

February 26, 1987

Docket Nos. 50-272
and 50-311

Mr. C. A. McNeill, Jr.
Vice President - Nuclear
Public Service Electric and Gas Company
Post Office Box 236
Hancocks Bridge, New Jersey 08038

Dear Mr. McNeill:

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The Commission has issued the enclosed Amendment No. 76 to Facility Operating License No. DPR-70 and Amendment No. 50 to Facility Operating License No. DPR-75 for the Salem Nuclear Generating Station, Unit Nos. 1 and 2, respectively. The amendments consist of changes to the Technical Specifications in response to your application transmitted by letter dated October 3, 1986.

These amendments would allow for a reduction in the number of fuel rods per assembly in cases where leaking fuel rods can be identified and replaced with Zircaloy-4 rods or stainless steel rods or vacancies.

A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's next regular bi-weekly Federal Register notice.

Sincerely,

/s/

Donald C. Fischer, Senior Project Manager
PWR Project Directorate No. 5
Division of PWR Licensing-A

Enclosures:

1. Amendment No. 76 to DPR-70
2. Amendment No. 50 to DPR-75

cc: w/enclosures
See next page

*See previous page for concurrences.

*PD#5
DFischer:ss
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Docket Nos. 50-272
and 50-311

Mr. C. A. McNeill, Jr.
Vice President - Nuclear
Public Service Electric and Gas Company
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Donald C. Fischer, Senior Project Manager
PWR Project Directorate No. 5
Division of PWR Licensing-A

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Amendment No. to DPR-75

cc: w/enclosures
See next page

Distribution

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PWR PD#5 R/F
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1/5/87

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VSNoonan
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DEAD
SE Moore
1/9/87

Subject to Change

Mr. C. A. McNeill
Public Service Electric & Gas Company

Salem Nuclear Generating Station

cc:

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Conner and Wetterhahn
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State of New Jersey
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Assistant General Solicitor
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Newark, New Jersey 07101

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
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c/o Mary O. Henderson, Clerk
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General Manager - Salem Operations
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Nuclear Licensing & Regulation
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Lower Alloways Creek Township
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Assistant Consumer Advocate
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Salem Nuclear Generating Station
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Trenton, New Jersey 08628



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. 76
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 licensees) dated October 3, 1986, 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.
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:

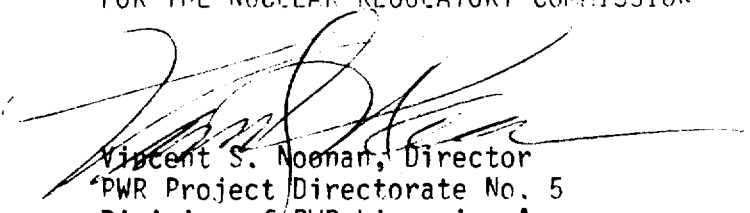
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P PDR

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 76, 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 the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Vincent S. Noonan, Director
PWR Project Directorate No. 5
Division of PWR Licensing-A

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 26, 1987

ATTACHMENT TO LICENSE AMENDMENT NO. 76

FACILITY OPERATING LICENSE NO. DPR-70

DOCKET NO. 50-272

Revise Appendix A as follows:

Remove Pages

5-4

Insert Pages

5-4

DESIGN FEATURES

DESIGN PRESSURE AND TEMPERATURE

5.2.2 The reactor containment building is designed and shall be maintained for a maximum internal pressure of 47 psig and an air temperature of 271°F.

5.3 REACTOR CORE

FUEL ASSEMBLIES

5.3.1 The reactor core shall contain 193 fuel assemblies with each fuel assembly normally containing 264 fuel rods clad with Ziracloy-4 except that limited substitution of fuel rods by filler rods consisting of Ziracloy-4 or stainless steel or by vacancies may be made if justified by a cycle specific reload analysis. Each fuel rod shall have a nominal active fuel length of 143.7 inches and contain a maximum total weight of 1766 grams uranium. The initial core loading shall have a maximum enrichment of 3.35 weight percent U-235. Reload fuel shall be similar in physical design to the core loading and shall have a maximum enrichment of 4.05 weight percent U-235.

CONTROL ROD ASSEMBLIES

5.3.2 The reactor core shall contain 53 full length and no part length control rod assemblies. The full length control rod assemblies shall contain a nominal 142 inches of absorber material. The nominal values of absorber material shall be 80 percent silver, 15 percent indium and 5 percent cadmium. All control rods shall be clad with stainless steel tubing.

