

August 1, 1995

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. M92157 AND M92158)

Dear Mr. Eliason:

The Commission has issued the enclosed Amendment Nos. 172 and 153 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 April 18, 1995.

These amendments delete the quarterly leak rate test for the containment pressure-vacuum relief valves that is currently required because of the valves' resilient seat material. The changes are being made because you are replacing the resilient valve seat material with a hard seat (metal-to-metal) design. The valves are remaining in the 10 CFR Part 50, Appendix J, Type C leak rate test program.

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

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

Docket Nos. 50-272/50-311

Enclosures: 1. Amendment No. 172 to  
License No. DPR-70  
2. Amendment No. 153 to  
License No. DPR-75  
3. Safety Evaluation

cc w/encls: See next page

DISTRIBUTION:

Docket File	MO'Brien	CGrimes
PUBLIC	LOlshan	RBarrett
PDI-2 Reading	OGC	ACRS(4)
SVarga	OPA	OC/LFDCB
JZwolinski	GHill(4)	JWhite, RGN-I
JStolz		

OFC : PDI-2/LA : PDI-2/PM : SCSB/BC : OGC : PDI-2/D :  
NAME : MO'Brien : LOlshan : rb : RBarrett : JStolz :  
DATE : 7/5/95 : 7/5/95 : 7/5/95 : 7/6/95 : 7/5/95 :  
*CHB*  
*CP-1*  
*BERLINGER*  
*HOWARD*

OFFICIAL RECORD COPY  
9508040199 950801  
PDR ADOCK 05000272  
PDR

FILENAME: A:\SA92157.AMD

DF01  
11

NOT THE OFFICIAL COPY



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

August 1, 1995

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. M92157  
AND M92158)

Dear Mr. Eliason:

The Commission has issued the enclosed Amendment Nos. 172 and 153 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 April 18, 1995.

These amendments delete the quarterly leak rate test for the containment pressure-vacuum relief valves that is currently required because of the valves' resilient seat material. The changes are being made because you are replacing the resilient valve seat material with a hard seat (metal-to-metal) design. The valves are remaining in the 10 CFR Part 50, Appendix J, Type C leak rate test program.

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 cursive script, reading "Leonard N. Olshan", is written over the typed name.

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

Docket Nos. 50-272/50-311

Enclosures: 1. Amendment No. 172 to  
License No. DPR-70  
2. Amendment No. 153 to  
License No. DPR-75  
3. Safety Evaluation

cc w/encls: See next page

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

cc:

Mark J. Wetterhahn, Esquire  
Winston & Strawn  
1400 L Street NW  
Washington, DC 20005-3502

Richard Fryling, Jr., Esquire  
Law Department - Tower 5E  
80 Park Place  
Newark, NJ 07101

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

Mr. J. Hagan  
Vice President - Nuclear Operations  
Nuclear Department  
P.O. Box 236  
Hancocks Bridge, New Jersey 08038

Mr. Charles S. Marschall, Senior  
Resident Inspector  
Salem Generating Station  
U.S. Nuclear Regulatory Commission  
Drawer I  
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, Maryland 21202

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

Mr. S. LaBruna  
Vice President - Nuclear Engineering  
Nuclear Department  
P.O. Box 236  
Hancocks Bridge, New Jersey 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

Mr. Frank X. Thomson, Jr., Manager  
Licensing and Regulation  
Nuclear Department  
P.O. Box 236  
Hancocks Bridge, NJ 08038

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

Ms. P. J. Curham  
MGR. Joint Generation Department  
Atlantic Electric Company  
P.O. Box 1500  
6801 Black Horse Pike  
Pleasantville, NJ 08232

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. 172  
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 April 18, 1995, 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:

9508040287 950801  
PDR ADOCK 05000272  
P PDR

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 172, 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 restart following the twelfth refueling 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: August 1, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 172

FACILITY OPERATING LICENSE NO. DPR-70

DOCKET NO. 50-272

Revise Appendix A as follows:

Remove Page

3/4 6-13

Insert Page

3/4 6-13

## CONTAINMENT SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

=====

4.6.3.1.2 Each isolation valve specified in Table 3.6-1 shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE at least once per 18 months by:

- a. Verifying that on a Phase A containment isolation test signal, each Phase A isolation valve actuates to its isolation position.
- b. Verifying that on a Phase B containment isolation test signal, each Phase B isolation valve actuates to its isolation position.
- c. Not Used.
- d. Verifying that on a Containment Purge and Pressure-Vacuum Relief isolation test signal, each Purge and Pressure-Vacuum Relief valve actuates to its isolation position.
- e. Verifying that the Containment Pressure-Vacuum Relief Isolation valves are limited to  $\leq 60^\circ$  opening angle.

4.6.3.1.3 At least once per 18 months, verify that on a main steam isolation test signal, each main steam isolation valve specified in Table 3.6-1 actuates to its isolation position.

4.6.3.1.4 The isolation time of each power operated or automatic valve of Table 3.6-1 shall be determined to be within its limit when tested pursuant to Specification 4.0.5.

