

May 8, 1997

Mr. Leon R. Eliason
Chief Nuclear Officer & President-
Nuclear Business Unit
Public Service Electric & Gas
Company
Post Office Box 236
Hancocks Bridge, NJ 08038

SUBJECT: SALEM NUCLEAR GENERATING STATION, UNIT NOS. 1 AND 2
(TAC NOS. M97555 and M97556)

Dear Mr. Eliason:

The Commission has issued the enclosed Amendment Nos. 193 and 176 to Facility Operating License Nos. DPR-70 and DPR-75 for the Salem Nuclear Generating Station, Unit Nos. 1 and 2. These amendments consist of changes to the Technical Specifications (TSs) in response to your application dated January 7, 1997.

These amendments revise TS 3/4.2.5 to incorporate an exception to the provisions of TS 4.0.4 and to clarify the time at which the surveillance can be performed by adding that the surveillance is to be performed within 24 hours after attaining steady state conditions at or above 90% rated thermal power. The revised surveillance contains editorial enhancements that clarify the surveillance requirement. Salem Unit 1 TS Table 3.2-1 is also being revised to delete reference to three loop operation.

A copy of our safety evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

/s/

Leonard N. Olshan, Senior Project Manager
Project Directorate I-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket Nos. 50-272/311

- Enclosures: 1. Amendment No. 193 to License No. DPR-70
- 2. Amendment No. 176 to License No. DPR-75
- 3. Safety Evaluation

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NAME	LOlshan:cw	DBrinkman	MO'Brien	JLyons	MYoung	JStolz
DATE	5/7/97	5/7/97	5/7/97	04/08/97	05/07/97	05/07/97

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

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A copy of our safety evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

A handwritten signature in black ink, appearing to read "L. N. Olshan".

Leonard N. Olshan, Senior Project Manager
Project Directorate I-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket Nos. 50-272/311

Enclosures: 1. Amendment No. 193 to
License No. DPR-70
2. Amendment No. 176 to
License No. DPR-75
3. Safety Evaluation

cc w/encls: See next page

Mr. Leon R. Eliason
Public Service Electric & Gas
Company

Salem Nuclear Generating Station,
Units 1 and 2

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

PUBLIC SERVICE ELECTRIC & GAS COMPANY

PHILADELPHIA ELECTRIC COMPANY

DELMARVA POWER AND LIGHT COMPANY

ATLANTIC CITY ELECTRIC COMPANY

DOCKET NO. 50-272

SALEM NUCLEAR GENERATING STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 193
License No. DPR-70

1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:
 - A. The application for amendment filed by the Public Service Electric & Gas Company, Philadelphia Electric Company, Delmarva Power and Light Company and Atlantic City Electric Company (the licensees) dated January 7, 1997, 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 set forth in 10 CFR Chapter I;
 - 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-70 is hereby amended to read as follows:

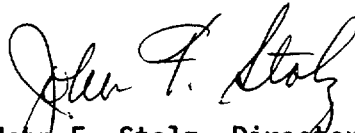
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(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 193, 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 its date of issuance, to be implemented prior to entry into Mode 1 from the current outage.

FOR THE NUCLEAR REGULATORY COMMISSION



John F. Stolz, 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: May 8, 1997

ATTACHMENT TO LICENSE AMENDMENT NO.193

FACILITY OPERATING LICENSE NO. DPR-70

DOCKET NO. 50-272

Revise Appendix A as follows:

Remove Pages

3/4 2-13

3/4 2-14

Insert Pages

3/4 2-13

3/4 2-14

POWER DISTRIBUTION LIMITS

DNB PARAMETERS

LIMITING CONDITION FOR OPERATION

3.2.5 The following DNB related parameters shall be maintained within the limits shown on Table 3.2-1:

- a. Reactor Coolant System T_{avg} .
- b. Pressurizer Pressure
- c. Reactor Coolant System Total Flow Rate

APPLICABILITY: MODE 1

ACTION:

With any of the above parameters exceeding its limit, restore the parameter to within its limit within 2 hours or reduce THERMAL POWER to less than 5% of RATED THERMAL POWER within the next 4 hours.

