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July 25, 2000

U.S. Nuclear Regulatory Commission
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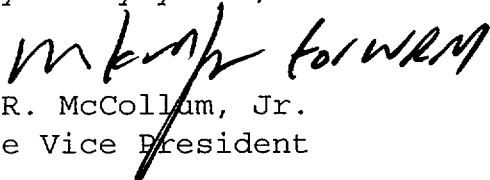
Subject: Duke Energy Company
Oconee Nuclear Station, Unit 2
Docket Nos. 50-270
Third Ten Year Inservice Inspection Interval
Request for Relief No. 00-01

On March 16, 2000, Duke Energy (Duke) submitted Request for Relief No. 00-01 pursuant to 10 CFR 50.55a(g)(6)(i). This relief requested credit for limited ultrasonic examinations on specific welds identified in the request, in conjunction with hydrostatic tests and VT-2 visual inspections. The request was necessary because the ultrasonic examination coverages could not achieve the 90% examination requirements of Code Case N-460 during examination of the subject Unit 2 welds in our recent outage.

Subsequent telephone discussions with the NRC staff revealed the need for additional information. The NRC's questions and Duke's answers are attached.

If there are any further questions, please contact R. P. Todd at (864) 885-3418.

Very truly yours,


W. R. McCollum, Jr.
Site Vice President

Attachment

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U. S. Nuclear Regulatory Commission

July 25, 2000

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xc w/att:

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Attachment 1
ONS Relief Request 00-01
NRC Questions And Duke Answers
July 25, 2000

1. Q. The submittal references Figure IWB-2500-7 for the examination volume. What specific figure in IWB-2500-7 (a), (b), (c) or (d) applies to the configuration of each pressurizer nozzle-to-vessel weld, steam generator nozzle-to-vessel weld, and steam generator nozzle inner radius?

A. The appropriate figure is IWB-2500-7 (a) for the pressurizer nozzle-to-vessel weld, and steam generator nozzle-to-vessel welds; and is IWB-2500-7 (b) for the steam generator nozzle inner radius.

2. Q. The submittal requests relief from the requirements in ASME Section V, Article 4 and ASME Section XI Appendix I. What specific paragraph(s) under ASME Section V, Article 4 and ASME Section XI, Appendix I is the licensee seeking relief for nozzle inner radius sections?

A. The reference to ASME Section V, Article 4 for the nozzle inner radius was an editorial error. The nozzle inner radius is examined in accordance with ASME Section V, Article 4, Paragraph T-441.3.2.1. However, relief is being sought from the requirement to examine 100% of the volume M-N-O-P shown in IWB-2500-7 (b).

3. Q. The submittal identifies pressurizer nozzle-to-vessel weld examinations as being performed to Appendix I and Appendix VIII. How does Appendix VIII fit into the examinations? Do Appendix VIII personnel and procedures also satisfy the 1989 Edition of the Code?

A. On July 20, 1999 Duke submitted Relief Request 99-GO-001 seeking approval to use Code Case N-622 for the welds mentioned in this relief request (00-01). After review of the NRC final rulemaking published in the Federal Register on

Attachment 1

Relief Request 00-01 Questions and Answers (Continued)

September 22, 1999, which states that Appendix VIII will become mandatory after November 22, 1999, Duke determined that relief was no longer needed. Consequently, Duke withdrew Request for Relief 99-GO-001 by letter dated September 29, 1999.

Duke had qualified a procedure, personnel and equipment through the Performance Demonstration Initiative (PDI) early in 1999. The procedure applies to ferritic vessels greater than 2 inches in thickness up to a maximum thickness of 7.5 inches. The pressurizer head nominal thickness is 4.75 inches, which is within the range of the qualified procedure. The examination was performed from the vessel plate OD surface that corresponds to the surface scanned during the procedure qualification. The only difference in the scanning surface geometry was the difference in curvature between the qualification specimen and the pressurizer head (117 inches radius vs. 50 inches radius). Using ASME Section XI, Appendix I, Supplement 3 and ASME Section V, Article 5, Appendix A, for guidance, these curvatures are essentially flat.

4. Q. Explain the coverage differences between Relief Request 90-01 and Relief Request 00-01 for similar welds. If necessary, use sketches to show the differences. Relief Request 96-01 was granted in a letter to J. W. Hampton, Duke Power Company, from H. N. Berkow, NRC dated December 13, 1996.

A. The differences are the result of using the Appendix VIII procedure vs. the standard ASME Section V, Article 4 methodology. Duke Energy's Appendix VIII procedure requires only two beam angles covering different volumes from four directions. A procedure based on ASME Section V, Article 4 requires coverage of the weld with two beam angles from four directions and coverage of the base material with one beam angle from four directions as a minimum. Coverage of the examination volume with a straight beam search unit is also required (See Figures 1 and 2). The nozzle-to-head configuration allows scanning from only one side. Consequently, no beam angle or combination of beam angles completely covers the required volume. Only the base material on the vessel plate side receives four directional coverage.

