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U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
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**REQUEST FOR CHANGE TO TECHNICAL SPECIFICATIONS
RECIRCULATION PUMP TRIP ACTUATION INSTRUMENTATION
HOPE CREEK GENERATING STATION
FACILITY OPERATING LICENSE NPF-57
DOCKET NO. 50-354**

Pursuant to 10 CFR 50.90, PSEG Nuclear LLC (PSEG) hereby requests a revision to the Technical Specifications for the Hope Creek Generating Station. In accordance with 10CFR50.91(b)(1), a copy of this submittal has been sent to the State of New Jersey.

The proposed amendment would extend the surveillance test intervals (STIs) and allowed out-of-service times (AOTs) for the end of cycle recirculation pump trip (EOC-RPT) instrumentation. The proposed STI and AOT changes are based on General Electric Company (GE) Licensing Topical Report (LTR) GENE-770-06-1-A (December 1992). The NRC has approved similar changes for other licensees as described in Attachment 1.

PSEG has evaluated the proposed changes in accordance with 10CFR50.91(a)(1), using the criteria in 10CFR50.92(c), and has determined this request involves no significant hazards considerations. An evaluation of the requested changes is provided in Attachment 1 to this letter. The marked up Technical Specification pages affected by the proposed changes are provided in Attachment 2.

PSEG requests approval of the proposed License Amendment by May 30, 2003 to be implemented within 60 days.

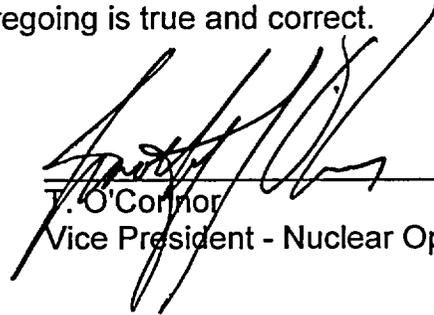
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Should you have any questions regarding this request, please contact Mr. Paul Duke at 856-339-1466.

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

Executed on 2/14/03
(date)



J. O'Connor
Vice President - Nuclear Operations

Attachments (2)

FEB 14 2003

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

EVALUATION OF REVISIONS TO THE TECHNICAL SPECIFICATIONS
FOR RECIRCULATION PUMP TRIP ACTUATION INSTRUMENTATION

**REQUEST FOR CHANGE TO TECHNICAL SPECIFICATIONS
RECIRCULATION PUMP TRIP ACTUATION INSTRUMENTATION**

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**REQUEST FOR CHANGE TO TECHNICAL SPECIFICATIONS
RECIRCULATION PUMP TRIP ACTUATION INSTRUMENTATION**

1. DESCRIPTION

The proposed amendment would revise the Hope Creek Technical Specifications contained in Appendix A to the Operating License to change selected surveillance test intervals (STIs) and allowed out-of-service times (AOTs) for end-of-cycle (EOC) recirculation pump trip (RPT) system instrumentation.

2. PROPOSED CHANGE

Technical Specification 3/4.3.4.2, "End-of-Cycle Recirculation Pump Trip System Instrumentation," and its associated bases would be changed such that:

- A. The AOT for surveillance testing specified in Note (a) of Table 3.3.4.2-1 is extended from 2 hours to 6 hours.
- B. The AOT for maintenance is extended from 1 hour to 12 hours.
- C. The channel functional test requirements specified in Table 4.3.4.2.1-1 are changed from monthly to quarterly for the following trip functions:
 - 1. Turbine Stop Valve - Closure
 - 2. Turbine Control Valve - Fast Closure
- D. Bases Section 3/4.3.4 is revised to include a reference to General Electric Company (GE) Licensing Topical Report (LTR) GENE-770-06-1-A which describes the basis for the proposed changes.

The marked up Technical Specification pages are included in Attachment 2.

