

March 24, 1998

Mr. Harold W. Keiser
Executive Vice 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. MA0074 AND MA0075)

Dear Mr. Keiser:

The Commission has issued the enclosed Amendment Nos. 209 and 191 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 November 4, 1997.

These amendments revise the emergency core cooling system surveillance test acceptance criteria in Technical Specification 3/4.6.2 for the containment spray pumps.

The NRC found that the quality of the initial submittal and its supporting information were adequate such that no additional information was needed.

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/

Patrick D. Milano, 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. 209 to License No. DPR-70
- 2. Amendment No. 191 to License No. DPR-75
- 3. Safety Evaluation

DF01/1

cc w/encls: See next page

DISTRIBUTION

Docket File JStolz GHill(4) JLinville, RGN-I
 PUBLIC TClark CBerlinger THarris (E-Mail SE)
 PDI-2 Reading PMilano WBeckner
 JZwolinski OGC ACRS

subject to be checked

OFFICE	PDI-2/PM	PDI-2/LA	OGC	SCSB/BC	PDI-2/D
NAME	PMilano:rb	TClark	Cmarco	CBerlinger	JStolz
DATE	3/14/98	3/14/98	3/19/98	3/15/98	3/17/98

OFFICIAL RECORD COPY
DOCUMENT NAME: SA0074.AMD

ERS FILE CENTER COPY

9803310394 980324
PDR ADOCK 05000272
P PDR

March 24, 1998

Mr. Harold W. Keiser
Executive Vice 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. MA0074 AND MA0075)

Dear Mr. Keiser:

The Commission has issued the enclosed Amendment Nos. 209 and 191 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 November 4, 1997.

These amendments revise the emergency core cooling system surveillance test acceptance criteria in Technical Specification 3/4.6.2 for the containment spray pumps.

The NRC found that the quality of the initial submittal and its supporting information were adequate such that no additional information was needed.

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/

Patrick D. Milano, 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 209 to License No. DPR-70
- 2. Amendment No 191 to License No. DPR-75
- 3. Safety Evaluation

cc w/encls: See next page

DISTRIBUTION

Docket File	JStolz	GHill(4)	JLinville, RGN-I
PUBLIC	TClark	CBerlinger	THarris (E-Mail SE)
PDI-2 Reading	PMilano	WBeckner	
JZwolinski	OGC	ACRS	

*subject
approved*

OFFICE	PDI-2/PM	PDI-2/LA	OGC	SCSB/BC	PDI-2/D
NAME	PMilano:rb	TClark	CMurphy	CBerlinger	JStolz
DATE	3/14/98	3/14/98	3/19/98	3/15/98	3/12/98

OFFICIAL RECORD COPY
DOCUMENT NAME: SA0074.AMD

Mr. Harold W. Keiser
Public Service Electric & Gas
Company

cc:

Jeffrie J. Keenan, Esquire
Nuclear Business Unit - N21
P.O. Box 236
Hancocks Bridge, NJ 08038

General Manager - Salem Operations
Salem Nuclear Generating Station
P.O. Box 236
Hancocks Bridge, NJ 08038

Mr. Louis Storz
Sr. Vice President - Nuclear Operations
Nuclear Department
P.O. Box 236
Hancocks Bridge, NJ 08038

Senior Resident Inspector
Salem Nuclear Generating Station
U.S. Nuclear Regulatory Commission
Drawer 0509
Hancocks Bridge, NJ 08038

Dr. Jill Lipoti, Asst. Director
Radiation Protection Programs
NJ Department of Environmental
Protection and Energy
CN 415
Trenton, NJ 08625-0415

Maryland Office of People's Counsel
6 St. Paul Street, 21st Floor
Suite 2102
Baltimore, MD 21202

Ms. R. A. Kankus
Joint Owner Affairs
PECO Energy Company
965 Chesterbrook Blvd., 63C-5
Wayne, PA 19087

Mr. Elbert Simpson
Senior Vice President-
Nuclear Engineering
Nuclear Department
P.O. Box 236
Hancocks Bridge, NJ 08038

