



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

February 8, 2012

Mr. Thomas Joyce
President and Chief Nuclear Officer
PSEG Nuclear LLC
P.O. Box 236, N09
Hancocks Bridge, NJ 08038

SUBJECT: HOPE CREEK GENERATING STATION - ISSUANCE OF AMENDMENT RE:
CONTROL ROOM EMERGENCY FILTRATION SYSTEM AND CONTROL
ROOM AIR CONDITIONING SYSTEM (TAC NO. ME5748)

Dear Mr. Joyce:

The Commission has issued the enclosed Amendment No. 191 to Renewed Facility Operating License (FOL) No. NPF-57 for the Hope Creek Generating Station (HCGS) in response to your application dated February 28, 2011, as supplemented by letters dated August 29, and December 16, 2011, and January 26, 2012.

The amendment modifies the HCGS Technical Specifications (TSs) to revise the existing TS for the control room emergency filtration system and to add a new TS for the control room air conditioning system. The amendment is based, in part, on Nuclear Regulatory Commission-approved Technical Specification Task Force (TSTF) Standard TS Change Traveler TSTF-477, Revision 3, "Adding an Action Statement for Two Inoperable Control Room Air Conditioning Subsystems."

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

Sincerely,

A handwritten signature in black ink, appearing to read "R B Ennis".

Richard B. Ennis, 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. 191 to
Renewed License No. NPF-57
2. Safety Evaluation

cc w/encls: Distribution via ListServ



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

PSEG NUCLEAR LLC

DOCKET NO. 50-354

HOPE CREEK GENERATING STATION

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 191
Renewed 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 February 28, 2011, as supplemented by letters dated August 29, and December 16, 2011, and January 26, 2012, 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 as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Renewed 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. 191, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated into the renewed 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



Meena K. Khanna, Chief
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the License
and the Technical Specifications

Date of Issuance: February 8, 2012

ATTACHMENT TO LICENSE AMENDMENT NO. 191

RENEWED FACILITY OPERATING LICENSE NO. NPF-57

DOCKET NO. 50-354

Replace the following page of the Renewed Facility Operating License with the revised page. The revised page is identified by amendment number and contains a marginal line indicating the area of change.

Remove
Page 3

Insert
Page 3

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
xii
xx
3/4 7-6
3/4 7-6a
3/4 7-7
3/4 7-8

Insert
xii
xx
3/4 7-6
3/4 7-6a
3/4 7-7
3/4 7-8
3/4 7-8a
3/4 7-8b

reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;

- (4) PSEG Nuclear LLC, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
- (5) PSEG Nuclear LLC, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
- (6) PSEG Nuclear LLC, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility. Mechanical disassembly of the GE14i isotope test assemblies containing Cobalt-60 is not considered separation.
- (7) PSEG Nuclear LLC, pursuant to the Act and 10 CFR Part 30, to intentionally produce, possess, receive, transfer, and use Cobalt-60.

C. This renewed license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

PSEG Nuclear LLC is authorized to operate the facility at reactor core power levels not in excess of 3840 megawatts thermal (100 percent rated power) in accordance with the conditions specified herein.

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 191, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the renewed license. PSEG Nuclear LLC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

