

July 18, 2002

APPLICANT: Exelon Generation Company, LLC

FACILITIES: Peach Bottom Atomic Power Station, Units 2 and 3

SUBJECT: TELECOMMUNICATION WITH EXELON GENERATION COMPANY, LLC (EXELON) TO DISCUSS INFORMATION IN SECTION 2.5 SCOPING AND SCREENING RESULTS: ELECTRICAL AND INSTRUMENTATION AND CONTROL AND 3.6 AGING MANAGEMENT OF ELECTRICAL AND INSTRUMENTATION AND CONTROLS OF THE PEACH BOTTOM ATOMIC POWER STATION (PBAPS) LICENSE RENEWAL APPLICATION

On January 23 and March 12, 2002, the NRC staff (hereafter referred to as "the staff") issued request for additional Information (RAI) pertaining to Section 2.5 Scoping and Screening Results: Electrical and Instrumentation and Controls, and Section 3.6 Aging Management of electrical and Instrumentation and Controls, of the license renewal application (LRA). Exelon (hereafter referred to as "the applicant") responded to this request by letters dated April 29, and May 22, 2002. On June 18 and July 15, 2002, conference calls were conducted between the staff and the applicant to discuss information provided to staff pertaining to Sections 2.5 and 3.6. The information discussed, the applicant's responses, and the follow-up actions are provided below. Participants of the June 18 and July 15, 2002, conference calls are enclosed.

The subject discussed was Station Blackout System (SBO). The staff reviewed the applicant's response to RAI 2.5-1 Station Blackout System, provided in a letter dated March 12, 2002. Specifically, the staff requested a description of the PBAPS recovery path for offsite power from its power sources to the 4 KV emergency buses. Staff also requested a complete and comprehensive table displaying aging management review results, including consideration of operating experience for electrical structures, systems, and components as identified in the LRA. The applicant agreed to supplement the additional information in a letter to the NRC.

The staff discussed the GALL Report, Program XI.E3, "Inaccessible Medium-Voltage Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements." The applicant elected to replace cables suspect to water-treeing. Since the replacement cables were suitable for use in a wet environment, the applicant believes that moisture is not an aging effect requiring management at PBAPS.

The applicant stated that the replacement program was initiated at PBAPS in 1995 and completed in 1999. The replacement cable was ethylene propylene Rubber (EPR) insulated cable, pink in color, with a poly-vinyl-chloride (PVC) jacket, suitable for use in wet or dry locations in conduit, underground duct systems, direct buried, or aerial installations.

Based on review of a paper entitled, "An Assessment of Field Aged 15KV and 35 KV Ethylene Propylene Rubber Insulated Cables," published in the 1994, T&D Conference Proceeding and review of the manufacturers data sheet, the applicant believes that the cables were suitable for use in a wet environment and that moisture is not an aging effect requiring management at PBAPS.

The staff stated that PBAPS responded to a series of non-safety related cable failures due to water trees between 1984 and 1991 with a cable replacement program that was completed in 1999. The staff acknowledges that the replacement cable (EPR insulation) is an improved formulation, which is more resistant to water-treeing. However, the staff does not accept the applicant's position that moisture is not an aging effect requiring aging management for these cables. The staff believes that the discussion and conclusions in the "Assessment of Field Aged 15 KV and 35 KV Ethylene Propylene Rubber Insulated Cables" do not support the applicant's position that moisture is not an aging effect requiring management at PBAPS. For example, this study concludes that aging of the EPR insulated cables can be characterized by an increase in moisture content, growth of water trees, drop in insulation elongation, increase in dissipation factor and decrease in ac and impulse voltage breakdown strength. Further, the data for water trees, elongation, dissipation factor, ac and impulse strength indicate that EPR insulated cable deterioration appears to result from moisture permeating the insulation of the cable. As such, the staff is concerned that the applicant has not provided a sufficient technical justification for not requiring an aging management program and, has not proposed to do what it can do to prevent cables from being exposed to significant moisture, such as inspecting for water collection in cable manholes and conduit, and draining water, as needed. The staff indicated that this issue will be a potential open item in the SER.

A draft of this telephone conversation summary was provided to the applicant to allow them the opportunity to comment on the contents of its input prior to the summary being issued.

