

SEP 20 2001



LRN-01-0307

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

Gentlemen:

**INSERVICE INSPECTION PROGRAM  
RELIEF REQUEST S2-RR-B03  
SALEM GENERATING STATION – UNIT 2  
FACILITY OPERATING LICENSE DPR-75  
DOCKET NOS. 50-311**

Pursuant to 10CFR50.55a(a)(3)(i), PSEG Nuclear is submitting Inservice Inspection (ISI) relief request S2-RR-B03 for NRC approval.

The attached relief request relates to the NRC Final Rule amending 10 CFR 50.55a, as published in the Federal Register on September 22, 1999 (64 FR 51370). This rulemaking requires PSEG Nuclear to implement Appendix VIII titled, "Performance Demonstration for Ultrasonic Examination Systems," to the American Society of Mechanical Engineers (ASME) Section XI, Division 1, 1995 Edition with the 1996 Addenda, with modifications as stated in 10 CFR 50.55a(b)(2)(xiv, xv, and xvi).

PSEG Nuclear requests to reduce the examination volume to ½ inch from the widest part of the weld in lieu of the examination volume requirements of Figures IWB-2500-7 (a) and (b) ASME Section XI, 1983 Edition 1983 Summer Addenda Examination Category B-D Full Penetration Welds of Nozzles in Vessels.

PSEG Nuclear requests NRC approval by April 1<sup>st</sup>, 2002, as this relief request is applicable to the Salem Unit 2, 10-year second interval vessel examination scheduled for the spring of 2002. The use of a reduced volume 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.

Similar relief was granted for Salem Unit 1 (TAC No. MB1228) in a Nuclear Regulatory Commission (NRC) Safety Evaluation dated April 26, 2001.

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).

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

Sincerely,  
  
G. Salamon  
Manager – Nuclear Safety and Licensing

Attachment: ISI Relief Request S2-RR-B03

A047

C Mr. H. Miller  
Regional Administrator - Region I  
U. S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, PA 19406

Mr. R. Fretz  
Licensing Project Manager - Salem  
U. S. Nuclear Regulatory Commission  
One White Flint North  
Mail Stop 08B2  
11555 Rockville Pike  
Rockville, MD 20852

USNRC Senior Resident Inspector - Salem (X24)

Mr. K. Tosch, Manager IV  
Bureau of Nuclear Engineering  
P. O. Box 415  
Trenton, NJ 08625

**PSEG NUCLEAR LLC  
SALEM GENERATING STATION  
ISI RELIEF REQUEST S2-RR-B03**

COMPONENT DESCRIPTION:

Salem Unit 2, 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, 1986 Edition; Table IWB-2500-1, Examination Category B-D, Full Penetration Welds of Nozzles in Vessels, Code Item B3.90, Figures 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 ASME Section XI, Figures IWB-2500-7 (a) and (b)

Additionally, PSEG Nuclear requests relief from ASME Section V, Article 4 for the performance of the required volumetric examinations as specified in Table IWB-2500-1 Category B-D of the 1986 Edition of ASME Section XI.

This relief is requested for the Salem Unit 2, 10-year 2<sup>nd</sup> interval vessel examination scheduled for the spring of 2002.

BASIS FOR RELIEF:

PSEG Nuclear, Salem Unit 2 is currently required to perform in-service examinations of selected welds in accordance with the requirements of 10CFR50.55a, Plant Technical Specifications, and the 1986 Edition 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.

The implementation of this request for relief would reduce the examination volume next to the widest part of the weld from half of the vessel wall thickness to one-half ( $1/2$ ) inch from the weld. This reduction is applicable to base metal examination volume that was extensively interrogated during the construction and preservice inspections and is not located in the high stressed areas of the nozzle-to-vessel weld. The high stressed areas are included in the examination volume as defined above and are subject to examination.

**PSEG NUCLEAR LLC  
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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 and 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

PSEG Nuclear proposes to use the reduced volume of one-half ( $\frac{1}{2}$ ) inch from the weld, in lieu of the requirements of ASME Section XI Figures IWB-2500-7 (a) and (b).

PSEG Nuclear proposes to use the alternative requirements defined above in lieu of ASME Section V, Article 4 for the performance of the required volumetric examinations as specified in Table IWB-2500-1 Category B-D of the 1986 Edition of ASME Section XI.

PSEG Nuclear will perform examinations in accordance with ASME Code, Section XI, Div. 1, 1995 Edition, 1996 Addenda, Appendix VIII Supplement 4 and 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.

The extent of examination coverage proposed, along with the demonstrated ultrasonic technique and periodic system pressure tests, will provide added assurance that the Reactor Vessel welds have remained free of service related flaws, therefore providing an acceptable level of quality and safety.