INDEX

BASES

<u>SECTION</u>	<u>PAGE</u>
<u>3/4.7 PLANT SYSTEMS</u>	
3/4.7.1 SERVICE WATER SYSTEMS	B 3/4 7-1
3/4.7.2 CONTROL ROOM SYSTEMS	B 3/4 7-1
3/4.7.3 FLOOD PROTECTION	B 3/4 7-1
3/4.7.4 REACTOR CORE ISOLATION COOLING SYSTEM	B 3/4 7-1a
3/4.7.5 DELETED	
3/4.7.6 SEALED SOURCE CONTAMINATION	B 3/4 7-4
3/4.7.7 MAIN TURBINE BYPASS SYSTEM	B 3/4 7-4
<u>3/4.8 ELECTRICAL POWER SYSTEMS</u>	
3/4.8.1, 3/4.8.2 and 3/4.8.3 A.C. SOURCES, D.C. SOURCES and ONSITE POWER DISTRIBUTION SYSTEMS	B 3/4 8-1
3/4.8.4 ELECTRICAL EQUIPMENT PROTECTIVE DEVICES	B 3/4 8-3
<u>3/4.9 REFUELING OPERATIONS</u>	
3/4.9.1 REACTOR MODE SWITCH	B 3/4 9-1
3/4.9.2 INSTRUMENTATION	B 3/4 9-1
3/4.9.3 CONTROL ROD POSITION	B 3/4 9-1
3/4.9.4 DELETED	B 3/4 9-1
3/4.9.5 DELETED	B 3/4 9-1
3/4.9.6 DELETED	B 3/4 9-2
3/4.9.7 DELETED	B 3/4 9-2
3/4.9.8 and 3/4.9.9 WATER LEVEL - REACTOR VESSEL and WATER LEVEL - SPENT FUEL STORAGE POOL	B 3/4 9-2
3/4.9.10 CONTROL ROD REMOVAL	B 3/4 9-2
3/4.9.11 RESIDUAL HEAT REMOVAL AND COOLANT CIRCULATION	B 3/4 9-2

PLANT SYSTEMS

3/4.7.2 CONTROL ROOM SYSTEMS

CONTROL ROOM EMERGENCY FILTRATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.2.1 Two control room emergency filtration system subsystems shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3, and *.

ACTION:

- a. In OPERATIONAL CONDITION 1, 2 or 3
 1. With one control room emergency filtration subsystem inoperable for reasons other than Condition a.2, restore the inoperable subsystem to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
 2. With one or more control room emergency filtration subsystems inoperable due to an inoperable control room envelope (CRE) boundary^{##},
 - a. Immediately, initiate action to implement mitigating actions; and
 - b. Within 24 hours, verify mitigating actions ensure CRE occupant exposures to radiological and chemical hazards will not exceed the limits and actions to mitigate exposure to smoke hazards are taken; and
 - c. Within 90 days, restore the CRE boundary to operable status;Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- b. In OPERATIONAL CONDITION *:
 1. With one control room emergency filtration subsystem inoperable for reasons other than Condition b.3, restore the inoperable subsystem to OPERABLE status within 7 days or initiate and maintain operation of the OPERABLE subsystem in the pressurization/recirculation mode of operation.

* When recently irradiated fuel is being handled in the secondary containment and during operations with a potential for draining the reactor vessel.

The main control room envelope (CRE) boundary may be opened intermittently under administrative control.

PLANT SYSTEMS

CONTROL ROOM EMERGENCY FILTRATION SYSTEM

LIMITING CONDITION FOR OPERATION (continued)

2. With both control room emergency filtration subsystems inoperable for reasons other than Condition b.3, suspend handling of recently irradiated fuel in the secondary containment and operations with a potential for draining the reactor vessel.
 3. With one or more control room emergency filtration subsystems inoperable due to an inoperable CRE boundary^{##}, immediately suspend handling of recently irradiated fuel and operations with a potential for draining the vessel.
- c. The provisions of Specification 3.0.3 are not applicable in OPERATIONAL CONDITION *.

SURVEILLANCE REQUIREMENTS

4.7.2.1.1 Each control room emergency filtration subsystem shall be demonstrated OPERABLE:

- a. DELETED
- b. In accordance with the Surveillance Frequency Control Program by verifying that the subsystem operates for at least 10 hours with the heaters on.

* When recently irradiated fuel is being handled in the secondary containment and during operations with a potential for draining the reactor vessel.

The main control room envelope (CRE) boundary may be opened intermittently under administrative control.

