

July 20, 1993

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: ECCS ACCUMULATOR BORON CONCENTRATION, SALEM NUCLEAR GENERATING
 STATION, UNIT NOS. 1 AND 2 (TAC NOS. M87181 AND M87182)

The Commission has issued the enclosed Amendment Nos. 152 and 132 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 August 6, 1993.

These amendments change the technical specifications to provide for a separate action if the Accumulator cannot meet the requirements of the Limiting Condition for Operation due to boron concentration. The allowed outage time to restore boron concentration is changed from 1 hour to 72 hours.

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 the amendment has been implemented at Salem, Units 1 and 2.

Sincerely,

/s/

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

Enclosures:

1. Amendment No. 152 to
 License No. DPR-70
2. Amendment No. 132 to
 License No. DPR-75
3. Safety Evaluation

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cc w/enclosures:
 See next page

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CP-1

DSOI



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

July 20, 1994

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: ECCS ACCUMULATOR BORON CONCENTRATION, SALEM NUCLEAR GENERATING
STATION, UNIT NOS. 1 AND 2 (TAC NOS. M87181 AND M87182)

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These amendments change the technical specifications to provide for a separate action if the Accumulator cannot meet the requirements of the Limiting Condition for Operation due to boron concentration. The allowed outage time to restore boron concentration is changed from 1 hour to 72 hours.

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 the amendment has been implemented at Salem, Units 1 and 2.

Sincerely,

A handwritten signature in cursive script, reading "James C. Stone", is written over the typed name.

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

Enclosures:

1. Amendment No. 152 to
License No. DPR-70
2. Amendment No. 132 to
License No. DPR-75
3. Safety Evaluation

cc w/enclosures:
See next page

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

cc:

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Salem Nuclear Generating Station,
Units 1 and 2

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Wilmington, DE 19899

Public Service Commission of Maryland
Engineering Division
Chief Engineer
6 St. Paul Centre
Baltimore, MD 21202-6806



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. 152
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 August 6, 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-70 is hereby amended to read as follows:

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P PDR

ATTACHMENT TO LICENSE AMENDMENT NO. 152

FACILITY OPERATING LICENSE NO. DPR-70

DOCKET NO. 50-272

Revise Appendix A as follows:

Remove Page

3/4 5-1

Insert Page

3/4 5-1

3/4.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

ACCUMULATORS

LIMITING CONDITION FOR OPERATION

3.5.1 Each reactor coolant system accumulator shall be OPERABLE with:

- a. The isolation valve open,
- b. A contained volume of between 6,223 and 6,500 gallons of borated water,
- c. A boron concentration of between 2,200 and 2,500 ppm, and,
- d. A nitrogen cover-pressure of between 595.5 and 647.5 psig.

APPLICABILITY: MODES 1, 2 and 3*.

ACTION:

- a. With one accumulator inoperable, except as a result of a closed isolation valve or boron concentration outside the required limits, restore the inoperable accumulator to OPERABLE status within one hour or be in HOT SHUTDOWN within the next 12 hours.
- b. With one accumulator inoperable due to the isolation valve being closed, either immediately open the isolation valve or be in HOT STANDBY within one hour and be in HOT SHUTDOWN within the next 12 hours.
- c. With the boron concentration of one accumulator outside the required limits, restore the boron concentration to within the required limits within 72 hours or be in at least HOT STANDBY within the next 6 hours and reduce pressurizer pressure to less than or equal to 1000 psig within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.5.1 Each accumulator shall be demonstrated OPERABLE:

- a. At least once per 12 hours by:
 1. Verifying the water level and nitrogen cover-pressure in the tanks, and
 2. Verifying that each accumulator isolation valve is open.

* Pressurizer Pressure above 1000 psig.



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. 132
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 6, 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:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 132, 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 after the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Charles L. Miller

Charles L. Miller, 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: July 20, 1994

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 152, 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 after the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Charles L. Miller

Charles L. Miller, 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: July 20, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 132

FACILITY OPERATING LICENSE NO. DPR-75

DOCKET NO. 50-311

Revise Appendix A as follows:

Remove Page

3/4 5-1

Insert Page

3/4 5-1

3/4.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

ACCUMULATORS

LIMITING CONDITION FOR OPERATION

3.5.1 Each reactor coolant system accumulator shall be OPERABLE with:

- a. The isolation valve open,
- b. A contained volume of between 6223 and 6500 gallons of borated water,
- c. A boron concentration of between 2200 and 2500 ppm, and
- d. A nitrogen cover-pressure of between 595.5 and 647.5 psig.