SURVEILLANCE REQUIREMENTS

4.2.5.1 Each of the parameters of Table 3.2-1 shall be verified to be within their limits at least once per 12 hours.

4.2.5.2 The Reactor Coolant System total flow rate shall be determined to be within the limits of Table 3.2-1 by performing a precision heat balance within 24 hours after achieving steady state conditions $\geq 90\%$ RATED THERMAL POWER at least once per 18 months. The provisions of Specification 4.0.4 are not applicable.

TABLE 3.2-1

DNB PARAMETERS

<u>PARAMETER</u>	<u>LIMITS</u>
Reactor Coolant System T_{avg}	4 Loops In Operation $\leq 582^{\circ}F$
Pressurizer Pressure	≥ 2220 psia*
Reactor Coolant System	$\geq 357,200$ gpm#

*Limit not applicable during either THERMAL POWER ramp increase in excess of 5% RATED THERMAL POWER per minute or a THERMAL POWER step increase in excess of 10% RATED THERMAL POWER.

#Includes a 2.2% flow measurement uncertainty plus a 0.1% measurement uncertainty due to feedwater venturi fouling.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

PUBLIC SERVICE ELECTRIC & 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. 176
License No. DPR-75

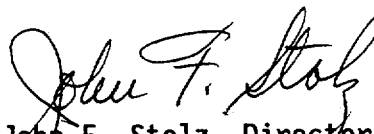
1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:
 - A. The application for amendment filed by the Public Service Electric & Gas Company, Philadelphia Electric Company, Delmarva Power and Light Company and Atlantic City Electric Company (the licensees) dated January 7, 1997, 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 set forth in 10 CFR Chapter I;
 - 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-75 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 176, 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 its date of issuance, to be implemented prior to entry into Mode 1 from the current outage.

FOR THE NUCLEAR REGULATORY COMMISSION



John F. Stolz, Director
Project Directorate 1-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: May 8, 1997

ATTACHMENT TO LICENSE AMENDMENT NO.176

FACILITY OPERATING LICENSE NO. DPR-75

DOCKET NO. 50-311

Revise Appendix A as follows:

Remove Page

3/4 2-16

Insert Page

3/4 2-16

POWER DISTRIBUTION LIMITS

3/4.2.5 DNB PARAMETERS

LIMITING CONDITION FOR OPERATION

3.2.5 The following DNB related parameters shall be maintained within the limits shown on Table 3.2-1:

- a. Reactor Coolant System T_{avg} .
- b. Pressurizer Pressure.
- c. Reactor Coolant System Total Flow Rate.

APPLICABILITY: MODE 1

ACTION:

With any of the above parameters exceeding its limit, restore the parameter to within its limit within 2 hours or reduce THERMAL POWER to less than 5% of RATED THERMAL POWER within the next 4 hours.

SURVEILLANCE REQUIREMENTS

4.2.5.1 Each of the parameters of Table 3.2-1 shall be verified to be within their limits at least once per 12 hours.

4.2.5.2 The Reactor Coolant System Total Flow Rate shall be determined to be within the limits of Table 3.2-1 by performing a precision heat balance within 24 hours after achieving steady state conditions $\geq 90\%$ RATED THERMAL POWER at least once per 18 months. The provisions of Specification 4.0.4 are not applicable.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NOS. 193 AND 176 TO FACILITY OPERATING
LICENSE NOS. DPR-70 AND DPR-75
PUBLIC SERVICE ELECTRIC & GAS COMPANY
PHILADELPHIA ELECTRIC COMPANY
DELMARVA POWER AND LIGHT COMPANY
ATLANTIC CITY ELECTRIC COMPANY
SALEM NUCLEAR GENERATING STATION, UNIT NOS. 1 AND 2
DOCKET NOS. 50-272 AND 50-311

1.0 INTRODUCTION

By letter dated January 7, 1997, the Public Service Electric & Gas Company (the licensee) submitted a request for changes to the Salem Nuclear Generating Station, Unit Nos. 1 and 2, Technical Specifications (TSs). The requested changes would revise TS 3/4.2.5 to incorporate an exception to the provisions of TS 4.0.4 and to clarify the time at which the surveillance can be performed by adding that the surveillance is to be performed within 24 hours after attaining steady state conditions at or above 90% rated thermal power. The revised surveillance would also contain editorial enhancements that do not change the intent of the current surveillance. TS Table 3.2-1 for Salem Unit 1 would be revised to delete reference to three loop operation (which is not permitted at Salem Unit 1) in order to eliminate potential confusion when applying this table.

