

September 18, 2002

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:  
RELOCATION OF REACTOR COOLANT SYSTEM CHEMISTRY  
REQUIREMENTS (TAC NO. MB4717)

Dear Mr. Keiser:

The Commission has issued the enclosed Amendment No. 140 to Facility Operating License No. NPF-57 for the Hope Creek Generating Station in response to your application dated April 3, 2002. This amendment consists of changes to the Technical Specifications (TSs) which allow the relocation of TS 3/4.4.4, "Reactor Coolant System - Chemistry," and the associated bases from the TSs to the Hope Creek Updated Final Safety Analysis Report.

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/*

George F. Wunder, 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. 140 to  
License No. NPF-57  
2. Safety Evaluation

cc w/encls: See next page

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Accession No.: ML022140131

\*previous concurrence

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PSEG NUCLEAR LLC

DOCKET NO. 50-354

HOPE CREEK GENERATING STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 140  
License No. NPF-57

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment filed by the PSEG Nuclear LLC dated April 3, 2002, 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. 140, 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. Implementation shall include relocation of information related to reactor coolant system chemistry from the Technical Specifications to the Updated Final Safety Analysis Report as described in the licensee's application dated April 3, 2002, and the staff's attached safety evaluation.

FOR THE NUCLEAR REGULATORY COMMISSION

*/RA/*

James W. Andersen, Acting 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: September 18, 2002

ATTACHMENT TO LICENSE AMENDMENT NO. 140

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

x

3/4 4-15

3/4 4-16

3/4 4-17

B 3/4 4-3

B 3/4 4-4

Insert

x

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B 3/4 4-3

B 3/4 4-4

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 140 TO FACILITY OPERATING LICENSE NO. NPF-57

PSEG NUCLEAR LLC

HOPE CREEK GENERATING STATION

DOCKET NO. 50-354

## 1.0 INTRODUCTION

By letter dated April 3, 2002, PSEG Nuclear LLC (PSEG, or the licensee) submitted a request for changes to the Hope Creek Generating Station (HCGS) Technical Specification (TSs). The requested changes would allow the relocation of TSs 3/4.4.4, "Reactor Coolant System - Chemistry," and the associated bases from the TSs to the Hope Creek Updated Final Safety Analysis Report (UFSAR) .

## 2.0 BACKGROUND

Section 182a of the Atomic Energy Act of 1954, as amended (the Act) requires applicants for nuclear power plant operating licenses to include the TSs as part of the license. The Commission's regulatory requirements related to the content of TSs are set forth in Section 50.36 of Title 10 of the *Code of Federal Regulations* (10 CFR). The regulation requires that the TSs include items in specific categories, including: (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operation (LCOs); (3) surveillance requirements (SRs); (4) design features; and (5) administrative controls. The regulation does not specify the particular requirements to be included in the TSs.

The four criteria defined by 10 CFR 50.36(c)(2)(ii) for determining whether particular items are required to be included in the TS LCOs, are as follows:

- (A) *Criterion 1.* Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.
- (B) *Criterion 2.* A process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier;
- (C) *Criterion 3.* A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

(D) *Criterion 4.* A structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

Existing TS LCOs which fall within or satisfy any of the above criteria must be retained in the TSs; those which do not fall within or satisfy these criteria may be relocated to other licensee-controlled documents.

### 3.0 EVALUATION

The Hope Creek primary system is made primarily of austenitic stainless steel and Zircaloy cladding. In order to provide an environment that minimizes corrosion and is favorable to these metals, the licensee controls primary water chemistry; specifically, the TSs require the licensee to monitor reactor coolant system chlorides, conductivity, and pH. The TSs provide limits for chlorides, conductivity, and pH for all operational modes. These limits are intended to help ensure the integrity of primary materials over their lifetime.

