



10 CFR 50.90

LR-N07-0163  
LCR H07-02  
JUL 26 2007

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

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

Subject: License Amendment Request to Remove Turbine First Stage Pressure Values from Technical Specifications

Reference: 1) Letter from George P. Barnes (PSEG Nuclear LLC) to USNRC, September 18, 2006

Pursuant to 10 CFR 50.90, PSEG Nuclear LLC hereby requests a change to the Technical Specifications (TS) for Hope Creek Generating Station (HCGS).

The proposed change would remove values for turbine first stage pressure equivalent to  $P_{bypass}$  from the Technical Specifications (TS).  $P_{bypass}$  is the reactor power level below which the turbine stop valve (TSV) closure and the turbine control valve (TCV) fast closure reactor protection system (RPS) trip functions and the end-of-cycle recirculation pump trip (EOC-RPT) are bypassed automatically.

The proposed change was included in the Reference 1 request to increase the HCGS maximum authorized power level to support the high-pressure turbine modifications which will be performed to utilize the higher power level. The modifications to the high-pressure turbine will change the relationship of turbine first stage pressure to reactor power.

Based on discussions with the NRC staff, PSEG is submitting this request separately to permit the planned modifications to the high-pressure turbine to proceed as scheduled during the Fall 2007 refueling outage. While the proposed change would be needed to support the planned HCGS constant pressure power uprate, it is not dependent upon Nuclear Regulatory Commission (NRC) approval of the uprate.

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LR-N07-0163  
LCR H07-02

**JUL 26 2007**

Page 2

Attachment 1 to this letter describes the proposed changes and provides justification for the changes. PSEG has concluded that the proposed changes present no significant hazards consideration under the standards set forth in 10CFR 50.92. Attachment 2 provides the marked up Technical Specification pages.

PSEG requests approval of the proposed amendment by October 10, 2007 with implementation to be completed within 60 days.

There are no commitments in this letter.


These proposed changes have been reviewed by the Plant Operations Review Committee, and the Nuclear Review Board. We are notifying the State of New Jersey of this application for changes to the TS 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. Paul Duke at 856-339-1466.

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

Executed on 7/26/07  
(date)

Sincerely,



Carl J. Fricker  
Vice President - Operations Support

Attachment

1. Response to Request for Additional Information
2. Markup of Proposed Technical Specification Page Changes

cc: S. Collins, Regional Administrator – NRC Region I  
R. Ennis, Project Manager - USNRC  
NRC Senior Resident Inspector - Hope Creek  
P. Mulligan, Manager IV, NJBNE

**ATTACHMENT 1**

**License Amendment Request**

**Hope Creek Generating Station**

**NRC Docket No. 50-354**

**Description of Proposed Changes, Technical Analysis,  
and Regulatory Analysis**

Subject: Remove Turbine First Stage Pressure Values from Technical Specifications

1.0 DESCRIPTION

2.0 PROPOSED CHANGE

3.0 BACKGROUND

4.0 TECHNICAL ANALYSIS

5.0 REGULATORY ANALYSIS

5.1 No Significant Hazards Consideration

5.2 Applicable Regulatory Requirements/Criteria

6.0 ENVIRONMENTAL CONSIDERATION

7.0 REFERENCES

**ATTACHMENT 1  
DESCRIPTION OF PROPOSED CHANGES, TECHNICAL ANALYSIS,  
AND REGULATORY ANALYSIS**

**1.0 DESCRIPTION**

This letter is a request to amend Operating License NPF-57 for Hope Creek Generating Station.

The proposed change would remove values for turbine first stage pressure equivalent to  $P_{bypass}$  from the Technical Specifications (TS).  $P_{bypass}$  is the reactor power level below which the turbine stop valve (TSV) closure and the turbine control valve (TCV) fast closure reactor protection system (RPS) trip functions and the end-of-cycle recirculation pump trip (EOC-RPT) are bypassed automatically.

**2.0 PROPOSED CHANGE**

The values for turbine first stage pressure associated with  $P_{bypass}$  would be removed from the following TS:

- Table 3.3.1-1 - Reactor Protection System Instrumentation Table Notations, Note (j)
- Table 3.3.4.2-1 - EOC-RPT Trip System Instrumentation, Note (b)

**3.0 BACKGROUND**

The turbine stop valve (TSV) closure and the turbine control valve (TCV) fast closure reactor protection system (RPS) trip functions and the end-of-cycle recirculation pump trip (EOC-RPT) are bypassed automatically when thermal power is less than 30% of rated thermal power ( $P_{bypass}$ ). Turbine first stage pressure is monitored to provide the interlocks for bypassing the RPS trip functions and the EOC-RPT.