3. BACKGROUND

The RPT system functions to trip the recirculation pumps in the event of a turbine trip, generator trip, or load rejection above a preset level of reactor power. This reduces the impact on the fuel from thermal transients caused by these events. The rapid core flow reduction increases void content and thereby introduces negative reactivity in conjunction with control rod insertion initiated by the reactor protection system (RPS).

The RPT is initiated by signals common to the RPS (turbine stop valve closure and turbine control valve fast closure). The STIs and AOTs for the RPS trip functions were evaluated in Reference 2 as part of an effort by the Boiling Water Reactor (BWR) Owners' Group to minimize unnecessary testing and excessively

restrictive out-of-service times that could potentially degrade overall plant safety and availability. The NRC approved changes to the Hope Creek Technical Specifications (Reference 3) which extended the RPS AOTs and changed the channel functional test surveillance frequency from monthly to quarterly for certain RPS trip functions (including turbine stop valve closure and turbine control valve fast closure).

In accordance with Technical Specification Table 4.3.4.2.1-1, the channel functional tests for the RPT trip functions are currently required to be performed monthly. This is inconsistent with the requirements for RPS trip function testing.

4. TECHNICAL ANALYSIS

The proposed amendment would extend the EOC-RPT AOTs and change the channel functional test surveillance frequency from monthly to quarterly.

The effect of the proposed changes was evaluated in Reference 1 which concluded that overall plant safety is not degraded. Any increase in unavailability of the EOC-RPT trip functions was shown to be very small and was justified in light of the benefits associated with similar approved STI and AOT changes for the RPS trip functions. The benefits include reductions in the potential for unnecessary plant scrams, excessive equipment testing cycles and diversion of plant personnel and resources.

In a Safety Evaluation Report dated July 21, 1992 (Reference 4), the NRC accepted Reference 1 as an acceptable basis for extending STIs and AOTs for EOC-RPT system actuation instrumentation. The NRC also stated that licensees requesting approval for plant-specific application of the changes described in Reference 1 are required to meet two conditions discussed below.

1. Confirm the applicability of the generic analyses of GENE-770-06-1 to the plant.

PSEG reviewed the applicable portions of GENE-770-06-1 and concluded the generic analyses are applicable to Hope Creek.

2. Confirm that any increase in instrument drift due to the extended STIs is properly accounted for in the setpoint methodology.

In Reference 5, the NRC staff provided the following additional guidance on addressing this requirement:

To address the setpoint drift issue in the amendment proposals to extend STIs, licensees need only confirm that the setpoint drift which could be expected under the extended STIs has been studied and either (1) has been

shown to remain within the existing allowance in the RPS and ESFAS instrument setpoint calculation or (2) that the allowance and setpoint have been adjusted to account for the additional expected drift.

The calibration interval for the EOC-RPT system actuation instrumentation is eighteen months. Therefore instrument drift is unaffected by the proposed change to the STIs from monthly to quarterly. In addition, PSEG reviewed the most recent as-found calibration data for the EOC-RPT system actuation instrumentation and confirmed instrument drift is within acceptable limits.

The proposed changes provide consistency with already approved STI and AOT changes to the RPS Technical Specifications. The NRC approved similar changes for the Limerick Generating Station, Units 1 and 2 (TAC Nos. M86507 and M86508), the Brunswick Steam Electric Plant, Units 1 and 2 (TAC Nos. M90794 and M90795) and the Nine Mile Point Nuclear Station, Unit 2 (TAC No. M85168).

5. REGULATORY SAFETY ANALYSIS

5.1 No Significant Hazards Consideration

PSEG Nuclear LLC (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 amendment would extend the allowed out-of-service times (AOTs) and surveillance test intervals (STIs) for the end of cycle recirculation pump trip (EOC-RPT) instrumentation system. No changes are being made to any EOC-RPT instrumentation setpoints or components. The effect of the proposed changes is to reduce the potential for unnecessary plant scrams or transients. The proposed changes were evaluated in General Electric Company Topical Report GENE-770-06-1-A which concluded that they do not result in a degradation in overall plant safety.

Since the proposed changes do not affect any accident initiator and since the EOC-RPT instrumentation will remain capable of performing its design

function,, 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.

