October 4, 1993

Docket No. 50-311

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: A.C. POWER REQUIREMENTS DURING SWITCHYARD MODIFICATIONS, SALEM NUCLEAR GENERATING STATION, UNIT 2 (TAC NO. M87141)

The Commission has issued the enclosed Amendment No. 123 to Facility Operating License No. DPR-75 for the Salem Nuclear Generating Station, Unit No. 2. This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated August 4, 1993, as supplemented by letter dated August 24, 1993.

This amendment request modifies the TS for the A.C. power sources, on a one-time basis, to allow connection of two new 500/13.8 kV transformer bus sections as part of the Salem switchyard project. Two different entries into the Action Statement will be required during the refueling outage to connect the transformers. This change extends the allowed outage time for one inoperable offsite power circuit from 72 hours to 120 hours and modifies the emergency diesel generator testing requirements during the action statement entries.

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

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PDR ADOCK 05000311
P PDR

Enclosures:
1. Amendment No. 123 to License No. DPR-75
2. Safety Evaluation

cc w/enclosures:
See next page

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

October 4, 1993

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James C. Stone, Senior Project Manager
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2. Safety Evaluation

cc w/enclosures:
See next page

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

Salem Nuclear Generating Station,
Units 1 and 2

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Engineering Division
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Baltimore, MD 21202-3486



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. 123
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 August 4, 1993, and supplemented by letter dated August 24, 1993, 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:

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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. 123, 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.

FOR THE NUCLEAR REGULATORY COMMISSION

Michael L. Boyle, Acting 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: October 4. 1993

ATTACHMENT TO LICENSE AMENDMENT NO. 123

FACILITY OPERATING LICENSE NO. DPR-75

DOCKET NO. 50-311

Revise Appendix A as follows:

Remove Pages	Insert Pages
3/4 8-1	3/4 8-1
3/4 8-2	3/4 8-2
-	3/4 8-2a

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system (vital bus system), and

b. Three separate and independent diesel generators with:

1. Separate day tanks containing a minimum volume of 130 gallons of fuel, and

2. A common fuel storage system consisting of two storage tanks, each containing a minimum volume of 20,000 gallons of fuel, and two fuel transfer pumps.*

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

a. With either an offsite circuit or diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirements 4.8.1.1.1.a and 4.8.1.1.2.a.2 within one hour and at least once per 8 hours thereafter**; restore at least two offsite circuits and three diesel generators to OPERABLE status within 72 hours*** or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With one offsite circuit and one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirements 4.8.1.1.1.a and 4.8.1.1.2.a.2 within 1 hour and at least once per 8 hours thereafter; restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore at least two offsite circuits and three diesel generators to OPERABLE status within 72 hours# from the time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

---

* One inoperable fuel transfer pump is equivalent to one inoperable diesel generator.

ACTION (Continued)

c. With two of the above required offsite A.C. circuits inoperable, demonstrate the OPERABILITY of three diesel generators by performing Surveillance Requirement 4.8.1.1.2.a.2 within one hour and at least once per 8 hours thereafter, unless the diesel generators are already operating; restore at least one of the inoperable offsite sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours. With only one offsite source restored, restore at least two offsite circuits to OPERABLE status within 72 hours from the time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

d. With two or more of the above required diesel generators inoperable, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; restore at least two of the inoperable diesel generators to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore three diesel generators to OPERABLE status within 72 hours from time of initial loss or be in least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Two physically independent A.C. circuits between the offsite transmission network and the onsite Class 1E distribution system (vital bus system) shall be:

a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments, power availability, and

b. Demonstrated OPERABLE at least once per 18 months during shutdown by transferring (manually and automatically) vital bus supply from one 13/4 kv transformer to the other 13/4 kv transformer.

Notes to Actions 3.8.1.1.a and 3.8.1.1.b

** Perform Surveillance Requirement 4.8.1.1.2.a.2 within 24 hours prior to each entry into Action Statement 3.8.1.1.a during the Unit 1 11th refueling outage for the installation of bus connections for 500/13.8 kv Station Power Transformers (SPT's). Repeat Surveillance Requirement 4.8.1.1.2.a.2 for each diesel within 72 hours of the diesel's last successful test, unless the affected 500/13.8 kv SPT has been restored to OPERABLE status. No additional diesel testing is required during entry into Action a. for installation of the 500/13.8 kv bus connections.

