

April 25, 2011

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Peach Bottom Atomic Power Station, Units 2 and 3  
Renewed Facility Operating License Nos. DPR-44 and DPR-56  
NRC Docket Nos. 50-277 and 50-278

Subject: Spent Fuel Pool Criticality Documents

- Reference:
- 1) Letter from D. P. Helker (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "Spent Fuel Pool Criticality Documents," dated February 9, 2011
  - 2) Letter from D. P. Helker (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "Spent Fuel Pool Criticality Documents," dated February 23, 2011
  - 3) Letter from D. P. Helker (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "Spent Fuel Pool Criticality Documents," dated April 18, 2011

In the Reference 1 letter, as requested by the U.S. Nuclear Regulatory Commission Senior Resident Inspector at Peach Bottom Atomic Power Station, Exelon Generation Company, LLC (Exelon) submitted several documents for NRC review. We note that there is no outstanding license amendment request associated with this issue.

References 2 and 3 provided additional information as requested.

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In this submittal, attached is a copy of the requested note from procedure RT-R-004-990-2/3, Revision 8 (Boraflex Surveillance Using the Racklife Program).

If any additional information is needed, please contact Tom Loomis at (610) 765-5510.

Respectfully,



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David P. Helker  
Manager, Licensing & Regulatory Affairs  
Exelon Generation Company, LLC

Attachments: 1) RT-R-004-990-2, Revision 8 (Boraflex Surveillance Using the Racklife Program) - Page 12 of 14  
2) RT-R-004-990-3, Revision 8 (Boraflex Surveillance Using the Racklife Program) - Page 13 of 14

cc: USNRC Region I, Regional Administrator  
USNRC Senior Resident Inspector, PBAPS  
USNRC Project Manager, PBAPS  
R. R. Janati, Bureau of Radiation Protection  
S. T. Gray, State of Maryland

**Attachment 1**

**RT-R-004-990-2, Revision 8 (Boraflex Surveillance Using the Racklife Program)**

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**NOTE**

Operability Evaluation 10-007 (IR 1127773) and the associated Technical Evaluation (IR 864431-15, or current revision) are both based on a Boron Carbide loss of 45% relative to the minimum certified B-10 areal density of 0.021 g/cm<sup>2</sup>, which equals 0.01155 g/cm<sup>2</sup>. Therefore, the minimum B-10 areal density of any in-service Boraflex panel must be greater than 0.01155 g/cm<sup>2</sup>.

RACKLIFE utilizes the nominal as-built B-10 areal density (0.0256 g/cm<sup>2</sup>) when calculating percent Boron Carbide (B4C) loss. Therefore, the RACKLIFE Boron Carbide loss acceptance criterion that is equivalent to the Op Eval / Tech Eval criteria is calculated as:

$$\text{RACKLIFE \% B4C Loss} = (1 - (0.01155/0.0256)) = 54.88\%$$

For conservatism, an acceptance criterion of **54.8%** peak panel B4C loss will be used.

- 6.9.6 **VERIFY** that the peak panel B4C loss is less than 54.8%.

R



- 6.9.7. **EXIT** the RACKLIFE program by clicking "File", **THEN** "Exit".

**Attachment 2**

**RT-R-004-990-3, Revision 8 (Boraflex Surveillance Using the Racklife Program)**

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**NOTE**

Operability Evaluation 10-007 (IR 1127773) and the associated Technical Evaluation (IR 864431-15, or current revision) are both based on a Boron Carbide loss of 45% relative to the minimum certified B-10 areal density of 0.021 g/cm<sup>2</sup>, which equals 0.01155 g/cm<sup>2</sup>. Therefore, the minimum B-10 areal density of any in-service Boraflex panel must be greater than 0.01155 g/cm<sup>2</sup>.

RACKLIFE utilizes the nominal as-built B-10 areal density (0.0256 g/cm<sup>2</sup>) when calculating percent Boron Carbide (B4C) loss. Therefore, the RACKLIFE Boron Carbide loss acceptance criterion that is equivalent to the Op Eval / Tech Eval criteria is calculated as:

$$\text{RACKLIFE \% B4C Loss} = (1 - (0.01155/0.0256)) = 54.88\%$$

For conservatism, an acceptance criterion of **54.8%** peak panel B4C loss will be used.

6.9.6 **VERIFY** that the peak panel B4C loss is less than 54.8%.

R



6.9.7. **EXIT** the RACKLIFE program by clicking "File", **THEN** "Exit".

**7.0 PROCEDURE COMPLETION**

Initial

7.1 Records Completion

7.1.1 **COMPLETE** Section 2 of Cover Page (and Section 3 if applicable).

**8.0 REFERENCES**

8.1 Governing

8.1.1 NRC Generic Letter 96-04 "Boraflex Degradation Is Spent Fuel Pool Storage Racks"

8.1.2 Report NET-092-04 "RACKLIFE Users Manual", Northeast Technologies Corp., March 1996

8.1.3 Report AEAT/R/NS/0084 Issue 1 "Criticality Assessment of the Peach Bottom Spent Fuel Ponds with Degraded Broaflex Panels", AEA Technology Co., July 2000