



PECO ENERGY

PECO Energy Company
Nuclear Group Headquarters
965 Chesterbrook Boulevard
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April 5, 1994

Docket Nos. 50-277
50-278
License Nos. DPR-44
DPR-56

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Subject: Peach Bottom Atomic Power Station, Units 2 and 3
Response to Request for Additional Information
Regarding Power Rerate Request dated March 9, 1994

Dear Sir:

Attached is our response to your Request for Additional Information (RAI) dated March 9, 1994 regarding our planned implementation of the Power Rerate Program at Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3. The Power Rerate Program was the subject of Technical Specification Change Request (TSCR) 93-12 which was forwarded to you by letter dated June 23, 1993. As indicated in your letter, this is the first of several RAIs regarding this issue. In order to aid in our tracking of these RAIs, we will be numbering the responses in sequential order. Therefore, this response will be designated as RAI-1.

If you have any questions, please contact us.

Very truly yours,

G. A. Hunger, Jr., Director
Licensing

cc: T. T. Martin, Administrator, Region I, USNRC
W. L. Schmidt, USNRC Senior Resident Inspector, PBAPS

File
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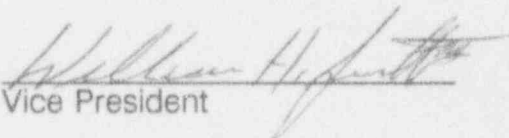
COMMONWEALTH OF PENNSYLVANIA :

: SS.

COUNTY OF CHESTER :

W. H. Smith, III, being first duly sworn, deposes and says:

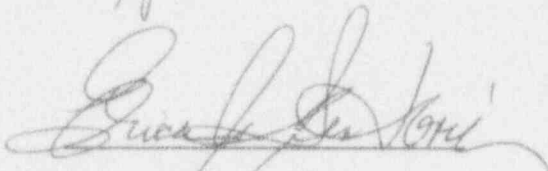
That he is Vice President of PECO Energy Company; the Applicant herein; that he has read the Enclosed Response to the NRC Request for Additional Information dated on March 9, 1994, concerning Technical Specifications Change Request (Number 93-12) for Peach Bottom Facility Operating Licenses DPR-44 and DPR-56, and knows the contents thereof; and that the statements and matters set forth therein are true and correct to the best of his knowledge, information and belief.


Vice President

Subscribed and sworn to

before me this ^{5th} day

of April 1994.



Notary Public

Notarial Seal
Erica A. Santon, Notary Public
Tredyffrin Twp., Chester County
My Commission Expires July 10, 1995

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION (RAI-1)
PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3

Question 1: Main control room atmosphere control system:

- a. The staff recognizes that iodine loading in the makeup air filters and recirculation air filters will increase marginally (approximately five percent) due to the proposed power uprate. Show that there is enough margin between the calculated value of filter loading and the RG 1.52 acceptance criterion (no more than 2.5 milligrams of iodine (radioactive and stable) per gram of activated carbon) to accommodate the slight increase in iodine loading that can be expected from the five percent increase in the proposed power uprate.
- b. In the UFSAR for PBAPS, the expected dose rates during the DBA would be 7.5 mRem whole body and 250 mRem thyroid exposure. While the staff recognized these doses are well below the limits defined in GDC 19, to facilitate a review of these limits and their response to the proposed power uprate, provide the basis and assumptions, and the new calculated exposures for the new power level.

Response:

- 1a. The iodine loading on the Control Room filter for accident releases for the rerated plant was evaluated. Filter loading based on 102% of rerated power (i.e., 102% of 3458 MWt) was calculated to be 2.46×10^{-2} mgI/gC, which is well below the limit of 2.5 mgI/gC given in Regulatory Guide 1.52.
- 1b. Control Room habitability for Peach Bottom for the rerated plant was evaluated using the rerated accident source term along with bases and assumptions described in Section 14.9 of the PBAPS, Units 2 and 3 Updated Final Safety Analysis Report (UFSAR). The resulting Control Room doses are presented in Tables 9-3 through 9-6 of the Peach Bottom Atomic Power Station, Units 2 and 3 power rerate licensing report, NEDC-32183P, "Power Rerate Safety Analysis Report for Peach Bottom 2 & 3", dated May 1993. All of the doses remain below the dose limits defined in 10CFR50, Appendix A, GDC 19.

Question 2: Ultimate Heat Sink

Provide a determination on the quantity of water in the ultimate heat sink (UHS) (the Conowingo Pond). Is there adequate level in the UHS to provide a sufficient quantity of water to meet the anticipated demand following a postulated LOCA?

Response:

The primary Ultimate Heat Sink (UHS) for PBAPS, Units 2 and 3 is the Conowingo Pond, which is the Susquehanna River from upstream of the Conowingo Dam to downstream of the Holtwood Dam. The Conowingo Pond is approximately 14.5 miles in length and contains approximately 80 billion gallons of water. Minimum natural river flow rate through the pond is approximately 37.7 million gallons per hour. The PBAPS UFSAR, Section 1.6.1.1.8, has additional information on the Conowingo Pond.

Due to this large volume of water, no measurable change in the pond water level would occur as a result of the power rerate increase in heat rejection from a LOCA.

As described in the PBAPS UFSAR, Section 10.24, the Emergency Cooling Tower (ECT) was installed to provide emergency cooling in the unlikely event of the unavailability of water from the Conowingo Pond, due to flooding or low water level due to dam failure. The volume of ECT water required to provide a seven day supply of cooling water to High Pressure Service Water (HPSW) and Emergency Service Water (ESW) without makeup, was evaluated based on the HPSW and ESW rerated heat loads. Prior to rerate, 3.15 million gallons of water were required to provide a seven day supply of cooling water to HPSW and ESW without makeup. Power rerate results in the seven day cooling water requirement increasing to 3.37 million gallons. This value is 94% of the 3.6 million gallons of water available (minimum) in the ECT reservoir. Thus, the reservoir capacity at the current Technical Specification minimum water level is adequate to provide a seven day supply of cooling water to both HPSW and ESW without makeup, as required by the Bases to Technical Specification.

Question 3: Station Blackout (SBO)

Provide an evaluation of the capability of emergency diesel generator, Class 1E battery, and proposed SBO alternate AC source to maintain safe shutdown following loss of power for uprated power conditions.

Response:

At PBAPS, Units 2 and 3, a station black-out (SBO) is defined as a loss of the preferred offsite power supplies and loss of four station emergency diesel generators. Operation at the rerate level does not increase electrical loads beyond the levels currently evaluated for a SBO. Therefore, the capability of the Class 1E battery and proposed alternate AC source is acceptable to maintain safe shutdown following loss of power for rerated power conditions. Refer to Section 9.3.4 References 4 and 5 of the General Electric power rerate safety analysis (NEDC-32183P).

Question 4: Mechanical Component Design Qualification (10.2.2)

It was identified in the power uprate submittal that the mechanical design of equipment/components (pumps, heat exchangers, etc.) in certain BOP systems are affected by operation at the uprated power level due to slightly increased temperatures, pressure, and in some cases flow. Identify which components these are and how the environmental qualification of this equipment will be resolved for the uprated power level.

Response:

To assess mechanical/component design adequacy, all of the equipment in the balance-of-plant (BOP) Systems which were impacted by rerate were reviewed to determine their acceptability for operation at power rerate conditions. Systems primarily affected were the steam cycle systems such as main steam, extraction steam, feedwater, and condensate. In all cases, the as-designed and equipment capability bounds the marginal increases in system pressure, temperature, and flow, and all associated loads due to rerate. This equipment is not subject to the environmental qualification requirements of 10 CFR 50.49.