

Exelon Nuclear
200 Exelon Way
Kennett Square, PA 19348

www.exeloncorp.com

10 CFR 50.90

September 4, 2003

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Peach Bottom Atomic Power Station, Unit 3
Facility Operating License No. DPR-56
NRC Docket No. 50-278

Subject: License Amendment Request: AR A1418692
Safety Limit Minimum Critical Power Ratio (SLMCPR) Change

Reference: Letter from M. P. Gallagher (Exelon Generation Company, LLC) to
U. S. Nuclear Regulatory Commission, dated June 23, 2003

Dear Sir/Madam:

In the referenced letter, Exelon Generation Company, LLC (Exelon), requested an amendment to the Technical Specifications (TS), Appendix A of Operating License No. DPR-56 for Peach Bottom Atomic Power Station (PBAPS), Unit 3. This proposed change will revise Technical Specification (TS) Section 2.1. This Section will be revised to incorporate revised Safety Limit Minimum Critical Power Ratios (SLMCPRs) due to the cycle specific analysis performed by Global Nuclear Fuel for PBAPS, Unit 3, Cycle 15, which will include the use of the GE-13 and GE-14 fuel product lines.

On August 19, 2003, a conference call was held with the U. S. Nuclear Regulatory Commission staff regarding our request. Attached are the questions discussed during the call, and our responses.

Attachment 1 contains information proprietary to Global Nuclear Fuel. Global Nuclear Fuel requests that the document be withheld from public disclosure in accordance with 10 CFR 2.790(a)(4). An affidavit supporting this request is also contained in Attachment 1. Attachment 2 contains a non-proprietary version of the Global Nuclear Fuel document.

Additionally, there are no commitments contained within this letter.

Apo!

PBAPS Unit 3 License Amendment Request: AR A1418692
September 4, 2003
Page 2

If you have any questions or require additional information, please contact Dave Helker at (610) 765-5525.

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

Respectfully,

09-04-03
Executed on

Michael P. Gallagher
Michael P. Gallagher
Director, Licensing and Regulatory Affairs

Attachments: 1-Affidavit and Proprietary Global Nuclear Fuels Letter
2-Non-proprietary Version of Global Nuclear Fuels Letter

cc: H. J. Miller, Administrator, Region I, USNRC
A. C. McMurtray, USNRC Senior Resident Inspector, PBAPS
J. Boska, Senior Project Manager, USNRC
R. R. Janati, Commonwealth of Pennsylvania

ATTACHMENT 1

**PEACH BOTTOM ATOMIC POWER STATION
UNIT 3**

DOCKET NO. 50-278

LICENSE NO. DPR-56

LICENSE AMENDMENT REQUEST: AR 1418692

Affidavit and Proprietary Global Nuclear Fuels Letter

Affidavit

I, Jens G. Andersen, state as follows:

- (1) I am Fellow and project manager, TRACG Development, Global Nuclear Fuel – Americas, L.L.C. (“GNF-A”) 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 the attachment, “Responses to NRC RAIs on Peach Bottom 3, Cycle 15 SLMCPR Submittal,” September 3, 2003. GNF proprietary information is indicated by enclosing it in double brackets. In each case, the superscript notation ⁽³⁾ 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, GNF-A relies upon the exemption from disclosure set forth in the Freedom of Information Act (“FOIA”), 5 USC Sec. 552(b)(4), and the Trade Secrets Act, 18 USC Sec. 1905, and NRC regulations 10 CFR 9.17(a)(4) and 2.790(a)(4) 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 GNF-A’s competitors without license from GNF-A 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 GNF-A, its customers, or its suppliers;
 - d. Information which reveals aspects of past, present, or future GNF-A customer-funded development plans and programs, of potential commercial value to GNF-A;
 - e. Information which discloses patentable subject matter for which it may be desirable to obtain patent protection.

Affidavit

The information sought to be withheld is considered to be proprietary for the reasons set forth in paragraphs (4)a. and (4)b., above.

