



HDI-IPEC-22-013

February 1, 2022

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

Indian Point Nuclear Generating Unit Nos. 1, 2, and 3
Docket Nos. 50-003, 50-247, and 50-286
Provisional Operating License No. DPR-5
Renewed Facility License No. DPR-26
Renewed Facility License No. DPR-64

Subject: Supplement to Holtec Decommissioning International, LLC (HDI) Request for Exemptions from Certain Emergency Planning Requirements of 10 CFR 50.47 and 10 CFR Part 50, Appendix E for Indian Point Unit Nos. 1, 2, and 3 Including Site-Specific Calculations

References:

- 1) Letter from Holtec International to US NRC, "Holtec Spent Fuel Pool Heat Up Calculation Methodology Topical Report," (ADAMS Accession No. ML20280A524) September 29, 2020.
- 2) Letter from Holtec International to US NRC, "Response to Request for Additional Information –Holtec Spent Fuel Pool Heat Up Calculation Methodology Topical Report," (ADAMS Accession No. ML21148A289) dated May 28, 2021.
- 3) Letter from Holtec International to US NRC, "Revised Response to Request for Additional Information—Holtec Spent Fuel Pool Heat Up Calculation Methodology Topical Report," (ADAMS Accession No. ML21228A262) dated August 16, 2021.
- 4) Letter from Holtec International to US NRC, "Response to Request for Additional Information 10—Holtec Spent Fuel Pool Heat Up Calculation Methodology Topical Report," (ADAMS Accession No. 211291A161) dated October 18, 2021.
- 5) Letter from Holtec Decommissioning International, LLC (HDI) to US NRC, "Request for Exemptions from Certain Emergency Planning Requirements of 10 CFR 50.47 and 10 CFR Part 50, Appendix E," (ADAMS Accession No. ML21356B693) dated December 22, 2021.

- 6) Letter from US NRC to Holtec International, “Draft Safety Evaluation Report—Holtec Spent Fuel Pool Heat Up Calculation Methodology Topical Report,” dated December 20, 2021.

Dear Sir or Madam:

In Reference 1, Holtec Decommissioning International, LLC (HDI) submitted a Holtec International Topical Report providing a methodology for calculating Spent Fuel Pool heat up for NRC review and approval. Holtec believes the methodology will be a large benefit in reducing zirconium fire risks in the spent fuel pool.

In References 2, 3 and 4, Holtec provided responses to Requests for Additional Information (RAIs) concerning the Topical Report.

In Reference 6, the US Nuclear Regulatory Commission (NRC) issued a Draft Safety Evaluation for the Holtec Topical Report submitted in Reference 1.

In Reference 5, HDI submitted a request for exemptions from the following regulations:

- Certain standards in 10 CFR 50.47(b) regarding onsite and offsite emergency response plans for nuclear power reactors;
- Certain requirements of 10 CFR 50.47(c)(2) to establish plume exposure and ingestion pathway Emergency Planning Zones (EPZs) for nuclear power plants; and
- Certain requirements of 10 CFR Part 50, Appendix E, which establish the elements that make up the content of Emergency Plans.

The requested exemptions would allow HDI to reduce Indian Point Energy Center (IPEC) emergency planning requirements consistent with the permanently shutdown and defueled condition of the IPEC facilities.

The HDI request for exemptions utilize the methodology developed by Holtec International and submitted for NRC review and approval in Reference 1.

This letter provides a Supplement to the pending request for exemptions submitted in Reference 5. This supplement provides site-specific calculations for Indian Point Units 2 & 3 (IP2 & IP3) utilizing the Holtec methodology provided in the Holtec Topical Report as revised in responses to NRC Requests for Additional Information (RAIs) (References 2, 3 and 4). The calculations as documented in Enclosure 1 to this letter and utilized in the pending Indian Point exemption requests (Reference 5) were developed utilizing the methodology presented in the Holtec topical report (Reference 1) with appropriate adjustments from the RAI responses (References 2, 3 and 4).

The calculations are also in alignment with the NRC Draft Safety Evaluation Report (Reference 6). NRC final acceptance of the of the Draft Safety Evaluation is currently pending. Upon issuance of the NRC Final Safety Evaluation Report, HDI will confirm consistency with NRC conditions and limitations and will update the calculations, if necessary.

Enclosure 1 provides a proprietary version of the following Holtec calculations used to develop the HDI requests for exemptions submitted in Reference 5:

- HI-2210948, Spent Fuel Pool Heat Load Limits for Indian Point Unit 2 and 3.
- HI-2210967, Assembly Decay Heat Calculations for Indian Point Unit 2 and 3
- HI-2210972, Spent Fuel Pool Loading Plan for Indian Point Unit 2 and Unit 3

Enclosure 1 contains information proprietary to Holtec and is therefore supported by an affidavit signed by Holtec which is provided in Enclosure 3. The calculations provided in Enclosure 1 include appropriate markings identifying those portions that are proprietary.

Enclosure 2 provides a non-proprietary, redacted version of the calculation.

I declare under penalty of perjury that the foregoing is true and correct. Executed on February 1, 2022.

If you have any questions, please contact me at 856-797-0900 ext. 3578.

