



10 CFR 50.90

LR-N17-0060  
LAR H17-04

**MAR 27 2017**

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: APPLICATION TO REVISE TECHNICAL SPECIFICATIONS TO ADOPT  
TSTF-535, "REVISE SHUTDOWN MARGIN DEFINITION TO ADDRESS  
ADVANCED FUEL DESIGNS"

Pursuant to 10 CFR 50.90, PSEG Nuclear LLC (PSEG) is submitting a request for an amendment to the Technical Specifications (TS) for Renewed Facility Operating License No. NPF-57 for Hope Creek Generating Station.

The proposed amendment modifies the TS definition of "Shutdown Margin" (SDM) to require calculation of the SDM at a reactor moderator temperature of 68°F or a higher temperature that represents the most reactive state throughout the operating cycle. This change is needed to address new Boiling Water Reactor (BWR) fuel designs that may be more reactive at shutdown temperatures above 68°F.

Attachment 1 provides a description and assessment of the proposed changes. Attachment 2 provides the existing TS pages marked up to show the proposed changes. These proposed changes have been reviewed and approved by the Hope Creek Plant Operations Review Committee.

PSEG requests NRC approval of the proposed License Amendment within one year of submittal to be implemented within 60 days of issuance.

There are no regulatory commitments contained in this letter.

MAR 27 2017

10 CFR 50.90

Page 2  
LR-N17-0060

In accordance with 10 CFR 50.91, "Notice for public comment; State consultation," paragraph (b), PSEG is notifying the State of New Jersey of this application for license amendment by transmitting a copy of this letter and its attachments to the designated State Official.

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 3/27/2017  
(Date)

Respectfully,



Eric Carr  
Site Vice President  
Hope Creek Generating Station

Attachments:

1. Request for Changes to Technical Specifications
2. Technical Specification Page with Proposed Changes

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. MacEwen, Hope Creek Commitment Tracking Coordinator

**Attachment 1**

**Request for Changes to Technical Specifications**

HOPE CREEK GENERATING STATION  
RENEWED FACILITY OPERATING LICENSE NO. NPF-57  
DOCKET NO. 50-354

**License Amendment Request to Revise Technical Specifications to Adopt  
TSTF-535, "Revise Shutdown Margin Definition to Address  
Advanced Fuel Designs"**

Table of Contents

1.0 DESCRIPTION.....	2
2.0 ASSESSMENT.....	2
2.1 Applicability of Published Safety Evaluation.....	2
2.2 Optional Changes and Variations.....	2
3.0 REGULATORY ANALYSIS.....	3
3.1 No Significant Hazards Consideration Determination.....	3
3.2 Conclusions.....	4
4.0 ENVIRONMENTAL CONSIDERATION.....	4
5.0 REFERENCES.....	4

## 1.0 DESCRIPTION

The proposed amendment modifies the Technical Specifications (TS) definition of "Shutdown Margin" (SDM) to require calculation of the SDM at a reactor moderator temperature of 68°F or a higher temperature that represents the most reactive state throughout the operating cycle. This change is needed to address new Boiling Water Reactor (BWR) fuel designs that may be more reactive at shutdown temperatures above 68°F.

## 2.0 ASSESSMENT

### 2.1 Applicability of Published Safety Evaluation

PSEG Nuclear LLC (PSEG) has reviewed the model safety evaluation dated February 19, 2013 (Reference 5.2), as part of the Federal Register Notice of Availability. This review included a review of the NRC staff's evaluation, as well as the information provided in TSTF-535 (Reference 5.1). As described in the subsequent paragraphs, PSEG has concluded that the justifications presented in the TSTF-535 proposal and the model safety evaluation prepared by the NRC are applicable to Hope Creek Generating Station and justify this amendment for the incorporation of the changes to the plant TS.

### 2.2 Optional Changes and Variations

PSEG is not proposing any significant variations or deviations from the TS changes described in TSTF-535, Revision 0, or the applicable parts of the NRC's model safety evaluation dated February 19, 2013.

