

2.0 ASSESSMENT

2.1 Applicability of Published Safety Evaluation

PSEG Nuclear (PSEG) has reviewed the safety evaluation provided to the Technical Specifications Task Force on [DATE], as well as the information provided in TSTF-542. PSEG has concluded that the justifications presented in TSTF-542 and the safety evaluation prepared by the NRC staff are applicable to Hope Creek Generating Station (Hope Creek) and justify this amendment for the incorporation of the changes to the Hope Creek TS.

The following Hope Creek TS reference or are related to OPDRVs and are affected by the proposed change:

- 3/4.3.2, Isolation Actuation Instrumentation
- 3/4.3.3, Emergency Core Cooling System Actuation Instrumentation
- 3/4.3.7, Radiation Monitoring Instrumentation
- 3/4.5.2, ECCS - Shutdown
- 3/4.5.3, Suppression Chamber
- 3/4.6.5.1, Secondary Containment Integrity
- 3/4.6.5.2, Secondary Containment Automatic Isolation Dampers
- 3/4.6.5.3.1, Filtration, Recirculation and Ventilation System (FRVS) Ventilation Subsystem
- 3/4.6.5.3.2, FRVS Recirculation Subsystem
- 3/4.7.2.1, Control Room Emergency Filtration System
- 3/4.7.2.2, Control Room Air Conditioning (AC) System
- 3/4.8.1.2, AC Sources - Shutdown
- 3/4.8.2.2, DC Sources – Shutdown
- 3/4.8.3.2, Electrical Power Systems Distribution - Shutdown

2.2 Variations

PSEG is proposing the following variations from the TS changes described in the TSTF-542 or the applicable parts of the NRC staff's safety evaluation. These variations do not affect the applicability of TSTF-542 or the NRC staff's safety evaluation to the proposed license amendment.

1. The Hope Creek TS utilize different numbering and titles than the BWR/4 Standard Technical Specifications (STS) on which TSTF-542 was based. Specifically, the following table shows the differences between the plant-specific TS numbering and/or titles and the TSTF-542 numbering and titles. These differences are administrative and do not affect the applicability of TSTF-542 to the Hope Creek TS.

TSTF-542 STS	Hope Creek TS	Comments
1.1, Definitions	1.0 Definitions 1.11.1 – DRAIN TIME	For Hope Creek, each definition is individually numbered.
3.3.5.1A, Emergency Core Cooling System (ECCS) Instrumentation	3.3.3, Emergency Core Cooling System Actuation Instrumentation	

TSTF-542 STS	Hope Creek TS	Comments
3.3.5.2A, Reactor Pressure Vessel (RPV) Water Inventory Control Instrumentation	3.3.3.1, Reactor Pressure Vessel (RPV) Water Inventory Control Instrumentation	
3.3.6.1A, Primary Containment Isolation Instrumentation	3.3.2, Isolation Actuation Instrumentation	
3.3.6.2A, Secondary Containment Isolation Instrumentation	3.3.2, Isolation Actuation Instrumentation	
3.3.7.1A Main Control Room Environmental Control (MCREC) System Instrumentation	3.3.7.1, Radiation Monitoring Instrumentation	
3.5, EMERGENCY CORE COOLING SYSTEMS (ECCS), RPV WATER INVENTORY CONTROL, AND REACTOR CORE ISOLATION COOLING SYSTEM (RCIC)	3.5, Emergency Core Cooling Systems (ECCS) and RPV Water Inventory Control,	
3.5.3, RCIC System	3.7.4, Reactor Core Isolation Cooling System	
3.6.4.1, Secondary Containment	3.6.5.1, Secondary Containment Integrity	
3.6.4.2, Secondary Containment Isolation Valves (SCIVs)	3.6.5.2, Secondary Containment Automatic Isolation Dampers	
3.6.4.3, Standby Gas Treatment (SGT) System	3.6.5.3, Filtration, Recirculation and Ventilation System (FRVS)	
3.7.4, Main Control Room Environmental Control (MCREC) System	3.7.2.1, Control Room Emergency Filtration System	
3.7.5, Control Room Air Conditioning (AC) System	3.7.2.2, Control Room Air Conditioning (AC) System	
3.8.2, AC Sources - Shutdown	3.8.1.2, AC Sources - Shutdown	
3.8.5, DC Sources - Shutdown	3.8.2.2, DC Sources - Shutdown	
3.8.8, Inverters - Shutdown	N/A	Hope Creek does not have an equivalent TS
3.8.10, Distribution Systems - Shutdown	3.8.3.2, Distribution - Shutdown	
5.5.16, Setpoint Control Program	N/A	Hope Creek does not have an equivalent TS

