



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

10 CFR 50.90

10 CFR 2.390

April 18, 2014

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:** Extended Power Uprate License Amendment Request – Supplement 25  
Response to Request for Additional Information

**Reference:**

1. Exelon letter to the NRC, "License Amendment Request - Extended Power Uprate," dated September 28, 2012 (ADAMS Accession No. ML122860201)
2. Exelon letter to the NRC, "Extended Power Uprate License Amendment Request – Supplement 19, Response to Request for Additional Information," dated January 31, 2014 (ADAMS Accession No. ML14035A158)

In accordance with 10 CFR 50.90, Exelon Generation Company, LLC (EGC) requested amendments to 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 Operating Licenses to implement an increase in rated thermal power from 3514 megawatts thermal (MWt) to 3951 MWt. During their technical review of the application, the NRC Staff identified the need for additional information. The NRC has provided a draft Request for Additional Information (RAI) related to the replacement steam dryer (RSD). Proprietary and non-proprietary versions of the responses to the outstanding questions (EMCB-SD-RAIs 45 through 46, 52b and 58) are provided in Attachments 1 and 2. In addition, clarifications to two responses submitted in Supplement 19 (Reference 2) are also provided in these attachments.

Westinghouse Electric Company (WEC) considers portions of the information provided in the Attachment 1 response proprietary and, therefore, exempt from public disclosure pursuant to 10 CFR 2.390. In accordance with 10 CFR 2.390 and in support of this request for withholding, affidavits executed by WEC are provided in Attachment 3.

EGC 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*

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

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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), EGC is notifying the Commonwealth of Pennsylvania and the State of Maryland of this application by transmitting a copy of this letter along with the non-proprietary attachments 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 18<sup>th</sup> day of April 2014.

Respectfully,



Craig W. Lambert  
Vice President, Power Upgrades  
Exelon Generation Company, LLC

Attachments:

1. Response to Request for Additional Information – EMCBS-SD - Proprietary
2. Response to Request for Additional Information – EMCBS-SD
3. Affidavit in Support of Request to Withhold Information

cc:	USNRC Region I, Regional Administrator	w/attachments
	USNRC Senior Resident Inspector, PBAPS	w/attachments
	USNRC Project Manager, PBAPS	w/attachments
	R. R. Janati, Commonwealth of Pennsylvania	w/o proprietary attachment
	S. T. Gray, State of Maryland	w/o proprietary attachment

**Attachment 2**

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

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

**Response to Request for Additional Information – EMCBS-SD**

**Note**

This attachment includes the non-proprietary version of the response; brackets identify where proprietary information has been redacted.

**Response to Request for Additional Information**

**Mechanical and Civil Engineering Branch (EMCB) - Steam Dryer (SD)**

By letter dated September 28, 2012, Exelon Generation Company, LLC (Exelon) submitted a license amendment request for Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3. The proposed amendment would authorize an increase in the maximum power level from 3514 megawatts thermal (MWt) to 3951 MWt. The requested change, referred to as an extended power uprate (EPU), represents an increase of approximately 12.4 percent above the current licensed thermal power level.

The NRC staff has reviewed the information supporting the proposed amendment and has requested additional information.

The responses to EMCB-SD-RAIs 45-46, 52b, and 58 are provided below. In addition, requested clarifications to two earlier RAIs, EMCB-SD-RAI-35 and 36 from Supplement 19 dated January 31, 2014, are provided at the end of this attachment.

**EMCB-SD-RAI-45**

In order for the NRC staff and the licensee to have a common understanding prior to performing the actual end-to-end benchmarking using the PBAPS Unit 2 on-dryer instrument data, and to expedite the review of the licensee's submittal at CLTP, please provide a detailed, step-by-step procedure for determining end-to-end B/Us and a determination of the maximum dryer stresses for PBAPS Unit 2 under CLTP and EPU conditions. The procedure should encompass the (i) adjustment of predicted stresses (from finite element analysis) by location-specific stress bias error, (ii) determination of end-to-end B/Us at instrument locations such that the measured strains at the dominant frequencies are bounded, and, (iii) determination of maximum dryer stresses. Ensure that the proposed procedure provides an upper bound to the maximum predicted stress.

