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Docket No. 50-364

NEL-02-0234

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

Joseph M. Farley Nuclear Plant Unit 2
Updated Interval
(Second 10-Year Interval, Third Period and Third 10-year Interval, First and Second Periods)
Request For Relief No. RR-47 From 1989 ASME Code Requirements

Ladies and Gentlemen:

In accordance with the provisions of 10 CFR 50.55a, Southern Nuclear Operating Company (SNC) is requesting NRC approval of the enclosed Relief Request for Farley Nuclear Plant Unit 2. If granted, this relief will allow reduced examination coverage for the RHR Heat Exchanger Shell to Flange Weld. Approval is requested by October 1, 2003 to support ongoing ISI activities.

As the third interval for Unit 1 started before the third interval for Unit 2, this request is being submitted for portions of the Unit 2 second and third intervals. This is to provide consistency with the Unit 1 third interval. SNC was allowed by NRC letter dated March 20, 1997 to update the Unit 2 ASME Code edition early in the interval to coincide with the Unit 1 ISI interval.

There are no commitments contained in this letter. If you have questions, please advise.

Respectfully submitted,


J. B. Beasley, Jr.

EWC/sdl: rr47.doc

Attachment

A047

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U. S. Nuclear Regulatory Commission

cc: Southern Nuclear Operating Company
Mr. D. E. Grissette, General Manager

U. S. Nuclear Regulatory Commission, Washington, D. C.
Mr. F. Rinaldi, Licensing Project Manager – Farley

U. S. Nuclear Regulatory Commission, Region II
Mr. L. A. Reyes, Regional Administrator
Mr. T. P. Johnson, Senior Resident Inspector – Farley

Attachment

**Joseph M. Farley Nuclear Plant Unit 2
Updated Program**

**(Second 10-Year Interval, Third Period and Third 10-year Interval, First and Second Periods)
Request For Relief No. RR-47 From 1989 ASME Code Requirements**

Attachment

SOUTHERN NUCLEAR OPERATING COMPANY
FARLEY UNIT 2
UPDATED PROGRAM
REQUEST FOR RELIEF NO. RR-47

- I. System/Component(s) for Which Relief is Requested: Volumetric examination of the austenitic pressure-retaining weld in the Class 2 vessel identified in Table 1 to this request for relief.
- II. Code Requirement: Category C-A, Table IWC-2500-1, of ASME Section XI, 1989 Edition, no addenda requires volumetric examination of pressure-retaining welds in Class 2 vessels. The applicable examination volume is shown in ASME Section XI Figure IWC-2500-1. All examinations should include essentially 100% of the weld length.

Section XI, Subarticle I-2200 requires that ultrasonic examinations of vessel welds, less than or equal to two inches in thickness, and all piping welds be conducted in accordance with Appendix III. Subarticle III-3230 of Appendix III requires full coverage of the examination volume from four directions: axial up, axial down, circumferential clockwise and circumferential counter-clockwise. The axial scans are used to locate reflectors parallel to the weld while the circumferential scans are used to locate reflectors transverse to the weld. For austenitic welds, ASME Section XI Appendix III, Supplement 4, requires that the angle beam examination for reflectors transverse to the weld be performed on the weld crown and 1/2 inch of the base material on each side of the weld.

- III. Code Requirement from Which Relief is Requested: Relief is requested from performing a full Code coverage volumetric examination to locate reflectors parallel to the Class 2 vessel weld identified in Table 1 to this request for relief.
- IV. Basis for Relief: Physical limitations, due to geometric configuration of the welded areas, restrict coverage of this category C-A weld and make it impossible to achieve 100% of the total examination volume required by Figure IWC-2500-1 and ASME Section XI Appendix III, Supplement 4. See Figure 1 for a picture of this configuration. Complete coverage for reflectors located transverse to the weld was obtained; however, due to physical limitations on both sides of the weld, complete coverage was not obtained for reflectors parallel to the weld. One-direction axial coverage was obtained from the shell side for approximately 75 % of the weld length. The axial scan from the shell side for the remaining length of this weld was limited by the inlet and outlet Residual Heat Removal (RHR) system nozzles and the associated reinforcing plates. No axial scans from the flange side were possible due to the flange and bolting configuration.

The actual examination volume was determined to be 59 %. It should be noted that while not a requirement for vessel welds less than or equal to 2-inches in thickness, SNC made a conservative decision to not claim examination coverage for the axial scan from the shell side beyond the weld centerline. This is based on SNC experience learned in the Appendix VIII qualification process using ultrasonic techniques for austenitic piping welds. SNC believes that large flaws on the flange side of the weld would have been observed with the axial scans from the shell side.

- V. Alternate Examination: No alternate examination is proposed. Coverage, to the maximum extent practical, has been obtained.

