



10 CFR 50.90

LR-N18-0095
LAR H17-06

SEP 06 2018

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

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

Subject: Supplement to License Amendment Request, Re: Application to Revise Technical Specifications to Adopt TSTF-542, "Reactor Pressure Vessel Water Inventory Control"

- References:**
1. PSEG letter to NRC, "Application to Revise Technical Specifications to Adopt TSTF-542, 'Reactor Pressure Vessel Water Inventory Control,'" dated September 21, 2017 (ADAMS Accession No. ML17265A847)
 2. NRC email to PSEG, "Hope Creek – Final RAI RE: Revise TS to Adopt TSTF-542," (EPID: L-2017-LLA-0352) dated May 30, 2018 (ADAMS Accession No. ML18150A691)
 3. PSEG letter to NRC, "Response to Request for Additional Information, RE: Application to Revise Technical Specifications to Adopt TSTF-542, 'Reactor Pressure Vessel Water Inventory Control,'" dated June 27, 2018 (ADAMS Accession No. ML18178A234)
 4. PSEG letter to NRC, Supplement to License Amendment Request for Additional Information, Re: Application to Revise Technical Specifications to Adopt TSTF-542, "Reactor Pressure Vessel Water Inventory Control", dated July 19, 2018 (ADAMS Accession No. ML18200A149)

In the Reference 1 letter, PSEG Nuclear LLC (PSEG) submitted a license amendment request (LAR) for Hope Creek Generating Station. The proposed amendment would revise Technical Specifications (TS) to adopt TSTF-542, Revision 2, "Reactor Pressure Vessel Water Inventory Control." In Reference 2, the Nuclear Regulatory Commission (NRC) requested PSEG to provide additional information in order to evaluate the proposed License Amendment Request to

revise Technical Specifications. In References 3 and 4, PSEG submitted changes to the proposed TS changes from the Reference 1 submittal. Subsequently, it was determined that additional changes to the Reference 1 and 3 submittals are needed and are proposed as follows:

Reference 1, Attachment 2, as revised by Reference 3 Attachment 2, Technical Specification (TS) Table 3.3.12-1, Page 3/4 3-112

- TRIP FUNCTION 1.c. – CORE SPRAY SYSTEM Manual Initiation.

The MINIMUM OPERABLE CHANNELS PER TRIP FUNCTION is changed from "1/subsystem" to "1/division". Each of the two core spray subsystem is comprised of two divisions. Therefore, it's appropriate that core spray manual initiation is "1/division" for divisions associated with a subsystem required to be operable by LCO 3.5.2, consistent with the presentation of the requirements for manual initiation in existing TS Table 3.3.3-1. Each of the four LPCI subsystems is comprised of a single division. Therefore LPCI manual initiation is "1/subsystem," also consistent with the presentation of the requirements for manual initiation in existing TS Table 3.3.3-1.

Reference 1, Attachment 4, Technical Specification (TS) Limiting Condition for Operation (LCO) 3.5.2 , camera-ready Pages 3/4 5-2, and 3/4 5-3

- The word (Continued) is restored to the title at the top of camera-ready pages 3/4 5-2 and 3/4 5-3 which was unintentionally omitted in the Reference 1 Attachment 4 submittal.

Reference 3 Attachment 3, Technical Specification (TS) Limiting Condition for Operation (LCO) 3.5.2 , camera-ready Page 3/4 5-6

- LCO 3.5.2.a and 3.5.2.b from the camera-ready page 3/4 5-6 are reworded to be consistent with the marked-up copy provided in Reference 3 Attachment 2 (added words "with a subsystem"). This change will make the camera-ready copy LCO wording consistent with the existing LCO 3.5.1.a and 3.5.1.b.

Attachment 1 to this letter provides the proposed supplemental TS mark-up page and Attachment 2 provides the revised camera-ready TS pages. The remaining TS mark-ups and camera-ready TS pages provided in Reference 1, as revised by References 3 and 4, remain unaffected by this supplement.

PSEG has determined that the information provided in this submittal does not alter the conclusions reached in the 10 CFR 50.92 no significant hazards determination previously submitted. In addition, the information provided in this submittal does not affect the bases for concluding that neither an environmental impact statement nor an environmental assessment needs to be prepared in connection with the proposed amendment.

There are no regulatory commitments contained in this letter.

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If you have any questions or require additional information, please contact Mr. Lee Marabella at (856) 339-1208.