**RESPONSE**

A detailed, step by step procedure for determining end to end biases and uncertainties and maximum dryer stresses is provided below. This is the planned procedure for PBAPS Unit 2 near CLTP and at EPU conditions. The procedure focuses on the [

]<sup>a,c</sup>

[

]

[

[

]a,c

#### EMCB-SD-RAI-46

The stress convergence bias for finite element results is location dependent. The strain gages on the dryer are placed away from the high stress gradient locations and welds to ensure reliability of the measured strains. However, the stress convergence bias at strain gage locations may be smaller than the bias at peak stress locations. In order to ensure proper bias is applied during benchmarking, please provide the following information:

- a) The stress convergence bias values for PBAPS Unit 2 at the on-dryer instrument locations and high stress locations.
- b) The stress convergence bias values for PBAPS Unit 3 at the high stress locations.

#### RESPONSE

- a) The following approach relative to the incorporation of a mesh/stress convergence bias will be included in the Peach Bottom acoustic/structural evaluation. A [

] <sup>a,c</sup> The application of this [

[ <sup>a,c</sup> will be determined at predicted EPU conditions. For these  
[ <sup>a,c</sup> at that location. The incorporation of  
this work into the [ <sup>a,c</sup> is discussed in response to  
EMCB-SD-RAI 45. The biases will be included in the brief summary report provided  
prior to exceeding CLTP.

- b) At the [ <sup>a,c</sup>, the  
location specific [ <sup>a,c</sup> will be incorporated into the predicted stress value at  
that location.

#### EMCB-SD-RAI-52

In WCAP-17609-P, Revision 2, "PBAPS Unit 2 & 3 RSD Structural Evaluation for High-cycle Acoustic Loads," (Attachment 5 of Reference 2), hydrodynamic damping [ <sup>a,c</sup> was introduced in the dynamic analysis of the dryer. However, no information was provided to substantiate the amount of damping which was introduced in the analysis. Please provide the following:

- a) Explain the basis of selecting the amount of hydrodynamic damping introduced [ <sup>a,c</sup> and provide the necessary information which substantiates the procedure and the value of the damping ratio used in the analysis.

- b) Provide the Minimum Alternating Stress Ratio (MASR) for the [ ]<sup>a,c</sup> if no credit is taken for hydrodynamic damping. The NRC staff notes that the MASR for PBAPS Unit 2 is [ ]<sup>a,c</sup> with hydrodynamic damping.

**RESPONSE**

a) The response to this item was provided in EGC Supplement 24 dated April 11, 2014.

b) If no credit is taken for [ ]<sup>a,c</sup>

**EMCB-SD-RAI-58**

WCAP 17635-P, Revision 3, Section 5.2 states that:

[ ]

] <sup>a,c</sup>

The third sentence indicates that [ ]

] <sup>a,c</sup> Please confirm that this sentence is applicable to [ ]<sup>a,c</sup> used for PBAPS Units 2 and 3 RSDs, and provide a supporting reference.

**RESPONSE**

This sentence in question was not meant to imply that [ ]<sup>a,c</sup> Improper surface roughness control could lead to unfavorable surface residual stresses. To prevent unfavorable surface residual stresses, and consistent with the [ ]

] <sup>a,c</sup> Additionally, the [ ]

] <sup>a,c</sup> are intended to minimize surface residual stresses that may lead to high cycle fatigue crack initiation.



**EMCB-SD-RAI-35 - response clarification**

The response to EMCB-SD-RAI-35 does not provide sufficient information regarding the [ ]<sup>a,c</sup> so we cannot determine whether [ ]<sup>a,c</sup> Therefore the NRC staff requests the following information.