The water chemistry limits of TS 3/4.4.4, while important to the long-term integrity of the primary system, do not meet any of the four criteria for inclusion in the TSs as set forth in 10 CFR 50.36(c)(2)(ii). Criterion 1 refers to installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary. While poor chemistry control can lead to a more rapid degradation of the primary materials, this type of degradation is a long-term process; furthermore, poor reactor coolant system (RCS) chemistry control is a cause of, not a detector or indicator of, RCS degradation. The inservice inspections required by 10 CFR 50.55a and the RCS leakage limits are examples of requirements provided to monitor degradation of the RCS boundary materials. TS 3/4.4.4 does not, therefore, meet Criterion 1 of 10 CFR 50.36(c)(2)(ii) for inclusion in the TSs.

Criterion 2 refers to a process variable, design feature, or operating restriction that is an initial condition of a design-basis accident or transient analysis that either assumes the failure of, or presents a challenge to, the integrity of a fission product barrier. Neither reactor coolant chlorides, nor conductivity, nor pH are assumed as initial conditions for any design-basis accident that would present a challenge to the integrity of any fission product barrier. Again, while reactor coolant chemistry is important to the maintenance of the integrity of the RCS, the degradation caused by poor water chemistry control occurs long-term. TS 3/4.4.4 does not, therefore, meet Criterion 2 of 10 CFR 50.36(c)(2)(ii) for inclusion in the TSs.

Criterion 3 refers to a structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design-basis accident or transient that either assumes the failure of, or presents a challenge to, the integrity of a fission product barrier. Criterion 4 refers to a structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety. Neither of these criteria are applicable to limits on reactor coolant chlorides, conductivity, or pH. TS 3/4.4.4 does not, therefore, meet either Criterion 3 or 4 of 10 CFR 50.36(c)(2)(ii) for inclusion in the TSs.

The staff has reviewed the licensee's application for relocation of the requirements of TS 3/4.4.4 to the UFSAR and has determined that these requirements do not meet any of the four

criteria set forth in 10 CFR 50.36(c)(2)(ii) for inclusion in plant TSs. Following relocation to the UFSAR, any future changes to the coolant chemistry criteria will be controlled in accordance with 10 CFR 50.59. The staff, therefore, finds that the requested amendment is 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. The State official had no comments.

#### 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. 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 (67 FR 34492). 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: G. Wunder

Date: September 18, 2002

Hope Creek Generating Station

cc:

Jeffrie J. Keenan, Esquire  
PSEG Nuclear - N21  
P.O. Box 236  
Hancocks Bridge, NJ 08038

Hope Creek Resident Inspector  
U.S. Nuclear Regulatory Commission  
Drawer 0509  
Hancocks Bridge, NJ 08038

Mr. Mark B. Bezilla  
Vice President - Technical Support  
PSEG Nuclear - N10  
P.O. Box 236  
Hancocks Bridge, NJ 08038

Mr. David F. Garchow  
Vice President - Operations  
PSEG Nuclear - X10  
P.O. Box 236  
Hancocks Bridge, NJ 08038

Mr. Gabor Salamon  
Manager - Nuclear Safety and Licensing  
PSEG Nuclear - N21  
P.O. Box 236  
Hancocks Bridge, NJ 08038

Regional Administrator, Region I  
U.S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, PA 19406

Dr. Jill Lipoti, Asst. Director  
Radiation Protection Programs  
NJ Department of Environmental  
Protection and Energy  
CN 415  
Trenton, NJ 08625-0415

Richard Hartung  
Electric Service Evaluation  
Board of Regulatory Commissioners  
2 Gateway Center, Tenth Floor  
Newark, NJ 07102

Lower Alloways Creek Township  
c/o Mary O. Henderson, Clerk  
Municipal Building, P.O. Box 157  
Hancocks Bridge, NJ 08038

Mr. Elbert Simpson  
Senior Vice President &  
Chief Administrative Officer  
PSEG Nuclear - N19  
P.O. Box 236  
Hancocks Bridge, NJ 08038