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Ron Gaston
Director, Nuclear Licensing

10 CFR 50.90

NL-21-014

February 26, 2021

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

Subject: Response to 2nd Round Request for Additional Information - License Amendment Request to Revise the Indian Point Nuclear Generating Unit No. 3 Licensing Basis to Incorporate the Installation and Use of a New Auxiliary Lifting Device

Indian Point Nuclear Generating Unit No. 3
NRC Docket No. 50-286
Renewed Facility Operating License No. DPR-64

In Reference 1, Entergy Nuclear Operations, Inc. (Entergy) submitted a request for a proposed amendment to Renewed Facility Operating License (FOL) DPR-64 for Indian Point Nuclear Generating Unit No. 3 (IP3). The proposed amendment requested U.S. Nuclear Regulatory Commission (NRC) approval to incorporate, into the IP3 Licensing Basis, the installation and use of a new single failure proof auxiliary lifting device (i.e., the Holtec International (Holtec) HI-LIFT) to handle a dry cask storage (DCS) transfer cask (i.e., the HI-TRAC) in the IP3 Fuel Storage Building (FSB).

In Reference 2, the NRC transmitted requests for additional information (RAIs) identified by the NRC Plant Systems Branch concerning the proposed license amendment. In Reference 3, the NRC provided an additional question associated with the Reference 2 RAIs. The following Enclosures to this letter provide a response to the NRC RAIs.

Enclosure 1 provides a proprietary version of the narrative RAI responses. This enclosure contains information proprietary to Holtec, and is therefore supported by an affidavit signed by Holtec, the owner of the information, which is provided in Enclosure 3.

Attachment 1 to Enclosure 1 provides a complete Failure Mode and Effects Analysis (FMEA) for the strand jack load bearing items and its hydraulic control system. This attachment, in its entirety, contains information proprietary to Holtec, and is therefore supported by an affidavit signed by Holtec, the owner of the information, which is provided in Enclosure 3.

Attachment 2 to Enclosure 1 provides engineering diagrams for the strand jack load path and hydraulic system. This attachment, in its entirety, contains information proprietary to Holtec, and is therefore supported by an affidavit signed by Holtec, the owner of the information, which is provided in Enclosure 3.

Enclosure 2 provides a non-proprietary, redacted version of the narrative RAI responses, including non-proprietary versions of the FMEA and engineering diagrams (i.e., Attachments 1 and 2, respectively).

Enclosure 3 provides the Holtec Affidavit in support of Enclosure 1 and the proprietary Attachments 1 and 2. The affidavit sets forth the basis on which the information may be withheld from public disclosure by the NRC and addresses, with specificity, the considerations listed in paragraph (b)(4) of Section 2.390 of the Commission's regulations.

There are no new regulatory commitments in the enclosed RAI responses.

Should you have any questions or require additional information, please contact Ms. Mahvash Mirzai, IP2 and IP3 Regulatory Assurance Manager, at (914) 254-7714.

In accordance with 10 CFR 50.91, "Notice for public comment; State consultation," paragraph (b), a copy of this application, with non-proprietary enclosures, is being provided to the designated State Officials.

I declare under penalty of perjury; the foregoing is true and correct. Executed on February 26, 2021.

Respectfully,

Ron Gaston

RWG/jls

References:

1) Entergy Nuclear Operations, Inc. (Entergy) letter to U. S. Nuclear Regulatory Commission (NRC), "Proposed License Amendment to Revise the Indian Point Nuclear Generating Unit No. 3 Licensing Basis to Incorporate the Installation and Use of a New Auxiliary Lifting Device" (ADAMS Accession No. ML20084U773), dated March 24, 2020

2) NRC Electronic mail from R. Guzman (NRC) to R. Gaston (Entergy), Subject: "Indian Point Unit No. 3 - LAR to Revise Licensing Basis for New Auxiliary Lifting Device, 2nd Round Request for Additional Information [EPID L-2020-LLA-0051]," (ADAMS Accession No. ML21019A567), dated January 19, 2021

3) NRC Electronic mail from R. Guzman (NRC) to P. Couture (Entergy), Subject: "Indian Point Unit No. 3 - Request for Additional Information: LAR to Revise Licensing Basis for New Auxiliary Lifting Device [EPID L-2020-LLA-0051]," dated February 8, 2021

Enclosure 1: Response to Requests for Additional Information, Proprietary
- Attachment 1 Failure Modes and Effects Analysis, Proprietary
- Attachment 2 Engineering Diagrams, Strand Jack Load Path and Hydraulic System, Proprietary

