

December 9, 1993

Docket No. 50-354

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: REACTOR COOLANT SYSTEM JET PUMPS, HOPE CREEK GENERATING STATION
(TAC NO. M86474)

The Commission has issued the enclosed Amendment No. 61 to Facility Operating License No. NPF-57 for the Hope Creek Generating Station. This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated May 18, 1993 and supplemented on October 6, 1993.

This amendment revises TS 4.4.1.2 surveillance requirements for the reactor coolant system jet pumps.

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 inform the NRC, in writing, when this amendment has been implemented.

Sincerely,

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

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PDR ADDCK 05000354
P PDR

Enclosures:

1. Amendment No. 61 to License No. NPF-57
2. Safety Evaluation

cc w/enclosures:
See next page

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| NAME | :MO'Brien | :JStone:rb | :TCollins | :CGrimes | :MYoung | :LNicholson: | |
| DATE | :11/8/93 | :12/1/93 | :11/22/93 | :11/29/93 | :08/19/93 | :12/8/93 | : |

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

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Sincerely,

A handwritten signature in cursive script that reads "James C. Stone".

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. 61 to License No. NPF-57
2. Safety Evaluation

cc w/enclosures:
See next page

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

Hope Creek Generating Station

cc:

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

PUBLIC SERVICE ELECTRIC & GAS COMPANY

ATLANTIC CITY ELECTRIC COMPANY

DOCKET NO. 50-354

HOPE CREEK GENERATING STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 61
License No. NPF-57

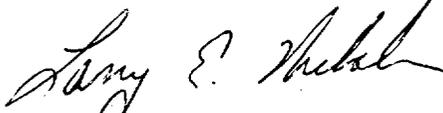
1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:
 - A. The application for amendment filed by the Public Service Electric & Gas Company (PSE&G) dated May 18, 1993, and supplemented by letter dated October 6, 1993, complies with the standards and requirements of the Atomic 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. NPF-57 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 61, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated into the license. PSE&G shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. The license amendment is effective as of its date of issuance and shall be implemented within 60 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Larry E. Nicholson, Acting 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: December 9, 1993

ATTACHMENT TO LICENSE AMENDMENT NO. 61

FACILITY OPERATING LICENSE NO. NPF-57

DOCKET NO. 50-354

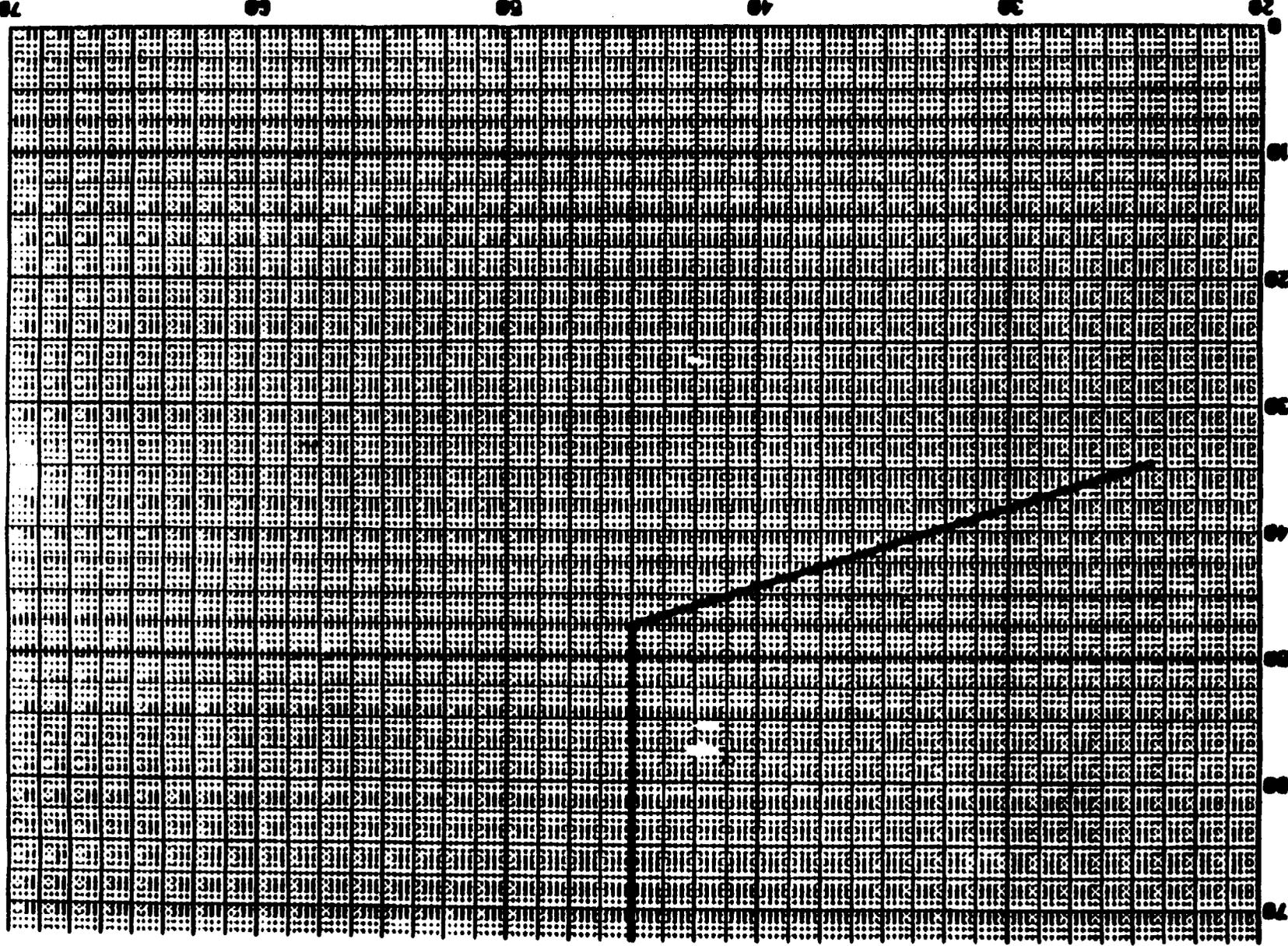
Replace the following page of the Appendix "A" Technical Specifications with the attached page. The revised page is identified by Amendment number and contains vertical lines indicating the area of change. Overleaf page provided to maintain document completeness.*

