July 3, 1990

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: 125 and 28 VOLT BATTERY SERVICE TESTS REQUIREMENTS, SALEM GENERATING STATION, UNIT NOS. 1 AND 2 (TAC NOS. 75176 AND 75177)

The Commission has issued the enclosed Amendment Nos. 111 and 92 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 October 17, 1989 and supplemented by letters dated March 26, 1990 and May 16, 1990. The March 26, 1989 letter provided details of how the load tests are to be conducted, and the May 16, 1990 letter provided the correct TSs pages. The supplemental letters did not increase the scope of the original amendment request and did not affect the staff's original no significant hazards determination.

These amendments modify Surveillance Requirements 4.8.2.3.2(d) and 4.8.2.5.2(d) by requiring a design duty cycle load profile service test (simulated emergency loads) or load service test (actual loads) in lieu of the (8) hour service test currently specified in the TSs. You are requested to notify the Commission, in writing, when the enclosed amendments are implemented at Salem 1 and 2.

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

Enclosures:
1. Amendment No. 111 to License No. DPR-70
2. Amendment No. 92 to License No. DPR-75
3. Safety Evaluation

cc w/enclosures: See next page

DISTRIBUTION w/enclosures:

Docket File	MO'Brien (2)	Wanda Jones	JDyer
NRC PDR	OGC	JCalvo	RBlough
Local PDR	DHagan	FBurrows	Boger
PDI-2 Reading	EJordan	ACRS (10)	WButler
GPA/PA	JStone	MThadini	GHill (8)
Rita Jacques, ARM/LFMB		PSwetland	FRosa

Previously concurred* [75176/77]

PDI-2/LA*	PDI-2/PM*	PDI-2/GE*	PDI-2/D	OGC
MO'Brien	JStone:ew	MFranovich	WButler	CBarth concurred on am page
06/13/90	06/15/90	06/15/90	7/2/90	7/2/90 and notice 6/19/90

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

Salem Nuclear Generating Station

cc:

Mark J. Wetterhahn, Esquire
Conner and Wetterhahn
Suite 1050
1747 Pennsylvania Avenue, NW
Washington, DC 20006

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

Mr. L. K. Miller
General Manager - Salem Operations
Salem Generating Station
P.O. Box 236
Hancocks Bridge, NJ 08038

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

Mr. Thomas P. Johnson, Senior Resident Inspector
Salem Generating Station
U.S. Nuclear Regulatory Commission
Drawer I
Hancocks Bridge, NJ 08038

Dr. Jill Lipoti, Asst. Director
Radiation Protection Programs
NJ Department of Environmental Protection
CN 415
Trenton, NJ 08625

Maryland People's Counsel
American Building, 9th Floor
231 East Baltimore Street
Baltimore, Maryland 21202

Mr. J. T. Robb, Director
Joint Owners Affairs
Philadelphia Electric Company
955 Chesterbrook Blvd., 51A-13
Wayne, PA 19087

Richard B. McGlynn, Commission
Department of Public Utilities
State of New Jersey
101 Commerce Street
Newark, NJ 07102

Regional Administrator, Region I
U. S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Lower Alloways Creek Township
c/o Mary O. Henderson, Clerk
Municipal Building, P.O. Box 157
Hancocks Bridge, NJ 08038

Mr. Bruce A. Preston, Manager
Licensing and Regulation
Nuclear Department
P.O. Box 236
Hancocks Bridge, NJ 08038

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

Mr. Scott B. Ungerer
MGR. - Joint Generation Projects
Atlantic Electric Company
P.O. Box 1500
1199 Black Horse Pike
Pleasantville, NJ 08232

Mr. Jack Urban
General Manager, Fuels Department
Delmarva Power & Light Company
800 King Street
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. 111
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 October 17, 1989 and supplemented by letters dated March 26, 1990 and May 16, 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. 111 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance to be implemented within 60 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 3, 1990

PDI-2/LA	PDI-2/PM	OGC	PDI-2/D
MO'Brien	JStone:ew		WButler
6/13/90	6/15/90	7/2/90	6/15/90 7/2/90

ATTACHMENT TO LICENSE AMENDMENT NO. 111

FACILITY OPERATING LICENSE NO. DPR-70

DOCKET NO. 50-272

Revise Appendix A as follows:

Remove Pages	Insert Pages
3/4 8-9	3/4 8-9
3/3 8-12	3/4 8-12

SURVEILLANCE REQUIREMENTS (Continued)

2. The pilot cell specific gravity, corrected to 77°F and full electrolyte level, is greater than or equal to 1.200.

3. The pilot cell voltage is greater than or equal to 2.08 volts.

4. The overall battery voltage is greater than or equal to 125 volts.

b. At least once per 92 days by verifying that:

1. The voltage of each connected cell is greater than or equal to 2.13 volts under float charge and has not decreased more than 0.27 volts from the value observed during the original acceptance test.

2. The specific gravity, corrected to 77°F and full electrolyte level, of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.02 from the value observed during the previous test.

