

Public Service  
Electric and Gas  
Company

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Vice President - Nuclear Operations

NLR-N93155  
LCR 93-13 Rev. 1  
OCT 06 1993

United States Nuclear Regulatory Commission  
Document Control Desk  
Washington, D.C. 20555

Gentlemen:

REVISION TO REQUEST FOR LICENSE AMENDMENT  
HOPE CREEK GENERATING STATION  
FACILITY OPERATING LICENSE NO. NPF-57  
DOCKET NO. 50-354

By letter dated May 18, 1993 (NLR-N93067), Public Service Electric and Gas Company (PSE&G) submitted a request for amendment of Facility Operating License NPF-57 for the Hope Creek Generating Station in accordance with the requirements of 10CFR50.90. This amendment request proposes to change the Technical Specification surveillance requirements for the Reactor Coolant Recirculation System jet pumps consistent with General Electric SILs 330 and 517.

Per telecon with the NRC Licensing Project Manager, PSE&G has revised this amendment request to clarify the footnote associated with Technical Specification 3.4.1.2. The revised footnote would allow single loop operation baseline data to be recorded the first time the unit enters single loop operation. Two loop operation baseline data will continue to be collected during startup following any refueling outage. The basis for a no significant hazards consideration determination was not impacted as a result of this revision to the proposed amendment.

A description of the revised amendment, supporting information and analyses for the change and the basis for a no significant hazards consideration determination are provided in Attachment 1. The Technical Specification pages affected by the proposed change are marked-up in Attachment 2.

Pursuant to the requirements of 10CFR50.91(b)(1), PSE&G has provided a copy of this amendment request to the State of New Jersey.

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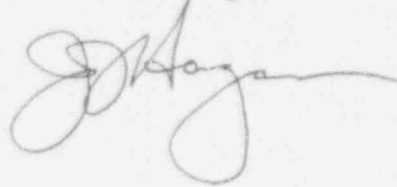
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Upon NRC approval of the proposed change, PSE&G requests that the amendment be made effective upon issuance, but implementable within 60 days to provide sufficient time for associated administrative activities.

Should you have any questions regarding this request, please do not hesitate to contact us.

Sincerely,



Attachments  
Affidavit

C Mr. T. T. Martin, Administrator - Region I  
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475 Allendale Road  
King of Prussia, PA 19406

Mr. M. Davis, Licensing Project Manager  
U. S. Nuclear Regulatory Commission  
One White Flint North  
11555 Rockville Pike  
Rockville, MD 20852

Mr. C. S. Marschall (S09)  
USNRC Senior Resident Inspector

Mr. Kent Tosch, Manager, IV  
NJ Department of Environmental Protection  
Division of Environmental Quality  
Bureau of Nuclear Engineering  
CN 415  
Trenton, NJ 08625


STATE OF NEW JERSEY            )  
  ) SS.  
COUNTY OF SALEM                )

J. J. Hagan, being duly sworn according to law deposes and says:

I am Vice President - Nuclear Operations of Public Service Electric and Gas Company, and as such, I find the matters set forth in the above referenced letter, concerning the Hope Creek Generating Station, are true to the best of my knowledge, information and belief.



Subscribed and Sworn to before me  
this 10th day of October, 1993

  
Notary Public of New Jersey

My Commission expires on \_\_\_\_\_  
KIMBERLY JO BROWN  
NOTARY PUBLIC OF NEW JERSEY  
My Commission Expires April 21, 1998

ATTACHMENT 1

PROPOSED TECHNICAL SPECIFICATION CHANGE

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

## I. Description of Change

This amendment request proposes that existing Surveillance Requirements of Technical Specification 4.4.1.2, Reactor Coolant Recirculation System Jet Pumps, be revised such that:

