Florida Power & Light Company, 6501 South Ocean Drive, Jensen Beach, FL 34957

FPL.

This letter forwards proprietary information in accordance with 10 CFR 2.390. The balance of this letter may be considered non-proprietary upon removal of Attachments 2, 3, and 4.

May 7, 2012

L-2012-201
10 CFR 50.90
10 CFR 2.390

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

Re: St. Lucie Plant Unit 2
Docket No. 50-389
Renewed Facility Operating License No. NPF-16

Response to NRC Reactor Systems Branch Request for Additional Information Regarding Extended Power Uprate License Amendment Request

References:

(1) R. L. Anderson (FPL) to U.S. Nuclear Regulatory Commission (L-2011-021), "License Amendment Request for Extended Power Uprate," February 25, 2011, Accession No. ML110730116.

(2) Email from T. Orf (NRC) to L. Abbott (FPL), Subject: "St. Lucie 2 EPU RAIs – Reactor Systems (SRXB) re: spent fuel criticality," April 16, 2012.

(3) Email from T. Orf (NRC) to L. Abbott (FPL), Subject: "St. Lucie 2 EPU RAIs – Reactor Systems (SRXB) re: spent fuel criticality," April 17, 2012.

(4) R. L. Anderson (FPL) to U.S. Nuclear Regulatory Commission (L-2012-182), "Response to NRC Reactor Systems Branch Request for Additional Information Regarding Extended Power Uprate License Amendment Request," May 4, 2012.

(5) Email from T. Orf (NRC) to C. Wasik (FPL), Subject: "St. Lucie 1 EPU - Request for Additional Information," April 30, 2012.

By letter L-2011-021 dated February 25, 2011 [Reference 1], Florida Power & Light Company (FPL) requested to amend Renewed Facility Operating License No. NPF-16 and revise the St. Lucie Unit 2 Technical Specifications (TS). The proposed amendment will increase the unit's licensed core thermal power level from 2700 megawatts thermal (MWt) to 3020 MWt and revise the Renewed Facility Operating License and TS to support operation at this increased core thermal power level. This represents an approximate increase of 11.85% and is therefore considered an Extended Power Uprate (EPU).

A001
NRR

In emails dated April 16 and 17, 2012 from NRC (T. Orf) to FPL (L. Abbott) [References 2 and 3, respectively], NRC staff requested additional information regarding FPL's EPU LAR. The emails consisted of 30 requests for additional information (RAIs) from the NRC Reactor Systems Branch (SRXB). Responses to 21 of the RAIs were provided in FPL letter L-2012-182 [Reference 4]. Responses to the remaining 9 RAIs are provided in Attachments 1 and 2 to this letter.

In an email dated April 30, 2012 from NRC (T. Orf) to FPL (C. Wasik) [Reference 5], NRC staff requested FPL submit the St. Lucie Unit 2 new fuel storage vault criticality analysis.

Attachment 1 contains the non-proprietary responses to RAI questions SRXB-131, -133, -137, and -141. Attachment 2 contains the Holtec International, Inc. (Holtec) proprietary responses to RAI questions SRXB-119, -121, -137, -138, -139, and -145. Note that SRXB-137 contains both proprietary and non-proprietary information. Attachment 3 contains proprietary Hotlec Report No: HI-2104753, Revision 4, "St. Lucie Unit 2 Criticality Analysis for EPU and Non-EPU Fuel." Attachment 4 contains proprietary Hotlec Report No: HI-2094416, Revision 1, "Criticality Analysis of the St. Lucie Unit 2 New Fuel Vault."

Attachment 5 contains three proprietary information affidavits. The purpose of this attachment is to withhold the proprietary information contained in the responses provided in Attachment 2 and the reports provided in Attachments 3 and 4 from public disclosure. The affidavits, signed by Holtec as the owner of the information, sets forth the basis for which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b)(4) of § 2.390 of the Commission's regulations. Accordingly, FPL respectfully requests that the information proprietary to Holtec be withheld from public disclosure in accordance with 10 CFR 2.390.

