

MARCH 6 1979

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Docket No. 50-272

Mr. F. P. Librizzi
General Manager - Electric
Production
Public Service Electric & Gas Company
Production Department
80 Park Place, Room 7221
Newark, New Jersey 07101

Gentlemen:

The Commission has issued the enclosed Amendment No. 15 to Facility Operating License No. DPR-70 for the Salem Nuclear Generating Station, Unit No. 1. The amendment consisted of a temporary change to the Technical Specifications in response to your application dated January 12, 1979 and confirms the Commission's action taken on January 12, 1979.

The amendment to the Technical Specifications revised on a one-time basis, the time limitation that the Boron Injection Tank (BIT) is permitted to be inoperable prior to implementing the requirement for placing the reactor in HOT STANDBY and to a SHUTDOWN MARGIN equivalent to 1% Δk/k.

Copies of the Safety Evaluation and the Federal Register Notice are also enclosed.

Sincerely,

Original signed by
M. Grotenhuis

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Enclosures:

1. Amendment No. 15
2. Safety Evaluation
3. Notice

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cc w/enclosures:
See next page

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SURNAME →	GZech:esp	PCheck	DBrinkman	Sunningham	ASchwencer
DATE →	2/20/79	3/1/79	2/26/79	3/5/79	3/16/79

Public Service Electric & Gas Company - 2 - March 6, 1979

cc: Mark J. Wetterhahn, Esquire
Conner, Moore & Corber
Suite 1050
1747 Pennsylvania Avenue, NW
Washington, D.C. 20006

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

Richard Fryling, Jr., Esquire
Assistant General Solicitor
Public Service Electric & Gas Company
80 Park Place
Newark, New Jersey 07101

State House Annex
ATTN: Deputy Attorney General
State of New Jersey
36 West State Street
Trenton, New Jersey 08625

Gene Fisher
Bureau Chief
Bureau of Radiation Protection
380 Scotch Road
Trenton, New Jersey 08628

Director, Technical Assessment Division
Office of Radiation Programs (AW-459)
U. S. Environmental Protection Agency
Crystal Mall #2
Arlington, Virginia 20460

Public Service Electric & Gas Company
ATTN: Herbert J. Heller
Manager, Salem Nuclear Generating
Station
Hancocks Bridge, New Jersey 08038

U.S. Environmental Protection
Agency
Region II Office
ATTN: EIS COORDINATOR
20 Federal Plaza
New York, New York 10007

Public Service Electric & Gas Company
ATTN: Mr. R. L. Mittl
General Manager - Licensing and
Environment
80 Park Place
Newark, New Jersey 07101

Leif J. Norrholm
USNRC
Drawer I
Hancocks Bridge, New Jersey 08038

Salem Free Library
112 West Broadway
Salem, New Jersey 08079

Attorney General
Department of Law & Public Safety
State House Annex
Trenton, New Jersey 08625

Samuel E. Donelson, Mayor
Lower Alloways Creek Township
Municipal Hall
Hancocks Bridge, New Jersey 08038



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

PUBLIC SERVICE ELECTRIC AND 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. 15
License No. DPR-70

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Public Service Electric and Gas Company, Philadelphia Electric Company, Delmarva Power and Light Company and Atlantic City Electric Company (the licensee) dated January 12, 1979, and as supplemented January 15, 1979, 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;
 - 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.

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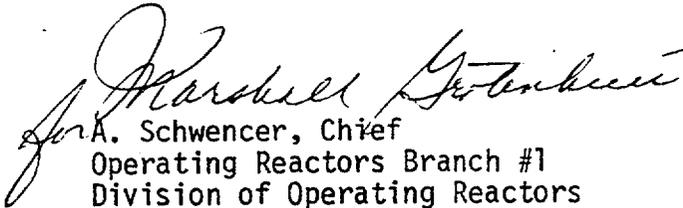
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-70 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 15, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment was effective as of January 12, 1979.

FOR THE NUCLEAR REGULATORY COMMISSION


for A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 6, 1979

ATTACHMENT TO LICENSE AMENDMENT NO. 15

FACILITY OPERATING LICENSE NO. DPR-70

DOCKET NO. 50-272

Replace the following page of the Appendix "A" Technical Specifications with the enclosed page. The revised page is identified by Amendment number and contains vertical lines indicating the area of change. The corresponding overleaf page 3/4 5-8 is also provided to maintain document completeness. No changes were made on 3/4 5-8.

