



Public Service Electric and Gas Company P.O. Box 236 Hancocks Bridge, New Jersey 08038-0236

Nuclear Business Unit

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

Gentlemen:

**INSERVICE INSPECTION PROGRAM  
RELIEF REQUEST RR-B6  
HOPE CREEK AND SALEM GENERATING STATIONS  
FACILITY OPERATING LICENSES DPR-70, DPR-75, AND NPF-57  
DOCKET NOS. 50-272, 50-311, AND 50-354**

Pursuant to 10 CFR 50.55a(a)(3), Public Service Electric and Gas Company (PSE&G) requests relief from a requirement of Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code for the Hope Creek and Salem Generating Stations. Specifically, as an alternative to the length sizing criterion in ASME Section XI, 1995 Edition, 1996 Addenda, Appendix VIII, Supplement 4, Subparagraph 3.2(b), PSE&G proposes to use a length sizing qualification criterion of 0.75 inch root mean square error (RMSE).

The attachment to this letter includes the proposed alternative and supporting justification for the relief. Based on the evaluation contained in the attachment, PSE&G has concluded that the proposed alternative provides an acceptable level of quality and safety. Accordingly, the proposed alternative satisfies the requirements of 10 CFR 50.55a(a)(3)(i). The NRC has approved a similar request for the Davis-Besse Nuclear Power Station.

PSE&G requests that the NRC approve this relief request by October 1, 2000 in order to support the Salem Unit 2 outage currently scheduled to begin October 7, 2000.

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

Sincerely,

G. Salamon  
Manager – Licensing

Attachment: ISI Relief Request No. RR-B6

A047

The power is in your hands.

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

Mr. J. Harrison  
Licensing Project Manager - Hope Creek  
U. S. Nuclear Regulatory Commission  
One White Flint North  
Mail Stop 8B1  
11555 Rockville Pike  
Rockville, MD 20852

Mr. R. Fretz  
Licensing Project Manager - Salem  
U. S. Nuclear Regulatory Commission  
One White Flint North  
Mail Stop 4D3  
11555 Rockville Pike  
Rockville, MD 20852

USNRC Senior Resident Inspector - HC (X24)

USNRC Senior Resident Inspector - Salem (X24)

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

**HOPE CREEK AND SALEM GENERATING STATIONS  
ISI RELIEF REQUEST RR-B6**

**COMPONENT DESCRIPTION:**

ASME Section XI, Class 1, Examination category B-A, Item no. B1.10 reactor pressure vessel (RPV) longitudinal and circumferential shell welds and B1.20 RPV head welds subject to Appendix VIII, Supplement 4 examination

**ASME CODE CLASS:**

ASME Section XI Class 1

**ASME EXAMINATION REQUIREMENTS:**

10 CFR 50.55a(b)(2) was amended (64 FR 51370) to reference Section XI of the Code through the 1995 Edition with the 1996 Addenda. ASME Section XI, 1995 Edition, 1996 Addenda, Appendix VIII, Supplement 4, Subparagraph 3.2(b), length sizing qualification criteria, requires that flaw lengths estimated by ultrasonics be the true length  $-\frac{1}{4}$  inch  $+1$  inch. As amended, 10 CFR 50.55a(b)(2)(xv)(C)(1) requires a depth sizing acceptance criterion of 0.15 inch root mean square (RMS) be used in lieu of the requirements in Subparagraph 3.2(b) to Supplement 4 to Appendix VIII of Section XI of the 1995 Edition with 1996 Addenda of the Code.

**RELIEF REQUESTED:**

Relief is requested in accordance with 10 CFR 50.55a(a)(3)(i), to use a length sizing qualification criteria of 0.75 inch root mean square error (RMSE). These examinations will be performed during the second inspection intervals for Salem Unit Nos. 1 and 2 and for Hope Creek.

**BASIS FOR RELIEF:**

Revisions to 10 CFR 50.55a published September 22, 1999 require licensees to implement ASME Code Section XI, Division I, Appendix VIII, "Performance Demonstration for Ultrasonic Examination Systems." The final rule requires Supplement 4 to Appendix VIII to be implemented by November 22, 2000. Supplement 4, Subparagraph 3.2(b) requires flaw lengths estimated by ultrasonics be the true length  $-\frac{1}{4}$  inch  $+1$  inch. Paragraph 10 CFR 50.55a(b)(2)(xv)(C)(1) of the final rule changed Subparagraph 3.2(b) to a depth sizing requirement of 0.15 inch RMS. The Performance Demonstration Initiative (PDI) program uses a length sizing tolerance of 0.75 inch RMS in lieu of the requirements in Subparagraph 3.2(b). The NRC staff has acknowledged that Paragraph 10 CFR 50.55a(b)(2)(xv)(C)(1) in the final rule is in error and should actually be a length sizing tolerance of 0.75 inch RMS, the same tolerance used in the PDI program.

U.S. nuclear utilities created the PDI to address the requirements of Appendix VIII in an efficient, cost-effective and technically sound manner. The NRC performed an assessment of the PDI program in 1995 and reported that PDI was using a length

sizing tolerance of 0.75 inch RMS for RPV performance demonstrations. This criterion was introduced to reduce testmanship (passing the test based on manipulation of results rather than skill). The NRC staff noted in its assessment report dated March 6, 1996 (Reference 1) that the length sizing tolerance was not in accord with Appendix VIII but did not take exception to PDI's implementation of the 0.75 inch RMS length sizing tolerance. The staff requested that the length sizing difference between PDI and the Code be resolved.

ASME Code Case N-622, "Ultrasonic Examination of RPV and Piping, Bolts and Studs, Section XI, Division 1," was developed to resolve the differences between the PDI program and the code requirements. The 0.75 inch RMS length sizing tolerance is included in Appendix IV to Code Case N-622. While the NRC incorporated most of Code Case N-622 in the final rule published September 22, 1999, the 0.75-inch RMS length sizing tolerance was omitted from 10 CFR 50.55a(b)(2)(xv)(C)(1). In a January 12, 2000 conference call with NRC Staff, PDI identified the omission of the length sizing tolerance. The NRC staff concurred that the omission was an oversight. The inclusion of a depth sizing tolerance in reference to Paragraph 3.2(b) of Supplement IV to Appendix VIII was an error.

The NRC granted similar relief for St. Lucie Plant Unit 2 in a safety evaluation dated September 23, 1999, and for the Davis-Besse Nuclear Power Station in a safety evaluation dated March 24, 2000 (TAC No. MA8294).

#### **ALTERNATIVE EXAMINATIONS**

In lieu of the length sizing requirements in ASME Section XI, 1995 Edition, 1996 Addenda, Appendix VIII, Supplement 4, Subparagraph 3.2(b), a length sizing qualification criterion of 0.75 inch RMSE will be used.

#### **REFERENCES:**

1. NRC Assessment of the PDI Program, Jack R. Strosnider, Chief Materials and Chemical Engineering Branch, to Bruce J. Sheffel, Chairman, PDI, March 6, 1996, Table 2, Item 94-005, p34.
2. Meeting Summary, Teleconference between NRC and representatives from PDI, D.G.Naujock, Metallurgist, NDE & Metallurgy Section, to Edmund J. Sullivan, Chief NDE & Metallurgy Section, Chemical Engineering Branch, Division of Engineering, U.S. NRC, March 6, 2000.