March 11, 1991

Docket Nos. 50-272/311

Mr. Steven E. Miltenberger
Vice President and Chief Nuclear
Officer
Public Service Electric & Gas Company
Post Office Box 236
Hancocks Bridge, New Jersey 08038

Dear Mr. Miltenberger:

SUBJECT: TURBINE OVERSPEED PROTECTION SURVEILLANCE TESTS, SALEM GENERATING STATION, UNIT NOS. 1 AND 2 (TAC NOS. 79369/79370)

The Commission has issued the enclosed Amendment Nos.120 and 100 to Facility Operating License Nos. DPR-70 and DPR-75 for the Salem Generating Station, Unit Nos. 1 and 2. These amendments consist of changes to the Technical Specifications (TSs) in response to your application dated December 21, 1990.

These amendments modify the power level requirements at which turbine overspeed protection surveillance tests are performed. The revised power level requirements now reference the turbine manufacturers recommendations.

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

You are requested to notify the NRC, in writing, when these amendments have been implemented at Salem 1 and 2.

Sincerely,

/S/

James C. Stone, Project Manager
Project Directorate I-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No.120 to License No. DPR-70
2. Amendment No.100 to License No. DPR-75
3. Safety Evaluation

cc w/enclosures:
See next page

DISTRIBUTION w/enclosures:

Docket File	MO'Brien (2)	JCalvo	RBlough
NRC PDR	OGC	Tech Branch	SVarga
Local PDR	DHagan	ACRS (10)	EGreenman
PDI-2 Reading	JStone	JRaleigh	WButler
GPA/PA	JWhite	CMcCracken	GHill(8), P1-37
OC/LFMB	Wanda Jones	JCaldwell	

OFC	:PDI-2/LA	:PDI-2/PM	:OGC	:PDI-2/D	:SPLB/BC
NAME	:MO'Brien	:JStone:rb	:	:WButler	:CMcCracken
DATE	:3/8/91	:2/14/91	:2/21/91	:3/8/91	:2/15/91

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Document Name: [TAC NOS. 79369/370]

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

March 11, 1991

Docket Nos. 50-272/311

Mr. Steven E. Miltenberger
Vice President and Chief Nuclear
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Public Service Electric & Gas Company
Post Office Box 236
Hancocks Bridge, New Jersey 08038

Dear Mr. Miltenberger:

SUBJECT: TURBINE OVERSPEED PROTECTION SURVEILLANCE TESTS, SALEM GENERATING STATION, UNIT NOS. 1 AND 2 (TAC NOS. 79369/79370)

The Commission has issued the enclosed Amendment Nos. 120and 100 to Facility Operating License Nos. DPR-70 and DPR-75 for the Salem Generating Station, Unit Nos. 1 and 2. These amendments consist of changes to the Technical Specifications (TSs) in response to your application dated December 21, 1990.

These amendments modify the power level requirements at which turbine overspeed protection surveillance tests are performed. The revised power level requirements now reference the turbine manufacturers recommendations.

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

You are requested to notify the NRC, in writing, when these amendments have been implemented at Salem 1 and 2.

Sincerely,

James C. Stone

James C. Stone, Project Manager
Project Directorate I-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No.120 to
License No. DPR-70
2. Amendment No.100 to
License No. DPR-75
3. Safety Evaluation

cc w/enclosures:
See next page

Mr. Steven E. Miltenberger
Public Service Electric & Gas Company

Salem Nuclear Generating Station

cc:

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Wilmington, DE 19899

Public Service Commission of Maryland
Engineering Division
ATTN: Chief Engineer
231 E. Baltimore Street
Baltimore, MD 21202-3486

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

PUBLIC SERVICE ELECTRIC & GAS COMPANY

PHILADELPHIA ELECTRIC COMPANY

DELMARVA POWER AND LIGHT COMPANY

ATLANTIC CITY ELECTRIC COMPANY

DOCKET NO. 50-272

SALEM GENERATING STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 120
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 December 21, 1990 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. 120 , 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 and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

