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Nuclear LLC

10 CFR 50.90

LR-N11-0068
February 28, 2011

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Hope Creek Generating Station
Facility Operating License No. NPF-57
NRC Docket No. 50-354

Subject: Application for Technical Specification Change TSTF-477, Revision 3, Add Action for Two Inoperable Control Room AC Subsystems to the Technical Specifications Using Consolidated Line Item Improvement Process

In accordance with the provisions of 10 CFR 50.90 PSEG Nuclear LLC (PSEG) is submitting a request for an amendment to the technical specifications (TS) for Hope Creek Generating Station.

The proposed amendment would modify the TS by adding an action statement for two inoperable control room AC subsystems to the plant specific TS. Additionally, because Hope Creek has not implemented NUREG-1433, Rev. 3, "Standard Technical Specifications (STS), General Electric Plant, BWR/4," PSEG proposes additional TS changes to ensure consistency with STS. These additional changes align HCGS TS with STS to allow for direct use of TSTF-477. The changes to align with STS involve addition of a separate TS for the control room air conditioning system.

Attachment 1 provides a description of the proposed change, the requested confirmation of applicability, and plant-specific verifications. Attachment 2 provides the existing TS pages marked up to show the proposed change. Attachment 3 provides revised (clean) TS pages. Attachment 4 provides the existing TS Bases pages marked up to show the proposed change in accordance with 10 CFR 50.36(a). The Bases pages are provided for information only and do not require NRC approval.

There are no regulatory commitments contained in this letter.

PSEG requests approval of the proposed license amendment by March 1, 2012, with the amendment being implemented within 60 days.

In accordance with 10 CFR 50.91, a copy of this application, with enclosures, is being provided to the designated New Jersey Official.

If you should have any questions regarding this submittal, please contact Mr. Paul Duke at 856-339-1466.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on FEB 28 2011
(date)

Sincerely,

John F. Perry
Site Vice President - Hope Creek

Enclosures:
1. Description and Assessment
2. Proposed Technical Specification Changes
3. Revised Technical Specification Pages
4. Marked up Existing TS Bases Changes

cc: W. Dean, Administrator, Region I, NRC
R. Ennis, Project Manager - USNRC
NRC Senior Resident Inspector, Salem
P. Mulligan, Manager IV, NJBNE
P. Duca - Commitment Tracking Coordinator - Hope Creek
L. Marabella - Corporate Commitment Tracking Coordinator

ATTACHMENT 1

License Amendment Request

Hope Creek Generating Station
NRC Docket No. 50-354

Description and Assessment

Subject: Application for Technical Specification Change TSTF-477, Revision 3, Add Action for Two Inoperable Control Room AC Subsystems to the Technical Specifications Using Consolidated Line Item Improvement Process

1.0 DESCRIPTION

The proposed amendment would modify technical specifications by adding an Action Statement to the Limiting Condition for Operation (LCO). The new Action Statement allows a finite time to restore one control room AC subsystem to operable status and requires verification that control room temperature remains less than 90°F every 4 hours.

Because Hope Creek has not implemented NUREG-1433, Rev. 3, "Standard Technical Specifications (STS), General Electric Plant, BWR/4," PSEG is proposing additional TS changes to ensure consistency with STS. Specifically, PSEG proposes to add a separate Technical Specification for the Control Room Air Conditioning (AC) system, and to renumber and revise the existing TS for the Control Room Emergency Filtration (CREF) system.

The changes are consistent with Nuclear Regulatory Commission (NRC) approved Industry/Technical Specification Task Force (TSTF) TSTF-477 Revision 3 (Reference 1). The availability of this TS improvement was published in the Federal Register on March 26, 2007 (Reference 2) as part of the consolidated line item improvement process (CLIIP).

2.0 ASSESSMENT

2.1 Applicability of TSTF-477, and Published Safety Evaluation

PSEG has reviewed TSTF-477 (Reference 1), and the NRC model safety evaluation (SE) (Reference 3) as part of the CLIIP. PSEG has concluded that the information in TSTF-477, as well as the SE prepared by the NRC staff are applicable to Hope Creek Generating Station (HCGS) and justify this amendment for the incorporation of the changes to the HCGS TS.