Sincerely,

Jean A. Fleming
HDI Vice President, Regulatory and Environmental Affairs
Holtec Decommissioning International, LLC

Enclosures:

- Enclosure 1 Indian Point Unit Nos. 2 and 3 Spent Fuel Pool Calculations (Holtec Proprietary Withhold Information from Public Disclosure pursuant to 10 CFR 2.390):
 - HI-2210948, Revision 3, “Spent Fuel Pool Heat Load Limits for Indian Point Unit 2 and 3”
 - HI-2210967, Revision 1, “Assembly Decay Heat Calculations for Indian Point Unit 2 and 3”
 - HI-2210972, Revision 3, “Spent Fuel Pool Loading Plan for Indian Point Unit 2 and Unit 3”

- Enclosure 2 Indian Point Unit Nos. 2 and 3 Spent Fuel Pool Heat up Calculations (Non-proprietary):
 - HI-2210948, Revision 3, “Spent Fuel Pool Heat Load Limits for Indian Point Unit 2 and 3”
 - HI-2210967, Revision 1, “Assembly Decay Heat Calculations for Indian Point Unit 2 and 3”
 - HI-2210972, Revision 3, “Spent Fuel Pool Loading Plan for Indian Point Unit 2 and Unit 3”

- Enclosure 3: Affidavit Pursuant to 10 CFR 2.390 to Withhold Information from Public Disclosure

cc: NRC Senior Project Manager, NRC NRR DORL
NRC Region I Regional Administrator
NRC Senior Regional Inspector, Indian Point Energy Center
New York State Liaison Officer Designee, NYSERDA
New York State (NYS) Public Service Commission

~~HOLTEC PROPRIETARY INFORMATION~~

Enclosure 1

Indian Point Unit Nos. 2 and 3 Spent Fuel Pool Heat Up Calculations

~~Proprietary Version~~

~~Withhold Information From Public Disclosure Under 10 CFR 2.390~~

Submitted Separately

(37 Pages not including this Cover Page)

Enclosure 2

Indian Point Unit Nos. 2 and 3 Spent Fuel Pool Heat Up Calculations

Non-Proprietary (Redacted) Version

(37 Pages not including this Cover Page)



Nuclear Power Division		3131
Sponsoring Company		Project No.
HI-2210948	3	28 Jan 2022
Company Record Number	Revision No.	Issue Date
Report	Proprietary Information	
Record Type	Proprietary Classification	
Nuclear	No	
Quality Class	Export Control Applicability	

Record Title:

Spent Fuel Pool Heat Load Limits for Indian Point Unit 2 and 3

Prepared by:

J.Rocheleau, 27 Jan 2022

Reviewed by:

P.Gowda, 28 Jan 2022

Approved by:

P.Gowda, 28 Jan 2022

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Export Control Status

Not applicable.

Revision Log

Revision	Description of Changes
0	Initial issue.
1	Added md5 sum of significant calculation files to Section 7 to improve the quality pedigree of the document. Removed absolute file path form Section 7.
2	Updated reference [1] revision from R0 to R2.
3	All previous changes accepted. Updated reference [1] revision from R2 to R0. Added references [6], [7], and [8] for RAI responses dated May 28, 2021, August 16, 2021 and October 18, 2021 respectively.

EXECUTIVE SUMMARY

This report documents the calculation of the Spent Fuel Pool (SFP) assembly heat load limits for Indian Point Unit 2 (IP2) and Unit 3 (IP3). Heat load limits [

]^{4 a, 4b} are developed to ensure the fuel cladding remains below the temperature limit that precludes a zirconium fire in the postulated event of an unexpected SFP drain. To the extent possible, the information in the Topical Report (TR), HI-2200750 Rev. 0, [1] and RAI responses [6], [7], and [8] are referenced and not repeated in this report.

Assumptions that need Verification

The methodology presented in the topical report and any adjustments from the RAI's or additional limitations imposed on the methodology by the NRC is pending final acceptance by the NRC. It is assumed the methodology in the topical report [1] and adjustments from the RAI's, [6], [7], and [8] will be accepted as is without further adjustments.

Glossary

IP2	Indian Point Unit 2	
IP3	Indian Point Unit 3	
PCT	Peak Cladding Temperature	
SFP	Spent Fuel Pool	
[] ^{4 a, 4b}
TR	Topical Report	
[] ^{4 a, 4b}



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1.0 PURPOSE

The purpose of this report is to document the calculation of the Spent Fuel Pool (SFP) assembly heat load limits for Indian Point Unit 2 (IP2) and Unit 3 (IP3). The Topical Report (TR) HI-2200750 Rev. 0 [1] presents a methodology to establish []^{4 a, 4b} criteria for a SFP that can demonstrate a zirconium fire in the pool under a drain-down event is not credible. To the extent possible, the information in the TR [1] and RAI responses, [6], [7], and [8] are referenced and not repeated in this report.

2.0 ACCEPTANCE CRITERIA

There are no specific acceptance criteria for the calculations presented here.

However, the heat load criteria determined in the calculations presented here should satisfy the applicable criteria discussed in Section 2 of [1] that preclude a zirc fire in the SFP, namely that the fuel cladding must not exceed 900 °C within 10 hours.

3.0 METHODOLOGY

All calculations performed use the methodology described in Section 3 of [1], including the adjustments made in the Holtec responses to RAIs, [6], [7] and [8]. Generally, these are []

] ^{4 a, 4b}

4.0 ASSUMPTIONS

For a list of the main assumptions on the methodology, see Section 4 of [1].

4a, 4b

No site-specific assumptions are made in this report.

5.0 INPUT DATA

All generic inputs are documented in Section 5 of [1], specifically Table 5.1 and Table 5.2. The conservatively bounding site-specific inputs presented in the table below are taken from [2]. The last column presents the conservatively bounding inputs that will be used in the calculations. Parameters marked with an asterisk (*) are calculated from the values in the table, Table 5.2 of [1], and [2].