This submittal does not alter the significant hazards consideration or environmental assessment previously submitted by FPL letter L-2011-021 [Reference 1].

This submittal contains no new commitments and no revisions to existing commitments.

In accordance with 10 CFR 50.91(b)(1), a copy of this letter is being forwarded to the designated State of Florida official.

Should you have any questions regarding this submittal, please contact Mr. Christopher Wasik, St. Lucie Extended Power Uprate LAR Project Manager, at 772-467-7138.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Executed on 07-May-2012

Very truly yours,

Richard L. Anderson
Site Vice President
St. Lucie Plant

Attachments (5)

cc: Mr. William Passetti, Florida Department of Health

Response to Request for Additional Information

The following information is provided by Florida Power & Light (FPL) in response to the U.S. Nuclear Regulatory Commission's (NRC) Request for Additional Information (RAI). This information was requested to support the Extended Power Uprate (EPU) License Amendment Request (LAR) for St. Lucie Nuclear Plant Unit 2 that was submitted to the NRC by FPL via letter L-2011-021 dated February 25, 2011, Accession No. ML110730116.

In an email dated April 16, 2012, the NRC staff requested additional information regarding FPL's EPU LAR. The email consisted of 28 requests for additional information (RAIs) from the NRC Reactor Systems Branch (SRXB). In an email dated April 17, 2012, the NRC staff provided two additional RAIs related to spent fuel pool criticality. Responses to 21 of the RAIs were provided in FPL letter L-2012-182, dated May 4, 2012. The remaining non-proprietary responses are provided below and the remaining Holtec International, Inc. (Holtec) proprietary responses are provided in Attachment 2.

SRXB-131

The first sub-bullet of the fourth bullet in Section 2.4 of report HI-2104753 addresses storage of assemblies with Metamic inserts. Confirm that there is not a similar issue with required CEAs.

Additionally, Table 5.2 notes that the tip of the CEA extends to approximately 3.34 inches from the bottom of the active fuel length. The table does not indicate how far the bottom of the B_4C pellets is from the bottom of active fuel length. Describe the axial location of the B_4C pellets, including uncertainties. Describe how the CEAs are modeled in the criticality analysis. Confirm that only fresh unirradiated CEAs are credited in spent fuel storage or describe how in-reactor ^{10}B depletion is accounted for in the analysis. Note that even if the active regions of the CEAs are out of the core, there likely is some ^{10}B depletion in the CEA tips near the top of the active fuel length in the core.

Response

The issue related to the removal of a fuel assembly from a cell with a Metamic™ insert does not apply to an assembly with a control element assembly (CEA). Unlike the Metamic™ insert, the CEA is not required to be removed separately from the assembly. A fuel assembly with a CEA can be removed from a cell together with the CEA without violating the analyzed fuel assembly patterns.

The distance of the CEA tip stated in Table 5.2 of HI-2104753 represents the distance from the bottom of active fuel length to the bottom of the CEA poison. The uncertainty on the axial location is ~0.186 inches.

Only full strength CEAs are credited in the criticality analysis to control the assembly reactivity in the spent fuel pool. These CEAs are not part of the lead bank CEAs used in the core for reactivity control. The full strength CEAs, which are part of regulating or shutdown banks when used in the core, remain in the fully withdrawn position during steady state operation (see response to SRXB-127). The positioning of these CEAs in the core in the fully withdrawn position minimizes any depletion effects in the CEA fingers. This is demonstrated by the comparison of measured rod worth with the predictions for the past several cycles. CEA depletion is not modeled by the analytical tools used for the rod worth predictions. CEAs, which had undergone several cycles of operation, showed good comparison of measured-to-predicted rod worth with no indication of CEA worth reduction by depletion effects. Additionally, any minor

effects of depletion will be in the tip of the CEA fingers, which is of less importance than the remainder portion of the CEAs when credited in the spent fuel pool storage. Also, the lifetime of the CEAs in the core is limited based on the mechanical considerations and not the depletion effects. Thus, the CEAs used in the core are considered acceptable for crediting in the spent fuel pool storage.