PLANT SYSTEMS

CONTROL ROOM EMERGENCY FILTRATION SYSTEM

SURVEILLANCE REQUIREMENTS (Continued)

- c. In accordance with the Surveillance Frequency Control Program or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the subsystem filter train by:
 - 1. Verifying that the subsystem satisfies the in-place penetration testing acceptance criteria of less than 0.05% and uses the test procedure guidance in Regulatory Positions C.5.a, C.5.c and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system filter train flow rate is 4000 cfm \pm 10%.
 - 2. Verifying within 31 days after removal, that a laboratory test of a sample of the charcoal adsorber, when obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than 0.5% when tested in accordance with ASTM D3803-1989 at a temperature of 30°C and a relative humidity 70%.
 - 3. Verifying a subsystem filter train flow rate of 4000 cfm \pm 10% during subsystem operation when tested in accordance with ANSI N510-1980.
- d. After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal from the Control Room Emergency Filtration units that a laboratory analysis of a representative carbon sample, when obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows a methyl iodide penetration less than 0.5% when tested in accordance with ATSM D3803 –1989 at a temperature of 30°C and a relative humidity of 70%.
- e. In accordance with the Surveillance Frequency Control Program by:
 - 1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 7.5 inches Water Gauge while operating the filter train subsystem at a flow rate of 4000 cfm \pm 10%.
 - 2. Verifying with the control room hand switch in the recirculation mode that on each of the below recirculation mode actuation test signals, the subsystem automatically switches to the isolation mode of operation and the isolation dampers close within 5 seconds:
 - a) High Drywell Pressure
 - b) Reactor Vessel Water Level Low Low Low, Level 1
 - c) Control room ventilation radiation monitors high.

PLANT SYSTEMS

CONTROL ROOM EMERGENCY FILTRATION SYSTEM

SURVEILLANCE REQUIREMENTS (Continued)

3. Verifying with the control room hand switch in the outside air mode that on each of the below pressurization mode actuation test signals, the subsystem automatically switches to the pressurization mode of operation:
 - a) High Drywell Pressure
 - b) Reactor Vessel Water Level Low Low Low, Level 1
 - c) Control room ventilation radiation monitors high.
4. Verifying that the heaters dissipate 13 ± 1.3 Kw when tested in accordance with ANSI N510-1980 and verifying humidity is maintained less than or equal to 70% humidity through the carbon adsorbers by performance of a channel calibration of the humidity control instrumentation.
- f. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter bank satisfies the inplace penetration testing acceptance criteria of less than 0.05% in accordance with Regulatory Positions C.5.a and C.5.c of Regulatory Guide 1.52, Revision 2, March 1978, while operating the system at a flow rate of 4000 cfm \pm 10%.
- g. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorber bank satisfies the inplace penetration testing acceptance criteria of less than 0.05% in accordance with Regulatory Positions C.5.a and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, for a halogenated hydrocarbon refrigerant test gas while operating the system at a flow rate of 4000 cfm \pm 10%.

4.7.2.1.2 The control room envelope boundary shall be demonstrated OPERABLE:

- a. At a frequency in accordance with the Control Room Envelope Habitability Program by performance of control room envelope unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program.

PLANT SYSTEMS

CONTROL ROOM AIR CONDITIONING (AC) SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.2.2 Two control room AC subsystems shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3, and *.

ACTION:

- a. In OPERATIONAL CONDITION 1, 2 or 3:
 1. With one control room AC subsystem inoperable, restore the inoperable subsystem to OPERABLE status within 30 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
 2. With two control room AC subsystems inoperable:
 - a. Verify control room air temperature is less than 90°F at least once per 4 hours; and
 - b. Restore one control room AC subsystem to OPERABLE status within 72 hours.Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- b. In OPERATIONAL CONDITION *:
 1. With one control room AC subsystem inoperable, restore the inoperable subsystem to OPERABLE status within 30 days; or place the OPERABLE control room AC subsystem in operation; or immediately suspend movement of recently irradiated fuel assemblies in the secondary containment and initiate action to suspend operations with a potential for draining the reactor vessel.
 2. With two control room AC subsystems inoperable, immediately suspend movement of recently irradiated fuel assemblies in the secondary containment and initiate action to suspend operations with a potential for draining the reactor vessel.
 3. The provisions of Specification 3.0.3 are not applicable in Operational Condition *.