Salem Nuclear Generating Station,
Units 1 and 2

Richard Hartung
Electric Service Evaluation
Board of Regulatory Commissioners
2 Gateway Center, Tenth Floor
Newark, NJ 07102

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Lower Alloways Creek Township
c/o Mary O. Henderson, Clerk
Municipal Building, P.O. Box 157
Hancocks Bridge, NJ 08038

Manager-Licensing and Regulation
Nuclear Busienss Unit - N21
P.O. Box 236
Hancocks Bridge, NJ 08038

Mr. David Wersan
Assistant Consumer Advocate
Office of Consumer Advocate
1425 Strawberry Square
Harrisburg, PA 17120

Manager - Joint Generation
Atlantic Energy
6801 Black Horse Pike
Egg Harbor Twp., NJ 08234-4130

Carl D. Schaefer
External Operations - Nuclear
Delmarva Power & Light Company
P.O. Box 231
Wilmington, DE 19899

Public Service Commission of Maryland
Engineering Division
Chief Engineer
6 St. Paul Centre
Baltimore, MD 21202-6806



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. 209
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 November 4, 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:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendices A and B, as revised through Amendment No.209, 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 within 60 days.

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: March 24, 1998

ATTACHMENT TO LICENSE AMENDMENT NO. 209

FACILITY OPERATING LICENSE NO. DPR-70

DOCKET NO. 50-272

Revise Appendix A as follows:

Remove Pages

3/4 6-9

Insert Pages

3/4 6-9

CONTAINMENT SYSTEMS

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

CONTAINMENT SPRAY SYSTEM

LIMITING CONDITION FOR OPERATION
=====

3.6.2.1 Two independent containment spray systems shall be OPERABLE with each spray system capable of taking suction from the RWST and transferring suction to the RHR pump discharge.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With one containment spray system inoperable, restore the inoperable spray system to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours; restore the inoperable spray system to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS
=====

4.6.2.1 Each containment spray system shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.
- b. By verifying, that on recirculation flow, each pump develops a differential pressure of greater than or equal to 204 psid when tested pursuant to Specification 4.0.5.
- c. At least once per 18 months during shutdown, by:
 1. Verifying that each automatic valve in the flow path actuates to its correct position on a Containment High-High pressure test signal.
 2. Verifying that each spray pump starts automatically on a Containment High-High pressure test signal.
- d. At least once per 10 years by:
 1. Performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.



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.191
License No. DPR-75

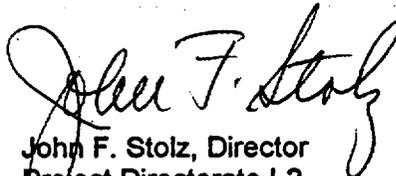
1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:
 - A. The application for amendment filed by the Public Service Electric & Gas Company, Philadelphia Electric Company, Delmarva Power and Light Company and Atlantic City Electric Company (the licensees) dated November 4, 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.191, 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 within 60 days.

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: March 24, 1998

ATTACHMENT TO LICENSE AMENDMENT NO.191

FACILITY OPERATING LICENSE NO. DPR-75

DOCKET NO. 50-311

Revise Appendix A as follows:

Remove Pages

3/4 6-10

Insert Pages

3/4 6-10

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

CONTAINMENT SPRAY SYSTEM

LIMITING CONDITION FOR OPERATION
=====

3.6.2.1 Two independent containment spray systems shall be OPERABLE with each spray system capable of taking suction from the RWST and transferring suction to the RHR pump discharge.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With one containment spray system inoperable, restore the inoperable spray system to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours; restore the inoperable spray system to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS
=====

4.6.2.1 Each containment spray system shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.
- b. By verifying, that on recirculation flow, each pump develops a differential pressure of greater than or equal to 204 psid when tested pursuant to Specification 4.0.5.
- c. At least once per 18 months during shutdown, by:
 1. Verifying that each automatic valve in the flow path actuates to its correct position on a Containment High-High pressure test signal.
 2. Verifying each spray pump starts automatically on a Containment High-High pressure test signal.
- d. At least once per 10 years by:
 1. Performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 209 AND 191 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 November 4, 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 the Salem Unit 2 containment systems surveillance test acceptance criteria in TS 3/4.6.2 for the containment spray pumps. Specifically, the change would replace the minimum specified discharge pressure requirement with an acceptance criterion based on pump differential pressure. Since this surveillance requirement is not currently included in the Salem Unit 1 TSs, the proposed change would add this requirement to TS 3/4.6.2.

