September 23, 2002

Mr. John L. Skolds, President
and Chief Nuclear Officer
Exelon Nuclear
Exelon Generation Company, LLC
200 Exelon Way, KSA 3-E
Kennett Square, PA 19348

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION, UNIT NO. 2 - ISSUANCE OF AMENDMENT RE: REVISION TO TECHNICAL SPECIFICATIONS SAFETY LIMIT MINIMUM CRITICAL POWER RATIO FOR CYCLE 15 OPERATION (TAC NO. MB5351)

Dear Mr. Skolds:

The Commission has issued the enclosed Amendment No. 246 to Facility Operating License No. DPR-44 for the Peach Bottom Atomic Power Station, Unit No. 2. This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated June 10, 2002, as supplemented by letter dated August 2, 2002.

This amendment revises the TSs for the safety limit for the minimum critical power ratio from its current value of 1.09 to 1.07 for two recirculation-loop operation, and from 1.10 to 1.09 for single recirculation-loop operation.

A copy of the safety evaluation is also enclosed. Notice of Issuance will be included in the Commission's Biweekly *Federal Register* Notice.

Sincerely,

/RA/

John P. Boska, Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-277

Enclosures: 1. Amendment No. 246 to License No. DPR-44
2. Safety Evaluation

cc w/encls: See next page

Peach Bottom Atomic Power Station, Units 2 and 3

cc:

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John P. Boska, Project Manager, Section 2
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DISTRIBUTION:

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ACCESSION NO. ML022460176 *SE provided, no major changes were made.
** See previous concurrence

OFFICE	PD1-2/PM	PD1-2/PM	PD1-2/LA	SRXB/BC*	OGC**	PDI-2/(A)SC
NAME	SWall	JBoska	SLittle for MO'Brien	RCaruso	RWeisman	JAndersen
DATE	9/20/2002	9/20/2002	9/23/2002	9/11/02	9/19/02	9/23/2002

Official Record Copy

EXELON GENERATION COMPANY, LLC

PSEG NUCLEAR LLC

DOCKET NO. 50-277

PEACH BOTTOM ATOMIC POWER STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 246
License No. DPR-44

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Exelon Generation Company, LLC (Exelon Generation Company), and PSEG Nuclear LLC (the licensees), dated June 10, 2002, as supplemented by letter dated August 2, 2002, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I.

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C(2) of Facility Operating License No. DPR-44 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 246, are hereby incorporated in the license. Exelon Generation Company shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented prior to startup for Cycle 15 operations, scheduled for September 2002.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

James W. Andersen, Acting Chief, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: September 23, 2002

ATTACHMENT TO LICENSE AMENDMENT NO. 246

FACILITY OPERATING LICENSE NO. DPR-44

DOCKET NO. 50-277

Replace the following page of the Appendix A Technical Specifications with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove	Insert
2.0-1	2.0-1

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 246 TO FACILITY OPERATING LICENSE NO. DPR-44

EXELON GENERATION COMPANY, LLC

PSEG NUCLEAR LLC

PEACH BOTTOM ATOMIC POWER STATION, UNIT 2

DOCKET NO. 50-277

1.0 INTRODUCTION

By letter dated June 10, 2002 (Reference 1), as supplemented by letter dated August 2, 2002 (Reference 2), Exelon Generation Company, LLC (Exelon, the licensee) submitted a request for changes to the Peach Bottom Atomic Power Station (PBAPS), Unit 2, Technical Specifications (TSs) for Cycle 15 operation. The requested change would incorporate revised safety limit minimum critical power ratios (SLMCPRs) in TS 2.1.1.2. The PBAPS Unit 2 Cycle 15 core has 764 fuel assemblies, of which there are 284 fresh GE14 fuel bundles, 292 once-burned GE14 fuel bundles, and 188 twice-burned GE13 fuel bundles. The August 2, 2002, letter provided clarifying information that did not change the initial proposed no significant hazards consideration determination or expand the application beyond the scope of the original *Federal Register* notice.

2.0 EVALUATION

The licensee requested a change to the PBAPS Unit 2 TSs for Cycle 15 in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.90. Specifically, the licensee proposed to change the SLMCPR values in TS 2.1.1.2 from 1.09 to 1.07 for two recirculation-loop operation and from 1.10 to 1.09 for single recirculation-loop operation with the reactor vessel steam dome pressure $\geq$ 785 psig and core flow $\geq$ 10 percent of rated core flow.

The licensee described the methodology used to calculate the SLMCPR values for the TS changes in the submittal. The Cycle 15 SLMCPR analysis was performed by Global Nuclear Fuel (GNF-A) using the plant- and cycle-specific fuel and core parameters, and U.S. Nuclear Regulatory Commission (NRC)-approved methodologies (References 3, 4, and 5).