* When recently irradiated fuel is being handled in the secondary containment and during operations with a potential for draining the reactor vessel.

PLANT SYSTEMS

CONTROL ROOM AIR CONDITIONING (AC) SYSTEM

SURVEILLANCE REQUIREMENTS

4.7.2.2 Each control room AC subsystem shall be demonstrated OPERABLE in accordance with the Surveillance Frequency Control Program by verifying each subsystem has the capability to remove the assumed heat load.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 191

TO RENEWED FACILITY OPERATING LICENSE NO. NPF-57

PSEG NUCLEAR LLC

HOPE CREEK GENERATING STATION

DOCKET NO. 50-354

1.0 INTRODUCTION

By letter dated February 28, 2011, as supplemented by letters dated August 29, and December 16, 2011, and January 26, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML110590636, ML112420124, ML113530205, and ML12026A458, respectively), PSEG Nuclear LLC (PSEG, or the licensee) submitted a request for changes to the Hope Creek Generating Station (HCGS) Technical Specifications (TSs) and Facility Operating License (FOL). The proposed amendment would modify the HCGS TSs to revise the existing TS for the control room emergency filtration (CREF) system and to add a new TS for the control room air conditioning (AC) system. The proposed amendment is based, in part, on Nuclear Regulatory Commission (NRC)-approved Technical Specification Task Force (TSTF) Standard TS (STS) Change Traveler TSTF-477, Revision 3, "Adding an Action Statement for Two Inoperable Control Room Air Conditioning Subsystems." The availability of this TS improvement was published in the *Federal Register* (FR) on March 26, 2007 (72 FR 14143), as part of the consolidated line item improvement process (CLIIP). HCGS plant-specific deviations from TSTF-477 were proposed by the licensee to accommodate differences between the HCGS TSs and the STSs originally used to develop TSTF-477.

The supplements dated August 29, and December 16, 2011, and January 26, 2012, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the NRC staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on May 3, 2011 (76 FR 24929).

2.0 REGULATORY EVALUATION

2.1 Background

As described in the licensee's application dated February 28, 2011, the supplements dated August 29, and December 16, 2011, and Sections 6.4 and 9.4 of the HCGS Updated Final Safety Analysis Report (UFSAR), the design bases of the control room AC system is to ensure habitability of the control room and adjacent areas by maintaining space temperature within limits during normal operation, as well as during abnormal conditions. This includes maintaining

Enclosure

temperature limits for a 30-day continuous occupancy following isolation of the control room envelope. The design conditions for the control room envelope environment are 72 °F ± 6 °F at a nominal relative humidity between 20% and 60% for personnel comfort and equipment performance. The control room AC system includes two 100% capacity control room supply (CRS) air-handling units. Each CRS unit contains a low-efficiency filter, a high-efficiency filter, a fan, a cooling coil (cooled by the chilled water system), a heating coil, and a humidifier.

The CREF system is discussed in UFSAR Sections 6.4, 6.5 and 9.4. The system is designed to maintain control room habitability by providing filtration of fresh air and recirculated air during any accident that may release high radioactivity. The CREF system includes two 100% capacity emergency air filtration units. Each CREF unit consists of a low-efficiency pre-filter, electric heating coil, upstream high-efficiency particulate air (HEPA) filter, charcoal adsorber, and downstream HEPA filter. The CREF filter unit is located downstream of its respective CREF supply fan. Each CREF unit is capable of handling 4000 cubic feet per minute (cfm) of air, either entirely returned from the main control room area or a combination of 3000 cfm returned air mixed with 1000 cfm of outside air. Each CREF train operates in series with one CRS unit. The CREF system does not operate normally.

