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Docket Number 50-346

License Number NPF-3

Serial Number 2699

March 27, 2001

United States Nuclear Regulatory Commission  
Document Control Desk  
Washington, D.C. 20555-0001

Subject: Request for Relief from an American Society of Mechanical Engineers Boiler  
and Pressure Vessel Code Inservice Inspection Requirement at the Davis-Besse  
Nuclear Power Station (RR-A23)

Ladies and Gentlemen:

The purpose of this letter is to request relief pursuant to 10 CFR 50.55a(a)(3) from a Section XI requirement of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (BPV) Code at the Davis-Besse Nuclear Power Station (DBNPS). 10 CFR 50.55a, as amended by the Federal Register Notice 64 FR 51370, dated September 22, 1999, requires implementation of Appendix VIII, "Performance Demonstration for Ultrasonic Examination Systems," Supplement 4 of the 1995 Edition, 1996 Addenda of ASME Section XI prior to November 22, 2000. Supplement 4 imposes qualification requirements for procedures, equipment and personnel involved in performing ultrasonic examinations. The FirstEnergy Nuclear Operating Company (FENOC) used Supplement 4 of Appendix VIII during examinations of the DBNPS Reactor Vessel conducted during the Twelfth Refueling Outage in April 2000.

The Performance Demonstration Initiative (PDI) is an organization of U.S. nuclear utilities that was formed for the purpose of developing an efficient, cost-effective, and technically sound means of implementing ultrasonic examination performance demonstration requirements. The PDI has worked with the ASME BPV Code Committee in developing Supplement 4. Paragraph 2.4.1 in the summary of comments issued with the above cited Federal Register notice stated that the PDI requirements are directly contained in paragraph 10 CFR 50.55a(b)(2)(xv) of the revised 10 CFR 50.55a. However, during

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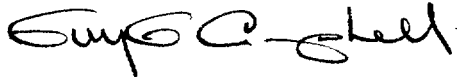
discussions held on October 11, 2000, between the NRC Staff, PDI, and representatives from the Electric Power Research Institute (EPRI), a discrepancy was noted in that 10 CFR 50.55a(b)(2)(xv)(C)(1) does not exclude ASME Section XI, Appendix VIII, Supplement 4, Subparagraph 3.2(c). The NRC acknowledged this discrepancy and agreed to review 10 CFR 50.55a(b)(2)(xv)(C)(1) for possible revision to exclude Subparagraph 3.2(c) as a requirement.

Accordingly, enclosed is DBNPS Relief Request RR-A23 which requests relief from the inappropriate statistical parameter requirements of 10 CFR 50.55a(b)(2)(xv) that invoke Subparagraph 3.2(c) in Supplement 4 to Appendix VIII of the 1995 Edition, 1996 Addenda of ASME BPV Code Section XI. As an alternative, FENOC proposes use of Code Case N-622, "Ultrasonic Examination of RPV and Piping, Bolts and Studs, Section XI, Division 1", Appendix IV, Section 3.2 for qualification of examination equipment using the PDI qualification process. Relief is requested from the NRC in accordance with 10 CFR 50.55a(a)(3)(i) in that the proposed alternative would provide an acceptable level of quality and safety.

Approval of this relief request is requested by October 12, 2001.

Should you have any questions or require additional information, please contact Mr. David H. Lockwood, Manager-Regulatory Affairs, at (419) 321-8450.

Sincerely yours,



RMC/dlc

Enclosure

cc: J. E. Dyer, Regional Administrator, NRC Region III  
S. P. Sands, DB-1 NRC/NRR Project Manager  
K. S. Zellers, DB-1 Senior Resident Inspector  
Utility Radiological Safety Board

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**RELIEF REQUEST  
RR-A23**

**Component Description:**

ASME Section XI, Examination Category B-A, Item No. B1.11, Reactor Vessel Circumferential Shell Welds; B1.21, Reactor Vessel Circumferential Head Welds; and B1.30, Reactor Vessel Shell-to-Flange Weld, subject to Appendix VIII, Supplement 4, examination.

