

10CFR50.90



PECO ENERGY

PECO Energy Company
Nuclear Group Headquarters
965 Chesterbrook Boulevard
Wayne, PA 19087-5691

July 6, 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 Program (RAI-5)

Dear Sir:

Attached is our response to your request for additional information (RAI) discussed in our telephone conversations on June 8, 1994 and June 29, 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 Specifications Change Request (TSCR) No. 93-12 which was forwarded to you by letter dated June 23, 1993.

If you have any questions, please contact us.

Very truly yours,

G. A. Hunger, Jr.

G. A. Hunger, Jr., Director
Licensing

cc: T. T. Martin, Administrator, Region I, USNRC
W. L. Schmidt, USNRC Senior Resident Inspector, PBAPS
R. R. Janati, Commonwealth of Pennsylvania

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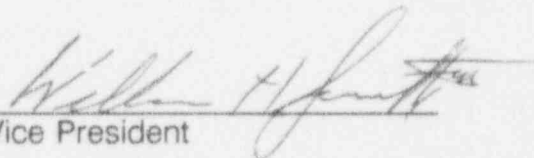
COMMONWEALTH OF PENNSYLVANIA :

: 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 request for additional information 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 *6th* day
of *July* 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-5)
PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3**

Question 1

"Does the Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3 High Pressure Coolant Injection (HPCI) System utilize the guidance of SIL 480?"

Response

SIL 480 has been implemented at PBAPS, Units 2 and 3 for the HPCI System.

Question 2

"Why is the guidance of SIL 377 not being utilized for the Reactor Core Isolation Cooling (RCIC) System?"

Response

The PBAPS RCIC Turbine is a Terry Turbine, GS-1 model. This model has less inlet nozzles than later RCIC Turbine models (GS-2). As a result, the effects of start-ups are less severe. Review of actual PBAPS RCIC start-up transient data shows that there is sufficient margin between the initial speed spike and the overspeed trip setpoint. Following implementation of power rerate at PBAPS, Units 2 and 3, a test will be performed during the start-up of the unit to confirm this margin.

Question 3

"Section 2.4 ('Stability') identifies Interim Corrective Actions (ICAs) recommended by General Electric and the Boiling Water Reactors' Owners Group (BWROG). Clarify what is meant by the statement 'Interim Corrective Actions.'"

Response

The potential for BWR core thermal-hydraulic instability is documented in GE Service Information Letter (SIL) 380, Revision 1. GE SIL 380, Revision 1, recommendations have been included in the PBAPS, Units 2 and 3 operating procedures. In addition, GE and the BWROG have developed Interim Corrective Actions (ICAs) to further address core stability concerns. NRC Bulletin No. 88-07, Supplement 1, "Power Oscillations in Boiling Water Reactors (BWRs)," has endorsed these ICAs which have been implemented at PBAPS, Units 2 and 3. The ICAs include "operating exclusion regions" on the PBAPS power/flow map. Inadvertent entry into these regions requires

immediate action for exiting the region. The exclusion regions are bounded by the natural circulation line, the minimum recirculation pump speed line, and the 45% of rated core flow line. These flow boundaries are essentially unaffected by power rerate since only the power axis of the power/flow map is rescaled by power rerate, and rated core flow is not changed. The exclusion regions are also bounded by the 80% rod line, the 100% rod line, and the maximum flow control rod line. The maximum flow control rod line is unaffected by power rerate; however, the 80% and 100% rod lines are affected. To ensure that the ICAs provide the same level of protection at power rerate conditions as they do currently, the 80% and 100% rod lines have been redefined such that the absolute power (Mwt) values of these boundaries are unchanged (i.e., 80% becomes 76.2% [80/1.05] and 100% becomes 95.2% [100/1.05]). Thus, the power rerate ICA exclusion region boundaries provide the same level of protection against potential stability events as the current boundaries.

Question 4

"Was the recirculating system reviewed for vibrations resulting from power rerate? Include a statement that we meet the ASME code."

Response

A detailed vibration analysis was performed for the reactor recirculation system piping for rerate conditions. The impact of rerate resulted in a negligible effect.

A qualitative assessment of the rerate vibration conditions for the recirculation pump shaft was performed. The increased speed of the recirculation pump will not lead to a significant increase in shaft mechanical stresses.

A qualitative analysis of the impact of rerate conditions on the recirculation pump and pump motor vibration was performed by General Electric. It was concluded that rerate conditions would not impact pump or pump motor vibration levels.

The recirculation pump, pump motor, and piping were determined to remain within their ASME Code allowable values for stresses.

Question 5

"Was the upper bound peak cladding temperature (PCT) calculated for a Loss-of-Coolant (LOCA) at Maximum Extended Load Line Limit (MELLL) conditions? Was the upper bound PCT below the specified limits?"

Response

No specific calculation of the upper bound PCT was performed for the MELLL domain. However, Section 5.3.2 of General Electric (GE) document NEDC-32163P, "Peach Bottom Atomic Power Station Units 2 and 3 SAFER/GESTR-LOCA Loss-of-Coolant Accident Analysis," dated January, 1993, provides the results of a sensitivity calculation which showed that the change in PCT between rated and MELLL core flows was 35°F for pre-GE 11 fuels under 10 CFR 50, Appendix K assumptions. The change in PCT calculated under nominal assumptions will be bounded by the change in 10 CFR 50, Appendix K PCT (for all fuel types). NEDC-32163P states (Table 6-1) that the upper bound PCT is less than 1400°F for all fuel types, which is significantly less than the 1600°F limit for the upper bound PCT. Therefore, the PCT increase due to MELLL (<35°F) will not result in an upper bound PCT in excess of 1600°F.