

~~SEP 10 1976~~

Sept. 10, 1976

Docket No. 50-272

Public Service Electric & Gas Company  
ATTN: Mr. F. P. Librizzi  
General Manager - Electric Production  
Production Department  
30 Park Place, Room 7221  
Newark, New Jersey 07101

Gentlemen:

ISSUANCE OF AMENDMENT NO. 1 TO FACILITY OPERATING LICENSE FOR SALEM  
NUCLEAR GENERATING STATION, UNIT NO. 1

The Commission has issued the enclosed Amendment No. 1 for License No.  
DPR-70 for the Salem Nuclear Generating Station, Unit No. 1. This  
amendment is in response to your request dated September 7, 1976.

The amendment revises portions of Attachment 1 to License No. DPR-70  
and consists of (1) changing the sequence for conducting certain  
preoperational tests and startup tests, and (2) deleting the requirement  
for testing the feedwater snubbers and (3) deleting the requirement for  
completing certain maintenance procedures for the limited operation  
for testing permitted by License No. DPR-70.

Copies of the related Safety Evaluation and the Federal Register Notice  
are also enclosed.

Sincerely,

ORIGINAL SIGNED BY

*R.C. DeYoung*



Roger S. Boyd, Director  
Division of Project Management  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 1 to License No. DPR-70
2. Federal Register Notice
3. Safety Evaluation

cc: See page 2

OFFICE >	DPM:LWR #2	DPM:LWR #2	ELD <i>SMS</i>	AD/LWR:DPM	DPM
SURNAME >	<i>IV</i> IVillalva:mt	<i>PAS</i> KKnietel	<i>S. SOHINKI</i>	<i>DBV</i> DBVassallo	<i>R.S. Boyd</i>
DATE >	9/10/76	9/11/76	9/10/76	9/10/76	9/11/76

Public Service Electric  
and Gas Company

- 2 -

cc: Fred Broadfoot, Esq.  
Public Service Electric & Gas Company  
80 Park Place  
Newark, New Jersey 07101

Joseph B. Knotts, Jr., Esq.  
Conner & Knotts  
Suite 1050  
1747 Pennsylvania Avenue, N. W.  
Washington, D. C. 20006

Philadelphia Electric Company  
2301 Market Street  
Philadelphia, Pennsylvania 19105

Delmarva Power & Light Company  
800 King Street  
Wilmington, Delaware 19899

Atlantic City Electric Company  
1600 Pacific Avenue  
Atlantic City, New Jersey 08401

State House Annex  
ATTN: Deputy Attorney General  
State of New Jersey  
36 West State Street  
Trenton, New Jersey 08625

Department of Natural Resources  
and Environmental Control  
ATTN: Director, Division of  
Environmental Control  
Tatnall Building  
Dover, Delaware 19901

Governor's Office of State Planning  
and Development  
ATTN: Coordinator, Pennsylvania  
State Clearinghouse  
P. O. Box 1323  
Harrisburg, Pennsylvania 17120  
(w/o enclosures)

Department of Environmental Resources  
ATTN: Director, Office of  
Radiological Health  
P. O. Box 2063  
Harrisburg, Pennsylvania 17105  
(w/2 enclosures)

Honorable David A. Fogg  
Mayor, Lower Alloways Creek Township  
Salem County, New Jersey 08079

Dr. Neill Thomasson (AW-459)  
Chief, Energy Systems Analysis Branch  
Office of Radiation Programs  
U. S. Environmental Protection Agency  
401 M. Street, S. W.  
Washington, D. C. 20460

Mr. Paul A. Giardina  
Regional Radiation Representative  
U. S. Environmental Protection Agency  
26 Federal Plaza  
New York, New York 10007

Mr. Bruce Blanchard  
Environmental Projects Review  
U. S. Department of the Interior  
Room 5321  
18th and C Streets, N. W.  
Washington, D. C. 20240

Mr. Sheldon Meyers  
ATTN: Mr. Jack Anderson  
Office of Federal Activities  
U. S. Environmental Protection Agency  
Room W-541, Waterside Mall  
401 M Street, S. W.  
Washington, D. C. 20460

Colonel Howard Sargent  
Executive Director of Civil Works  
Office of the Chief of Engineers  
Corps of Engineers  
Department of the Army  
Forrestal Building, Room G060  
10th and Independence  
Washington, D. C. 20314

