



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

10 CFR 50.90  
10 CFR 2.390

July 6, 2015

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: MELLLA+ License Amendment Request – Supplement 4  
Response to Request for Additional Information

- Reference:
1. Exelon letter to the NRC, "License Amendment Request – Maximum Extended Load Line Limit Analysis Plus," dated September 4, 2014 (ADAMS Accession No. ML14247A503)
  2. Exelon letter to the NRC, "License Amendment Request – Maximum Extended Load Line Limit Analysis Plus – Supplement 3," dated April 28, 2015 (ADAMS Accession No. ML15118A717)
  3. Email from R. Ennis, NRC to D. Neff, Exelon, "Peach Bottom MELLLA+ - Draft RAIs Round 2 (Revision 1)," dated April 7, 2015

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 allow operation in the expanded Maximum Extended Load Line Limit Analysis Plus (MELLLA+) operating domain and the use of the Detect and Suppress – Confirmation Density (DSS-CD) stability solution.

This letter provides responses to Requests for Additional Information (RAIs) from the Mechanical and Civil Engineering Branch (EMCB) provided in Reference 3. Portions of the information provided in Attachment 1 are considered to be proprietary and are, therefore, exempt from public disclosure pursuant to 10 CFR 2.390. Attachment 2 provides a non-proprietary version. Attachment 4 contains an affidavit for withholding information executed by Westinghouse Electric Corporation (WEC). On behalf of WEC, EGC requests Attachment 1 be withheld from public disclosure in accordance with 10 CFR 2.390(b)(1).

In addition, EGC had provided a response to request for additional information APHB-RAI-13 in Reference 2. The response included text for a proposed License Condition 2.C (17)

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

related to MELLLA+ operating training. EGC proposes minor editorial and administrative changes to that text; Attachment 3 provides the revised text for the license condition.

This letter also modifies the PBAPS plans for implementation of the MELLLA+ amendments. In the cover letter of the amendment request (Reference 1), EGC described plans for implementation of the MELLLA+ amendment. The following statement amends this original implementation plan: Once approved, the amendment will be implemented on Unit 2 within 90 days following the completion of the Unit 3 outage (P3R20), and will be implemented on Unit 3 within 90 days following the completion of the Unit 3 P3R20 EPU full power ascension.

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 the referenced LAR. 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), 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 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 6<sup>th</sup> day of July 2015.

Respectfully,



Kevin F. Borton  
Manager, Licensing – Power Uprate  
Exelon Generation Company, LLC

Attachments:

1. Response to Mechanical and Civil Engineering Branch Request for Additional Information - Proprietary
2. Response to Mechanical and Civil Engineering Branch Request for Additional Information – Non-Proprietary
3. Revised Proposed License Condition 2.C (17)
4. Affidavit in Support of Request to Withhold Information

U.S. Nuclear Regulatory Commission  
MELLLA+ LAR Supplement 4  
Response to Request for Additional Information  
July 6, 2015  
Page 3

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**

**MELLLA+ LAR Supplement 4  
Peach Bottom Atomic Power Station Units 2 and 3  
NRC Docket Nos. 50-277 and 50-278**

**Responses to Mechanical and Civil Engineering Branch  
Request for Additional Information – Non-proprietary**

**Responses to Mechanical and Civil Engineering Branch (EMCB)  
Request for Additional Information**

By letter dated September 4, 2014, Exelon Generation Company, LLC (EGC) submitted a license amendment request for Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3. The proposed amendment would allow operation in the Maximum Extended Load Line Limit Analysis Plus (MELLLA+) operating domain and the use of the Detect and Suppress – Confirmation Density stability solution.

In an email dated April 7, 2015, from the NRC (Rick Ennis) to Exelon (David Neff), the NRC provided updated requests for additional information seeking clarification of certain issues related to the LAR. This attachment provides responses to those RAIs.

**EMCB-RAI-1**

Section 3.3.3 of the MELLLA+ Safety Analysis Report (M+SAR) indicates that the moisture carryover (MCO) values of the PBAPS steam dryer and separator under MELLLA+ conditions are bounded by the pre MELLLA+ conditions. Do the pre MELLLA+ conditions include Extended Power Uprate (EPU) conditions? Please clarify if the MCO values or steam quality for steam: (a) entering the steam separator; (b) exiting the steam separator; (c) entering the steam dryer; and (d) exiting the steam dryer, are affected by MELLLA+ core flow conditions. Are the values utilized in the EPU analysis bounding for combined EPU and MELLLA+ conditions for the replacement steam dryer (RSD)?

**RESPONSE**

Yes, the pre MELLLA+ conditions are the EPU rated power and flow conditions: 3951 MWt and 102.5 Mlbm/hr.

Due to the lower core flow conditions at MELLLA+:

- steam quality entering the steam separator increases
- maximum MCO exiting the steam separator and entering the steam dryer decreases
- MCO exiting the steam dryer decreases

Therefore, the EPU MCO analysis is bounding for the combined EPU and MELLLA+ conditions for the RSD.

