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United States Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Gentlemen:

**INSERVICE INSPECTION PROGRAM
RELIEF REQUEST RR-B8
SALEM GENERATING STATION – UNIT 1
FACILITY OPERATING LICENSES DPR-70
DOCKET NOS. 50-272**

Pursuant to 10CFR50.55a(a)(3)(i), PSEG Nuclear requests to use the alternative requirements of Code Case N-613 "Ultrasonic Examination of Full Penetration Nozzles, Examination Category B-D, Item No's. B3.10 and B3.90, Reactor Vessel-To-Nozzle Welds, Fig. IWB-2500-7 (a), (b), and (c), Section XI, Division 1" for the reduced examination volume (A-B-C-D-E-F-H) Figures 1 & 2 in lieu of Section XI, 1983 Edition 1983 Summer Addenda Examination Category B-D Full Penetration Welds of Nozzles in Vessels

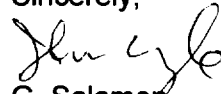
This relief request is applicable to the Salem Unit 1, 10-year second interval vessel examination scheduled for the spring of 2001. The use of Code Case N-613 for the examination of Reactor Pressure Vessel (RPV) nozzle-to-vessel welds is expected to reduce personnel radiation exposure and reduce examination time, which translates to significant cost savings.

The attachment to this letter includes the proposed alternative and supporting justification for the relief. Based on the evaluation contained in the attachment, PSEG Nuclear has concluded that the proposed alternative provides an acceptable level of quality and safety. Accordingly, this proposal satisfies the requirements of 10 CFR 50.55a(a)(3)(i).

PSEG Nuclear requests that the NRC approve this relief request by April, 2001 in order to support the Salem Unit 1 outage currently scheduled to begin April 7, 2001.

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

Sincerely,


for G. Salamon
Manager – Licensing

Attachment: ISI Relief Request No. RR-B8

AD47

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**PSEG NUCLEAR LLC
SALEM GENERATING STATION
ISI RELIEF REQUEST RR-B8**

COMPONENT DESCRIPTION:

Salem Unit 1, Class 1 Reactor Pressure Vessel (RPV) Nozzle-to-Vessel welds.

ASME CODE CLASS:

ASME Section XI Class 1

ASME EXAMINATION REQUIREMENTS:

ASME Boiler and Pressure Vessel Code, Section XI, Rules for Inservice Inspection of Nuclear Power Plant Components, 1983 Edition including 1983 Summer Addenda; Table IWB-2500-1, Examination Category B-D, Full Penetration Welds of Nozzles in Vessels, Code Item B3.90, Figure IWB-2500-7(a) and (b) for defining the examination volume and Article 4 of Section V for the Ultrasonic examination.

In addition PSEG Nuclear had committed to implement Alternative A to Regulatory Guide 1.150, Rev. 1 "Ultrasonic Testing Of Reactor Pressure Vessel (RPV) Welds During Preservice and Inservice Examinations" as regulatory guidance for the UT examination of RPV welds.

RELIEF REQUESTED:

Pursuant to 10CFR50.55a(a)(3)(i), PSEG Nuclear requests relief from the $t_s/2$ examination volume requirements of Figures IWB-2500-7(a) and (b). Additionally, PSEG Nuclear requests relief from the requirement to perform the ultrasonic examination in accordance with Article 4 of Section 5 of the ASME Boiler and Pressure Vessel Code.

This relief is requested for the Salem Unit 1, 10-year 2nd interval vessel examination scheduled for the spring of 2001.

BASIS FOR RELIEF:

PSEG Nuclear, Salem Unit 1 is currently required to perform in-service examinations of selected welds in accordance with the requirements of 10CFR50.55a, Plant Technical Specifications, and the 1983 Edition 1983 Summer Addenda of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI, Rules for In-Service Inspection of Nuclear Power Plant Components. The Code invokes the ($t_s/2$) examination volume requirements of Figures IWB-2500-7 (a) and (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 extends the examination time significantly, and results in no net increase in safety, as the area being examined is a base metal region which is not prone to in-service cracking and has been extensively examined during construction, pre-service examination, and during the first in-service 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. Code Case N-613 reduces the

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examination volume next to the widest part of the weld from half of the vessel wall thickness to one-half ($\frac{1}{2}$) inch.

The implementation of the examination volume requirements of Code Case N-613 will reduce examination time, which translates to significant cost savings and reduce personnel radiation exposure.

The UT examination of the RPV vessel-to-nozzle weld will be performed both from the vessel shell and from the nozzle bore to ensure full code required through volume examination coverage. The portion of the **examination from the vessel shell** will be conducted utilizing Appendix VIII Supplement 4 & 6 as amended by the Final Rule in Federal Register Notice 64FR 51370 dated September 22, 1999 in lieu of Article 4 of Section V, which will enable PSEG Nuclear to use a Performance Demonstration Initiative (PDI) qualified procedure, personnel and equipment for the examination.

In addition to the **examination from the vessel wall**, a UT examination from the nozzle bore will be performed per the requirements of Article 4 of Section V and the subsequent guideline requirements of Reg. Guide 1.150 Rev 1. Currently there are no PDI qualified procedures for the bore examination of the nozzle to vessel weld. The Final Rule requires implementation of Appendix VIII Supplement 7 "Qualification Requirements for Nozzle-To-Vessel Weld" by November 22, 2002. In Supplement 7 and as amended in the Final Rule, both Supplement 4 and 6 will be required, at that time.

The use of a qualified UT procedure implementing Supplement 4 and 6 for the portion of the examinations conducted from the vessel shell will save time on the RPV since this would be the same procedure and set up as used for the adjacent welds.

ALTERNATIVE EXAMINATIONS

1. Perform examinations in accordance with Code Case N-613 for the reduced ($\frac{1}{2}$ inch) examination volume.
2. ASME Section XI, Div. 1, 1995 Edition, 1996 Addenda, Appendix VIII Supplement 4 & 6 as amended by the Federal Register Notice 64FR 51370 dated September 22, 1999, for the portion of the examination conducted from the vessel shell.