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DISTRIBUTION FOR FACILITY OPERATING LICENSE NO. DPR-70-AMENDMENT NO. 1  
DATED **SEP 10 1976**

Docket File  
NRC PDR  
Local PDR  
LWR #2 File  
Attorney, ELD  
R. C. DeYoung  
K. Kniel  
Project Manager  
J. Lee  
F. J. Williams  
H. Smith  
B. Scott, PM  
IE (5)  
N. Dube, MIPC  
M. Jinks, OA (w/4 enclosures)  
W. Miller, ADM  
ACRS (16)  
H. Denton, DSE  
V. A. Moore, DSE  
R. H. Vollmer, DSE  
M. L. Ernst, DSE  
W. P. Gammill, DSE  
R. Heineman, SS  
J. Knight, SS  
D. F. Ross, SS  
R. L. Tedesco, SS  
B. Scharf, OA (15 copies)  
D. Skovholt  
E. Hughes  
EP Project Manager  
EP Licensing Assistant  
H. Bristow, NMSS  
V. Stello, OR  
K. Goller, OR  
J. McGough, OR  
D. Eisenhut, OR  
J. R. Buchanan, NSIC  
Thomas B. Abernathy, TIC  
A. Rosenthal, ASLAB  
N. H. Goodrich, ASLBP  
D. B. Vassallo

PUBLIC SERVICE ELECTRIC AND 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. 1  
 License No. DPR-70

1. The Nuclear Regulatory Commission (the Commission) has found that:

- A. The application for amendment by Public Service Electric and Gas Company, on behalf of itself, Philadelphia Electric Company, Delmarva Power and Light Company and Atlantic City Electric Company, (the licensees) dated September 7, 1976, 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. An environmental statement or negative declaration need not be prepared in connection with the issuance of this amendment.

2. Accordingly, the license is amended by revising Attachment 1 to DPR-70 (attached hereto). In addition, Paragraph 2.C(1) of Facility License No. DPR-70 is hereby amended to read as follows:

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(1) Maximum Power Level

Public Service Electric and Gas Company is authorized to operate the facility for testing at reactor core power level not in excess of 33.38 megawatts (one percent of rated core power) limited to a cumulative fuel exposure of 300 megawatt days. Prior to attaining the power level, Public Service Electric and Gas Company shall complete the preoperational tests, startup tests and other items identified in Attachment 1 to this license in the sequence specified. Attachment 1, as revised, is an integral part of the license.

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

FOR THE NUCLEAR REGULATORY COMMISSION

ORIGINAL SIGNED BY

*ja* R. C. DeYoung  
Roger S. Boyd, Director  
Division of Project Management  
Office of Nuclear Reactor Regulation

Attachment:  
Attachment 1 to License  
No. DPR-70, as revised

Date of Issuance:

OFFICE >	DPM:LWR #20	DPM:LWR #B	ELD <i>Soms</i>	AD/LWR:DPM <i>DBV</i>	DPM
SURNAME >	IVillalva:mt	KKniel <i>for</i>	<i>S. SORINKI</i>	DBVassallo	RSE <i>for</i>
DATE >	9/16/76	9/11/76	9/10/76	9/10/76	9/11/76

ATTACHMENT TO LICENSE DPR-70  
(Revised September , 1976)

Incomplete Preoperational Tests, Startup Tests, and  
Other Items Which Must be Completed

This attachment identifies certain preoperational tests, startup tests, and other items which must be completed to the Commission's satisfaction prior to proceeding to certain specified Operational Modes. Public Service Electric and Gas Company shall not proceed beyond the authorized Operational Modes without prior written authorization from the Commission.

- A. Public Service Electric and Gas Company may at the license issue date proceed directly to Operational Mode 6 (initial fuel loading), and may subsequently proceed to Operational Mode 5 (cold shutdown).
- B. Prior to proceeding to Operational Mode 4 (hot shutdown), Public Service Electric and Gas Company shall test the response times of primary sensors in the reactor coolant system per SUP 20.1. Subsequent to the verification by the Office of Inspection and Enforcement of the acceptable completion of this item, and upon written authorization by the Commission, Public Service Electric and Gas Company may proceed to Operational Mode 4 (hot shutdown).
- C. Prior to proceeding to Operational Mode 3 (hot standby), Public Service Electric and Gas Company shall complete the following items:
  - 1. Testing operation of RHR pump recirculation valves 11RH29 and 12RH29 per SUP 50.0.
  - 2. Testing motor winding temperatures of RHR pump motors Nos. 11 and 12 per SUP 12.
  - 3. Testing the following snubbers per SUP 50.4:
    - RHRH 11-29A
    - RHRH 11-29B
    - RHRH 12-34B
    - RHRH 12-34C
  - 4. Testing the boron recycle system per SUP 10.5.
  - 5. Demonstrate beta dosimetry capability.
  - 6. Testing process radiation monitors, excluding those required for fuel loading, per SUP 21.
  - 7. Testing service water system per SUP 28.