- The Hope Creek TS also differ in format from the Standard Technical Specifications on which TSTF-542 was based. In general, the TS LCO, APPLICABILITY, ACTION and SURVEILLANCE REQUIREMENTS are provided in an outline format. Instead of a single

table, the Hope Creek ECCS Actuation Instrumentation TS 3/4.3.3 utilizes three tables to display the following information:

- Table 3.3.3-1 – List of trip functions, minimum operable channels, applicable Operating Conditions and Actions
- Table 3.3.3-2 – Associated trip setpoints and allowable values for the trip functions in Table 3.3.3-1
- Table 4.3.3.1-1 – Associated surveillance requirements for the trip functions in Table 3.3.3-1

The proposed TS 3/4.3.3.1 presents the RPV Water Inventory Control Instrumentation requirements in a similar manner.

3. The Hope Creek Technical Specifications contain a Surveillance Frequency Control Program. Therefore, the Surveillance Requirement Frequencies for Specifications 3/4.3.3.1 and 3/4.5.2 are "In accordance with the Surveillance Frequency Control Program."
4. PSEG has chosen to implement the Reactor Pressure Vessel Water Inventory Control (WIC) Instrumentation specification as TS 3.3.3.1 to avoid renumbering existing TS 3.3.3.
5. The STS Table 1.1-1 defines MODES of Operation for STS plants (1 through 5) while Hope Creek TS Table 1.2 defines Operational Conditions (1 through 5). The differences in the definitions of OPCONs 4 and 5 vs. MODEs 4 and 5 are as follows:
 - Hope Creek has an Average Reactor Coolant Temperature limit of $\leq 140^{\circ}\text{F}$ for OPCON 5, Refueling, and STS does not.
 - Hope Creek has notes which describe allowances for repositioning the mode switch and refers to Special Test Exception TS 3.10.1, 3.10.3 and 3.10.8 while STS does not.

Therefore, the STS MODEs 4 and 5 and the Hope Creek OPCONs 4 and 5 are considered equivalent.

6. Proposed TS Table 3.3.3.1-1 for RPV Water Inventory Control Instrumentation presents the TS Actions in a manner consistent with the format of the current Hope Creek TS. TS ACTION 83 combines TSTF-542 TS 3.3.5.2 Actions C and E in a single Action statement. Similarly, TS Action 84 combines TSTF-542 TS 3.3.5.2 Actions D and E, and TS ACTION 85 combines TSTF-542 TS 3.3.5.2 Actions B1 and B2.
7. In Hope Creek TS Table 3.3.3-1 for ECCS Actuation Instrumentation, TS ACTION 32 applies only in OPERATIONAL CONDITIONS 4 and 5. Therefore, consistent with the removal of OPERATIONAL CONDITION 4 and 5 requirements from the ECCS Actuation Instrumentation TS, TS ACTION 32 is being deleted.
8. Proposed TS Action 3.3.3.1.a is being added to be consistent with the current Hope Creek instrumentation TS. With an RPV Water Inventory Control instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.3.1-2, TS Action 3.3.3.1.a would require the channel to be declared inoperable until the channel is restored to OPERABLE status with its trip setpoint adjusted consistent

with the Trip Setpoint value. The variation provides consistency with the existing Hope Creek instrumentation TS and does not affect the requirements of new TS ACTIONS 83, 84 and 85, which are consistent with TSTF-542.

9. Note (c) is being added to TS Table 3.3.3.1-1 for the Core Spray Reactor Vessel Pressure - Low (Permissive) trip function. Note (c) clarifies that the trip function is only required for Divisions 1 and 2. The note is included in the current TS Table 3.3.3-1 for ECCS Actuation Instrumentation.
10. Proposed SR 4.5.2.5 would be modified by a note permitting automatic valves capable of automatic return to their ECCS position when an ECCS signal is present to be in position for another mode of operation. The note is included in current SR 4.5.1.a.1.b and is consistent with the STS Bases for SR 3.5.2.5.
11. The Hope Creek TS contain requirements that differ from the Standard Technical Specifications on which TSTF-542 was based, but are encompassed in the TSTF-542 justification:
 - a. There are plant-specific TS requirements related to OPDRVs and Required Actions to "suspend OPDRVs" that do not appear in the STS (e.g., NUREG-1433). Changes to these TS controls are justified by the discussion in the TSTF-542 justification.

