



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

February 23, 2012

Mr. M. J. Ajluni
Nuclear Licensing Director
Southern Nuclear Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295, Bin - 038
Birmingham, AL 35201-1295


SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 1 - REQUEST FOR
ADDITIONAL INFORMATION ON INSERVICE INSPECTION PLAN
(TAC NO. ME5966)

Dear Mr. Ajluni:

By letter dated March 28, 2011 (Agencywide Documents Access and Management System Accession No. ML110871951), Southern Nuclear Operating Company, Inc., submitted a request for relief for Joseph M. Farley Nuclear Plant, Unit 1, that would allow the use of an alternate depth-sizing qualification for volumetric examinations of the reactor pressure vessel nozzle-to-safe end dissimilar metal welds from the inside surface. The U.S. Nuclear Regulatory Commission staff previously requested additional information and you responded by letter dated August 11, 2011. We have considered this issue further and find that additional information, as described in the Enclosure, is needed to continue the review of this issue.

We discussed this issue with your staff on February 17, 2012. We request your response within 15 days of the date of this letter.

Sincerely,


Robert E. Martin, Senior Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-348

Enclosure:
Request for Additional Information

cc w/encl: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION

FOR RELIEF REQUEST FNP-ISI-RR-01

JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 1

DOCKET NO. 50-348

By letter dated March 28, 2011 (Agencywide Document Access & Management System (ADAMS) accession number ML110871951) as supplemented by the letter dated August 11, 2011 (ADAMS accession number ML112232241), the Southern Nuclear Operating Company (SNC) submitted relief request FNP-ISI-RR-01 requesting approval to use an alternate depth-sizing qualification for volumetric examinations of the reactor pressure vessel (RPV) nozzle-to-safe end dissimilar metal welds (DMW) from the inside surface at the Joseph M. Farley Nuclear Plant Unit 1 (Farley Unit 1).

The NRC staff has reviewed the Relief Request FNP-ISI-RR-01. After examining the sizing uncertainties associated with the higher root mean square (RMS) errors and reviewing the available data, the NRC staff finds insufficient technical basis for the proposed alternative in FNP-ISI-RR-01. Adding the difference between the procedure RMS error and 0.125 inches to any measured flaw depth fails to consider the effects of surface conditions and the maximum individual sizing errors associated with increasing RMS errors. The NRC staff requests the licensee either reconsider the adjustment that will be made to the measured flaw size as outlined below or commit to submit a flaw evaluation, for any flaws identified during the examination along with the information outlined below, for NRC staff review and approval.

The NRC staff is currently reviewing the implications of the large flaw depth sizing uncertainty associated with inner diameter (ID) examinations of full penetration welds. Until the NRC staff has finished the review, larger values will need to be added to the measured flaw size, or the NRC staff will need to review any flaw evaluations, on a case by case basis, on flaws found in piping welds sized from the ID as a condition to granting relief. Note, that the latter approach may impact the unit restart from the outage if the staff has not had adequate time to review and approve the flaw evaluation, including the measured flaw adjustment used in the evaluation.

One possible alternative the NRC staff finds has sufficient technical justification is to add twice the RMS error to the depth of a flaw prior to performing a flaw evaluation. This addition of twice the RMS error would cover evaluations of flaws found during ID inspections of welds with poor ID geometries (greater than 1/32 probe lift off). Licensees desiring to adjust the measured flaw depth differently from the above will need to provide justification for any such adjustment, such as documentation of a very smooth surface and the absence of ridges that would cause transducer lift off, compatible material type/grain structure, demonstrated effectiveness on these surfaces, etc. The staff will need to ensure that any value used will result in a reasonable assurance of structural integrity and leak tightness of any weld evaluated, or that any mitigation will result in a reasonable assurance of structural integrity and leak tightness considering the possible uncertainty in the measured flaw size.