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8. Testing chilled water portion of the control room air conditioning system per SUP 19.7.
9. Prepare the following radiochemistry procedures:
  - (a) PD 3.3.010 - procedure to determine the average energy of gamma emitting isotopes;
  - (b) PD 3.3.011 - procedure for detecting fission gases by gamma spectroscopy in the presence of other gases;
  - (c) PD 3.3.003 - procedure to determine the dose equivalent Iodine 131 in the primary coolant.
10. Replace the existing standby charcoal filters in the auxiliary building ventilation system with charcoal filters capable of removing 90 percent of the organic iodines.

Subsequent to verification by the Office of Inspection and Enforcement of the acceptable completion of the above listed items, and upon written authorization from the Commission, the Public Service Electric and Gas Company may proceed to Operational Mode 3 (hot standby).

D. Prior to proceeding to Operational Mode 2 (initial criticality), Public Service Electric and Gas Company shall complete the following items:

1. Testing high temperature alarm TE463A on pressurizer relief line per SUP 50.6.
2. Testing control of steam generator blowdown flow by valves GB8 and GB10 per SUP 50.13.
3. Testing upper motor bearing of reactor coolant pump No. 14 per SUP 50.9.
4. Testing pump seal of reactor coolant pump No. 11 per SUP 50.0.
5. Testing RED's Nos. 423B, 431A, 433B and 440B in the reactor coolant system per SUP 50.7.
6. Testing the following snubbers per SUP 50.4:

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1 - PRA-146	1-PRSN-7	1-PRSN-28	1-PRSN-400
1 - PRA-150	1-PRSN-9	1-PRSN-29	1-PRSN-401
1 - PRA-154	1-PRSN-10	1-PRSN-30	1-PRSN-402
1 - PRA-158	1-PRSN-11	1-PRSN-32A	1-PRSN-405
1 - PRA-162	1-PRSN-12	1-PRSN-32B	1-PRSN-405A
	1-PRSN-13	1-PRSN-33	1-PRSN-406
1-PRSN-1	1-PRSN-16	1-PRSN-34	1-PRSN-406A
1-PRSN-2	1-PRSN-17	1-PRSN-36	
1-PRSN-3	1-PRSN-19	1-PRSN-37	
1-PRSN-3A	1-PRSN-20	1-PRSN-38A	
1-PRSN-4	1-PRSN-23	1-PRSN-38B	
1-PRSN-5	1-PRSN-25	1-PRSN-39	
1-PRSN 5A	1-PRSN-27	1-PRSN-42	

Subsequent to verification by the Office of Inspection and Enforcement of the acceptable completion of the above items, and upon written authorization from the Commission, Public Service Electric and Gas Company may proceed to Operational Mode 2 (initial criticality). The power level of Operational Mode 2 shall be limited to one percent of rated core thermal power.

- E. The completion of the Maintenance Procedures required for facility operation, as delineated in Inspection and Enforcement Report 50-272/76-36, detail 3h, and the testing of the feedwater line snubbers listed below, shall be completed prior to licensing the facility for operating in Operational Mode 1 (power operation).

11-FWSN-12A  
11-FWSN-12B  
11-FWSN-16  
12-FWSN-13A  
12-FWSN-13B  
12-FWSN-15  
13-FWSN-15A  
13-FWSN-15B  
13-FWSN-17A  
13-FWSN-17B  
14-FWSN-13A  
14-FWSN-13B  
14-FWSN-15A  
14-FWSN-15B

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 1 TO FACILITY OPERATING LICENSE NO. DPR-70

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. 1

DOCKET NO. 50-272

Introduction

By letter dated September 7, 1976, Public Service Electric and Gas Company requested a change to Attachment 1 to DPR-70, an integral part of Facility Operating License No. DPR-70 for the Salem Nuclear Generating Station, Unit No. 1. The proposed changes consists of (1) revising the sequence for conducting certain tests, (2) deleting the requirements for testing the feedwater snubbers, and (3) deleting the requirements for completing certain maintenance procedures.

