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PSEG
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10 CFR 50.90

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LAR H19-01

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U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

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

Subject: **Application to Revise Technical Specifications to Adopt TSTF-551, "Revise Secondary Containment Surveillance Requirements"**

Pursuant to 10 CFR 50.90, PSEG Nuclear LLC is submitting a request for an amendment to the Technical Specifications (TS) for Hope Creek Generating Station.

The proposed change revises TS 3.6.5.1, "Secondary Containment Integrity," Surveillance Requirement (SR) 4.6.5.1.a. and SR 4.6.5.1.b.2.a. SR 4.6.5.1.a is revised to address conditions during which the secondary containment pressure may not meet the SR pressure requirements. SR 4.6.5.1.b.2.a is modified to acknowledge that secondary containment access openings may be open for entry and exit. Additionally, TS Definitions 1.39.d and 1.39.g are revised to conform to the proposed change to SR 4.6.5.1.b.2.a and SR 4.6.5.1.a respectively.

Attachment 1 provides a description and assessment of the proposed changes.
Attachment 2 provides the existing TS page marked up to show the proposed changes.
Attachment 3 provides the existing TS Bases marked up to show the associated TS Bases changes and is provided for information only.

Approval of the proposed amendment is requested in accordance with standard NRC approval process and schedule. Once approved, the amendment shall be implemented within 60 days from the date of issuance.

In accordance with 10 CFR 50.91(b)(1), a copy of this application, with attachments, is being provided to the designated State of New Jersey Official.

There are no regulatory commitments contained in this letter.

If you have any questions or require additional information, please contact Mr. Michael Wiwel at 856-339-7907.

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

Executed on 4/11/19
(Date)

Respectfully,

Eric Carr
Vice President – Hope Creek Generating Station
PSEG Nuclear

Attachments: 1. Description and Evaluation of the Proposed Change
2. Proposed Technical Specification Changes (Mark-Up)
3. Proposed Technical Specification Bases Changes (Mark-Up) – Information Only

cc: Mr. D. Lew, Administrator, Region I, NRC
Mr. J. Kim, NRC Project Manager, Salem & Hope Creek
NRC Senior Resident Inspector, Hope Creek
Mr. P. Mulligan, Chief NJBNE
PSEG Corporate Commitment Tracking Coordinator
Hope Creek Commitment Coordinator

Description and Assessment of the Proposed Change

Application to Revise Technical Specifications to Adopt TSTF-551 "Revise Secondary Containment Surveillance Requirements"

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ATTACHMENT 1 – DESCRIPTION AND ASSESSMENT

1.0 DESCRIPTION

The proposed change revises Technical Specification (TS) 3.6.5.1, "Secondary Containment Integrity," Surveillance Requirement (SR) 4.6.5.1.a. The SR is revised to allow conditions during which the secondary containment pressure may not meet the SR pressure requirements. SR 4.6.5.1.b.2.a is modified to acknowledge that secondary containment access openings may be open for entry and exit. In addition, TS Definition 1.39, "Secondary Containment Integrity" item 'd' and item 'g' are revised to align with the proposed change to TS SR 4.6.5.1.b.2.a and SR 4.6.5.1.a respectively

2.0 ASSESSMENT

2.1 Applicability of Safety Evaluation

PSEG Nuclear LLC (PSEG) has reviewed the safety evaluation for TSTF-551 provided to the Technical Specifications Task Force in a letter dated September 21, 2017 (NRC ADAMS Accession No. ML17236A367). This review included a review of the NRC staff's evaluation, as well as the information provided in TSTF-551. PSEG has concluded that the justifications presented in TSTF-551 and the safety evaluation 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 Hope Creek TS.

The loss of coolant accident (LOCA) radiological consequence analysis for HCGS was approved by the NRC on October 7, 2010 (Accession No. ML102700263), and is documented in UFSAR Section 15.6. PSEG has confirmed that the brief, inadvertent, simultaneous opening of both an inner and outer personnel access door during normal entry and exit conditions, and their prompt closure by normal means, is bounded by the radiological dose consequence analysis. In the unlikely event that an accident would occur when both personnel access doors are open for entry or exit, the brief time required to close one of the doors is small compared to the 375 seconds assumed in the accident analysis for reducing the post-accident secondary containment pressure to 0.25 inches of vacuum water gauge, and will not result in an increase in any onsite or offsite dose. The average FRVS drawdown time from zero vacuum conditions to 0.50 inches of vacuum water gauge based on routine surveillance testing results is on the order of 97 seconds.

