May 1, 2003

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 NOS. 2 AND 3 - REQUEST FOR ADDITIONAL INFORMATION REGARDING RISK-INFORMED INSERVICE INSPECTION PROGRAM (TAC NOS. MB5512 AND MB5513)

Dear Mr. Skolds:

By letter dated June 25, 2002, Exelon Generation Company, LLC, submitted proposed alternatives to the requirements of Section 50.55a of Title 10 of the *Code of Federal Regulations*. In order to continue our review of your request, the Nuclear Regulatory Commission staff requires additional information as delineated in the enclosure. The request for additional information was discussed with Mr. Thomas Loomis of your staff and a response date of May 30, 2003, was mutually agreeable.

Sincerely,

/RA/

John P. Boska, Senior 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: Request for Additional Information

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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May 1, 2003

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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 NOS. 2 AND 3 - REQUEST FOR ADDITIONAL INFORMATION REGARDING RISK-INFORMED INSERVICE INSPECTION PROGRAM (TAC NOS. MB5512 AND MB5513)

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John P. Boska, Senior 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: Request for Additional Information

cc w/encl: See next page

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NAME	SWall for JBoska	CRaynor for MO'Brien	JClifford	
DATE	4/22/03	4/23/03	5/1/03	

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REQUEST FOR ADDITIONAL INFORMATION (RAI)

PEACH BOTTOM ATOMIC POWER STATION (PBAPS), UNIT NOS. 2 AND 3

RISK-INFORMED INSERVICE INSPECTION PROGRAM

References:

1. Letter from M. P. Gallagher, Exelon Generation Company, LLC (EGC), to the U.S. Nuclear Regulatory Commission (NRC) Document Control Desk, “Third Ten-Year Interval Inservice Inspection (ISI) Program Risk-Informed Inservice Inspection Program Alternative to the ASME [American Society of Mechanical Engineers] Boiler and Pressure Vessel Code Section XI Requirements for Class 1and 2 Piping Welds,” dated June 25, 2002.

2. Letter from W.H. Bateman, NRC, to G.L. Vine, Electric Power Research Institute (EPRI), "Safety Evaluation Report Related to EPRI Risk-Informed Inservice Inspection Evaluation Procedure (EPRI-TR-112657, Revision B, July 1999)," dated October 28, 1999.

The NRC staff needs the following information to complete its review of Reference 1:

1. Enclosure 2, Section 4, Implementation and Monitoring Program

   EGC stated that the Risk-Informed Inservice Inspection (RI-ISI) program is a living program requiring feedback of new relevant information to ensure the appropriate identification of high safety-significant piping locations. Regulatory Guide (RG) 1.178, “An Approach for Plant-Specific Risk-Informed Decisionmaking for Inservice Inspection of Piping,” Section C.3.4, specifies acceptance guidelines for implementation of the RI-ISI program. It recommends that the accepted RI-ISI program plan have a program in place to monitor industry findings. As discussed in Section C.4.1, “Documentation that Should Be Included in a Licensee’s RI-ISI Submittal,” licensees are requested to provide a description of the implementation, performance monitoring, and corrective action strategies and programs in sufficient detail for the NRC staff to understand the new ISI program and its implications.

   We request that you describe the program that you will use at PBAPS to monitor information that may have an impact on the proposed RI-ISI program. Also, identify the sources of information (domestic and international) that the program will monitor and discuss how soon the information will be reviewed and when the examination program will be adjusted and implemented. Give an example (such as intergranular stress corrosion cracking (IGSCC) was found in the IGSCC Category A welds) to show how the program works, assuming the relevant information has an impact on the proposed RI-ISI program.

2. Enclosure 2, Table 2

RG 1.178, Section 2.1, “Traditional Engineering Analysis,” states that an RI-ISI program should assess failure potential for a defined piping segment (from leaks to breaks). The residual heat removal (RHR) system piping is identified as susceptible to thermal stratification, cycling and stripping (TASCS) and erosion-cavitation (E-C). Generally, the Class 1 piping inside the containment is made of austenitic stainless steel and is susceptible to IGSCC.

In order for the NRC staff to assess the level of safety provided by the RI-ISI program, as required by 10 CFR 50.55a(a)(3)(i), confirm that there is:

a. no piping in the reactor core isolation cooling (RCIC) and RHR systems susceptible to IGSCC,

b. no piping in the core spray, main steam, RCIC, and RHR systems susceptible to flow accelerated corrosion (FAC), and

c. no piping in the reactor water cleanup system susceptible to TASCS.

3. Enclosure 2, Tables 3 and 4

Welds subject only to FAC or only to IGSCC degradation mechanisms are not included in the population of welds from which inspections are selected. These welds are included in Tables 3 and 4, but not included in Tables 5 and 6. EGC indicated that the RI-ISI program utilized the examination methodology and selection criteria of EPRI-TR-112657, Revision B.

As outlined by Reference 2, the NRC staff requests the following information in order to verify conformance with the criteria of the EPRI Topical Report. Expand Tables 3 and 4 (or provide additional tables) by including two additional columns. Identify in these new columns, the number of welds exposed only to FAC and only to IGSCC for each system. If any welds are subject to both FAC and IGSCC, include a footnote providing the number of these welds.

4. Enclosure 2, Section 2.3, Augmented Programs

EGC stated that no augmented programs are subsumed in the RI-ISI program, with the exception of the IGSCC Category A welds. In order for the NRC staff to assess compliance with approved methodology and to confirm proper classification, as delineated in Generic Letter 88-01, provide the following additional information regarding IGSCC Category A welds:

a. the number of IGSCC Category A welds that are included in the RI-ISI program in each piping system and their inspection category, and

b. identify the dissimilar metal welds in each piping system, the material used for buttering in each weld and their inspection category.

5. The NRC staff notes that the third ISI interval is almost half gone for both PBAPS units. To implement the RI-ISI program into the current 10-year ISI interval, the requirements of 10 CFR 50.55a(g) must be satisfied.

   Describe how the RI-ISI program will be implemented into the Section XI ISI program. Identify the percentage of inspections to be performed in the remaining inspection periods.

6. On page 2, EGC stated that the PBAPS Probabilistic Risk Analysis (PRA), 1999 PRA model PB299, Rev. 1, June 2000, was used for the RI-ISI analysis. RG 1.178, Section C.2.2, addresses elements of the PRA analysis that are integral in assessing acceptability of the program.

   In accordance with Reference 2, and as requested by RG 1.178, Section C.4.1, provide the baseline core damage frequency and baseline large early release frequency from this version of the PRA model. State which version of the EGC PRA was reviewed by the BWROG Peer Review/Certification team in 1998.

7. On pages 9 and 10, EGC discussed use of the Markov piping reliability method to estimate the change in risk due to adding and removing locations from the inspection program.

   As outlined by Reference 2, the NRC staff requests the following information in order to verify conformance with the criteria of the EPRI Topical Report. Confirm that the change in risk is calculated utilizing the Markov model described in EPRI Topical Report TR-111061, dated December 1998, to estimate the "inspection efficiency factor" (IEF). Additionally, confirm that the method is the same as that described by EGC in a February 19, 2001, RAI response (Agencywide Document Access and Management System (ADAMS) accession number ML010570133), and approved by the NRC staff in a safety evaluation dated September 5, 2001 (ADAMS accession number ML012050103).