

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

cc w/encls: See next page

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

cc w/encls: See next page

DISTRIBUTION:

See next page

Document Name: C:\ORPCheckout\FileNET\ML023360467.wpd

OFFICE	PM:RLEP:DRIP	LA:RLEP:DRIP	SC:RLEP:DRIP	BC:EMCB:DE	BC:RLEP:DRIP
NAME	DSolorio	HBerilla	SLee	BBateman	PTKuo
DATE	11/22/02	11/22/02	11/23/02	11/25/02	11/26/02

OFFICIAL RECORD COPY

DISTRIBUTION: Letter to Michael P. Gallagher, Dated: November 26, 2002

Package: ML023330195

**HARD COPY**

RLEP RF

D. Solorio

R. Hoefling

**E-MAIL:**

PUBLIC

J. Johnson

W. Borchardt

D. Matthews

F. Gillespie

RidsNrrDe

R. Barrett

J. Zwolinski

E. Imbro

G. Bagchi

K. Manoly

W. Bateman

J. Calvo

C. Holden

P. Shemanski

H. Nieh

G. Holahan

H. Walker

S. Black

B. Boger

D. Thatcher

G. Galletti

C. Li

J. Moore

R. Weisman

M. Mayfield

A. Murphy

W. McDowell

S. Smith

R. Assa

C. Munson

RLEP Staff

-----

J. Boska

M. Modes

D. Lew

B. Elliot

S. Coffin

B. Bateman

G. Hatchett

Peach Bottom Atomic Power Station, Units 2 and 3

cc:

Vice President, General Counsel and  
Secretary  
Exelon Generation Company, LLC  
300 Exelon Way  
Kennett Square, PA 19348

Site Vice President  
Peach Bottom Atomic Power Station  
Exelon Generation Company, LLC  
1848 Lay Road  
Delta, PA 17314

Plant Manager  
Peach Bottom Atomic Power Station  
Exelon Generation Company, LLC  
1848 Lay Road  
Delta, PA 17314

Regulatory Assurance Manager  
Peach Bottom Atomic Power Station  
Exelon Generation Company, LLC  
1848 Lay Road  
Delta, PA 17314

Resident Inspector  
U.S. Nuclear Regulatory Commission  
Peach Bottom Atomic Power Station  
P.O. Box 399  
Delta, PA 17314

Regional Administrator, Region I  
U.S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, PA 19406

Mr. Roland Fletcher  
Department of Environment  
Radiological Health Program  
1800 Washington Blvd.  
Baltimore, MD 21230

Correspondence Control Desk  
Exelon Generation Company, LLC  
200 Exelon Way, KSA 1-N-1  
Kennett Square, PA 19348

Rich Janati, Chief  
Division of Nuclear Safety  
Bureau of Radiation Protection  
Department of Environmental Protection  
Rachel Carson State Office Building  
P.O. Box 8469  
Harrisburg, PA 17105-8469

Board of Supervisors  
Peach Bottom Township  
545 Broad Street Ext.  
Delta, PA 17314-9203

Mr. Richard McLean  
Power Plant and Environmental  
Review Division  
Department of Natural Resources  
B-3, Tawes State Office Building  
Annapolis, MD 21401

Dr. Judith Johnsrud  
National Energy Committee  
Sierra Club  
433 Orlando Avenue  
State College, PA 16803

Manager-Financial Control & Co-Owner  
Affairs  
Public Service Electric and Gas Company  
P.O. Box 236  
Hancocks Bridge, NJ 08038-0236

Manager Licensing-Limerick and Peach  
Bottom  
Exelon Generation Company, LLC  
Nuclear Group Headquarters  
Correspondence Control  
P.O. Box 160  
Kennett Square, PA 19348

Mr. Alan P. Nelson  
Nuclear Energy Institute  
1776 I Street, N.W., Suite 400  
Washington, DC 20006-3708

Peach Bottom Atomic Power Station, Units 2 and 3

cc:

Director - Licensing  
Mid-Atlantic Regional Operating Group  
Exelon Generation Company, LLC  
Nuclear Group Headquarters  
Correspondence Control  
P.O. Box 160  
Kennett Square, PA 19348

Vice President-Licensing and Regulatory  
Affairs  
Exelon Generation Company, LLC  
4300 Winfield Road  
Warrenville, IL 60555

Senior Vice President  
Mid-Atlantic Regional Operating Group  
Exelon Generation Company, LLC  
200 Exelon Way, KSA 3-N  
Kennett Square, PA 19348

Senior Vice President, Nuclear Services  
Exelon Generation Company, LLC  
4300 Winfield Road  
Warrenville, IL 60555

Vice President, Mid-Atlantic Operations  
Support  
Exelon Generation Company, LLC  
200 Exelon Way, KSA 3-N  
Kennett Square, PA 19348

Manager License Renewal  
Exelon Generation Company, LLC  
200 Exelon Way  
Kennett Square, PA 19348

Mr. Oliver D. Kingsley, President  
Exelon Nuclear  
Exelon Generation Company, LLC  
200 Exelon Way, KSA 3-E  
Kennett Square, PA 19348

Public Service Commission of Maryland  
Engineering Division  
Chief Engineer  
6 St. Paul Center  
Baltimore, MD 21202-6806

Chief Operating Officer  
Exelon Generation Company, LLC  
4300 Winfield Road  
Warrenville, IL 60555

BWRVIP-26, BWR Top Guide Inspection and Flaw Evaluation Guidelines, states that the threshold fluence beyond which the components will be significantly affected is  $5 \times 10^{20}$  n/cm<sup>2</sup> (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  $6 \times 10^{21}$  n/cm<sup>2</sup>, which exceeds the  $5 \times 10^{20}$  n/cm<sup>2</sup> 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?