[Relief Request RR-A20 (submitted by FENOC letter Serial Number 2622 dated November 13, 1999, and supplemented by FENOC letter Serial Number 2694 dated March 24, 2001) requested relief to apply the requirements of Appendix VIII, Supplement 4 to the Reactor Vessel Shell-to-Flange Weld because ASME Section XI does not specify that Appendix VIII requirements are applicable to this weld.]

**ASME Code Class:**

ASME Section XI, Class 1

**ASME Examination Requirements:**

10 CFR 50.55a(b)(2) was amended to reference Section XI of the ASME Boiler and Pressure Vessel (BPV) 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(c) requires performance demonstration results satisfy the statistical parameters specified in Subparagraph 3.2(c).

**Basis for Relief:**

During the Twelfth Refueling Outage in April 2000, the DBNPS Reactor Vessel Circumferential Shell Welds, Reactor Vessel Circumferential Head Welds, and Reactor Vessel Shell-to-Flange Weld were examined. The examination equipment was qualified to the requirements of Appendix VIII, Supplement 4 using the Performance Demonstration Initiative (PDI) protocol. The PDI protocol does not use the statistical parameters of Appendix VIII, Supplement 4, Subparagraph 3.2(c) for the qualification of this examination equipment.

Pursuant to 10 CFR 50.55a(a)(3)(i) relief is requested to use the Root Mean Square Error (RMSE) calculations of Code Case N-622, Appendix IV, Paragraph 3.2 in lieu of the statistical parameters of Appendix VIII, Supplement 4, Subparagraph 3.2(c). The use of a

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length sizing acceptance criterion of 0.75 inch RMS was previously requested (FENOC letter Serial Number 2644 dated February 27, 2000) and approved by the NRC in Relief Request RR-A21 (TAC No. MA8294, FENOC Log Number 5645).

The United States nuclear utilities created the PDI to implement the performance demonstration requirements contained in ASME Section XI, Appendix VIII. During the development of PDI, exceptions were taken to the requirements of Appendix VIII. The solution for resolving the differences between the PDI program and the ASME Code was PDI's participation in development of a Code Case that reflected PDI's program. The Code Case was presented to the ASME BPV Code Committee for discussion and consensus building. NRC representatives participated in this process. The ASME BPV Code Committee 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." Code Case N-622, Appendix IV, paragraph 3.2 does not require the use of statistical parameters for the performance demonstration acceptance criteria. The NRC has previously approved the use of Code Case N-622 for Florida Power and Light Company's St. Lucie Plant Unit 2 (TAC No. MA5041).

In a public meeting on October 11, 2000, at the NRC offices in White Flint, Maryland, the PDI identified the discrepancy between the PDI program and Subparagraph 3.2(c). As noted in the NRC meeting minutes, the NRC acknowledged the cited discrepancy and agreed to review 10 CFR 50.55a(b)(2)(xv)(C)(1) for possible revision to exclude Subparagraph 3.2(c) as a requirement.

This relief is proposed to be effective until 10 CFR 50.55a(b)(2)(xv)(C)(1) is revised by the NRC to exclude Subparagraph 3.2(c) as a requirement.

#### **Alternative Examination:**

In lieu of ASME Section XI, Appendix VIII, Subparagraph 3.2(c) requirements, ASME Code Case N-622, Appendix IV, Paragraph 3.2 will be applied for qualification of examination equipment using the PDI qualification process. As discussed above, the use of Code Case N-622, Appendix IV, Paragraph 3.2 provides an acceptable level of quality and safety, thereby satisfying the requirements for the NRC to grant approval in accordance with 10 CFR 50.55a(a)(3)(i).

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### **COMMITMENT LIST**

The following list identifies those actions committed to by the Davis-Besse Nuclear Power Station (DBNPS) in this document. Any other actions discussed in the submittal represent intended or planned actions by the DBNPS. They are described only for information and are not regulatory commitments. Please notify the Manager - Regulatory Affairs (419-321-8450) at the DBNPS of any questions regarding this document or associated regulatory commitments.

#### **COMMITMENTS**

#### **DUE DATE**

None