**EMCB-RAI-2**

Address if the boundary conditions used in the Acoustic Circuit Model (ACM) model for the RSD are affected by MELLLA+ flow. Is there any impact on the reactor water level and boundary conditions for the annular region between the RSD skirt and the separator stand pipes; and the annulus region between reactor pressure vessel (RPV) wall and the RSD skirt? Is there any impact on the RSD pressure loading used and on the RSD structural analysis?

**RESPONSE**

See response to EMCB-RAI-3 below.

**EMCB-RAI-3**

Address if the stresses in the RSD evaluated for EPU conditions are bounding for plant operation at EPU conditions combined with MELLLA+ conditions.

**RESPONSE**

The replacement steam dryer (RSD) analyses being developed after completion of EPU power ascension, consistent with Unit 2 License Condition 2.C(15)(e) and Unit 3 License Condition 2.C(15)(e), are representative of the reactor water level and core flow conditions consistent with the current operating range at EPU conditions. These analyses are not intended to be representative of conditions for EPU conditions combined with MELLLA+.

To address the impact on the RSD structural analysis for EPU conditions combined with MELLLA+, [

] <sup>a,c</sup>

[

] <sup>a,b</sup> These biases will be added to the EPU RSD structural analyses to support operation in the MELLLA+ operating range for both Units 2 and 3. Unit 2 or Unit 3 will not enter into the MELLLA+ region on a unit until that unit's RSD analysis for EPU combined with MELLLA+ stress ratios has been shown to be greater than 1.0.

**Attachment 3**

**MELLLA+ LAR Supplement 4  
Peach Bottom Atomic Power Station Units 2 and 3  
NRC Docket Nos. 50-277 and 50-278**

**Revised Proposed License Condition 2.C (17)**

**Revised Proposed License Condition 2.C (17)**

In letter dated April 28, 2015, Exelon Generation Company, LLC (EGC) had provided a response to Request for Additional Information APHB-RAI-13. The response included text for a proposed license condition 2.C (17), related to operator training associated with MELLLA+. The revised license condition below supersedes the previous text in its entirety.

(17) Maximum Extended Load Line Limit Analysis Plus (MELLLA+) Operator Training

Prior to operation in the MELLLA+ operating domain, the Exelon Generation Company shall:

- (a) Complete operator training on time-critical actions supporting the MELLLA+ analysis.
- (b) Validate the ability to complete the time-critical actions consistent with the assumptions in the MELLLA+ analysis.
- (c) Provide the results of the validation activities to the NRC as a report in accordance with 10 CFR 50.4. As a minimum, the report shall contain the following:
  - 1) A listing of the time-critical response times assumed in the MELLLA+ analysis.
  - 2) The average times recorded for completion of the associated actions for all operating crews during operator training.
  - 3) A description of the resolution of any problems/discrepancies identified during the validation activities.



**Attachment 4**

**MELLLA+ LAR Supplement 4  
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**



Westinghouse Electric Company  
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Cranberry Township, Pennsylvania 16066  
USA

U.S. Nuclear Regulatory Commission  
Document Control Desk  
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CAW-15-4226

July 1, 2015

APPLICATION FOR WITHHOLDING PROPRIETARY  
INFORMATION FROM PUBLIC DISCLOSURE

Subject: LTR-BWR-ENG-15-067-P "Response to Support the U.S. NRC Requests for Additional Information Relative to the Impacts of MELLLA+ on the Peach Bottom Replacement Steam Dryer," and Attachment 1 to Exelon Generation submittal to the NRC containing the response to EMC-B-RAI-3, "Responses to Mechanical and Civil Engineering Branch Request for Additional Information – Proprietary"

The proprietary information for which withholding is being requested in the above-referenced report is further identified in Affidavit CAW-15-4226 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-15-4226, 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.

*W. J. Gresham / FOR*

James A. Gresham, Manager  
Regulatory Compliance

Enclosures

July 1, 2015

AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

ss

COUNTY OF BUTLER:

I, Henry A. Sepp, am 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 my knowledge, information, and belief.

  
A handwritten signature in black ink, appearing to read 'Henry A. Sepp', is written over a horizontal line.

Henry A. Sepp, Director

CRE-Systems and Components Engineering

- (1) I am Director, CRE-Systems and Components Engineering, 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 "LTR-BWR-ENG-15-067-P, "Response to Support the U.S. NRC Requests for Additional Information Relative to the Impacts of MELLLA+ on the Peach Bottom Replacement Steam Dryer," and Attachment 1 to Exelon Generation submittal to the NRC containing the response to EMCB-RAI-3, "Responses to Mechanical and Civil Engineering Branch Request for Additional Information – Proprietary"" 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 NRC's further review of the RSD analysis for EPU and MELLLA+ operating conditions for PBAPS 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 and approval of the RSD analysis for EPU and MELLLA+ operating conditions for PBAPS Units 2 and 3.
- (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 evaluation 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 non-proprietary versions of documents furnished to the NRC associated with the NRC's request for additional information with regards to the Impacts of MELLLA+ on the Peach Bottom Replacement Steam Dryer, and may be used only for that purpose.

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 that Westinghouse customarily holds in confidence is 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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