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April 30, 2002

Docket Nos. 50-348  
50-364



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

Joseph M. Farley Nuclear Plant  
Inservice Inspection Program  
Revised Submittal of Request for Relief No. 48

Ladies and Gentlemen:

By letter dated September 28, 2001, Southern Nuclear Operating Company (SNC) submitted Requests for Relief No. RR-48 for the Inservice Inspection Program for the Joseph M. Farley Nuclear Plant, Units 1 and 2. Relief was requested from the 1989 Edition of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Section XI requirement. Based on discussion with NRC staff, SNC has revised RR- 48. The revised request is attached.

Table IWB-2500-1 of the ASME Section XI Code requires the volumetric examination of Reactor Pressure Vessel (RPV) nozzle inner radii sections. As an alternative, SNC proposes the substitution of a visual (VT-1) examination for RPV nozzle inner radii sections.

As suggested by NRC staff, the revision includes a requirement for resolution of remote inspection equipment of 1 mil wire resolution. A similar request was approved for Fermi 2 via NRC letter dated October 5, 2001. SNC requests that RR-48 be approved by September 1, 2003.

The September 28, 2001 SNC submittal also included RR-49. SNC requests that it be approved as previously submitted. Approval of RR-49 is needed by September 1, 2002 to support a planned Unit 2 outage.

Should there be any questions, please advise.

Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY

Dave Morey

EWC/sdl: RR4849.doc

Attachment: 1. Request for Relief No. RR-48 - Units 1 and 2

A047

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U. S. Nuclear Regulatory Commission

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

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 1  
TO  
SOUTHERN NUCLEAR OPERATING COMPANY  
LETTER NEL-02-0102**

**JOSEPH M. FARLEY NUCLEAR PLANT  
INSERVICE INSPECTION PROGRAM  
REQUEST FOR RELIEF RR-48**

SOUTHERN NUCLEAR OPERATING COMPANY  
JOSEPH M. FARLEY NUCLEAR PLANT, UNITS 1 AND 2  
INSERVICE INSPECTION PROGRAM  
REQUEST FOR RELIEF NO. RR-48

- I. **System/Component(s) for Which Relief is Requested:** Examination of Reactor Pressure Vessel (RPV) inner radii, ASME Code Category B-D, B3.100.
- II. **Code Requirement:** The 1989 edition of ASME Section XI, Table IWB-2500-1, Examination Category B-D, Item B3.100, requires the volumetric examination of the RPV nozzle inside radius section.
- III. **Code Requirement for Which Relief is Requested:** Relief is requested from the requirement of performing the volumetric examination.
- IV. **Basis for Relief:** Pursuant to 10 CFR 50.55a(a)(3)(i) Southern Nuclear is requesting relief from ASME Section XI requirements to perform the volumetric examination described above. Southern Nuclear is proposing to implement a visual examination alternative. The visual examination will cover the same inspection surface as specified for the volumetric examination. Visual examination has the additional benefit of reducing personnel radiation exposure, consistent with the Farley ALARA program.
- V. **Alternate Examination:** Southern Nuclear proposes to perform a visual examination per the requirements of the approved Farley ISI NDE Program, ASME Section XI and in conjunction with the category B-A, Pressure Retaining Welds in Reactor Vessel or the category B-D, Full Penetration Welds of Nozzles in Vessels examinations. Required coverage will include essentially 100% of the surface M-N as shown in Figure IWB-2500-7 (a) and (b) in lieu of the volumetric examination required by Table IWB-2500-1, Examination Category B-D, B3.100, for inservice examination of reactor vessel nozzles.

The resolution sensitivity for remote in-vessel exams will be established using a 1-mil wire standard. For pressurized water reactors (PWR), the ultrasonic examination has been performed generally in conjunction with a first period "40-month" examination or during the 10-year vessel ISI examination. In addition, remote visual examinations using specialized underwater cameras are routinely performed of the RPV interior surface, usually in conjunction with the ten-year vessel ISI examination.

If crack-like surface flaws are detected by visual examination, the flaws will be characterized in accordance with Table IWB-3512-1. When applying Table IWB-3512-1 criteria, the crack depth will be assumed to be equal to one-half the measured crack length. Once the flaw characteristics are established, the flaws will be evaluated in accordance with ASME Section XI Code section IWB-3140.

- VI. **Justification for Granting Relief:** All nozzle forgings were nondestructively examined during fabrication and have previously been examined using inservice ultrasonic techniques specific to the nozzle configuration. No indication of fabrication defects or service related cracking has been detected by these examinations.

Nozzle inner radius examinations are the only non-welded area requiring examination on the RPV. This requirement was deterministically made early in the development of ASME Section XI, and applied to 100% of nozzles welded with full penetration welds. Fatigue cracking is the only applicable degradation mechanism for the nozzle inner radius region. For FNP nozzles, there is no significant thermal cycling during operation. Therefore, from a risk perspective there is no need to perform volumetric examination. No service related cracking has ever been discovered in any PWR fleet plant nozzles. Southern Nuclear believes that application of a visual examination alternative for the RPV nozzle inner radius regions ensures an acceptable level of quality and safety.

- VII. **Implementation Schedule**: This request for relief is applicable to the Third Ten-Year Interval for Unit 1 and ISI examinations using the 1989 Edition of Section XI (from December 1, 1997 through November 30, 2007) for Unit 2.
- VIII. **Relief Request Status**: This request for relief is awaiting NRC approval.