Station Support Department

10 CFR 50.90

PECO NUCLEAR
A Unit of PECO Energy

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

October 30, 1996

Docket No. 50-278

License No. DPR-56

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

Subject: Peach Bottom Atomic Power Station, Unit 3
License Change Application ECR 96-02609

Dear Sir:

PECO Energy Company (PECO Energy) hereby submits License Change Application ECR 96-02609, in accordance with 10 CFR 50.90, requesting a change to the Peach Bottom Atomic Power Station (PBAPS), Unit 3 Facility Operating License. This proposed change will revise TS Section 2.0, "Safety Limits." This Section will be revised to incorporate revised Safety Limit Minimum Critical Power Ratios (SLMCPRs) due to the determination by General Electric Nuclear Energy (GENE) that the previous calculation of the SLMCPRs is non-conservative. This change is similar to License Change Request No. 96-01 for PBAPS, Unit 2, which was approved by the U. S. Nuclear Regulatory Commission in Amendment No. 217 dated September 27, 1996.

Information supporting this request is contained in Attachment 1 to this letter, and the marked up page showing the proposed changes to the PBAPS, Unit 3 TS is contained in Attachment 2. Attachment 3 (letter from R. M. Butrovich (GENE) to H. J. Diamond (PECO Energy), "Peach Bottom Unit 3 Safety Limit MCPR Revision," dated July 7, 1996) specifies the new SLMCPRs for PBAPS, Unit 3.

We request that, if approved, the amendment to the PBAPS, Unit 3 TS become effective within 30 days of issuance.

If you have any questions, please do not hesitate to contact us.

Very truly yours,

G. A. Hunger, Jr.

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

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Enclosures: Affidavit, Attachment 1, Attachment 2, Attachment 3

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

060082

COMMONWEALTH OF PENNSYLVANIA :

: ss.

COUNTY OF CHESTER :

D. B. Fetters, 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 Application ECR 96-02609, for Peach Bottom Facility Operating License 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 30th day
of October 1996.

Notary Public

ATTACHMENT 1

PEACH BOTTOM ATOMIC POWER STATION
UNIT 3

Docket No. 50-278

License No. DPR-56

LICENSE CHANGE APPLICATION
ECR 96-02609

"Revision of SLMCPRs"

Supporting Information - 3 Pages

Introduction

PECO Energy Company, Licensee under Facility Operating License DPR-56 for the Peach Bottom Atomic Power Station (PBAPS), Unit 3, requests that the Technical Specifications (TS) contained in Appendix A to the Operating License be amended to revise TS Section 2.1 to reflect changes in the Safety Limit Minimum Critical Power Ratios (SLMCPRs). The TS page showing the proposed changes is contained in Attachment 2. Attachment 3 (Letter from R. M. Butrovich (GENE) to H. J. Diamond (PECO Energy), "Peach Bottom Unit 3 Safety Limit MCPR Revision," dated July 7, 1996) specifies the new SLMCPRs for PBAPS, Unit 3. This License Change Application provides a discussion and description of the proposed TS changes, a safety assessment of the proposed TS changes, information supporting a finding of No Significant Hazards Consideration and information supporting an Environmental Assessment.

Discussion and Description of the Proposed Change

The proposed change involves revising the SLMCPRs contained in Section 2.1 of the PBAPS, Unit 3 TS. PECO Energy was advised by General Electric Nuclear Energy (GENE) that the methodology used by GENE to calculate the generic SLMCPR may not always yield the most conservative result and that GENE has performed a plant unique evaluation for PBAPS, Unit 3, Cycle 11. As a result of this plant unique evaluation, the SLMCPR for PBAPS, Unit 3, Cycle 11, is 1.08. The single loop operation SLMCPR is 1.09 and is determined on a generic approach. A 0.01 penalty for single loop operation is applied to the cycle-specific SLMCPR value of 1.08. The 0.01 penalty has been confirmed to be conservative based on a plant specific analysis by GENE as documented in GENE's Design Record File. The calculation of the cycle-specific SLMCPR value for PBAPS, Unit 3, Cycle 11, is based upon USNRC-approved methods ("General Electric Standard Application for Reactor Fuel," NEDE-24011-P-A-11, and U.S. Supplement, NEDE-24011-P-A-11-US, November 17, 1995) and interim (reconfirmation) implementing procedures. Revision 11 of the aforementioned document, "GESTAR II", requires that the SLMCPR be reconfirmed each cycle. This reconfirmation was performed using the interim (reconfirmation) implementing procedures which the USNRC staff discussed with GENE during their meetings on April 17, 1996 and May 6, 1996 through May 10, 1996. These reconfirmation procedures utilize cycle-specific parameters which include: 1) the actual core loading, 2) conservative variations of projected control blade patterns, 3) the actual bundle parameters (e.g., local peaking), and 4) the full cycle exposure range. Specifically, the implementing procedures involve reconfirmation of the applicability of the generic SLMCPR to PBAPS, Unit 3, Cycle 11. This reconfirmation was performed by incorporating cycle-specific parameters into the analysis described in Section 1.1.5 of GESTAR II, Revision 11, and indicates that the generic SLMCPR will not bound PBAPS, Unit 3, Cycle 11; therefore, the resulting cycle-specific SLMCPR will be applied to PBAPS, Unit 3, Cycle 11. Instead of using a typical, large, high-power-density plant and bounding equilibrium core, the actual projected PBAPS, Unit 3, Cycle 11 core loading was used and the analysis was performed at the maximum licensed thermal power for PBAPS, Unit 3. Multiple exposure points in the projected Cycle 11 were checked to obtain the limiting case. The core radial power distribution was manipulated by adjusting control rods to maximize the number of bundles near thermal limits using only symmetric control rod patterns. The dependency of the local power distributions on specific bundle design characteristics is explicitly addressed by using actual bundle and pin-by-pin R-factors. The number of rods anticipated to be susceptible to transition boiling is uniquely defined by the core loading and local power distributions and from those used in previous generic analyses. The SLMCPR is selected such that 99.9% of the rods in the core are expected to avoid transition boiling.

