

**PROPRIETARY INFORMATION-WITHHOLD UNDER 10 CFR 2.390**

10 CFR 50.90  
10 CFR 50, Appendix K

August 30, 2017

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

Peach Bottom Atomic Power Station, Units 2 and 3  
Renewed Facility Operating License Nos. DPR-44 and DPR-56  
NRC Docket Nos. 50-277 and 50-278

Subject: Measurement Uncertainty Recapture License Amendment Request –  
Supplement 4 Response to Request for Additional Information

- References:
1. Exelon letter to the NRC, "Request for License Amendment Regarding Measurement Uncertainty Recapture Power Uprate," dated February 17, 2017 (ADAMS Accession No. ML17048A444)
  2. Email from R. Ennis (USNRC) to D. Neff (Exelon), "Peach Bottom Atomic Power Station, Units 2 and 3 - Request for Additional Information Regarding License Amendment Request for Measurement Uncertainty Recapture Power Uprate (TAC Nos. MF9289 and MF9290)," dated August 24, 2017 (ADAMS Accession No. ML17240A006)
  3. GE Hitachi Nuclear Energy letter to Exelon, "GEH Response to PBAPS MUR RAI SNPB-RAI-1," document number DOC-0006-5993-128, dated August 28, 2017

In accordance with 10 CFR 50.90, Exelon Generation Company, LLC (Exelon) requested amendments to Renewed Facility Operating License Nos. DPR-44 and DPR-56 for Peach Bottom Atomic Power Station (PBAPS) Units 2 and 3, respectively (Reference 1). Specifically, the proposed changes would revise the Renewed Facility Operating Licenses to implement an increase in rated thermal power from 3951 Megawatts-Thermal (MWt) to 4016 MWt. During their technical review of the application, the NRC Staff identified the need for additional information. Reference 2 provided the Request for Additional Information (RAI) from the NRC Nuclear Performance and Code Review Branch (SNPB). Attachment 1 to this letter provides the response to the RAI.

**Attachment 1 contains Proprietary Information.  
When separated from Attachment 1, this document is decontrolled**

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Attachment 1 contains proprietary information as defined by 10 CFR 2.390. GE Hitachi Nuclear Energy (GEH), as the owner of the proprietary information, has executed an affidavit provided in Attachment 3, which identifies that the enclosed proprietary information has been handled and classified as proprietary, is customarily held in confidence, and has been withheld from public disclosure. The proprietary information was provided to Exelon in a GEH transmittal (Reference 3) that is referenced by the affidavit. The proprietary information has been faithfully reproduced in Attachment 1 such that the affidavit remains applicable. GEH hereby requests that the enclosed proprietary information be withheld from public disclosure in accordance with the provisions of 10 CFR 2.390. Information that is not considered proprietary is provided in Attachment 2.

Exelon has reviewed the information supporting a finding of no significant hazards consideration and the environmental consideration provided to the U.S. Nuclear Regulatory Commission in Reference 1. The supplemental information provided in this submittal does not affect the bases for concluding that the proposed license amendment does not involve a significant hazards consideration. Further, the additional information provided in this submittal does not affect the bases for concluding that neither an environmental impact statement nor an environmental assessment needs to be prepared in connection with the proposed amendment.

In accordance with 10 CFR 50.91, "Notice for public comment; State consultation," paragraph (b), Exelon is notifying the Commonwealth of Pennsylvania and the State of Maryland of this response by transmitting a copy of this letter to the designated State Officials.

There are no regulatory commitments contained in this letter.

Should you have any questions concerning this letter, please contact Mr. David Neff at (610) 765-5631.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 30<sup>th</sup> day of August 2017.

Respectfully,



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David P. Helker  
Manager - Licensing & Regulatory Affairs  
Exelon Generation Company, LLC

Attachments:

1. Response to Request for Information from NRC Review Branch SNPB – Proprietary
2. Response to Request for Information from NRC Review Branch SNPB – Non-Proprietary
3. Affidavit in Support of Request to Withhold Information

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cc: USNRC Region I, Regional Administrator  
USNRC Senior Resident Inspector, PBAPS  
USNRC Project Manager, PBAPS  
R. R. Janati, Pennsylvania Bureau of Radiation Protection  
S. T. Gray, State of Maryland

**Attachment 2**

**Peach Bottom Atomic Power Station, Units 2 and 3**

**NRC Docket Nos. 50-277 and 50-278**

**Response to Request for Information from**

**NRC Review Branch SNPB – Non-Proprietary**

**NON-PROPRIETARY NOTICE**

This is a non-proprietary version of Attachment 1 which has the proprietary information redacted. Portions of the document that have been redacted are indicated by an open and closed bracket as shown here [[ ]].