2.2 Optional Changes and Variations

PSEG is proposing additional changes to ensure consistency with NUREG-1433, Rev 3, "Standard Technical Specifications (STS), General Electric Plant, BWR/4.". Current TS 3/4.7.2 is renumbered to TS 3/4.7.2.1 and revised; and new TS 3/4.7.2.2 is added to establish separate TS requirements for the Control Room Air Conditioning (AC) system. This new specification will provide the necessary requirements, consistent with NUREG-1433, to address the condition when Control Room AC subsystems are inoperable. The additional changes are discussed below.

1. Proposed TS 3/4.7.2.2 - Control Room Air Conditioning (AC) System
   Proposed TS 3/4.7.2.2 establishes a separate Limiting Condition for Operation for the control room AC portion of the Control Room Heating, Ventilation, and Air Conditioning (HVAC) System (hereafter referred to as the Control Room AC System).

   Current TS Requirements
   Hope Creek TS do not currently contain specific requirements for OPERABILITY of the Control Room AC System. When a Control Room AC subsystem is not capable of performing its required function, PSEG's current practice is to conservatively consider the Control Room Emergency Filtration (CREF) subsystem associated with the affected control room supply HVAC unit to be inoperable.

Current Hope Creek TS Surveillance Requirement (SR) 4.7.2.1a determines equipment operability for the CREF system by surveillance of the control room air temperature (i.e., the function of Control Room AC system).

NUREG-1433, Rev. 3, contains a separate LCO with specific OPERABILITY requirements and appropriate Surveillance Requirements for the control room cooling function.

Control Room AC System Design
The Control Room AC System is designed to maintain space temperatures and relative humidity within nominal values in the control room and adjacent areas during normal operation as well as during abnormal conditions. The system has two 100 percent capacity control room supply (CRS) air handling units, each supplied by a separate Class 1E power source.

Each CRS unit is equipped with an outside air intake, outside air radiation monitors, an outside air smoke detector, motorized isolation dampers, prefilters, afterfilters, humidifier, chilled water coil, electric heating coil, and supply fan. Each CRS unit is connected to a common Seismic Category I supply and return duct system that distributes supply air throughout the rooms. Air is returned from the rooms by a control room return air (CRRA) fan to the CRS unit.

The chilled water for the cooling coils in each unit is supplied by a Seismic Category I, independent, Chilled Water Supply System.

All equipment is located within the control area of the Auxiliary Building, a Seismic Category I structure. During a loss of offsite power, standby power is available from the standby diesel generators (SDGs) for the continued operation of all safety-related equipment.

The single failure criterion for active safety-related equipment is met by using redundant equipment and controls and automatically switching from an operating system to a standby system upon detection of an active failure. Isolation of control circuits is provided between redundant trains to ensure that the single failure criterion is met. Active equipment such as fans, controls, dampers, pumps, and chillers are redundant. The redundant systems provided for the control area HVAC systems ensure that control area environmental limits are not exceeded for continued reliable equipment performance.

Components Common to Control Room AC Subsystems and CREF Subsystem
Common components include the fan portion (and associated duct work) of the two CRS air handling units and the two CRRA fans.

Control Room AC System Design Basis
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 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 safety function is maintained when one Control Room AC subsystem is OPERABLE.

Proposed TS Requirements

Proposed LCO 3.7.2.2 would require two control room AC subsystems to be OPERABLE in OPERATIONAL CONDITIONS 1, 2, 3 and in OPERATIONAL CONDITION * (i.e., when recently irradiated fuel is being handled in the secondary containment; and during operations with a potential for draining the reactor vessel). This ensures at least one subsystem is available, assuming a single failure disables the other subsystem.

With one control room AC subsystem inoperable, proposed TS 3.7.2.2 Actions a.1 and b.1 require the inoperable subsystem to be restored to OPERABLE status within 30 days. The 30 day allowed outage times are consistent with NUREG-1433, Rev. 3, and are reasonable based on the low probability of an event occurring requiring control room isolation, the consideration that the remaining subsystem can provide the required protection, and the availability of alternate cooling methods.

The proposed TS 3.7.2.2 Action a.2 for two control room AC subsystems inoperable in OPERATIONAL CONDITIONS 1, 2 and 3 is consistent with TSTF-477 Revision 3.

With two control room AC subsystems inoperable when recently irradiated fuel is being handled in the secondary containment and during operations with a potential for draining the reactor vessel, proposed TS 3.7.2.2 Action b.2 requires immediately suspending movement of recently irradiated fuel assemblies in the secondary containment and initiating action to suspend operations with a potential for draining the reactor vessel. This places the unit in a condition that minimizes risk. Proposed TS 3.7.2.2 Action b.2 is consistent with NUREG-1433, Rev. 3.