TS Limiting Condition for Operation (LCO) 3.3.1 requires that the TSV closure and the TCV fast closure reactor protection system trip functions be operable in Operational Condition 1. The specified applicable operational conditions in TS Table 3.3.1-1 are modified by a note stating that these trip functions shall be automatically bypassed when turbine first stage pressure is less than or equal to 159.7 psig equivalent to thermal power less than 30% of rated thermal power. The note also states that a setpoint of less than or equal to 135.7 psig is used to allow for instrument accuracy, calibration, and drift.

LCO 3.3.4.2 requires that EOC-RPT be operable in Operational Condition 1 when thermal power is greater than or equal to 30% of rated thermal power. TS Table 3.3.4.2-1 is modified by a note stating that these trip functions shall be automatically bypassed when turbine first stage pressure is less than or equal to 159.7 psig equivalent to thermal power less than 30% of rated thermal power. The note also states

that a setpoint of less than or equal to 135.7 psig is used to allow for instrument accuracy, calibration, and drift.

Modifications to the high-pressure turbine to be performed during the Fall 2007 refueling outage will change the relationship of turbine first stage pressure to reactor power. The new value for turbine first stage pressure corresponding to  $P_{\text{bypass}}$  is expected to be lower than the current TS value. A turbine first stage pressure setpoint will be established in accordance with plant procedures before plant startup to ensure compliance with TS requirements. Testing will be performed to confirm the turbine first stage pressure at  $P_{\text{bypass}}$  during the plant startup after the Fall 2007 outage.

The turbine first stage pressure values in TS Tables 3.3.1-1 and 3.3.4.2-1 are details of system design that are not required by 10 CFR 50.36(c)(2)(ii) to be included in the TS as discussed below.

The proposed change was included in the Reference 1 request to increase the HCGS maximum authorized power level to support the high-pressure turbine modifications which will be performed to utilize the higher power level. Additional information concerning the proposed change was provided in Reference 2. Based on discussions with the NRC staff, PSEG is submitting this request separately to permit the planned modifications to the high-pressure turbine to proceed as scheduled during the Fall 2007 refueling outage. While the proposed change would be needed to support the planned HCGS constant pressure power uprate, it is not dependent upon Nuclear Regulatory Commission (NRC) approval of the uprate.

#### 4.0 TECHNICAL ANALYSIS

The proposed change would remove values for turbine first stage pressure associated with  $P_{\text{bypass}}$  from the TS. The turbine first stage pressure values in TS Tables 3.3.1-1 and 3.3.4.2-1 are details of system design that are not required by 10 CFR 50.36(c)(2)(ii) to be included in the TS as discussed below:

1. Turbine first stage pressure instrumentation is not used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.
2. Turbine first stage pressure is not a process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.  $P_{\text{bypass}}$  is an initial condition for some transient analyses and is retained in TS Tables 3.3.1-1 and 3.3.4.2-1.
3. Turbine first stage pressure instrumentation is not a structure, system, or component that is part of the primary success path and which functions or

actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

4. Turbine first stage pressure instrumentation is not a structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

Removal of the turbine first stage pressure values from the TS is consistent with NUREG-1433, "Standard Technical Specifications, General Electric Plants, BWR/4." The turbine first stage pressure setpoint will be controlled in accordance with plant procedures and will be verified during post-installation testing.

## 5.0 REGULATORY ANALYSIS

### 5.1 No Significant Hazards Consideration

PSEG 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 removal of values for turbine first stage pressure associated with  $P_{\text{bypass}}$  from the Technical Specifications does not alter the requirements for component operability or surveillance currently in the Technical Specifications. The proposed change will have no impact on any safety related structures, systems or components.

The probability of occurrence of a previously evaluated accident is not increased because this change does not introduce any new potential accident initiating conditions. The consequences of accidents previously evaluated in the UFSAR are not affected because the ability of the components to perform their required function is not affected.

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 change is administrative in nature, and does not result in physical alterations or changes in the method by which any safety related system performs its intended function. The proposed change does not affect any safety analysis assumptions. The proposed change does not create any new accident initiators or involve an activity that could be an initiator of an accident of a different type.