For the [ ]<sup>a,c</sup> shown in Figures 35-1, 35-2 and 35-3 (see response to EMCB-SD-RAI-35), please provide the following:

- (a) A table showing the dimensions for [ ]<sup>a,c</sup>
- (b) Thickness correction factors used for fatigue evaluation.
- (c) Confirm whether cracking of these welds may generate loose parts

**RESPONSE**

The information provided in this clarification supplements the response to EMCB-SD-RAI 35 provided in EGC Supplement 19 dated January 31, 2014.

- a) The requested information is provided in Table 35-1.

**Table 35-1**

[ ]<sup>b,c</sup>


] <sup>b,c</sup>

- b) Thickness correction is [ ]

] <sup>a,c</sup>

- c) Reviews of both [ ]

] <sup>a,c</sup>

The welds are designed to be [ ]

] <sup>a,c</sup>

**EMCB-SD-RAI-36 - response clarification**

The response to this RAI states that:

[

]<sup>a,c</sup>

- (a) Please provide clarification on using a [ ]<sup>a,c</sup>
- (b) Also provide clarification on [ ]<sup>a,c</sup> to obtain nominal stress based on forces and moments at weld location.

**RESPONSE**

The information provided in this clarification supplements the response to EMCB-SD-RAI 36 provided in EGC Supplement 19, dated January 31, 2014.

- a) Yes. The use of a [ ]<sup>a,c</sup> noted in the response to PBAPS-EPU-EMCB-SD-RAI-36 pertains to the use of a [ ]<sup>a,c</sup>.
- b) For a selected number of components/locations in the steam dryer, [ ]<sup>a,c</sup> were performed to determine the [ ]<sup>a,c</sup> For this approach, [ ]<sup>a,c</sup> is then performed to determine the [ ]<sup>a,c</sup> using the guidelines from the ASME Code, Section III, Subsection NG.

## REFERENCES

- 1) Exelon letter to NRC, "Extended Power Uprate License Amendment Request - Supplement 21, Response to Request for Additional Information," dated February 28, 2014 (ADAMS Accession No. ML14035A158 & ML14035A159).
- 2) Exelon letter to NRC, "Extended Power Uprate License Amendment Request - Supplement 22, Response to Request for Additional Information," dated March 10, 2014 (ADAMS Accession No. ML14072A022).
- 3) Exelon letter to the NRC, "Supplemental Information and Corrections Supporting Request for License Amendment Request - Extended Power Uprate Supplement 1," dated February 15, 2013, Attachment 9 (NRC Issue 2 - Steam Dryer Analysis) (ADAMS Accession No. ML13051A032).
- 4) Exelon letter to the NRC, "Extended Power Uprate License Amendment Request – Supplement 19 Response to Request for Additional Information," dated January 31, 2014 (ADAMS Accession No. ML14035A158)

**Attachment 3**

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

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

**AFFIDAVIT**

**Note**

Attachment 1 contains proprietary information as defined by 10 CFR 2.390. WEC, as the owner of the proprietary information, has executed the enclosed affidavit, which identifies that the proprietary information has been handled and classified as proprietary, is customarily held in confidence, and has been withheld from public disclosure. The proprietary information has been faithfully reproduced in the attachment such that the affidavit remains applicable.



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CAW-14-3945

April 17, 2014

**APPLICATION FOR WITHHOLDING PROPRIETARY  
INFORMATION FROM PUBLIC DISCLOSURE**

**Subject: Attachment 1 "Response to Request for Additional Information – EMCBS-SD - Proprietary,"  
attached to Exelon Generation submittal to the NRC "Extended Power Uprate License  
Amendment Request – Supplement 25, Response to Request for Additional Information"**

The proprietary information for which withholding is being requested in the above-referenced report is further identified in Affidavit CAW-14-3945 signed by the owner of the proprietary information, Westinghouse Electric Company LLC. The Affidavit, which accompanies this letter, sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b)(4) of 10 CFR Section 2.390 of the Commission's regulations.