5.4 REACTOR COOLANT SYSTEM

DESIGN FEATURE AND TEMPERATURE

5.4.1 The reactor coolant system is designed and shall be maintained:



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. 50-311

SALEM NUCLEAR GENERATING STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 50
License No. DPR-75

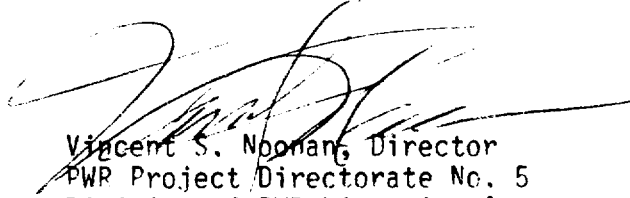
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Public Service Electric and Gas Company, Philadelphia Electric Company, Delmarva Power and Light Company and Atlantic City Electric Company (the licensees) dated October 3, 1986, complies with 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.
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

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 50, 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 the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Vincent S. Noonan, Director
PWR Project Directorate No. 5
Division of PWR Licensing-A

Attachment:
Charges to the Technical
Specifications

Date of Issuance: February 26, 1987

ATTACHMENT TO LICENSE AMENDMENT NO. 50
FACILITY OPERATING LICENSE NO. DPR-75
DOCKET NO. 50-311

Revise Appendix A as follows:

Remove Pages

5-4

Insert Pages

5-4

DESIGN FEATURES

DESIGN PRESSURE AND TEMPERATURE

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5.3.1 The reactor core shall contain 193 fuel assemblies with each fuel assembly normally containing 264 fuel rods clad with Zircaloy-4 except that limited substitution of fuel rods by filler rods consisting of Zircaloy-4 or stainless steel or by vacancies may be made if justified by a cycle specific reload analysis. Each fuel rod shall have a nominal active fuel length of 143.7 inches and contain a maximum total weight of 1766 grams uranium. The initial core loading shall have a maximum enrichment of 3.55 weight percent U-235. Reload fuel shall be similar in physical design to the core loading and shall have a maximum enrichment of 4.05 weight percent U-235.

CONTROL ROD ASSEMBLIES

5.3.2 The reactor core shall contain 53 full length and no part length control rod assemblies. The full length control rod assemblies shall contain a nominal 142 inches of absorber material. The nominal values of absorber material shall be 80 percent silver, 15 percent indium and 5 percent cadmium. All control rods shall be clad with stainless steel tubing.

5.4 REACTOR COOLANT SYSTEM

DESIGN FEATURE AND TEMPERATURE

5.4.1 The reactor coolant system is designed and shall be maintained:

- a. In accordance with the code requirement specified in Section 4.1 of the FSAR, with allowance for normal degradation pursuant to the applicable Surveillance Requirements,
- b. For a pressure of 2485 psig, and
- c. For a temperature of 650°F, except for the pressurizer which is 680°F.

VOLUME

5.4.2 The total water and steam volume of the reactor coolant system is 12,811 \pm 100 cubic feet at a nominal T_{avg} of 581.0°F.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 76 TO FACILITY OPERATING LICENSE NO. DPR-70
AND AMENDMENT NO. 50 TO FACILITY OPERATING LICENSE NO. DPR-75

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

SALEM NUCLEAR GENERATION STATION, UNIT NOS. 1 AND 2

DOCKET NOS. 50-272 AND 50-311

INTRODUCTION

By letter from C. A. McNeill, Jr. (PSEG) to the NRC (ATTN: S. Varga) dated October 3, 1986, Public Service Electric and Gas Company requested changes to Facility Operating Licenses DPR-70 and DPR-75 for Salem Generating Station Unit Nos. 1 and 2, respectively. The proposed changes are to Technical Specification 5.3.1, Design Features-Fuel Assemblies. The first sentence of Technical Specification 5.3.1 for each unit currently states "The reactor core shall contain 193 fuel assemblies with each fuel assembly containing 264 fuel rods clad with Zircaloy-4". The proposed revision for each unit would add "normally" before "containing" in this sentence, and would add at the end of the sentence "except that limited substitution of fuel rods by filler rods consisting of Zircaloy-4 or stainless steel or by vacancies may be made if justified by a cycle specific reload analysis."

EVALUATION AND SUMMARY

The intent of the proposed change to the Salem Units 1 and 2 Technical Specifications is to allow for a reduction in the number of fuel rods per assembly in cases where leaking fuel rods can be identified and replaced with Zircaloy-4 rods or stainless steel rods or vacancies. Replacement of leaking fuel rods with other fuel rods involves handling of additional fuel assemblies and has not been used in Westinghouse reactors to date. Replacement of leaking fuel rods will permit utilization of the energy remaining in fuel assemblies containing defective fuel rods.

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In general substitution of a limited number of fuel rods with filler rods or water holes in isolated regions of the core has a negligible effect on core physics parameters and consequently on the safety analysis. The wording of the change specifically provide that the substitutions may be made only if justified by a cycle specified reload analysis. The licensee states that an explicit model with each discrete rod identified is utilized to predict core performance bases on actual core inventory. We find this acceptable. The reload analysis will ensure that the safety criteria and design limits, including peaking factors and core average linear heat rate effects are not exceeded. Thus, the final safety evaluation of implementation of substitutions allowed by this change will be made as part of the reload analysis performed for the affected cycle.

Because the limited substitution of Zircaloy-4 or stainless steel rods or vacancies for fuel rods is not expected to have a significant impact on plant safety, and because a cycle specific evaluation will be performed to justify any such substitutions with an acceptable evaluation model, we find the proposed Technical Specification changes for Salem Units 1 and 2 acceptable.

ENVIRONMENTAL CONSIDERATION

These amendments involve a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. 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 these amendments involve no significant hazards consideration and there has been no public comment on such finding. Accordingly, these amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR Sec 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 these amendments.

CONCLUSION

We have 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 these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Dated: February 26, 1987

PRINCIPAL CONTRIBUTOR:

M. Dunenfeld