November 17, 2000

Mr. Harold W. Keiser
Chief Nuclear Officer & President
PSEG Nuclear LLC-X04
Post Office Box 236
Hancocks Bridge, NJ 08038

SUBJECT: HOPE CREEK GENERATING STATION - ISSUANCE OF AMENDMENT RE: REVISION TO VENTILATION CHARCOAL ADSORBER TESTING PROGRAM (TAC NO. MA7322)

Dear Mr. Keiser:

The Commission has issued the enclosed Amendment No. 130 to Facility Operating License No. NPF-57 for the Hope Creek Generating Station (HCGS). This amendment consists of changes to the Technical Specifications (TSs) in response to the application dated November 24, 1999, submitted by Public Service Electric and Gas Company (PSE&G) as supplemented by a letter dated September 14, 2000, submitted by PSEG Nuclear LLC (PSEG Nuclear).

On August 21, 2000, the license for HCGS, to the extent held by PSE&G, was transferred to PSEG Nuclear. By letter dated September 6, 2000, PSEG Nuclear stated that they had assumed responsibility for the active items on the Hope Creek docket previously submitted by PSE&G as of the date of the transfer, which include the subject amendment request.

The amendment revises the TSs to implement Filtration, Recirculation, and Ventilation System and Control Room Emergency Filtration System charcoal filter testing requirements that are consistent with the U.S. Nuclear Regulatory Commission guidance delineated in Generic Letter 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal."

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

Sincerely,

/RA/

John T. Harrison, Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-354

Enclosures: 1. Amendment No. 130 to License No. NPF-57
2. Safety Evaluation

cc w/encls: See next page

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Office of Nuclear Reactor Regulation

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Hope Creek Generating Station

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PSEG NUCLEAR LLC

ATLANTIC CITY ELECTRIC COMPANY

DOCKET NO. 50-354

HOPE CREEK GENERATING STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 130
License No. NPF-57

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment filed by Public Service Electric and Gas Company dated November 24, 1999, as supplemented by letter dated September 14, 2000, submitted by PSEG Nuclear LLC, 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. 130 , and the Environmental Protection Plan contained in Appendix B, are hereby incorporated into the license. PSEG Nuclear LLC 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

/RA/

James W. Clifford, Chief, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: November 17, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 130

FACILITY OPERATING LICENSE NO. NPF-57

DOCKET NO. 50-354

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove	Insert
3/4 6-51a	3/4 6-51a
3/4 6-53	3/4 6-53
3/4 7-7	3/4 7-7

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 130 TO FACILITY OPERATING LICENSE NO. NPF-57

PSEG NUCLEAR LLC

ATLANTIC CITY ELECTRIC COMPANY

HOPE CREEK GENERATING STATION

DOCKET NO. 50-354

1.0 INTRODUCTION

By letter dated November 24, 1999, Public Service Electric and Gas Company (PSE&G) submitted a request for changes to the Hope Creek Generating Station (HCGS) Technical Specification (TSs). On August 21, 2000, the license for HCGS, to the extent held by PSE&G, was transferred to PSEG Nuclear LLC (the licensee). By letter dated September 6, 2000, PSEG Nuclear LLC stated that it had assumed responsibility for the active items on the HCGS docket previously submitted by PSE&G as of the date of the transfer, which include the amendment request related to this safety evaluation. By letter dated September 14, 2000, PSEG Nuclear LLC submitted a supplement to the application.

The proposed amendment revises the TSs to implement Filtration, Recirculation, and Ventilation System and Control Room Emergency Filtration System charcoal filter testing requirements that are consistent with the U.S. Nuclear Regulatory Commission (NRC) guidance delineated in Generic Letter (GL) 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal." This includes laboratory testing of charcoal samples per American Society for Testing and Materials (ASTM) D3803-1989 and the application of a safety factor of 2.0 to the charcoal filter efficiency assumed in the plant design-basis dose analyses. The September 14, 2000, letter provided clarifying information that did not change the initial proposed no significant hazards consideration determination or expand the scope of the original application.

2.0 EVALUATION

The NRC staff, with technical assistance from Brookhaven National Laboratory (BNL), has reviewed the licensee's submittals. In addition, the staff has reviewed the attached BNL Technical Evaluation Report (TER) regarding the proposed TS changes for HCGS. Based on its review, the staff adopts the TER. In view of the above, and because the NRC staff considers ASTM D3803-1989 to be the most accurate and most realistic protocol for testing charcoal in safety-related ventilation systems, the NRC staff finds that the proposed TS changes satisfy the actions requested in GL 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal," dated June 3, 1999, and are acceptable.