- The acceptance criteria for the indicated diffuser-to-lower plenum differential pressure of any individual jet pump has been increased from 10% to 20% from established patterns. This change is applicable to both two loop and single loop operation.
- During single loop operation, the surveillance requirement to demonstrate operability of the jet pumps at least once every 24 hours has been clarified to be applicable only to the jet pumps for the operating loop.
- The footnote (\*) associated with Technical Specification 4.4.1.2 that requires the gathering of baseline data for two loop or single loop operation during startup following any refueling outage is proposed to be deleted, and the following revised footnote added:

"\*During startup following any refueling outage, baseline data shall be recorded for the parameters listed to provide a basis for establishing the specified relationships. Comparisons of the actual data in accordance with the criteria listed shall commence upon conclusion of the baseline data analysis. Single loop baseline data shall be recorded the first time the unit enters single loop operation during an operating cycle."

## II. Reason for the Proposed Change

Increasing the acceptable limit for the indicated diffuser-to-lower plenum differential pressure of any individual jet pump from 10% to 20% for both two loop and single loop operation is consistent with the recommendations of General Electric SIL 330. GE SIL 330 recommends a value of 20% due to the turbulence in the jet pump diffuser where the flow measurement pressure tap is located.

During single loop operation, the surveillance requirement to demonstrate operability of the jet pumps at least once every 24 hours has been clarified to be applicable only to the jet pumps for the operating loop. The Surveillance Requirement is to be performed only when the loop has forced recirculation flow which is necessary to detect significant

degradation in jet pump performance. Without forced flow, the inactive jet pump diffuser-to-lower plenum D/P is too low a value causing difficulty in satisfying the surveillance requirements. This proposed change is consistent with the recommendations of General Electric SIL 517.

Revision of the footnote (\*) associated with Technical Specification 4.4.1.2 that requires the gathering of baseline data for two loop or single loop operation during startup following any refueling outage is proposed. This proposed amendment would eliminate the requirement to trip and restart the recirculation pumps at power during plant startup. Baseline data will continue to be collected during startup following a refueling outage in accordance with plant operating procedures for two loop operation. Single loop operation data will not be collected during startup following a refueling outage, but will be collected the first time single loop operation is entered during an operating cycle.

### III. Justification for the Proposed Change

Technical Specification Surveillance Requirement 4.4.1.2 requires verification of the integrity of the jet pumps in two loop and single loop recirculation pump operation. The bases for this Surveillance Requirement is to ensure that the core can be reflooded to about two thirds of the core height following a Design Basis Loss of Coolant Accident (LOCA). The requirement ensures that the removable portion of the jet pump between the top of the internal riser and the diffuser is intact. General Electric SIL 330 indicates that surveillance of the jet pumps will provide a warning several days in advance of possible jet pump disassembly due to lock plate saddle fatigue. Jet pump performance degradation could adversely affect the water level in the core during the reflood phase of a LOCA as well as the blowdown flow during a LOCA.

Increasing the acceptance criteria from 10% to 20% for the diffuser-to-lower plenum differential pressure of any individual jet pump is described in General Electric SIL 330. Due to the turbulence in the jet pump diffuser where the flow measurement pressure tap is located, the differential pressure signal (D/P) is extremely noisy when the pump is in operation. Attempts have been made to filter the noise in the differential pressure instrumentation. However, some noise is still transmitted causing constant motion of the individual jet pump D/P indicators. Therefore, GE SIL 330 recommends a criteria of 20% when measuring diffuser-to-lower plenum D/P.

During single recirculation loop operation, the jet pumps are required to be demonstrated OPERABLE at least once per 24 hours. This amendment proposes to clarify that surveillance testing of the jet pumps in the operating loop only will be performed during single loop operation. The Surveillance Requirement acceptance criteria was developed to detect significant degradation in jet pump performance that precedes jet pump failure. During single loop operation, the stresses applied to the jet pump beam that holds the removable portion of jet pump in place is much less when the jet pumps are inactive than when the pumps are operating. If the jet pump was found operable in accordance with the criteria of Technical Specification Surveillance Requirement 4.4.1.2 before entering single loop operation, degradation of the jet pumps when the loop is inactive is considered unlikely. This surveillance can only be performed when forced recirculation loop flow is present. Without forced flow, the inactive jet pump diffuser-to-lower plenum D/P is too low a value causing difficulty in satisfying the surveillance requirement. In addition, surveillance testing of the inactive loop is not considered necessary in accordance with the recommendations of General Electric SIL 517.