Extending the AOTs and STIs for the EOC-RPT instrumentation does not change the design function or operation of any plant equipment. Additionally, no new modes of plant operation are involved with these changes.

Therefore, the proposed changes do 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.

No changes are being made to any plant instrumentation setpoints or to the required level of redundancy. The proposed changes were evaluated in General Electric Company Topical Report GENE-770-06-1-A which concluded that they do not result in a degradation in overall plant safety.

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

Based on the above, PSEG concludes that the proposed changes present 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

The basis for the proposed changes is described in Reference 1. The NRC determined the analysis described in Reference 1 provides adequate justification for extending EOC-RPT instrumentation AOTs and STIs, provided the plant specific conditions listed in Reference 2 are met. As described in Section 4 of this attachment, PSEG has determined that the generic analysis in Reference 1 is applicable to Hope Creek, and that any increase in instrument drift is properly accounted for.

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. ENVIRONMENTAL CONSIDERATION

PSEG has determined 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 a surveillance requirement. 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 criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), an environmental assessment of the proposed change is not required.

7. REFERENCES

1. GENE-770-06-1-A, "Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications," dated December 1992.
2. NEDC-30851P-A, "Technical Specification Improvement Analyses for BWR Reactor Protection System," March 1988.
3. Amendment No. 26, Facility Operating License No. NPF-57, July 5, 1989 (TAC No. 72699).
4. Safety Evaluation by the Office of Nuclear Reactor Regulation, "Review of BWR Owners Group Report GENE-770-06-1, on Justification for Extending Surveillance Test Intervals and Allowed Out-of-Service Times for Selected BWR Actuation Instrumentation," July 21, 1992.
5. Letter from C. E. Rossi (NRR) to R. F. Janecek (BWROG), "Staff Guidance for Licensee Determination that the Drift Characteristics for Instrumentation Used in RPS Channels are Bounded by NEDC-30851P Assumptions When the Functional Test Interval is Extended from Monthly to Quarterly," April 27, 1988.

**HOPE CREEK GENERATING STATION
FACILITY OPERATING LICENSE NPF-57
DOCKET NO. 50-354
REVISIONS TO THE TECHNICAL SPECIFICATIONS**

TECHNICAL SPECIFICATION PAGES WITH PROPOSED CHANGES

The following Technical Specifications for Facility Operating License No. NPF-57 are affected by this change request:

| <u>Technical Specification</u> | <u>Page</u> |
|--------------------------------|-------------|
| 3.3.4.2 | 3/4 3-45 |
| Table 3.3.4.2-1 | 3/4 3-47 |
| Table 4.3.4.2.1-1 | 3/4 3-50 |
| Bases 3/4.3.4 | B 3/4 3-3 |

INSTRUMENTATION

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.4.2 The end-of-cycle recirculation pump trip (EOC-RPT) system instrumentation channels shown in Table 3.3.4.2-1 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.4.2-2 and with the END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM RESPONSE TIME as shown in Table 3.3.4.2-3.

APPLICABILITY: OPERATIONAL CONDITION 1, when THERMAL POWER is greater than or equal to 30% of RATED THERMAL POWER.

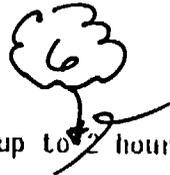
ACTION:

- a. With an end-of-cycle recirculation pump trip system instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.4.2-2, declare the channel inoperable until the channel is restored to OPERABLE status with the channel setpoint adjusted consistent with the Trip Setpoint value.
- b. With the number of OPERABLE channels one less than required by the Minimum OPERABLE Channels per Trip System requirement for one or both trip systems, place the inoperable channel(s) in the tripped condition within ~~one hour~~. 
- c. With the number of OPERABLE channels two or more less than required by the Minimum OPERABLE Channels per Trip System requirement for one trip system and:
 1. If the inoperable channels consist of one turbine control valve channel and one turbine stop valve channel, place both inoperable channels in the tripped condition within ~~one hour~~. 
 2. If the inoperable channels include two turbine control valve channels or two turbine stop valve channels, declare the trip system inoperable.
- d. With one trip system inoperable, restore the inoperable trip system to OPERABLE status within 72 hours or take the ACTION required by Specification 3.2.3.
- e. With both trip systems inoperable, restore at least one trip system to OPERABLE status within one hour or take the ACTION required by Specification 3.2.3.

