August 12, 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, UNITS 2 AND 3 - REQUEST FOR ADDITIONAL INFORMATION REGARDING REQUEST FOR POWER UPRATE (MB5192 AND MB5193)

Dear Mr. Skolds:

By letter dated May 24, 2002, Exelon Generation Company, LLC, submitted a request for a license amendment to increase the licensed rated thermal power level by 1.62%, based on improvements in the measurement of feedwater flow, which improves the accuracy of measuring reactor power. In order to continue our review of your request, additional information, as delineated in the Enclosure, is required. The request for additional information was discussed with your staff on August 1, 2002, and a response date of September 11, 2002, was mutually agreeable.

Sincerely,

/RA/

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

Docket Nos. 50-277 and 50-278

Enclosure: As stated

cc w/encl: See next page

Peach Bottom Atomic Power Station, Units 2 and 3

cc:

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Peach Bottom Atomic Power Station, Units 2 and 3

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Exelon Nuclear
Exelon Generation Company, LLC
200 Exelon Way, KSA 3-E
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Sincerely,

/RA/

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

Docket Nos. 50-277 and 50-278
Enclosure: As stated
cc w/encl: See next page
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ADAMS ACCESSION NUMBER: ML022210002

OFFICE	PM/PD1-2	LA/PD1-2	ASC/PD1-2
NAME	JBoska	MO'Brien	JZimmerman
DATE	8-12-02	8/12/02	8/12/02

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REQUEST FOR ADDITIONAL INFORMATION

PEACH BOTTOM ATOMIC POWER STATION (PBAPS), UNITS 2 AND 3

POWER UPRATE BASED ON IMPROVED FEEDWATER FLOW MEASUREMENT

Reference: Letter from Exelon Generation Company, LLC to the U.S. Nuclear Regulatory Commission (NRC), "Peach Bottom Atomic Power Station, Units 2 & 3, License Amendment Request 01-01190, May 24, 2002.

The NRC staff needs the following information to complete its review of the license amendment request.

1. Attachment 1, Section 4.2.1, LEFM [leading edge flow meter] Inoperability

   The licensee stated, "The LEFM✓+™ feedwater mass flow and temperature inputs will also be used to adjust or calibrate the feedwater flow nozzle-based signals. If the LEFM system, or a portion of the system becomes inoperable, control room operators are promptly alerted by control room computer indications. Feedwater flow input to the core thermal power calculation would then be provided by the existing flow nozzles, or a combination of flow nozzle(s) and LEFM flow data. Power level will be adjusted as required to reflect the accuracy of the equipment in service. Calculations have been performed to support the uncertainty of different combinations of LEFM and flow nozzle inputs to the core thermal power calculation. In addition, if the flow nozzles are calibrated to the last available data from the LEFM system, it will be acceptable to remain at 3514 MWt for up to 72 hours to enact LEFM system repairs. The administrative control described above will be added to the PBAPS Technical Requirements Manual."

   Describe the actions the licensee will take if the LEFM is not restored in 72 hours.

2. Attachment 2, Section 1.1, Overview

   Reference is made to the boiling water reactor thermal power optimization (TPO) report, NEDC-32938P, (which is also being reviewed by the NRC staff) for evaluations of several sections in the PBAPS report. However, the TPO report covers power uprate to 1.5% only. Additional evaluations are required to support the PBAPS application. In some cases, reference to TPO with 1.5% power uprate may be still valid. In other cases, the reference to the TPO report may not be valid.

   Please identify the areas where the TPO is not valid and provide the bases for the additional .12% power uprate.

3. Attachment 2, Table 1-3, Summary of Effect of TPO Uprate on Licensing Criteria

   The effect of a 1.7% thermal power increase for the anticipated transient without a scram (ATWS) peak vessel pressure is stated as a "slight increase".

   Please specify the actual value.

Enclosure

4. Attachment 2, Figure 1-1, Power/Flow Map for PBAPS at TPO Uprate Power

   Please define the 113.2% rod line.