APPLICABILITY: MODES 1, 2 and 3*.

ACTION:

- a. With one accumulator inoperable, except as a result of a closed isolation valve or boron concentration outside the required limits, restore the inoperable accumulator to OPERABLE status within one hour or be in HOT SHUTDOWN within the next 12 hours.
- b. With one accumulator inoperable due to the isolation valve being closed, either immediately open the isolation valve or be in HOT STANDBY within one hour and be in HOT SHUTDOWN within the next 12 hours.
- c. With the boron concentration of one accumulator outside the required limits, restore the boron concentration to within the required limits within 72 hours or be in at least HOT STANDBY within the next 6 hours and reduce pressurizer pressure to less than or equal to 1000 psig within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.5.1 Each accumulator shall be demonstrated OPERABLE:

- a. At least once per 12 hours by:
 1. Verifying the water level and nitrogen cover-pressure in the tanks, and
 2. Verifying that each accumulator isolation valve is open.

* Pressurizer Pressure above 1000 psig.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NOS. 152 AND 132 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 August 6, 1993, the Public Service Electric & 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 revise the allowed outage time to restore the boron concentration in the emergency core cooling system (ECCS) accumulators.

2.0 EVALUATION

2.1 Background

The accumulators at Salem Nuclear Generating Station, Units 1 and 2, are pressure vessels partially filled with borated water and pressurized with nitrogen gas. The accumulators are passive components in that no operator action or control action is required for them to perform their intended function. The function of the accumulators is to provide inventory to the reactor vessel during the blowdown phase of a loss of coolant accident (LOCA) and to provide reactor coolant system (RCS) make-up during the refill phase of a LOCA.

Each accumulator is piped into one RCS cold leg via an accumulator line and is isolated from the RCS by a motor-operated isolation valve and two check valves in series. The accumulators' size, water volume, and nitrogen cover pressure are selected so that three of the four accumulators are sufficient to partially cover the core before significant clad melting or zirconium water reaction can occur following a LOCA. The need to ensure that three accumulators are adequate for this function is consistent with the LOCA assumptions that the entire contents of one accumulator will be lost via the RCS pipe break during the blowdown phase of the LOCA. The internal tank

pressure is sufficient to discharge the contents to the RCS, if RCS pressure decreases below the accumulator pressure.

2.2 Discussion of Proposed Change

The licensee is requesting to extend the period that the boron concentration of one accumulator can be outside of the TS limit from 1 hour to 72 hours. Therefore, the ability of that accumulator to perform its intended function is in question for a longer period of time.

The analysis of the blowdown phase of a LOCA does not include the boron concentration of the accumulators, only the volume. Therefore, if the boron concentration is outside the TS limit in one accumulator, it will not effect the blowdown recovery.

During the refill phase of the LOCA, the accumulator and the refueling water storage tank replenish the RCS. The boron content of the accumulators is of concern during the refill phase. During this phase, the ECCS takes suction from the sump which contains the contents of the RCS and the refueling water storage tank (RWST). The licensee indicated that in comparing the total volume of the RCS and RWST, the volume of one accumulator contributes less than 2 percent of the water in the containment. Therefore, the boron concentration of one accumulator has a minimal effect on the overall concentration of the refill volume.

The licensee indicated that it is not possible to change and verify the boron concentration within 1 hour. As discussed above, changing the allowed time for the boron concentration to be outside the TS limits, for one accumulator, will not affect the ability of the accumulators to perform the intended function in that (1) the boron concentration of the accumulators is not taken into consideration in the blowdown analysis and (2) one accumulator is only 2 percent of the total available refill volume. In addition, the change is consistent with NUREG-1430, Standard Technical Specifications, and will have an insignificant effect on core subcriticality during core reflood, switchover from cold leg to hot leg recirculation injection or sump pH.

The staff has reviewed the licensee's proposed change and based on the licensee's demonstration that the accumulators can continue to function as needed during the blowdown and refill phases of a LOCA, the proposed change is 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 amendments. The State official had no comments.

4.0 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. 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 (58 FR 48389). 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 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: S. Brewer

Date: July 20, 1994