Currently, HCGS TS 3/4.7.2, "Control Room Emergency Filtration System," pertains to components in both the CREF system, as well as the control room AC system. The proposed amendment would renumber TS 3/4.7.2 as TS 3/4.7.2.1 and the TS would be revised to pertain solely to the CREF system. The amendment would also add new TS 3/4.7.2.2 which would pertain solely to the control room AC system.

As discussed in the licensee's application dated February 28, 2011, the current TSs do not contain specific requirements for operability of the control room AC system. When a control room AC subsystem (i.e., one of the two trains) is not capable of performing its required function, the licensee stated that its current practice is to conservatively consider the associated CREF subsystem (i.e., train) to be inoperable. As discussed in the licensee's supplement dated December 16, 2011, in order for CREF to perform its design-basis function, the CRS fan needs to be operating. However, CREF functionality is not dependent on the CRS cooling function (i.e., chilled water system). The licensee stated that the amendment request is intended, in part, to remove the current interdependency between the control room AC system and the CREF system (i.e., allow CREF operability without chilled water).

The proposed new TS 3/4.7.2.2 for the control room AC system would include the provisions in TSTF-477, Revision 3. Specifically, the Action statement in Limiting Condition for Operation (LCO) 3.7.2.2 would allow both control room AC subsystems to be inoperable as long as: (1) control room air temperature was verified to be less than 90 °F at least once per 4 hours; and (2) one control AC subsystem was restored to operable status within 72 hours.

2.2 Regulatory Requirements and Guidance Documents

Regulatory Requirements

The NRC staff review took into consideration the regulatory requirements discussed below.

The NRC's regulatory requirements related to the content of the TSs are set forth in Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.36, "Technical specifications." This regulation requires that the TSs include items in five specific categories. These categories include: (1) safety limits, limiting safety system settings and limiting control settings; (2) LCOs; (3) surveillance requirements (SRs); (4) design features; and (5) administrative controls. However, the regulation does not specify the particular TSs to be included in a plant's TSs.

General Design Criterion (GDC) 19, "Control room," of Appendix A to 10 CFR Part 50, requires, in part, that a control room be provided from which actions can be taken to operate the nuclear power unit safely under normal conditions and to maintain it in a safe condition under accident conditions, including loss-of-coolant accidents (LOCAs). Adequate radiation protection is to be provided to permit access and occupancy of the control room under accident conditions without personnel receiving radiation exposure in excess of 5 rem whole body, or its equivalent to any part of the body, for the duration of the accident.

Guidance Documents

The NRC staff used the following guidance documents in its review:

- NUREG-1433, Revision 3, "Standard Technical Specifications, General Electric Plants BWR/4," and the changes approved to NUREG-1433 based on TSTF-477, Revision 3.
- Regulatory Guide 1.52, "Design, Testing, and Maintenance Criteria For Post Accident Engineered-Safety-Feature Atmosphere Cleanup System Air Filtration and Adsorption Units Of Light-Water-Cooled Nuclear Power Plants," Revision 2, dated March 1978.
- NUREG-0800, Standard Review Plan (SRP), Section 6.4, "Control Room Habitability System," Revision 2, dated July 1981.
- NUREG-0800, SRP, Section 9.4.1, "Control Room Area Ventilation System," Revision 2, dated July 1981.

3.0 TECHNICAL EVALUATION

3.1 Proposed Changes to CREF TS

Overview

As discussed above in Safety Evaluation (SE) Section 2.1, currently HCGS TS 3/4.7.2, "Control Room Emergency Filtration System," pertains to components in both the CREF system as well as the control room AC system. The proposed amendment would renumber TS 3/4.7.2 as TS 3/4.7.2.1 and the TS would be revised to pertain solely to the CREF system. The specific changes to the CREF TS are discussed below.