Table 5.1: Site Specific Inputs

--	--

4a, 4b

The bounding inputs use the []^{4 a, 4b} All other inputs are the same.

6.0 COMPUTER PROGRAMS

All calculations were performed using Microsoft Excel. No computer codes or scripts requiring verification were used.

7.0 COMPUTER FILES

All computer files that are used to perform the calculations are located on the Holtec International server under the project 3131 directory in the report HI-2210948 directory.

The md5 checksums of significant calculation files are provided below:

File name	Md5
[] ^{4 a, 4b}	[] ^{4 a, 4b}
[] ^{4 a, 4b}	[] ^{4 a, 4b}

The calculation file remains unchanged from revision 0 of this document.

8.0 CALCULATIONS

The methodology presented in [1] was implemented in a straightforward manner into a Microsoft Excel spreadsheet. []

[]^{4 a, 4b} The input, output, and one example calculation sheet are provided in Appendix A.

9.0 RESULTS

The results are summarized in the table below.

	4a, 4b
--	--------

As expected, the [

] 4 a, 4b

10.0 CONCLUSION

This report documents calculations and corresponding results. [

] 4 a, 4b

11.0 REFERENCES

- [1] "Method for Determining Spent Fuel Assembly Heat Up During a Theoretical Drain Down Event", HI-2200750 Rev. 0.
- [2] "Fuel Compatibility Report for Indian Point Unit 2 and Unit 3", HI-2210573 Rev. 3.
- [3] "Draft Limitations and Conditions for the Holtec Decommissioning International Topical Report HI-2200750, Revision 0", EPID L-2020-TOP-0056. September 28, 2021.
- [4] "NUREG-1738 Technical Study of Spent Fuel Pool Accident Risk at Decommissioning Nuclear Power Plants (ML010430066)," 2001.
- [5] "NUREG/CR-0479 MATPRO-Version 11 (Revision 2) A Handbook of Materials Properties for Use in the Analysis of Light Water Reactor Fuel Rod Behavior," 1981.
- [6] Letter from Holtec to US NRC, "Response to Request for Additional Information—Holtec Spent Fuel Pool Heat Up Calculation Methodology Topical Report," (ADAMS Accession No. ML21148A289) dated May 28, 2021.
- [7] Letter from Holtec to US NRC, "Revised Response to Request for Additional Information—Holtec Spent Fuel Pool Heat Up Calculation Methodology Topical Report," (ADAMS Accession No. ML21228A262) dated August 16, 2021.

-
- [8] Letter from Holtec to US NRC, “Response to Request for Additional Information 10—Holtec Spent Fuel Pool Heat Up Calculation Methodology Topical Report,” (ADAMS Accession No. ML211291A161) dated October 18, 2021.

Appendix A: **CALCULATIONS**

4a, 4b

Spent Fuel Pool Heat Load Limits for Indian Point Unit 2 and 3
~~Holtec Proprietary Information~~



4a, 4b

Spent Fuel Pool Heat Load Limits for Indian Point Unit 2 and 3
~~Holtec Proprietary Information~~



4a, 4b



Nuclear Power Division		3131
Sponsoring Company		Project No.
HI-2210967	1	20 Dec 2021
Company Record Number	Revision No.	Issue Date
Report	Proprietary Information	
Record Type	Proprietary Classification	
Nuclear	No	
Quality Class	Export Control Applicability	

Record Title:

Assembly Decay Heat Calculations for Indian Point Unit 2 and 3

Prepared by:

J.Rocheleau, 20 Dec 2021

Reviewed by:

B.Khorsandi, 20 Dec 2021

Approved by:

P.Gowda, 20 Dec 2021

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Export Control Status

Not applicable.

Revision Log

Revision	Description of Changes
0	Initial issue.
1	Added md5 sum of significant calculation files to Section 7 to improve the quality pedigree of the document. Removed absolute file path form Section 7. Moved md5 sums of aheat2.csv files from Section 9 to Section 7.

EXECUTIVE SUMMARY

This report documents the calculation of the assembly specific decay heats for Indian Point Unit 2 and Unit 3. [

] ^{4 a, 4 b}

Assumptions that need Verification

There are no assumptions that need verification.

Glossary

IP2	Indian Point Unit 2
IP3	Indian Point Unit 3

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1.0 PURPOSE

The purpose of this report is to document the calculation of the assembly specific decay heats for Indian Point Unit 2 (IP2) and Unit 3 (IP3). [

] 4 a, 4 b

2.0 ACCEPTANCE CRITERIA

There are no specific acceptance criteria for the calculations presented here.

3.0 METHODOLOGY

The decay heat values are calculated with the [

] 4 a, 4 b

4.0 ASSUMPTIONS

Assumptions for this analysis are listed below.

4.a, 4.b

4.a, 4.b

5.0 INPUT DATA

The fuel assembly model inputs are summarized in Table 5-1. [

] 4.a, 4.b

4.a, 4.b

4.a, 4.b

6.0 COMPUTER PROGRAMS

4.a, 4.b

7.0 COMPUTER FILES

All computer files that are used to perform the calculations are located on the Holtec International server under the project 3131 directory in the report HI-2210967 directory.

The md5 checksums of significant calculation files are provided below:

4.a, 4.b

A comprehensive list and description of these computer files are provided below. Calculations for IP2 and IP3 were performed in separate, but nearly identical, folders named IP2 and IP3 respectively.

Directories:

4.a, 4.b

is

4.a, 4.b

8.0 CALCULATIONS

4.a, 4.b



9.0 RESULTS

This report documents the generation of [

.]^{4a, 4b}

10.0 CONCLUSION

This report documents calculations that support subsequent analyses, [
^{4a, 4b} There are no specific conclusions.