Discussion

The changes proposed by Public Service Electric and Gas Company include (1) deferring certain tests originally scheduled for completion during Operational Mode 4 (hot shutdown) to completion during Operational Mode 3 (hot standby); (2) deleting the requirement to test the feedwater snubbers because of the limited operation for testing permitted by Facility Operating License No. DPR-70; and (3) deleting the requirement to complete the maintenance procedures required for facility operation prior to proceeding to Operational Mode 4 as delineated in Inspection and Enforcement Report 50-272/76-25 Detail 12.

The Technical Specifications for the Salem Nuclear Generating Station, Unit 1 (Appendix A to License No. DPR-70), impose constraints which do not permit certain tests to be conducted in the sequence delineated in Attachment 1 to License DPR-70. Public Service Electric and Gas Company has, therefore, requested these tests be deferred such that the constraints imposed by the technical specifications do not inhibit said tests.

The testing of the feedwater snubbers requires that the feedwater system be operational. The operation of the feedwater system associated with the limited operation for testing permitted by Facility Operating

License No. DPR-70 does not permit performing acceptable tests of the feedwater snubbers because the temperature, pressure and flow are not sufficiently high for acceptable testing.

OFFICE OF NUCLEAR REACTOR REGULATION  
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Public Service Electric and Gas Company has, therefore, requested that these tests be deleted from the license currently in force for Salem Unit 1.

The maintenance procedures delineated in Inspection and Enforcement Report 50-272/76-25 Detail 12, are those required prior to proceeding to Operational Mode 1 (power operation). However, the license currently in force for Salem Unit 1, does not permit operation beyond that of Operational Mode 2 (initial criticality). Public Service Electric and Gas Company has, therefore, requested that the requirements for these maintenance procedures be deleted from the license currently in force for Salem Unit 1.

Specifically, Public Service Electric and Gas Company has requested that Attachment 1 to License No. DPR-70 be revised as follows:

1. Revise Paragraph B. by deleting the following statement in the first sentence: "and complete the maintenance procedures required for facility operation as delineated in Inspection and Enforcement Report 50-272/76-25 Detail 12."
2. Revise Paragraph C. as follows:
  - (a) The first sentence in Paragraph C should be revised to read: "Prior to proceeding to Operational Mode 3 (hot standby), Public Service Electric and Gas Company shall complete the following items:"
  - (b) Delete the following five tests listed as items under Paragraph C: testing high pressure alarm on pressurizer; testing steam generator blowdown flow; testing upper motor bearing of reactor coolant pump No. 14; testing pump seal of reactor coolant pump No. 11; and testing RTD's Nos. 423B, 431A, 433B and 440B in the reactor coolant system.
  - (c) Delete the testing of snubbers except for those associated with the residual heat removal system, i.e., those with the prefix "RHRH".
3. Add a new Paragraph D. to include the following:
  - (a) The first sentence in Paragraph D would read as follows: "Prior to proceeding to Operational Mode 2 (initial criticality), Public Service Electric and Gas Company shall complete the following items:"

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- (b) The first five items under Paragraph D would include the five tests that were deleted from Paragraph C.
- (c) The sixth item under Paragraph D would include the testing of the snubbers that were deleted from Paragraph C, except that the snubbers associated with the feedwater system would not be included.

Evaluation

We have reviewed the proposed changes to Attachment 1 to License No. DPR-70 which would allow the deferring of five tests originally scheduled for completion during Operational Mode 4 (hot shutdown) to completion during Operational Mode 3 (hot standby). In addition, we have reviewed the proposed change which would allow deferring the testing of snubbers with the prefixes 1-PR5 and 1-PR5W originally scheduled for completion during Operational Mode 4 to completion during Operational Mode 3. In each case we find that it is physically possible to conduct the tests in the sequence indicated in Attachment 1 to License No. DPR-70, but we find that the Appendix A Technical Specifications as currently written, inhibit the tests by not allowing the appropriate temperatures to be reached. For example, testing the high temperature alarm on the pressurizer requires a temperature in excess of 500 degrees Fahrenheit, but the present stipulation is that this test be conducted while the unit is in Operational Mode 4. Since the maximum temperature permitted by the Technical Specifications while the unit is in Operational Mode 4 is 350 degrees Fahrenheit, this test, and the other tests identified by Public Service Electric and Gas Company, cannot be conducted as presently stipulated.