/S/

Walter R. Butler, Director
Project Directorate I-2
Division of Reactor Projects - I/II

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 11, 1991

*See previous concurrence

OFC	:PDI-2/LA	:PDI-2/PM	:OGC*	:PDI-2/D	:
NAME	:MO'Brien	:JStone:rb	:CBarth	:WButler	:
DATE	:3/4/91	:3/1/91	:02/21/91	:3/11/91	:

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Document Name: TAC NOS. 79369/370

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 120 , 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 and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Walter R. Butler

Walter R. Butler, Director
Project Directorate I-2
Division of Reactor Projects - I/II

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 11, 1991

ATTACHMENT TO LICENSE AMENDMENT NO. 120

FACILITY OPERATING LICENSE NO. DPR-70

DOCKET NO. 50-272

Revise Appendix A as follows:

Remove Pages	Insert Pages
3/4 3-70	3/4 3-70
B 3/4 3-4	B 3/4 3-4

3/4.3.4 TURBINE OVERSPEED PROTECTION

LIMITING CONDITION FOR OPERATION

3.3.4 At least one turbine overspeed protection system shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

a. With one stop valve or one control valve per high pressure turbine steam lead inoperable and/or with one reheat stop valve or one reheat intercept valve per low pressure turbine steam lead inoperable, restore the inoperable valve(s) to the OPERABLE status within 72 hours or close at least one valve in the affected steam lead; otherwise, isolate the turbine from the steam supply within the next 6 hours.

b. With the above required turbine overspeed protection system otherwise inoperable, within 6 hours either restore the system to OPERABLE status or isolate the turbine from the steam supply.

SURVEILLANCE REQUIREMENTS

4.3.4.1 The provisions of Specification 4.0.4 are not applicable.

4.3.4.2 The above required turbine overspeed protection system shall be demonstrated OPERABLE; (1) prior to admitting steam to the turbine during each startup unless performed within the past 7 days, (2) following startup, within 24 hours of attaining manufacturer's recommended power level for performing turbine valve testing, and (3) at a frequency not to exceed one year* by direct observation of the movement of each of the following valves through at least one complete cycle from the running position.

a. Four high pressure turbine stop valves.

b. Four high pressure turbine control valves.

c. Six low pressure hot reheat stop valves.

d. Six low pressure hot reheat intercept valves.

* The above valves are to be tested at a frequency consistent with the methodology presented in WCAP-11525, "Probabilistic Evaluation of Reduction in Turbine Valve Test Frequency", and in accordance with the established NRC acceptance criteria for the probability of a missile ejection incident of 1.0×10^{-5} per year, in no case shall the test interval for the above valves exceed one year.

3/4.3.4 TURBINE OVERSPEED PROTECTION

This specification is provided to ensure that the turbine overspeed protection instrumentation and the turbine speed control valves are OPERABLE and will protect the turbine from excessive overspeed. Protection from turbine excessive overspeed is required since excessive overspeed of the turbine could generate potentially damaging missiles which could impact and damage safety-related components, equipment or structures.

Salem Unit 1 turbine is operated at full time, partial arc admission. To prevent double shocking the turbine, perform turbine valve testing in accordance with manufacturer's recommendations.

During normal operation, turbine valve testing is performed at a frequency consistent with the methodology presented in WCAP-11525, "Probabilistic Evaluation of Reduction in Turbine Valve Frequency." This report evaluates the contribution of failure or unavailability of the turbine valve safety function to the probability that the turbine will overspeed and eject a missile. It concludes that extended intervals between turbine valve functional tests can be achieved without exceeding the NRC acceptance criteria for the probability of a turbine missile ejection incident. Factors which affect the selected valve test interval include low pressure turbine rotor type and inspection interval; turbine valve type, arrangement and overspeed controls; and secondary side water chemistry.