As discussed earlier, CEA rods used in the core are considered acceptable for use in the criticality analysis of St. Lucie Unit 2 spent fuel pool, therefore, CEA rods are not modeled with CASMO for depletion calculations. For the in rack criticality calculations, CEA rods are modeled explicitly in MCNP5, i.e., the B_4C neutron absorber is surrounded by a radial ring of Inconel 625. Conservatively, the minimum B_4C pellet diameter, the minimum B-10 isotopic content, as well as the minimum Boron weight percent listed in Table 5.2 are used in all calculations. In addition, the distance between the bottom of the CEA rods and the bottom of the active fuel is assumed as 6 inches, which is larger than the actual tip of 3.34 inches. This means a section of about 2.5 inches of B_4C is neglected in the analysis, which would counteract any potential Boron depletion in this area.

SRXB-133

Section 2.5.7 of HI-2104753 describes evaluation of misloads due to using the incorrect loading curve. The analysis should not be restricted to only the "most likely" error. Instead, the analysis should look at unlikely (but still credible) errors and identify the error that has the maximum impact on k_{eff}. This could be use of the least restrictive loading curve for loading the most restrictive pattern. Provide better justification for the analysis of "incorrect loading curve" used.

Response

The analysis considers the possibility of multiple misloads for each of the storage rack designs in the St. Lucie Unit 2 spent fuel pool. The term "most likely" was misleading when describing the credible possibilities. The following is a summary of the cases and multiple misload considerations for each storage rack design:

- Region 2: There are five different cases:

  Case 5 has two Metamic™ inserts,
  Case 6 has one Metamic™ insert,
  Case 7 has one empty cell,
  Case 9 has two CEAs, and
  Case 10 has one CEA.

  For this region, the multiple misload accidents analyzed were the use of the Case 5 loading curve for Case 6 (i.e., multiple missing Metamic™ inserts), and the use of the Case 9 loading curve for Case 10 (i.e., multiple missing CEAs). Using the Case 7 (1/4 empty cells) loading curve for any other case was not analyzed as it would require two changes (inclusion of a fourth assembly and inclusion of one Metamic™ insert or CEA in each 2x2 array). Use of the loading curves for Metamic™ inserts (Cases 5, 6) for those requiring CEAs (Cases 9, 10) would have a minimal impact, as the burnup requirements are similar (approximately 1-2 GWD/MTU difference).

- Region 1: There are three different cases:

  Case 2 has two empty cells,
  Case 3 has one CEA, and
  Case 4 has one empty cell.

  Case 2 does not have a loading curve. Using the Case 4 (one empty cell) loading curve for Case 3 was not analyzed as it would require two changes (inclusion of a fourth assembly and inclusion of one CEA in each 2x2 array).

- Cask Pit Rack (CPR): There are two different cases:

  Case 1 has two empty cells, and
  Case 8 has one empty cell.

  Case 1 does not have a loading curve.

As noted above, there are two common mode failure analyses for multiple misloads documented in HI-2104753: (1) Case 5, which requires two Metamic™ inserts in the 2x2 array, was modeled with one Metamic™ insert, and (2) Case 9, which requires two CEAs, was modeled with one CEA. Both of those analyses were for infinite arrays, meaning that every 2x2 array is missing either a Metamic™ insert or a CEA. HI-2104753 Table 7.59 notes that the calculated k_{eff} for each of those analyses was less than 0.89, well below the regulatory requirement of 0.95.