We have evaluated the safety considerations associated with deferring the above tests. We find that the only difference is that the primary coolant system may be operated at higher temperatures, which from a fracture toughness consideration is preferred. Since the reactor will not be made critical until after these tests have been completed, we find that the radiological safety aspects associated with deferring the above tests are nil.

We have reviewed the proposed changes which would delete the requirements for testing the feedwater snubbers for the license currently in force for Salem Unit 1. We agree with Public Service Electric and Gas Company that the effective testing of the feedwater snubbers requires that the unit be in Operational Mode 1 (power operation). We have concluded that since the feedwater snubbers are part of the secondary system, that the radiological safety aspects associated with conducting these tests while the unit is in Operational Mode 1 are minimal. Accordingly, we find that these tests can be deferred until the unit is in Operational Mode 1; however, we will require that these tests be completed with the unit operating at 15 percent of rated core power or less.

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We have reviewed the proposed changes which would delete the requirements for completing the maintenance procedures required for facility operation prior to proceeding to Operational Mode 4 as delineated in Inspection and Enforcement Report 50-272/76-25. Since the aforementioned maintenance procedures are not required prior to proceeding the Operational Mode 1, we agree that this requirement should be deleted from the license currently in force for Salem Unit 1. In addition, our Office of Inspection and Enforcement has updated its review of this matter, and has reported the results of its findings in IE Inspection Report 50-272/76-38. The recommendations contained in this report (Detail 3h.) are such that they supercede those contained in IE Inspection Report 50-272/76-25 and acknowledge that these maintenance procedures can be deferred until prior to attaining Operational Mode 1. Accordingly, prior to authorizing Salem Unit 1 to enter into Mode 1, we will require that the maintenance procedures required for facility operation as delineated in IE Inspection Report 50-272/76-38 (Detail 3h.) be completed.

Conclusions

Based on the considerations discussed above, we have concluded that the changes pertain only to the sequence in which certain tests are conducted and as such: (1) they do not increase the probability or consequences of accidents previously considered; (2) they do not involve a decrease in safety margin nor do they involve new hazards considerations; (3) the activities will be conducted in compliance with the Commission's rules and regulations and the issuance of this amendment will not be inimical to the health and safety of the public; and (4) there is reasonable assurance that activities described in this evaluation can be conducted without endangering the health and safety of the public.

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UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-272

PUBLIC SERVICE ELECTRIC AND GAS COMPANY, ET AL

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE

Notice is hereby given that the U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 1 to Facility Operating License No. DPR-70, issued to Public Service Electric and Gas Company, Philadelphia Electric Company, Delmarva Power and Light Company, and Atlantic City Electric Company which revised Attachment 1 to DPR-70 for operation of the Salem Nuclear Generating Station, Unit No. 1, located in Salem County, New Jersey. The amendment is effective as of its date of issuance.

The amendment revises Attachment 1 to DPR-70 and consists of (1) changing the sequence for conducting certain preoperational tests and startup tests, (2) deleting the requirement for testing the feedwater snubbers, and (3) deleting the requirement for completing certain maintenance procedures for the limited operation for testing permitted by License No. DPR-70.

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 is 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 Section 51.5(d)(4) an environmental statement, negative declaration or environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

For further details with respect to this action, see (1) the application for amendment dated September 7, 1976, (2) Amendment No. 1 to License No. DPR-70, 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, N. W., 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 Project Management.

Dated at Bethesda, Maryland, this 10<sup>th</sup> day of SEPTEMBER, 1976.

FOR THE NUCLEAR REGULATORY COMMISSION

*Ralph A. Birkel*

Ralph A. Birkel, Acting Chief  
Light Water Reactors Branch No. 2  
Division of Project Management



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. 50-272

SALEM NUCLEAR GENERATING STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 1  
License No. DPR-70

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Public Service Electric and Gas Company, on behalf of itself, Philadelphia Electric Company, Delmarva Power and Light Company and Atlantic City Electric Company, (the licensees) dated September 7, 1976, 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. An environmental statement or negative declaration need not be prepared in connection with the issuance of this amendment.
2. Accordingly, the license is amended by revising Attachment 1 to DPR-70 (attached hereto). In addition, Paragraph 2.C(1) of Facility License No. DPR-70 is hereby amended to read as follows:

(1) Maximum Power Level

Public Service Electric and Gas Company is authorized to operate the facility for testing at reactor core power level not in excess of 33.38 megawatts (one percent of rated core power) limited to a cumulative fuel exposure of 300 megawatt days. Prior to attaining the power level, Public Service Electric and Gas Company shall complete the preoperational tests, startup tests and other items identified in Attachment 1 to this license in the sequence specified. Attachment 1, as revised, is an integral part of the license.

