March 19, 1998

Mr. Harold W. Keiser
Executive Vice President-
Nuclear Business Unit
Public Service Electric & Gas
Company
Post Office Box 236
Hancocks Bridge, NJ 08038

SUBJECT: SALEM NUCLEAR GENERATING STATION, UNIT NO. 2 (TAC NO. M99888)

Dear Mr. Keiser:

The Commission has issued the enclosed Amendment No. 190 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 October 29, 1997, as supplemented on January 27, 1998.

This amendment provides a one-time change to TS 3/4.4.6, "Steam Generators," to require that the next inspection be performed within 24 months from initial criticality for fuel cycle 10, or during the next refueling outage, whichever is first for fuel cycle 10. In addition, the amendment eliminates a description of an alternate steam generator tube sampling plan that was applicable only during the fourth refueling outage.

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/
Patrick D. Milano, Senior Project Manager
Project Directorate I-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-311

Enclosures: 1. Amendment No. 190 to License No. DPR-75
2. Safety Evaluation

cc w/encls: See next page

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

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cc w/encls: See next page

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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. 50-311

SALEM NUCLEAR GENERATING STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 190
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 29, 1997, as supplemented on January 27, 1998, 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. 190, 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

John F. Stolz, 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: March 19, 1998

ATTACHMENT TO LICENSE AMENDMENT NO. 190

FACILITY OPERATING LICENSE NO. DPR-75

DOCKET NO. 50-311

Revise Appendix A as follows:

Remove Pages	Insert Pages
3/4 4-11	3/4 4-11
3/4 4-15a	3/4 4-15a

SURVEILLANCE REQUIREMENTS (Continued)

4.4.6.3 Inspection Frequencies - The above required inservice inspections of steam generator tubes shall be performed at the following frequencies:

a. The first inservice inspection shall be performed after 6 Effective Full Power Months but within 24 calendar months of initial criticality. Subsequent inservice inspections shall be performed at intervals of not less than 12 nor more than 24 calendar months after the previous inspection. For Fuel Cycle 10 only, the inspection interval shall begin at criticality. If two consecutive inspections following service under AVT conditions, not including the preservice inspection, result in all inspection results falling into the C-1 category or if two consecutive inspections demonstrate that previously observed degradation has not continued and no additional degradation has occurred, the inspection interval may be extended to a maximum of once per 40 months.

b. If the results of the inservice inspection of a steam generator conducted in accordance with Table 4.4-2 at 40 month intervals fall in Category C-3, the inspection frequency shall be increased to at least once per 20 months. The increase in inspection frequency shall apply until the subsequent inspections satisfy the criteria of Specification 4.4.6.3.a; the interval may then be extended to a maximum of once per 40 months.

c. Additional, unscheduled inservice inspections shall be performed on each steam generator in accordance with the first sample inspection specified in Table 4.4-2 during the shutdown subsequent to any of the following conditions:

1. Primary-to-secondary tubes leaks (not including leaks originating from tube-to-tube sheet welds) in excess of the limits of Specification 3.4.7.2.

2. A seismic occurrence greater than the Operating Basis Earthquake.

3. A loss-of-coolant accident requiring actuation of the engineered safeguards.

4. A main steam line or feedwater line break.

STEAM GENERATOR SURVEILLANCE PERIOD AMENDMENT
FOR SALEM NUCLEAR GENERATING STATION UNIT 2
FUEL CYCLE 2R10

Salem Unit 2 was removed from service in June of 1995 for a comprehensive review of plant methods and policies. In May of 1996, a 100% bobbin coil and additional specialty examinations inspection of the Salem Unit 2 steam generators was completed. Permission to restart Unit 2 was given by the NRC in June of 1997 and Mode 2 first achieved on August 17, 1997. After the May 1996 inspection, Unit 2 steam generators were placed in lay-up, using EPRI guidelines, to protect the steam generators from deterioration. PSE&G has a high level of confidence that corrosion growth and new corrosion initiation during the time of lay-up were essentially halted, and the condition of the steam generators has not changed since the May 1996 inspection.

Thus, in order to avoid an unnecessary mid-cycle steam generator inspection forced outage, Technical Specification 3/4.4.6 is hereby amended such that the next steam generator inspection will be required to be performed within 24 months of Mode 2(this would be by August 17, 1999), or during the next scheduled refueling outage, whichever is first for Unit 2 fuel cycle 10. Subsequent steam generator inspections will be scheduled accordingly.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 190 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 October 29, 1997, as supplemented on January 27, 1998, the Public Service Electric & Gas Company (the licensee) submitted a request for changes to the Salem Nuclear Generating Station, Unit No. 2, Technical Specifications (TSs). The requested changes would provide a one-time change to TS 3/4.4.6, "Steam Generators," to require that the next inspection be performed within 24 months from initial criticality for fuel cycle 10, or during the next refueling outage, whichever is first for fuel cycle 10. In addition, the proposed change would eliminate a description of an alternate steam generator tube sampling plan that was applicable only during the fourth refueling outage. The January 27, 1998, letter provided clarifying information that did not change the initial proposed no significant hazards consideration determination.

2.0 EVALUATION

2.1 Background

An inservice inspection of the Salem Unit 2 steam generator tubes was completed in May 1996. The steam generators were then placed in wet lay-up because Salem Unit 2 was expected to be shutdown for an extended period of time. On August 17, 1997 (over a year later), the licensee started up Salem Unit 2 and entered operational Mode 2.