11.0 REFERENCES

- [1] “B.T. Rearden and M.A. Jessee, Eds., SCALE Code System, ORNL/TM-2005/39, Version 6.2.1, Oak Ridge National Laboratory, Oak Ridge, Tennessee (2016). Available from Radiation Safety Information Computational Center as CCC-834
- [2] Email from Giancarlo Delfini (from Entergy) to Joseph Cascio (from Holtec), with the Subject of “Fuel Weights”, Dated on 05/06/2021.
- [3] Design Input Record, EN-DC-141 R17 210108, Document Revision 0, Prepared by Raw Williams (from Entergy), Dated on 01/08/2021.
- [4] Design Input Record, EN-DC-141R18 210629, Document Revision 0, Prepared by Rich Motko (from Entergy), Dated on 06/29/2021.
- [5] Design Input Record, EN-DC-141R18_210624, Document Revision 0, Prepared by Rich Motko (from Entergy), Dated on 06/24/2021.



Nuclear Power Division		3131
Sponsoring Company		Project No.
HI-2210972	3	28 Jan 2022
Company Record Number	Revision No.	Issue Date
Report	Proprietary Information	
Record Type	Proprietary Classification	
Nuclear	No	
Quality Class	Export Control Applicability	

Record Title:

Spent Fuel Pool Loading Plan for Indian Point Unit 2 and Unit 3

Prepared by:

J.Rochelleau, 27 Jan 2022

Reviewed by:

P.Gowda, 28 Jan 2022

Approved by:

P.Gowda, 28 Jan 2022

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Export Control Status

Not applicable.

Revision Log

Revision	Description of Changes
0	Initial issue.
1	Added md5 sum of significant calculation files to Section 7 to improve the quality pedigree of the document. Removed absolute file path form Section 7.
2	Added reference [8]. Loading plan modified in accordance with the requested changes in [8]. SFP map and move list updated to reflect changes. Updated md5 sum of calculation file archive.
3	All previous changes accepted. Updated citation for reference [6]. Updated revision for reference [1].

EXECUTIVE SUMMARY

This report documents the [Point Unit 2 and Unit 3. [

] ^{4 a, 4 b} Spent Fuel Pool of Indian

] ^{4 a, 4 b} .

Assumptions that need Verification

There are no assumptions that need verification.

Glossary

IP2	Indian Point Unit 2	
IP3	Indian Point Unit 3	
SFP	Spent Fuel Pool	
[] ^{4 a, 4 b}
LHLL	Heat Load Limit	
[] ^{4 a, 4 b}

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1.0 PURPOSE

The purpose of this report is to document the development of [

] 4 a, 4b

2.0 ACCEPTANCE CRITERIA

All assemblies in each respective SFP are [

] 4 a, 4b

3.0 METHODOLOGY

Two sets of calculations are performed for each unit [

] 4 a, 4b

First, [

] 4 a, 4b is required

to meet applicable zirc fire safety criteria.

Second, a computer code is used with the [

] 4 a, 4b

4.0 ASSUMPTIONS

Assumptions for this analysis are listed below.

4a, 4b

5.0 INPUT DATA

The [

] 4 a, 4b

6.0 COMPUTER PROGRAMS

Computer codes and scripts were used to perform [

] 4 a, 4b

7.0 COMPUTER FILES

All computer files that are used to generate the source terms are located on the Holtec International server under the project 3131 directory in the report HI-2210972 directory.

4a, 4b

A comprehensive list and description of the computer files are provided below.

Directories:

4a, 4b

Spent Fuel Pool Loading Plan for Indian Point Unit 2 and 3
~~Holtec Proprietary Information~~