Enclosure 2: Response to Requests for Additional Information, Non-proprietary
- Attachment 1 Failure Modes and Effects Analysis, Non-proprietary
- Attachment 2 Engineering Diagrams, Strand Jack Load Path and Hydraulic System, Non-proprietary

Enclosure 3: Holtec Affidavit Pursuant to 10 CFR 2.390, dated February 24, 2021

cc: NRC Region I Regional Administrator
NRC Senior Resident Inspector, Indian Point Nuclear Generating Unit Nos. 2 and 3
NRC Senior Project Manager, NRC/NRR/DORL
President and CEO, NYSERDA (with Enclosures 2 and 3)
New York State Public Service Commission (with Enclosures 2 and 3)
NYS Department of Health - Radiation Control Program (with Enclosures 2 and 3)
NYS Emergency Management Agency (with Enclosures 2 and 3)

Enclosure 2

NL-21-014

Response to Requests for Additional Information

Non-Proprietary

Response to Requests for Additional Information

Background

By letter dated March 24, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20084U773), Entergy Nuclear Operations, Inc., (Entergy, the licensee) submitted a license amendment request (LAR) for to revise the Indian Point Nuclear Generating Unit No. 3 (IP3) licensing basis for spent fuel cask handling. Specifically, the licensee requested approval to incorporate into the IP3 Licensing Basis the installation and use of a new single failure proof auxiliary lifting device (i.e., the Holtec International (Holtec) HI-LIFT) to handle a dry cask storage (DCS) transfer cask (i.e., the HI-TRAC) in the IP3 Fuel Storage Building (FSB). The change to the IP3 licensing would be documented in a revision to the IP3 Updated Final Safety Analysis Report (UFSAR).

The existing IP3 40-ton FSB Crane does not have the capacity to lift a fully loaded HI-TRAC (i.e., containing a multi-purpose canister (MPC-32) with 32 spent fuel bundles). Building constraints limited the potential options for increasing the load capability of the existing crane. Since 2012, the licensee has conducted DCS loading by moving spent fuel from the IP3 FSB to the Indian Point Nuclear Generating Unit No. 2 (IP2) FSB using a wet transfer method, which requires multiple transfers to transfer 32 spent fuel bundles. The proposed licensing basis change would permit the direct loading of the HI-TRAC without wet fuel transfer from IP3 to IP2 through use of the HI-LIFT as a single-failure-proof lifting device meeting the intent of guidance in American Society of Mechanical Engineers (ASME) NOG-1 2004 edition (ASME NOG-1), "Rules for Construction of Overhead and Gantry Cranes," NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants," and NUREG-0554, "Single-Failure-Proof Cranes for Nuclear Power Plants." Entergy described the HI-LIFT as a lifting device comprised of a U-shaped frame, strand jack hoisting device, hydraulic positioning cylinders, torque arms and stabilizing arm.

Section 1.3, "General Design Criteria," of the IP3 UFSAR states that the licensee conducted a study of the method of compliance with NRC regulations contained in 10 CFR Part 50, including the General Design Criteria (GDC) of Appendix A to 10 CFR Part 50, and that the results of the compliance study were updated to reflect changes made to the configuration since the study was completed. The study was conducted in accordance with the provisions of NRC Confirmatory Order of February 11, 1980, and submitted to the NRC on August 11, 1980.

The Nuclear Regulatory Commission (NRC) staff has determined that additional information is needed to complete its review, as described in the request for additional information (RAI) shown below.

RAI-6 (SCPB-Plant Systems): Qualification of Components

Regulatory Basis:

In accordance with 10 CFR Part 50, Appendix A, GDC 1, "Quality standards and records," specifies that structures, systems, and components (SSCs) important to safety be designed, fabricated, erected, and tested to quality standards commensurate with the importance of the

safety functions to be performed. Where generally recognized codes and standards are used, they shall be identified and evaluated to determine their applicability.

Section 10 of NUREG-0554, "Single-Failure-Proof Cranes for Nuclear Power Plants," specifies quality measures addressing the design, fabrication, installation, testing, and operation be applied to crane handling systems for safe handling of critical loads.