The NRC received a letter from the ASTM in response to a March 8, 2000, *Federal Register* Notice (65 FR 12286) related to revising testing standards in accordance with ASTM D3803-1989 for laboratory testing of activated charcoal in response to GL 99-02. The ASTM notified the NRC that the 1989 standard is out of date and should be replaced by D3803-1991 (1998). The staff acknowledges that the most current version of ASTM D3803 is ASTM D3803-1991 (reaffirmed in 1998). However, it was decided, for consistency purposes, to have all of the nuclear reactors test to the same standard (ASTM D3803-1989) because, prior to GL 99-02 being issued, approximately one third of nuclear reactors had technical specifications that referenced ASTM D3803-1989 and there are no substantive changes between the 1989 and 1998 versions.

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 (64 FR 73096). 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: J. Segala
J. Harrison

Date: November 17, 2000

Attachment: Technical Evaluation Report, Brookhaven National Laboratory

BROOKHAVEN NATIONAL LABORATORY
TECHNICAL EVALUATION REPORT
FOR THE OFFICE OF NUCLEAR REACTOR REGULATION
DIVISION OF SYSTEMS SAFETY AND ANALYSIS
PLANT SYSTEMS BRANCH
RELATED TO AMENDMENT TO FACILITY OPERATING LICENSE NO. NPF-57
PUBLIC SERVICE ELECTRIC AND GAS COMPANY
HOPE CREEK GENERATING STATION
DOCKET NO. 50-354

1.0 INTRODUCTION

By letter dated November 24, 1999 (LR-N990466), Public Service Electric and Gas Company (PSE&G) submitted its response to the actions requested in Generic Letter (GL) 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal," dated June 3, 1999, for the Hope Creek Generating Station. By another letter dated November 24, 1999 (LR-N99474), PSE&G requested changes to the Technical Specifications (TS) Sections 4.6.5.3.1.c.2 and 4.6.5.3.1.d for the Filtration, Recirculation and Ventilation System Ventilation mode (FRVS-V), 4.6.5.3.2.c.2 and 4.6.5.3.2.d for the Filtration, Recirculation and Ventilation System Recirculation mode (FRVS-R) and 4.7.2.c.2 and 4.7.2.d for the Control Room Emergency Filtration System (CREFS). By letter dated September 14, 2000 (LR-N000328), PSE&G submitted a letter containing additional information on the charcoal filter bed depth, residence time and system face velocity for each of the ventilation systems. The proposed changes would revise the TS surveillance testing of the safety related ventilation system charcoal to meet the requested actions of GL 99-02.

2.0 BACKGROUND

Safety-related air-cleaning units used in the engineered safety features (ESF) ventilation systems of nuclear power plants reduce the potential onsite and offsite consequences of a radiological accident by filtering radioiodine. Analyses of design basis accidents assume particular safety related charcoal adsorption efficiencies when calculating offsite and control room operator doses. To ensure that the charcoal filters used in these systems will perform in a manner that is consistent with the licensing basis of a facility, licensees have requirements in their TS to periodically perform a laboratory test (in accordance with a test standard) of charcoal samples taken from these ventilation systems.

In GL 99-02, the staff alerted licensees that testing nuclear-grade activated charcoal to standards other than American Society for Testing and Materials (ASTM) D3803-1989, “Standard Test Method for Nuclear-Grade Activated Carbon,” does not provide assurance for complying with their current licensing bases with respect to the dose limits of General Design Criterion (GDC) 19 of Appendix A to Part 50 of Title 10 of the Code of Federal Regulations (10 CFR) and Subpart A of 10 CFR Part 100.

GL 99-02 requested that all licensees determine whether their TS reference ASTM D3803-1989 for charcoal filter laboratory testing. Licensees whose TS do not reference ASTM D3803-1989 were requested to either amend their TS to reference ASTM D3803-1989 or propose an alternative test protocol.

Attachment

3.0 EVALUATION

3.1 Laboratory Charcoal Sample Testing Surveillance Requirements

The current and proposed TS surveillance requirements for laboratory charcoal sample testing for the Filtration Recirculation Ventilation System - Ventilation Mode (FRVS-V) and the Filtration Recirculation Ventilation System - Recirculation Mode (FRVS-R), and the Control Room Emergency Filtration System (CREFS) are shown in Table 1 and Table 2, respectively.

