

January 29, 2004

Mr. Roy A. Anderson
President & Chief Nuclear Officer
PSEG Nuclear LLC-X04
Post Office Box 236
Hancocks Bridge, NJ 08038

SUBJECT: HOPE CREEK GENERATING STATION - ISSUANCE OF AMENDMENT
RE: ELIMINATION OF REQUIREMENTS FOR POST-ACCIDENT SAMPLING
SYSTEM (TAC NO. MB8140)

Dear Mr. Anderson:

The Commission has issued the enclosed Amendment No. 149 to Facility Operating License No. NPF-57 for the Hope Creek Generating Station (Hope Creek). This amendment consists of changes to the Technical Specifications (TSS) in response to your application dated March 13, 2003.

The Amendment deletes TS 6.8.4.c, "Post Accident Sampling," and, thereby, eliminates the requirements to have and maintain the post-accident sampling system at Hope Creek.

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 P. Boska, Senior 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. 149 to
License No. NPF-57
2. Safety Evaluation

cc w/encls: See next page

Hope Creek Generating Station

cc:

Mr. A. Christopher Bakken, III
Senior Vice President - Site Operations
PSEG Nuclear - X15
P.O. Box 236
Hancocks Bridge, NJ 08038

Mr. John T. Carlin
Vice President - Nuclear Assessment
PSEG Nuclear - N10
P.O. Box 236
Hancocks Bridge, NJ 08038

Mr. David F. Garchow
Vice President - Eng/Tech Support
PSEG Nuclear - N28
P.O. Box 236
Hancocks Bridge, NJ 08038

Mr. James A. Hutton
Plant Manager
PSEG Nuclear - X15
P.O. Box 236
Hancocks Bridge, NJ 08038

Mr. Steven Mannon
Acting Manager - Nuclear Safety and
Licensing
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 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

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

January 29, 2004

Mr. Roy A. Anderson
President & Chief Nuclear Officer
PSEG Nuclear LLC-X04
Post Office Box 236
Hancocks Bridge, NJ 08038

SUBJECT: HOPE CREEK GENERATING STATION - ISSUANCE OF AMENDMENT
RE: ELIMINATION OF REQUIREMENTS FOR POST-ACCIDENT SAMPLING
SYSTEM (TAC NO. MB8140)

Dear Mr. Anderson:

The Commission has issued the enclosed Amendment No. 149 to Facility Operating License No. NPF-57 for the Hope Creek Generating Station (Hope Creek). This amendment consists of changes to the Technical Specifications (TSS) in response to your application dated March 13, 2003.

The Amendment deletes TS 6.8.4.c, "Post Accident Sampling," and, thereby, eliminates the requirements to have and maintain the post-accident sampling system at Hope Creek.

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 P. Boska, Senior 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. 149 to
License No. NPF-57
2. Safety Evaluation

cc w/encls: See next page

DISTRIBUTION

PUBLIC DRoberts OGC GMeyer, RGN-I GMiller JBoska
PDI-2 Reading CRaynor WBeckner GHill (2) ACRS

ADAMS Accession Numbers: Letter: ML031430416; TS(s): ML ; Package: ML

*See Previous Concurrence

OFFICE	CLIIP LPM*	PDI-2/PM*	PDI-2/PM	PDI-2/LA*	PDI-2/SC(A)
NAME	WReckley	GMiller	JBoska	CRaynor	DRoberts
DATE	6/11/03	6/2/03	1/22/04	5/30/03	1/28/04

OFFICIAL RECORD COPY

PSEG NUCLEAR LLC

DOCKET NO. 50-354

HOPE CREEK GENERATING STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 149
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 March 13, 2003, 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. 149, 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 180 days.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Darrell J. Roberts, 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: January 29, 2004

ATTACHMENT TO LICENSE AMENDMENT NO. 149

FACILITY OPERATING LICENSE NO. NPF-57

DOCKET NO. 50-354

Replace the following page of the Appendix A Technical Specifications with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove
6-16

Insert
6-16

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 149 TO FACILITY OPERATING LICENSE NO. NPF-57

PSEG NUCLEAR LLC

HOPE CREEK GENERATING STATION

DOCKET NO. 50-354

1.0 INTRODUCTION

By letter dated March 13, 2003, PSEG Nuclear LLC (PSEG, or the licensee) submitted a request for changes to the Hope Creek Generating Station Technical Specifications (TSs). The proposed amendment would delete TS 6.8.4.c, "Post Accident Sampling."

