

August 18, 1993

Docket No. 50-278

Mr. George A. Hunger, Jr.
Director-Licensing, MC 52A-5
Philadelphia Electric Company
Nuclear Group Headquarters
Correspondence Control Desk
P.O. Box No. 195
Wayne, Pennsylvania 19087-0195

Dear Mr. Hunger:

SUBJECT: MINIMUM CRITICAL POWER RATIO SAFETY LIMITS, PEACH BOTTOM ATOMIC
POWER STATION, UNIT NO. 3 (TAC NO. M85758)

The Commission has issued the enclosed Amendment No. 183 To Facility
Operating License No. DPR-56 for the Peach Bottom Atomic Power Station, Unit
No. 3. This amendment consists of changes to the Technical Specifications in
response to your application dated January 28, 1993.

This amendment revises the safety limit minimum critical power ratio for two
recirculation-loop and single recirculation-loop operation to 1.07 and 1.08,
respectively. The change was requested to accommodate installation and use of
a new fuel type, GE-11 fuel, during Unit 3, Cycle 10 operation. You are
requested to notify the staff when you have implemented the provisions of this
amendment.

A copy of the Safety Evaluation is also enclosed. Notice of Issuance will be
included in the Commission's bi-Weekly Federal Register Notice.

Sincerely,

/s/

Joseph W. Shea, Project Manager
Project Directorate I-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

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PDR ADOCK 05000278
P PDR

Enclosures:

1. Amendment No. 183 to
License No. DPR-56
2. Safety Evaluation

cc w/enclosures:
See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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Sincerely,

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Joseph W. Shea, Project Manager
Project Directorate I-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 183 to
License No. DPR-56
2. Safety Evaluation

cc w/enclosures:
See next page

Mr. George A. Hunger, Jr.
Philadelphia Electric Company

Peach Bottom Atomic Power Station,
Units 2 and 3

cc:

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Peach Bottom Atomic Power Station
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Peach Bottom Township
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Delta, Pennsylvania 17314

Public Service Commission of Maryland
Engineering Division
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Mr. Richard McLean
Power Plant and Environmental
Review Division
Department of Natural Resources
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Annapolis, Maryland 21401



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

PHILADELPHIA ELECTRIC COMPANY
PUBLIC SERVICE ELECTRIC AND GAS COMPANY
DELMARVA POWER AND LIGHT COMPANY
ATLANTIC CITY ELECTRIC COMPANY

DOCKET NO. 50-278

PEACH BOTTOM ATOMIC POWER STATION, UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 183
License No. DPR-56

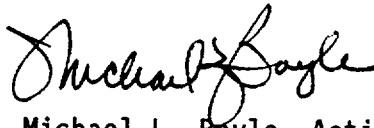
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Philadelphia Electric Company, et. al. (the licensee) dated January 28, 1993, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I.
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-56 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 183, are hereby incorporated in the license. PECO shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read "Michael L. Boyle". The signature is fluid and cursive, with the first name "Michael" being more prominent than the last name "Boyle".

Michael L. Boyle, Acting Director
Project Directorate I-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: August 18, 1993

ATTACHMENT TO LICENSE AMENDMENT NO.183

FACILITY OPERATING LICENSE NO. DPR-56

DOCKET NO. 50-278

Replace the following page of the Appendix A Technical Specifications with the enclosed page. The revised areas are indicated by marginal lines.

Remove

9

Insert

9

PBAPS

SAFETY LIMIT1.1 FUEL CLADDING INTEGRITYApplicability:

The Safety Limits established to preserve the fuel cladding integrity apply to those variables which monitor the fuel thermal behavior.

Objectives:

The objective of the Safety Limits is to establish limits which assure the integrity of the fuel cladding.

Specification:

A. Reactor Pressure \geq 800 psia and Core Flow \geq 10% of Rated

The existence of a minimum critical power ratio (MCPR) less than 1.07 for two recirculation loop operation, or 1.08 for single loop operation, shall constitute violation of the fuel cladding integrity safety limit.

To ensure that this safety limit is not exceeded, neutron flux shall not be above the scram setting established in specification 2.1.A for longer than 1.15 seconds as indicated by the process computer. When the process computer is out of service this safety limit shall be assumed to be exceeded if the neutron flux exceeds its scram setting and a control rod scram does not occur.

LIMITING SAFETY SYSTEM SETTING2.1 FUEL CLADDING INTEGRITYApplicability:

The Limiting Safety System Settings apply to trip settings of the instruments and devices which are provided to prevent the fuel cladding integrity Safety Limits from being exceeded.

