



Richard A. Muench  
Vice President Technical Services

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U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555

- References:
- 1) Letter WM 87-0097, dated March 20, 1987, from B. D. Withers, WCNOC, to USNRC
  - 2) Letter dated November 12, 1987, from USNRC to B. D. Withers, WCNOC
- Subject: Docket 50-482: Inservice Inspection Program Alternative for Limited Examination on Feedwater Nozzle to Steam Generator Shell Weld, Relief Request I2R-23

Gentlemen:

In accordance with 10 CFR 50.55a(a)(3)(i), Wolf Creek Nuclear Operating Corporation (WCNOC) hereby requests Nuclear Regulatory Commission (NRC) approval for the use of an alternative to the requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, Inservice Inspection Program.

Attachment I describes Relief Request I2R-23 to the WCNOC Second Interval Inservice Inspection Program Plan. This relief request is applicable to the "A" Steam Generator feedwater nozzle to shell weld, EBB01A-11-W. A complete examination could not be performed on this weld because of the physical geometry of the weld joint and nozzle design.

During Refuel X, a significant portion of the required volume of the subject weld was successfully examined, which would provide detection of significant patterns of degradation. Considering the significant portion of weld coverage during Refuel X, WCNOC proposes that performing the examinations to the fullest extent practical provides an acceptable level of quality and safety as required by 10 CFR 50.55a(a)(3)(i).

A similar relief request for the same weld for WCNOC's first ten-year interval was submitted by Reference 1 and was approved by Reference 2.

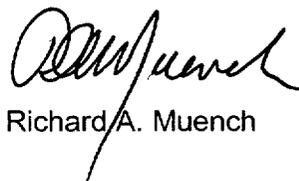
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WCNOC requests approval of this relief request by January 1, 2003. The approval date was administratively selected to allow for NRC review, but NRC approval by this date is not required to allow continued safe full power operation or to conduct a refueling outage.

Attachment II contains a list of commitments made in this letter.

If you have any questions concerning this matter, please contact me at (620) 364-4034, or Mr. Tony Harris at (620) 364-4038.

Very truly yours,



Richard A. Muench

RAM/pb

Attachments

cc: J. N. Donohew (NRC), w/a  
W. D. Johnson (NRC), w/a  
E. W. Merschoff (NRC), w/a  
Senior Resident Inspector (NRC), w/a

## RELIEF REQUEST I2R-23

### **Component Identification:**

Code Class: 2  
Examination Category: C-B  
Item Number: C2.21  
Description: Steam Generator Feedwater Nozzle to Shell Welds.  
There is one Feedwater Nozzle to Shell Weld per Steam Generator; WCNOG has four Steam Generators.

### **Weld Identification Number:**

EBB01A-11-W ("A" Steam Generator)

### **Examination Requirements:**

The Wolf Creek Nuclear Operating Corporation (WCNOG) Second Interval Inservice Inspection (ISI) Program Plan is prepared to the 1989 Edition of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, Section XI. From Table IWC-2500-1, the non-destructive exams required for this weld are surface and volumetric. ASME Section XI, Figure IWC-2500-4(a) illustrates the required examination surface area and volume, respectively. Per Note (4) of Table IWC-2500-1, for multiple vessels of similar design, the required exams may be limited to one vessel.

ASME Section V, 1989 Edition, Article 4, Paragraph T-441.3.2, specifies that the volume illustrated in Figure IWC-2500-4(a) be scanned by straight and angle beam techniques. The angle technique scans shall generally have nominal angles of 45 degrees and 60 degrees. The examination volume must be scanned with the angle beam search units directed both at right angles to the weld axis (perpendicular to the weld) and along the weld axis (parallel to the weld).

### **Relief Requested:**

Pursuant to 10 CFR 50.55a(a)(3)(i) and 10 CFR 50.55a(g)(6)(i), relief is requested to conduct alternative examinations as described below.

### **Basis for Alternative and Relief:**

Pursuant to 10 CFR 50.55a(a)(3)(i), relief is requested on the basis that a reasonable percentage of the weld has been examined using available technology and techniques.

Pursuant to 10 CFR 50.55a(g)(6)(i), relief is requested on the basis that conformance with the Code requirements is impractical. In order to achieve the Code required examinations, the steam generator nozzle would have to be redesigned and refabricated.

*Background from WCNOG ISI Program, Interval 1*

### RELIEF REQUEST I2R-23

In Reference 1, the NRC evaluated WCNOC's first interval incomplete volumetric exam for the subject weld. At that time, the NRC concluded that the limited exam of the subject weld provided an acceptable level of safety and that compliance with the Code requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

#### *WCNOC ISI Program Interval 2*

100 per cent of the Code required surface exam was completed during Refuel X.

The steam generator feedwater nozzle to shell weld design and configuration prevents 100 per cent ultrasonic (UT) examination of the Code required volume for the subject weld. Physical limitations are due to nozzle forging and weld joint geometry. Due to these limitations, the examination of the weld required volume can only be performed from the shell side of the joint. Figure 1 provides a representation of the joint. Once the transducer shoe passes point A shown on Figure 1, liftoff is experienced, and the 0 degree and parallel scans become invalid.

#### Inspection Volume Coverage Summary:

A one sided exam from the shell side using a 45 degree search unit on the perpendicular scans was completed. A full vee exam was performed, providing complete coverage from two directions.

