

Docket No. 50-311

MAR 29 1982

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Mr. Richard A. Uderitz
Vice President - Nuclear
Public Service Electric and Gas Co.
Mail Code T15A
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Newark, New Jersey 07101

Dear Mr. Uderitz:

The Commission has issued the enclosed Amendment No. 6 to Facility Operating License No. DPR-75 for the Salem Nuclear Generating Station, Unit No. 2. This amendment consists of changes to the Technical Specifications in response to your request dated February 8, 1982.

The amendment revises the Technical Specifications to change the axial flux target band about the target flux difference.

Copies of the Safety Evaluation and the Notice of Issuance are also enclosed.

Sincerely,

ORIGINAL SIGNED

William J. Ross, Project Manager
Operating Reactors Branch #1
Division of Licensing

Enclosures:

1. Amendment No. 6 to DPR-75
2. Safety Evaluation
3. Notice of Issuance

cc w/encs:
See next page



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FR NOTICE
+ AMENDMENT

OFFICE	DL:ORB#1	DL:ORB#1	DL:ORB#1	DL:OR	OELD	CPB/React. Physics
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DATE	3/14/82	3/13/82	3/13/82	3/22/82	3/24/82	3/23/82

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

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

DOCKET NO. 50-311

SALEM NUCLEAR GENERATING STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 6
License No. DPR-75

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Public Service Electric and Gas Company, Philadelphia Electric Company, Delmarva Power and Light Company and Atlantic City Electric Company (the licensees) dated February 8, 1982 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.

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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-75 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 6, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION


Steven A. Varga, Chief
Operating Reactors Branch #1
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 29, 1982

ATTACHMENT TO LICENSE AMENDMENT NO. 6

FACILITY OPERATING LICENSE NO. DPR-75

DOCKET NO. 50-311

Revise Appendix A as follows:

Remove Pages

3/4 2-1
3/4 2-2
3/4 2-6
B3/4 2-2
B3/4 2-3

Insert Pages

3/4 2-1
3/4 2-2
3/4 2-6
B3/4 2-2
B3/4 2-3

3/4.2 POWER DISTRIBUTION LIMITS

3/4.2.1 AXIAL FLUX DIFFERENCE (AFD)

LIMITING CONDITION FOR OPERATION

3.2.1 The indicated AXIAL FLUX DIFFERENCE shall be maintained within a +6, -9% target band (flux difference units) about the target flux difference.

APPLICABILITY: MODE 1 ABOVE 50% RATED THERMAL POWER*.

ACTION:

- a. With the indicated AXIAL FLUX DIFFERENCE outside of the +6, -9% target band about the target flux difference and with THERMAL POWER:
 1. Above 90% of RATED THERMAL POWER, within 15 minutes:
 - a) Either restore the indicated AFD to within the target band limits, or
 - b) Reduce THERMAL POWER to less than 90% of RATED THERMAL POWER.
 2. Between 50% and 90% of RATED THERMAL POWER:
 - a) POWER OPERATION may continue provided:
 - 1) The indicated AFD has not been outside of the +6, -9% target band for more than 1 hour penalty deviation cumulative during the previous 24 hours, and
 - 2) The indicated AFD is within the limits shown on Figure 3.2-1. Otherwise, reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within 30 minutes and reduce the Power Range Neutron Flux-High Trip Setpoints to less than or equal to 55% of RATED THERMAL POWER within the next 4 hours.
 - b) Surveillance testing of the Power Range Neutron Flux Channels may be performed pursuant to Specification 4.3.1.1.1 provided the indicated AFD is maintained within the limits of Figure 3.2-1. A total of 16 hours operation may be accumulated with the AFD outside of the target band during this testing without penalty deviation.

*See Special Test Exception 3.10.2

POWER DISTRIBUTION LIMITS

LIMITING CONDITION FOR OPERATION (Continued)

- b. THERMAL POWER shall not be increased above 90% of RATED THERMAL POWER unless the indicated AFD is within the +6, -9% target band and ACTION 2.a) 1), above has been satisfied.
- c. THERMAL POWER shall not be increased above 50% of RATED THERMAL POWER unless the indicated AFD has not been outside of the +6, -9% target band for more than 1 hour penalty deviation cumulative during the previous 24 hours. Power increases above 50% of RATED THERMAL POWER do not require being within the target band provided the accumulative penalty deviation is not violated.