Objectives:

The objective of the Limiting Safety System Settings is to define the level of the process variables at which automatic protective action is initiated to prevent the fuel cladding integrity Safety Limits from being exceeded.

Specification:

The limiting safety system settings shall be as specified below:

A. Neutron Flux Scram1. APRM Flux Scram Trip Setting (Run Mode)

When the Mode Switch is in the RUN position, the APRM flux scram trip setting shall be:

$$S \leq 0.58W + 62\% - 0.58\Delta W$$

where:

S = Setting in percent of rated thermal power (3293 MWt)

W = Loop recirculating flow rate in percent of design. W is 100 for core flow of 102.5 million lb/hr or greater.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 183 TO FACILITY OPERATING LICENSE NO. DPR-56

PHILADELPHIA ELECTRIC COMPANY
PUBLIC SERVICE ELECTRIC AND GAS COMPANY
DELMARVA POWER AND LIGHT COMPANY
ATLANTIC CITY ELECTRIC COMPANY

PEACH BOTTOM ATOMIC POWER STATION, UNIT NO. 3

DOCKET NO. 50-278

1.0 INTRODUCTION

By letter dated January 28, 1993, the Philadelphia Electric Company, Public Service Electric & Gas Company, Delmarva Power and Light Company and Atlantic City Electric Company (the licensees) submitted a request for changes to the Peach Bottom Atomic Power Station, Unit No. 3, Technical Specifications (TS). The requested changes would revise the safety limit minimum critical power ratio (SLMCPR) for two recirculation loop and single recirculation loop operation to 1.07 and 1.08 respectively. The change was requested to accommodate installation and use of a new fuel type, GE-11 fuel, during Unit 3 Cycle 10 operation.

2.0 EVALUATION

The current Unit 3 TS MCPR Safety Limits are 1.06 for two-recirculation loop operation and 1.07 for single recirculation loop operation. However, use of GE11 fuel in Unit 3 during Cycle 10 requires MCPR Safety Limits not less than 1.07 for two-loop operation and 1.08 for single loop operation.

The SLMCPR is determined using the NRC-approved methodologies described in "General Electric Standard Application for Reactor Fuel," NEDE-24011-P-A-10, February 1991 and "General Electric BWR Thermal Analysis Basis (GETAB): Data, Correlation and Design Application," NEDO-10958-A, January 1977 for two recirculation loop operation. The SLMCPR is increased by 0.01 for single loop operation as described in GETAB. The SLMCPR is influenced by the critical power correlation and by bundle design parameters which affect the bundle R-factor distribution and the core radial power distribution. These parameters include the spacer design assembly dimensional geometry, enrichment level and distribution, and fuel discharge exposure. Since the GE11 fuel design has significant design changes from previous designs, a recalculation of the SLMCPR is necessary.

A Safety Limit MCPR of 1.07 (1.08 for single loop) has been approved by the NRC for D- or C-lattice plants operating with a reload core of GE11 fuel. PBAPS Unit 3 is a D-lattice plant and reload fuel for Cycle 10 is of the GE11 design. Approximately, one-third of the core will be replaced with fresh GE11 bundles. The only exception to the PBAPS Unit 3 Reload 9 (Cycle 10) batch is that four bundles of the SPC 9x9A design will be included. The four Lead Use Assemblies (LUAs) will be loaded in non-limiting locations such that the LUAs will have no impact on the core wide Operating Limit Critical Power Ratio (OLMCPR). The LUAs will be evaluated for applicability of a SLMCPR of 1.07.

The staff has reviewed the licensee's proposed TS changes on the Safety Limit, that Section 1.1.A; "Reactor Pressure \geq 800 psia and Core Flow \geq 10% of Rated," be revised to reflect the new limits for GE11 fuel, i.e., "the present wording would remain the same except 1.07 and 1.08 would replace the present values of 1.06 and 1.07 for two loop and single loop operation, respectively." The staff has reviewed the licensee's submittal and determined that the proposed MCPR Safety Limits have been established in accordance with NRC-approved methods and are, therefore, acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Pennsylvania State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (58 FR 12266). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: T. Huang

Date: August 18, 1993

REFERENCES

1. Letter (TSCR 92-19) from G. J. Beck (PECo) to U.S. Nuclear Regulatory Commission, dated January 28, 1993.
2. NEDE-31917P, "GE-11 Compliance with Amendment 22 of NEDE-24011-P-A," April 1991.