3. The electrolyte level of each connected cell is between the minimum and maximum level indication marks.

c. At least once per 18 months by verifying that:

1. The cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration.

2. The cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material.

3. The resistance of each cell-to-cell and terminal connection is less than or equal to 0.01 ohms.

4. The battery charger will supply at least 200 amperes at 125 volts for at least 4 hours.

d. At least once per 18 months, during shutdown, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual or simulated emergency loads for the design duty cycle when the battery is subjected to a battery service test.

e. At least once per 60 months, during shutdown, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. Satisfactory completion of this performance discharge test shall also satisfy the requirements of Specification 4.8.2.3.2.d if the performance discharge test is conducted during a shutdown where that test and the battery service test would both be required.

SURVEILLANCE REQUIREMENTS (Continued)

2. The pilot cell specific gravity, corrected to 77°F, and full electrolyte level, is greater than or equal to 1.200.

3. The pilot cell voltage is greater than or equal to 2.08 volts.

4. The overall battery voltage is greater than or equal to 27 volts.

b. At least once per 92 days by verifying that:

1. The voltage of each connected cell is greater than or equal to 2.13 volts under float charge and has not decreased more than 0.27 volts from the value observed during the original acceptance test.

2. The specific gravity, corrected to 77°F and full electrolyte level, of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.02 from the value observed during the previous test.

3. The electrolyte level of each connected cell is between the minimum and maximum level indication marks.

c. At least once per 18 months by verifying that:

1. The cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration.

2. The cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material.

3. The battery charger will supply at least 150 amperes at 28 volts for at least 4 hours.

d. At least once per 18 months, during shutdown, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual or simulated emergency loads for the design duty cycle when the battery is subjected to a battery service test.

e. At least once per 60 months, during shutdown, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. Satisfactory completion of this performance discharge test shall also satisfy the requirements of Specification 4.8.2.5.2.d if the performance discharge test is conducted during a shutdown where that test and the battery service test would both be required.

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. 92
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 October 17, 1989 supplemented by letters dated March 26, 1990 and May 16, 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. 92 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance to be implemented within 60 days of the date of issuance.

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: July 3, 1990

ATTACHMENT TO LICENSE AMENDMENT NO. 92

FACILITY OPERATING LICENSE NO. DPR-75

DOCKET NO. 50-311

Revise Appendix A as follows:

Remove Pages	Insert Pages
3/4 8-11	3/4 8-11
3/4 8-14	3/4 8-14

SURVEILLANCE REQUIREMENTS (Continued)

2. The pilot cell specific gravity, corrected to 77°F and full electrolyte level, is greater than or equal to 1.200.

3. The pilot cell voltage is greater than or equal to 2.08 volts.

4. The overall battery voltage is greater than or equal to 125 volts.

b. At least once per 92 days by verifying that:

1. The voltage of each connected cell is greater than or equal to 2.13 volts under float charge and has not decreased more than 0.27 volts from the value observed during the original acceptance test.

2. The specific gravity, corrected to 77°F and full electrolyte level, of each connected cell is greater than or equal to 1.200 and has not decreased more than 0.02 from the value observed during the previous test.

3. The electrolyte level of each connected cell is between the minimum and maximum level indication marks.

c. At least once per 18 months by verifying that:

1. The cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration.

2. The cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material.

3. The resistance of each cell-to-cell and terminal connection is less than or equal to 0.01 ohms.

4. The battery charger will supply at least 200 amperes at 125 volts for at least 4 hours.

d. At least once per 18 months, during shutdown, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual or simulated emergency loads for the design duty cycle when the battery is subjected to a battery service test.

e. At least once per 60 months, during shutdown, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. Satisfactory completion of this performance discharge test shall also satisfy the requirements of Specification 4.8.2.3.2.d if the performance discharge test is conducted during a shutdown where that test and the battery service test would both be required.

2. The pilot cell specific gravity, corrected to 77°F, and full electrolyte level, is greater than or equal to 1.200.

3. The pilot cell voltage is greater than or equal to 2.08 volts.

4. The overall battery voltage is greater than or equal to 27 volts.

b. At least once per 92 days by verifying that:

1. The voltage of each connected cell is greater than or equal to 2.13 volts under float charge and has not decreased more than 0.27 volts from the value observed during the original acceptance test.

2. The specific gravity, corrected to 77°F and full electrolyte level, of each connected cell is greater than or equal to 1.200 has not decreased more than 0.02 from the value observed during the previous test.

3. The electrolyte level of each connected cell is between the minimum and maximum level indication marks.

c. At least once per 18 months by verifying that:

1. The cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration.

2. The cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material.

3. The battery charger will supply at least 150 amperes at 28 volts for at least 4 hours.

d. At least once per 18 months, during shutdown, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual or simulated emergency loads for the design duty cycle when the battery is subjected to a battery service test.

e. At least once per 60 months, during shutdown, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. Satisfactory completion of this performance discharge test shall also satisfy the requirements of Specification 4.8.2.5.2.d if the performance discharge test is conducted during a shutdown where that test and the battery service test would both be required.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NOS. 111 AND 92 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 October 17, 1989 and supplemented by letters dated March 26 and May 16, 1990, Public Service Electric & Gas Company 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 revise the plants' Technical Specifications related to the service test requirements for the 125 and 28 volt batteries. The March 26, 1990 letter provided details of how the load tests are to be conducted, and the May 16, 1990 letter provided the correct Technical Specifications pages for this amendment request. The supplemental letters did not increase the scope of the original amendment request and did not affect the staff's original no significant hazards determination.