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

Executed on 9/6/18
(Date)

Respectfully,



Eric Carr
Site Vice President
Hope Creek Generating Station

Attachments:

1. Revised Mark-up Of Proposed Technical Specification Page
2. Revised Camera-ready Technical Specification Pages

cc: Administrator, Region I, NRC
Project Manager, NRC
NRC Senior Resident Inspector, Hope Creek
Mr. P. Mulligan, Chief, NJBNE
Mr. L. Marabella, Corporate Commitment Tracking Coordinator
Mr. T. McEwen, Hope Creek Commitment Tracking Coordinator

Attachment 1

Revised Mark-up of Proposed Technical Specification Page

The following Technical Specification page for Renewed Facility Operating License NPF-57 is affected by this Supplemental Response:

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TABLE 3.3.12-1
RPV WATER INVENTORY CONTROL INSTRUMENTATION

<u>TRIP FUNCTION</u>	<u>MINIMUM OPERABLE CHANNELS PER TRIP FUNCTION</u>	<u>APPLICABLE OPERATIONAL CONDITIONS</u>	<u>ACTIONS</u>
<u>1. CORE SPRAY SYSTEM</u>			
a. Reactor Vessel Pressure - Low (Permissive)	4/division ^{(a)(c)}	4, 5	83
b. Core Spray Pump Discharge Flow - Low (Bypass)	1/subsystem ^(a)	4, 5	84
c. Manual Initiation	1/division ^(a)	4, 5	84
<u>2. LOW PRESSURE COOLANT INJECTION MODE OF RHR SYSTEM</u>			
a. Reactor Vessel Pressure-Low (Permissive)	1/valve ^(a)	4, 5	83
b. LPCI Pump Discharge Flow - Low (Bypass)	1/pump ^{(a)(d)}	4, 5	84
c. Manual Initiation	1/subsystem ^(a)	4, 5	84
<u>3. RHR SYSTEM SHUTDOWN COOLING MODE ISOLATION</u>			
a. Reactor Vessel Water Level – Low, Level 3	2/Valve	(b)	85
<u>4. REACTOR WATER CLEANUP SYSTEM ISOLATION</u>			
a. Reactor Vessel Water Level - Low Low, Level 2	2/Valve	(b)	85

(a) Associated with an ECCS subsystem required to be OPERABLE by LCO 3.5.2, "RPV Water Inventory Control."

(b) When automatic isolation of the associated penetration flow path(s) is credited in calculating DRAIN TIME.

(c) Division 1 and 2 only.

(d) Function not required to be OPERABLE while associated pump is operating in decay heat removal when minimum flow valve is closed and deactivated.

Attachment 2

Revised Camera-ready Technical Specification Pages

The following Technical Specification page for Renewed Facility Operating License NPF-57 is affected by this Supplemental Response:

3/4 3-112

3/4 5-2

3/4 5-3

3/4 5-6

TABLE 3.3.12-1
RPV WATER INVENTORY CONTROL INSTRUMENTATION

<u>TRIP FUNCTION</u>	<u>MINIMUM OPERABLE CHANNELS PER TRIP FUNCTION</u>	<u>APPLICABLE OPERATIONAL CONDITIONS</u>	<u>ACTIONS</u>
<u>1. CORE SPRAY SYSTEM</u>			
a. Reactor Vessel Pressure - Low (Permissive)	4/division ^{(a)(c)}	4, 5	83
b. Core Spray Pump Discharge Flow - Low (Bypass)	1/subsystem ^(a)	4, 5	84
c. Manual Initiation	1/division ^(a)	4, 5	84
<u>2. LOW PRESSURE COOLANT INJECTION MODE OF RHR SYSTEM</u>			
a. Reactor Vessel Pressure-Low (Permissive)	1/valve ^(a)	4, 5	83
b. LPCI Pump Discharge Flow - Low (Bypass)	1/pump ^{(a)(d)}	4, 5	84
c. Manual Initiation	1/subsystem ^(a)	4, 5	84
<u>3. RHR SYSTEM SHUTDOWN COOLING MODE ISOLATION</u>			
a. Reactor Vessel Water Level – Low, Level 3	2/Valve	(b)	85
<u>4. REACTOR WATER CLEANUP SYSTEM ISOLATION</u>			
a. Reactor Vessel Water Level - Low Low, Level 2	2/Valve	(b)	85

-
- (a) Associated with an ECCS subsystem required to be OPERABLE by LCO 3.5.2, "RPV Water Inventory Control."
- (b) When automatic isolation of the associated penetration flow path(s) is credited in calculating DRAIN TIME.
- (c) Division 1 and 2 only.
- (d) Function not required to be OPERABLE while associated pump is operating in decay heat removal when minimum flow valve is closed and deactivated.

ACTION:

NOTE: LCO 3.0.4.b is not applicable to HPCI.

- a. For the Core Spray system:
 1. With one core spray subsystem inoperable, provided that at least two LPCI subsystem are OPERABLE, restore the inoperable core spray 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 both core spray subsystems inoperable, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.

