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NL-04-0237

March 31, 2004

Docket No.: 50-364

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555-0001

Joseph M. Farley Nuclear Plant – Unit 2
ASME Section XI Request for Relief Number RR-56
Examination of Reactor Pressure Vessel Circumferential Weld

Ladies and Gentlemen:

The enclosed request for relief RR-56 is submitted in accordance with the provisions of 10 CFR 50.55a(a)(3) to provide relief for the examination of the Reactor Pressure Vessel (RPV) lower shell to bottom head circumferential weld.

This request for relief is applicable to the ISI examinations using the 1989 Edition of Section XI that were performed starting December 1, 1997 and which will continue to November 30, 2007.

Southern Nuclear Operating Company previously submitted a request for an alternative to the 10 CFR 50.55a(g)(6)(ii)(A) requirements for weld APR1-1100-8. That request, dated December 4, 2000, used the same basis discussed in this request for relief. The proposed alternative was approved per NRC Safety Evaluation (TAC No. MB0738) dated August 1, 2001.

Southern Nuclear Operating Company requests approval of this request for relief by March 31, 2005.

This letter contains no NRC commitments. If you have any questions, please advise.

Sincerely,

A handwritten signature in black ink, appearing to read "L. M. Stinson".

L. M. Stinson

LMS/JLS/sdl

Enclosure: Request for Relief RR-56

A047

U. S. Nuclear Regulatory Commission

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cc: Southern Nuclear Operating Company
Mr. J. B. Beasley, Jr., Executive Vice President
Mr. D. E. Grissette, General Manager – Plant Farley
RTYPE: CFA04.054; LC # 13847

U. S. Nuclear Regulatory Commission
Mr. L. A. Reyes, Regional Administrator
Mr. S. E. Peters, NRR Project Manager – Farley
Mr. C. A. Patterson, Senior Resident Inspector – Farley

**Joseph M. Farley Nuclear Plant – Unit 2
ASME Section XI Request for Relief Number RR-56
Examination of Reactor Pressure Vessel Circumferential Weld**

Enclosure

Request for Relief RR-56

Joseph M. Farley Nuclear Plant – Unit 2
ASME Section XI Request for Relief Number RR-56
Examination of Reactor Pressure Vessel Circumferential Weld

Enclosure

Request for Relief RR-56

- I. System/Component for Which Relief is Requested: Relief is requested for the examination of Reactor Pressure Vessel (RPV) lower shell to bottom head circumferential weld. Specifically, this weld is identified as:

APR1-1100-8

- II. Code Requirement: Item No. B1.11, Category B-A, Table IWB-2500-1 of ASME Section XI (1989 Edition) requires a volumetric examination of the RPV lower shell to bottom head circumferential weld (see Figure 56-1). The applicable examination volume is shown in Figure IWB-2500-1 and the examination volume includes 100% of the weld length. Additionally, Section XI, Article I-2100 requires that ultrasonic examination (UT) of vessel welds greater than two inches in thickness be conducted in accordance with ASME Code, Section V, Article 4 as supplemented by Appendix I. Article 4 also requires two-directional coverage wherever feasible. Scanning was done to locate reflectors parallel to, as well as transverse to, the weld.
- III. Code Requirement for Which Relief is Requested: Relief is requested from meeting the required coverage for this weld.
- IV. Basis for Relief: Examination coverage and the basis for the limitations are listed below. (Figure 56-1 shows the configuration of the weld including the adjacent core support lugs.) A total of four core support lugs occupying a space of about 20 degrees each are positioned immediately above the lower shell to bottom head circumferential weld. The composite coverage was calculated as 84.5%.

This weld is not located in the beltline region and is therefore, not susceptible to irradiation embrittlement. All other RPV shell welds with ASME Item Numbers B1.11 and B1.12 received 100% Code-required examination coverage and the examination results for these welds revealed no recordable indications that exceeded the allowable standards of ASME Code paragraph IWB-3500. Southern Nuclear Operating Company believes that if a pattern of degradation exists in this one weld, the UT examination coverage of 84.5% would have detected it. Furthermore, the likelihood of a significant defect existing in the unexamined portion is extremely small.

In addition, for weld APR1-1100-8, Southern Nuclear Operating Company previously submitted a request for alternative to the 10 CFR 50.55a(g)(6)(ii)(A) requirements. That request, dated December 4, 2000, used the basis discussed above. The proposed alternative was approved per NRC Safety Evaluation (TAC No. MB0738) dated August 1, 2001.