The NRC staff has reviewed: (1) an issue relating to the staff's March 2001 audit of GNF-A databases for GEXL14 correlation, (2) the applicability of the previously-approved methodologies to GE14 fuel, and (3) the justification for changing the SLMCPR from 1.09 to 1.07 for two recirculation-loop operation and from 1.10 to 1.09 for single recirculation-loop operation using the approach stated in Amendment 25 to NEDE-24011-P-A.
The NRC staff identified discrepancies in GNF-A databases while conducting an audit of GNF-A's GEXL correlation development for the Duane Arnold Energy Center plant-specific

power uprate application in March 2001 (Reference 6). The licensee addressed the issue and provided the results of additional analyses that indicated there is sufficient conservatism for the PBAPS Unit 2 Cycle 15 SLMCPR values to accommodate the penalty due to expected top-peaked power shape during PBAPS Unit 2 Cycle 15 operation. The NRC staff reviewed the licensee's evaluation and found it to be acceptable since NRC-approved methodologies were used.

To address the applicability of the previously approved methodologies to GE14 fuel, GNF-A submitted two letters for the staff's review: (1) FLN-2001-016, from Glen A. Watford, General Electric (GE), to NRC, "Confirmation of 10x10 Fuel Design Applicability to Improved SLMCPR, Power Distribution and R-Factor Methodologies," dated September 24, 2001, and (2) FLN-2001-017, from Glen A. Watford, GE, to NRC, "Confirmation of Applicability of GEXL14 Correlation and Associated R-Factor Methodology for Calculating SLMCPR Values in Core Containing GE14 Fuel," dated October 1, 2001. The NRC staff has reviewed GNF-A's evaluation contained in the two letters and has found the approach, supplemented by the use of a higher interim GEXL14 correlation uncertainty, acceptable for this application because NRC-approved methodologies were used. Further tests in the future have been planned and committed to by GNF-A to revise the uncertainty for the GEXL correlation.

Based on its review of the licensee's application (Reference 1), and the supplement (Reference 2), the NRC staff finds that the Cycle 15 SLMCPR analysis for PBAPS Unit 2 is acceptable because it uses appropriate plant- and cycle-specific fuel and core parameters in conjunction with NRC-approved methods. The proposed Cycle 15 SLMCPR values will ensure that 99.9 percent of the fuel rods in the core will not experience boiling transition, which satisfies the requirements of General Design Criterion 10 of Appendix A to 10 CFR Part 50 regarding acceptable fuel design limits. The analysis shows that SLMCPR values for PBAPS Unit 2 Cycle 15 operation have sufficient conservatism to accommodate the penalty due to top-peaked power shape during Cycle 15 operation. In view of the above, the staff also concludes that the justification for analyzing and determining the SLMCPR value of 1.07 for two recirculation-loop operation and 1.09 for single recirculation-loop operation is acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Pennsylvania State official was notified of the proposed issuance of the amendments. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (67 FR 50953). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

6.0 REFERENCES

1. Letter from Michael P. Gallagher, Exelon, to NRC, "License Amendment Request 02-00304 Safety Limit Minimum Critical Power Ratio (SLMCPR) Change," dated June 10, 2002.

2. Letter from Michael P. Gallagher, Exelon, to NRC, "License Amendment Request 02-00304 Response to Request for Additional Information Concerning Safety Limit Minimum Critical Power Ratio (SLMCPR) Change," dated August 2, 2002.

3. Letter from Frank Akstulewicz, NRC, to Glen A. Watford, GE, "Acceptance for Referencing of Licensing Topical Reports NEDC-32601P, *Methodology and Uncertainties for Safety Limit MCPR Evaluations*; NEDC-32694P, *Power Distribution Uncertainties for Safety Limit MCPR Evaluation*; and Amendment 25 to NEDE-24011-P-A on Cycle Specific Safety Limit MCPR," dated March 11, 1999.

4. Letter from Thomas H. Essig, NRC, to Glen A. Watford, GE, "Acceptance for Referencing of Licensing Topical Report NEDC-32505P, Revision 1, *R-Factor Calculation Method for GE11, GE12 and GE13 Fuel*," dated January 11, 1999.

5. NEDO-10958-A, "General Electric BWR Thermal Analysis Basis (GETAB): Data, Correlation and Design Application," dated January 1977.

6. Letter from Brenda L. Mozafari, NRC, to Gary Van Middlesworth, Nuclear Management Company, LLC, "Duane Arnold Energy Center - Request for Additional Information on the Proposed Extended Power Uprate Program," dated June 4, 2001.

Principal Contributors: T. Huang, S. Wall

Date: September 23, 2002