The NRC staff believes it is appropriate to determine the RMS error based on the procedure qualification and the personnel qualifications. The RMS error should be an average of the RMS

Enclosure

error of the qualified person who analyzes the data and the procedure qualification. Alternatives to this may be proposed and will need to be justified to and accepted by the NRC staff. The staff will need to ensure that any value used will result in a reasonable assurance of structural integrity and leak tightness of any weld evaluated, or that any mitigation will result in a reasonable assurance of structural integrity and leak tightness considering the possible uncertainty in the measured flaw size.

If twice the RMS error is not to be added to the depth of the measured flaw, the NRC staff requests that the licensee commit in their RAI response that flaw evaluations of any flaws found in the inspections covered by this relief request, FNP-ISI-RR-01 be submitted to the NRC for review and approval prior to reactor startup. When submitting the evaluation, in addition to the typical information provided in a flaw evaluation, the following additional information will need to be included:

- The measured flaw size(s).
- The RMS error that was added to the measured flaw size and how the RMS error was established. The RMS depth-sizing error for the personnel conducting the examination. The licensee may propose a smaller addition (less than twice the RMS error) to the flaw depth. A smaller addition to the flaw depth will need to be technically justified, which should include, as a minimum, a demonstration that the welds are easier to inspect than the Performance Demonstration Initiative Supplement 10 ID specimens (e.g. no probe lift-off, less than 1/32 inch surface waviness) in the area near the flaw and the area used for depth-sizing. Smooth ID surfaces and other factors will be taken into account by NRC staff when reviewing the flaw evaluation.
- If the procedure uses eddy current, the determination by eddy current if the flaw is or is not surface breaking.
- The inner diameter profile of the weld, pipe, nozzle, and safe end (as applicable) in the region at and surrounding the transducer locations used to depth size the flaw.
- The suspected flaw degradation mechanism and the process used to determine the degradation mechanism.

February 23, 2012

Mr. M. J. Ajluni
Nuclear Licensing Director
Southern Nuclear Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295, Bin - 038
Birmingham, AL 35201-1295

SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 1 - REQUEST FOR
ADDITIONAL INFORMATION ON INSERVICE INSPECTION PLAN
(TAC NO. ME5966)

Dear Mr. Ajluni:

By letter dated March 28, 2011 (Agencywide Documents Access and Management System Accession No. ML110871951), Southern Nuclear Operating Company, Inc., submitted a request for relief for Joseph M. Farley Nuclear Plant, Unit 1, that would allow the use of an alternate depth-sizing qualification for volumetric examinations of the reactor pressure vessel nozzle-to-safe end dissimilar metal welds from the inside surface. The U.S. Nuclear Regulatory Commission staff previously requested additional information and you responded by letter dated August 11, 2011. We have considered this issue further and find that additional information, as described in the Enclosure, is needed to continue the review of this issue.

We discussed this issue with your staff on February 17, 2012. We request your response within 15 days of the date of this letter.

Sincerely,

/RA/

Robert E. Martin, Senior Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-348

Enclosure:
Request for Additional Information

cc w/encl: Distribution via Listserv

DISTRIBUTION

PUBLIC	LPL2-1R/F	RidsNrrDorLpl2-1 Resource	RidsAcrsAcnw_MailCTR Resource
RidsRgn2MailCenter Resource		RidsNrrLASFigueroaResource	RidsOgcRp Resource
RidsNrrDciCpnb Resource		SCumblidge, RES/DE	DAiley, NRR/DE
RidsNrrPMFarley Resource			

ADAMS Accession No.: ML12048B330

* By email dated

** Via Telephone

OFFICE	DORL/LPL2-1/PM	DORL/LPL2-1/LA	DCI/EPNB/BC	DORL/LPL2-1/BC	DORL/LPL2-1/PM
NAME	RMartin	SFiguerao	TLupold**	NSalgado**	RMartin
DATE	02/22/12	02/22/12	02/22/12	02/23/12	02/23/12

OFFICIAL RECORD COPY