Administrative Changes

The proposed amendment would change the title of TS 3/4.7.2 from "Control Room Emergency Filtration System" to "Control Room Systems" since it would apply to the renumbered CREF TS

(i.e., TS 3/4.7.2.1) and the new control room AC TS (i.e., TS 3/4.7.2.2). In addition, the TS Index would be revised to reflect the above renumbering. Current SRs 4.7.2.1 and 4.7.2.2 would be renumbered as SRs 4.7.2.1.1 and 4.7.2.1.2, respectively. The NRC staff finds that all of these changes are administrative in nature. Therefore, the changes are acceptable.

LCO Changes

The LCO for the CREF system would still require two subsystems (i.e., CREF trains) to be operable). However, the LCO would be revised to delete the list of the components in each subsystem. HCGS TS 1.28, provides the following definition for determining operability:

A system, subsystem, train, component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified function(s) and when all necessary attendant instrumentation, controls, electrical power, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component or device to perform its function(s) are also capable of performing their related support function(s).

The NRC staff finds that the definition in HCGS TS 1.28 provides sufficient information on the requirements for an operable system, subsystem, train, component or device such that the list of components in the CREF LCO is not necessary. As such, the NRC concludes that the proposed change to the LCO is acceptable.

During the review, the NRC staff questioned the licensee regarding the interlocks between the CREF system and the control AC system to determine if separating the TSs (and allowing two trains of control room AC to be inoperable per TSTF-477) raises any issues with respect to CREF system operability. In response to an NRC staff request for additional information, the licensee stated the following in its supplement dated December 16, 2011:

The Control Room Supply (CRS) unit and CREF system can be placed in-service without an in-service Control Room AC train. All fans may be started without an interlock from the chilled water pump or chiller. However, in normal alignment with the Control Room AC system operating to supply cooling to the CRS unit, a trip of the Control Room AC chilled water pump does send a trip signal to the CRS unit, which results in a trip of the operating CREF fan. This is a one-second momentary trip signal. The CRS unit and CREF may be re-started following this trip, without operating chilled water pump or chiller subcomponents of the Control Room AC system. Current technical specifications require declaring the CREF inoperable when the Control Room AC is inoperable. This amendment request is intended to remove this current inter-dependency and allow for operability of the CREF without chilled water.

The licensee also stated in the supplement dated December 16, 2011, that:

If the proposed amendment is approved, CREF will remain operable without control room AC, provided the CRS fan is not the failed component. In the event of a chilled water pump trip, there are no start permissives that would prevent

manual restart of the CRS unit and CREF. The CRS unit and CREF would be able to be re-started, and would remain operable.

The NRC staff reviewed the assumptions in the HCGS licensing basis analyses of design-basis accident (DBA) radiological consequences and determined that the manual restart of CREF does not invalidate any of the assumptions in the DBA analyses.

SR Changes

Current SR 4.7.2.1a requires that the control room air temperature be verified periodically. The proposed amendment would delete this SR (and its associated footnote) since the SR pertains to a function of the control room AC system. Since this SR does not pertain to the CREF system, the NRC staff concludes that the proposed change is acceptable.

Current SR 4.7.2.1b requires that the subsystems be operated periodically to demonstrate operability. The proposed amendment would delete details on how the test is to be run. The licensee's application stated that these details are adequately controlled by plant procedures. Paragraph (c)(3) of 10 CFR 50.36 states that SRs are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the LCOs will be met. The NRC staff finds that the proposed SR, along with the definition of operable in TS 1.28 (discussed above), is sufficient to provide reasonable assurance that the test will be capable of demonstrating operability in accordance with the LCO requirements. Therefore, the NRC staff concludes that the proposed change is acceptable.

Conclusion

Based on the above, the NRC staff concludes that the proposed changes to the CREF TS are acceptable.

3.2 New Control Room AC TS

Overview

As discussed above in SE Section 2.1, the proposed amendment would add new TS 3/4.7.2.2 which would pertain solely to the control room AC system. The specific TS requirements in the proposed new TS 3/4.7.2.2 are discussed below.

