

April 7, 2006

Mr. William Levis
Senior Vice President & Chief Nuclear Officer
PSEG Nuclear LLC - N09
Post Office Box 236
Hancocks Bridge, NJ 08038

SUBJECT: HOPE CREEK GENERATING STATION - ISSUANCE OF AMENDMENT RE:
DELETION OF REQUIREMENT FOR STANDBY LIQUID CONTROL SYSTEM
DURING REFUELING (TAC NO. MC8608)

Dear Mr. Levis:

The Commission has issued the enclosed Amendment No. 166 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 October 11, 2005. The amendment removes the TS 3.1.5 requirement for the standby liquid control (SLC) system to be operable in Operational Condition 5 (refueling) with any control rod withdrawn. Corresponding changes are also made to the SLC initiation sections of TS Tables 3.3.2-1 and 4.3.2-1.

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/

Stewart N. Bailey, Senior Project Manager
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-354

Enclosures:

1. Amendment No. 166 to License No. NPF-57
2. Safety Evaluation

cc w/encls: See next page

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DATE		4/07/06	3/22/06	3/24/06
OFFICE	NRR/SBWB	OGC	NRR/LPLB/BC	
NAME	GCranston	MLemoncelli	DRoberts	
DATE	3/30/06	4/07/06	4/07/06	

OFFICIAL RECORD COPY

Hope Creek Generating Station

cc:

Mr. Michael P. Gallagher
Vice President - Eng/Tech Support
PSEG Nuclear
P.O. Box 236
Hancocks Bridge, NJ 08038

Mr. Dennis Winchester
Vice President - Nuclear Assessments
PSEG Nuclear
P.O. Box 236
Hancocks Bridge, NJ 08038

Mr. George P. Barnes
Site Vice President - Hope Creek
PSEG Nuclear
P.O. Box 236
Hancocks Bridge, NJ 08038

Mr. George H. Gellrich
Plant Support Manager
PSEG Nuclear
P.O. Box 236
Hancocks Bridge, NJ 08038

Mr. Michael J. Massaro
Plant Manager - Hope Creek
PSEG Nuclear
P.O. Box 236
Hancocks Bridge, NJ 08038

Mr. Darin Benyak
Director - Regulatory Assurance
PSEG Nuclear - N21
P.O. Box 236
Hancocks Bridge, NJ 08038

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

Ms. R. A. Kankus
Joint Owner Affairs
Exelon Generation Company, LLC
Nuclear Group Headquarters KSA1-E
200 Exelon Way
Kennett Square, PA 19348

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

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

Mr. Brian Beam
Board of Public Utilities
2 Gateway Center, Tenth Floor
Newark, NJ 07102

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

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

PSEG NUCLEAR LLC

DOCKET NO. 50-354

HOPE CREEK GENERATING STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 166
License No. NPF-57

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment filed by PSEG Nuclear LLC dated October 11, 2005, 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. 166, 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.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Darrell J. Roberts, Chief
Plant Licensing Branch 1-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: April 7, 2006

ATTACHMENT TO LICENSE AMENDMENT NO. 166

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

3/4 1-19
3/4 3-12
3/4 3-16a
3/4 3-29
3/4 3-31
B 3/4 3-2k

Insert

3/4 1-19
3/4 3-12
3/4 3-16a
3/4 3-29
3/4 3-31
B 3/4 3-2k

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 166 TO FACILITY OPERATING LICENSE NO. NPF-57

PSEG NUCLEAR LLC

HOPE CREEK GENERATING STATION

DOCKET NO. 50-354

1.0 INTRODUCTION

By letter dated October 11, 2005, PSEG Nuclear LLC (PSEG or the licensee) requested a license amendment, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.90, for the Hope Creek Generating Station (Hope Creek). The amendment would remove requirements for the standby liquid control (SLC) system to be operable in Operational Condition 5, "Refueling," with any control rod withdrawn. The licensee requested a change to the applicability of Technical Specification (TS) Limiting Condition for Operation (LCO) 3.1.5, "Standby Liquid Control System," and corresponding changes to the SLC initiation sections of TS Table 3.3.2-1, "Isolation Actuation Instrumentation," and TS Table 4.3.2-1, "Isolation Actuation Instrumentation Surveillance Requirements." The proposed changes would make the Hope Creek TS requirements for the SLC system consistent with the Standard Technical Specifications (STSS) contained in NUREG-1433, "Standard Technical Specifications General Electric Plants, BWR [boiling-water reactor]/4."

2.0 REGULATORY EVALUATION

The purpose of the SLC system is to provide a backup reactivity control system. The SLC system is designed to inject borated water into the reactor core to bring the reactor from full power to a cold, xenon-free shutdown, assuming that none of the withdrawn control rods can be inserted. The SLC system satisfies the requirements of 10 CFR 50.62(c)(4) to reduce the risk of anticipated transient without scram (ATWS) events.

Section 50.36(c)(2)(ii) of 10 CFR provides the criteria for including items in the TSs. The Nuclear Regulatory Commission (NRC or the Commission) staff has determined that the SLC system meets 10 CFR 50.36(c)(2)(ii) Criterion 4, which states "A structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety," due to the SLC system's role in reducing risk from ATWS events.