SURVEILLANCE REQUIREMENTS

4.2.1.1 The indicated AXIAL FLUX DIFFERENCE shall be determined to be within its limits during POWER OPERATION above 15% of RATED THERMAL POWER by:

- a. Monitoring the indicated AFD for each OPERABLE excore channel:
 - 1. At least once per 7 days when the AFD Monitor Alarm is OPERABLE, and
 - 2. At least once per hour for the first 24 hours after restoring the AFD Monitor Alarm to OPERABLE status.
- b. Monitoring and logging the indicated AXIAL FLUX DIFFERENCE for each OPERABLE excore channel at least once per hour for the first 24 hours and at least once per 30 minutes thereafter, when the AXIAL FLUX DIFFERENCE Monitor Alarm is inoperable. The logged values of the indicated AXIAL FLUX DIFFERENCE shall be assumed to exist during the interval preceding each logging.

4.2.1.2 The indicated AFD shall be considered outside of its +6, -9% target band when at least 2 or more OPERABLE excore channels are indicating the AFD to be outside the target band. Penalty deviation outside of the +6, -9% target band shall be accumulated on a time basis of:

- a. One minute penalty deviation for each one minute of POWER OPERATION outside of the target band at THERMAL POWER levels equal to or above 50% of RATED THERMAL POWER, and
- b. One-half minute penalty deviation for each one minute of POWER OPERATION outside of the target band at THERMAL POWER levels below 50% of RATED THERMAL POWER.

POWER DISTRIBUTION LIMITS

SURVEILLANCE REQUIREMENTS

4.2.2.1 The provisions of Specification 4.0.4 are not applicable.

4.2.2.2 F_{xy} shall be evaluated to determine if $F_Q(Z)$ is within its limit by:

- a. Using the movable incore detectors to obtain a power distribution map at any THERMAL POWER greater than 5% of RATED THERMAL POWER.
- b. Increasing the measured F_{xy} component of the power distribution map by 3% to account for manufacturing tolerances and further increasing the value by 5% to account for measurement uncertainties.
- c. Comparing the F_{xy} computed (F_{xy}^C) obtained in b, above to:
 1. The F_{xy} limits for RATED THERMAL POWER (F_{xy}^{RTP}) for the appropriate measured core planes given in e. and f., below, and
 2. The relationship:

$$F_{xy}^L = F_{xy}^{RTP} [1 + \frac{0.3}{0.2}(1-P)]$$

where F_{xy}^L is the limit for fractional THERMAL POWER operation expressed as a function of F_{xy}^{RTP} and P is the fraction of RATED THERMAL POWER at which F_{xy} was measured.

- d. Remeasuring F_{xy} according to the following schedule:
 1. When F_{xy}^C is greater than the F_{xy}^{RTP} limit for the appropriate measured core plane but less than the F_{xy}^L relationship, additional power distribution maps shall be taken and F_{xy}^C compared to F_{xy}^{RTP} and F_{xy}^L :
 - a) Either within 24 hours after exceeding by 20% of RATED THERMAL POWER or greater, the THERMAL POWER at which F_{xy}^C was last determined, or

POWER DISTRIBUTION LIMITS

BASES

Although it is intended that the plant will be operated with the AXIAL FLUX DIFFERENCE within the +6, -9% target band about the target flux difference, during rapid plant THERMAL POWER reductions, control rod motion will cause the AFD to deviate outside of the target band at reduced THERMAL POWER levels. This deviation will not affect the xenon redistribution sufficiently to change the envelope of peaking factors which may be reached on a subsequent return to RATED THERMAL POWER (with the AFD within the target band) provided the time duration of the deviation is limited. Accordingly, a 1 hour penalty deviation limit cumulative during the previous 24 hours is provided for operation outside of the target band but within the limits of Figure 3.2-1 while at THERMAL POWER levels between 50% and 90% of RATED THERMAL POWER. For THERMAL POWER levels between 15% and 50% of rated THERMAL POWER, deviations of the AFD outside of the target band are less significant. The penalty of 2 hours actual time reflects this reduced significance.