2.0 EVALUATION

In its letter of November 4, 1997, the licensee proposed to modify the TSs surveillance test acceptance criteria in TS 3/4.6.2, "Containment Spray System," for Salem Unit 2. In TS 4.6.2.1, the containment spray system is demonstrated to be operable, in part, by verifying that on recirculation flow, each containment spray (CS) pump develops a discharge pressure of greater than or equal to 215 psig (pounds per square inch gauge) when tested pursuant to TS 4.0.5. Specifically, the licensee proposed to replace the pump discharge pressure acceptance criterion (TS 4.6.2.1.b) with a criterion based on pump differential pressure.

The containment spray system (CSS) automatically sprays cooling water into the containment atmosphere in the event of a loss-of-coolant accident (LOCA) to limit the peak containment pressure. This action ensures that the containment pressure does not exceed the design value for the containment structure. The CSS is designed to spray at least 2600 gpm of borated water into the containment whenever two out of the four high-high containment pressure signals occur. The CS pumps take suction from the RWST and the contents of the spray additive tank are mixed into the spray stream to enhance iodine removal capability. The CS pump recirculation line flow is passed through an eductor which draws on the spray additive tank and then to the CS

pump suction. When the RWST reaches the low-low level alarm point, CS pump flow is discontinued, and containment pressure control is maintained with the residual heat removal system functioning through the CSS headers.

The discharge head or pressure of a centrifugal pump is a combination of the suction head, the dynamic head, and other velocity factors. The dynamic head is the energy imparted to the process liquid by the pump impeller between the points where suction and discharge heads are measured. The difference in measured pressure between the suction and discharge is the pump differential pressure. Thus, the CS pump discharge pressure will vary with changes in suction pressure. The design discharge head of the CS pumps is sufficient to continue at rated capacity with a minimum level in the RWST against a head equivalent to the sum of the design pressure of the containment, the head of the uppermost spray nozzles, and the line and nozzle pressure losses.

The CS pumps are tested individually by establishing flow through the miniflow recirculation line. This test monitors CS pump performance as compared to the expected pump discharge head as determined from the pump characteristics curve. In its letter of May 14, 1997, the licensee stated that the Salem accident analysis is based upon the CS pumps' ability to develop a total differential head greater than 204 psid (pounds per square inch differential) when 300 gallons per minute (gpm) flows through the test recirculation line. Additionally, the licensee noted that the currently specified surveillance requirement of ≥ 215 psig does not ensure, for all instances, that the accident analysis total differential head is met. While in operational modes 1 (power operation) through 4 (hot shutdown), the minimum required RWST volume results in a CS pump suction pressure of approximately 26 psig. With this suction pressure, assuming minimal suction line loss, the current discharge pressure acceptance criterion would provide only 189 psid.

Since the total dynamic head (as measured by the pump differential pressure) is the measure of pump performance, the NRC staff finds the change to this specified criterion is acceptable. The staff also finds that the proposed value for this acceptance criterion of ≥ 204 psid when added to the pump suction pressure corresponds to the expected operating point on the pump head characteristic curve in Figure 6.2-5 of the Salem Updated Final Safety Analysis Report. Therefore, the NRC staff finds the proposed change to Salem Unit 2 TS 4.6.2.1 to be acceptable. Since the proposed addition of TS 4.6.2.1.b to Salem Unit 1 adds a requirement that currently does not exist and is the same as to the proposed surveillance requirement for Salem Unit 2, the NRC staff finds this change to be acceptable.

The change in the numbering of the requirements in Salem Unit 1 TS 4.6.2.1 and the removal of a duplicate word in Salem Unit 2 TS 4.6.2.1.b.2 are administrative in nature and are acceptable.

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. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendments 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 66141). 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: P. Milano

Date: March 24, 1998