The common mode failure analyses performed represent the reduction of one required insert for full density cases (four assemblies loaded in the 2x2 array; i.e., cases 3, 5, 6, 9 and 10) that require either Metamic™ inserts or CEAs. The two cases analyzed reduce the number of inserts in each 2x2 array from 2 to 1. Although a common mode failure analysis reducing the number of inserts in each 2x2 array from 1 to 0 was not performed, the reactivity increase going from 2 to 1 inserts is judged to be similar to that of going from 1 to 0 inserts. That scenario was not analyzed as there are no loading curves for St. Lucie Unit 2 with full density and 0 inserts.

Two other scenarios not explicitly analyzed were (1) using the loading curve for Region 1 Case 3 instead of Region 2 Case 10 (both requiring one CEA), and (2) using the loading curve for Region 1 Case 4 instead of Region 2 Case 7 (both requiring one empty cell). The difference in burnup requirements for those two scenarios is similar to the two analyzed cases. Given the large margin in the common mode failure cases analyzed, it is concluded that a common mode failure (use of an incorrect loading curve) remains below the regulatory requirement of 0.95.

SRXB-137

Section 7.6 of HI-2104753 describes how the enrichment patterns provided in Figures 5.5 through 5.9 are used in the criticality analysis. It is not clear how Figure 5.5 was used to generate the data in Table 7.34. Note that Figure 5.5 shows a 4.2/3.8/2.3 wt % 235U split, having an average planar initial enrichment of 4.02 wt % 235U. Further, it is not clear that evaluating the impact of the modeling simplification at only one planar-average enrichment (i.e., 4.6 wt% 235U) in only one lattice arrangement is sufficient. Provide justification for the limited evaluation of impact of this modeling simplification. Describe the implementation of controls that will ensure all past, present and future assembly patterns have been, are, and will be consistent with the criticality analysis.

Response

With respect to past and present assembly patterns, all those are included in Figures 5.5 through 5.9 of HI-2104753. In the future, the principal lattice arrangement for the uranium pins will remain the same as that presented in the criticality analysis report HI-2104753. The reduced strength uranium pins (in locations identified in Figures 5.5 to 5.9) in a given assembly will have a reduction of enrichment of 0.3 wt% to 0.4 wt% ^{235}U as compared to the maximum pin enrichment in that assembly (i.e., an assembly with a maximum enrichment of 4.6 wt% ^{235}U will have 52 pins of either 4.3 wt% or 4.2 wt% ^{235}U in the locations identified in Figures 5.5 through 5.9).

The Gd_2O_3 bearing pins will remain between 4 and 20 pins per assembly with Gd_2O_3 loading ranging from 4 wt% to 8 wt%. These Gd_2O_3 pins will contain a reduced ^{235}U enrichment of ~1.5 wt% to ~2.8 wt%, with a typical enrichment reduction of about 2.0 wt% ^{235}U from the maximum uranium pin enrichment. An assembly with 4.6 wt% ^{235}U maximum enrichment for the uranium pins will have between 4 and 20 Gd_2O_3 pins at ~ 2.6 wt% ^{235}U. These requirements will be controlled as part of the reload process.

Additional information that is proprietary to Holtec is provided in the response to SRXB-137 in Attachment 2.

SRXB-141

Section 7.13.4 addresses accident conditions related to missing Metamic inserts or absorber rod assembly. A common mode failure could occur in which misidentification of pattern requirements could lead to failure to load required absorber rods or Metamic inserts into multiple assemblies. The analysis documented in HI-2104753 appears to evaluate only a limited set of missing inserts or absorber rods. Provide justification for limiting the scope of accident conditions considered.

Response

There are two common mode failure analyses documented in HI-2104753: (1) Case 5, which requires two Metamic™ inserts in the 2x2 array, was modeled with one Metamic™ insert, and (2) Case 9, which requires two CEAs, was modeled with one CEA. Both of those analyses were for infinite arrays, meaning that every 2x2 array is missing either a Metamic™ insert or a CEA. HI-2104753 Table 7.59 notes that the calculated k_{eff} for each of those analyses was less than 0.89, well below the regulatory requirement of 0.95.