The fuel handling accident (FHA) radiological consequence analysis for HCGS that is documented in UFSAR Section 15.7.4 was approved by the NRC on May 14, 2008 (Accession No. ML081230581). The dose consequence analysis for the FHA assumes all fission products reaching the reactor building atmosphere are released directly to the environment over a two hour period with no credit for fission product removal by the FRVS. Based on the conservative assumptions used in the FHA radiological consequence analysis, the proposed TS SR changes will not result in an increase in any onsite or offsite dose.

2.2 Variations

PSEG is proposing the following variations from the TS changes described in the TSTF-551, or the NRC staff's safety evaluation. These variations do not affect the applicability of TSTF-551 or the NRC staff's safety evaluation to the proposed license amendment.

The HCGS TS utilize different numbering than the Standard Technical Specifications (STS) on which TSTF-551 was based. Specifically, Secondary Containment is governed by Hope Creek TS 3.6.5.1 which is titled "Secondary Containment Integrity". STS SR 3.6.4.1.1 is equivalent to Hope Creek SR 4.6.5.1.a and STS SR 3.6.4.1.3 is equivalent to Hope Creek SR 4.6.5.1.b.2.a. These numbering differences are administrative and do not affect the applicability of TSTF-551 to HCGS.

The safety evaluation and change to STS SR 3.6.4.1.1 provided by TSTF-551 refers to one standby gas treatment (SGT) subsystem capable of establishing the required secondary containment vacuum. HCGS maintains post-accident secondary containment vacuum via filtration recirculation and ventilation system (FRVS) units. The combination of four (of six) FRVS recirculation units and one FRVS ventilation unit (out of two) perform the equivalent pressure control and air filtration functions of the SGT subsystem described in TSTF-551.

STS SR 3.6.4.1.1 requires verification that secondary containment vacuum is greater than or equal to a specific value of vacuum water gauge, whereas Hope Creek TS SR 4.6.5.1.a. requires verification that the reactor building is at a negative pressure. The reactor building is synonymous with secondary containment and the SR to verify that the reactor building is maintained at a negative pressure, in lieu of a specific gauge value, ensures the reactor building is sufficiently leak tight which is consistent with STS SR 3.6.4.1.1.

The HCGS TS includes Definition 1.39 for Secondary Containment Integrity. Item 'd' within Definition 1.39 describes the closure requirements for double door access to secondary containment. Item 'g' within Definition 1.39 describes the pressure within secondary containment relative to Specification 4.6.5.1.a. These Definitions are revised to align with the proposed changes to TS SR 4.6.5.1.b.2.a and SR 4.6.5.1.a.

The Bases changes in TSTF-551 are incorporated with applicable changes to substitute the Hope Creek FRVS in place of the SGT subsystem described in the TSTF. In addition, supporting text is provided describing the analyzed secondary containment drawdown capability of the FRVS.

Finally the Model Application contained in TSTF-551 contains the final, "camera ready," version of the revised TS change along with a markup of the affected TS. PSEG has elected to withhold this final version of the TS change to avoid any potential implementation conflicts.

3.0 REGULATORY ANALYSIS

3.1 No Significant Hazards Consideration Analysis

PSEG Nuclear LLC (PSEG) requests adoption of TSTF-551, "Revise Secondary Containment Surveillance Requirements," which is an approved change to the standard technical specifications (STS), into the Hope Creek Generating Station (HCGS) Technical Specifications (TS). The proposed change revises TS Surveillance Requirement (SR) 4.6.5.1.a. The SR is

revised to permit conditions during which the secondary containment may not meet the SR acceptance criterion for a period of up to 4 hours if an analysis demonstrates that four filtration recirculation and ventilation system (FRVS) recirculation units along with one FRVS ventilation unit remain capable of establishing the required secondary containment vacuum. SR 4.6.5.1.b.2.a is modified to acknowledge that secondary containment access openings may be open for entry and exit. Additionally, TS Definitions 1.39.d and 1.39.g are revised to conform to the proposed change to SR 4.6.5.1.b.2.a and SR 4.6.5.1.a respectively.

PSEG has evaluated the proposed change against the criteria of 10 CFR 50.92(c) to determine if the proposed change results in any significant hazards. The following is the analysis of each of the 10 CFR 50.92(c) criteria:

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

   Response: No

   The proposed change addresses conditions during which the secondary containment SRs are not met. The secondary containment is not an initiator of any accident previously evaluated. As a result, the probability of an accident previously evaluated is not increased. The consequences of an accident previously evaluated while utilizing the proposed changes are no different than the consequences of an accident while utilizing the existing four hour Completion Time for an inoperable secondary containment. In addition, the proposed Note for SR 4.6.5.1.a provides an alternative means to ensure the secondary containment safety function is met. As a result, the consequences of an accident previously evaluated are not significantly increased.