In the aftermath of the accident at Three Mile Island (TMI), Unit 2, the U.S. Nuclear Regulatory Commission (the Commission or NRC) imposed requirements on licensees for commercial nuclear power plants to install and maintain the capability to obtain and analyze post-accident samples of the reactor coolant and containment atmosphere. The desired capabilities of the Post-Accident Sampling System [or Station] (PASS) were described in NUREG-0737, "Clarification of TMI Action Plan Requirements." The NRC issued orders to licensees with plants operating at the time of the TMI accident to confirm the installation of PASS capabilities (as they had been described in NUREG-0737). A requirement for PASS and related administrative controls was added to the TSs of the operating plants and was included in the initial TSs for plants licensed during the 1980s and 90s. Additional expectations regarding PASS capabilities were included in Regulatory Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Power Plants To Assess Plant and Environs Conditions During and Following an Accident."

Significant improvements have been achieved since the TMI accident in the areas of understanding risks associated with nuclear plant operations, and developing better strategies for managing the response to potentially severe accidents at nuclear power plants. Recent insights about plant risks and alternate severe accident assessment tools have led the NRC staff to conclude that some TMI Action Plan items can be revised without reducing the ability of licensees to respond to severe accidents. The NRC's efforts to oversee the risks associated with nuclear technology more effectively, and to eliminate undue regulatory costs to licensees and the public have prompted the NRC to consider eliminating the requirements for PASS in TSs and other parts of the licensing bases of operating reactors.

The staff has completed its review of the topical report submitted by the Boiling Water Reactor (BWR) Owners Group (BWROG) that proposed the elimination of PASS. The justifications for the proposed elimination of PASS requirements center on evaluations of the various radiological and chemical sampling and their potential usefulness in responding to a severe reactor accident or making decisions regarding actions to protect the public from possible releases of radioactive materials. As explained in more detail in the staff's Safety Evaluation (SE) for the topical report, the staff has reviewed the available sources of information for use by

decisionmakers in developing protective action recommendations and assessing core damage. Based on this review, the staff found that the information provided by PASS is either unnecessary, or is effectively provided by other indications of process parameters or measurement of radiation levels. The staff agrees with the owners group that licensees can remove the TS requirements for PASS, revise (as necessary) other elements of the licensing bases, and pursue possible design changes to alter or remove existing PASS equipment.

2.0 REGULATORY EVALUATION

In its letter dated November 30, 2000, the BWROG submitted for the NRC staff's review, Topical Report NEDO-32991, "Regulatory Relaxation for BWR Post Accident Sampling Stations (PASS)," for eliminating PASS requirements from BWRs. The NRC staff's SE for the BWROG topical report is dated June 12, 2001 (Agencywide Documents Access and Management System (ADAMS) Accession Number ML011630016). The BWROG proposed that relaxation of the PASS requirements be incorporated into the Standard Technical Specifications by submitting TSTF-413.

The NRC staff prepared the SE relating to the elimination of requirements on post-accident sampling for BWRs and solicited public comment (66 FR 66949, dated December 27, 2001) in accordance with the Consolidated Line Item Improvement Program (CLIIP). The use of the CLIIP in this matter is intended to help the NRC efficiently process amendments that propose to remove the PASS requirements from TSs. Licensees of nuclear power reactors, to which this SE applies, were informed (67 FR 13027, dated March 20, 2002) that they could request amendments conforming to the SE. In such requests, the licensee should confirm the applicability of the SE to their reactors, and provide the requested plant-specific verifications and commitments.

3.0 TECHNICAL EVALUATION

The ways in which the requirements and recommendations for PASS were incorporated into the licensing bases of commercial nuclear power plants varied based on when the plants were licensed. Plants that were operating at the time of the TMI accident, were likely to have been the subject of confirmatory orders that imposed the PASS functions described in NUREG-0737 as obligations. The issuance of plant-specific amendments to adopt this change, which would remove PASS and related administrative controls from TSs, would also supercede the PASS-specific requirements imposed by post-TMI confirmatory orders.

