May 27, 1986

Docket Nos. 50-272
and 50-311

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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:

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION - TECHNICAL SPECIFICATION CHANGES FOR BORON INJECTION TANK REMOVAL

The staff has reviewed the information submitted in your request to remove the Boron Injection Tank, dated October 25, 1985. The staff has concluded that insufficient information was provided to complete the evaluation. The additional information required is discussed in the enclosures. Please respond to this request for information within 60 days from receipt of this letter.

The reporting and/or recordkeeping requirements of this letter affect fewer than ten respondents; therefore, OMB clearance is not required under P.L. 96-511.

Sincerely,

/s/DFischer

Donald C. Fischer, Senior Project Manager
PWR Project Directorate No. 3
Division of PWR Licensing-A

Enclosures:
As stated

cc w/enclosures:
See next page

OFC	:PAD#3	:PAD#3	:D/PAD#3	:	:	:	
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ENCLOSURE 1

REQUEST FOR ADDITIONAL INFORMATION

TECHNICAL SPECIFICATION CHANGES REGARDING

SALEM 1 & 2 BORON INJECTION TANKS (BITS)

REACTOR SYSTEMS BRANCH

1. For the large steam line break accident, please provide the minimum DNBR calculated assuming both present conditions (BIT boron concentration of 20,000 ppm) and proposed condition (BIT boron concentration 0 ppm). In accordance with the regulations of 10 CFR 50.92, the staff requires this information to determine whether a significant reduction in margin of safety is involved.

2. Page 3 of your submittal states: "The heat tracing will be deleted and the BIT will be maintained at a boron concentration* between 4 weight % and 0 weight %". Therefore assured means would still be required to maintain the fluid inside the BITS and associated SI piping at a minimum of 65°F (the minimum solution temperature of 4% boric acid). State how this will be accomplished.

   * (Note: We assume you mean boric acid concentration.)

3. The Salem FSAR apparently does not contain detailed piping and instrumentation drawings of the SI piping from the charging pumps via the BITs to containment penetration. We also can not find the BIT location in the building drawings (i.e., Figures 3.6-26, 3.6-27 and 6.3-1 do not provide sufficiently detailed information). Therefore, please provide detailed piping and instrumentation schematics and layout drawings for the above flow path. (The latter could simply consist of a marked up building drawing.) Also, state whether the connections to the Boric Acid Tank BAT and other concentrated boric acid sources will be blanked off.

4. Provide assurance that periodic sampling of the BIT and connected SI piping will be conducted to determine boron concentration. Also, discuss whether the Salem plant procedures will include requirements for periodic flushing of the BIT and connected SI lines.

5. FSAR Figure 10.3-1 does not show check valves in the main steam lines. Are the main steam stop valves designed to provide positive flow isolation for both forward and reverse flow?

6. State what investigations have been made regarding the effect of the proposed decrease in the BIT boron concentration on the amount of superheat resulting from a steam line break, including the effect on equipment that can be affected by the superheated steam, which may subsequently react in such a way as to increase the severity of the accident.

ENCLOSURE 2

REQUEST FOR ADDITIONAL INFORMATION
TECHNICAL SPECIFICATION CHANGES
REGARDING BORON INJECTION TANK (BIT)

SALEM UNITS 1 AND 2

DOCKET NOS. 50-272/311

ENGINEERING BRANCH
DIVISION OF PWR LICENSING-A

1. State the values of re-voporization coefficient that were used in in the main steam line break analyses. Provide justification for using values that are larger than eight (8) percent.

2. Discuss briefly why a different number of blowdown cases and break sizes were evaluated in the revised containment pressure/temperature anaylses for the proposed reduction in BIT boron concentration.

ENCLOSURE 3

SALEM UNITS 1 AND 2

REQUEST FOR ADDITIONAL INFORMATION

REGARDING BORON INJECTION TANK

PLANT SYSTEMS BRANCH

Q1: With respect to the analyses presented in reference 1, supporting removal of the Boron Injection Tank (BIT), the mass and energy releases following a main steam line break were calculated using the Westinghouse computer code LOFTRAN. The version of the LOFTRAN code used does not account for heat transfer to the steam during steam generator tube bundle uncovery. This heat transfer effect will lead to superheating of the steam being produced in the steam generator, and the exiting steam temperature may be substantially above the qualification temperature of equipment. The phenomenon of steam superheating and its effect on containment response has not been addressed in the main steam line break analyses that have been submitted. Provide a blowdown analysis which includes steam superheating effects. Discuss and justify the assumptions and conservatisms made relative to containment response analysis.

Q2: The analyses presented in reference 1 did not address the effect of BIT removal on safety related equipment outside containment. Provide an analysis of the environmental conditions outside containment which includes the steam superheating effect discussed in the preceeding question. Discuss and justify the adequacy of the qualification of all safety related equipment outside containment that may be exposed to the superheated steam blowdown.

References:

1. Letter from Corbin McNeill, Jr. (Public Service Electric and Gas Company) to Steven Varga (NRC), dated October 25, 1985.