4a, 4b

8.0 CALCULATIONS

Two sets of calculations were performed. [

8.1 []^{4 a, 4b}]^{4.a, 4b}

The output [

[]^{4 a, 4b}]^{4 a, 4b} 4a, 4b

Table 8.1 provides a [

[]^{4 a, 4b}]^{4 a, 4b} 4a, 4b

8.2 SFP Loading Configuration

The output [

[]^{4 a, 4b}]^{4 a, 4b} (2) 4a, 4b

[]^{4 a, 4b}]^{4 a, 4b}

Table 8.2 summarizes the []^{4 a, 4b}



9.0 CONCLUSION

[

] 4 a, 4b

A [

] 4 a, 4b

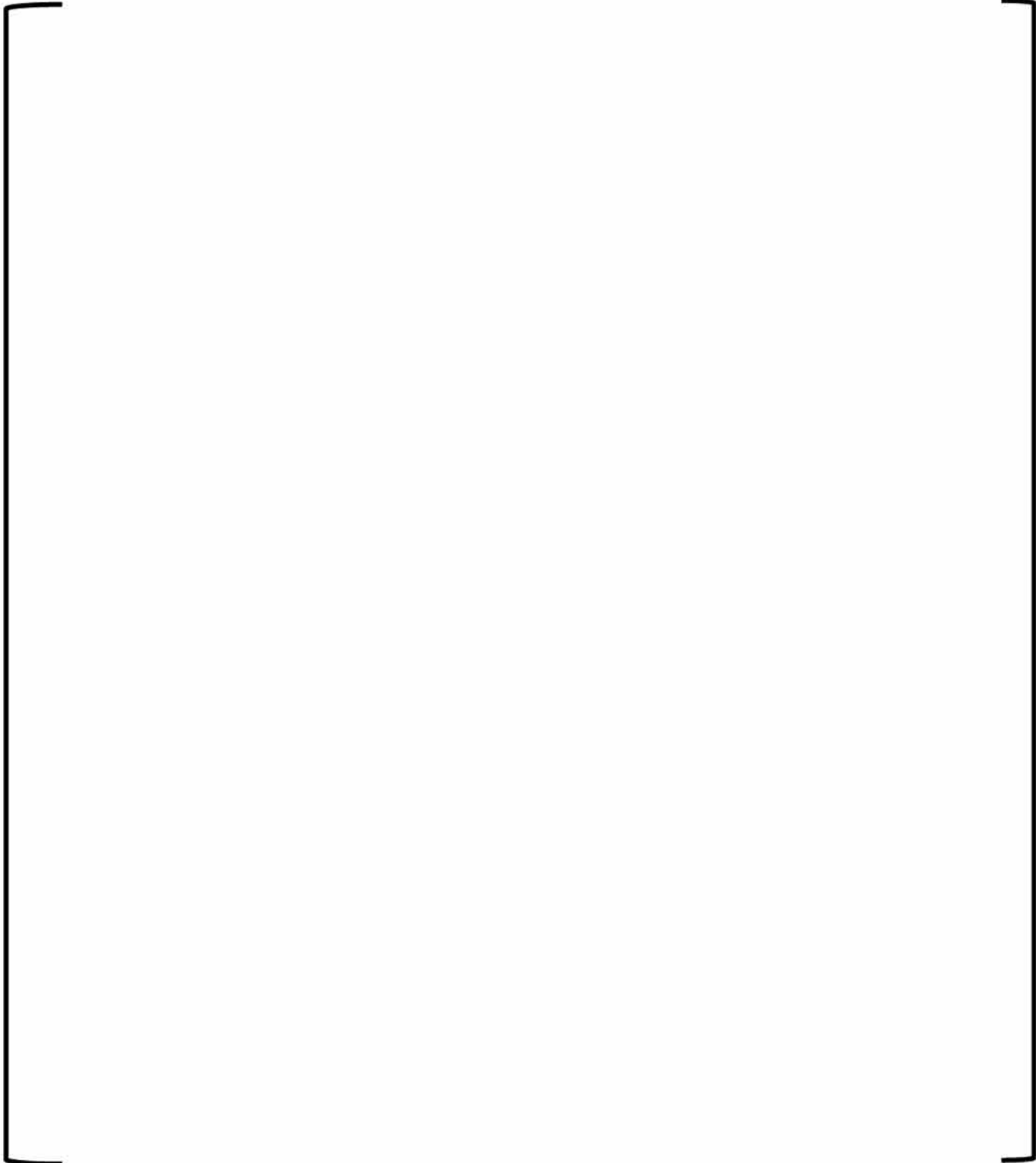
10.0 REFERENCES

- [1] “Spent Fuel Pool Heat Load Limits for Indian Point Unit 2 and 3”, HI-2210948, Rev. 3.
- [2] “Assembly Decay Heat Calculations for Indian Point Unit 2 and 3”, HI-2210967, Rev. 1.
- [3] “Design Input Record”, EN-DC-141R18_210624.pdf, Rev. 0.
- [4] “Design Input Record”, EN-DC-141R17_210319 - fuel details.pdf, Rev. 0.
- [5] "NUREG-6801 Recommendations for Addressing Axial Burnup in PWR Burnup Credit Analyses," ML031110292, 2003.
- [6] Letter from Holtec to US NRC, “Response to Request for Additional Information 10—Holtec Spent Fuel Pool Heat Up Calculation Methodology Topical Report,” (ADAMS Accession No. ML21291A161) dated October 18, 2021.
- [7] “Decay Heat Calculations”, HI-2200902, Rev. 0.
- [8] Email from Raymond Williams (CDI) with subject “SFP Moves for Topical.msg”