Provisions for monitoring the AFD are derived from the plant nuclear instrumentation system through the AFD Monitor Alarm. A control room recorder continuously displays the auctioneered high flux difference and the target band limits as a function of power level. A first alarm is received any time the auctioneered high flux difference exceeds the target band limits. A second alarm is received if the AFD exceeds its allowable limits for a cumulative time of one hour during any 24 hour time period starting with the occurrence of the first alarm. Time outside the target band is graphically presented on the strip chart.

Figure B 3/4 2-1 shows a typical monthly target band.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 6 TO FACILITY OPERATING LICENSE NO. DPR-75

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

SALEM NUCLEAR GENERATING STATION, UNIT NO. 2

DOCKET NO. 50-311

Introduction

In a letter dated February 8, 1982 Public Service Electric and Gas Company (the licensee) requested changes to the Technical Specifications for Salem Unit 2 related to Power Distribution Limits. These changes include: (1) an increase in the allowable axial flux difference operating band about the target flux difference from +5% to +6 to -9%, and (2) a modification of the allowable limit on F_{xy} at fractional thermal power by changing the multiplier from 0.2 to 0.3 in the equation $F_{xy}^L = F_{xy}^{RTP}[1+0.3(1-P)]$.

Evaluation

The licensee has performed an analysis of total peaking factor versus core height for normal plant operation of Salem Unit 2 during Cycle 1. This analysis used a control band of +6 to -9% flux difference about the target flux band and a +0.3 multiplier in the F_{xy} allowed at peak power. The analysis was performed using a standard set of 18 cases documented in a Westinghouse letter from C Eicheldinger to D. B. Vassallo of the NRC dated July 16, 1975. Our approval to use this analysis for ΔI band widening was given in a letter from D. B. Vassallo to C. Eicheldinger dated April 15, 1976. Such analyses have been approved and used for most Westinghouse reloads in the past few years, including Salem Unit 1.

The results of the analysis provided for Salem Unit 2 cycle 1 show that the total peaking factor will continue to fall below the value of 2.32 (with axial shaping above the core centerline) used as an initial assumption in the ECCS analysis. Since this analysis uses techniques approved by us in the past, and shows that no increase in maximum total peaking factor will occur in normal operation of the power plant during cycle 1, we conclude operation will continue to meet the requirements of 10 CFR 50.46, Appendix K. We, therefore, find the proposed changes acceptable.

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Environmental Consideration

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: March 29, 1982

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-311
PUBLIC SERVICE ELECTRIC AND GAS COMPANY,
PHILADELPHIA ELECTRIC COMPANY,
DELMARVA POWER AND LIGHT COMPANY, AND
ATLANTIC CITY ELECTRIC COMPANY

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY
OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 6 to Facility Operating License No. DPR-75, issued to Public Service Electric and Gas Company, Philadelphia Electric Company, Delmarva Power and Light Company and Atlantic City Electric Company (the licensees), which revised Technical Specifications for operation of the Salem Nuclear Generating Station, Unit No. 2 (the facility) located in Salem County, New Jersey. The amendment is effective as of the date of issuance.

The amendment revises the Technical Specifications to change the axial flux target band about the target flux difference.

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of this amendment was not required since the amendment does not involve a significant hazards consideration.

The Commission has determined that the issuance of this amendment will not result in any significant environmental impact and that pursuant to 10 CFR §1.5(d)(4) an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of this amendment.

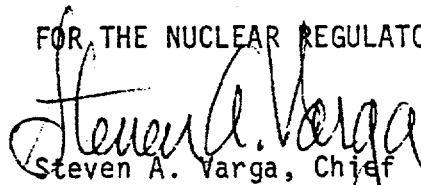
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- 2 -

For further details with respect to this action, see (1) the application for amendment dated February 8, 1982, (2) Amendment No. 6 to License No. DPR-75, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, NW., Washington, D. C. and at the Salem Free Public Library, 112 West Broadway, Salem, New Jersey. A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Licensing.

Dated at Bethesda, Maryland, this 29th day of March, 1982.

FOR THE NUCLEAR REGULATORY COMMISSION


Steven A. Varga, Chief
Operating Reactors Branch #1
Division of Licensing