

Robert G. Byram
Senior Vice President and
Chief Nuclear Officer

PPL Susquehanna, LLC
Two North Ninth Street
Allentown, PA 18101-1179
Tel. 610.774.7502 Fax 610.774.5019
rgbyram@pplweb.com



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U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
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**SUSQUEHANNA STEAM ELECTRIC STATION
PROPOSED RELIEF REQUEST NO. RR-19 TO
THE SECOND 10-YEAR INSERVICE INSPECTION
PROGRAM FOR SUSQUEHANNA SES UNITS 1&2
PLA-5245**

Docket Nos. 50-387
and 50-388

The purpose of this letter is to request relief pursuant to the requirements of 10 CFR 50.55a(a)(3)(i) based upon acceptable alternatives and the requirements of ASME Section XI, 1995 Edition, 1996 Addenda, Appendix VIII, Supplement 4, Subparagraph 3.2(b) as imposed by 10 CFR 50.55a(b)(2), (64 FR 51370). Subparagraph 3.2(b) specifies the length sizing qualification criterion for flaw lengths estimated by ultrasonics for longitudinal and circumferential shell welds and head welds. Relief is requested to use a length sizing qualification criterion of 0.75 inch Root Mean Square Error (RMSE) for category B-A, Item No. B1.10 longitudinal and circumferential shell welds and B1.20 head welds subject to Appendix VIII, Supplement 4, examination.

NRC amended 10 CFR 50.55a(b)(2) to reference Section XI of the ASME Code (Code) through the 1995 Edition with the 1996 Addenda (64 FR 51370). ASME Section XI, 1995 Edition, 1996 Addenda, Appendix VIII, Supplement 4, Subparagraph 3.2(b), length sizing qualification criterion requires that flaw lengths estimated by ultrasonics be the true length - ¼ 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 instead of the requirements of Subparagraph 3.2(b) to Supplement 4 to Appendix VII of Section XI of the 1995 Addenda of the Code.

There is a difference between Supplement 4 to Appendix VIII, Paragraph 10 CFR 50.55a(b)(2)(xv)(C)(1) in the rule, and the implementation of Supplement 4 by the Performance Demonstration Initiative Program (PDI). Supplement 4, Subparagraph 3.2(b) imposed a flaw sizing tolerance of -¼ inch, +1 inch of the true length to the performance demonstration qualification criteria. The rule changed Subparagraph 3.2(b)

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to a depth sizing requirement of 0.15 inch RMS, and the PDI program uses a length sizing tolerance of 0.75 inch RMS for paragraph 3.2(b). The NRC staff acknowledged that Paragraph 10 CFR 50.55a(b)(2)(xv)(C)(1) in the rule was an error and should actually be a length sizing tolerance of 0.75 inch RMS, the same tolerance that was being implemented by the PDI program.

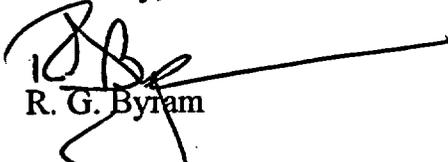
In lieu of the length sizing requirements of the ASME Code Section XI, 1995 Edition, 1996 Addenda, Appendix VIII, Supplement 4, Subparagraph 3.2(b), PPL Susquehanna, LLC proposes to use a length sizing qualification criterion of 0.75 inch RMS. We believe that the alternative criterion provides an adequate level of safety assurance while meeting the intent for regular inspections as prescribed in the Code.

This Relief Request is similar to the following requests approved by the NRC:

- Public Service Electric and Gas, LLC for Hope Creek Generating Station submitted 7/28/2000 and approved 9/14/2000.
- First Energy Nuclear Operating Company for Davis-Besse Nuclear Power Station submitted 3/24/2000 and approved 7/31/2000.
- Southern Nuclear Operating Company for Edwin I. Hatch Nuclear Plant submitted 6/15/2000 and approved 9/14/2000.

We request that this relief request be approved by January 15, 2001, in order to support the Unit 2 10th Refuel Outage that is scheduled to begin in March 2001. Should you have any questions, please contact C. T. Coddington at (610) 774-4019.

Sincerely,


R. G. Byram
Attachment

Copy: Regional Administrator – Region I
Mr. S. L. Hansell, NRC Sr. Resident Inspector
Mr. R. G. Schaaf, NRC Sr. Project Manager

**PPL SUSQUEHANNA, LLC
SUSQUEHANNA SES, UNITS 1 AND 2
SECOND 10-YEAR INTERVAL
REQUEST FOR RELIEF No. 19**

SYSTEM/COMPONENT(S) FOR WHICH RELIEF IS REQUESTED

ASME Section XI, Class 1, Examination category B-A, Item no. B1.10 longitudinal and circumferential shell welds and B1.20 Head welds subject to Appendix VIII, Supplement 4, examination.

