

October 16, 1995

Mr. Leon R. Eliason  
Chief Nuclear Officer & President-  
Nuclear Business Unit  
Public Service Electric & Gas  
Company  
Post Office Box 236  
Hancocks Bridge, NJ 08038

SUBJECT: HOPE CREEK GENERATING STATION (TAC NO. M92917)

Dear Mr. Eliason:

The Commission has issued the enclosed Amendment No. 84 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 4, 1995.

The change to Technical Specification (TS) 3/4.6.1.8, "Drywell and Suppression Chamber Purge System," increases the annual operational limit for the drywell and suppression chamber purge system from 120 to 500 hours.

A copy of our safety evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

<sup>/s/</sup>  
David H. Jaffe, Senior Project Manager  
Project Directorate I-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket No. 50-354

- Enclosures: 1. Amendment No. 84 to License No. NPF-57
- 2. Safety Evaluation

cc w/encls: See next page

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

October 16, 1995

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Sincerely,

A handwritten signature in black ink, appearing to read "David H. Jaffe", written over a circular stamp or mark.

David H. Jaffe, Senior Project Manager  
Project Directorate I-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket No. 50-354

Enclosures: 1. Amendment No. 84 to  
License No. NPF-57  
2. Safety Evaluation

cc w/encls: See next page

Mr. Leon R. Eliason  
Public Service Electric & Gas  
Company

Hope Creek Generating Station

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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. 84  
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 4, 1995, 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:

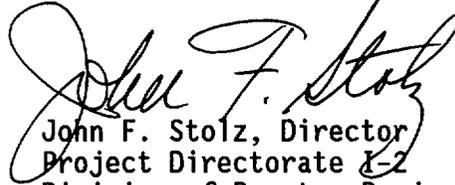
(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 84, 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.

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3. The license amendment is effective as of its date of issuance, to be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION



John F. Stolz, Director  
Project Directorate 1-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical  
Specifications

Date of Issuance: October 16, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 84

FACILITY OPERATING LICENSE NO. NPF-57

DOCKET NO. 50-354

Replace the following pages of the Appendix "A" Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change.

Remove

Insert

3/4 6-11

3/4 6-11

B 3/4 6-2

B 3/4 6-2

## CONTAINMENT SYSTEMS

### DRYWELL AND SUPPRESSION CHAMBER PURGE SYSTEM

#### LIMITING CONDITION FOR OPERATIONS

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3.6.1.8 The drywell and suppression chamber purge system, including the 6-inch nitrogen supply line, may be in operation for up to 500 hours each 365 days with the supply and exhaust isolation valves in one supply line and one exhaust line open for containment prepurge cleanup, inerting, deinerting, or pressure control.\*

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2 and 3.

ACTION:

- a. With a drywell or suppression chamber purge supply and/or exhaust isolation valve and/or the nitrogen supply valve open, except as permitted above, close the valves(s) or otherwise isolate the penetration(s) within 4 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- b. With a drywell purge supply or exhaust isolation valve, or a suppression chamber purge supply or exhaust isolation valve or the nitrogen supply valve, with resilient material seals having a measured leakage rate exceeding the limit of Surveillance Requirement 4.6.1.8.2, restore the inoperable valve(s) to OPERABLE status within 24 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

#### SURVEILLANCE REQUIREMENTS

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4.6.1.8.1 Before being opened, the drywell and suppression chamber purge supply and exhaust, and nitrogen supply butterfly isolation valves shall be verified not to have been open for more than 500 hours in the previous 365 days.\*

4.6.1.8.2 At least once per 6 months\*\*, but no more than once per 92 days\*\*\*, the 26-inch drywell purge supply and exhaust isolation valves and the 24-inch suppression chamber purge supply and exhaust isolation valves and the 6-inch nitrogen supply valve with resilient material seals shall be demonstrated OPERABLE by verifying that the measured leakage rate is less than or equal to 0.05 L<sub>a</sub> per penetration when pressurized to P<sub>a</sub> 48.1 psig.

\* Valves open for pressure control are not subject to the 500 hours per 365 days limit, provided the 2-inch bypass lines are being utilized.

\*\* Provided that the valve has not been operated since the previous test.

\*\*\* Applies only to a valve which has been operated since the previous test.

## CONTAINMENT SYSTEMS

### BASES

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#### 3/4.6.1.5 PRIMARY CONTAINMENT STRUCTURAL INTEGRITY

This limitation ensures that the structural integrity of the containment will be maintained comparable to the original design standards for the life of the unit. Structural integrity is required to ensure that the containment will withstand the maximum pressure of 48.1 psig in the event of a LOCA. A visual inspection in conjunction with Type A leakage tests is sufficient to demonstrate this capability.

#### 3/4.6.1.6 DRYWELL AND SUPPRESSION CHAMBER INTERNAL PRESSURE

The limitations on drywell and suppression chamber internal pressure ensure that the containment peak pressure of 48.1 psig does not exceed the design pressure of 62 psig during LOCA conditions or that the external pressure differential does not exceed the design maximum external pressure differential of 3 psid. The limit of -0.5 to +1.5 psig for initial positive containment pressure will limit the total pressure to 48.1 psig which is less than the design pressure and is consistent with the safety analysis.

#### 3/4.6.1.7 DRYWELL AVERAGE AIR TEMPERATURE

The limitation on drywell average air temperature ensures that the containment peak air temperature does not exceed the design temperature of 340°F during LOCA conditions and is consistent with the safety analysis. The 135°F average temperature is conducive to normal and long term operation.

