



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

September 8, 1994

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: EMERGENCY DIESEL GENERATOR SURVEILLANCE TESTING, SALEM NUCLEAR
GENERATING STATION, UNIT NOS. 1 AND 2 (TAC NOS. M89317 AND M89318)

The Commission has issued the enclosed Amendment Nos. 156 and 137 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 12, 1994 as supplemented by letter dated July 15, 1994.

These amendments eliminate the required loss of offsite power plus an engineered safety feature actuation signal test following the 24-hour endurance test, revise the 5-minute emergency diesel generator (EDG) hot restart test by separating it from the 24-hour endurance test and add a new surveillance requirement of a simple hot restart test following a 2-hour loaded run of the EDG.

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

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Docket Nos. 50-272
and 50-311

Enclosures:

1. Amendment No. 156 to License No. DPR-70
2. Amendment No. 137 to License No. DPR-75
3. Safety Evaluation

cc w/enclosures:
See next page

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

Salem Nuclear Generating Station,
Units 1 and 2

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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. 156
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 12, 1994 and supplement dated July 15, 1994, 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. 156, 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 90 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION


Mohan C. Thadani, 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: September 8, 1994

ATTACHMENT TO LICENSE AMENDMENT NO.156

FACILITY OPERATING LICENSE NO. DPR-70

DOCKET NO. 50-272

Revise Appendix A as follows:

Remove Pages

3/4 8-5

3/4 8-5a

Insert Pages

3/4 8-5

3/4 8-5a

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

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- c) Verifying that all nonessential automatic diesel generator trips (i.e., other than engine overspeed, lube oil pressure low, 4 KV bus differential and generator differential), are automatically bypassed upon loss of voltage on the vital bus concurrent with a safety injection actuation signal.

- 7. Verifying the diesel generator operates for at least 24 hours*. During the first 2 hours of this test, the diesel generator shall be loaded to 2760-2860 kw.** During the remaining 22 hours of this test, the diesel generator shall be loaded to 2500-2600 kw**. The steady state voltage and frequency shall be maintained at ≥ 3950 and ≤ 4580 volts and 60 ± 1.2 Hz during this test.

- 8. Verifying that the auto-connected loads to each diesel generator do not exceed the two hour rating of 2860 kw.

- 9. Verifying that with the diesel generator operating in a test mode (connected to its bus), a simulated safety injection signal overrides the test mode by (1) returning the diesel generator to standby operation and (2) automatically energizing the emergency loads with offsite power.

- e. At least once per ten years or after any modifications which could affect diesel generator interdependence by starting all diesel generators simultaneously*, during shutdown, and verifying that all diesel generators accelerate to at least 900 rpm in less than or equal to 10 seconds.

- f. At least once per 18 months, the following test shall be performed within 5 minutes of diesel shutdown after the diesel has operated for at least two hours at 2500-2600 kw**:

Verifying the diesel starts and accelerates to 900 rpm in less than or equal to 10 seconds*. The generator voltage and frequency shall be ≥ 3950 volts and ≤ 4580 volts and 60 ± 1.2 Hz within 13 seconds after the start signal.

4.8.1.1.3 The diesel fuel oil storage and transfer system shall be demonstrated OPERABLE:

- a. At least once per 31 days by:
 - 1. Verifying the level in each of the above required 20,000 gallon fuel storage tanks.

 - 2. Verifying that both fuel transfer pumps can be started and transfer fuel from the 20,000 gallon storage tanks to the day tanks.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

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- b. At least once per 92 days by verifying that a sample of diesel fuel from each of the above required 20,000 gallon fuel storage tanks is within the acceptable limits specified in Table 1 of ASTM D975-77 when checked for viscosity, water and sediment.

4.8.1.1.4 Reports - All diesel generator failures, valid or non-valid, shall be reported to the Commission in a Special Report pursuant to Specification 6.9.2 within 30 days. Reports of diesel generator failures shall include the information recommended in Regulatory Position C.3.b of Regulatory Guide 1.108, Revision 1, August 1977. If the number of failures in the last 100 valid tests (on a per nuclear unit basis) is greater than or equal to 7, the report shall be supplemented to include the additional information recommended in Regulatory Position C.3.b of Regulatory Guide 1.108, Revision 1, August 1977.