4.6.3.1.5 Each containment purge isolation valve shall be demonstrated OPERABLE within 24 hours after each closing of the valve, except when the valve is being used for multiple cyclings, then at least once per 72 hours, by verifying that when the measured leakage rate is added to the leakage rates determined pursuant to Specification 4.6.1.2d. for all other Type B and C penetrations, the combined leakage rate is less than or equal to 0.60La.

4.6.3.1.6 A pressure drop test to identify excessive degradation of resilient valve seals shall be conducted on the:

- a. Containment Purge Supply and Exhaust Isolation Valves at least once per 6 months.
- b. Deleted.



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. 153  
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 April 18, 1995, 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. 153, 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 restart following the current outage.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in cursive script, appearing to read "John F. Stolz".

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: August 1, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 153

FACILITY OPERATING LICENSE NO. DPR-75

DOCKET NO. 50-311

Revise Appendix A as follows:

Remove Page

3/4 6-15

Insert Page

3/4 6-15

## CONTAINMENT SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

=====

4.6.3.2 Each isolation valve specified in Table 3.6-1 shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE at least once per 18 months by:

- a. Verifying that on a Phase A containment isolation test signal, each Phase A isolation valve actuates to its isolation position.
- b. Verifying that on a Phase B containment isolation test signal, each Phase B isolation valve actuates to its isolation position.
- c. NOT USED
- d. Verifying that on a Containment Purge and Pressure-Vacuum Relief isolation test signal, each Purge and Pressure-Vacuum Relief valve actuates to its isolation position.
- e. Verifying that the Containment Pressure-Vacuum Relief Isolation valves are limited to  $\leq 60^\circ$  opening angle.

4.6.3.3 At least once per 18 months, verify that on a main steam isolation test signal, each main steam isolation valve specified in Table 3.6-1 actuates to its isolation position.

4.6.3.4 The isolation time of each power operated or automatic valve of Table 3.6-1 shall be determined to be within its limit when tested pursuant to Specification 4.0.5.

4.6.3.5 Each containment purge isolation valve shall be demonstrated OPERABLE within 24 hours after each closing of the valve, except when the valve is being used for multiple cyclings, then at least once per 72 hours, by verifying that when the measured leakage rate is added to the leakage rates determined pursuant to Specification 4.6.1.2d. for all other Type B and C penetrations, the combined leakage rate is less than or equal to 0.60La.

4.6.3.6 A pressure drop test to identify excessive degradation of resilient valve seals shall be conducted on the:

- a. Containment Purge Supply and Exhaust Isolation Valves at least once per 6 months.
- b. Deleted.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NOS. 172 AND 153 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 April 18, 1995, 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 delete the quarterly leak rate test for the containment pressure-vacuum relief valves that is currently required because of the valves' resilient seat material. The changes are being requested to accommodate the replacement of the resilient valve seat material with a hard seat (metal-to-metal) design.

2.0 EVALUATION

Leakage tests of large butterfly valves installed in containment vent and purge systems have shown that resilient valve seat materials in these valves have a history of relatively rapid and severe failures (reference I&E Circular 77-11, dated September 6, 1977). Because of this, the TSs include augmented testing requirements to ensure that seal degradation is detected and repaired in a timely manner. The requested change deletes this augmented testing requirement, which is quarterly in the Salem TSs. Instead, the new metal-to-metal seated valves would be tested in accordance with the 24-month test interval specified in 10 CFR Part 50, Appendix J. Because the new valve design does not rely on resilient seating seals, inclusion of the valves in the Type C testing interval of 24 months specified in Appendix J is 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. By letter dated July 20, 1995, the State of New Jersey, Department of Environmental Protection (NJDEP), provided the following comments:

**NJDEP Comment:** No operating experience information is provided or referenced in support of the licensee's statement that augmented quarterly testing is no longer needed based on the improved design and operating experience of the replacement valves.

**Staff Reply:** As discussed in Section 2.0 of this safety evaluation, augmented testing of valves with resilient seals was required because these valves have a history of relatively rapid and severe failures. This is due to installation and adjustment problems and deterioration from high temperatures and thermal cycling. Operating experience has shown that valves with metal-to-metal seats are not subject to the same maladjustment problems, heat deterioration and temperature cycling deterioration of valves with resilient seals.

**NJDEP Comment:** Valves with metal-to-metal seats are subject to sticking shut due to corrosion.

**Staff Comment:** In addition to leak testing, isolation valves are subject to "operability" testing. This encompasses quarterly "cycling" (full open and full closed) of such valves. This ensures that the valves are free to move.

**NJDEP Comment:** If replacement of resiliently sealed valves with metal-seated valves is the solution, why was it not done earlier?

**Staff Comment:** Use of valves with metal-to-metal seats is the best solution if they can achieve the necessary leak-tightness. However, valves with resilient seals, when properly adjusted, generally provide a greater degree of leak tightness than valves with metal-to-metal seats. If overall (total containment leakage) limits can be met with valves with metal-to-metal seats, utilities may elect to use them. Utilities will also use them in order to eliminate the maintenance requirement to frequently replace resilient seals. The valve vendor typically recommends replacing resilient seals every 5 years. Therefore, the decision to replace valves with resilient seals to valves with metal-to-metal seats involves many factors, including economic factors. The NRC staff's concern is limited to valve operability and leak tightness.

### 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. 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 (60 FR 27342). 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: L. Olshan

Date: August 1, 1995