UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

July 14, 2009

LICENSEE: Exelon Generation Company, LLC (Exelon)

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

SUBJECT: SUMMARY OF JUNE 16, 2009, MEETING WITH EXELON TO DISCUSS MANAGEMENT OF BORAFLEX DEGRADATION AND THE ASSOCIATED LICENSE AMENDMENT REQUEST UNDER REVIEW TO REVISE THE TECHNICAL SPECIFICATIONS FOR THE SPENT FUEL POOL K-INFINITY VALUE. (TAC NOS. MD9154 AND MD9155)

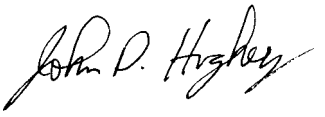
On June 16, 2009, a Category 1 public meeting was held between members of the U.S. Nuclear Regulatory Commission (NRC) staff and representatives of Exelon Generation Company, LLC (Exelon) at NRC Headquarters, One White Flint North, 11555 Rockville Pike, Rockville, Maryland. The purpose of the meeting was to discuss the License Amendment Request (LAR) currently under review to revise the Technical Specifications (TS) related to the Spent Fuel Pool K-infinity value at Peach Bottom Atomic Power Station (PBAPS) (Agencywide Documents Access and Management System Accession No. ML081820302). Exelon also provided an overview to the NRC staff of the plans for managing Boraflex degradation in the PBAPS spent fuel pools (See Enclosure 2). The meeting concluded with a closed portion where proprietary information related to the LAR was discussed.

Exelon representatives presented a history of recent licensing activities undertaken to address Boraflex degradation in the PBAPS spent fuel pools. The licensee's remarks focused on the submittal to the NRC dated June 25, 2008, to revise the TS 4.3.1.1a spent fuel pool K-infinity value. The licensee also described planned future activities that include testing in the first quarter of 2010 to measure the current level of Boraflex degradation and the development of additional calculations to project Boraflex degradation through 2016. The NRC staff encouraged Exelon to focus on solutions that will achieve long term resolution of the Boraflex degradation issues. The Exelon representatives agreed that long term resolution should be their focus.

During the closed portion of the meeting, Exelon representatives and NRC staff discussed proprietary information related to the LAR to revise the spent fuel pool K-infinity value at PBAPS. Boraflex degradation prediction and analyses were discussed. In particular, information was provided regarding the validation of the expected level of irradiation that the Boraflex panels will experience. Information provided in the LAR regarding the use of the average panel boron carbide loss in the criticality analyses was also discussed. Other topics discussed included the determination and application of the statistical tolerances, the validation of criticality codes, and the identification and use of a bounding fuel assembly in the criticality analyses.

No regulatory decisions were made during the meeting. One member of the public, a representative from the Nuclear Energy Institute, was in attendance as well as an official from the Pennsylvania Department of Environmental Protection. A list of the meeting attendees is provided in Enclosure 1.

Please direct any inquiries to me at 301-415-3204 or John.Hughey@nrc.gov.



John D. Hughey
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-277 and 50-278

Enclosures:
1. List of Attendees
2. Exelon Presentation Slides

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LIST OF ATTENDEES

JUNE 16, 2009, MEETING WITH EXELON GENERATION COMPANY, LLC

PEACH BOTTOM BORAFLEX DEGRADATION AND

K-INFINITY LICENSE AMENDMENT REQUEST

EXELON
Pam Cowan
David Helker
Tom Loomis
Jill Fisher
Alex Psaros
Jim Armstrong
Ken Lindquist (Northeast Technology Corp.)
Matt Harris (Northeast Technology Corp.)

NRC
Harold Chernoff
Fred Bower
Greg Cranston
Kent Wood
John Hughey
Gabriel Broche
Jeff Whited
Carleen Sanders
Tony Nakanishi

STATE
Rich Janati, M.S., Chief, Division of Nuclear Safety/PA Department of Environmental Protection

