Station Support Department

10 CFR 50.90

PECO ENERGY

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

June 2, 1995

Docket No. 50-277
50-278
License No. DPR-44
DPR-56

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

SUBJECT: Peach Bottom Atomic Power Station, Units 2 and 3
Facility Operating License Change Request 94-07,
Supplement 1

REFERENCE: Letter from G. A. Hunger, Jr. (PECO Energy) to NRC dated January 13, 1995

Dear Sir:

In the referenced letter, PECO Energy Company submitted License Change Request (LCR) 94-07, in accordance with 10 CFR 50.90, requesting changes to Appendix A of the Peach Bottom Atomic Power Station (PBAPS) Facility Operating Licenses.

The proposed changes concern a revision to the frequency of calibration for the Local Power Range Monitor (LPRM) signals from every 6 weeks to every 2000 Megawatt Days per Standard Ton (MWD/ST).

During a May 16, 1995 meeting, PECO Energy and GE Nuclear Energy provided the NRC staff with supplemental information regarding LCR 94-07. At the conclusion of the meeting, the staff requested that PECO Energy formally submit the information provided. Accordingly, this letter supplements our earlier submittal by providing the requested information (see Attachment). This information was prepared by GE Nuclear in support of the May 16, 1995 meeting.

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If you have any questions concerning this submittal, please contact us.

Sincerely,

G. A. Hunger, Jr.

G. A. Hunger, Jr.,
Director - Licensing

Enclosures: Affidavit, Attachment

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

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 attached License Change Request (LCR 94-07, Supplement 1) for changes to the Peach Bottom Facility Operating License DPR-44, 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.

William H Smith III
Vice President

Subscribed and sworn to
before me this 6th day
of June 1995.

Erica A. Santori
Notary Public

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

ATTACHMENT

Supplemental Information to LCR 94-07 for
Peach Bottom Atomic Power Station, Units 2 and 3

"LPRM Signal Calibration Frequency"

Peach Bottom 2 & 3 Technical Specification Change
LPRM Calibration Change to 2000 MWD/ST
Supplemental Information

Procedure for Determining Nodal RMS Uncertainty

Start from cases where power distribution was determined immediately after TIPs were run. Power distribution is based on the TIP flux data rather than LPRM flux data. Five cases were utilized:

DATE	EXPOSURE (OR MWD/T)				
	Core	Cycle	Sequence	Change	EFPH*
07-23-91	11545.7	1016.4	A2		
08-03-91	11783.5	1254.2	A2	237.8	265
09-02-91	12422.9	1893.6	A2	877.2	976
10-13-91**	2768		A2=>A1		
10-18-91	13413.2	2883.9	A1	1867.5	2078
11-25-91	14233.2	3707.9	A1	2687.5	2991

* Effective Full Power Hours
** Information only

LPRM calibrations were performed prior to the cases of 9-02-91, 10-18-91 and 11-25-91. The calibration current data were obtained from Hatch 2 and LPRM reading consistency for the LPRM monitoring cases was maintained by nulling out the LPRM amplifier changes.

Calibration currents are those currents that the LPRM detectors generate when the meter should read a fixed valued (typically 100 meter units). As an individual LPRM looses sensitivity, the calibration current decreases. This decrease is compensated in calculations based on an expected rate of decrease of the detector sensitivity. The decrease also is corrected physically by adjusting individual LPRM gain amplifiers to yield the correct LPRM meter readings.

For this analysis, the effect of the physical calibration of the LPRM gain amplifiers were reversed relative to the 7-23-91 LPRM readings for input to downstream LPRM monitoring cases as follows:

$$PCLPRM = PCLPRM_0 * CALCUR/CALCUR(7\text{-}23)$$

where: PCLPRM	=	LPRM Reading Input
$PCLPRM_0$	=	PCLPRM from Adaptive Case
CALCUR(7-23)	=	Chamber Calibration current on 7-23
CALCUR	=	Current Chamber Calibration current

The site cases after TIPs were rerun using steady state xenon and the monitoring programs' calculated decay of the LPRM sensitivity. These cases were used as the basis for determining the additional uncertainty caused by running in the LPRM mode for up to 2991 EFPH without running TIPs and calibrating the LPRMs.

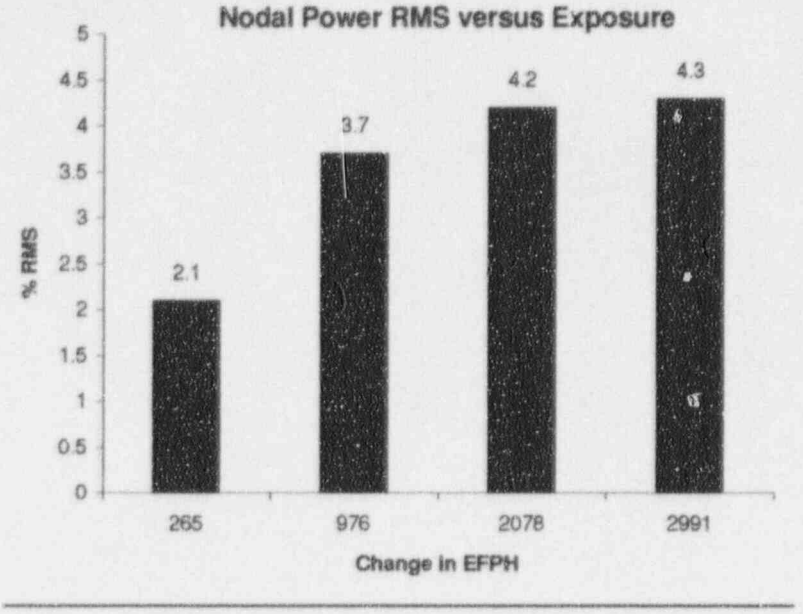
Starting from the 7-23-91 case after TIP case, LPRM monitoring cases were run as follows:

1. Run an LPRM case burning from 7-23-91 to 8-03-91 using the live plant data from the 8-03-91 case. No PCLPRM correction was required.

2. Run an LPRM case restarting from the above 8-03-91 case burning to the 9-02-91 case and using the live data from the 9-02-91 case. Correct the PCLPRM inputs as discussed earlier.

3. Repeat this process for the 10-18-91 and 11-25-91 cases.

Compute the standard deviations of the nodal powers comparing the LPRM and corresponding TIP case results.



Combining the 4.2% additional uncertainty with the other components contributing to nodal uncertainty (Power calculations, LPRM available, TIP available for calibration, use of thermal TIP), the total nodal uncertainty is well bellow the value assumed in the GETAB Analysis. For gamma TIP plants, the total uncertainty is even less.

Applicability to Other Cores

Additional exposure of LPRM detectors - and associated change in LPRM readings - create perturbations in nodal power calculations (an additional uncertainty) about a base calculation. That base calculation which accounts for different core loadings has its own associated uncertainty that is uneffected by the proposed change in LPRM calibration frequency. As similar LPRMs at different sites behave in the same manner with additional flux regardless of the source of that flux, the perturbations and additional uncertainty will be similar.

This change is dependent on uncertainties in the nodal power and additional LPRM exposure being based upon the same nuclear methods. Also, LPRM detectors are assumed to behave in a predictable manner with exposure.

The study's use of a conventional core is bounding over control cell core (CCC) configuration as sequence exchanges in conventional cores would introduce larger flux uncertainty than deep-shallow swaps in control rod positions in CCC.