A one sided exam from the shell side using a 60 degree search unit on the perpendicular scans was completed from one direction. A full vee exam could not be performed due to the WCNOC calibration block not being physically long enough to support a full vee calibration.

Parallel scans and 0 degree scans of the subject weld are impractical due to joint configuration, and effective coverage is 0 per cent.

There were no recordable indications noted during the performance of these examinations.

#### *Additional Technical Considerations*

The WCNOC steam generators were designed and fabricated in accordance with the stringent quality controls of ASME Section III. During fabrication, the ASME Section III required volumetric and surface examinations were performed on these specific welds with acceptable results.

Based on this information, reasonable assurance of the continued inservice structural integrity of the subject welds is achieved without performing a complete Code examination. Compliance with the applicable Code requirements can only be accomplished by re-designing and re-fabricating the steam generator nozzle. WCNOC deems this course of action impractical.

WCNOC considers that the use of the proposed alternative examinations described below will provide an acceptable level of quality and safety as required by 10 CFR 50.55a(a)(3)(i).

## RELIEF REQUEST I2R-23

### **Proposed Alternative Examinations:**

- 1) The steam generator feedwater nozzle to shell weld has been examined to the fullest extent practical. WCNOG proposes that the completed examinations be considered an acceptable alternative to the Code requirements.
- 2) Periodic System Leakage Tests per Category C-H, Table IWC-2500-1, provide additional verification of component integrity.

### **Period for which Relief is Requested:**

Relief is requested for the second ten-year interval of the WCNOG Inservice Inspection Program. This interval ends in 2005.

### **Implementation Schedule:**

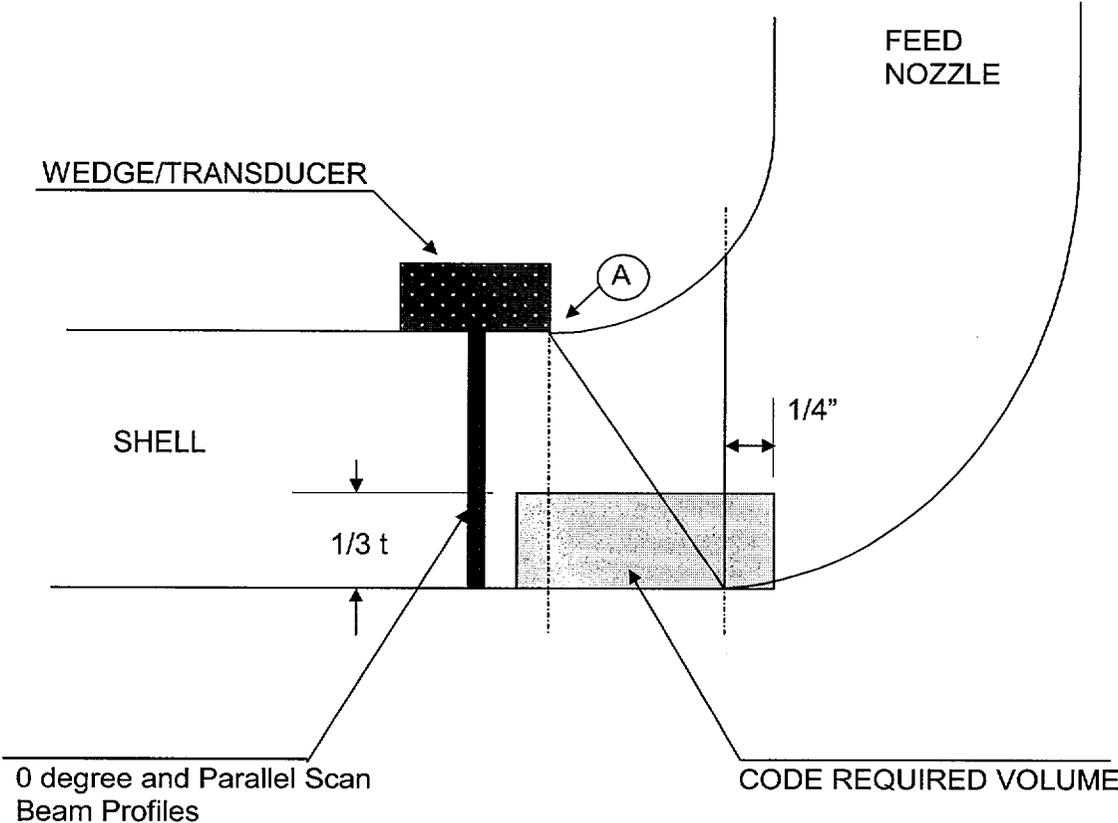
This relief request will be implemented within 60 days of approval.

WCNOG requests approval of this relief request by January 1, 2003.

RELIEF REQUEST I2R-23

FIGURE 1

Steam Generator Feedwater Nozzle to Shell Weld Configuration  
(Not to Scale)



### LIST OF COMMITMENTS

The following table identifies those actions committed to by Wolf Creek Nuclear Operating Corporation (WCNOC) in this document. Any other statements in this submittal are provided for information purposes and are not considered to be commitments. Please direct questions regarding these commitments to Mr. Tony Harris, Manager Regulatory Affairs at Wolf Creek Generating Station, (620) 364-4038.

<b>COMMITMENT</b>	<b>Due Date/Event</b>
The relief request will be implemented within 60 days of approval.	Within 60 days of approval of the relief request.