The Hope Creek TS definition of SDM is being updated to correspond with the wording and format proposed in TSTF-535, Revision 0. Hope Creek's TS are based on NUREG-0123, Standard Technical Specifications for General Electric Boiling Water Reactors, and, therefore, the wording and format varies slightly from NUREG-1433, Standard Technical Specifications General Electric BWR/4 Plants, shown in TSTF-535, Revision 0, and the applicable parts of the NRC's model safety evaluation.

The Hope Creek TS utilize different numbering than the Standard Technical Specifications on which TSTF-535 was based. Specifically, definitions in the Hope Creek TS are in Section 1 vice Section 1.1 and the definitions are numbered.

The Standard Technical Specifications format and definition, as modified by TSTF-535, are proposed to be adopted into the Hope Creek TS. The NUREG-1433 definition of SDM includes the sentence, "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." This is not explicitly stated in the current Hope Creek TS SDM definition, but is addressed in Hope Creek TS SURVEILLANCE REQUIREMENT 4.1.1.c which requires Shutdown Margin to be verified acceptable with an increased allowance for the withdrawn worth of an immovable or untrippable control rod.

The minor variations are administrative and do not affect the applicability of TSTF-535 to the Hope Creek TS.

### 3.0 REGULATORY ANALYSIS

#### 3.1 No Significant Hazards Consideration Determination

PSEG Nuclear LLC (PSEG) requests adoption of TSTF-535, Revision 0, "Revise Shutdown Margin Definition to Address Advanced Fuel Designs," which is an approved change to the Standard Technical Specifications (STS), into the Hope Creek Technical Specifications (TS). The proposed amendment modifies the TS definition of "Shutdown Margin" (SDM) to require calculation of the SDM at a reactor moderator temperature of 68°F or a higher temperature that represents the most reactive state throughout the operating cycle.

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

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

Response: No.

The proposed change revises the definition of SDM. SDM is not an initiator of any accident previously evaluated. Accordingly, the proposed change to the definition of SDM has no effect on the probability of any accident previously evaluated. SDM is an assumption in the analysis of some previously evaluated accidents and inadequate SDM could lead to an increase in consequences of those accidents. However, the proposed change revises the SDM definition to ensure that the correct SDM is determined for all fuel types at all times during the fuel cycle. As a result, the proposed change does not adversely affect the consequences of any accident previously evaluated.

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 accident previously evaluated?

Response: No.

The proposed change revises the definition of SDM. The change does not involve a physical alteration of the plant (i.e., no new or different type of equipment will be installed) or a change in the methods governing normal plant operations. The change does not alter assumptions made in the safety analysis regarding SDM.

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

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

Response: No.

The proposed change revises the definition of SDM. The proposed change does not alter the manner in which safety limits, limiting safety system settings or limiting conditions for operation are determined. The proposed change ensures that the SDM assumed in determining safety limits, limiting safety system settings or limiting conditions for operation is correct for all BWR fuel types at all times during the fuel cycle.

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

Based on the above, PSEG concludes that the proposed change 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 CONSIDERATION

The proposed change 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 change 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 change 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 change.

## 5.0 REFERENCES

- 5.1 TSTF-535-A, Revision 0, "Revise Shutdown Margin Definition to Address Advanced Fuel Designs," dated August 8, 2011
- 5.2 Notice of Availability of the "Models for Plant-Specific Adoption of Technical Specifications Task Force Traveler TSTF-535, Revision 0, 'Revise Shutdown Margin Definition to Address Advanced Fuel Designs,' Using the Consolidated Line Item Improvement Process," dated February 26, 2013

**Attachment 2**

**Technical Specification Page with Proposed Changes**

**TECHNICAL SPECIFICATION PAGE WITH PROPOSED CHANGES**

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

<b><u>Technical Specification Definition</u></b>	<b><u>Page</u></b>
1.40	1-7

## 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.
- 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.

SHUTDOWN MARGIN (SDM) ← ADD

INSERT 1 →

1.40 SHUTDOWN MARGIN shall be the amount of reactivity by which the reactor is subcritical or would be subcritical assuming all control rods are fully inserted except for the single control rod of highest reactivity worth which is assumed to be fully withdrawn and the reactor is in the shutdown condition; cold, i.e. 68°F; and xenon free.

### 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.

Insert 1

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  $\geq 68^{\circ}\text{F}$ , 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.