5. Attachment 2, Section 2.1, Fuel Design and Operation

   Please describe the TPO core, specifying the numbers and types of General Electric fuel. Please discuss the impact of any new fuel type introduction on the power uprate.

6. Attachment 2, Section 3.1, Nuclear System Pressure Relief/Overpressure Protection

   Please identify the approved methodology used for the overpressure analysis, and the peak pressure reached for the closure of all main steam isolation valves.

7. Attachment 2, Section 3.2, Reactor Vessel

   On page 3-2 it is stated that "Considering TPO conditions, the Unit 3 P-T curves become beltline limited at 22 EFPY [effective full-power years] and will require modification for operation beyond 22 EFPY."

   Please provide the following information:

   a.) a statement that the vessel fluence has been recalculated using an NRC staff-approved code.

   b.) for Unit 3, please identify the new limiting element and provide the process and the arithmetic in the estimation of the 22 EFPY limit.

   c.) in Tables 3-2a and 3-2b, the lower-intermediate to intermediate weld has different values for Cu, Ni and chemistry factors. Please provide the correct values that apply.

   d.) in the Unit 3 Technical Specifications (TSs), Figures 3.4.9-1, 3.4.9-2 and 3.4.9-3 are designated as valid for 32 EFPY of operation. Because the vessel is now limited to 22 EFPY, the figures must change accordingly. Please submit revised figures for the Unit 3 TS.

8. Attachment 2, Section 3.5.1, Reactor Coolant Pressure Boundary Piping

   The submittal contains statements that a minor increase in the erosion/corrosion FAC (flow accelerated corrosion) is expected, that FAC concerns are covered by the existing piping monitoring program, and that no changes to piping inspection scope and frequency are required to ensure margins for the changing process conditions.

   Please provide the following information:

   a.) the analysis for the most critical components that are expected to receive the higher increase.

b.) a justification that the program ensures that the power uprate has no adverse effect on high energy piping systems potentially susceptible to pipe wall thinning due to erosion/corrosion.

9. Attachment 2, Section 3.6, Reactor Recirculation System

Please provide the licensed maximum core flow for Peach Bottom in units of millions of pounds per hour.

10. Attachment 2, Section 4.3, Emergency Core Cooling System Performance

Please identify the loss-of-coolant accident analyses evaluations used. State if PBAPS is in compliance with Title 10 of the *Code of Federal Regulations* Section 50.46.

11. Attachment 2, Section 5.2.3, Leak Detection System

In describing the effect of an approximate 1 degree F increase in feedwater (FW) temperature on main steam tunnel temperature based leak detection, the licensee stated, "The ~1 °F increase in FW temperature for the TPO uprate decreases leak detection trip avoidance margin."

Please provide the temperature setpoint for leak detection in the main steam tunnel, and the typical temperature in the main steam tunnel during the summer months.

12. Attachment 2, Section 6.1, AC Power

Please provide details about the grid stability analysis including assumptions and results and conclusions for the power uprated condition. Also, provide in detail (including the ratings) the effect of the power uprate on the following equipment:

i. main generator
ii. isophase bus
iii. main power transformer
iv. startup transformer
v. unit auxiliary transformer

13. Attachment 2, Section 8.4.2, Activated Corrosion and Fission Products

The submittal contains a statement that although the activated corrosion product activities are expected to increase approximately proportionally to the power uprate, the sum of the total activated corrosion activity and the total fission product activity is expected to remain a fraction of the original design-basis activity in the reactor water.

Please state the design basis for radioactivity in the reactor water, the current levels of this radioactivity, and the expected increase.

14. Attachment 2, Section 9.2, Design-Basis Accidents (DBAs)

The licensee stated that "Radiological consequences due to postulated DBA events, as documented in the UFSAR [updated final safety analysis report], have previously been evaluated and analyzed to show that NRC regulations are met for 2% above the CLTP [current licensed thermal power]. Therefore, the radiological consequences associated with a postulated DBA from TPO uprate conditions are bounded by the previous analyses."

Please list the DBA events analyzed for the radiological consequences and reference appropriate PBAPS UFSAR sections where the postulated DBA events are evaluated with its reactor power level assumed for each event.