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

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

   Response: No

   The proposed change does not alter the protection system design, create new failure modes, or change any modes of operation. The proposed change does not involve a physical alteration of the plant; and no new or different kind of equipment will be installed. Consequently, there are no new initiators that could result in a new or different kind of accident.

   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 change involve a significant reduction in a margin of safety?

Response: No

The proposed change addresses conditions during which the secondary containment SRs are not met. Conditions in which the secondary containment is not at a negative pressure are acceptable provided the conditions do not affect the ability of the FRVS to establish the required secondary containment vacuum under post-accident conditions within the time assumed in the accident analysis. This condition is incorporated in the proposed change by requiring an analysis of actual environmental and secondary containment pressure conditions to confirm the capability of the FRVS is maintained within the assumptions of the accident analysis. Therefore, the safety function of the secondary containment is not affected. The allowance for both an inner and outer secondary containment door to be open simultaneously for entry and exit does not affect the safety function of the secondary containment as the doors are promptly closed after entry or exit, thereby restoring the secondary containment boundary.

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

Based on the above, PSEG concludes that the proposed amendment presents 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 Conclusions

In conclusion, based on the considerations discussed above, (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.

4.0 ENVIRONMENTAL EVALUATION

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 effluents 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.

Mark-up of Proposed Technical Specification Page

The following Technical Specifications page for Renewed Facility Operating License NPF-57 is affected by this change request:

Technical Specification		Page
1.39	Definitions - Reactor Enclosure Secondary Containment Integrity	1-7
4.6.5.1	Secondary Containment Integrity Surveillance Requirements	3/4 6-47

DEFINITIONS

SECONDARY CONTAINMENT INTEGRITY

1.39 SECONDARY CONTAINMENT INTEGRITY shall exist when:

a. All secondary containment penetrations required to be closed during accident conditions are either:

1. Capable of being closed by an OPERABLE secondary containment automatic isolation system, or

2. Closed by at least one manual valve, blind flange, or deactivated automatic valve or damper, as applicable secured in its closed position, except as provided in Table 3.6.5.2-1 of Specification 3.6.5.2.

b. All secondary containment hatches and blowout panels are closed and sealed.

, except when the access opening is being used for entry and exit

c. The filtration, recirculation and ventilation system is in compliance with the requirements of Specification 3.6.5.3.

d. For double door arrangements, at least one door in each access to the secondary containment is closed;

e. For single door arrangements, the door in each access to the secondary containment is closed, except for normal entry and exit.

f. The sealing mechanism associated with each secondary containment penetration, e.g., welds, bellows or O-rings, is OPERABLE.

g. The pressure within the secondary containment is less than or equal to the value required by Specification 4.6.5.1.a;

, except as indicated by the footnote for Specification 4.6.5.1.a

SHUTDOWN MARGIN (SDM)

1.40 SDM shall be the amount of reactivity by which the reactor is subcritical or would be subcritical throughout the operating cycle assuming that:

a. The reactor is xenon free;

b. The moderator temperature is ≥ 68°F, corresponding to the most reactive state; and

c. All control rods are fully inserted except for the single control rod of highest reactivity worth, which is assumed to be fully withdrawn. With control rods not capable of being fully inserted, the reactivity worth of these control rods must be accounted for in the determination of SDM.

SITE BOUNDARY

1.41 The SITE BOUNDARY shall be that line beyond which the land is neither owned, nor leased, nor otherwise controlled, by the licensee.

CONTAINMENT SYSTEMS

3/4.6.5 SECONDARY CONTAINMENT

SECONDARY CONTAINMENT INTEGRITY

LIMITING CONDITION FOR OPERATION

3.6.5.1 SECONDARY CONTAINMENT INTEGRITY shall be maintained.

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

ACTION:

Without SECONDARY CONTAINMENT INTEGRITY:

a. In OPERATIONAL CONDITION 1, 2 or 3, restore SECONDARY CONTAINMENT INTEGRITY within 4 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. In Operational Condition *, suspend handling of recently irradiated fuel in the secondary containment. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.6.5.1 SECONDARY CONTAINMENT INTEGRITY shall be demonstrated by: **

a. Verifying in accordance with the Surveillance Frequency Control Program that the reactor building is at a negative pressure.

b. Verifying in accordance with the Surveillance Frequency Control Program that:

1. All secondary containment equipment hatches and blowout panels are closed and sealed.

2. a. For double door arrangements, at least one door in each access to the secondary containment is closed except when the access opening is being used for entry and exit.

b. For single door arrangements, the door in each access to the secondary containment is closed except for routine entry and exit.