To align with NUREG-1433, Rev. 4, and consistent with TSTF-542, Rev. 2, PSEG proposes to revise TS 3.5.3, "Suppression Chamber," to remove TS requirements associated with OPERATIONAL CONDITIONS 4 and 5 since they are redundant to the requirements and intent of the newly proposed TS Section 3.5.2, "Reactor Pressure Vessel (RPV) Water Inventory Control (WIC)."

Specifically, TS LCO 3.5.3.b is addressed in newly proposed TS LCO 3.5.2 and its associated surveillance requirements 4.5.2.2 and 4.5.2.3.

In OPERATIONAL CONDITIONS 4 and 5, TS LCO 3.5.3.b requires a minimum indicated suppression chamber water level of 5.0" except that the suppression chamber level may be less than the limit, provided that:

- i. No operations are performed that have a potential for draining the reactor vessel,
- ii. The reactor mode switch is locked in the Shutdown or Refuel position,
- iii. The condensate storage tank contains at least 135,000 available gallons of water, and
- iv. The core spray system is OPERABLE per Specification 3.5.2 with an OPERABLE flow path capable of taking suction from the condensate storage tank and transferring the water through the spray sparger to the reactor vessel.

With LCO 3.5.3.b not met, TS Action 3.5.3.b requires CORE ALTERATIONS and operations that have a potential for draining the reactor vessel to be suspended, the reactor mode switch to be locked in the Shutdown position, and SECONDARY CONTAINMENT INTEGRITY to be established within 8 hours.

The minimum required suppression chamber water level in TS LCO 3.5.3.b and SR 4.5.3.2 is made redundant by proposed SRs 4.5.2.2 for LPCI subsystems and 4.5.2.3 for Core Spray subsystems, which are consistent with TSTF-542. Removal of the TS Action 3.5.3.b requirement to suspend operations that have a potential for draining the reactor vessel is consistent with the proposed addition of DRAIN TIME requirements to TS LCO 3.5.2. The TS Action 3.5.3.b requirement to establish SECONDARY CONTAINMENT INTEGRITY within 8 hours is made redundant by proposed TS Actions 3.5.2.c and 3.5.2.d for DRAIN TIMES not meeting LCO 3.5.2, which are consistent with TSTF-542.

TS Action 3.5.3.b is currently modified by a note stating the suppression chamber is not required to be OPERABLE in OPERATIONAL CONDITION 5, provided that the reactor vessel head is removed, the cavity is flooded or being flooded from the suppression pool, the spent fuel pool gates are removed when the cavity is flooded, and the water level is maintained within the limits of Specifications 3.9.8 and 3.9.9. Removal of this note is consistent with the proposed addition of DRAIN TIME requirements to TS LCO 3.5.2. and the removal of the similar allowance from STS 3.5.2 Applicability for Mode 5.

- b. There are plant-specific instrumentation functions that provide automatic initiation of ECCS water injection on low RPV water level. Changes to these instrumentation functions are justified by the discussion in Section 3.4.1 of the TSTF-542 justification.

Current Hope Creek TS Table 3.3.3-1 includes Trip Functions 1e and 1f, Core Spray Pump Start Delay Time – Normal Power and Core Spray Pump Start Delay Time – Emergency Power, which are required to be OPERABLE in Operating Conditions 1, 2, 3, 4, and 5. The purpose of the delay times is to stagger the automatic start of the Core Spray pumps, limiting starting transients on their associated 4.16 kV emergency buses. This staggering is unnecessary for manual operation. Therefore, these functions applicable in Operating Conditions 4 and 5 are being removed from Table 3.3.3-1 and are not being included in the proposed TS Table 3.3.3.1-1 for RPV Water Inventory Control Instrumentation. This is consistent with the intent of TSTF-542 and a similar change made to STS Function 2.f, "Low Pressure Coolant Injection Pump Start – Time Delay Relay."

- c. There are plant-specific systems that provide Secondary Containment, and SGT system functions in the TS. Changes to the TS controls on these systems are justified by the discussion in Section 3.4.2 of the TSTF-542 justification.