Page

3/4 5-7

EMERGENCY CORE COOLING SYSTEMS

3/4.5.4 BORON INJECTION SYSTEM

BORON INJECTION TANK

LIMITING CONDITION FOR OPERATION

- 3.5.4.1 The boron injection tank shall be OPERABLE with:
- A minimum contained volume of 900 gallons of borated water,
 - Between 20,100 and 21,800 ppm of boron, and
 - A minimum solution temperature of 145°F.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

With the boron injection tank inoperable, restore the tank to OPERABLE status within 1 hour or be in HOT STANDBY and borated to a SHUTDOWN MARGIN equivalent to 1% $\Delta k/k$ at 200°F within the next 6 hours; restore the tank to OPERABLE status within the next 7 days or be in HOT SHUTDOWN within the next 12 hours.*

SURVEILLANCE REQUIREMENTS

- 4.5.4.1 The boron injection tank shall be demonstrated OPERABLE by:
- Verifying the water level through a recirculation flow test at least once per 7 days,
 - Verifying the boron concentration of the water in the tank at least once per 7 days, and
 - Verifying the water temperature at least once per 24 hours.

*Effective 5:55 P.M. January 12, 1979 and expiring at 11:55 A.M., January 13, 1979 the following ACTION statement is applicable: With the boron injection tank inoperable, restore the tank to OPERABLE status within 1 hour or be in HOT STANDBY and borated to a SHUTDOWN MARGIN equivalent to 1% $\Delta k/k$ at 200°F within the next 24 hours; restore the tank to OPERABLE status within the next 7 days or be in HOT SHUTDOWN within the next 12 hours.

EMERGENCY CORE COOLING SYSTEMS

HEAT TRACING

LIMITING CONDITION FOR OPERATION

3.5.4.2 At least two independent channels of heat tracing shall be OPERABLE for the boron injection tank and for the heat traced portions of the associated flow paths.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

With only one channel of heat tracing on either the boron injection tank or on the heat traced portion of an associated flow path OPERABLE, operation may continue for up to 30 days provided the tank and flow path temperatures are verified to be $\geq 145^{\circ}\text{F}$ at least once per 8 hours; otherwise, be in HOT SHUTDOWN within 12 hours.

SURVEILLANCE REQUIREMENTS

4.5.4.2 Each heat tracing channel for the boron injection tank and associated flow path shall be demonstrated OPERABLE:

- a. At least once per 31 days by energizing each heat tracing channel, and
- b. At least once per 24 hours by verifying the tank and flow path temperatures to be $\geq 145^{\circ}\text{F}$. The tank temperature shall be determined by measurement. The flow path temperature shall be determined by either measurement or recirculation flow until establishment of equilibrium temperatures within the tank.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 15 TO FACILITY OPERATING LICENSE NO. DPR-70

PUBLIC SERVICE ELECTRIC AND GAS COMPANY,
PHILADELPHIA ELECTRIC COMPANY,
DELMARVA POWER AND LIGHT COMPANY, AND
ATLANTIC CITY ELECTRIC COMPANY

SALEM NUCLEAR GENERATING STATION, UNIT NO. 1

DOCKET NO. 50-272

Introduction

By letter dated January 12, 1979 and telecopied to the NRC on that date, Public Service Electric and Gas Company (PSE&G) requested a temporary change to the Technical Specifications appended to Facility Operating License DPR-70 for the Salem Nuclear Generating Station Unit No. 1. The proposed change involved revision of the time limitation that the Boron Injection Tank (BIT) is permitted to be inoperable prior to having the reactor in HOT STANDBY and borated to a SHUTDOWN MARGIN equivalent to 1% $\Delta k/k$. The staff performed a safety evaluation of this request and authorized by telephone, an emergency Technical Specification change on January 12, 1979 which was confirmed in writing on January 12, 1979.

Background

At 10:55 A.M. on January 12, 1979 while at power, the Boron Injection Tank (BIT) was found to be out of Technical Specification 3.5.4.1 tolerance for boron concentration. Efforts were started to increase the BIT boron concentration. At 11:55 A.M. since the concentration, while increasing was still not within tolerance limits, the licensee proceeded towards HOT STANDBY by initiating a power reduction. When it became apparent that the concentrations would not be restored within the six hours allowed to achieve the HOT STANDBY condition of ACTION STATEMENT 3.5.4.1, the licensee performed a safety evaluation to demonstrate that it would be safe to continue to operate the plant at

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power with the existing concentration while the concentration was being returned to within tolerance limits. On the basis of that evaluation, the licensee requested NRC to grant a one time 18 hour extension of time in the HOT SHUTDOWN requirement. The intent of this extension was to allow time for the boron concentration to complete its return to within Technical Specification 3.5.4.1 limits without further power reduction. We performed a review of this matter, as discussed below, and granted the requested extension.