* Surveillance testing shall be conducted in accordance with the manufacturer's recommendations regarding engine prelube, warm-up and loading (unless loading times are specified in the individual Surveillance Requirements).

** This band is meant as guidance to preclude routine exceedances of the diesel generator manufacturer's design ratings. Loads in excess of this band for special testing or momentary variations due to changing bus loads shall not invalidate the test.



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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. 137
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 12, 1994 and supplement dated July 15, 1994, 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. 137, 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 before restart from the eighth refueling outage, currently scheduled to begin on October 15, 1994.

FOR THE NUCLEAR REGULATORY COMMISSION



Mohan C. Thadani, 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: September 8, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 137

FACILITY OPERATING LICENSE NO. DPR-75

DOCKET NO. 50-311

Revise Appendix A as follows:

Remove Pages

3/4 8-5

3/4 8-6

Insert Pages

3/4 8-5

3/4 8-6

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

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- c) Verifying that all nonessential automatic diesel generator trips (i.e., other than engine overspeed, lube oil pressure low, 4 KV Bus differential and generator differential) are automatically bypassed upon loss of voltage on the vital bus concurrent with a safety injection actuation signal.

- 7. Verifying the diesel generator operates for at least 24 hours*. During the first 2 hours of this test, the diesel generator shall be loaded to 2760-2860 kw**. During the remaining 22 hours of this test, the diesel generator shall be loaded to 2500-2600 kw**. The steady state voltage and frequency shall be maintained at ≥ 3950 and ≤ 4580 volts and 60 ± 1.2 Hz during this test.

- 8. Verifying that the auto-connected loads to each diesel generator do not exceed the two hour rating of 2860 kw.

- 9. Verifying that with the diesel generator operating in a test mode (connected to its bus), a simulated safety injection signal overrides the test mode by (1) returning the diesel generator to standby operation and (2) automatically energizing the emergency loads with offsite power.

- e. At least once per 10 years or after any modifications which could affect diesel generator interdependence by starting all diesel generators simultaneously*, during shutdown, and verifying that all diesel generators accelerate to at least 900 rpm in less than or equal to 10 seconds.

- f. At least once per 18 months, the following test shall be performed within 5 minutes of diesel shutdown after the diesel has operated for at least two hours at 2500-2600 kw**:

Verifying the diesel starts and accelerates to 900 rpm in less than or equal to 10 seconds*. The generator voltage and frequency shall be ≥ 3950 volts and ≤ 4580 volts and 60 ± 1.2 Hz within 13 seconds after the start signal.

4.8.1.1.3 The diesel fuel oil storage and transfer system shall be demonstrated OPERABLE:

- a. At least once per 31 days by:
 - 1. Verifying the level in each of the above required 20,000 gallon fuel storage tanks.
 - 2. Verifying that both fuel transfer pumps can be started and transfer fuel from the 20,000 gallon storage tanks to the day tanks.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

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- b. At least once per 92 days by verifying that a sample of diesel fuel from each of the above required 20,000 gallon fuel storage tanks is within the acceptable limits specified in Table 1 of ASTM D975-77 when checked for viscosity, water and sediment.

4.8.1.1.4 Reports - All diesel generator failures, valid or non-valid, shall be reported to the Commission in a Special Report pursuant to Specification 6.9.2 within 30 days. Reports of diesel generator failures shall include the information recommended in Regulatory Position C.3.b of Regulatory Guide 1.108, Revision 1, August 1977. If the number of failures in the last 100 valid tests (on a per nuclear unit basis) is greater than or equal to 7, the report shall be supplemented to include the additional information recommended in Regulatory Position C.3.b of Regulatory Guide 1.108, Revision 1, August 1977.

* Surveillance testing shall be conducted in accordance with the manufacturer's recommendations regarding engine prelube, warm-up and loading (unless loading times are specified in the individual Surveillance Requirements).