Request:

By letter dated November 9, 2020 (ADAMS Accession No. ML20314A355), Entergy provided a response to a request to clarify qualification of the strand jack component of the HI-LIFT (RAI-1(b) (SCPB-Plant Systems)), which stated that the strand jack would be procured as a commercial item and dedicated under the Holtec NQA-1 quality assurance program using inspections and tests (Method 1 of Subpart 2.14 of ASME NQA-1). The staff had also requested that Entergy specify critical characteristics of the strand jack and how each characteristic would be evaluated against the related acceptance criteria if commercial-grade dedication would be used for qualification. The response identified only functional performance related to the ability to lift/lower/hold sufficient load as critical characteristics and specified a proof load test in accordance with ASME B30.1-2015, paragraph 1-7.4.2(b) as the means of demonstrating the critical characteristics would be met. The guidelines of Section 10 of NUREG-0554, "Single-Failure-Proof Cranes for Nuclear Power Plants," specify quality measures addressing the design, fabrication, installation, testing, and operation be applied to crane handling systems for safe handling of critical loads, but the identified characteristics and testing do not address strand jack characteristics associated with design and fabrication identified in Holtec Report HI-2188459, "HI-LIFT Specification for IPEC Unit 3." The response noted that the specifications for the strand jack in HI-2188549, Section 4 have been augmented to invoke ASME B30.1-2015, but the B30.1 standard states that the manufacturer establishes many of the design criteria applicable to strand jacks. Please identify characteristics, including design criteria established by the manufacturer in accordance with ASME B30.1, associated with the design and fabrication of the strand jack that are considered critical to the strand jack safety function and specify the tests or inspections that will be used to verify the critical characteristics have been met. If strand jack design features described in HI-2188549 are excluded from the list of critical characteristics, please provide information justifying the exclusion of the design feature from the list of critical characteristics based on its importance to the strand jack safety function of stopping and holding the dry storage cask system components.

Entergy Response:

Please identify characteristics, including design criteria established by the manufacturer in accordance with ASME B30.1, associated with the design and fabrication of the strand jack that are considered critical to the strand jack safety function and specify the tests or inspections that will be used to verify the critical characteristics have been met.

If strand jack design features described in HI-2188549 are excluded from the list of critical characteristics, please provide information justifying the exclusion of the design feature from the list of critical characteristics based on its importance to the strand jack safety function of stopping and holding the dry storage cask system components.

The characteristics associated with the design and fabrication of the strand jack are established using the guidance provided in ASME B30.1-2015 and are described in Table 6.1 below. The table lists each of the design characteristics of the strand jack identified in ASME B30.1, as well as additional design characteristics identified by Holtec. For each of the aforementioned characteristics, the table identifies if the characteristic is critical to the strand jack safety function of stopping and holding a load, and provides a brief justification for the determination. For those characteristics that are identified as critical, the table describes the quality measures to be used during design, fabrication, and testing to verify that the critical characteristics have been met. For those strand jack features identified as non-critical, Table 6.1 describes the justification as to why the feature is considered non-critical.

Section 1-7.1.2 of ASME B30.1-2015 states "The strand jack system shall be designed in accordance with the criteria established by the manufacturer or a qualified person." In that traditional manufacturers do not possess NRC approved quality programs, Holtec has developed the design criteria for the strand jack. The ASME B30.1 standard was not specifically written for devices that will be used to lift critical loads in nuclear power plants. Due to this Holtec developed and imposed design criteria for the strand jack based on NUREG-0554. The design criteria important to the safety function of the strand jack are described in Table 6.2 below. The use of guidance from NUREG-0554 ensures that areas of strand jack design that are normally established by the manufacturer will maintain a level of conservatism and safety, consistent with critical load handling applications. Entries in Table 6.1 invoke the full body of criteria described in Table 6.2.

The requirements identified in the tables below shall be incorporated into the HI-LIFT design specification, HI-2188459, "HI-LIFT Specification for IPEC Unit 3."

Table 6.1: Design characteristics of the HI-LIFT Strand Jack

[PROPRIETARY INFORMATION WITHHELD IN ACCORDANCE WITH 10 CFR 2.390]

TABLE 6.2 - DESIGN CRITERIA CONSISTENT WITH NUREG 0554:

[PROPRIETARY INFORMATION WITHHELD IN ACCORDANCE WITH 10 CFR 2.390]

RAI-7 (SCPB-Plant Systems): Qualification of Components

Regulatory Basis:

10 CFR Part 50, Appendix A, GDC 4, "Environmental and Dynamic Effects Design Bases," specifies appropriate protection for SSCs important to safety against dynamic effects, including the effects of missiles that may result from equipment failures.