On the basis of the surveillance test requirements of TS 3/4.4.6, the next Salem Unit 2 steam generator tube inspection would be required to be performed within 24 months after the previous inspection. This would require a steam generator tube inspection by May 1998. Since the current Unit 2 fuel cycle (cycle 10) is expected to end approximately February 1999 (an 18-month fuel cycle), the current TS would require a mid-cycle outage solely to perform the steam generator tube inspection.

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The licensee proposed a one-time amendment to the Salem Unit 2 TSs to change the steam generator tube inspection schedule to require the next steam generator inspection within 24 months of Mode 2, or during the next scheduled refueling outage, whichever is first, for fuel cycle 10. In essence, this TSs change modifies when the steam generator inspection interval begins.

2.2 Change to the Inspection Interval

The licensee addressed several technical areas in support of the proposed license amendment request. They are as follows: 1) steam generator tube inspection in May 1996; 2) steam generator lay-up in accordance with industry guidelines; and 3) leakage history, leakage monitoring and leakage guidelines.

The licensee stated that an extensive eddy current inspection of steam generator tubes was performed in May 1996. This included bobbin coil examination of 100% of in-service tubes, and extensive rotating pancake coil (RPC) probe inspections of tube sheet transitions, tube support plate intersections and special interest areas. In addition, the licensee performed an assessment of the structural and leakage integrity of the steam generator tubing which justified a full cycle of operation for the Salem Unit 2 steam generators. The NRC staff previously reviewed the May 1996 inspection scope, results, and structural and leakage integrity assessment, and concluded that a full cycle of operation for Salem Unit 2 was justified. This review is documented in a letter dated October 30, 1996, from William H. Ruland of the NRC to Leon R. Eliason of PSE&G, titled, "Combined Inspection Report Nos. 50-272/96-10 and 50-311/96-10."

Following the May 1996 steam generator inspection, the licensee placed the steam generators in wet lay-up in accordance with industry guidelines prescribed for that purpose. During the lay-up, the steam generators were maintained at reduced temperatures and with water chemistry conditions that should prevent further degradation of steam generator tubes.

The licensee stated that should unforseen circumstances cause steam generator tube leakage, there are multiple methods available to monitor primary-to-secondary leakage through the steam generators. The licensee employs radiation monitors in the condenser air ejector, the steam generator blowdown line, the condensate polishing filter and the main steam line. In addition, main steam line Nitrogen-16 (N-16) monitors are installed, which significantly enhance monitoring of main steam line activity. The licensee also indicated that there had been no measurable steam generator leakage since the August 1997 plant startup. In addition to the Salem Unit 2 TSs leakage limits, the licensee utilizes more conservative administrative leakage guidelines, which are documented in a plant procedure. These guidelines require various licensee actions (e.g., increased frequency of chemistry sampling, shutdown, etc.) before even reaching the TSs steam generator leakrate limits.

Typically, the amount of time between the completion of a tube inspection and plant startup is negligible. Therefore, the 24-month TSs inspection interval mainly transpires during the period of full power operation. In the case of Salem Unit 2, cycle 10, the time between the inspection and startup was more than one year. Assuming appropriate wet lay-up conditions are maintained, tube degradation is not expected to occur in this time-frame. On the basis of the results of the extensive eddy current examination and the structural and leakage integrity assessment, the Salem Unit 2 steam generators are expected to operate satisfactorily for the entire fuel cycle 10.

Because of the wet lay-up program and the current operating cycle leakage history, it does not appear that the steam generators degraded during the extended shutdown period. Lastly, if leakage were to occur, the leakage monitoring capability and leakage guidelines would enable operators to take necessary actions within an acceptable timeframe. Therefore, the proposed change should not impact the Salem Unit 2 steam generator's ability to safely and reliably operate for the entire fuel cycle.

2.3 Elimination of Alternate Steam Generator Tube Sampling Plan

During the Salem Unit 2 fourth refueling outage, the TSs were modified to incorporate an alternate steam generator tube inspection sampling plan which was applicable only to the fourth refueling outage. The licensee is now proposing elimination of this alternate steam generator tube inspection sampling plan. This is essentially an editorial modification and does not change the intent of the Salem Unit 2 TSs, and therefore, the NRC staff finds that the change acceptable.

2.4 Summary

On the basis of the preceding evaluation, the NRC staff concludes that the licensee's proposed one-time change to the steam generator tube inspection interval and elimination of the refueling outage 4 alternate steam generator tube sampling plan are acceptable. The associated proposed technical specification wording changes are as follows:

1. TS 4.4.6.3.a is revised to allow the cycle 10 steam generator tube inspection interval to begin at Mode 2.

2. TS Page 3/4 4-15a is revised to a) eliminate the alternate steam generator tube sampling plan, and b) insert a detailed description of the proposed change to the steam generator inspection interval to require the next steam generator inspection for Unit 2, fuel cycle 10, to be performed within 24 months of Mode 2, or during the next scheduled refueling outage, whichever is first.

The staff has reviewed the TS changes discussed above and finds that they are acceptable.

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 and changes surveillance requirements. 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

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: C. Beardslee

Date: March 19, 1998