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

FOR THE NUCLEAR REGULATORY COMMISSION



Roger S. Boyd, Director  
Division of Project Management  
Office of Nuclear Reactor Regulation

Attachment:

Attachment 1 to License  
No. DPR-70, as revised

Date of Issuance:

ATTACHMENT TO LICENSE DPR-70  
(Revised September 10, 1976)

Incomplete Preoperational Tests, Startup Tests, and  
Other Items Which Must be Completed

This attachment identifies certain preoperational tests, startup tests, and other items which must be completed to the Commission's satisfaction prior to proceeding to certain specified Operational Modes. Public Service Electric and Gas Company shall not proceed beyond the authorized Operational Modes without prior written authorization from the Commission.

- A. Public Service Electric and Gas Company may at the license issue date proceed directly to Operational Mode 6 (initial fuel loading), and may subsequently proceed to Operational Mode 5 (cold shutdown).
- B. Prior to proceeding to Operational Mode 4 (hot shutdown), Public Service Electric and Gas Company shall test the response times of primary sensors in the reactor coolant system per SUP 20.1. Subsequent to the verification by the Office of Inspection and Enforcement of the acceptable completion of this item, and upon written authorization by the Commission, Public Service Electric and Gas Company may proceed to Operational Mode 4 (hot shutdown).
- C. Prior to proceeding to Operational Mode 3 (hot standby), Public Service Electric and Gas Company shall complete the following items:
  1. Testing operation of RHR pump recirculation valves 11RH29 and 12RH29 per SUP 50.0.
  2. Testing motor winding temperatures of RHR pump motors Nos. 11 and 12 per SUP 12.
  3. Testing the following snubbers per SUP 50.4:
    - RHRH 11-29A
    - RHRH 11-29B
    - RHRH 12-34B
    - RHRH 12-34C
  4. Testing the boron recycle system per SUP 10.5.
  5. Demonstrate beta dosimetry capability.
  6. Testing process radiation monitors, excluding those required for fuel loading, per SUP 21.
  7. Testing service water system per SUP 28.

8. Testing chilled water portion of the control room air conditioning system per SUP 19.7.
9. Prepare the following radiochemistry procedures:
  - (a) PD 3.3.010 - procedure to determine the average energy of gamma emitting isotopes;
  - (b) PD 3.3.011 - procedure for detecting fission gases by gamma spectroscopy in the presence of other gases;
  - (c) PD 3.3.003 - procedure to determine the dose equivalent Iodine 131 in the primary coolant.
10. Replace the existing standby charcoal filters in the auxiliary building ventilation system with charcoal filters capable of removing 90 percent of the organic iodines.

Subsequent to verification by the Office of Inspection and Enforcement of the acceptable completion of the above listed items, and upon written authorization from the Commission, the Public Service Electric and Gas Company may proceed to Operational Mode 3 (hot standby).

- D. Prior to proceeding to Operational Mode 2 (initial criticality), Public Service Electric and Gas Company shall complete the following items:
1. Testing high temperature alarm TE463A on pressurizer relief line per SUP 50.6.
  2. Testing control of steam generator blowdown flow by valves GB8 and GB10 per SUP 50.13.
  3. Testing upper motor bearing of reactor coolant pump No. 14 per SUP 50.0.
  4. Testing pump seal of reactor coolant pump No. 11 per SUP 50.0.
  5. Testing RTD's Nos. 423B, 431A, 433B and 440B in the reactor coolant system per SUP 50.7.
  6. Testing the following snubbers per SUP 50.4:

