☑ FINAL

PART I.D -- COMMENTS

Signature - Freedom of Information Act Officer or Designee

Stephanie A. Blaney

Digitally signed by Stephanie A. Blaney
Date: 2018.06.15 10:32:53 -04'00'

NRC FORM 464 Part II
(04-2018)

U.S. NUCLEAR REGULATORY COMMISSION

RESPONSE TO FREEDOM OF INFORMATION ACT (FOIA) REQUEST

NRC: 2018-000517

DATE: 06/15/2018

PART II.A -- APPLICABLE EXEMPTIONS

Records subject to the request are being withheld in their entirety or in part under the FOIA exemption(s) as indicated below (5 U.S.C. 552(b)).

- [ ] Exemption 1: The withheld information is properly classified pursuant to an Executive Order protecting national security information.
- [ ] Exemption 2: The withheld information relates solely to the internal personnel rules and practices of NRC.
- [ ] Exemption 3: The withheld information is specifically exempted from public disclosure by the statute indicated.
  - [ ] Sections 141-145 of the Atomic Energy Act, which prohibits the disclosure of Restricted Data or Formerly Restricted Data (42 U.S.C. 2161-2165).
  - [ ] Section 147 of the Atomic Energy Act, which prohibits the disclosure of Unclassified Safeguards Information (42 U.S.C. 2167).
  - [ ] 41 U.S.C. 4702(b), which prohibits the disclosure of contractor proposals, except when incorporated into the contract between the agency and the
  - [ ] Other:
- [x] Exemption 4: The withheld information is a trade secret or confidential commercial or financial information that is being withheld for the reason(s) indicated.
  - [x] The information is considered to be proprietary because it concerns a licensee's or applicant's physical protection or material control and accounting program for special nuclear material pursuant to 10 CFR 2.390(d)(1).
  - [ ] The information is considered to be another type of confidential business (proprietary) information.
  - [ ] The information was submitted by a foreign source and received in confidence pursuant to 10 CFR 2.390(d)(2).
- [ ] Exemption 5: The withheld information consists of interagency or intraagency records that are normally privileged in civil litigation.
  - [ ] Deliberative process privilege.
  - [ ] Attorney work product privilege.
  - [ ] Attorney-client privilege.
- [ ] Exemption 6: The withheld information from a personnel, medical, or similar file, is exempted from public disclosure because its disclosure would result in a clearly unwarranted invasion of personal privacy.
- [ ] Exemption 7: The withheld information consists of records compiled for law enforcement purposes and is being withheld for the reason(s) indicated.
  - [ ] (A) Disclosure could reasonably be expected to interfere with an open enforcement proceeding.
  - [ ] (C) Disclosure could reasonably be expected to constitute an unwarranted invasion of personal privacy.
  - [ ] (D) The information consists of names and other information the disclosure of which could reasonably be expected to reveal identities of confidential sources.
  - [ ] (E) Disclosure would reveal techniques and procedures for law enforcement investigations or prosecutions, or guidelines that could reasonably be expected to risk circumvention of the law.
  - [ ] (F) Disclosure could reasonably be expected to endanger the life or physical safety of any individual.
- [ ] Other:

PART II.B -- DENYING OFFICIALS

In accordance with 10 CFR 9.25(g) and 9.25(h) of the U.S. Nuclear Regulatory Commission regulations, the official(s) listed below have made the determination to withhold certain information responsive to your request.

DENYING OFFICIAL	TITLE/OFFICE	RECORDS DENIED	APPELLATE OFFICIAL	
			EDO	SECY
Stephanie Blaney	FOIA Officer	Proprietary Information	✓	
	Select Title/Office from drop-down list			
	Select Title/Office from drop-down list			
	Select Title/Office from drop-down list			

McKirgan, John

From: Joyce Tomlinson <J.Tomlinson@holtec.com>
Sent: Tuesday, April 24, 2018 8:05 AM
To: McKirgan, John
Cc: Stefan Anton
Subject: [External_Sender] HI STORM UMAX Amendment 3 presentation
Attachments: UMAX-Amd3.pptx

Good morning John,

Attached is the presentation that we will be using during the meeting today.

Warm Regards,
Joyce

Joyce Tomlinson
Adjunct Licensing Manager
Holtec International

The information contained herein is intended only for the person or entity to which it is addressed and may contain confidential and/or privileged material from Holtec International. If you are not the intended recipient, you must not keep, use, disclose, copy or distribute this email without the author's prior permission. Further, review, retransmission, dissemination, or other use of this information in whole or part for any other purpose by persons outside the recipient's organization is strictly prohibited unless explicit authorization to such effect has been issued by the sender of this message. Holtec International policies expressly prohibit employees from making defamatory or offensive statements and infringing any copyright or any other legal right by Email communication. Holtec International will not accept any liability in respect of such communications. Holtec International has taken precautions to minimize the risk of transmitting software viruses, but we advise you to carry out your own virus checks on any attachment to this message. Holtec International cannot accept liability for any loss or damage caused by software viruses. If you are the intended recipient and you do not wish to receive similar electronic messages from us in the future then please respond to the sender to this effect.