*** One offsite power circuit may be inoperable for 120 hours for installation of bus connections for 500/13.8 kv SPT T3 or T4 during the Unit 1 11th refueling outage.

120 hours if this Action Statement is entered during installation of bus connections for 500/13.8 kv SPT T3 or T4 during the Unit 1 11th refueling outage.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 123 TO FACILITY OPERATING LICENSE NO. DPR-75

PUBLIC SERVICE ELECTRIC & GAS COMPANY

PHILADELPHIA ELECTRIC COMPANY

DELMARVA POWER AND LIGHT COMPANY

ATLANTIC CITY ELECTRIC COMPANY

SALEM NUCLEAR GENERATING STATION, UNIT NO. 2

DOCKET NO. 50-311

1.0 INTRODUCTION

By letter dated August 4, 1993, as supplemented August 24, 1993, the Public Service Electric & Gas Company (the licensee) submitted a request for changes to the Salem Nuclear Generating Station, Unit 2, Technical Specifications (TS). The requested changes would modify the TS for the A.C. power sources, on a one-time basis, during the Unit 1 11th refueling (1R11) outage, to allow switchyard modifications.

2.0 EVALUATION

This amendment application requests, on a one-time basis during the upcoming 1R11 outage, that footnotes be added to the SGS Unit 2 TS 3.8.1.1 (limiting condition for operation [LCO]) Action Statements a and b. The amendment will extend the allowed outage time (AOT) from 72 hours to 120 hours for one inoperable offsite power circuit and reduce the number of diesel starts that would be required by the present action statements for one inoperable offsite power circuit.

PSE&G is planning an extensive switchyard modification during the 1R11 outage to increase the operational flexibility and overall reliability of offsite power. The switchyard modification would install 500 kV and 13 kV buses to allow the future connection of the new 500/13.8 kV station power transformers (SPT) T3 and T4. The work scope also includes the addition of 13 kV disconnect switches and a new key interlock system. The existing 500/13.8 kV SPTs T1 and T2 must be deenergized to allow installation of the T3 and T4 buses. The SPTs T1 and T2 will be deenergized one at a time to modify their respective buses T3 and T4 so that one offsite power source is always available during this outage. According to the installation schedule, each SPT is expected to be deenergized for 68 hours during the 1R11 outage.

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When an existing 500/13.8 kV SPT (T1 or T2) is deenergized, one of the offsite power circuits required by TS 3.8.1.1 becomes inoperable (applicable in MODES 1, 2, 3, and 4). Therefore, this modification will force operators to enter the TS action statements, unless both units are in cold shutdown or refueling modes. TS 3.8.1.1, Action "a" requires unit shutdown if one offsite power circuit is inoperable for more than 72 hours. Presently, Action "a" also requires repetitive testing of each of the three emergency diesel generators (EDG) every 8 hours until the action statement is exited. Action "b" applies to a condition where one offsite power circuit and one EDG are inoperable, and allows 72 hours from the time of initial loss to restore both offsite power circuits and all three EDGs to operable status.

Change 1:

Add the following footnote to the SGS Unit 2 TS 3.8.1.1, Action a:

** Perform Surveillance Requirement 4.8.1.1.2.a.2 within 24 hours prior to each entry into Action Statement 3.8.1.1.a during the Unit 1 11th refueling outage for the installation of bus connections for 500/13.8 kV Station Power Transformers (SPT's). Repeat Surveillance Requirement 4.8.1.1.2.a.2 for each diesel within 72 hours of the diesel's last successful test, unless the affected 500/13.8 kV SPT has been restored to OPERABLE status. No additional diesel testing is required during entry into Action a for installation of the 500/13.8 kV bus connections.