CODE REQUIREMENTS

10 CFR 50.55a(b)(2) was amended to reference Section XI of the Code through the 1995 Edition with the 1996 Addenda (64 FR 51370). 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 - 1/4 inch +1 inch. As amended, 10 CFR 50.55a(b)(2)(xv)(C)(1) requires a depth sizing acceptance criteria of 0.15 inch root mean square (RMS) be used in lieu of the requirements of Subparagraphs 3.2(b) to Supplement 4 to Appendix VII of Section XI of the 1996 Addenda of the Code. Subparagraph 3.2(c) contains addition requirements for statistical parameters.

RELIEF REQUESTED

Pursuant to 10 CFR 50.55a(a)(3)(i) relief is requested to use a length sizing qualification criteria of 0.75 inch Root Mean Square Error (RMSE) in lieu of subparagraph 3.2(b), and to use the RMSE calculations of 3.2(a) and 3.2(b) in lieu of the statistical parameters of 3.2(c). These examinations will be performed during the second 10-year inspection interval.

BASIS FOR RELIEF

On January 12, 2000, NRC staff, representatives from the Electric Power Research Institute (EPRI) Nondestructive Examination Center, and representatives from the Performance Demonstration Initiative (PDI) participated in a conference call. The discussion during the conference call included the difference between Supplement 4, "Qualification Requirements for the Clad/Basemetal Interface of Reactor Vessel," to Appendix VIII, "Performance Demonstration for Ultrasonic Examination Systems," Paragraph 10 CFR 50.55a(b)(2)(xv)(C)(1) in the rule (Federal Register, 64 FR 51370), and the implementation of Supplement 4 by the PDI Program Supplement 4, Subparagraph 3.2(b) imposed a flaw sizing tolerance of -1/4 inch, +1.0 inch of the true length to the performance demonstration qualification criteria. The rule changed

Subparagraph 3.2(b) to a depth sizing requirement of 0.15 inch RMS, and the PDI program uses a length sizing tolerance of 0.75 in RMS for paragraph 3.2(b). The NRC staff acknowledged that Paragraph 10 CFR 50.55a(b)(2)(xv)(C)(1) in the rule was an error and should actually be a length sizing tolerance of 0.75 inch RMS, the same tolerance that was being implemented by the PDI program.

In a public meeting on October 11, 2000 at NRC offices in White Flint, MD, the PDI identified the discrepancy between the Subparagraph 3.2(c) and the PDI program. The NRC agrees that Paragraph 10 CFR 50.55a(b)(2)(xv)(C)(1) should have excluded Subparagraph 3.2(c) as a requirement.

The U.S. nuclear utilities created the PDI to implement demonstration requirements contained in Appendix VIII. PDI developed a performance demonstration program for qualifying UT techniques. In 1995, the NRC staff performed an assessment of the PDI program and reported that PDI was using a length sizing tolerance of 0.75 inch RMS for reactor pressure vessel performance demonstrations. This criterion was introduced to reduce testmanship (passing the test based on manipulation of results rather than skill). The staff noted in the assessment report dated, March 6, 1996, that the length sizing tolerance was not according to 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.

The solution for resolving the differences between the PDI program and the Code was for PDI to participate in development of a Code case that reflected PDI's program. The Code case was presented to ASME for discussion and consensus building. NRC representatives participated in this process. ASME approved the Code case and published it as Code Case N-622, "Ultrasonic Examination of RPV and Piping, Bolts and Studs, Section XI, Division 1."

Operating in parallel with the actions of PDI, the staff incorporated most of Code Case N-622 criteria in the rule published in the Federal Register, 64 FR 51370. Appendix IV to Code Case N-622 contains the proposed alternative sizing criteria, which has been authorized by the staff. The staff agrees that the omission of the length sizing tolerance of 0.75 inch RMS in the rule and the inclusion of the statistical parameters of Paragraph 3.2(c) of Supplement 4 to Appendix VIII was an oversight. The staff will correct the error in an upcoming rule.

ALTERNATIVE EXAMINATION

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

IMPLEMENTATION SCHEDULE

PPL Susquehanna, LLC requests this relief request be approved by January 15, 2001, in order to support the Unit 2 10th Refuel Outage that is scheduled to begin in March 2001. This relief will remain in effect for the duration of the second 10-year interval of the Inservice Inspection Program for Susquehanna SES Units 1 & 2 (June 1, 2004).

REFERENCE

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.

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.

NRC staff's letter to Mr. T. F. Plunkett, Florida Power and Light Company dated September 23, 1999.