2.0 EVALUATION

TS 3/4.2.5 is applicable in Mode 1. TS 4.2.5.1 requires, in part, verification of reactor coolant system (RCS) flow rate at least once per 12 hours. This verification is performed by use of permanently installed instrumentation. No changes are being proposed for TS 4.2.5.1. TS 4.2.5.2 requires that RCS flow rate be determined to be within its limit by measurement at least once per 18 months. TS 4.2.5.2 provides for detection of possible RCS flow rate degradation and ensures that the correlation performed in accordance with TS 4.2.5.1 is valid. The RCS flow rate determination required by TS 4.2.5.2 is normally made by performing a precision heat balance of the secondary side and then using those measurements to determine the RCS flow rate. TS 4.0.4 requires that entry into an operational mode or other specified condition shall not be made unless the required surveillance requirement has been performed within the stated surveillance interval or as

otherwise specified. Since the Salem units have been shut down for more than 18 months, such a process cannot be performed prior to entry into Mode 1. Therefore, the licensee has proposed to modify TS 4.2.5.2 to incorporate an exception to the provisions of TS 4.0.4, to require that the surveillance be performed within 24 hours after attaining steady state conditions at or above 90% rated thermal power, and to specify the method for performing the flow rate determination (by performing a precision heat balance).

The NRC staff has reviewed the proposed changes to TS 4.2.5.2. We note that Item 2 of TS Table 4.3-1 (Reactor Trip System Instrumentation Surveillance Requirements) requires a daily heat balance channel calibration of the Power Range, Neutron Flux instrumentation when reactor power is above 15% of rated thermal power. These daily heat balance calibrations provide adequate assurance that the indicated thermal power will not be grossly in error before performing the proposed precision heat balance.

In addition, prior to the RCS flow rate testing at 90 percent rated thermal power, operation within the analyzed Departure from Nucleate Boiling parameters can be assured by testing of the flow channels. These tests, done prior to Mode 1, assure that the reactor trip instrumentation is reliable and will trip the reactor should low flow condition occur.

The last time the RCS flow measurement was conducted, the measured flow was more than 2% above the TS limit. The only change to the units that could affect flow since the last flow tests were performed is the plugging of additional steam generator tubes on Unit 2. The licensee estimated that this plugging would decrease the total RCS flow rate by about 0.4% and, thus, it would still be well above the TS limit.

A precision heat balance of the secondary side cannot be accurately performed to determine RCS flow rate until the reactor is operating at a significant power level. Therefore, the staff finds that the proposed exception to the provisions of TS 4.0.4 is appropriate. The proposed requirement to perform this surveillance within 24 hours after attaining steady state conditions at or above 90% of rated thermal power is reasonable since operation at or above 90% of rated thermal power provides conditions (e.g., adequate core ΔT) to accurately determine RCS flow rate. Requiring performance of this surveillance within 24 hours of attaining 90% of rated thermal power ensures that the reactor will not be operated for a substantial duration with potentially degraded flow rates. Specifying the method to be used for determining RCS flow rate (a precision heat balance) ensures that an appropriate method is used for determining RCS flow rate. Therefore, the proposed changes to TS 4.2.5.2 are acceptable.

The proposed revision to TS 4.2.5.2 also includes editorial enhancements that clarify the TSs and is acceptable.

Reference to three-loop operation was proposed to be deleted from TS Table 3.2-1 for Salem Unit 1. License Condition 2.C.4 of Facility Operating License DPR-70 prohibits reactor operation above P-7 (as defined in TS Table 3.3-1) with less than four reactor coolant loops in operation until such operation is approved by the NRC. This license condition was included in the original issuance of DPR-70 and reactor operation with less than four reactor coolant loops in operation has not been approved for Salem Unit 1. Therefore, this proposed change is acceptable. The proposed deletion will eliminate potential confusion when using this table.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New Jersey State official was notified of the proposed issuance of the amendments. By letter dated February 24, 1997, the State official stated that the New Jersey Environmental Protection Bureau had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change surveillance requirements. The NRC staff has determined that the amendments involve 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 amendments involve no significant hazards consideration, and there has been no public comment on such finding (62 FR 4353). Accordingly, the amendments meet 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 amendments.

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 amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Donald S. Brinkman

Date: May 8, 1997