The technical evaluations for the elimination of PASS sampling requirements are provided in the SE dated June 12, 2001, for BWROG Topical Report NEDO-32991. As described in its SE for the topical report, the staff finds that the post-accident sampling requirements for the following may be eliminated for BWR plants:

1. Reactor coolant dissolved gases.
2. Reactor coolant hydrogen.
3. Reactor coolant oxygen.
4. Reactor coolant chlorides.
5. Reactor coolant pH.
6. Reactor coolant boron.

7. Reactor coolant conductivity.
8. Radioisotopes in the reactor coolant.
9. Containment hydrogen.
10. Containment oxygen.
11. Radioisotopes in the containment atmosphere.
12. Suppression pool pH.
13. Chlorides in the suppression pool.
14. Boron in the suppression pool.
15. Radioisotopes in the suppression pool.

The staff agrees that the sampling of radioisotopes is not required to support emergency response decisionmaking during the initial phases of an accident, because the information provided by PASS is either unnecessary or is effectively provided by other indications of process parameters or measurement of radiation levels. Therefore, it is not necessary to have dedicated equipment to obtain this sample in a prompt manner.

However, the staff does believe that there could be significant benefits to having information about the radioisotopes existing post-accident in order to address public concerns and plan for long-term recovery operations. As stated in the SE for the topical report, the staff has found that licensees could satisfy this function by developing contingency plans to describe existing sampling capabilities and what actions (e.g., assembling temporary shielding) may be necessary to obtain and analyze highly radioactive samples from the reactor coolant system (RCS), suppression pool, and containment atmosphere. (See item 4.1 under Verifications and Commitments.) The contingency plans for obtaining samples from the RCS, suppression pool, and containment atmosphere may also enable a licensee to derive information on parameters, such as hydrogen concentrations in containment and the pH of water in the suppression pool. The staff considers the sampling of the suppression pool to be potentially useful in confirming calculations of pH and confirming that potentially unaccounted for acid sources have been sufficiently neutralized. The use of the contingency plans for obtaining samples would depend on the plant conditions and the need for information by the decisionmakers responsible for responding to the accident.

In addition, the staff considers radioisotope sampling information to be useful in classifying certain types of events (such as a reactivity excursion or mechanical damage) that could cause fuel damage without having an indication of a loss-of-reactor-coolant inventory. However, the staff agrees with the topical report's contentions that other indicators of failed fuel, such as radiation monitors, can be correlated to the degree of failed fuel. (See item 4.2 under Verifications and Commitments.)

In lieu of the information that would have been obtained from PASS, the staff believes that licensees should maintain or develop the capability to monitor radioactive iodines that have been released to offsite environs. This information would be useful for decisionmakers trying to assess a release of, and limit the public's exposure to, radioactive materials. (See item 4.3 under Verifications and Commitments.)

The staff believes that the changes related to the elimination of PASS that are described in the SE for the topical report, and this proposed change to TSSs, are unlikely to result in a decrease in the effectiveness of a licensee's emergency plan. Each licensee, however, must evaluate

possible changes to its emergency plan in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 50.54(q) to determine if the change decreases the effectiveness of its site-specific plan. Evaluations and reporting of changes to emergency plans should be performed in accordance with applicable regulations and procedures.

The staff notes that containment hydrogen concentration monitors are required by 10 CFR 50.44 and are relied upon to meet the data reporting requirements of 10 CFR Part 50, Appendix E, Section VI.2.a.(ii)(3). The staff concludes that these hydrogen monitors provide an adequate capability for monitoring containment hydrogen concentration during the early phases of an accident. The staff sees value in maintaining the capability to obtain grab samples for complementing the information from the hydrogen monitors in the long term (i.e., by confirming the indications from the monitors and providing hydrogen measurements for concentrations outside the range of the monitors). As previously mentioned, the licensee's contingency plan (see item 4.1 under Verifications and Commitments) for obtaining highly radioactive samples will include sampling of the containment atmosphere and may, if deemed necessary and practical by the appropriate decisionmakers, be used to supplement the hydrogen monitors.

4.0 VERIFICATIONS AND COMMITMENTS

As requested by the staff in the notice of availability for this TS improvement, the licensee has addressed the following plant-specific verifications and commitments.

- 4.1 Each licensee should verify that it has, and make a regulatory commitment to maintain (or make a regulatory commitment to develop and maintain), contingency plans for obtaining and analyzing highly radioactive samples of reactor coolant, suppression pool, and containment atmosphere.