**Response to NRC Staff's  
Request for Additional Information**

By application dated February 17, 2017, as supplemented by letter dated March 20, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML17048A444 and ML17080A067, respectively), Exelon Generation Company, LLC (Exelon, the licensee) submitted a License Amendment Request (LAR) for Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3. The amendments would revise the Renewed Facility Operating Licenses and Technical Specifications (TSs) to implement a Measurement Uncertainty Recapture (MUR) power uprate. Specifically, the amendments would authorize an increase in the maximum licensed thermal power level from 3,951 Megawatts-Thermal (MWt) to 4,016 MWt which is an increase of approximately 1.66%.

In an email dated August 24, 2017, from the NRC (Rick Ennis) to Exelon (David Neff) (ADAMS Accession No. ML17240A006), the NRC provided a Request for Additional Information (RAI) seeking clarification of certain issues related to the RAI. Exelon agreed to provide a response to the RAI by September 5, 2017.

**SNPB-RAI-1**

TSAR<sup>1</sup>, Section 3.2.1, "Fracture Toughness," states, in part, that PBAPS was evaluated for a fluence that bounds the required value for operation at thermal power optimization (TPO) conditions. The first sentence on page 3-2 of the TSAR describes the method used to calculate the neutron fluence for TPO.

Confirm that the water density distribution throughout the core is either bounded or doesn't decrease significantly relative to the PBAPS current licensing basis conditions (i.e., CLTP/MELLLA+). If the water density distribution is not bounded:

- a) Provide water density distributions throughout the core for both CLTP/MELLLA+ and the proposed TPO/MELLLA+ conditions, and
- b) Explain why the method used to calculate the neutron fluence for TPO is acceptable given the water density changes.

**RESPONSE**

At TPO/MELLLA+ conditions the maximum power/flow ratio is reduced and is therefore bounded by the CLTP/MELLLA+ condition. The limiting state point for the water density distribution throughout the core occurs at the intersection of the MELLLA+ boundary and rated power on the power/flow map. Examining the power/flow map for PBAPS in Figure 1-1a of

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<sup>1</sup> Attachment 5 to the licensee's application, GE - Hitachi Nuclear Energy (GEH), "Safety Analysis Report for Peach Bottom Atomic Power Station, Units 2, and 3, Thermal Power Optimization," NEDC-33873P, Revision 0, dated February 2017, summarizes the evaluations performed for PBAPS for the proposed MUR. This proprietary report is referred to as the TSAR (i.e., Thermal Power Optimization Safety Analysis Report). A public version of the TSAR, GEH report NEDO-33873, is contained in Attachment 7 to Exelon's application.

NEDC-33873P (Reference 1), the intersection occurs at 3,951 MWt power and 83.0% core flow for the CLTP/MELLLA+ condition (point J'); and 4,016 MWt power and 85.2% core flow for the TPO/MELLLA+ condition (point J). Considering a rated core flow of 102.5 Mlbm/hr for PBAPS (Reference 1), this results in a power/flow ratio of 46.44 for CLTP/MELLLA+ and 45.99 for TPO/MELLLA+. Thus, the CLTP/MELLLA+ condition represents a more limiting water density distribution throughout the core compared with the TPO/MELLLA+ condition, and a detailed response to SNPB-RAI-1 parts a) and b) is not necessary.

The neutron fluence for the TPO/MELLLA+ condition was calculated [[  
]] using the GEH methodology described in licensing  
topical report NEDC-32983P-A, Revision 2 (Reference 2) and consistent with NRC Regulatory  
Guide 1.190 (Reference 3). [[  
]] the TPO/MELLLA+ condition. Any  
variation in the fluence due to [[  
]] the TPO/MELLLA+ condition [[  
]].

#### **References**

1. GE Hitachi Nuclear Energy, "Safety Analysis Report for Peach Bottom Atomic Power Station Units 2 and 3 Thermal Power Optimization," NEDC-33873P, Revision 0, February 2017.
2. GE Nuclear Energy, "General Electric Methodology for Reactor Pressure Vessel Fast Neutron Flux Evaluations," NEDC-32983P-A, Revision 2, January 2006.
3. NRC, "Calculational and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence," Regulatory Guide 1.190, March 2001.