Evaluation

The BIT is provided as part of the Emergency Core Cooling System. The Technical Specification on the lower limit for boron concentration in the BIT water is required to ensure that sufficient negative reactivity is injected into the core to promptly counteract any positive increase in reactivity caused by inadvertent cooldown of the reactor coolant system. Such cooldown could be caused by inadvertent depressurization, a loss-of-coolant accident or a main steam line rupture.

The minimum capability for injection of high concentration boron (20,100 ppm) is based on the most restrictive core conditions: end-of-life shutdown margin, equilibrium xenon conditions, most reactive control rod assembly stuck in its fully withdrawn position, and the negative moderator coefficient corresponding to the end-of-life, rodded core.

For the conditions existing on January 12, 1979, the licensee determined by calculations that a boric acid concentration of 16,000 ppm in the BIT would be sufficient to ensure the required shutdown margin of 1% $\Delta k/k$ at 200°F, should the reactor experience an inadvertent cooldown from full power.

We have reviewed the licensee's analysis and agreed with the conclusions stated. The analysis was based on (1) actual control rod worth, (2) the value of the moderator coefficient at the actual time in cycle rather than at end-of-life (EOL) and (3) the normal assumption of the worst reactive RCCA stuck in the fully withdrawn position. We also agreed that an analysis using the then present plant conditions was acceptable and that the margin between the actual boron concentration of 18,522 ppm and the value required to maintain adequate shutdown margin, 16,000 ppm, was sufficient to compensate for any uncertainties in the then present plant values for moderator temperature coefficient and rod worths.

In conclusion, we found that an 18 hour extension of the time limitation (from 6 hours to 24 hours) that the BIT is permitted to be "inoperable", (i.e., outside limits for boron concentration) without being in the HOT STANDBY called for in Action Statement 3.5.4.1, was an acceptable temporary Technical Specification change at the then current exposure history (12,800 MWD/MTU) for Salem Unit No. 1.

Environmental Considerations

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and pursuant to 10 CFR §51.5(d)(4) that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: March 6, 1979

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-272

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
PHILADELPHIA ELECTRIC COMPANY
DELMARVA POWER AND LIGHT COMPANY
ATLANTIC CITY ELECTRIC COMPANY

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY
OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 15 to Facility Operating License No. DPR-70, issued to Public Service Electric and Gas Company, Philadelphia Electric Company, Delmarva Power and Light Company and Atlantic City Electric Company (the licensees), which revised the operating license for Salem Nuclear Generating Station, Unit No. 1 (the facility) located in Salem County, New Jersey. The amendment was effective from 5:55 P.M. January 12, 1979 to 11:55 A.M. January 13, 1979.

The amendment consisted of a temporary change to the Technical Specifications which revised the time limitation that the Boron Injection Tank (BIT) was permitted to be inoperable prior to placing the reactor in a HOT STANDBY condition with a SHUTDOWN MARGIN equivalent to 1% $\Delta k/k$ at 200°F.

The application for the amendment complied with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules

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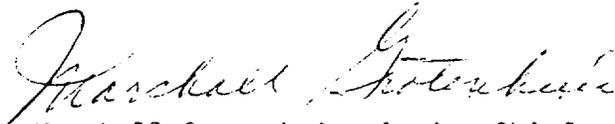
and regulations in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of this amendment was not required since the amendment did not involve a significant hazards consideration.

The Commission has determined that the issuance of this amendment did not result in any significant environmental impact and that pursuant to 10 CFR §51.5(d)(4) an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of this amendment.

For further details with respect to this action, see (1) the application for amendment dated January 12, 1979 and as supplemented January 15, 1979, (2) the Commission's letter to the licensee dated January 12, 1979, (3) Amendment No. 15 to License No. DPR-70 and (4) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C. and at the Salem Free Public Library, 112 West Broadway, Salem, New Jersey. A copy of items (2), (3) and (4) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland, this 6th day of March, 1979.

FOR THE NUCLEAR REGULATORY COMMISSION



Marshall Grotenhuis, Acting Chief
Operating Reactors Branch #1
Division of Operating Reactors