NRR-PMDAPEm Resource

From: Lingam, Siva
Sent: Tuesday, December 31, 2013 1:22 PM
To: richard.hightower@pgnmail.com
Cc: Quichocho, Jessie; Rosenberg, Stacey; Lupold, Timothy; McLellan, Thomas; Audrain, Margaret
Subject: H. B. Robinson Steam Electric Plant, Unit 2 - RAI Regarding Fourth 10-Year Interval Inservice Inspection Program Plan Requests for Relief (Relief Request-20) (TAC No. MF1967)

1. SCOPE

By letter dated June 3, 2013 (Agencywide Documents Access and Management System Accession Number ML13178A006), the licensee, Duke Energy Progress, Inc. (Duke Energy), submitted Request for Relief (RR) 20 from the requirements of the American Society of Mechanical Engineers, *Boiler and Pressure Vessel Code* (ASME Code), Section XI, *Rules for Inservice Inspection of Nuclear Power Plant Components* for H. B. Robinson Steam Electric Plant, Unit 2 (HBRSEP 2). The request for relief applies to the fourth 10-year inservice inspection (ISI) interval, in which the licensee adopted the 1995 edition through the 1996 addenda of ASME Code Section XI as the Code of record.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Section 50.55a(g)(5)(iii), the licensee has submitted the subject request for relief for limited examinations in multiple ASME Code Examination Categories. The ASME Code requires that 100% of the examination volumes, or surface areas, described in Tables IWB-2500, IWC-2500, and IWF-2500 be performed during each interval. The licensee stated that 100% of the ASME Code-required volumes, or surface areas, are impractical to obtain at HBRSEP 2.

Section 50.55a(g)(5)(iii) states that when licensees determine that conformance with ASME Code requirements is impractical at their facility, they shall submit information to support this determination. The Nuclear Regulatory Commission will evaluate such requests based on impracticality, and may impose alternatives, giving due consideration to public safety and the burden imposed on the licensee.

Pacific Northwest National Laboratory (PNNL) has reviewed the information submitted by the licensee, and based on this review, determined the following information is required within 30 days from the date of this e-mail to complete the evaluation.

2. REQUEST FOR ADDITIONAL INFORMATION

2.1 Request for Relief RR-20, Examination Category F-A, Item F1.40, Supports

2.1.1 The Reactor Vessel Cold Leg Loop “A”, “B”, and “C” Supports 101/A, 101/B, and 101/C, achieved 50 percent of the ASME Code required visual examination coverage according to Sections 2.3, 3.3, and 4.3 “Impracticality of Compliance,” respectively. In the supplemental report provided on page 9 of 221, the licensee states that “only 20 percent of the support can be seen from this available remote vantage point due to the HVAC [heating, ventilation and air-conditioning] duct configuration and the approach being blocked by debris” for Reactor Vessel Cold Leg Loop “A” Support 101/A. In the supplemental reports provided on pages 20 and 25 of 221, the licensee states that only “1/3 of the support can be seen from this available remote vantage point due to the HVAC duct configuration” for Reactor Vessel Cold Leg Loop “B” and “C” Supports 101/B and 101/C.

From these conflicting statements, it is unclear as to the level of visual examination coverage achieved. Please clarify and state the actual visual coverage achieved for each of the Reactor Vessel cold leg supports mentioned above.

2.2 Request for Relief RR-20, Examination Category C-A, Item C1.20, Pressure Retaining Welds in Class 2 Pressure Vessels

2.2.1 The licensee's submittal states that the subject weld areas were interrogated with a combination of 45- and 60-degree shear waves to detect axial and circumferentially-oriented flaws.

Confirm the insonification angles and wave modalities used to examine each of the subject welds. If only shear wave techniques were used to examine the subject stainless steel welds, please explain why refracted longitudinal wave (L-wave) techniques were not used. The L-wave method has been shown capable of detecting planar inside diameter surface-breaking flaws on the far-side of wrought stainless steel welds. Recent studies (References 1, 2 and 3) recommend the use of both shear and L-waves to obtain the best detection results, with minimum false calls, in austenitic welds.

2.3 Request for Relief RR-20, Examination Category C-B, Item C2.21, Pressure Retaining Nozzle Welds in Class 2 Vessels

2.3.1 Please state the materials of construction for the boron injection tank lower and upper head-to-nozzle welds.

2.4 Request for Relief RR-20, Examination Category C-C, Item C3.10, Integral Attachments for Class 2 Vessels, Piping, Pumps, and Valves

The licensee has provided a sketch on page 151 of 221 of their RR-20, regarding the impracticality of obtaining ASME Code-required surface examination for the boron injection tank support leg attachment. However, the sketch is unclear due to the lack of labeling of what the shaded area represents on the support leg plate, and the dimensions on the top (13 inches) and bottom (16 inches) do not appear to add up correctly.

2.4.1 Please submit a detailed and clear sketch or photograph to augment the description of the limitation of the surface examination for the boron injection tank support leg attachment.

REFERENCES

1. F. V, Ammirato, X. Edelmann, and S.M. Walker, *Examination of Dissimilar Metal Welds in BWR Nozzle-to-Safe End Joints*, 8th International Conference on NDE in the Nuclear Industry, ASM International, 1987.
2. P. Lemaitre, P., T.D. Koble, and S.R. Doctor, *PISC III Capability Study on Wrought-to-Wrought Austenitic Steel Welds: Evaluation at the Level of Procedures and Techniques*, Effectiveness of Nondestructive Examination Systems and Performance Demonstration, PVP-Volume 317, NDE-Volume 14, ASME, 1995.
3. M. T. Anderson, M.T., A.A. Diaz, A.D. Cinson, S.L. Crawford, S.E. Cumblidge, S.R Doctor, K.M. Denslow, and S. Ahmed, 2011. *An Assessment of Ultrasonic Techniques for Far-Side Examinations of Austenitic Stainless Steel Piping Welds*, NUREG/CR-7113, PNNL-19353, U. S. Nuclear Regulatory Commission, Washington, DC.

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