The licensee has made a regulatory commitment to develop contingency plans for obtaining and analyzing highly radioactive samples from the RCS, suppression pool, and containment atmosphere. The contingency plans will be contained within appropriate plant procedures. The licensee will implement this commitment within 180 days after the implementation of this license amendment.

- 4.2 Each licensee should verify that it has, and make a regulatory commitment to maintain (or make a regulatory commitment to develop and maintain), a capability for classifying fuel damage events at the Alert level threshold (typically this is 300 $\mu\text{Ci/ml}$ dose equivalent iodine). This capability may utilize the normal sampling system and/or correlations of radiation readings to radioisotope concentrations in the reactor coolant.

The licensee established the capability for classifying fuel damage events at the Alert level threshold. The licensee has committed to maintain the capability for the Alert classification within plant-implementing procedures. The licensee has implemented this commitment.

- 4.3 Each licensee should verify that it has, and make a regulatory commitment to maintain (or make a regulatory commitment to develop and maintain), an I-131 site survey detection capability, including an ability to assess radioactive iodines released to offsite environs, by using effluent monitoring systems or portable sampling equipment.

The licensee has verified that it has an I-131 site survey detection capability, including an ability to assess radioactive iodines released to offsite environs, by using effluent monitoring systems or portable sampling equipment. The licensee has committed to maintain the capability for monitoring iodines within its plant-implementing procedures. The licensee has implemented this commitment.

The NRC staff finds that reasonable controls for the implementation of, and for subsequent evaluation of, proposed changes pertaining to the above regulatory commitments are provided by the licensee's administrative processes, including its commitment management program. Should the licensee choose to incorporate a regulatory commitment into the emergency plan, final safety analysis report, or other document with established regulatory controls, the associated regulations would define the appropriate change-control and reporting requirements. The staff has determined that the commitments do not warrant the creation of regulatory requirements, which would require prior NRC approval of subsequent changes. The NRC staff has agreed that NEI 99-04, Revision 0, "Guidelines for Managing NRC Commitment Changes," provides reasonable guidance for the control of regulatory commitments made to the NRC staff. (See Regulatory Issue Summary 2000-17, "Managing Regulatory Commitments Made by Power Reactor Licensees to the NRC Staff," dated September 21, 2000 [ADAMS Accession Number ML003741774].) The commitments should be controlled in accordance with the industry guidance or comparable criteria employed by a specific licensee. The staff may choose to verify the implementation and maintenance of these commitments in a future inspection or audit.

5.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New Jersey (NJ) State Official was notified of the proposed issuance of the amendment. In a letter dated July 3, 2003, the State official provided the following comments:

We noted, that in Attachment I to the March 13 letter, PSEG commits to develop and maintain contingency plans for obtaining and analyzing highly radioactive samples of reactor coolant, containment sump and containment atmosphere. Based on a conversation we had with PSEG Hope Greek Chemistry Personnel on June 20, 2003, it is our understanding that PSEG will install the shielding required to allow sampling of the normal sampling points during accident conditions based on an engineering evaluation.

It is our expectation, that following an accident the radionuclide mix be characterized within a reasonable period of time, say within 24 hours, by whatever means available. This mix must be defined prior to consideration of protective action recommendations being developed for ingestion pathway issues. We believe that the federal Department of Energy with their role in post accident radiation surveys and assessment would have similar needs.

The NRC staff understands the responsibility of the NJ Department of Environmental Protection (NJ-DEP) to provide appropriate protective action recommendations to the governor and other officials, and that all organizations involved in responding to an accident would need to have the best information available prior to making decisions affecting public health and safety. The staff further recognizes that the ultimate decision to order the evacuation of citizens surrounding the plant or to recommend the prophylactic use of KI tablets must be based on timely and accurate

information, and that the public needs to have confidence in the decisions made by public officials. By letter dated September 30, 2002, the staff provided NJ-DEP a summary of its technical basis for approving PSEG's request for changes to the TSs. A copy of this letter is available for inspection at the Commission's Public Document Room, located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland, or from the ADAMS Public Library component on the NRC Web site, <http://www.nrc.gov/reading-rm.html> (the Public Electronic Reading Room) by referencing ADAMS Accession No. ML022470413.

6.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the 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 (68 FR 28856). 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.

7.0 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: W. Reckley

Date: January 29, 2004