Proposed TS 3.7.2.2 Action b.3 states that the provisions of Specification 3.0.3 are not applicable in OPERATIONAL CONDITION *. If moving recently irradiated fuel assemblies while in OPERATIONAL CONDITION 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, inability to suspend movement of recently irradiated fuel assemblies is not a sufficient reason to require a reactor shutdown. Proposed TS 3.7.2.2 Action b.3 is consistent with NUREG-1433, Rev. 3 and with current Hope Creek TS 3.7.2 Action c.

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. 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 periodic surveillance frequency is within the scope of TSTF-425.

2. Deletion of SR 4.7.2.1a
Current Hope Creek TS Surveillance Requirement (SR) 4.7.2.1a determines equipment operability for the CREF system by surveillance of the control room air temperature (i.e., the function of Control Room AC system). While this SR provides an indication of control room cooling, it does not assure that the necessary quality of systems and components for control room cooling is maintained.

Deletion of current SR 4.7.2.1a is consistent with NUREG-1433, Rev. 3. Proposed SR 4.7.2.2, discussed above, confirms adequate control room cooling at an appropriate frequency.

3. Changes to Current LCO 3.7.2
Current LCO 3.7.2 contains details relating to system design, function and OPERABILITY that are not required to be included in TS. The definition of OPERABILITY in TS 1.28 provides sufficient information on the requirements for an OPERABLE system, subsystem, train, component or device.

These details are relocated to the TS Bases and are also described in the Hope Creek Updated Final Safety Analysis Report (UFSAR) sections 6.4.2 and 9.4.1. The proposed changes are consistent with NUREG-1433, Rev. 3.

Changes to the TS Bases are controlled in accordance with the TS Bases Control Program. Changes to the UFSAR are controlled in accordance with 10 CFR 50.59.

4. Editorial Changes
Current TS 3/4.7.2 is renumbered to "3/4.7.2.1." The TS Index is revised to reflect these changes.

5. Changes to Current SR 4.7.2.1b
Details of methods for performing current SR 4.7.2.1b are being deleted. These details are adequately controlled by plant procedures. Changes to procedures for performing maintenance, including surveillance procedures, are made in accordance with applicable 10 CFR Part 50, Appendix B criteria and plant administrative procedure change processes which ensure that changes to plant configurations called for by procedures are consistent with the Technical Specifications. The proposed changes are consistent with NUREG-1433, Rev. 3.

3.0 REGULATORY ANALYSIS

3.1 No Significant Hazards Consideration Determination

PSEG Nuclear has evaluated whether or not a significant hazards consideration is involved with the proposed amendment(s) by focusing on the three standards set forth in 10 CFR 50.92, “Issuance of amendment,” as discussed below:

1. Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No.
   The proposed changes add a separate Technical Specification (TS) for the Control Room Air Conditioning (AC) system, and renumbers and revises the existing TS for the Control Room Emergency Filtration (CREF) system. Consistent with Technical Specification Task Force (TSTF) Standard TS Change Traveler TSTF–477, the proposed change also adds an action statement for two inoperable Control Room AC subsystems.

   The proposed change does not involve a physical alteration of the plant (no new or different type of equipment will be installed). The proposed changes add a separate TS for the Control Room AC system and an action statement for two inoperable control room subsystems. The equipment qualification temperature of the control room equipment is not affected. Future changes to the Bases or licensee-controlled document will be evaluated pursuant to the requirements of 10 CFR 50.59, '' Changes, test and experiments,'' to ensure that such changes do not result in more than a minimal increase in the probability or consequences of an accident previously evaluated.

   The proposed changes do not adversely affect accident initiators or precursors nor alter the design assumptions, conditions, and configuration of the facility or the manner in which the plant is operated and maintained. The proposed changes do not adversely affect the ability of structures, systems and components (SSCs) to perform their intended safety function to mitigate the consequences of an initiating event within the assumed acceptance limits. The proposed changes do not affect the source term, containment isolation, or radiological consequences of any accident previously evaluated. Further, the proposed changes do not increase the types and the amounts of radioactive effluent that may be released, nor significantly increase individual or cumulative occupation/public radiation exposures.

   Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

   Response: No.
   The proposed changes add a separate TS for the Control Room AC system and an action statement for two inoperable control room subsystems. The changes do not involve a physical altering of the plant (i.e., no new or different type of equipment will be installed) or a change in methods governing normal plant operation. The requirements in the TS continue to require maintaining the control room temperature within the design limits.

   Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed amendment involve a significant reduction in a margin of safety?

Response: No.
The proposed changes add a separate TS for the Control Room AC system and an action statement for two inoperable control room subsystems. Instituting the proposed changes will continue to maintain the control room temperature within design limits. Changes to the Bases or license controlled document are performed in accordance with 10 CFR 50.59. This approach provides an effective level of regulatory control and ensures that the control room temperature will be maintained within design limits.

The proposed changes maintain sufficient controls to preserve the current margins of safety.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, PSEG Nuclear concludes that the proposed amendment(s) present no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

3.2 Verification and Commitments

As discussed in the notice of availability published in the Federal Register on March 26, 2007 for this TS improvement, plant-specific verifications were performed as follows:

PSEG has reviewed TSTF-477 (Reference 1), and the NRC model safety evaluation (SE) (Reference 2). PSEG has concluded that the information in TSTF-477, as well as the SE prepared by the NRC staff are applicable to Hope Creek.

PSEG determined the 90°F limit in proposed TS Action 3.7.2.2 a.2.a is suitable based on review of design and procurement specifications for the Hope Creek control room. The Hope Creek design requirements for control room instruments and devices have at least a normal operating temperature range of 40°F to 120°F and an operative limit of 140°F. Therefore, monitoring of bulk control room temperature every 4 hours to ensure that ambient temperature is less than 90°F would verify that the control room temperature is below the normal design limit.

In addition, PSEG has proposed TS Bases consistent with TSTF-477 which provide guidance and details on how to implement the new requirements. Finally, PSEG has a Bases Control Program (HC TS 6.15) consistent with Section 5.5 of the Standard Technical Specifications (STS).

4.0 ENVIRONMENTAL EVALUATION

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released

offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

5.0 REFERENCES

1. TSTF-477, Revision 3, “Adding an Action Statement for Two Inoperable Control Room Air Conditioning Subsystems.”

2. Federal Register Notice: "Notice of Availability Concerning Technical Specification Improvement to Add an Action Statement for Two Inoperable Control Room Air Conditioning Subsystems to the Technical Specifications Using the Consolidated Line Item Improvement Process," published on March 26, 2007 (72 FR 14143).

3. Federal Register Notice: "Notice of Opportunity to Comment on Model Safety Evaluation and Model License Amendment Request on Technical Specification Improvement Regarding Adding an Action Statement for Two Inoperable Control Room Air Conditioning Subsystems," published on December 18, 2006 (71 FR 75774).

ATTACHMENT 2

License Amendment Request

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Proposed Technical Specification Changes

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Control Room Air Conditioning (AC) System ...3/4 7-8a

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BASES

CONTROL ROOM EMERGENCY FILTRATION System

~~PLANT SYSTEMS~~

3/4.7.2 CONTROL ROOM EMERGENCY FILTRATION SYSTEM S

LIMITING CONDITION FOR OPERATION

3.7.2 Two independent control room emergency filtration system subsystems shall be OPERABLE with each subsystem consisting of:

a) One control room supply unit,
b) One filter train, and
c) One control room return air fan.

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.

3/4.7.2 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 Each control room emergency filtration subsystem shall be demonstrated OPERABLE:

a. (DELETED)

b. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, the control area chilled water pump, flow through the HEPA filters and charcoal adsorbers and verifying that the subsystem operates for at least 10 hours with the heaters on in order to reduce the buildup of moisture on the carbon adsorbers and HEPA filters.

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

#This does not require starting the non-running control emergency filtration subsystem.

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

CONTROL ROOM EMERGENCY FILTRATION SYSTEM

SURVEILLANCE REQUIREMENTS (Continued)

c. At least once per 18 months 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 ± 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 ± 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. At least once per 18 months 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 ± 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:

CONTROL ROOM EMERGENCY FILTRATION SYSTEM

SURVEILLANCE REQUIREMENTS (Continued)

a) High Drywell Pressure
b) Reactor Vessel Water Level Low Low Low, Level 1
c) Control room ventilation radiation monitors high.

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 ± 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 ± 10%.

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4.7.2.2 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.

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 *.

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

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.

ATTACHMENT 3

License Amendment Request

Hope Creek Generating Station
NRC Docket No. 50-354

Revised Technical Specification Pages

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LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

BASES

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.