#### 3/4.6.1.8 DRYWELL AND SUPPRESSION CHAMBER PURGE SYSTEM

The 500 hours/365 days limit for the operation of the purge valves and the 6" nitrogen supply valve during plant Operational Conditions 1, 2 and 3 is intended to reduce the probability of a LOCA occurrence during the above operational conditions when the applicable combination of the above valves are open.

Blow-out panels are installed in the CPCS ductwork to provide additional assurance that the FRVs will be capable of performing its safety function subsequent to a LOCA.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 84 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 4, 1995 the Public Service Electric & Gas Company (the licensee) submitted a request for a change to the Hope Creek Generating Station (HCGS), Technical Specifications (TSs). The proposed change to Technical Specification (TS) 3/4.6.1.8, "Drywell and Suppression Chamber Purge System", would increase the annual operational limit for the drywell and suppression chamber purge system from 120 to 500 hours.

2.0 DISCUSSION

The drywell and suppression chamber purge system is described in Section 6.2.5.2 of the HCGS Updated Final Safety Analysis Report (UFSAR). The purge supply lines for the system consist of (1) a 24-inch line, containing two isolation valves, from the containment prepurge cleanup system (CPCS) to the suppression chamber, and (2) a 26-inch line, containing two isolation valves, from the CPCS to the drywell. The purge vent lines consist of (1) a 24-inch line containing two isolation valves, from the suppression chamber to the CPCS, and (2) a 26-inch line containing two isolation valves, from the drywell to the CPCS. The outboard purge vent isolation valves, in the 24 and 26-inch lines, are each equipped with a 2-inch bypass line, each containing a valve.

During normal operation, the purge vent valves may be used to vent the containment to compensate for thermal expansion of the air volume. In addition, the containment is inerted with nitrogen, via a 6-inch supply valve, to assure that post loss-of-coolant-accident containment oxygen concentration will not be sufficient for hydrogen combustion. The drywell and suppression chamber purge system is also used for prepurge cleanup and deinerting.

At the present time, TS 3/4.6.1.8 states that, "The drywell and suppression chamber purge system, including the 6-inch nitrogen supply line, may be in operation for up to 120 hours each 365 days with the supply [purge] and exhaust [vent] isolation valves in one supply line and one exhaust line open for containment prepurge cleanup, inerting, deinerting, or pressure control." The NRC Staff approved TS 3/4.6.1.8 in License Amendment No. 16, dated March 30, 1988, based upon the following: (1) seismic qualification for the purge

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and vent valves was found to be acceptable, (2) the licensee had demonstrated the ability of the purge and vent (24 and 26-inch) valves to close from the 90-degree, full open, position against the rise in containment pressure in the event of a DBA/LOCA, thereby meeting the requirements of TMI Action Item II.E.4.2, and (3) the licensee had justified the 120-hour annual operating limit (based on plant operational considerations) compared to the 90-hour annual operating limit of NRC's Standard Review Plan 6.2.4. The licensee's May 4, 1995 application proposes a 500-hour operating annual limit based upon new plant operational considerations and a revised accident analysis.

### 3.0 EVALUATION

The licensee's May 4, 1995 application was submitted as a result of operational experience which showed that operation of the drywell and suppression chamber purge system was required for 116 hours, during 1994, compared to the TS 3/4.6.1.8 annual limit of 120 hours. The licensee's request to extend the allowable operation time of the system from 120 to 500 hours per year is supported by an analysis which demonstrates that, for a drywell and suppression chamber purge system operating time of 4589 hours per year, the probability that 10 CFR Part 100 limits would be exceeded is  $1.0E-07$ . The proposed operating limit of 500 hours per year is, therefore, conservative with regard to 10 CFR Part 100 release limits.

The NRC staff recognizes the need to provide operational flexibility with regard to the use of the drywell and suppression chamber purge system for the uses specified in TS 3/4.6.8.1. The licensee's proposed operating time extension, from 120 to 500 hours per year, provides a reasonable margin to expected operational needs. Based upon the licensee's analysis, we conclude that there is sufficient confidence that the limits of 10 CFR Part 100 will not be exceeded for an allowable drywell and suppression chamber purge system operating time of 500 hours per year. Accordingly, the proposed changes to TS 3/4.6.8.1, and the associated Bases, are acceptable.

### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New Jersey State Official was notified of the proposed issuance of the amendment. By letter dated September 11, 1995, the New Jersey Department of Environmental Protection, Bureau of Nuclear Engineering (BNE) had the following comments concerning the May 4, 1995, application:

The BNE believes that since variances to the allowable operating limit for the containment purge system are based on plant specific equipment configurations, site meteorology, radiological source term for reactor type, etc., the bases for extending this limit to 500 hours should be provided. The NRC's Safety Evaluation for Amendment 16, which extended the annual 90 hour limit to 120 hours, contains a detailed explanation and justification for the increase of 30 hour per year. However, this request does not provide a similar justification. Also, PSE&G says that while

there is a slight increase in the possibility of purge operations at the onset of a LOCA, any resulting release would be insignificant and bounded by existing LOCA analysis. The BNE, however, suggests that although this resulting release could be insignificant, its radiological impact should be analyzed and discussed in this amendment request.

In addressing the BNE comments, the NRC staff notes that the licensee has adequately demonstrated that the requested drywell and suppression chamber purge system operation limit of 500 hours per year is justified by realistic operational considerations. Moreover, it is within the bounds of similar operation limits currently permitted at other nuclear power facilities. With regard to dose calculations, the licensee is bounded by the limits of 10 CFR Part 100 with regard to radiological releases during containment purging. In this regard, the licensee has adequately demonstrated that the probability of exceeding the dose limits of 10 CFR Part 100 is sufficiently low.

#### 5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes the 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 effluent 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 (60 FR 42607). 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.

#### 6.0 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 Contributor: D. H. Jaffe

Date: October 16, 1995