The Filtration, Recirculation, and Ventilation System (FRVS) consists of two subsystems that are required to perform post-accident, safety-related functions. The FRVS Recirculation System recirculates the Reactor Building air through filters for cleanup. This subsystem is the initial cleanup system before discharge is made via the FRVS ventilation subsystem. The FRVS Ventilation System maintains the Reactor Building at a negative pressure with respect to the outdoors. FRVS requirements are contained in proposed TS Actions 3.5.2.c and 3.5.2.d and are consistent with the requirements for the Standby Gas Treatment system in TSTF-542.

12. There are TS changes called out in the TSTF-542 document that do not apply to Hope Creek TS. They are as follows:
- a. TSTF-542 T3.3.6.1-1 Function 6b, Primary Containment Isolation Instrumentation Reactor Vessel Water Level – Low Low, Level 2 removes annotation referring to OPDRVs. The corresponding Hope Creek TS T3.3.2-1 Trip Function 7a is applicable in OPCONs 1, 2 and 3 only and has no existing reference to OPDRVs. Therefore no corresponding changes are proposed.
 - b. TSTF-542 T3.3.7.1-1, Function 4, Refueling Floor Area Radiation – High, removes annotation referring to OPDRVs. The Hope Creek TS have no corresponding TS Trip Function, therefore no corresponding changes are proposed.
 - c. TSTF 542 TS 3.6.1.3 Condition H and Required Action H1 removes reference to OPDRVs for PCIVs. The corresponding Hope Creek TS 3.6.3 is applicable in OPCONs 1, 2 and 3 only and has no existing reference to OPDRVs. Therefore no corresponding changes are proposed.
 - d. TSTF 542 TS 3.8.8, Inverters – Shutdown, Required Action A.2.3 removes reference to OPDRVs. The Hope Creek TS control the corresponding inverters under TS 3.8.3.1, Distribution – Operating which is applicable in OPCONs 1, 2 and 3 only. Therefore no corresponding changes are proposed.
 - e. Hope Creek TS contain no reference to a Setpoint Control Program as described in the TSTF-542 change to Section 5.5.16. Therefore no corresponding change to the Hope Creek TS is proposed.
13. In alignment with TSTF-542, Rev. 2, Proposed Safety Basis (Section 3.1.2), the existing Hope Creek TS 3.5.2 requirement to suspend core alterations as an action for ECCS inoperability is no longer warranted since there are no postulated events associated with core alterations that are prevented or mitigated by the proposed RPV water inventory control requirements. In addition, loss of RPV inventory events are not initiated by core alteration operations. Refueling Limiting Conditions for Operation (LCOs) 3.9.1, Reactor Mode Switch, 3.9.2, Instrumentation, 3.9.3, Control Rod Position, and 3.9.8, Water Level - Reactor Vessel, provide requirements to ensure safe operation during core alterations, including required water level above the RPV flange. Therefore, PSEG proposes to delete TS 3.5.2, Action 'b' in its entirety, including the action relating to core alterations.
14. To align with NUREG-1433, Rev. 4, and fully implement TSTF-542, Rev. 2, PSEG proposes to revise TS 3.5.3, "Suppression Chamber," to remove TS requirements associated with OPERATIONAL CONDITIONS 4 and 5. As discussed above in Item 11.a, the requirements in TS 3.5.3 related to OPDRVs and Actions to suspend OPDRVs are redundant to the requirements and intent of the newly proposed TS Section 3.5.2, "Reactor Pressure Vessel (RPV) Water Inventory Control (WIC)."

LCO 3.5.3.b also requires the reactor mode switch to be locked in the Shutdown or Refuel position when suppression chamber water level is less than TS limits in OPERATIONAL CONDITIONS 4 and 5. By definition, the reactor mode switch is in Shutdown or Refuel in OPERATIONAL CONDITIONS 4 and 5. The requirement to lock the mode switch in either position is an administrative control, rather than an element in the lowest functional

capability or performance levels of equipment required for safe operation of the facility required to be included in TS.

The TS Action 3.5.3.b requirement to lock the reactor mode switch in the Shutdown position is not required because it does not provide compensatory measures for suppression chamber water level less than TS limits. The TS Action 3.5.3.b requirement to suspend core alterations is not required because Refueling Operations LCOs 3.9.1, Reactor Mode Switch, 3.9.2, Instrumentation, 3.9.3, Control Rod Position, and 3.9.8, Water Level - Reactor Vessel, provide requirements to ensure safe operation during CORE ALTERATIONS including required water level above the RPV flange.

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