** This band is meant as guidance to preclude routine exceedances of the diesel generator manufacturer's design ratings. Loads in excess of this band for special testing or momentary variations due to changing bus loads shall not invalidate the test.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NOS. 156 AND 137 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 12, 1994, as supplemented by letter dated July 15, 1994, the Public Service Electric and Gas Company (the licensee) submitted a request for changes to the Salem Nuclear Generating Station, Unit Nos. 1 and 2, Technical Specifications (TS). The requested changes in TS 4.8.1.1.2.d.7 would eliminate the required loss of offsite power (LOOP) plus an engineered safety feature actuation (ESF) signal test following the 24-hour endurance test, separate the hot restart test of emergency diesel generator (EDG) from the 24-hour loaded run test and add a new surveillance requirement of a simple hot restart test following a 2-hour loaded run of the EDG. The July 15, 1994, letter provided clarifying information that did not change the initial proposed no significant hazards consideration determination.

2.0 BACKGROUND

The current Surveillance Requirement 4.8.1.1.2.d.7 requires that within 5 minutes of shutting down the EDG following the 24-hour endurance test run that is done during refueling outages, a simulated LOOP in conjunction with an ESF signal surveillance test be conducted. Performing the LOOP plus ESF test per the current TS requires the major ESF loads sequenced during LOCA to be available immediately following the 24-hour endurance run. Coordination of the 24-hour endurance run with availability of the ESF systems, results in a scheduling burden because it may preclude modifications, maintenance and testing of ESF systems from being performed in parallel with the 24-hour endurance test. This constraint on scheduling flexibility is estimated to cost a minimum of 2 days of critical path time per refueling outage.

The licensee has proposed to separate the 5-minute hot restart test from the 24-hour endurance test, eliminate the requirement for the LOOP plus ESF test following the 24-hour loaded run and add a new surveillance requirement of a

simple hot restart test following a 2-hour loaded run of the EDG. The revised surveillance requirement will verify EDG hot restart capability by starting the EDG and verifying that it attains rated voltage and frequency within the required time.

The proposed surveillance for the EDG hot restart test could be performed during any mode of plant operation. Since the hot restart, LOOP plus ESF load sequence test, and 24-hour endurance test objectives will continue to be met at Salem, decoupling the tests would result in improved scheduling flexibility with no reduction in demonstration of EDG operability.

3.0 SPECIFIC CHANGES

- 1) Revise Surveillance Requirement (SR) 4.8.1.1.2.d.7 to delete the requirement to perform SR 4.8.1.1.2.d.6.b within 5 minutes of completing the 24-hour endurance test.
- 2) Add SR 4.8.1.1.2.f, which would require an 18-month surveillance test to restart the EDG within 5-minutes of EDG shutdown after operating at least 2 hours at the continuous rating.
- 3) Delete the "****" footnote, which applies to the EDG hot restart to the EDG hot restart test presently required by SR 4.8.1.1.2.d.7.

4.0 EVALUATION

The proposed changes would separate the hot restart test from the 24-hour full load test, delete the requirement for the LOOP plus ESF test following the 24-hour loaded run and add new SR 4.8.1.1.2.f that would add a surveillance test that would require restarting the EDG within 5 minutes after at least 2 hours of operation at the continuous rating. The hot restart test can be scheduled for a different time so as to alleviate test scheduling difficulties and the financial burden that would result from an extended outage. The purpose of the EDG hot restart surveillance is to demonstrate functional capabilities of the EDG to restart from full load temperature conditions. The new SR 4.8.1.1.2.f would provide adequate demonstration of restart capability of the EDG from full load temperature conditions. This modified surveillance requirement of the EDGs has been examined and accepted by the NRC staff in the new improved Standard Technical Specifications, NUREG-1431. Based on the above, the staff finds the proposed changes to be acceptable.

5.0 STATE CONSULTATION

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

6.0 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 and change surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (59 FR 27066). 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.

7.0 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: O. Chopra

Date: September 8, 1994