Request:

By letter dated November 9, 2020 (ADAMS Accession No. ML20314A355), Entergy provided a response to a request to address strand jack failure modes and effects related to a statement in Attachment 2 (Holtec Report HI-2188459) to the Enclosure for the license amendment request, which stated that no more than one strand could be disengaged by a single mechanical or hydraulic failure. (RAI-3 (SCPB-Plant Systems)). The response stated:

The ASME NOG-1 Compliance Matrix, (i.e., HI-2188549, Appendix A) has been updated to clarify the statement: "The load is shared among all strands and wedges such that any single mechanical failure of a strand or wedge does not result in any significant loss of load capacity and would not impact the load holding ability of the strand jack".

As indicated, this modified statement replaced the original statement in HI-2188549, Appendix A. However, the original statement (and similar statements related to strand disengagement) also appear in the NUREG-0554 Compliance Matrix (i.e., HI-2188549, Appendix C, Section 4.9, Items 2 through 4), and these statements were not modified or removed by the RAI response.

Additional descriptions of strand jack functions and operations provided in the response did not adequately demonstrate how the strand jack would continue to hold the load following hydraulic or control system component failures. Thus, the modified statement appears to relax the acceptance criteria applied to the strand jack design, and yet the response did not resolve the original request for additional information regarding the consequences of single failures affecting the strand jack hydraulic system and its associated control system. Please clarify the design criteria in HI-2188549 that apply to the strand jack system and explain how the criteria satisfy the requirements of GDC-4 to protect equipment important to safety from the effects of equipment failures in the strand jack system. Also, please provide a complete failure modes and effects analysis for the strand jack hydraulic system and its associated control system, along with supporting engineering diagrams, that show how the design criteria established in HI-2188549 would be satisfied. Please ensure the response includes uniformity of strand loading as a critical characteristic supporting the capability of the strand jack system to withstand a broken strand without excessive shock loading to the remaining strands and how that feature would be verified.

Entergy Response:

Please clarify the design criteria in HI-2188549 that apply to the strand jack system and explain how the criteria satisfy the requirements of GDC-4 to protect equipment important to safety from the effects of equipment failures in the strand jack system.

General Design Criterion (GDC) 4, "Environmental and Dynamic Effects Design Bases," of Appendix A to 10 CFR Part 50 specifies, in part, that structures, systems, and components important to safety shall be appropriately protected against dynamic effects, including the effects of missiles, that may result from equipment failures. Section 9.1.5, "Overhead Heavy Load Handling Systems," of NUREG-0800, "NRC Standard Review Plan," references the guidelines of NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants," and NUREG-0554, "Single-Failure-Proof Cranes for Nuclear Power Plants," for implementation of these criteria in the design of overhead heavy load handling systems.

As described in SRP 9.1.5 (II), "Technical Rationale 3," GDC 4, as applied to overhead heavy load handling systems, specifies protection against the effects of internally-generated missiles (i.e., dropped loads). A dropped heavy load in a critical area could cause a release of radioactive materials, a criticality accident, or inability to cool fuel within the reactor vessel or spent fuel pool, or could prevent shutdown of the reactor.

Position C.5 of Regulatory Guide (RG) 1.13, "Spent Fuel Storage Facility Design Basis," including sub-element (a), provides guidance for meeting these requirements in spent fuel storage areas:

> *Cranes capable of carrying heavy loads should be prevented, preferably by design rather than interlocks, from moving over the pool. Furthermore, the spent fuel storage facility design should have least one of the following provisions with respect to the handling of heavy loads including the spent fuel cask:*
>
> *(b) Cranes should be designed to provide single-failure-proof handling of heavy loads so that a single failure will not result in the crane handling system losing the capability to perform its safety function*

In addition, NUREG-0800, SRP 9.1.5 (I)(4) provides the following acceptable safety guideline for verification that the heavy load handling systems satisfy the requirements of GDC 4:

> *The probability for a load drop is minimized by an overhead handling system designed to comply with the guidelines of NUREG-0554 and lifting devices that comply with American National Standards Institute (ANSI) N14.6 or an alternative based on American Society of Mechanical Engineers (ASME) B30.9. An overhead handling system that complies with ASME NOG-1 criteria for Type 1 cranes is an acceptable method for compliance with the NUREG-0554 guidelines.*

SRP 9.1.5 (III)(4)(c) further specifies that satisfying the following criteria is an acceptable means for demonstrating that the system has been designed as a highly reliable heavy load handling system:

> *The likelihood of failure is extremely low due to a single failure-proof handling system. A single failure-proof handling system consists of the following two elements:*
>
> *ii. The crane should be designed to the criteria of NUREG-0554. Cranes designed to the criteria of ASME NOG-1 2004 for a Type 1 crane are acceptable under the guidelines of NUREG-0554 for construction of a single failure-proof crane.*

The HI-LIFT is designed to provide protection against the effects of internally generated missiles (i.e. dropped loads). Through compliance with NUREG-0554, the HI-LIFT is demonstrated to provide single-failure proof load handling of the spent fuel and satisfy the requirements of GCD 4, as well as the guidance in RG 1.13, Regulatory Position C.5 and NUREG-0800, Section 9.1.5.