3. All secondary containment penetrations not capable of being closed by OPERABLE secondary containment automatic isolation dampers/valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic dampers/valves secured in position.

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* When recently irradiated fuel is being handled in the secondary containment.

**Not required to be met for 4 hours if analysis demonstrates four filtration recirculation and ventilation system (FRVS) recirculation units and one ventilation unit of the FRVS are capable of establishing the required secondary containment vacuum.

Attachment 3
LR-N19-0004

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Mark-up of Proposed Technical Specification Bases Page

The following Technical Specifications Bases page for Renewed Facility Operating License NPF-57 is affected by this change request:

Technical Specification		Page
TS 4.6.5	Secondary Containment	B 3/4 6-13

Each vacuum breaker must be cycled to ensure that it opens properly to perform its design function and returns to its fully closed position. This ensures that the safety analysis assumptions are valid.

Demonstration of vacuum breaker opening setpoint is necessary to ensure that the safety analysis assumption regarding vacuum breaker full open differential pressure of 0.25 psid is valid.

3/4.6.5 SECONDARY CONTAINMENT

Secondary containment is designed to minimize any ground level release of radioactive material which may result from an accident. The Reactor Building and associated structures provide secondary containment during normal operation when the drywell is sealed and in service. At other times the drywell may be open and, when required, secondary containment integrity is specified.

Establishing and maintaining a 0.25 inch water gage vacuum in the reactor building with the filtration recirculation and ventilation system (FRVS) once per 18 months, along with the surveillance of the doors, hatches, dampers and valves, is adequate to ensure that there are no violations of the integrity of the secondary containment.

INSERT-A →

In MODES 4 and 5, the probability and consequences of the LOCA are reduced due to the pressure and temperature limitations in these MODES. Therefore, maintaining secondary containment OPERABLE is not required in MODE 4 or 5 to ensure a control volume, except for other situations for which significant releases of radioactive material can be postulated, such as during movement of recently irradiated fuel assemblies in the secondary containment or during operations with a potential for draining the reactor vessel (OPDRVs). Due to radioactive decay, handling of fuel only requires OPERABILITY of secondary containment when fuel being handled is recently irradiated, i.e., fuel that has occupied part of the critical reactor core within the previous 24 hours.

During handling of fuel and CORE ALTERATIONS, secondary containment and FRVS actuation is not required. However, building ventilation will be operating during fuel handling and CORE ALTERATIONS and will be capable of drawing air into the building and exhausting through a monitored pathway. To reduce doses even further below that provided by 24 hours of natural decay, a single normal or contingency method to promptly close secondary containment penetrations is provided in accordance with RG 1.183. Such prompt methods need not completely block the penetration or be capable of resisting pressure. The purpose of the "prompt methods" (defined as within 30 minutes) is to enable ventilation systems to draw the release from a postulated fuel handling accident in the proper direction such that it can be treated and monitored. These contingencies are to be utilized after a postulated fuel handling accident has occurred to reduce doses even further below that provided by the natural decay.

INSERT-A

SR 4.6.5.1.a is modified by a Note which states the SR is not required to be met for up to 4 hours if an analysis demonstrates that four FRVS recirculation units and one FRVS ventilation unit remain capable of establishing the required secondary containment vacuum. Use of the Note is expected to be infrequent but may be necessitated by situations in which secondary containment vacuum may be less than the required containment vacuum, such as, but not limited to, wind gusts or failure or change of operating normal ventilation subsystems. These conditions do not indicate any change in the leak tightness of the secondary containment boundary. The analysis should consider the actual conditions (equipment configuration, temperature, atmospheric pressure, wind conditions, measured secondary containment vacuum, etc.) to determine whether, if an accident requiring secondary containment to be OPERABLE were to occur, the above FRVS lineup could establish the assumed secondary containment vacuum within the time assumed in the accident analysis. If so, the SR may be considered met for a period up to 4 hours. The 4 hour limit is based on the expected short duration of the situations when the Note would be applied.

The analysis referred to above has been performed for HCGS in a technical evaluation (ref. 70162724-0090) which modeled the drawdown capability of the above FRVS lineup. The technical evaluation documents that the FRVS lineup is capable of drawing down secondary containment from an initial atmospheric condition to 0.28 inches water gauge vacuum within 35 seconds. The ability of this FRVS lineup to maintain secondary containment is periodically demonstrated by the Reactor Building Integrity Functional Surveillance Test. The available margin between the FRVS performance documented in this analysis and the requirement assumed in the HCGS accident analysis to establish 0.25 inches water gauge vacuum within 375 seconds, accommodates any variation in drawdown performance during varying conditions of temperature, pressure and wind and meets the intent of the analysis described in the Note applied to SR 4.6.5.1.a.