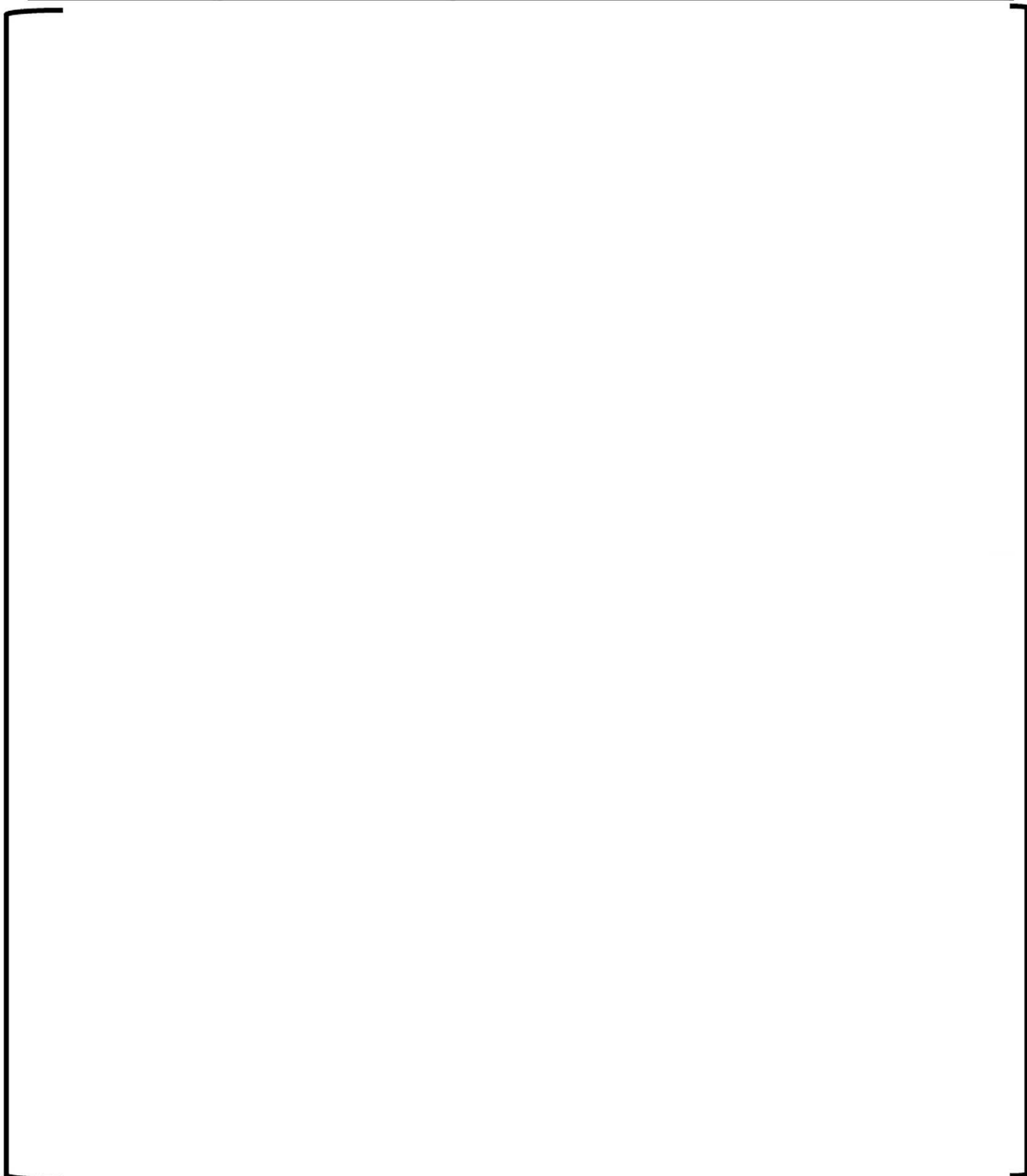
Appendix A: [

] 4.a, 4.b

4.a, 4.b

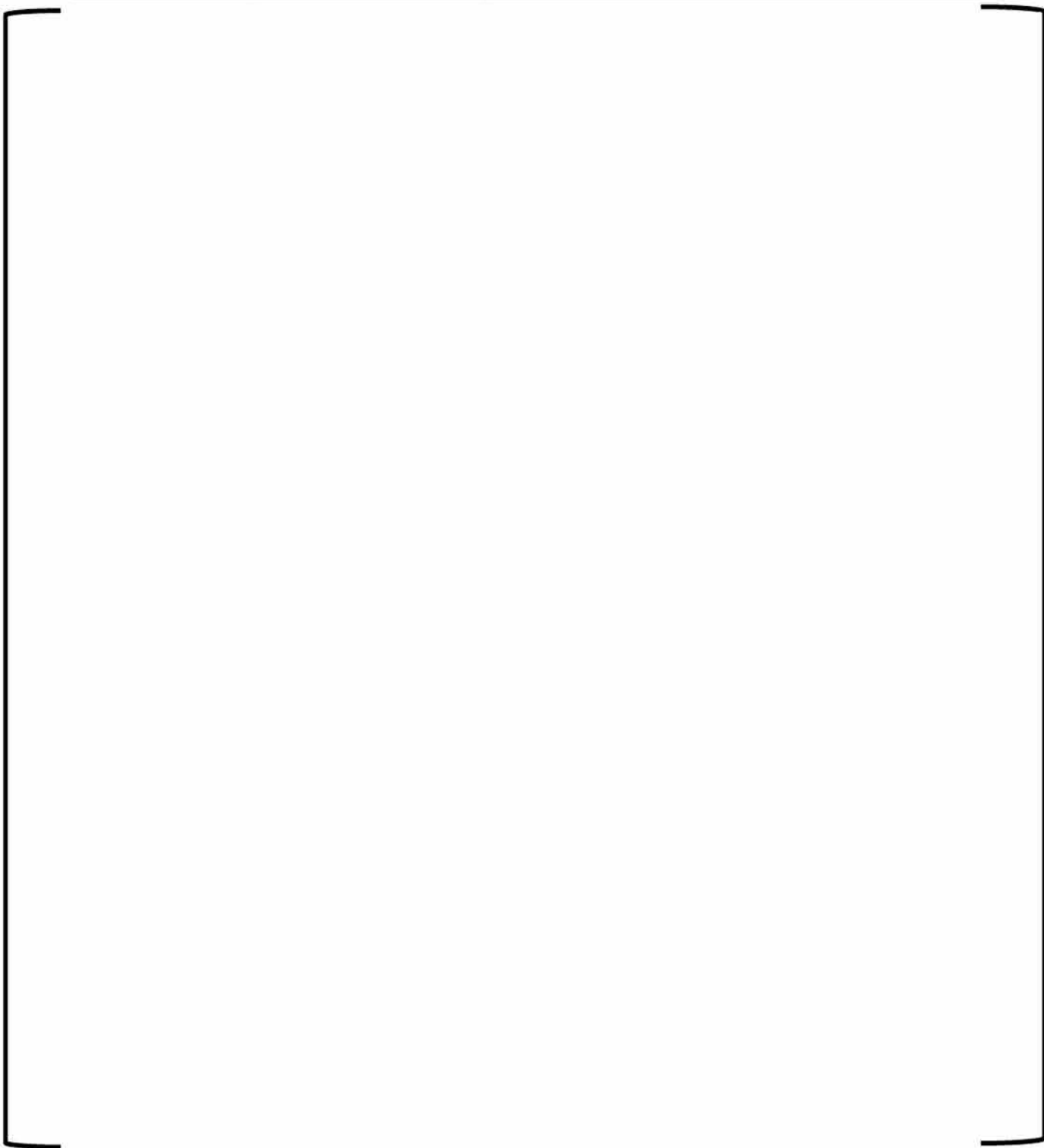


Spent Fuel Pool Loading Plan for Indian Point Unit 2 and 3
~~Holtec Proprietary Information~~