- V. Alternate Examination: Ultrasonic examination of this weld was performed to the maximum extent practical. No other examination will be conducted.
- VI. Justification for Granting Relief: Various techniques have been evaluated including the use of additional angles; however, it was concluded that the techniques described above permit the maximum practical coverage to be obtained. As described above, the examination provides reasonable assurance of the structural integrity of this weld. Southern Nuclear Operating Company proposes these examinations provide an acceptable level of quality and safety; therefore, approval should be granted pursuant to 10 CFR 50.55a(a)(3)(i).
- VII. Implementation Schedule: This request for relief is applicable to the ISI examinations performed from December 1, 1997 and to November 30, 2007 using the 1989 Edition of Section XI.
- VIII. Request for Relief Status: This is a new request for relief awaiting NRC approval.

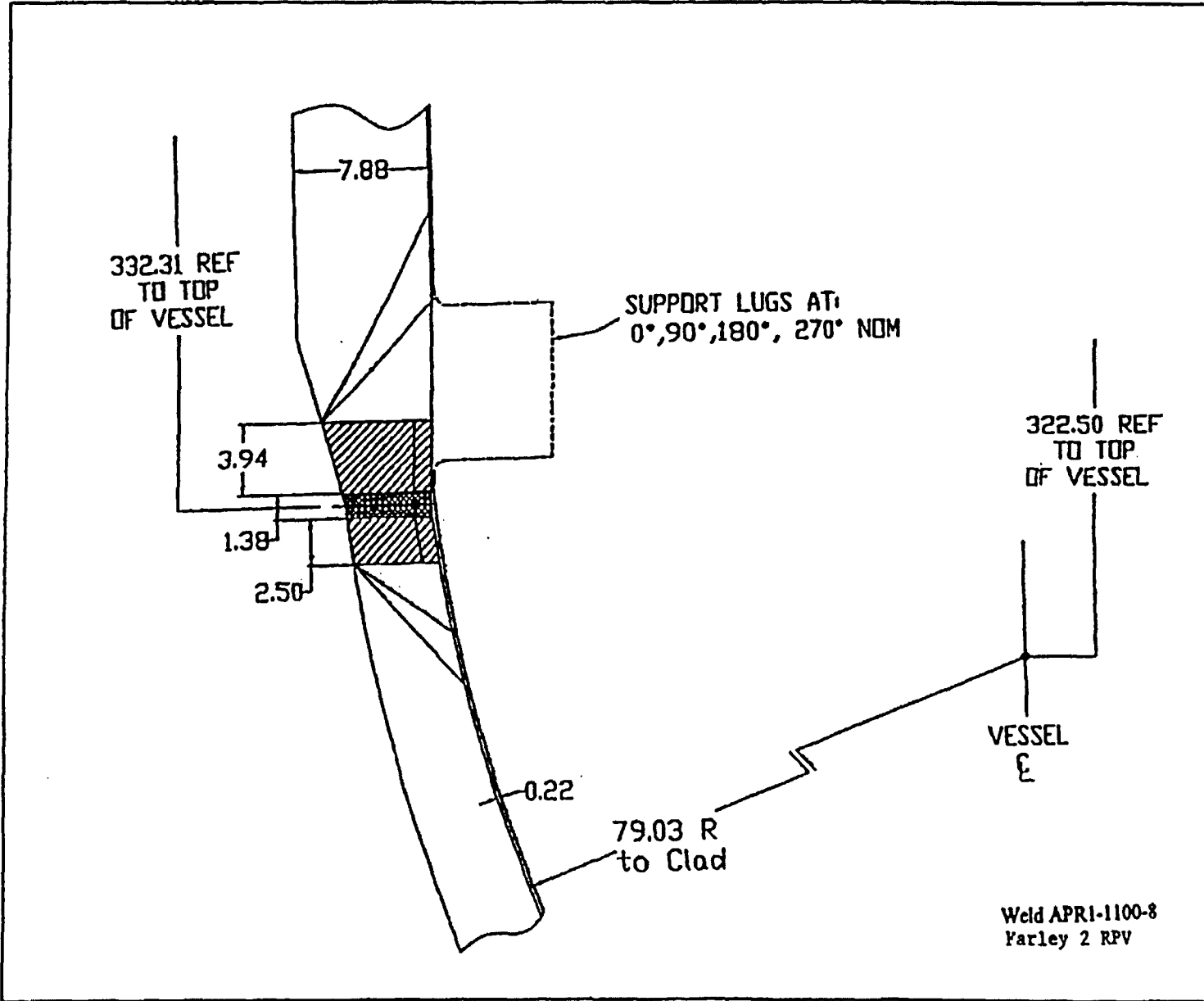


Figure 56-1