PUBLIC
Everett Redmond, Nuclear Energy Institute
Saeed Savar, PSEG

Exelon Generation

Boraflex Degradation Management at PBAPS

Jill Fisher
Exelon Generation Company, LLC

June 16, 2009

ENCLOSURE 2

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Background

- ✓ Spent fuel racks in both pools contain Boraflex neutron absorber material for criticality control
- ✓ Existing licensing basis k(inf-cold core) ≤ 1.362 (approved 5/93)
- ✓ 10% pool average Boraflex B-10 areal density loss
- ✓ BADGER testing and RACKLIFE analyses performed to monitor condition of Boraflex
  - Condition of Boraflex in individual cells dependent upon numerous factors, including gamma exposure, water chemistry and temperature
  - Unit 2 racks showing slightly faster degradation than Unit 3
- ✓ RACKLIFE analyses indicated 10% threshold would be exceeded in Fall 2008

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LAR Submittal - Summary

- ✓ Submitted License Amendment Request (LAR) in June 2008, requesting change in Tech Spec 4.3.1.1.a
- ✓ Determine in-rack impact of using less reactive bundle
  - Choose reasonable point in time when mitigation strategy can be implemented – May 2012
  - Identify design basis Reactivity Equivalent Beginning of Life (REBOL) assembly that bounds future assembly designs
  - Based upon RACKLIFE projections, determine pool average Boraflex areal density loss
  - Using REBOL, determine reactivity penalty (NETCO criticality analysis)

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LAR Submission - Summary (cont.)

- ✓ Determine Tech Spec impact of using less reactive bundle
  - Determine k(inf-cc) for REBOL assembly (GNF criticality analysis) – k(inf-cc) ≤ 1.318
  - Confirm REBOL design bounds all previous fuel designs either stored or in-use at site (GNF criticality analysis)

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RAIs

- ✓ NRC Request for Additional Information (RAI) issued January 2009
- ✓ RAI significant questions included:
  - Use of RACKLIFE for determination of Boraflex degradation at PBAPS (NETCO criticality analysis)
  - Use of CASMO for in-core and in-rack criticality analyses (NETCO criticality analysis)
  - Use of k(eff) 0.95 for off-normal conditions (NETCO criticality analysis)
  - Numerous questions regarding GNF criticality analysis
- ✓ NRC requested 45 day response

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RAI Responses

- ✓ Exelon removed conservatisms to meet criticality criterion of k(eff) ≤ 0.95 without defining a new REBOL assembly
  - Corrections required to criticality analyses in response to NRC RAIs necessitated using lower peak reactivity bundle
- ✓ Challenge for Exelon was to determine if pool average Boraflex B-10 areal density loss is compatible with chosen REBOL design
- ✓ Using REBOL analyzed, Exelon determined B-10 areal density loss is limit for keeping k(eff) ≤ 0.95
- ✓ Based upon RACKLIFE analysis, NETCO determined this loss corresponded to May 2010

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RAI Responses (cont.)

- ✓ May 2010 date does not allow sufficient time to procure and install new spent fuel racks
- ✓ Exelon determined additional step required (new, lower peak reactivity REBOL) was necessary to meet May 2012
- ✓ Exelon indicated in RAI response that additional LAR with new, lower peak reactivity REBOL would be resubmitted

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RAI Responses (cont.)

- ✓ Responding to questions raised by NRC Staff regarding GNF criticality, Exelon:
  - Reviewed and determined GNF could not support evaluating new REBOL lattice in time to respond to RAIs
  - Determined that inclusion of duplicate, in-pool criticality analyses was confusing
  - Identified that the GNF criticality analysis was not a necessary component of the original LAR
  - The only datum required from GNF was the determination of k(inf-cc) $\leq$ 1.318, which was necessary for the LAR submission
- ✓ In the RAI responses, Exelon indicated that the GNF document has been withdrawn

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Status of Boraflex Management

- ✓ BADGER testing scheduled for both pools in 1Q2010
- ✓ Additional RACKLIFE calculations underway (based upon previous BADGER testing) to project Boraflex degradation through 2016
- ✓ Budgetary estimate and estimated schedule for new, spent fuel racks obtained
- ✓ Alternative methods of criticality control under investigation for PBAPS

No regulatory decisions were made during the meeting. One member of the public, a representative from the Nuclear Energy Institute, was in attendance as well as an official from the Pennsylvania Department of Environmental Protection. A list of the meeting attendees is provided in Enclosure 1.

Please direct any inquiries to me at 301-415-3204 or John.Hughey@nrc.gov.

/ra/

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