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* 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.

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. At least once per 31 days on a STAGGERED TEST BASIS 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.

c. At least once per 18 months 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 ± 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 ± 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. At least once per 18 months 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 ± 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.

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 ± 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 ± 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.

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.

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.

ATTACHMENT 4

License Amendment Request

Hope Creek Generating Station
NRC Docket No. 50-354

Marked up Existing TS Bases Changes

B 3/4 7-1
B 3/4 7-1a

Bases Insert 1

Due to radioactive decay, handling of fuel only requires OPERABILITY of CREF when fuel being handled is recently irradiated, i.e., fuel that has occupied part of the critical reactor core within the previous 24 hours. Each CREF subsystem is considered OPERABLE when the individual components necessary to limit Control Room Envelope occupant exposure are OPERABLE. A subsystem is considered OPERABLE when its associated:

a. Fans are OPERABLE (i.e., one CREF fan, one control room supply fan and one control room return air fan);

b. HEPA filter and charcoal adsorbers are not excessively restricting flow and are capable of performing their filtration functions, and

c. Heater, ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

Bases Insert 2

3/4.7.2.1 CONTROL ROOM AIR CONDITIONING (AC) SYSTEM

The control room supply AC portion of the Control Room Heating, Ventilation, and Air Conditioning (HVAC) System (hereafter referred to as the Control Room AC System) provides temperature control for the control room following isolation of the control room. The Control Room AC System consists of two independent, redundant subsystems that provide cooling and heating of recirculated control room air. Each subsystem consists of heating coils, cooling coils, fans, one control room chilled water subsystem (which provides cooling water to the cooling coils), ductwork, dampers, and instrumentation and controls to provide for control room temperature control. The Control Room AC System is designed to provide a controlled environment under both normal and accident conditions. Each control room chilled water subsystem includes a centrifugal water chiller, a chilled water circulating pump, head tank, controls, piping, and valves.

The Control Room AC System is considered OPERABLE when the individual components necessary to maintain the control room temperature are OPERABLE in both subsystems. These components include the cooling coils, fans, chillers, compressors, ductwork, dampers, and associated instrumentation and controls. Due to radioactive decay, the Control Room AC System is only required to be OPERABLE during fuel handling involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous 24 hours.

With one Control Room AC subsystem inoperable, the inoperable Control Room AC subsystem must be restored to OPERABLE status within 30 days. With the unit in this condition, the remaining OPERABLE Control Room AC subsystem is adequate to perform the control room air conditioning function. However, the overall reliability is reduced because a single failure in the OPERABLE subsystem could result in loss of the control room air conditioning function. The 30 day allowed outage time is based on the low probability of an event occurring requiring control room isolation, the consideration that the remaining subsystem can provide the required protection, and the availability of alternate cooling methods.

If both Control Room AC subsystems are inoperable, the Control Room AC System may not be capable of performing its intended function. Therefore, the control room area temperature is required to be monitored to ensure that temperature is being maintained low enough that equipment in the control room is not adversely affected. With the control room temperature being maintained within the temperature limit, 72 hours is allowed to restore a Control Room AC subsystem to OPERABLE status. This allowed outage time is reasonable considering that the control room temperature is being maintained within limits and the low probability of an event occurring requiring control room isolation.

The provisions of Specification 3.0.3 are not applicable in OPERATIONAL CONDITION * If moving recently irradiated fuel assemblies while in OPERATIONAL CONDITION 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, inability to suspend movement of recently irradiated fuel assemblies is not a sufficient reason to require a reactor shutdown.

3/4.7.1 SERVICE WATER SYSTEMS

The OPERABILITY of the station service water and the safety auxiliaries cooling systems ensures that sufficient cooling capacity is available for continued operation of the SACS and its associated safety-related equipment during normal and accident conditions. The redundant cooling capacity of these systems, assuming a single failure, is consistent with the assumptions used in the accident conditions within acceptable limits.