1 - PRA-146	1-PRSN-7	1-PRSN-28	1-PRSN-400
1 - PRA-150	1-PRSN-9	1-PRSN-29	1-PRSN-401
1 - PRA-154	1-PRSN-10	1-PRSN-30	1-PRSN-402
1 - PRA-158	1-PRSN-11	1-PRSN-32A	1-PRSN-405
1 - PRA-162	1-PRSN-12	1-PRSN-32B	1-PRSN-405A
	1-PRSN-13	1-PRSN-33	1-PRSN-406
1-PRSN-1	1-PRSN-16	1-PRSN-34	1-PRSN-406A
1-PRSN-2	1-PRSN-17	1-PRSN-36	
1-PRSN-3	1-PRSN-19	1-PRSN-37	
1-PRSN-3A	1-PRSN-20	1-PRSN-38A	
1-PRSN-4	1-PRSN-23	1-PRSN-38B	
1-PRSN-5	1-PRSN-25	1-PRSN-39	
1-PRSN 5A	1-PRSN-27	1-PRSN-42	

Subsequent to verification by the Office of Inspection and Enforcement of the acceptable completion of the above items, and upon written authorization from the Commission, Public Service Electric and Gas Company may proceed to Operational Mode 2 (initial criticality). The power level of Operational Mode 2 shall be limited to one percent of rated core thermal power.

- E. The completion of the Maintenance Procedures required for facility operation, as delineated in Inspection and Enforcement Report 50-272/76-38, detail 3h, and the testing of the feedwater line snubbers listed below, shall be completed prior to licensing the facility for operating in Operational Mode 1 (power operation).

11-FWSN-12A  
11-FWSN-12B  
11-FWSN-16  
12-FWSN-13A  
12-FWSN-13B  
12-FWSN-15  
13-FWSN-15A  
13-FWSN-15B  
13-FWSN-17A  
13-FWSN-17B  
14-FWSN-13A  
14-FWSN-13B  
14-FWSN-15A  
14-FWSN-15B



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 1 TO FACILITY OPERATING LICENSE NO. DPR-70

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. 1

DOCKET NO. 50-272

Introduction

By letter dated September 7, 1976, Public Service Electric and Gas Company requested a change to Attachment 1 to DPR-70, an integral part of Facility Operating License No. DPR-70 for the Salem Nuclear Generating Station, Unit No. 1. The proposed changes consists of (1) revising the sequence for conducting certain tests, (2) deleting the requirements for testing the feedwater snubbers, and (3) deleting the requirements for completing certain maintenance procedures.

Discussion

The changes proposed by Public Service Electric and Gas Company include (1) deferring certain tests originally scheduled for completion during Operational Mode 4 (hot shutdown) to completion during Operational Mode 3 (hot standby); (2) deleting the requirement to test the feedwater snubbers because of the limited operation for testing permitted by Facility Operating License No. DPR-70; and (3) deleting the requirement to complete the maintenance procedures required for facility operation prior to proceeding to Operational Mode 4 as delineated in Inspection and Enforcement Report 50-272/76-25 Detail 12.

The Technical Specifications for the Salem Nuclear Generating Station, Unit 1 (Appendix A to License No. DPR-70), impose constraints which do not permit certain tests to be conducted in the sequence delineated in Attachment 1 to License DPR-70. Public Service Electric and Gas Company has, therefore, requested these tests be deferred such that the constraints imposed by the technical specifications do not inhibit said tests.

The testing of the feedwater snubbers requires that the feedwater system be operational. The operation of the feedwater system associated with the limited operation for testing permitted by Facility Operating License No. DPR-70 does not permit performing acceptable tests of the feedwater snubbers because the temperature, pressure and flow are not sufficiently high for acceptable testing.

Public Service Electric and Gas Company has, therefore, requested that these tests be deleted from the license currently in force for Salem Unit 1.

The maintenance procedures delineated in Inspection and Enforcement Report 50-272/76-25 Detail 12, are those required prior to proceeding to Operational Mode 1 (power operation). However, the license currently in force for Salem Unit 1, does not permit operation beyond that of Operational Mode 2 (initial criticality). Public Service Electric and Gas Company has, therefore, requested that the requirements for these maintenance procedures be deleted from the license currently in force for Salem Unit 1.