All components will continue to be tested to the same requirements as defined in the Technical Specification Surveillance Requirements. The proposed revision does not make changes in any method of testing or how any safety related system performs its safety functions.

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 change to remove values for turbine first stage pressure associated with  $P_{\text{bypass}}$  from the Technical Specifications does not alter the Technical Specification requirements for reactor protection system operability. The turbine first stage pressure setpoint will be controlled in accordance with plant procedures and will be verified during post-installation testing.

The proposed change will not affect the current Technical Specification requirements or the components to which they apply.

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.

## 5.2 Applicable Regulatory Requirements/Criteria

10 CFR 50.36 specifies the criteria for including limiting conditions for operation (LCOs) in the TSs for commercial nuclear power reactors. According to 10 CFR 50.36, an LCO must be established for items that meet one or more of the following criteria:

Criterion 1: Installed instrumentation that is used to detect, and indicate in the control room, a significant degradation of the reactor coolant pressure boundary.

Criterion 2: A process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Criterion 3: A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Criterion 4: A structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

In June 2004, the NRC issued Revision 3 to NUREG-1433, "Standard Technical Specifications, General Electric Plants (BWR/4)." Removal of the turbine first stage pressure setpoint values from the HCGS TS is consistent with NUREG-1433.

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.

## 6.0 ENVIRONMENTAL CONSIDERATION

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.



## 7.0 REFERENCES

1. PSEG letter LR-N06-0286, Request for License Amendment: Extended Power Uprate, September 18, 2006
2. PSEG letter LR-N07-0060, Response to Request for Additional Information: Request for License Amendment - Extended Power Uprate, March 30, 2007

**ATTACHMENT 2**

**Hope Creek Generating Station**

**Facility Operating License No. NPF-57  
NRC Docket No. 50-354**

**Remove Turbine First Stage Pressure Values from Technical  
Specifications**

**Markup of Proposed Technical Specification Page Changes**

TS Pages

3/4 3-5

3/4 3-47

TABLE 3.3.1.2 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION

TABLE NOTATIONS

- (a) A channel may be placed in an inoperable status for up to 6 hours for required surveillance without placing the trip system in the tripped condition provided at least one OPERABLE channel in the same trip system is monitoring that parameter.
- (b) This function shall be automatically bypassed when the reactor mode switch is in the Run position.
- (c) Unless adequate shutdown margin has been demonstrated per Specification 3.3.1, the "shorting links" shall be removed from the RPS circuitry prior to and during the time any control rod is withdrawn\*.
- (d) The non-coincident NMS reactor trip function logic is such that all channels go to both trip systems. Therefore, when the "shorting links" are removed, the Minimum OPERABLE Channels Per the Trip System are 4 APRMS, 6 IRMS and 2 SRMS.
- (e) An APRM channel is inoperable if there are less than 2 LPRM inputs per level or less than 14 LPRM inputs to an APRM channel.
- (f) This function is not required to be OPERABLE when the reactor pressure vessel head is removed per Specification 3.10.1.
- (g) This function shall be automatically bypassed when the reactor mode switch is not in the Run position.
- (h) This function is not required to be OPERABLE when PRIMARY CONTAINMENT INTEGRITY is not required.
- (i) With any control rod withdrawn. Not applicable to control rods removed per Specification 3.9.10.1 or 3.9.10.2.
- (j) This function shall be automatically bypassed when turbine first stage pressure is ~~≤ 159.7 psig~~ <sup>delete</sup> equivalent to THERMAL POWER less than 30% of RATED THERMAL POWER. ~~to allow for instrument accuracy, calibration, and drift, a setpoint of ≤ 135.7 psig is used.~~
- (k) Also actuates the EOC-RPT system. ↑ delete

\*Not required for control rods removed per Specification 3.9.10.1 or 3.9.10.2.

TABLE 3.3.4.2-1

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION

<u>TRIP FUNCTION</u>	<u>MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM<sup>(a)</sup></u>
1. Turbine Stop Valve - Closure	2 <sup>(b)</sup>
2. Turbine Control Valve-Fast Closure	2 <sup>(b)</sup>

(a) A trip system may be placed in an inoperable status for up to 6 hours for required surveillance provided that the other trip system is OPERABLE.

(b) This function shall be automatically bypassed when turbine first stage pressure is ~~≤ 159.7 psig~~ equivalent to THERMAL POWER less than 30% of RATED THERMAL POWER. ~~To allow for instrument accuracy, calibration and drift, a setpoint of ≤ 135.7 psig is used.~~

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