3/4.7.2 CONTROL ROOM SYSTEMS

3/4.7.2 CONTROL ROOM EMERGENCY FILTRATION SYSTEM (CREFAS)

The OPERABILITY of the control room emergency filtration system ensures that 1) the ambient air temperature does not exceed the allowable temperature for continuous duty rating for the equipment and instrumentation cooled by this system and 2) the control room will remain habitable for occupants during and following all design basis accident conditions. Continuous operation of the system with the heaters and humidity control instruments OPERABLE for 10 hours during each 31 day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. The OPERABILITY of this system in conjunction with control room design provisions is based on limiting the radiation exposure to personnel occupying the control room to 5 rem or less total effective dose equivalent (TEDE). This limitation is consistent with the requirements of 10 CFR Part 50.67, "Accident Source Term." BASES INSERT 1

The Control Room Envelope (CRE) is the area within the confines of the CRE boundary that contains the spaces that control room occupants inhabit to control the unit during normal and accident conditions. This area encompasses the control room, and other non-critical areas including adjacent support offices, toilet and utility rooms. The CRE is protected during normal operation, natural events, and accident conditions. The CRE boundary is the combination of walls, floor, ceiling, ducting, valves, doors, penetrations and equipment that physically form the CRE. The OPERABILITY of the CRE boundary must be maintained to ensure that the inleakage of unfiltered air into the CRE will not exceed the inleakage assumed in the licensing basis analysis of design basis accident (DBA) consequences to CRE occupants. The CRE and its boundary are defined in the Control Room Envelope Habitability Program.

In order for the CREFAS subsystems to be considered OPERABLE, the CRE boundary must be maintained such that the CRE occupant dose from a large radioactive release does not exceed the calculated dose in the licensing basis consequence analyses for DBAs, and that CRE occupants are protected from hazardous chemicals and smoke.

The LCO is modified by a Note allowing the CRE boundary to be opened intermittently under administrative controls. This Note only applies to openings in the CRE boundary that can be rapidly restored to the design condition, such as doors, hatches, floor plugs, and access panels. For entry and exit through doors, the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls should be proceduralized and consist of stationing a dedicated individual at the opening who is in continuous communication with the operators in the CRE. This individual will have a method to rapidly close the opening and to restore the CRE boundary to a condition equivalent to the design condition when a need for CRE isolation is indicated.

CONTROL ROOM EMERGENCY FILTRATION SYSTEM (Continued)

If the unfiltered inleakage of potentially contaminated air past the CRE boundary and into the CRE can result in CRE occupant radiological dose greater than the calculated dose of the licensing basis analyses of DBA consequences (allowed to be up to 5 rem TEDE), or inadequate protection of CRE occupants from hazardous chemicals or smoke, the CRE boundary is inoperable. Actions must be taken to restore an OPERABLE CRE boundary within 90 days.

During the period that the CRE boundary is considered inoperable, immediate action must be initiated to implement mitigating actions to lessen the effect on CRE occupants from the potential hazards of a radiological or chemical event or a challenge from smoke. Actions must be taken within 24 hours to verify that in the event of a DBA, the mitigating actions will ensure that CRE occupant radiological exposures will not exceed the calculated dose of the licensing basis analyses of DBA consequences, and that CRE occupants are protected from hazardous chemicals and smoke. These mitigating actions (i.e., actions that are taken to offset the consequences of the inoperable CRE boundary) should be preplanned for implementation upon entry into the condition, regardless of whether entry is intentional or unintentional. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of mitigating actions. The 90 day Completion Time is reasonable based on the determination that the mitigating actions will ensure protection of CRE occupants within analyzed limits while limiting the probability that CRE occupants will have to implement protective measures that may adversely affect their ability to control the reactor and maintain it in a safe shutdown condition in the event of a DBA. In addition, the 90 day Completion Time is a reasonable time to diagnose, plan and possibly repair, and test most problems with the CRE boundary.

Immediate action(s), in accordance with the LCO Action Statements, means that the required action should be pursued without delay and in a controlled manner.

Surveillance Requirement 4.7.2.2 verifies the OPERABILITY of the CRE boundary by testing for unfiltered air inleakage past the CRE boundary and into the CRE. The details of the testing are specified in the Control Room Envelope Habitability Program.

BASES INSERT 2

3/4.7.3 FLOOD PROTECTION

The requirement for flood protection ensures that facility flood protection features are in place in the event of flood conditions. The limit of elevation 10.5' Mean Sea Level is based on the elevation at which facility flood protection features provide protection to safety related equipment.

The intent of this LCO is to take action for conditions that could adversely affect the water level surrounding the plant (have an effect on tidal levels) and have the potential to impact the station by flooding susceptible areas. These conditions are tropical storms or hurricanes. The NWS does not have 'severe storm warnings' actions are taken under this LCO to protect against flooding whenever the NWS declares a "tropical storm warning" or "hurricane warning" for Salem County.