The methodology for determining the conservative variations of projected control blade patterns used to calculate the SLMCPR for PBAPS, Unit 3 was provided in our response to the request for additional information regarding the revision to License Change Request No. 96-01 for PBAPS, Unit 2, dated September 27, 1996 (letter from G. A. Hunger, Jr. (PECO Energy) to USNRC). Additionally, the methodology for determining the differences between the cycle-specific SLMCPR and generic SLMCPR is contained in the September 27, 1996 letter.

Therefore, we propose that PBAPS, Unit 3 TS Section 2.1 be revised to reflect the change in the SLMCPRs.

Safety Assessment

The proposed TS change will revise TS Section 2.1 to reflect the changes in the SLMCPRs due to the plant specific evaluation performed by GENE for PBAPS, Unit 3. The new SLMCPRs are calculated using USNRC-approved methods ("General Electric Standard Application for Reactor Fuel," NEDE-24011-P-A-11, and U.S. Supplement, NEDE-24011-P-A-11-US, November 17, 1995) and interim (reconfirmation) implementing procedures as discussed between the USNRC and GENE during their meetings on April 17, 1996, and May 6, 1996 through May 10, 1996. The SLMCPRs are set high enough to ensure that greater than 99.9% of all fuel rods in the core avoid transition boiling if the limit is not violated. The SLMCPRs incorporate margin for uncertainty in the core operating state and for uncertainties which are dependent on fuel type, including fuel bundle nuclear characteristics, critical power correlation, and manufacturing tolerances. These interim (reconfirmation) procedures include cycle-specific parameters which include: 1) the actual core loading, 2) conservative variations of projected control blade patterns, 3) the actual bundle parameters (e.g., local peaking), and 4) the full cycle exposure range. The new SLMCPRs at PBAPS, Unit 3 Cycle 11 are 1.08 and 1.09 (single loop operation).

Information Supporting a Finding of No Significant Hazards Consideration

We have concluded that the proposed change to the PBAPS, Unit 3 TS, which will revise TS Section 2.1 to change the SLMCPRs, does not involve a Significant Hazards Consideration. In support of this determination, an evaluation of each of the three (3) standards set forth in 10 CFR 50.92 is provided below.

1. The proposed TS changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

   The derivation of the cycle-specific SLMCPRs for incorporation into the TS, and its use to determine cycle-specific thermal limits, have been performed using USNRC-approved methods as discussed in "General Electric Standard Application for Reactor Fuel," NEDE-24011-P-A-11, and U.S. Supplement, NEDE-24011-P-A-11-US, November 17, 1995 and interim (reconfirmation) implementing procedures. This change in SLMCPRs cannot increase the probability or severity of an accident.

   The basis of the SLMCPR calculation is to ensure that greater than 99.9% of all fuel rods in the core avoid transition boiling if the limit is not violated. The new SLMCPRs preserve the existing margin to transition boiling and fuel damage in the event of a postulated accident. The fuel licensing acceptance criteria for the SLMCPR calculation apply to PBAPS, Unit 3, Cycle 11 in the same manner as they have applied previously. The probability of fuel damage is not increased. Therefore, the proposed TS changes do not involve an increase in the probability or consequences of an accident previously evaluated.

2. The proposed TS changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

   The SLMCPR is a TS numerical value, designed to ensure that transition boiling does not occur in 99.9% of all fuel rods in the core during the limiting postulated accident. It cannot create the possibility of any new type of accident. The new SLMCPRs are calculated using USNRC-approved methods ("General Electric Standard Application for Reactor Fuel," NEDE-24011-P-A-11, and U.S. Supplement, NEDE-24011-P-A-11-US, November 17, 1995) and interim (reconfirmation) implementing procedures.

Therefore, the proposed TS changes do not create the possibility of a new or different kind of accident, from any accident previously evaluated.

3. The proposed TS changes do not involve a significant reduction in a margin of safety.

The margin of safety as defined in the TS Bases will remain the same. The new SLMCPRs are calculated using USNRC-approved methods ("General Electric Standard Application for Reactor Fuel," NEDE-24011-P-A-11, and U.S. Supplement, NEDE-24011-P-A-11-US, November 17, 1995) and interim (reconfirmation) implementing procedures which are in accordance with the current fuel licensing criteria. The SLMCPRs ensure that greater than 99.9% of all fuel rods in the core will avoid transition boiling if the limit is not violated, thereby preserving the fuel cladding integrity. Therefore, the proposed TS changes do not involve a reduction in a margin of safety.

Information Supporting an Environmental Assessment

An environmental assessment is not required for the proposed changes since the proposed changes conform to the criteria for "actions eligible for categorical exclusion" as specified in 10 CFR 51.22(c)(9). The proposed changes will have no impact on the environment. The proposed changes do not involve a significant hazards consideration as discussed in the preceding section. The proposed changes do not involve a significant change in the types or significant increase in the amounts of any effluents that may be released offsite. In addition, the proposed changes do not involve a significant increase in individual or cumulative occupational radiation exposure.

Conclusion

The Plant Operations Review Committee and the Nuclear Review Board have reviewed this proposed change to the PBAPS, Unit 3 TS and have concluded that it does not involve an unreviewed safety question, and will not endanger the health and safety of the public.