The footnote for Technical Specification 4.4.1.2 is proposed to be revised. The baseline data for two loop operation will be collected as before during startup following a refueling outage. This baseline data will be an indication of changes in core resistance, pump hydraulic performance, jet pump fouling and resistance changes in the bottom head, separators and downcomer annulus.

Single loop operation baseline data will not be collected during startup following a refueling outage. Single loop data will be collected the first time single loop operation is initiated during a fuel cycle. New baseline data will then be collected for the operating loop. This proposed amendment would eliminate the requirement to trip and restart the recirculation pumps at power during plant startup. Baseline data collected during previous operating cycles will initially be utilized to confirm operability in accordance with the Surveillance Requirement acceptance criteria. Previous operating cycle baseline data will be utilized until new baseline data analysis can be completed. This data, as well as baseline data taken for two loop operation and surveillances performed during two loop operation to detect possible jet pump degradation, will provide the same degree of confidence that jet pump integrity will be maintained. A review of previous



operating cycle baseline data for single loop operation has shown very little change in the D/P from cycle to cycle.

#### IV. Significant Hazards Consideration

PSE&G has, pursuant to 10CFR50.92, reviewed the proposed changes to determine whether our request involves a significant hazards consideration. We have determined that operation of Hope Creek Generating Station in accordance with the proposed change:

1. Will not involve a significant increase in the probability or consequences of an accident or malfunction of equipment important to safety previously evaluated.

Increasing the acceptance criteria from 10% to 20% for the diffuser-to-lower plenum D/P of any individual jet pump is consistent with the recommendations of GE SIL 330.

This criterion, along with the other criteria of Surveillance Requirement 4.4.1.2, will ensure that possible jet pump degradation is detected.

Degradation of an inactive jet pump during single loop operation is not considered credible due to significantly reduced stresses applied to the jet pump beam. Surveillance testing of the operating jet pumps and any surveillance testing completed prior to removing a recirculation loop from operation will continue to ensure that jet pump integrity is maintained. This will ensure that the core can be reflooded to a level of two thirds of the core height following a LOCA.

Baseline data collection will be performed when single loop operation is entered for the first time during an operating cycle. Previous operating cycle baseline data for single loop operation will be utilized until new baseline data analysis can be completed. This previous data, along with surveillance results taken during two loop operation will provide the same degree of confidence that jet pump integrity is maintained. This will ensure that the core can be reflooded to a level of two thirds of the core height following a LOCA.

Therefore, the operation of Hope Creek Generating Station in accordance with the proposed amendment will not involve a significant increase in the probability or consequences of an accident or malfunction of equipment important to safety previously evaluated.



2. Will not create the possibility of a new or different kind of accident from any previously evaluated.

The proposed amendment to the jet pump surveillance requirements will continue to ensure that any significant jet pump degradation will be detected prior to jet pump failure. Failure of an inactive jet pump located in an inactive recirculation loop during single loop operation is not considered credible as discussed above. Therefore, the possibility of a new or different kind of accident previously evaluated is not created.

3. Will not involve a significant reduction in a margin of safety.

The proposed amendment to the jet pump surveillance requirements will continue to ensure that any significant jet pump degradation will be detected prior to jet pump failure. Jet pump integrity will be maintained thereby assuring the ability to allow reflooding of the core to a level of two-thirds core height during the reflood phase of a LOCA as well as maintain the assumed blowdown flow during a LOCA.

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

#### Conclusion

Based upon the above, we have determined that the proposed amendment does not involve a Significant Hazards Consideration.

ATTACHMENT 2

INSERTS AND MARKED-UP PAGES

REQUEST FOR LICENSE AMENDMENT  
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