TABLE 3.3.4.2-1

END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION

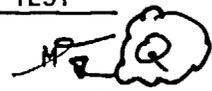
| <u>TRIP FUNCTION</u> | <u>MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM^(a)</u> |
|---------------------------------------|--|
| 1. Turbine Stop Valve - Closure | 2(b) |
| 2. Turbine Control Valve-Fast Closure | 2(b) |



(a) A trip system may be placed in an inoperable status for up to 2 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.

TABLE 4.3.4.2.1-1END-OF-CYCLE RECIRCULATION PUMP TRIP SYSTEM SURVEILLANCE REQUIREMENTS

| <u>TRIP FUNCTION</u> | <u>CHANNEL FUNCTIONAL TEST</u> | <u>CHANNEL CALIBRATION</u> |
|---------------------------------------|---|--------------------------------|
| 1. Turbine Stop Valve-Closure |  | R |
| 2. Turbine Control Valve-Fast Closure |  | R |

INSTRUMENTATION

BASES

3/4.3.4 RECIRCULATION PUMP TRIP ACTUATION INSTRUMENTATION

The anticipated transient without scram (ATWS) recirculation pump trip system provides a means of limiting the consequences of the unlikely occurrence of a failure to scram during an anticipated transient. The response of the plant to this postulated event falls within the envelope of study events in General Electric Company Topical Report NEDO-10349, dated March 1971, NEDO-24222, dated December 1979, and Section 15.8 of the FSAR.

The end-of-cycle recirculation pump trip (EOC-RPT) system is an essential safety supplement to the reactor trip. The purpose of the EOC-RPT is to recover the loss of thermal margin which occurs at the end-of-cycle. The physical phenomenon involved is that the void reactivity feedback due to a pressurization transient can add positive reactivity to the reactor system at a faster rate than the control rods add negative scram reactivity. Each EOC-RPT system trips both recirculation pumps, reducing coolant flow in order to reduce the void collapse in the core during two of the most limiting pressurization events. The two events for which the EOC-RPT protective feature will function are closure of the turbine stop valves and fast closure of the turbine control valves.

A fast closure sensor from each of two turbine control valves provides input to the EOC-RPT system; a fast closure sensor from each of the other two turbine control valves provides input to the second EOC-RPT system. Similarly, a position switch for each of two turbine stop valves provides input to one EOC-RPT system; a position switch from each of the other two stop valves provides input to the other EOC-RPT system. For each EOC-RPT system, the sensor relay contacts are arranged to form a 2-out-of-2 logic for the fast closure of turbine control valves and a 2-out-of-2 logic for the turbine stop valves. The operation of either logic will actuate the EOC-RPT system and trip both recirculation pumps.

Each EOC-RPT system may be manually bypassed by use of a keyswitch which is administratively controlled. The manual bypasses and the automatic Operating Bypass at less than 30% of RATED THERMAL POWER are annunciated in the control room.

The EOC-RPT system response time is the time assumed in the analysis between initiation of valve motion and complete suppression of the electric arc, i.e., 175 ms. Included in this time are: the response time of the sensor, the time allotted for breaker arc suppression (135 ms @ 100% RTP), and the response time of the system logic.

Operation with a trip set less conservative than its Trip Setpoint but within its specified Allowable Value is acceptable on the basis that the difference between each Trip Setpoint and the Allowable Value is an allowance for instrument drift specifically allocated for each trip in the safety analyses.

INSERT A

Insert A

Specified surveillance intervals and surveillance and maintenance outage times have been determined in accordance with GENE-770-06-1-A, "Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications," December 1992.