LCO and LCO Applicability

Proposed LCO 3.7.2.2 would require two control room AC subsystems to be OPERABLE in OPERATIONAL CONDITIONS 1, 2, 3 and *. A footnote would be added to define OPERATIONAL CONDITION * as "When recently irradiated fuel is being handled in the secondary containment and during operations with a potential for draining the reactor vessel."

The LCO requirement to have two subsystems OPERABLE ensures that at least one of these redundant subsystems is available assuming a single failure of one of the subsystems. This requirement is the same as the current requirement in TS 3/4.7.2 (i.e., TS that is applicable to

CREF and control room AC). The LCO Applicability for OPERATIONAL CONDITIONS 1, 2, 3 and * is also the same as the current requirements in TS 3/4.7.2. Since the new TS requirements are the same as the current TS requirements, the NRC staff concludes that the proposed TS 3/4.7.2.2 LCO and LCO Applicability are acceptable.

LCO Actions a.1 and b.1

With one control room AC subsystem inoperable, proposed LCO 3.7.2.2 Actions a.1 (applicable to OPERATIONAL CONDITIONS 1, 2, or 3) and b.1 (applicable to OPERATIONAL CONDITION *) would require the inoperable subsystem to be restored to OPERABLE status within 30 days. The NRC staff finds that the allowed outage time is reasonable based on the low probability of an event occurring requiring control room isolation and the consideration that the remaining subsystem can provide the required cooling function. Therefore, the NRC staff concludes that proposed LCO 3.7.2.2 Actions a.1 and b.1 are acceptable.

LCO Action a.2

Proposed LCO 3.7.2.2 Action a.2 (applicable to OPERATIONAL CONDITIONS 1, 2, or 3) would include the provisions in TSTF-477, Revision 3. Specifically, Action a.2 would allow both control room AC subsystems to be inoperable as long as: (1) control room air temperature was verified to be less than 90 °F at least once per 4 hours; and (2) one control AC subsystem was restored to operable status within 72 hours. If the above conditions are not met, the plant must be in HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

The licensee stated in its application dated February 28, 2011, that PSEG has reviewed TSTF-477 and the NRC model SE as part of the CLIIP. The licensee concluded that the information in TSTF-477, as well as the SE prepared by the NRC staff, are applicable to HCGS.

In its supplement dated August 29, 2011, the licensee stated it had performed an evaluation to support the proposed amendment. The evaluation determined that substantial margins exist between the proposed Action a.2 temperature limit of 90 °F and specified equipment limits.

The NRC staff finds that: (1) the 90 °F temperature limit is acceptable since it will ensure that affected equipment will still operate within its design specifications; (2) the 72 hour allowed outage time is reasonable considering that the control room temperature is being maintained within equipment design specifications and the low probability of an event occurring that would require control room isolation; and (3) the timeframes for plant shutdown (i.e., HOT SHUTDOWN within 12 hours and COLD SHUTDOWN within the following 24 hours) are consistent with the current TS requirements in TS 3.0.3 for when an LCO is not met. Based on the above considerations, the NRC staff concludes that proposed LCO 3.7.2.2 Action a.2 is acceptable.

LCO Action b.2

Proposed LCO 3.7.2.2 Action b.2 (applicable to OPERATIONAL CONDITION *) would require an immediate suspension of movement of recently irradiated fuel assemblies in the secondary containment and action initiated to suspend operations with a potential for draining the reactor

vessel if two control room AC subsystems are inoperable. This action is equivalent to the current requirements for two subsystems being inoperable as delineated in LCO 3.7.2 Action b.2. Therefore, the NRC staff concludes that proposed LCO 3.7.2.2 Action b.2 is acceptable.