Specifically, Public Service Electric and Gas Company has requested that Attachment 1 to License No. DPR-70 be revised as follows:

1. Revise Paragraph B. by deleting the following statement in the first sentence: "and complete the maintenance procedures required for facility operation as delineated in Inspection and Enforcement Report 50-272/76-25 Detail 12."
2. Revise Paragraph C. as follows:
  - (a) The first sentence in Paragraph C should be revised to read: "Prior to proceeding to Operational Mode 3 (hot standby), Public Service Electric and Gas Company shall complete the following items:"
  - (b) Delete the following five tests listed as items under Paragraph C: testing high pressure alarm on pressurizer; testing steam generator blowdown flow; testing upper motor bearing of reactor coolant pump No. 14; testing pump seal of reactor coolant pump No. 11; and testing RTD's Nos. 423B, 431A, 433B and 440B in the reactor coolant system.
  - (c) Delete the testing of snubbers except for those associated with the residual heat removal system, i.e., those with the prefix "RHRH".
3. Add a new Paragraph D. to include the following:
  - (a) The first sentence in Paragraph D would read as follows: "Prior to proceeding to Operational Mode 2 (initial criticality), Public Service Electric and Gas Company shall complete the following items:"

- (b) The first five items under Paragraph D would include the five tests that were deleted from Paragraph C.
- (c) The sixth item under Paragraph D would include the testing of the snubbers that were deleted from Paragraph C, except that the snubbers associated with the feedwater system would not be included.

### Evaluation

We have reviewed the proposed changes to Attachment 1 to License No. DPR-70 which would allow the deferring of five tests originally scheduled for completion during Operational Mode 4 (hot shutdown) to completion during Operational Mode 3 (hot standby). In addition, we have reviewed the proposed change which would allow deferring the testing of snubbers with the prefixes 1-PRS and 1-PRSN originally scheduled for completion during Operational Mode 4 to completion during Operational Mode 3. In each case we find that it is physically possible to conduct the tests in the sequence indicated in Attachment 1 to License No. DPR-70, but we find that the Appendix A Technical Specifications as currently written, inhibit the tests by not allowing the appropriate temperatures to be reached. For example, testing the high temperature alarm on the pressurizer requires a temperature in excess of 500 degrees Fahrenheit, but the present stipulation is that this test be conducted while the unit is in Operational Mode 4. Since the maximum temperature permitted by the Technical Specifications while the unit is in Operational Mode 4 is 350 degrees Fahrenheit, this test, and the other tests identified by Public Service Electric and Gas Company, cannot be conducted as presently stipulated.

We have evaluated the safety considerations associated with deferring the above tests. We find that the only difference is that the primary coolant system may be operated at higher temperatures, which from a fracture toughness consideration is preferred. Since the reactor will not be made critical until after these tests have been completed, we find that the radiological safety aspects associated with deferring the above tests are nil.

We have reviewed the proposed changes which would delete the requirements for testing the feedwater snubbers for the license currently in force for Salem Unit 1. We agree with Public Service Electric and Gas Company that the effective testing of the feedwater snubbers requires that the unit be in Operational Mode 1 (power operation). We have concluded that since the feedwater snubbers are part of the secondary system, that the radiological safety aspects associated with conducting these tests while the unit is in Operational Mode 1 are minimal. Accordingly, we find that these tests can be deferred until the unit is in Operational Mode 1; however, we will require that these tests be completed with the unit operating at 15 percent of rated core power or less.

We have reviewed the proposed changes which would delete the requirements for completing the maintenance procedures required for facility operation prior to proceeding to Operational Mode 4 as delineated in Inspection and Enforcement Report 50-272/76-25. Since the aforementioned maintenance procedures are not required prior to proceeding the Operational Mode 1, we agree that this requirement should be deleted from the license currently in force for Salem Unit 1. In addition, our Office of Inspection and Enforcement has updated its review of this matter, and has reported the results of its findings in IE Inspection Report 50-272/76-38. The recommendations contained in this report (Detail 3h.) are such that they supercede those contained in IE Inspection Report 50-272/76-25 and acknowledge that these maintenance procedures can be deferred until prior to attaining Operational Mode 1. Accordingly, prior to authorizing Salem Unit 1 to enter into Mode 1, we will require that the maintenance procedures required for facility operation as delineated in IE Inspection Report 50-272/76-38 (Detail 3h.) be completed.

### Conclusions

Based on the considerations discussed above, we have concluded that the changes pertain only to the sequence in which certain tests are conducted and as such: (1) they do not increase the probability or consequences of accidents previously considered; (2) they do not involve a decrease in safety margin nor do they involve new hazards considerations; (3) the activities will be conducted in compliance with the Commission's rules and regulations and the issuance of this amendment will not be inimical to the health and safety of the public; and (4) there is reasonable assurance that activities described in this evaluation can be conducted without endangering the health and safety of the public.