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

PUBLIC SERVICE ELECTRIC & GAS COMPANY

PHILADELPHIA ELECTRIC COMPANY

DELMARVA POWER AND LIGHT COMPANY

ATLANTIC CITY ELECTRIC COMPANY

DOCKET NO. 50-311

SALEM GENERATING STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 100
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 December 21, 1990 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. 100 , 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 and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

/S/

Walter R. Butler, Director
Project Directorate I-2
Division of Reactor Projects - I/II

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 11, 1991

*See previous concurrence

OFC	:PDI-2/LA	:PDI-2/PM	:OGC*	:PDI-2/D	:
NAME	:MO'Brien	:JStone:rb	:CBarth	:WButler	:
DATE	:3/11/91	:3/11/91	:02/21/91	:3/11/91	:

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Document Name: (TAC NOS. 79369/370)

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 100 , 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 and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Walter R. Butler

Walter R. Butler, Director
Project Directorate I-2
Division of Reactor Projects - I/II

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 11, 1991

ATTACHMENT TO LICENSE AMENDMENT NO. 100

FACILITY OPERATING LICENSE NO. DPR-75

DOCKET NO. 50-311

Revise Appendix A as follows:

Remove Pages	Insert Pages
3/4 3-65	3/4 3-65
B 3/4 3-3	B 3/4 3-3

3/4.3.4 TURBINE OVERSPEED PROTECTION

LIMITING CONDITION FOR OPERATION

3.3.4 At least one turbine overspeed protection system shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

a. With one stop valve or one control valve per high pressure turbine steam lead inoperable and/or with one reheat stop valve or one reheat intercept valve per low pressure turbine steam lead inoperable, restore the inoperable valve(s) to the OPERABLE status within 72 hours or close at least one valve in the affected steam lead; otherwise, isolate the turbine from the steam supply within the next 6 hours.

b. With the above required turbine overspeed protection system otherwise inoperable, within 6 hours either restore the system to OPERABLE status or isolate the turbine from the steam supply.

SURVEILLANCE REQUIREMENTS

4.3.4.1 The provisions of Specification 4.0.4 are not applicable.

4.3.4.2 The above required turbine overspeed protection system shall be demonstrated OPERABLE; (1) prior to admitting steam to the turbine during each startup unless performed within the past 7 days, (2) following startup, within 24 hours of attaining manufacturer's recommended power level for performing turbine valve testing, and (3) at a frequency not to exceed one year* by direct observation of the movement of each of the following valves through at least one complete cycle from the running position.

a. Four high pressure turbine stop valves.

b. Four high pressure turbine control valves.

c. Six low pressure hot reheat stop valves.

d. Six low pressure hot reheat intercept valves.

* The above valves are to be tested at a frequency consistent with the methodology presented in WCAP-11525, "Probabilistic Evaluation of Reduction in Turbine Valve Test Frequency", and in accordance with the established NRC acceptance criteria for the probability of a missile ejection incident of 1.0×10^{-5} per year, in no case shall the test interval for the above valves exceed one year.

3/4.3.3.8 RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

The radioactive liquid effluent instrumentation is provided to monitor and control, as applicable, the releases of radioactive materials in liquid effluents during actual or potential releases of liquid effluents. The alarm/trip setpoints for these instruments shall be calculated and adjusted in accordance with the procedures in the ODCM to ensure that the alarm/trip will occur prior to exceeding the limits of 10 CFR Part 20. The OPERABILITY and use of this instrumentation is consistent with the requirements of General Design Criteria 60, 63, and 64 of Appendix A to 10 CFR Part 50. The purpose of tank level indicating devices is to assure the detection and control of leaks that if not controlled could potentially result in the transport of radioactive materials to UNRESTRICTED AREAS.

3/4.3.3.9 RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

The radioactive gaseous effluent instrumentation is provided to monitor and control, as applicable, the releases of radioactive materials in gaseous effluents during actual or potential releases of gaseous effluents. The alarm/trip setpoints for these instruments shall be calculated and adjusted in accordance with the procedures in the ODCM to ensure that the alarm/trip will occur prior to exceeding the limits of 10 CFR Part 20. This instrumentation also includes provisions for monitoring (and controlling) the concentrations of potentially explosive gas mixtures in the waste gas holdup system. The OPERABILITY and use of this instrumentation is consistent with the requirements of General Design Criteria 60, 63, and 64 of Appendix A to 10 CFR Part 50.