LCO Action b.3

Proposed LCO 3.7.2.2 Action b.3 states that the provisions of Specification 3.0.3 are not applicable in OPERATIONAL CONDITION *. This action is the same as the current requirements in LCO 3.7.2 Action c. Therefore, the NRC staff concludes that proposed LCO 3.7.2.2 Action b.3 is acceptable.

SRs

Proposed SR 4.7.2.2 requires that each control room AC subsystem be demonstrated OPERABLE in accordance with the Surveillance Frequency Control Program by verifying each subsystem has the capability to remove the assumed heat load.

The licensee's application dated February 28, 2011, stated that this SR verifies that the heat removal capability of the system is sufficient to remove the control room heat load assumed in the design analysis. The frequency of the testing would be in accordance with the Surveillance Frequency Control Program, which is described in HCGS TS 6.8.4.j.

The current SRs in TS 3/4.7.2 do not contain any provisions for verifying the heat removal capability of the control room AC system. As such, the proposed SR is more restrictive than the current SRs. The NRC staff concludes that the proposed SR provides sufficient testing requirements to verify control room AC subsystem operability.

Conclusion

Based on the above, the NRC staff concludes that the proposed new control room AC TS requirements are acceptable.

3.3 TS Bases Changes

PSEG's application dated February 28, 2011, provided proposed changes to the TS Bases to be implemented with the associated TS changes. The TS Bases pages were provided for information only and will be revised in accordance with the HCGS TS Bases Control Program.

3.4 Technical Evaluation Conclusion

Based on the discussion in SE Sections 3.1 and 3.2, the NRC staff concludes that the proposed 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 amendments. 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 and changes SRs. 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 (76 FR 24929). 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 Contributors: H. Walker
R. Ennis

Date: February 8, 2012

February 8, 2012

Mr. Thomas Joyce
President and Chief Nuclear Officer
PSEG Nuclear LLC
P.O. Box 236, N09
Hancocks Bridge, NJ 08038

SUBJECT: HOPE CREEK GENERATING STATION - ISSUANCE OF AMENDMENT RE:
CONTROL ROOM EMERGENCY FILTRATION SYSTEM AND CONTROL
ROOM AIR CONDITIONING SYSTEM (TAC NO. ME5748)

Dear Mr. Joyce:

The Commission has issued the enclosed Amendment No. 191 to Renewed Facility Operating License (FOL) No. NPF-57 for the Hope Creek Generating Station (HCGS) in response to your application dated February 28, 2011, as supplemented by letters dated August 29, and December 16, 2011, and January 26, 2012.

The amendment modifies the HCGS Technical Specifications (TSs) to revise the existing TS for the control room emergency filtration system and to add a new TS for the control room air conditioning system. The amendment is based, in part, on Nuclear Regulatory Commission-approved Technical Specification Task Force (TSTF) Standard TS Change Traveler TSTF-477, Revision 3, "Adding an Action Statement for Two Inoperable Control Room Air Conditioning Subsystems."

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/

Richard B. Ennis, 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. 191 to
Renewed License No. NPF-57
2. Safety Evaluation

cc w/encls: Distribution via ListServ

DISTRIBUTION

PUBLIC

RidsNrrDorlLpl1-2 Resource
RidsNrrLAABaxter Resource
RidsNrrDorlDpr Resource
MHamm, NRR/STSB

LPL 1-2 R/F

RidsAcrsAcnw_MailCTR Resource
RidsNrrDssStsb Resource
RidsNrrDssScvb Resource

RidsOgcRp Resource

GHill, OIS
RidsNrrPMHope Creek Resource
HWalker, NRR/SCVB

ADAMS Accession No: ML120180078

OFFICE	LPL1-2/PM	LPL1-2/LA	STSB/BC	SCVB/BC	OGC	LPL1-2/BC
NAME	REnnis	ABaxter	RElliott	RDennig	LSubin	MKhanna
DATE	2/1/12	1/26/12	2/1/11	1/26/12	2/6/12	2/8/12

OFFICIAL RECORD COPY