- (5) To address the 10 CFR 2.790 (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 GNF-A, and is in fact so held. Its initial designation as proprietary information, and the subsequent steps taken to prevent its unauthorized disclosure, are as set forth in (6) and (7) following. The information sought to be withheld has, to the best of my knowledge and belief, consistently been held in confidence by GNF-A, no public disclosure has been made, and it is not available in public sources. All disclosures to third parties including any required transmittals to NRC, have been made, or must be made, pursuant to regulatory provisions or proprietary agreements which provide for maintenance of the information in confidence.
- (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, or subject to the terms under which it was licensed to GNF-A. Access to such documents within GNF-A 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 delegate), and by the Legal Operation, for technical content, competitive effect, and determination of the accuracy of the proprietary designation. Disclosures outside GNF-A 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 identified in paragraph (2) is classified as proprietary because it contains details of GNF-A's fuel design and licensing methodology.

The development of the methods used in these analyses, along with the testing, development and approval of the supporting methodology was achieved at a significant cost, on the order of several million dollars, to GNF-A or its licensor.
- (9) Public disclosure of the information sought to be withheld is likely to cause substantial harm to GNF-A's competitive position and foreclose or reduce the availability of profit-making opportunities. The fuel design and licensing methodology is part of GNF-A'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 GNF-A or its licensor.

Affidavit

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.

GNF-A's competitive advantage will be lost if its competitors are able to use the results of the GNF-A 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 GNF-A 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 GNF-A 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 affidavit and the matters stated therein are true and correct to the best of my knowledge, information, and belief.

Executed at Wilmington, North Carolina, this 3rd day of September, 2003.



Jens G. Andersen

Global Nuclear Fuel – Americas, LLC

ATTACHMENT 2

**PEACH BOTTOM ATOMIC POWER STATION
UNIT 3**

DOCKET NO. 50-278

LICENSE NO. DPR-56

LICENSE AMENDMENT REQUEST: AR 1418692

Non-Proprietary Global Nuclear Fuels Letter

Responses to NRC RAIs on Peach Bottom 3, Cycle 15 SLMCPR Submittal

Question 1:

Table 1 in Attachment 4 of the June 23, 2003 submittal indicates that Monte Carlo calculated Safety Limit MCPR (SLMCPR) is 0.04 reduction when reduced power distribution uncertainty is used comparing with the same calculation using GETAB power distribution uncertainty for Cycle 15. Please describe the rationale to cause a high end reduction of the Monte Carlo SLMCPR value according to results shown in Table 4.3 of NEDC-32694P. Please justify that the proposed SLMCPR value provides adequate safety margin for Cycle 15 operation.

Response:

The expected reduction in the calculated SLMCPR in going from the GETAB method and uncertainties to the revised method with reduced power distribution uncertainties is [[

]]. The probability that the reduction will be [[]] or larger is [[]]. Usually for a total reduction of [[]] the amount due to the revised method is approximately [[]] and the remaining [[]] is due to the reduced power distribution uncertainties. For this particular application at EOC for Cycle 15, the total [[]] reduction is composed of [[]] due to the switch from the GETAB to the revised method and [[]] is due to use of the reduced uncertainties. The primary factor that causes a larger reduction due to the method is the bimodal nature of the rod CPR distribution. The approved Monte Carlo process correctly models these distributions but the method that is used to estimate the reduction does not since it presumes a normal distribution of rod CPRs. A calculated reduction of 0.04 in the Monte Carlo result is well within the range of probable values.

Note that the technical specifications SLMCPR value for Cycle 14 is 1.09, and that the requested reduction is 0.02 to a requested technical specification SLMCPR value of 1.07 for Cycle 15. This provides an additional CPR margin of 0.02 and further assurance that 99.9% of the rods in the core will not be susceptible to boiling transition for the postulated worst-case AOO event.

Responses to NRC RAIs on Peach Bottom 3, Cycle 15 SLMCPR Submittal

Question 2: Describe the detailed calculation process to model the core design through entire cycle and identify which core design and operating conditions would result with no impact on the safety limit minimum critical power ratio value for both two loop operation (TLO) and single loop operation (SLO) due to end-of-cycle penalty of top-peaked power shape.

Response:

Five calculations were performed at different exposures through the cycle to determine that the largest calculated SLMCPR would occur near EOC. The axial power shapes were assessed at each of these points and for no case was an outlet or double-humped axial power shape indicated. Cycle 15 of Peach Bottom 3 has been designed and loaded to reduce the hot excess reactivity and thus minimize the use of control blades in order to extend control blade life. For this design, the axial skewing of the power to the top of the core is controlled more by axial gadolinia distribution in the fresh bundles than by control blades. The result is a middle to bottom peaked axial power shape throughout the cycle. [[

]]