Attachment 1
Relief Request 00-01 Questions and Answers (Continued)

5. Q. Describe the coverage achieved for the steam generator inner nozzle radius (2-SGB-WG25) for the Second 10-year interval. Explain any differences in coverage between the Second 10-year interval and Request For Relief (RR) 00-01. Use sketches if necessary. Reference any applicable safety evaluation.

A. There is no difference between the amount of coverage obtained during the second and third intervals. The coverage obtained during the second interval for the inside radius of weld 2SGB-WG25 was reported as 74%. In response to this question, Duke reassessed the examination records from 1994 for the same scan for Unit 3 and noted that the coverage should have been reported as 70%. There was apparently an error in the calculations due to the inspector using the inside diameter of the nozzle-to-pipe weld instead of using the inside diameter of the inside radius for the steam generator inlet nozzle. The examination coverage documented in RR 00-01 adequately depicts the examination coverage obtained.

6. Q. Describe the coverage achieved for the steam generator nozzle-to-vessel weld (2-SGB-WG25) for the Second 10-year interval. Explain any differences in coverage between the Second 10-year interval and RR 00-01. Use sketches if necessary. Reference any applicable safety evaluation.

A. There is no difference between the amount of coverage obtained during the second and third intervals. The coverage obtained during the second interval for weld 2SGB-WG25 was reported as 49%. In response to this question, Duke reassessed the examination records from 1992 for the same scan for Unit 3 and noted that the coverage should have been reported as 58%. The error was attributed to the inspector oversizing the examination area. In 1992 the area was listed as 101.1 square inches when it should have been listed as 73.7 square inches; which would result in obtaining the 58% examination coverage. The examination coverage documented in RR 00-01 adequately depicts the examination coverage obtained.

Attachment 1

Relief Request 00-01 Questions and Answers (Continued)

Both examinations (1992 and 1999) were performed using ASME Section V Article 4 and not to Appendix VIII. This was due to the weld thickness, which was greater than the maximum qualified thickness under Appendix VIII.

Additional historical research revealed that second interval examinations of the weld and inside radius for 2SGB-WG25 (Item Number B03.130.006 & B03.140.006) were performed during Refueling Outage 2EOC-9 (March 19, 1988). At that time, the practice within Duke was to indicate that the examination was limited. Duke did not record the amount of coverage obtained and did not originate a request for relief to document the limited examination.

After the NRC adopted Code Case N-460, Duke applied this Code Case to provide the needed guidance in interpreting the reference in the Code of "essentially 100%." The fact that Duke had not submitted request for relief for welds examined earlier in the second interval at Oconee was documented in Duke request for relief 93-GO-01.

At the conclusion of Refueling Outage 3EOC-13 for Oconee Unit 3, Duke submitted it's first request for relief for limited weld examination, serial number 92-12. This relief request documents the coverage obtained on weld 3SGB-WG25 (Item Number B03.130.006). This examination yielded 49% examination coverage. The Inside Radius limited examination was documented on Request For Relief 94-01. That examination yielded 74% examination coverage.

NRC inspection report 50-269/95-05, transmitted to Duke by letter dated May 5, 1995, provides additional historical perspective on the issue of limited examinations for Duke. As discussed in this inspection report, Duke is taking credit for the Unit 3 examination of weld & inside radius examination on weld 2SGB-WG25 due to the similarities of the steam generators for all three units at Oconee.

Attachment 1
Relief Request 00-01 Questions and Answers (Continued)