2.0 DISCUSSION

Currently, Sections 4.8.2.3.2(d) and 4.8.2.5.2(d) of the plant's Technical Specifications require design duty cycle load profile service tests utilizing actual emergency loads for 8 hours. This is in conflict with Section 8.3.2.2 of the plant's UFSAR which defines the battery design duty cycles to be based on a loss of AC power for no longer than 2 hours. The licensee's proposed revision to the Technical Specification sections listed above is intended to eliminate this conflict by requiring battery service tests to utilize actual or simulated emergency loads for the design duty cycles which the licensee will document in the 1990 or 1991 revisions to the plant's UFSAR.

Regulatory Guide 1.129, "Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Nuclear Power Plants," endorses IEEE Std 450-1975, "IEEE Recommended Practice for Maintenance, Testing and Replacement of Large Lead Storage Batteries for Generating Stations and Substations," as an adequate

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basis for testing large lead storage batteries. Subsection 4.3 of IEEE Std 450-1975 states that the battery service test is a test of the battery's capability to deliver power at or above the required minimum voltage to ensure the functional design requirements of the dc system are met. Further, Subsection 5.6 of IEEE Std 450-1975 states that the service test discharge rate and test length should correspond as close as practical to the actual load of the battery. Also current versions of standard technical specifications state that the battery service test should verify that the battery capacity is adequate to supply and maintain in operable status all of the actual or simulated emergency loads for the design duty cycle.

3.0 EVALUATION

As can be seen from the above discussion, the licensee's requested changes to the plant's Technical Specifications are consistent with the current staff guidance contained in Regulatory Guide 1.129 and standard technical specifications and are therefore acceptable.

Historically, detailed battery load profiles have been included in technical specifications or, most recently, in plant-specific FSAR's. Since the plant's Technical Specifications and UFSAR do not now contain a detailed description of the design duty cycles (load profiles), the revised technical specification, as approved, can only be meaningful if a detailed design load profile to support the actual service test requirement is documented for each battery.

In Attachment 4 to the licensee's October 17, 1989, letter, a brief description of the criteria and methodology utilized to identify and calculate battery loads for service test load profiles was provided. Basically, the licensee developed battery load profiles based on a LOCA with simultaneous loss of AC power (including a loss of power to the battery chargers) for 2 hours. In response to the staff's February 9, 1990, request for additional information, the licensee provided clarification and additional detailed descriptions of the 2 hour scenario for the four 28 and six 125 volt batteries in a March 26, 1990 letter. Also in that letter, the licensee committed to include a concise description of the battery design duty cycles in the 1990 or 1991 UFSAR revision.

The licensee divided the 2 hour scenario into two time periods. The first segment is the first minute following the postulated LOCA when many automatic system/equipment actuations occur. The second time interval is from 1 minute to 120 minutes during which some manual restoration of non-vital equipment to offsite power is anticipated. The licensee has included in the load profile for each battery and each time interval appropriate breaker actuations (tripping, closing and charging), relay actuations, instrument bus inverter loads, loads for indicator lights, and motor/pump loads based on a set of twelve rules or guidelines developed from engineering judgement which have been applied to the basic 2 hour scenario assumption.

We have reviewed the battery load profiles and the guidelines from which they were developed and find them conservative and acceptable as being representative of actual, anticipated battery loading during the 2 hour scenario. We also find the 2 hour scenario assumption to be consistent with current staff guidance/requirements but note that this issue will be revisited during the staff's plant-specific station black-out review.

The October 17, 1989 amendment request corrected the page number of 3/3 8-14 to read as page 3/4 8-14 for Salem Unit 2 Technical Specifications.

The May 16, 1990 supplemental letter provided the corrected Technical Specifications pages and replaced the corrected pages submitted in the October 17, 1989 submittal. The supplement provided the correct statements in 4.8.2.5.2(e) to read as they currently appear in the Unit 2 Technical Specifications. In addition, the supplemental letter corrected the spelling of the word "at" in the original submittal for Unit 2 Section 4.8.2.5.2(c).3.

In the Unit 1 Technical Specifications, revised page 3/4 8-9, paragraph d, the word "the" was inserted between "for" and "design" by the staff with the concurrence of the licensee. This brought the revised page into agreement with the "marked up" technical specification page.

4.0 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.

5.0 CONCLUSION

The Commission made a proposed determination that the amendments involve no significant hazards consideration which was published in the Federal Register (54 FR 51263) on December 13, 1989 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: July 3, 1990

Principal Contributor:

F. Burrows