The HI-LIFT design compliance with NUREG-0554, including the single-failure proof criteria is demonstrated through design compliance with the applicable requirements of NOG-1 (2004), as outlined in NUREG-0800, Section 9.1.5. The strand jack is a commercial grade item that is designed and fabricated in accordance with ASME B30.1, with additional design constraints such as increased safety factor for non-redundant items to meet the design intent of NUREG-0554 and ensure satisfaction of the single-failure proof criteria. The critical characteristics identified in RAI-6 are those that are essential to the safety function of the strand jack (i.e., load holding) and will be verified during the design, procurement, fabrication, and testing of the strand jack (i.e., the Holtec commercial grade dedication of the strand jack). Consistent with the guidance and criteria in NUREG 0800, Section 9.1.5, RG 1.13, NUREG-0554, and NOG-1, the verification of the critical characteristics, as discussed in the response to RAI-6, appropriately demonstrates the design and fabrication of the strand jack, for the HI-LIFT system, satisfies the guidelines of NUREG-0554 and therefore, satisfies the requirements of GDC 4.

Also, please provide a complete failure modes and effects analysis for the strand jack hydraulic system and its associated control system, along with supporting engineering diagrams, that show how the design criteria established in HI-2188549 would be satisfied.

A complete Failure Mode & Effects Analysis (FMEA) of the strand jack load bearing items and its hydraulic control system is provided in Attachment 1. The FMEA analysis considers potential failures of each component of the Strand Jack (Table 7.1) and its associated hydraulic control system (Table 7.2). This documents the failure modes and effects analysis for the strand jack system, verifies that single-failure proof criteria are met, and identifies the critical characteristics that are required to maintain a load in the case of equipment failure. The FMEA considers all the potential failure modes and subsequent consequences applicable to the strand jack system, including mechanical, hydraulic, and control system failures. For each credible failure mode, a mitigation strategy is provided to assuage or preclude any potential consequences of the failure mechanism. These mitigations have been added to the list of critical characteristics to be verified during fabrication or testing to verify the requirement is met. Engineering diagrams of the strand jack load path and hydraulic system are included in Attachment 2.

[PROPRIETARY INFORMATION WITHHELD IN ACCORDANCE WITH 10 CFR 2.390]

Please ensure the response includes uniformity of strand loading as a critical characteristic supporting the capability of the strand jack system to withstand a broken strand without excessive shock loading to the remaining strands and how that feature would be verified.

The strand jack design will provide effective load sharing across redundant components, particularly the strands and wedges.

[PROPRIETARY INFORMATION WITHHELD IN ACCORDANCE WITH 10 CFR 2.390]

Enclosure 2, Attachment 1

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Failure Modes and Effects Analysis

Non-Proprietary

[PROPRIETARY INFORMATION WITHHELD IN ACCORDANCE WITH 10CFR2.390]

Table 7.1: FMEA Table for Strand Jack Load Bearing Items

[PROPRIETARY INFORMATION WITHHELD IN ACCORDANCE WITH 10 CFR 2.390]

Table 7.2: FMEA Table for Hydraulics and Control System

[PROPRIETARY INFORMATION WITHHELD IN ACCORDANCE WITH 10 CFR 2.390]

Enclosure 2, Attachment 2

NL-21-01414

Engineering Diagrams
Strand Jack Load Path and Hydraulic System

Non-Proprietary

[PROPRIETARY INFORMATION WITHHELD IN ACCORDANCE WITH 10 CFR 2.390]

Enclosure 3

NL-20-014

Holtec Affidavit Pursuant to 10 CFR 2.390
dated February 24, 2021

AFFIDAVIT PURSUANT TO 10 CFR 2.390

I, Stefan Anton, 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 1 and Attachments 1 and 2 to Entergy Letter NL-21-014. 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).

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(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

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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.

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(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.

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

Stefan Anton, 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 24th day of February, 2021.

Stefan Anton
Vice President of Engineering
Holtec International

Subscribed and sworn before me this 24th day of February, 2021.

Erika Grandrimo
NOTARY PUBLIC
STATE OF NEW JERSEY
MY COMMISSION EXPIRES January 17, 2022