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United States Nuclear Regulatory Commission
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**INSERVICE INSPECTION PROGRAM
RELIEF REQUEST HC-RR-B08
HOPE CREEK GENERATING STATION
FACILITY OPERATING LICENSES NPF-57
DOCKET NOS. 50-354**

Pursuant to 10 CFR 50.55a(a)(3)(i), PSEG Nuclear, LLC is submitting inservice relief request HC-RR-B08 for NRC approval.

This relief request is for the ultrasonic examination of the Reactor Pressure Vessel (RPV) nozzle to vessel welds and is expected to reduce personnel radiation exposure and examination time, which translates to significant cost savings while still providing an acceptable level of quality and safety.

PSEG Nuclear, LLC requests to reduce the examination volume to one half inch from the widest part of the RPV nozzle to vessel weld in lieu of the examination volume requirements of Figures IWB-2500-7 (a) and (b) ASME Section XI, 1989 Edition, which is $t/2$.

The NRC Final Rule amending 10CFR50.55a establishes the requirements for the conduct of the ultrasonic examination and requires PSEG Nuclear to implement Appendix VIII titled "Performance Demonstration for Ultrasonic Examination Systems," American Society of Mechanical Engineers (ASME) Section XI, Division 1, 1995 Edition with the 1996 Addenda, with modifications as stated in the Final Rule.

This relief request is applicable to PSEG Nuclear LLC Hope Creek Generating Station. PSEG Nuclear requests that the NRC approve this request by April 2003 in order to support Hope Creek refueling outage RFO11 scheduled to commence April 12, 2003. Similar relief was granted for Salem Units 1 and 2 [Docket Numbers 50-272 and 50-311 via approved TAC numbers MB1228 and MB3048, dated April 26, 2001 and December 26, 2001, respectively].

Should you have any questions regarding this request, please contact Mr. Howard Berrick at 856-339-1862.

Sincerely,

A handwritten signature in black ink, appearing to read "G. Salamon", written over a horizontal line.

G. Salamon
Manager – Nuclear Safety and Licensing

Attachment:
ISI Relief Request HC-RR-B08

AD47

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1. **ASME Code Component(s) Affected**

Hope Creek, ASME Section XI, Class 1, Reactor Pressure Vessel (RPV) Nozzle-to-Vessel welds

2. **Applicable Code Edition and Addenda**

The code of record for Hope Creek ISI Program is Section XI of the ASME Code, 1989 Edition.

3. **Applicable Code Requirement**

ASME Code, Section XI, 1989 Edition; Table IWB-2500-1, Examination Category B-D Full Penetration Welds of Nozzles in Vessels. Code Item B3.90, Figure IWB-2500-7 (a) & (b), for defining the examination volume requirements, and ASME Code Section XI 1995 Edition, 1996 Addenda Appendix 1 as required by 10CFR.50.55a for the UT examination requirements.

4. **Proposed Alternative**

Pursuant to 10CFR50.55a(a)(3)(i), PSEG Nuclear LLC (PSEG) requests relief from the $t/2$ examination volume requirements of Figures IWB-2500-7 (a) and (b). PSEG Nuclear proposes to use the reduced volume to one-half (1/2) inch from the widest part of the weld, in lieu of requirements of ASME Section XI Figures IWB-2500-7 (a) and (b).

The following proposed alternatives provide an acceptable level of quality and safety:

- 1) PSEG Nuclear proposes to use the reduced examination volume defined above in lieu of the required volume specified in Table IWB-2500-1 Category B-D of the 1989 Edition of ASME XI.
- 2) Perform examinations in accordance with ASME Code, Section XI, Div. 1, 1995 Edition, 1996 Addenda, Appendix VIII Supplement VII
- 3) Periodic system pressure tests per Category B-P, Table IWB-2500-1

5. **Basis of Alternative for Providing Acceptable Level of Quality and Safety**

PSEG Nuclear, Hope Creek is currently required to perform inservice examinations of selected welds in accordance with the requirements of 10CFR50.55a, Plant Technical Specifications, and the 1989 American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI, Rules for In-Service Inspection of Nuclear Power Plant Components.

Proposed Alternative In Accordance with 10 CFR 50.55a(a)(3)(i)
-- Alternative Provides Acceptable Level of Quality and Safety --

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The Code invokes the $(t_s/2)$ examination volume requirements of Figures IWB-2500-7 (a) and IWB-2500-7 (b).

The examination volume for the RPV pressure retaining nozzle-to-vessel welds extend far beyond the weld into the base metal, and is unnecessarily large. This increases the examination time significantly, and results in no net increase in safety, as the area being examined is base metal region which is not prone to inservice cracking and has been extensively examined during construction, preservice examination and during the first inservice examinations with acceptable results. Creation of flaws during plant service is unlikely due to the low stresses in the base metal away from the weld. Stresses caused by welding are concentrated at and near the weld. This relief request would reduce the examination volume next to the widest part of the weld from one half of the vessel wall thickness to one half (1/2") inch.

The reduction of the examination will reduce examination time, which translates to significant cost savings and reduce personnel radiations exposure.

The UT examination of the RPV vessel to nozzle welds will be performed as they have been in previous examinations, from the vessel shell. The examination will utilize Appendix VIII Supplements 4, 6 & 7 as modified by 10CFR50.55a.

6. Duration of Proposed Alternative

Proposed alternative relief is requested for the duration of the second ten-year ISI interval at Hope Creek.

7. Precedents

Previous relief has been granted for Salem Units 1 and 2 [Docket Numbers 50-272 and 50-311 via approved TAC numbers MB1228 and MB3048, dated April 26, 2001 and December 26, 2001, respectively].

Proposed Alternative In Accordance with 10 CFR 50.55a(a)(3)(i)
-- Alternative Provides Acceptable Level of Quality and Safety --