Remove

3/4 4-3
3/4 4-4

Insert

3/4 4-3*
3/4 4-4



CORE FLOW & RATED
 THERMAL POWER VERSUS CORE FLOW
 FIGURE 3.4.1.1-1

HOPE CREEK
 CORE THERMAL POWER & RATED

HOPE CREEK

3/4 4-3

Amendment No. 3

April 7, 1987

REACTOR COOLANT SYSTEM

JET PUMPS

LIMITING CONDITION FOR OPERATION

3.4.1.2 All jet pumps shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1 and 2.

ACTION:

With one or more jet pumps inoperable, be in at least HOT SHUTDOWN within 12 hours.

SURVEILLANCE REQUIREMENTS*

4.4.1.2 All jet pumps shall be demonstrated OPERABLE as follows:

- a. Each of the above required jet pumps shall be demonstrated OPERABLE prior to THERMAL POWER exceeding 25% of RATED THERMAL POWER and at least once per 24 hours by determining recirculation loop flow, total core flow and diffuser-to-lower plenum differential pressure for each jet pump and verifying that no two of the following conditions occur when the recirculation pumps are operating in accordance with Specification 3.4.1.3.
 1. The indicated recirculation loop flow differs by more than 10% from the established pump speed-loop flow characteristics.
 2. The indicated total core flow differs by more than 10% from the established total core flow value derived from recirculation loop flow measurements.
 3. The indicated diffuser-to-lower plenum differential pressure of any individual jet pump differs from the established patterns by more than 20%.
- b. During single recirculation loop operation, each of the above required jet pumps in the operating loop shall be demonstrated OPERABLE at least once per 24 hours by verifying that no two of the following conditions occur:
 1. The indicated recirculation loop flow in the operating loop differs by more than 10% from the established* pump speed-loop flow characteristics.
 2. The indicated total core flow differs by more than 10% from the established* total core flow value derived from single recirculation loop flow measurements.
 3. The indicated diffuser-to-lower plenum differential pressure of any individual jet pump differs from established* single recirculation loop patterns by more than 20%.
- c. The provisions of Specification 4.0.4 are not applicable provided that this surveillance is performed within 24 hours after exceeding 25% of RATED THERMAL POWER.