The common mode failure analyses performed represent the reduction of one required insert for full density cases (four assemblies loaded in the 2x2 array; i.e., cases 3, 5, 6, 9 and 10) that require either Metamic™ inserts or CEAs. The two cases analyzed reduce the number of inserts in each 2x2 array from 2 to 1. Although a common mode failure analysis reducing the number of inserts in each 2x2 array from 1 to 0 was not performed, the reactivity increase going from 2 to 1 inserts is judged to be similar to that of going from 1 to 0 inserts. That scenario was not analyzed as there are no allowed 2x2 arrays for St. Lucie 2 with full density and 0 inserts. Nonetheless, there is considerable margin in the common mode cases analyzed to conclude that a common mode failure for any of the cases requiring Metamic™ inserts or CEAs remain below the regulatory requirement of 0.95.

ATTACHMENT 5

Response to NRC Reactor Systems Branch Request for Additional Information Regarding Extended Power Uprate License Amendment Request

Holtec International, Inc. Affidavits (3) to Withhold Proprietary Information from Public Disclosure

This coversheet plus 15 pages

HOLTEC INTERNATIONAL

Holtec Center, 555 Lincoln Drive West, Marlton, NJ 08053
Telephone (856) 797-0900
Fax (856) 797-0909

Holtec International Document ID 1867-AFFI-06

AFFIDAVIT PURSUANT TO 10 CFR 2.390

I, Thomas V. Fitzpatrick, 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 with Holtec letter 1867010, specifically Holtec RRTI-1867-005, and Holtec Report HI-2104753 which contains Holtec Proprietary information and is appropriately marked as such. The following RAIs and RAI responses are considered proprietary: SRXB-119, SRXB-121, SRXB-137 (Holtec Portion), SRXB-138, SRXB-139, SRXB-145.

(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 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 paragraph 4.b, 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 BURLINGTON)

Mr. Thomas V. Fitzpatrick, 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 her knowledge, information, and belief.

Executed at Marlton, New Jersey, this 27th day of April, 2012.

Thomas V. Fitzpatrick
Holtec International

Subscribed and sworn before me this 27 day of April, 2012.

MARIA C. MASSI
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires April 25, 2015

HOLTEC INTERNATIONAL

Holtec Center, 555 Lincoln Drive West, Marlton, NJ 08053
Telephone (856) 797-0900
Fax (856) 797-0909

Holtec International Document ID 1867-AFFI-08

AFFIDAVIT PURSUANT TO 10 CFR 2.390

I, Thomas V. Fitzpatrick, 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 with Holtec letter 1867012, specifically Holtec RRTI-1867-006 which contains Holtec Proprietary information and is appropriately marked 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).

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 paragraph 4.b, 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 BURLINGTON)

Mr. Thomas V. Fitzpatrick, 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 her knowledge, information, and belief.

Executed at Marlton, New Jersey, this 2nd day of May, 2012.

Thomas V. Fitzpatrick
Holtec International

Subscribed and sworn before me this 2nd day of May, 2012.

MARIA C. MASSI
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires April 25, 2015

HOLTEC INTERNATIONAL

Holtec Center, 555 Lincoln Drive West, Marlton, NJ 08053
Telephone (856) 797-0900
Fax (856) 797-0909

Holtec International Document ID 1867-AFFI-07

AFFIDAVIT PURSUANT TO 10 CFR 2.390

I, Thomas V. Fitzpatrick, 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 with Holtec letter 1867011, Holtec Report HI-2094416 which contains Holtec Proprietary information and is appropriately marked 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).

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 paragraph 4.b, 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.

(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 BURLINGTON)

Mr. Thomas V. Fitzpatrick, 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 her knowledge, information, and belief.

Executed at Marlton, New Jersey, this 1st day of May, 2012.

Thomas V. Fitzpatrick
Holtec International

Subscribed and sworn before me this 1st day of May, 2012.

MARIA C. MASSI
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires April 25, 2015