November 26, 2002

Mr. Michael P. Gallagher
Director-Licensing
Exelon Corporation
200 Exelon Way
Kennett Square, PA 19348

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION RELATED TO OPEN ITEM 4.5.2-1 FROM LICENSE RENEWAL SAFETY EVALUATION REPORT WITH OPEN AND CONFIRMATORY ITEMS FOR THE PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3

Dear Mr. Gallagher:

By letter dated September 13, 2002, the NRC staff (the staff) forwarded to you the "Safety Evaluation Report With Open and Confirmatory Items Related to the License Renewal of the Peach Bottom Atomic Power Station, Units 2 and 3," hereafter referred to as the SER (ADAMS Accession No. ML022590468). This SER reflected the status of the staff's review of Exelon's license renewal application, requests for additional information (RAIs) and clarification, and Exelon's responses to the staff's RAIs through July 30, 2001, unless otherwise noted.

As the staff has worked with your staff to resolve the open and confirmatory items, we have reached a point with respect to Open Item 4.5.2-1 where additional information, contained in Enclosure 1, is required beyond the draft information provided by Exelon in Enclosure 2. The nature of this information was also discussed in a teleconference with Exelon staff that occurred on November 14, 2002.

Sincerely,

/***RA***/

David L. Solorio
License Renewal Section
License Renewal and Environmental Impacts Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket Nos.: 50-277 and 50-278

Enclosures: As stated

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BWRVIP-26, BWR Top Guide Inspection and Flaw Evaluation Guidelines, states that the threshold fluence beyond which the components will be significantly affected is 5×10^{20} n/cm2 (neutrons per centimeter squared). At neutron fluences above this threshold, components would be susceptible to irradiation-assisted stress corrosion cracking (IASCC). Appendix C to BWRVIP-26 states that the generic fluence on the top guide for 60 years is 6×10^{21} n/cm2, which exceeds the 5×10^{20} n/cm2 damage threshold.

The applicant further stated that the location on the top guide that will see this high fluence is the grid beam. This is location 1, as identified in BWRVIP-26, Table 3-2, "Matrix of Inspection Options." In their evaluation of the top guide assembly, including the grid beam, General Electric (GE) assumed a lower allowable stress value, acknowledging the high fluence value at this location. The conclusion from this analysis was no inspection was necessary because there was no safety consequence of single failure at this location.

BWRVIP-26, Section 6.3, Core Configuration Distortion, indicates multiple ruptures of adjacent beam segments could lead to displacements of fuel assemblies at the top guide elevation on the order of five inches, and could inhibit the insertion of control rods during seismic events.

The staff is concerned that multiple failures of top guide beams are possible when the threshold fluence for IASCC is exceeded. According to Topical Report, "BWRVIP-26A: BWR Vessel and Internals Project, BWR Top Guide Inspection and Flaw Evaluation Guidelines," February 2002, multiple cracks have been observed in top guide beams at Oyster Creek. In addition, baffle former bolts on PWRs that exceeded the threshold fluence have had multiple failures of baffle former bolts. The staff agrees with the BWRVIP-26 conclusion for top guide beams that no inspection is required when a single failure is postulated. However, when the neutron fluence for the top guide beam exceeds the IASCC damage threshold, the staff believes that multiple failures from IASCC are possible and an inspection program is necessary to ensure that multiple failures do not result in the loss of the ability of control rods to be inserted. In order to ensure that this issue was addressed during the license renewal term, the staff identified this as a TLAA in its SER, which is documented in a December 7, 2000, letter to C. Terry. Section 3.5 of the staff's SER indicates that accumulated neutron fluence is a TLAA issue and must be identified and evaluated by individual applicants considering license renewal.

With this background, how have you considered the impact of multiple cracks resulting from IASCC on the ability to insert control rods during design basis events? If multiple cracks resulting from IASCC could impact the ability to insert control rods during design basis events, how will this aging effect be managed during the license renewal period?