*/RA/*

Raj K. Anand, Project Manager  
License Renewal and Environmental Impacts Program  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

Docket Nos. 50-277 and 50-278

Enclosure: As stated

cc w/enclosure: See next page

The staff stated that PBAPS responded to a series of non-safety related cable failures due to water trees between 1984 and 1991 with a cable replacement program that was completed in 1999. The staff acknowledges that the replacement cable (EPR insulation) is an improved formulation, which is more resistant to water-treeing. However, the staff does not accept the applicant's position that moisture is not an aging effect requiring aging management for these cables. The staff believes that the discussion and conclusions in the "Assessment of Field Aged 15 KV and 35 KV Ethylene Propylene Rubber Insulated Cables" do not support the applicant's position that moisture is not an aging effect requiring management at PBAPS. For example, this study concludes that aging of the EPR insulation cables can be characterized by an increase in moisture content, growth of water trees, drop in insulation elongation, increase in dissipation factor and decrease in ac and impulse voltage breakdown strength. Further, the data for water trees, elongation, dissipation factor, ac and impulse strength indicate that EPR insulation cable deterioration appears to result from moisture permeating the insulation of the cable. As such, the staff is concerned that the applicant has not provided a sufficient technical justification for not requiring an aging management program and, has not proposed to do what it can do to prevent cables from being exposed to significant moisture, such as inspecting for water collection in cable manholes and conduit, and draining water, as needed. The staff indicated that this issue will be a potential open item in the SER.

A draft of this telephone conversation summary was provided to the applicant to allow them the opportunity to comment on the contents of its input prior to the summary being issued.

*/RA/*

Raj K. Anand, Project Manager  
License Renewal and Environmental Impacts Program  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

Docket Nos. 50-277 and 50-278

Enclosure: As stated

cc w/enclosure: See next page

**DISTRIBUTION:**

See next page

DOCUMENT NAME: C:\ORPCheckout\FileNET\ML021990516.wpd

OFFICE	PM:RLEP:DRIP	LA:DRIP	DE	SC:RLEP:DRIP
NAME	RAnand	HBerilla	PShemanski	SLee
DATE	07/ 17/02	07/17/02	07/18/02	07/18 /02

OFFICIAL RECORD COPY

**HARD COPY**

RLEP RF

**E-MAIL:**

PUBLIC

J. Johnson

W. Borchardt

D. Matthews

F. Gillespie

RidsNrrDe

R. Barrett

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. Droggitis

T. Kobetz

RLEP Staff

-----

## **TELECOMMUNICATION PARTICIPANTS**

### **NRC STAFF**

Paul Gill  
Paul Shemanski  
James Lazevnick  
Amar Pal  
Raj Anand

### **EXELON**

Erach Patel  
Al Fulvio  
Paul Thomas  
Kevin Muggleston  
Jerry Phillabaum

Enclosure

Peach Bottom Atomic Power Station, Units 2 and 3

cc:

Mr. Edward Cullen  
Vice President & General Counsel  
Exelon Generation Company, LLC  
300 Exelon Way  
Kennett Square, PA 19348

Mr. J. Doering  
Site Vice President  
Peach Bottom Atomic Power Station  
1848 Lay Road  
Delta, PA 17314

Mr. G. Johnston  
Plant Manager  
Peach Bottom Atomic Power Station  
1848 Lay Road  
Delta, PA 17314

Mr. D. A. Henry  
Regulatory Assurance Manager  
Peach Bottom Atomic Power Station  
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  
2400 Broening Highway  
Baltimore, MD 21224

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  
R. D. #1  
Delta, PA 17314

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

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

Peach Bottom Atomic Power Station  
Units 2 and 3

cc:

Mr. Jeffrey A. Benjamin  
Vice President-Licensing  
Exelon Generation Company, LLC  
4300 Winfield Road  
Downers Grove, IL 60515

Mr. Michael P. Gallagher  
Director - Licensing  
Mid-Atlantic Regional Operating Group  
Exelon Generation Company, LLC  
200 Exelon Way, KSA 3-E  
Kennett Square, PA 19348

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

Mr. John Skolds  
Chief Operating Officer  
Exelon Generation Company, LLC  
4300 Winfield Road  
Downers Grove, IL 60515

Mr. William Bohlke  
Senior Vice President, Nuclear Services  
Exelon Generation Company, LLC  
4300 Winfield Road  
Downers Grove, IL 60515

Mr. Jim Meister  
Senior Vice President, Operations Support  
Exelon Generation Company, LLC  
4300 Winfield Road  
Downers Grove, IL 60515

Mr. Frederick W. Polaski  
Manager License Renewal  
Exelon Corporation  
200 Exelon Way  
Kennett Square, PA 19348