The present action statement for one inoperable offsite power circuit would require each of the three Unit 2 diesels to be started within one hour and once per 8 hours thereafter. PSE&G, in its submittal of August 4, 1993, proposed to eliminate the requirement for repetitive diesel starts and claimed that the action is consistent with the NRC's position as given in the new Westinghouse Standard Technical Specifications (NUREG-1431). However, NRC staff pointed out that the referenced section of NUREG-1431 is only applicable to an AOT of 72 hours. PSE&G agreed to revise their proposal to test each Unit 2 EDG within 24 hours before deenergizing the SPT and within 72 hours after the previous test unless the action statement has been exited. The requested amendment would still reduce the Unit 2 EDGS from several (approximately 50) starts. The switchyard configuration for the transformer connections will not introduce a common failure mode for the EDGs or 4.16 kV vital buses. On the basis of the adequate demonstration of EDG operability and no common failure mode, the staff finds this change acceptable.

Change 2:

Add the following footnotes to SGS Unit 2 TS 3.8.1.1, Action a:

*** One offsite power circuit may be inoperable for 120 hours for installation of bus connections for 500/13.8 kV SPT T3 and T4 during the Unit 1 11th refueling outage.

Action "a" of TS 3.8.1.1 requires unit shutdown if one of the offsite power circuits is inoperable for greater than 72 hours. During the switchyard modification one of two 500/13.8 kV SPT (T1 or T2) will be inoperable. According to the PSE&G installation schedule, each SPT is expected to be deenergized for 68 hours during the 1R11 outage. Since 68 hours is very close to the allowed 72 hours of AOT, PSE&G proposed increasing the AOT to 120 hours so that a forced shutdown could be avoided if the installation time exceeds 72 hours. In response to the staff's question as to why specifically 120 hours was chosen in lieu of a smaller interval as the proposed AOT, PSE&G stated that its Nuclear Department administrative procedure for work control states that planned entries into action statements should be limited in duration not to exceed 2/3 of the AOT. Extending the AOT from 72 to 120 hours for this activity would make the scheduled action statement entry equal to approximately 57 percent of the AOT.

PSE&G also submitted the Salem probabilistic risk assessment (PRA) model that was used to estimate the effect of the AOT extension on the core damage probability. The PRA results support the conclusion that extending the AOT in the action statement from 72 hours to 120 hours poses less risk to the operating unit than manually shutting down the unit when the allowable 72-hour AOT is exceeded. The PRA results also support the conclusion that the total increase in core damage probability associated with the proposed AOT increase is very low.

The staff finds this change to be acceptable because 120 hours for the AOT is consistent with PSE&G's existing administrative procedure. Also the PRA results support the conclusion that extension of the AOT poses less risk than manually shutting down the unit and an insignificant increase in core damage probability.

Change 3:

Add the following footnote to SGS Unit 2 TS 3.8.1.1, Action b:

\# 120 hours if this Action Statement is entered during installation of bus connections for 500/13.8 kV SPT T3 or T4 during the Unit 1 11th refueling outage.

Currently the action statement "b" of TS 3.8.1.1 with one offsite circuit and one EDG inoperable, allows 72 hours from the time of initial loss to restore all three EDGs and both the offsite power circuits to operable status. The proposed change would allow 120 hours from the time the SPT is inoperable during the 1R11 outage, which is consistent with the request of the AOT for action statement "a", addressed in "Change 2" previously. The current action statement also requires at least one of the two inoperable sources to be operable within 12 hours or to be in at least hot standby within the next 6 hours and in cold shutdown within the following 30 hours. Similarly, if one of the three EDGs should not start during the 72-hour required surveillance tests and one of the SPTs is still deenergized during the 1R11 outage, PSE&G is required to restore one of the sources within 12 hours to operate the plant.

This change is consistent with the 120 hours requested AOT for the SPT in "Change 2," and is acceptable.

The proposed changes in the TS are for use during the 1R11 outage only and will not change the design, function, or method of operation of any equipment at SGS. Two entries into the revised Action Statement will be required during the 1R11 outage to connect the two new transformers. The staff concludes that the proposed TS changes are consistent with other provisions of the existing TS, and their technical bases.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New Jersey State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes 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 amendment involves 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 amendment involves no significant hazards consideration, and there has been no public comment on such finding (58 FR 46250). Accordingly, the amendment meets 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 amendment.

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

Principal Contributor: S. K. Mitra

Date: October 4. 1993