- VI. Justification for Granting Relief: The examination identified herein is being conducted to the fullest extent practical. As described in both Table 1 and Figure 1, physical access is restricted, thereby preventing full Code required examination coverage.

Obtaining the required ultrasonic volumetric coverage for this weld would require re-design and replacement of the RHR heat exchanger, which is impractical and would be an extreme burden for Southern Nuclear.

Complete Code coverage of the examination volume was obtained for reflectors transverse to the weld; therefore, axially oriented cracks should have been detected. For reflectors parallel to the weld, a significant length of the weld was examined and there is reasonable assurance that significant circumferential cracking would have been detected and that the structural integrity of the weld is being maintained.

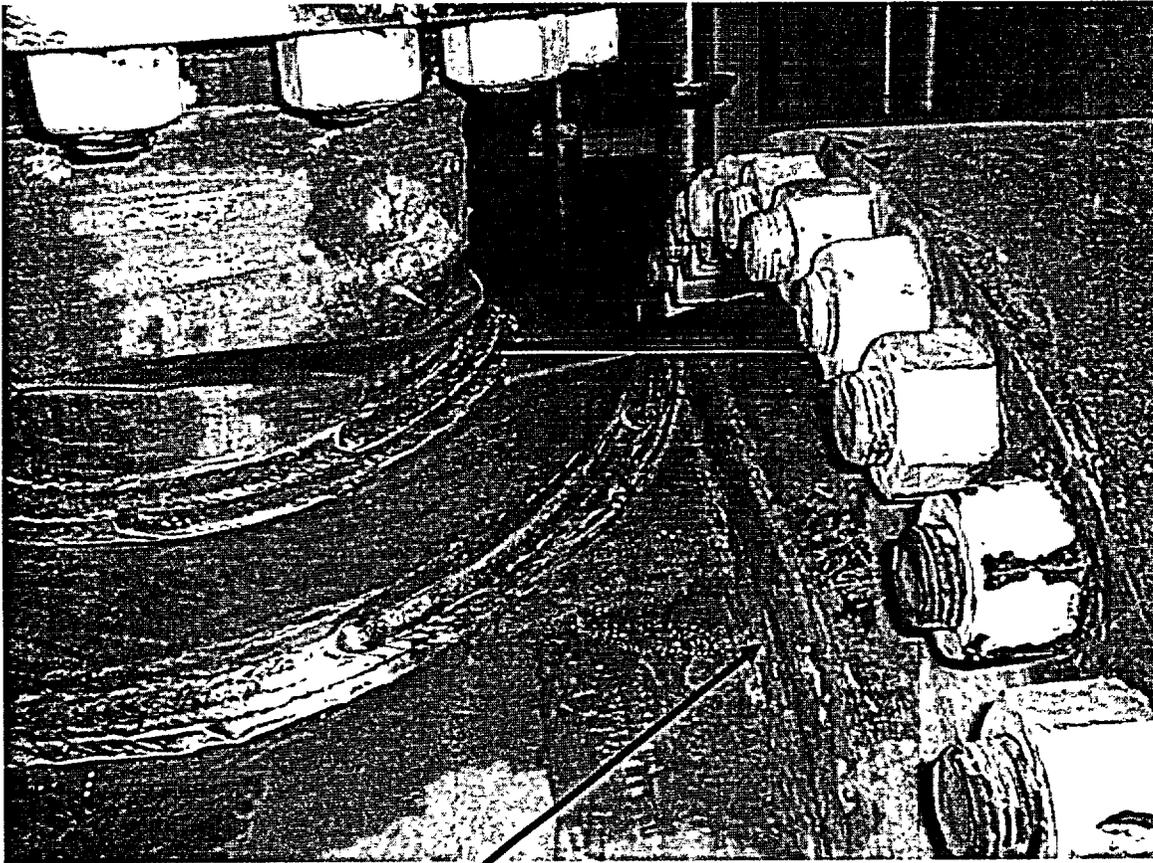
SNC requests that relief be authorized pursuant to 10 CFR 50.55a(g)(6)(i).

- VII. Implementation Schedule: This request for relief is applicable to examinations performed using the 1989 Edition of Section XI during the current inspection interval.
- VIII. Relief Request Status: This request for relief is awaiting NRC approval.

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TABLE 1

ASME Section XI Category/Item No.	Identification No.	Description	Limitation	Approximate Percentage
C-A / C1.20	APR2-3500-A	RHR Heat Exchanger Shell to Flange Weld	Limited examination from the flange side due to configuration (See Figure 1). Limited examination from the shell side due to the reinforcing plates around the two RHR nozzles.	UT - 59 %

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FIGURE 1



APR2 - 3500 - A