The proposed use of ASTM D3803-1989 is acceptable because it provides accurate and reproducible test results. The proposed test temperature of 30 °C for both FRVS and CREFS is acceptable because it is consistent with ASTM D3803-1989. The proposed test relative humidity (RH) of 70 percent is also acceptable, because these systems are equipped with safety-related heaters to maintain the RH at less than or equal to 70 percent during accident conditions. This is consistent with the actions requested in GL 99-02.

The credited removal efficiencies for radioactive organic iodine for FRVS-V, FRVS-R, and CREFS are 95%, 80%, and 99%, respectively. The proposed test penetrations for radioactive methyl iodide for FRVS-V, FRVS-R, and CREFS are 2.5%, 10%, and 0.5%, respectively and result in a safety factor of 2 for each of these systems. The proposed safety factor of 2 is acceptable because it ensures that the efficiency credited in the accident analysis is still valid at the end of the surveillance interval. This is consistent with the minimum safety factor of 2 specified in GL 99-02.

The August 23, 1999 errata to GL 99-02 clarified that if the maximum actual face velocity is greater than 110% of 40 fpm, then the test face velocity should be specified in the TS. PSE&G stated in the September 14, 2000 letter (LR-N000328) that all three systems, FRVS-V, FRVS-R, and CREFS have actual face velocities below 40 fpm, and are therefore not specified in the proposed TS amendments. The proposed testing of the charcoal adsorbers will be performed in accordance with ASTM D3803-1989, which specifies a test face velocity of 40 fpm with appropriate margins. This is acceptable because it ensures that the testing will be consistent with the operation of the ventilation system during accident conditions. This is consistent with the August 23, 1999 errata to GL 99-02.

4.0 CONCLUSION

On the basis of its evaluation, BNL recommends that the NRC staff consider the proposed TS changes to be acceptable.

Principal Contributors: Anthony Fresco and Mano Subudhi

Date: October 3, 2000

HOPE CREEK GENERATING STATION

TABLE 1 - CURRENT TS REQUIREMENTS											
System Description						**Current TS Requirements**					
TS Section	System	Bed Thickness (inches)	Actual Charcoal		Credited Efficiency (% methyl iodide)	Test Penetration (% methyl iodide)	Safety Factor	Test Standard **	Test Temp (° C)	Test RH (%)	Test Face Velocity (fpm)
			Res. Time (sec)	Face Velocity (fpm)							
4.6.5.3.1c.2 and 4.6.5.3.1.d	Filtration Recirculation and Ventilation System Ventilation (FRVS-V)	2	0.252	39.7	95.0	<1	Not stated (5)*	ASTM D3803-1979	30	70	40
4.6.5.3.2.c.2 and 4.6.5.3.2.d	Filtration Recirculation and Ventilation System Recirculation (FRVS-R)	2	0.258	38.8	80.0	<7.5	Not stated (2.67)*	ASTM D3803-1979	30	70	40
4.7.2.c.2 and 4.7.2.d	Control Room Emergency Filtration System (CREFS)	4	0.522	38.3	99.0	<0.175	Not stated (5.7)*	ASTM D3803-1979	30	70	40

* Safety factors are based on stated credited efficiencies and test penetrations.

** Current TS identifies ASTM D3803 without any year. However, GL submittal indicates the test protocol as ASTM D3803-1979.

HOPE CREEK GENERATING STATION

TABLE 2 - PROPOSED TS REQUIREMENTS											
System Description						**Proposed TS Requirements**					
TS Section	System	Bed Thickness (inches)	Actual Charcoal		Credited Efficiency (% methyl iodide)	Test Penetration (% methyl iodide)	Safety Factor	Test Standard	Test Temp (° C)	Test RH (%)	Test Face Velocity (fpm)
			Res. Time (sec)	Face Velocity (fpm)							
4.6.5.3. 1c.2 and 4.6.5.3. 1.d	Filtration Recirculation and Ventilation System Ventilation (FRVS-V)	2	0.252	39.7	95.0	2.5	2	ASTM D3803-1989	30	70	40
4.6.5.3. 2.c.2 and 4.6.5.3. 2.d	Filtration Recirculation and Ventilation System Recirculation (FRVS-R)	2	0.258	38.8	80.0	10	2	ASTM D3803-1989	30	70	40
4.7.2.c.2 and 4.7.2.d	Control Room Emergency Filtration System (CREFS)	4	0.522	38.3	99.0	0.5	2	ASTM D3803-1989	30	70	40