3/4.3.4 TURBINE OVERSPEED PROTECTION

This specification is provided to ensure that the turbine overspeed protection instrumentation and the turbine speed control valves are OPERABLE and will protect the turbine from excessive overspeed. Protection from turbine excessive overspeed is required since excessive overspeed of the turbine could generate potentially damaging missiles which could impact and damage safety-related components, equipment or structures.

Salem Unit 2 turbine is operated at full time, full arc admission. To prevent excessive steam flow induced cyclic stresses of the control stage blading, perform turbine valve testing in accordance with manufacturer's recommendations.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NOS. 120 AND 100 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 GENERATING STATION, UNIT NOS. 1 AND 2

DOCKET NOS. 50-272 AND 50-311

1.0 INTRODUCTION

By letter dated December 21, 1990, Public Service Electric & Gas Company (PSE&G) requested an amendment to Facility Operating License Nos. DPR-70 and DPR-75 for the Salem Generating Station, Unit Nos. 1 and 2. The proposed amendments would change the power level requirement at which turbine overspeed protection surveillance tests are performed. Instead of specifying a power level, reference would be made to the turbine manufacturer's latest recommendations for power level requirements.

2.0 EVALUATION

The Salem 1 and 2 Technical Specifications (TS), Section 4.3.4.2, currently state that surveillance tests shall be performed within 24 hours of attaining greater than or equal to 85% of rated power. Westinghouse has recommended to PSE&G that turbine valve testing be done at differing power levels, depending on how the turbine is operated. The Salem 1 turbine is operated at full time partial arc admission and the Salem 2 turbine is operated at full time full arc admission.

For Salem 1, operating at full time partial arc admission, Westinghouse recommends that valve testing be performed at greater than or equal to 85% of rated thermal power. This will prevent double shocking of the turbine during the conduct of these tests.

For Salem 2, operating at full time full arc admission, Westinghouse recommends that valve testing be performed prior to exceeding 50% of rated thermal power. This will prevent excessive steam flow induced cyclic stresses of the control stage blading during the conduct of these tests.

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P PDR

Instead of specifying a specific power level for conduct of the turbine valve tests, PSE&G has proposed to reference the turbine manufacturer's recommendations in the TS. This will allow the appropriate power level to be used should the manufacturer's recommendations change.

Also, the TS did not clearly state that the testing was only to be done following startup. As currently written the TS could be interpreted to require turbine valve testing whenever thermal power is increased to greater than or equal to 85% of Rated Thermal Power. The proposed TS would now read "...(2) Following startup, within 24 hours of attaining manufacturer's recommended power level for performing turbine valve testing. ..."

In addition, changes to the Bases, Section 3/4.3.4, Turbine Overspeed Protection, have been proposed to incorporate the differences in the operating modes of the two turbines and reference to the turbine manufacturer's power level recommendation for turbine valve testing.

By referencing the manufacturer's recommendations for power level requirements for turbine valve tests, the turbine limits are being maintained. Surveillance tests of turbine valves are done during restart to provide assurance that any maintenance that may have been performed has not affected the operability of the valves. The addition of the words "following startup" clarifies that and eliminates unnecessary testing of the turbine valves. Therefore, the staff finds the proposed changes to Sections 4.3.4.2 and Bases Sections 3/4.3.4 to be acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

These amendments involve a change to a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes to the surveillance requirements. The 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. 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.

4.0 CONCLUSION

The Commission made a proposed determination that the amendments involve no significant hazards consideration which was published in the Federal Register (54 FR 4871) on February 6, 1991 and consulted with the State of New Jersey. No public comments were received and the State of New Jersey did not have any comments.

The staff 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, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of the amendments will not be inimical to the common defense and security nor to the health and safety of the public.

Dated: March 11, 1991

Principal Contributor: James Stone