**Attachment 3**

**Peach Bottom Atomic Power Station, Units 2 and 3**

**NRC Docket Nos. 50-277 and 50-278**

**Affidavit in Support of Request to Withhold Information**

# GE-Hitachi Nuclear Energy Americas LLC

## AFFIDAVIT

I, **Lisa K. Schichlein**, state as follows:

- (1) I am a Senior Project Manager, NPP/Services Licensing, Regulatory Affairs, GE-Hitachi Nuclear Energy Americas LLC (GEH), and have been delegated the function of reviewing the information described in paragraph (2) which is sought to be withheld, and have been authorized to apply for its withholding.
- (2) The information sought to be withheld is contained in Enclosure 1 of GEH letter, DOC-0006-5993-128, "GEH Response to PBAPS MUR RAI SNPB-RAI-1," dated August 28, 2017. The GEH proprietary information in Enclosure 1, which is entitled "Response to SNPB-RAI-1 in Support of the PBAPS MUR LAR," is identified by a dotted underline inside double square brackets. [[This sentence is an example.<sup>13}</sup>]] Figures and large objects are identified with double square brackets before and after the object. In each case, the superscript notation <sup>13}</sup> refers to Paragraph (3) of this affidavit, which provides the basis for the proprietary determination.
- (3) In making this application for withholding of proprietary information of which it is the owner or licensee, GEH relies upon the exemption from disclosure set forth in the *Freedom of Information Act* ("FOIA"), 5 U.S.C. Sec. 552(b)(4), and the *Trade Secrets Act*, 18 U.S.C. Sec. 1905, and NRC regulations 10 CFR 9.17(a)(4), and 2.390(a)(4) for trade secrets (Exemption 4). The material for which exemption from disclosure is here sought also qualifies 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, 975 F.2d 871 (D.C. Cir. 1992), and Public Citizen Health Research Group v. FDA, 704 F.2d 1280 (D.C. Cir. 1983).
- (4) The information sought to be withheld is considered to be proprietary for the reasons set forth in paragraphs (4)a. and (4)b. Some examples of categories of information that 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 GEH's competitors without license from GEH constitutes a competitive economic advantage over other companies;
  - b. Information that, if used by a competitor, would reduce their expenditure of resources or improve their competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing of a similar product;
  - c. Information that reveals aspects of past, present, or future GEH customer-funded development plans and programs, resulting in potential products to GEH;
  - d. Information that discloses trade secret or potentially patentable subject matter for which it may be desirable to obtain patent protection.

## GE-Hitachi Nuclear Energy Americas LLC

- (5) To address 10 CFR 2.390(b)(4), the information sought to be withheld is being submitted to NRC in confidence. The information is of a sort customarily held in confidence by GEH, 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 GEH, not been disclosed publicly, and not been made 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 or confidentiality agreements that provide for maintaining the information in confidence. The initial designation of this information as proprietary information, and the subsequent steps taken to prevent its unauthorized disclosure, are as set forth in the following paragraphs (6) and (7).
- (6) Initial approval of proprietary treatment of a document is made by the manager of the originating component, who is the person most likely to be acquainted with the value and sensitivity of the information in relation to industry knowledge, or who is the person most likely to be subject to the terms under which it was licensed to GEH.
- (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 for technical content, competitive effect, and determination of the accuracy of the proprietary designation. Disclosures outside GEH 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 or confidentiality agreements.
- (8) The information identified in paragraph (2) is classified as proprietary because it contains detailed GEH methodology for thermal power optimization for GEH Boiling Water Reactors (BWRs). Development of these methods, techniques, and information and their application for the design, modification, and analyses methodologies and processes was achieved at a significant cost to GEH.

The development of the evaluation processes along with the interpretation and application of the analytical results is derived from the extensive experience and information databases that constitute a major GEH asset.

- (9) Public disclosure of the information sought to be withheld is likely to cause substantial harm to GEH's competitive position and foreclose or reduce the availability of profit-making opportunities. The information is part of GEH's comprehensive BWR safety and 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. In addition, the technology base includes the value derived from providing analyses done with NRC-approved methods.

The research, development, engineering, analytical and NRC review costs comprise a substantial investment of time and money by GEH. The precise value of the expertise to devise an evaluation process and apply the correct analytical methodology is difficult to

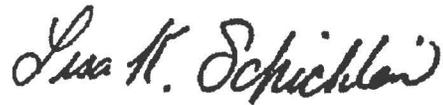
## GE-Hitachi Nuclear Energy Americas LLC

quantify, but it clearly is substantial. GEH's competitive advantage will be lost if its competitors are able to use the results of the GEH 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 GEH 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 GEH of the opportunity to exercise its competitive advantage to seek an adequate return on its large investment in developing and obtaining these very valuable analytical tools.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on this 28<sup>th</sup> day of August 2017.



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