*During startup following any refueling outage, baseline data shall be recorded for the parameters listed to provide a basis for establishing the specified relationships. Comparisons of the actual data in accordance with the criteria listed shall commence upon conclusion of the baseline data analysis. Single loop baseline data shall be recorded the first time the unit enters single loop operation during an operating cycle.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 61 TO FACILITY OPERATING LICENSE NO. NPF-57

PUBLIC SERVICE ELECTRIC & GAS COMPANY

ATLANTIC CITY ELECTRIC COMPANY

HOPE CREEK GENERATING STATION

DOCKET NO. 50-354

1.0 INTRODUCTION

By letter dated May 18, 1993, and supplemented on October 6, 1993, the Public Service Electric & Gas Company (the licensee) submitted a request for changes to the Hope Creek Generating Station, Technical Specifications (TS). The October 6, 1993, supplemental letter provided additional information that did not change the basis for the staff's proposed no significant hazards determination. The requested changes would revise the surveillance requirements of TS 4.4.1.2, Reactor Coolant Recirculation System Jet Pumps as follows:

1. The acceptance criteria of TS 4.4.1.2.a.3 and 4.4.1.2.b.3 for the indicated diffuser-to-lower plenum differential pressure of any individual jet pump will be increased from 10% to 20% from established patterns.
2. TS 4.4.1.2.b, surveillance requirements during single-loop operation to demonstrate operability of the jet pumps at least once every 24 hours will be revised to be applicable only to the jet pumps for the operating loop.
3. The footnote associated with TS 4.4.1.2.b that requires the gathering of baseline data for two-loop or single-loop operation during startup following any refueling outage will be revised to require gathering single-loop baseline data only after entering single-loop operation.

2.0 EVALUATION

The jet pump assemblies are located in two semicircular groups in the downcomer annulus between the core shroud and the reactor vessel wall. Each stainless steel jet pump consists of a driving nozzle, a suction inlet, a throat or mixing section, and a diffuser. The driving nozzle, suction inlet, and throat are joined together as a removable unit, and the diffuser is permanently installed. High-pressure water from the recirculation pumps is supplied to each pair of jet pumps through a riser pipe welded to the recirculation inlet nozzle thermal sleeve. In the event of a design-basis-accident, an inoperable jet pump could increase the blowdown area and reduce the capability of reflooding the core. TS 3.4.1.2 requires unit shutdown in the event of one or more jet pumps becoming inoperable. Jet pump operability is monitored by TS surveillance requirement 4.4.1.2, which checks jet pump performance daily for significant degradation.

The proposed change to increase the acceptable limit for the indicated diffuser-to-lower plenum differential pressure of any individual jet pump from 10% to 20% from established patterns is to account for turbulence in the jet pump diffuser where the flow measurement tap is located. The turbulence results in noise being generated in the differential pressure signal. Attempts to filter the noise have not been completely successful; and the remaining noise causes constant motion in the individual jet pump D/P indicators. The new acceptance limit is consistent with the recommendations of General Electric SIL 330 and is adequate to detect significant degradation in jet pump performance and is acceptable.

The proposed change to make the daily surveillance requirement for demonstrating operability of the jet pumps applicable only for the operating loop jet pumps during single loop operation will provide an acceptable level of safety. Without forced flow, the inactive loop jet pump diffuser-to-lower plenum differential pressures are much lower than those in the operating loop, and difficulty has been experienced in satisfying the surveillance requirements. During single loop operation, stresses are much lower on the inactive jet pump assemblies and their support structures. It is unlikely that jet pumps that were found to be operable prior to entering single loop operation would degrade when the loop is inactive. Surveillance testing of the inactive loop is not considered necessary. This position is consistent with the recommendations of General Electric SIL 517 and is acceptable.

In its original submittal dated May 18, 1993, the licensee proposed to eliminate the footnote associated with TS 4.4.1.2. This footnote requires gathering baseline data for two-loop or single-loop operation during startup following any refueling outage. In its October 6, 1993, supplement to its original submittal, the licensee proposed to revise the footnote vice deleting it. The revised footnote would allow single-loop operation baseline data to be recorded the first time the unit enters single-loop operation. Two-loop operation baseline data will continue to be collected during startup following any refueling outage. This proposed amendment would eliminate the requirement to trip and restart the recirculation pumps at power during plant startup. In its May 18, 1993, and October 10, 1993 letters, the licensee stated that baseline data collected during previous operating cycles will initially be utilized to confirm operability. Additionally, the licensee stated that their review of previous operating cycle baseline data for single-loop operation has shown very little change in the D/P from cycle to cycle. Based on the review of the licensee's submittals, the staff finds the licensee's proposal to revise the footnote for TS 4.4.1.2 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 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 comment on such finding (58 FR 34090). Accordingly, the amendment meets 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 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 Contributors: M. Davis
S. Dembek

Date: December 9, 1993