HOLTEC INTERNATIONAL

Holtec Technology Campus, 1 Holtec Blvd., Camden, NJ 08104
Telephone (856) 797-0900
Fax (856) 797-0909

April 26, 2018

John McKirgan
Division of Spent Fuel Management
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission

US Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Subject: HI-STORM UMAX Amendment 3 Meeting Presentation April 24, 2018

Dear Mr. McKirgan:

This letter is to provide you with the proprietary presentation and affidavit which was discussed during our meeting with you April 24, 2018. Attached to this letter are the following documents:

1. Holtec presentation for the HI-STORM UMAX Amendment 3: Discussions on Thermal RAI
2. Affidavit pursuant to 10 CFR 2.790, applicable to Attachment 1.

Please do not hesitate to contact us if there are any questions.

Sincerely,

Joyce Tomlinson
Adjunct Licensing Manager
Holtec International

Document ID 5014846

AFFIDAVIT PURSUANT TO 10 CFR 2.390

I, Debabrata Mitra-Majumdar, 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 information provided in Enclosure 2 to Holtec Letter 5014846. This enclosure contains Holtec Proprietary information.

(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).

AFFIDAVIT PURSUANT TO 10 CFR 2.390

(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 competitors without license from Holtec International 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 held. The information sought to be withheld has, to the best of my knowledge and belief, consistently been held in confidence by Holtec International. 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 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 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 at a significant cost to Holtec International. 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.

AFFIDAVIT PURSUANT TO 10 CFR 2.390

(9) Public disclosure of the information sought to be withheld is likely to cause substantial harm to Holtec International's competitive position and foreclose or reduce the availability of profit-making opportunities. The information is part of Holtec International'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 competitive advantage will be lost if its competitors are able to use the results of the Holtec International 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 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 of the opportunity to exercise its competitive advantage to seek an adequate return on its large investment in developing these very valuable analytical tools.

AFFIDAVIT PURSUANT TO 10 CFR 2.390

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

Debabrata Mitra-Majumdar, 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 Camden, New Jersey, this 26th day of April, 2018.

Debabrata Mitra-Majumdar
Senior Director, Engineering Analysis
Holtec International

Subscribed and sworn before me this 26th day of April, 2018.

HOLTEC
INTERNATIONAL

HI-STORM UMAX Amendment 3: Discussions on Thermal RAI

a generation ahead by design

Abrar H. Mohammad
Engineering Manager, Thermal-Hydraulics Group
Holtec International

April 24, 2018

HI-STORM UMAX Amendment 3 Thermal RAI

- Holtec International submitted a license amendment to HI-STORM UMAX CoC to allow storage of 24PT1 dry-shielded canister (DSC) canister in HI-STORM UMAX system.
- HI-STORM UMAX overpack is modeled the same as that approved in the current UMAX FSAR.
- Data on 24PT1-DSC basket and other canister internals is not available.
  - canister is modeled as a homogeneous cylinder with effective thermal conductivities
  - concept of homogenization has been previously used in license applications by Holtec.
- USNRC issued an RAI on the methodology adopted for the thermal evaluation of 24PT1-DSC stored in HI-STORM UMAX system.

Thermal RAI

Provide a thermal model that demonstrates peak cladding temperature is accurately predicted for the 24PT1 DSC when stored in the HI-STORM UMAX system.

Section I.4.4.1 of the FSAR describes the canister thermal model used to analyze the 24PT1 dry-shielded canister (DSC) when stored in the HI-STORM UMAX system. However, the applicant's modeling approach and analysis results of the HI-STORM-UMAX thermal design's predicted peak cladding temperatures rely on a homogenized DSC model. Also the ***application does not contain information (for example, validation or benchmarking studies performed for similar designs) to demonstrate the homogenized canister modeling approach used in the application is sufficient and conservative in the calculation of the peak cladding temperatures***. Accurate prediction of peak cladding temperature is necessary to demonstrate compliance with 10 CFR Part 72.236(b) which requires that design bases and design criteria must be provided for structures, systems, and components important to safety and 10 CFR 72.236(f) which requires that the spent fuel storage cask must be designed to provide adequate heat removal capacity without active cooling systems. ***In the amendment request the applicant did not provide adequate design basis analyses which demonstrate the cask would provide adequate heat removal capacity without exceeding the peak clad temperature limit.*** Staff has previously accepted thermal analysis that relies on homogenized fuel assemblies when accompanied by appropriate justification (see Section 4.5.4.1.2 of NUREG-1536 and Section 2.2 of NUREG-2208 for additional guidance on acceptable thermal models).

This information is needed to determine compliance with 10 CFR 72.236(b) and 10 CFR 72.236(f).

Principal Concerns

~~Confidential Information~~

- Based on the RAI, the principal concerns raised by the staff are summarized in the following:
  - validation or benchmarking studies performed for similar designs to demonstrate the homogenized canister modeling approach used in the application is sufficient and conservative in the calculation of the peak cladding temperatures
  - adequate design basis analyses to demonstrate the cask would provide adequate heat removal capacity without exceeding the peak clad temperature limit

Experimental Data Used for Validation

~~Confidential Information~~

(b)(4)

Validation Approach

~~Confidential Information~~

HOLTEC INTERNATIONAL

a generation ahead by design

(b)(4)

Validation Approach (contd..)

~~Confidential Information~~

(b)(4)

Validation Approach (contd..)

~~Confidential Information~~

HOLTEC INTERNATIONAL

a generation ahead by design

(b)(4)

(b)(4)

Model Calibration Steps

~~Confidential Information~~

(b)(4)

Model Validation Steps

~~Confidential Information~~

HOLTEC INTERNATIONAL

a generation ahead by design

(b)(4)

Conclusion

~~Confidential Information~~

HOLTEC INTERNATIONAL

a generation ahead by design

(b)(4)