4.a.4.b

Spent Fuel Pool Loading Plan for Indian Point Unit 2 and 3
~~Holtec Proprietary Information~~



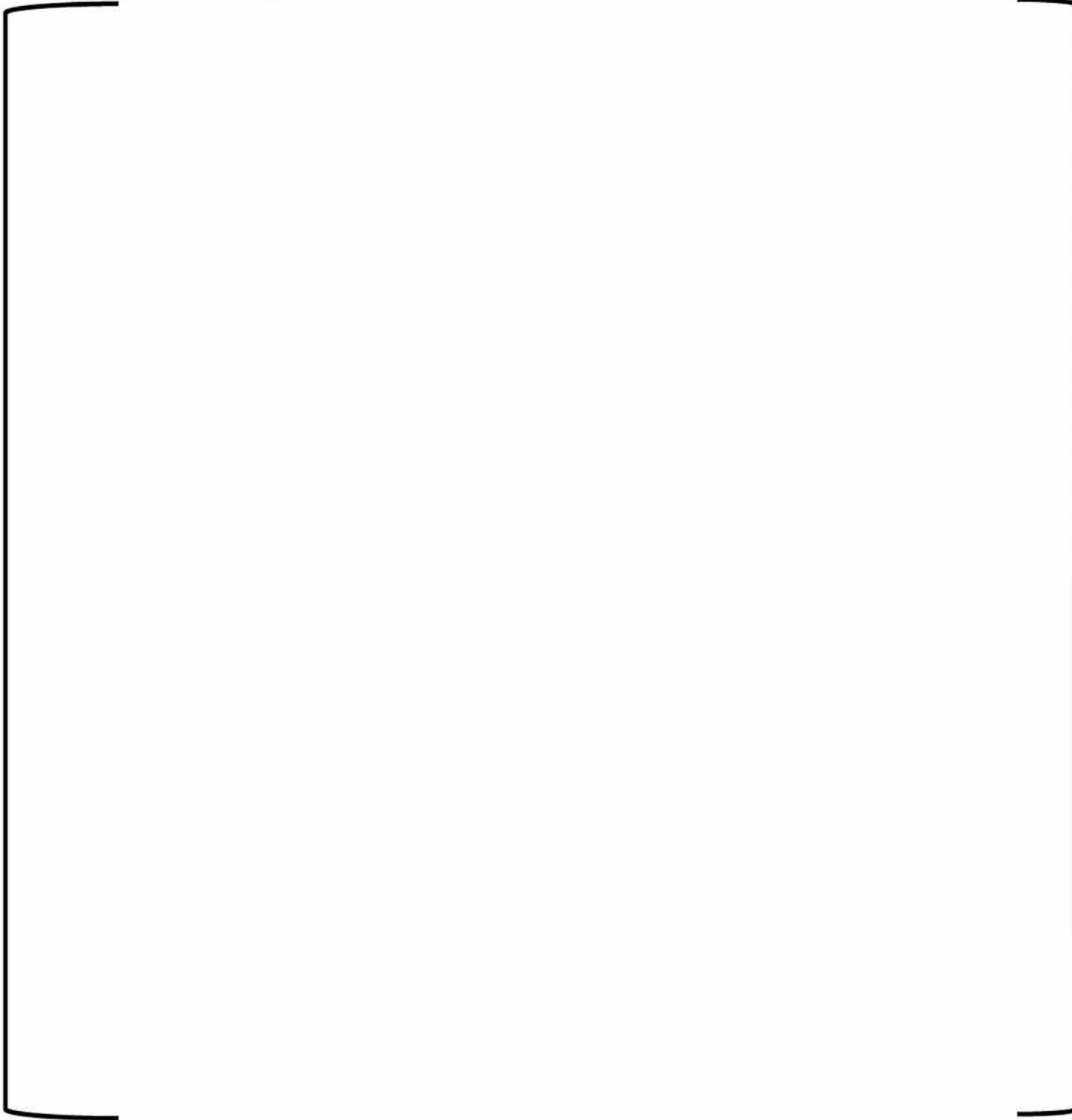
4.a, 4.b

Spent Fuel Pool Loading Plan for Indian Point Unit 2 and 3
~~Holtec Proprietary Information~~



4.a, 4.b

Spent Fuel Pool Loading Plan for Indian Point Unit 2 and 3
~~Holtec Proprietary Information~~



4.a, 4.b

Spent Fuel Pool Loading Plan for Indian Point Unit 2 and 3
~~Holtec Proprietary Information~~