Accordingly, this letter authorizes the utilization of the accompanying Affidavit by Exelon Generation.

Correspondence with respect to the proprietary aspects of the application for withholding or the Westinghouse Affidavit should reference CAW-14-3945 and should be addressed to James A. Gresham, Manager, Regulatory Compliance, Westinghouse Electric Company, 1000 Westinghouse Drive, Building 3 Suite 310, Cranberry Township, Pennsylvania 16066.

Very truly yours,

James A. Gresham, Manager

Regulatory Compliance

Enclosures


AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

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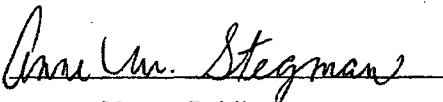
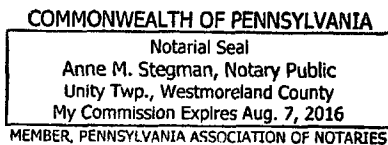
COUNTY OF BUTLER:

Before me, the undersigned authority, personally appeared Bradley F. Maurer, who, being by me duly sworn according to law, deposes and says that he is authorized to execute this Affidavit on behalf of Westinghouse Electric Company LLC (Westinghouse), and that the averments of fact set forth in this Affidavit are true and correct to the best of his knowledge, information, and belief:



Bradley F. Maurer, Principal Engineer  
Plant Licensing

Sworn to and subscribed before me  
this 17th day of April 2014

  
Notary Public

- (1) I am Principal Engineer, Plant Licensing, in Engineering, Equipment and Major Projects, Westinghouse Electric Company LLC (Westinghouse), and as such, I have been specifically delegated the function of reviewing the proprietary information sought to be withheld from public disclosure in connection with nuclear power plant licensing and rule making proceedings, and am authorized to apply for its withholding on behalf of Westinghouse.
- (2) I am making this Affidavit in conformance with the provisions of 10 CFR Section 2.390 of the Commission's regulations and in conjunction with the Westinghouse Application for Withholding Proprietary Information from Public Disclosure accompanying this Affidavit.
- (3) I have personal knowledge of the criteria and procedures utilized by Westinghouse in designating information as a trade secret, privileged or as confidential commercial or financial information.
- (4) Pursuant to the provisions of paragraph (b)(4) of Section 2.390 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure should be withheld.
  - (i) The information sought to be withheld from public disclosure is owned and has been held in confidence by Westinghouse.
  - (ii) The information is of a type customarily held in confidence by Westinghouse and not customarily disclosed to the public. Westinghouse has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine when and whether to hold certain types of information in confidence. The application of that system and the substance of that system constitute Westinghouse policy and provide the rational basis required.

Under that system, information is held in confidence if it falls in one or more of several types, the release of which might result in the loss of an existing or potential competitive advantage, as follows:

    - (a) The information reveals the distinguishing aspects of a process (or component, structure, tool, method, etc.) where prevention of its use by any of

Westinghouse's competitors without license from Westinghouse constitutes a competitive economic advantage over other companies.

- (b) It consists of supporting data, including test data, relative to a process (or component, structure, tool, method, etc.), the application of which data secures a competitive economic advantage, e.g., by optimization or improved marketability.
  - (c) Its use 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 a similar product.
  - (d) It reveals cost or price information, production capacities, budget levels, or commercial strategies of Westinghouse, its customers or suppliers.
  - (e) It reveals aspects of past, present, or future Westinghouse or customer funded development plans and programs of potential commercial value to Westinghouse.
  - (f) It contains patentable ideas, for which patent protection may be desirable.
- (iii) There are sound policy reasons behind the Westinghouse system which include the following:
- (a) The use of such information by Westinghouse gives Westinghouse a competitive advantage over its competitors. It is, therefore, withheld from disclosure to protect the Westinghouse competitive position.
  - (b) It is information that is marketable in many ways. The extent to which such information is available to competitors diminishes the Westinghouse ability to sell products and services involving the use of the information.
  - (c) Use by our competitor would put Westinghouse at a competitive disadvantage by reducing his expenditure of resources at our expense.
-