The proposed amendment would bring the Hope Creek TSs into further alignment with the STSS. Section 3.1.7 of the STSS specifies that the SLC system must be operational in Operational Conditions (Modes) 1 and 2. The STS Bases (NUREG-1433, Vol. 2) state the following:

In Modes 1 and 2, shutdown capability [provided by SLC] is required. In Modes 3 and 4, control rods are not able to be withdrawn since the reactor mode switch is in shutdown and a control rod block is applied. This provides adequate controls to ensure that the reactor remains subcritical. In MODE 5, only a single control rod can be withdrawn from a core cell containing fuel assemblies. Demonstration of adequate SDM (LCO 3.1.1, "SHUTDOWN MARGIN (SDM)") ensures that the reactor will not become critical. Therefore, the SLC System is not required to be OPERABLE when only a single control rod can be withdrawn.

For Hope Creek, the requirements for SDM and control rod removal are contained in LCO 3.1.1, "Shutdown Margin," of TS Section 3/4.1, "Reactivity Control Systems," and LCO 3.9.10.1, "Control Rod Removal," of TS Section 3/4.9, "Refueling Operations," respectively.

General Design Criterion 26 of Appendix A to 10 CFR Part 50 only requires one reactivity control system to be capable of holding the reactor subcritical under cold conditions. In refueling conditions (Operational Condition 5), the control rods hold the reactor core subcritical.

The NRC has granted similar amendments to the Dresden and Quad Cities Nuclear Power Stations (March 6, 1998; Agencywide Documents Access and Management System (ADAMS) Accession No. ML021150592) and the Duane Arnold Energy Center (March 31, 1998; ADAMS Accession No. ML021920192). These amendments removed the requirement for the SLC system to be operable during refueling, consistent with the STS.

3.0 TECHNICAL EVALUATION

The Hope Creek TSs require the SLC system to be operable in Operational Condition 5 when any control rod is withdrawn. The proposed amendment would remove this requirement.

During refueling conditions, the reactor is shut down with all control rods fully inserted as required by LCO 3.9.3, "Control Rod Position." LCO 3.9.10, "Control Rod Removal," provides the necessary controls for removing control rods from defueled cells. The one-rod-out interlock associated with the refuel position of the reactor mode switch (LCO 3.9.1, "Reactor Mode Switch") provides protection against inadvertent criticality while the reactor is in Operational Condition 5. Specifically, the reactor mode switch will be in the "shutdown" or "refuel" position and locked. With the reactor mode switch in these positions, a second control rod cannot be selected for movement while any other control rod is withdrawn. The reactor core is designed such that adequate SDM is maintained with one control rod fully withdrawn, as required by LCO 3.1.1.

Additional protection against inadvertent criticality is also achieved in Operational Condition 5 because, in accordance with the TSs and procedural controls, the amount of reactivity present in the reactor core will be incrementally reduced during core offloading. This reduction results in the SDM of the core being the same as, or greater than, its initial value during the entire core offloading process. For core reload, the SDM is analytically determined before fuel is loaded. The SDM acceptance criterion is specified in LCO 3.1.1. If a control rod is withdrawn in Operational Condition 5 and the SDM cannot be demonstrated, LCO 3.9.2, "Instrumentation," places additional restrictions on plant operations. Specifically, if SDM has not been demonstrated, at least two source range monitor channels must be operable with the shorting

links removed from the reactor protection system circuitry prior to and at any time one control rod is withdrawn from the core. In the extremely unlikely event that an inadvertent criticality occurs during this time, these additional restrictions ensure that the control rod system will be automatically actuated. If it is determined that SDM is inadequate in Operational Condition 5, the action statements in LCO 3.1.1 require that all activities that could reduce SDM be suspended and that all insertable control rods be inserted.

The staff finds that the SLC system at Hope Creek is not required to be operable in Operational Condition 5 when any control rod is withdrawn because other TS requirements, described above, will ensure that inadvertent criticality will not occur during refueling operations.

The TSs require compliance with the LCO during the Operational Conditions or other conditions specified in the LCO applicability statement. The applicability of an LCO is based on the accident analyses assumptions or, in the case of SLC, the conditions for which the system meets Criterion 4 of 10 CFR 50.36(c)(2)(ii). When applicability requirements are inconsistent with these conditions, the LCO applicability can be changed to establish a consistent set of requirements. ATWS events are postulated to initiate with the reactor in a critical condition, which only occurs on Operational Conditions 1 or 2. The NRC staff finds the proposed change to LCO 3.1.5 applicability acceptable because it establishes requirements that are consistent with the initial conditions of postulated ATWS events. The proposed change is also consistent with precedence established by the STSs.

The proposed changes to the SLC system initiation sections of TS Tables 3.3.2-1 and 4.3.2.1-1 conform to the change in the applicability of LCO 3.1.5. If the SLC system is not required to be operable in Operational Condition 5, the isolation actuation instrumentation is not required to be operable and its associated surveillances are not required. Therefore, the NRC staff finds the proposed changes to TS Tables 3.3.2-1 and 4.3.2.1-1 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 (71 FR 5083). 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: T. Valentine
S. Bailey

Date: April 7, 2006