Typical ASME Section V Article 4 Coverage

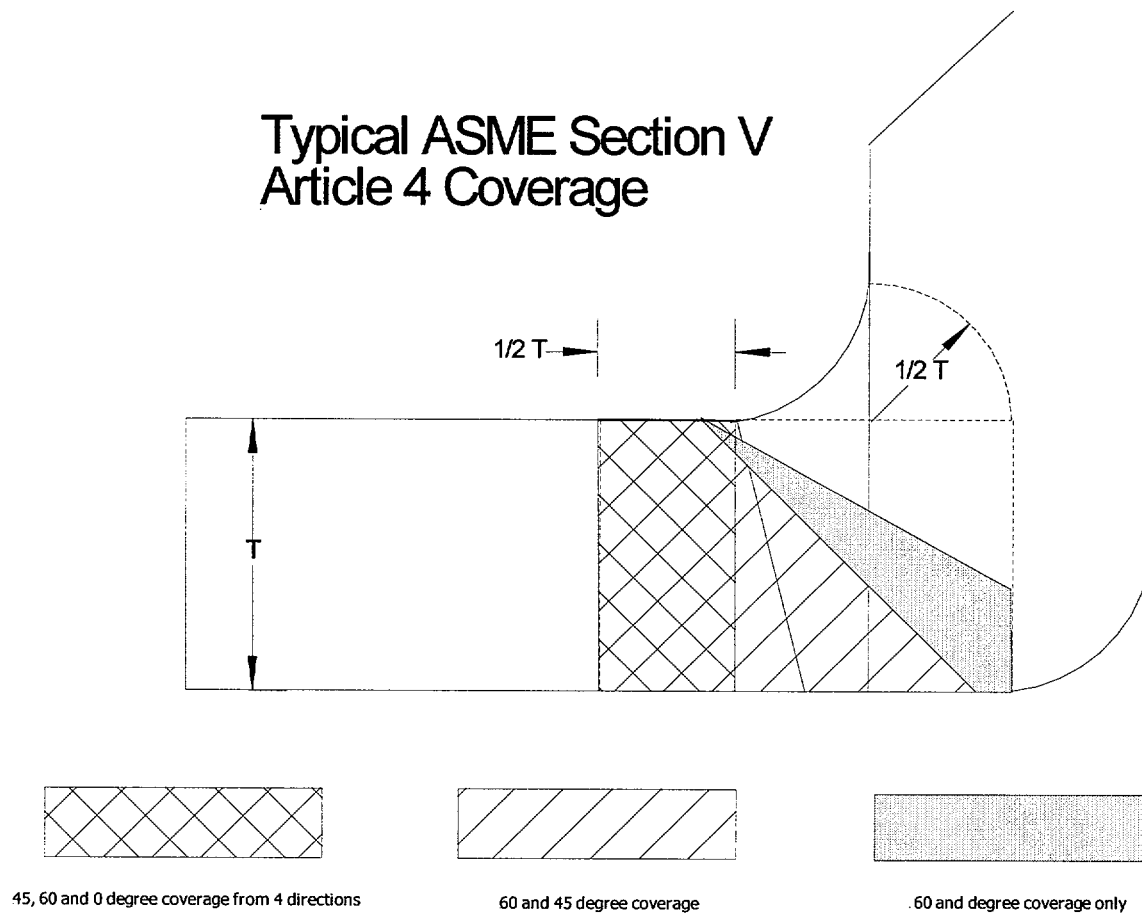


Figure 1

Typical Appendix VIII

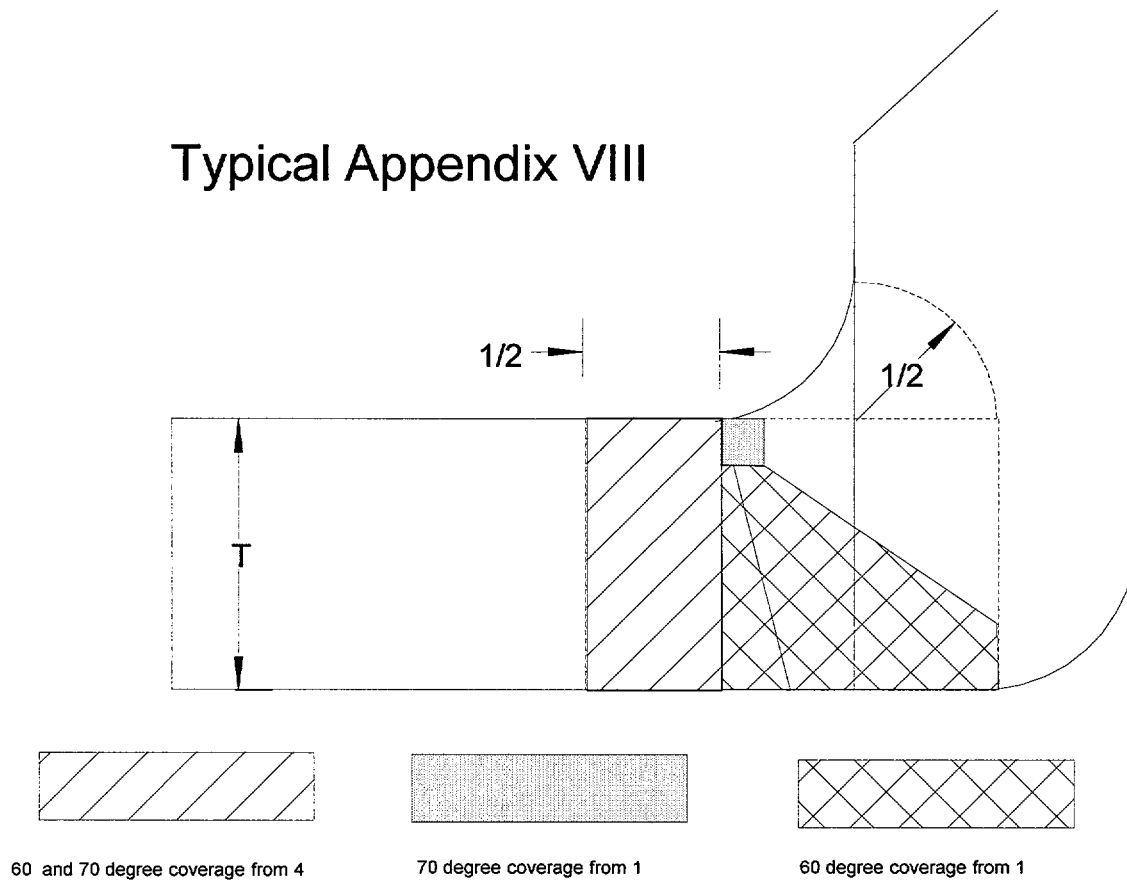


Figure 2