- (d) Each component of proprietary information pertinent to a particular competitive advantage is potentially as valuable as the total competitive advantage. If competitors acquire components of proprietary information, any one component may be the key to the entire puzzle, thereby depriving Westinghouse of a competitive advantage.
  - (e) Unrestricted disclosure would jeopardize the position of prominence of Westinghouse in the world market, and thereby give a market advantage to the competition of those countries.
  - (f) The Westinghouse capacity to invest corporate assets in research and development depends upon the success in obtaining and maintaining a competitive advantage.
- (iv) The information is being transmitted to the Commission in confidence and, under the provisions of 10 CFR Section 2.390, it is to be received in confidence by the Commission.
- (v) The information sought to be protected is not available in public sources or available information has not been previously employed in the same original manner or method to the best of our knowledge and belief.
- (vi) The proprietary information sought to be withheld in this submittal is that which is appropriately marked in Attachment 1 "Response to Request for Additional Information – EMCB-SD - Proprietary," attached to Exelon Generation submittal to the NRC "Extended Power Uprate License Amendment Request – Supplement 25, Response to Request for Additional Information" for submittal to the Commission, being transmitted by Exelon Generation letter and Application for Withholding Proprietary Information from Public Disclosure, to the Document Control Desk. The proprietary information as submitted by Westinghouse is that associated with the review of the Replacement Steam Dryer design and analysis which is a part of the Extended Power Uprate License Amendment Request for Peach Bottom Units 2 and 3, and may be used only for that purpose.
-

- (a) This information is part of that which will enable Westinghouse to:
  - (i) Assist Exelon Generation in obtaining NRC review of the Peach Bottom Atomic Power Station Units 2 and 3 License Amendment Request.
- (b) Further this information has substantial commercial value as follows:
  - (i) Westinghouse plans to sell the use of this information to its customers for purposes of plant specific replacement steam dryer analysis for licensing basis applications.
  - (ii) Its use by a competitor would improve their competitive position in the design and licensing of a similar product for BWR steam dryer analysis methodology.
  - (iii) The information requested to be withheld reveals the distinguishing aspects of a methodology which was developed by Westinghouse.

Public disclosure of this proprietary information is likely to cause substantial harm to the competitive position of Westinghouse because it would enhance the ability of competitors to provide similar technical justifications and licensing defense services for commercial power reactors without commensurate expenses. Also, public disclosure of the information would enable others to use the information to meet NRC requirements for licensing documentation without purchasing the right to use the information.

The development of the technology described in part by the information is the result of applying the results of many years of experience in an intensive Westinghouse effort and the expenditure of a considerable sum of money.

In order for competitors of Westinghouse to duplicate this information, similar technical programs would have to be performed and a significant manpower effort, having the requisite talent and experience, would have to be expended.

Further the deponent sayeth not.

### **PROPRIETARY INFORMATION NOTICE**

Transmitted herewith are proprietary and/or non-proprietary versions of documents furnished to the NRC in connection with requests for generic and/or plant-specific review and approval.

In order to conform to the requirements of 10 CFR 2.390 of the Commission's regulations concerning the protection of proprietary information so submitted to the NRC, the information which is proprietary in the proprietary versions is contained within brackets, and where the proprietary information has been deleted in the non-proprietary versions, only the brackets remain (the information that was contained within the brackets in the proprietary versions having been deleted). The justification for claiming the information so designated as proprietary is indicated in both versions by means of lower case letters (a) through (f) located as a superscript immediately following the brackets enclosing each item of information being identified as proprietary or in the margin opposite such information. These lower case letters refer to the types of information Westinghouse customarily holds in confidence identified in Sections (4)(ii)(a) through (4)(ii)(f) of the Affidavit accompanying this transmittal pursuant to 10 CFR 2.390(b)(1).

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