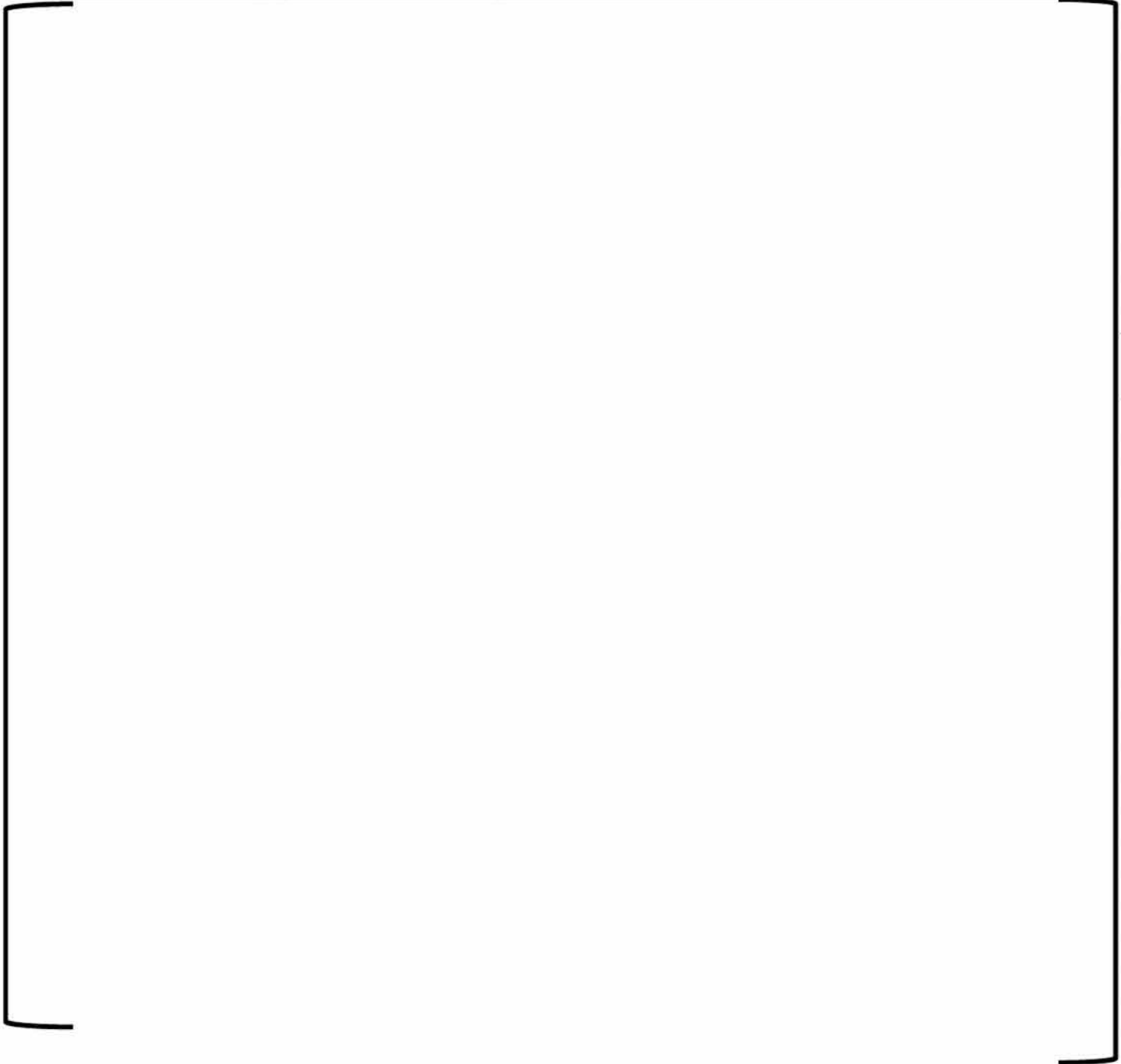
4.a, 4.b

Spent Fuel Pool Loading Plan for Indian Point Unit 2 and 3
~~Holtec Proprietary Information~~



4.a, 4.b

Spent Fuel Pool Loading Plan for Indian Point Unit 2 and 3
~~Holtec Proprietary Information~~



4.a, 4.b

Enclosure 3

Affidavit for Withholding Pursuant to 10 CFR 2.390

Non-Proprietary

(5 Pages not including this Cover Page)

AFFIDAVIT PURSUANT TO 10 CFR 2.390

I, Jean A. Fleming, being duly sworn, depose and state as follows:

- 1) I have reviewed the information provided in the Enclosure 1 to HDI-IPEC-22-013 which is sought to be withheld, and am authorized to apply for its withholding.
- 2) The information sought to be withheld is in the calculations provided in Enclosure 1 to HDI-IPEC-22-013 dated February 1, 2022. The calculations contain information that is proprietary to Holtec International.
- 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 10 CFR 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 and 4.b, and 4.c 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

AFFIDAVIT PURSUANT TO 10 CFR 2.390

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.
- 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

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Holtec International's comprehensive decommissioning and 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 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 MASSACHUSETTS)
) ss:
 COUNTY OF PLYMOUTH)

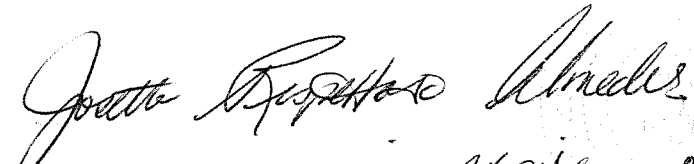
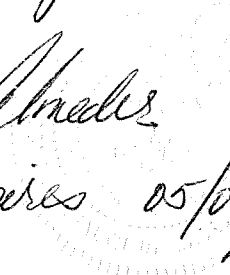
Jean A. Fleming, being duly sworn, deposes and says:

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

Executed at Plymouth, Massachusetts this 27th day of January 2022.

Jean A. Fleming
 Holtec Decommissioning International
 Holtec International
 VP, Regulatory & Environmental Affairs

Subscribed and sworn before me this 27 day of January,
 2022

My commission expires 05/09/2025