- b. For the LPCI system:
 1. With one LPCI subsystem inoperable, provided that at least one core spray subsystem is OPERABLE, restore the inoperable LPCI 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 LPCI subsystems inoperable, provided that at least one core spray subsystem is operable, restore at least one LPCI 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.
 3. With three LPCI subsystems inoperable, provided that both core spray subsystems are OPERABLE, restore at least two LPCI subsystems to OPERABLE status within 72 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
 4. With all four LPCI subsystems inoperable, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.*

* Whenever two or more RHR subsystems are inoperable, if unable to attain COLD SHUTDOWN as required by this ACTION, maintain reactor coolant temperature as low as practical by use of alternate heat removal methods.

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

- c. For the HPCI system, provided the Core Spray System, the LPCI system, the ADS and the RCIC system are OPERABLE:
 - 1. With the HPCI system inoperable, restore the HPCI system to OPERABLE status within 14 days or be in at least HOT SHUTDOWN within the next 12 hours and reduce reactor steam dome pressure to ≤ 200 psig within the following 24 hours.
 - 2. With the HPCI system inoperable and either one LPCI subsystem or one CSS subsystem inoperable, restore the HPCI system to operable status within 72 hours or restore the LPCI subsystem/CSS subsystem to operable status within 72 hours. Otherwise, be in HOT SHUTDOWN within the next 12 hours and reduce reactor steam dome pressure to ≤ 200 psig in the next 24 hours.
- d. For the ADS:
 - 1. With one of the above required ADS valves inoperable, provided the HPCI system, the core spray system and the LPCI system are OPERABLE, restore the inoperable ADS valve to OPERABLE status within 14 days or be in at least HOT SHUTDOWN within the next 12 hours and reduce reactor steam dome pressure to ≤ 100 psig within the next 24 hours.
 - 2. With two or more of the above required ADS valves inoperable, be in at least HOT SHUTDOWN within 12 hours and reduce reactor steam dome pressure to ≤ 100 psig within the next 24 hours.
- e. With a CSS and/or LPCI header ΔP instrumentation channel inoperable, restore the inoperable channel to OPERABLE status within 7 days or determine the ECCS header ΔP locally at least once per 12 hours; otherwise, declare the associated ECCS subsystem inoperable.
- f. The discharge line "keep filled" alarm instrumentation associated with a LPCI and/or CSS subsystem(s) may be in an inoperable status for up to 6 hours for required surveillance testing provided that the "keep filled" alarm instrumentation associated with at least one LPCI or CSS subsystem serviced by the affected "keep filled" system remains OPERABLE; otherwise, perform Surveillance Requirement 4.5.1.a.1.a.
- g. In the event an ECCS system is actuated and injects water into the Reactor Coolant System, a Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.9.2 within 90 days describing the circumstances of the actuation and the total accumulated actuation cycles to date. The current value of the usage factor for each affected safety injection nozzle shall be provided in this Special Report whenever its value exceeds 0.70.

* This includes testing of the "Reactor Coolant System Interface Valves Leakage Pressure Monitors" associated with LPCI and CSS in accordance with Surveillance 4.4.3.2.3

EMERGENCY CORE COOLING SYSTEMS (ECCS) AND RPV WATER INVENTORY CONTROL

3/4 5.2 RPV WATER INVENTORY CONTROL

LIMITING CONDITION FOR OPERATION

3.5.2 DRAIN TIME of RPV water inventory to the top of active fuel (TAF) shall be \geq 36 hours

AND

At least one of the following low pressure ECCS subsystems shall be OPERABLE:

- a. Core spray system subsystem with a subsystem comprised of:
 - 1. Two OPERABLE core spray pumps, and
 - 2. An OPERABLE flow path capable of taking suction from at least one of the following water sources and transferring the water through the spray sparger to the reactor vessel:
 - a) From the suppression chamber, or
 - b) When the suppression chamber water level is less than the limit or is drained, from the condensate storage tank containing at least 135,000 available gallons of water.
- b. Low pressure coolant injection (LPCI) system subsystem with a subsystem comprised of:
 - 1. One OPERABLE LPCI pump, and
 - 2. An OPERABLE flow path capable of taking suction from the suppression chamber and transferring the water to the reactor vessel.**

APPLICABILITY: OPERATIONAL CONDITION 4 and 5.

ACTION:

- a. With none of the above low pressure ECCS subsystems OPERABLE, immediately suspend CORE ALTERATIONS and restore a subsystem to OPERABLE status within 4 hours. Otherwise, immediately initiate action to establish a method of water injection capable of operating without offsite electrical power.
- b. Deleted.

* Deleted.

** A LPCI subsystem may be considered OPERABLE during alignment and operation for decay heat removal if capable of being manually realigned and not otherwise inoperable.