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SOUTHERN COMPANY
Energy to Serve Your World℠

November 4, 2002

Docket Nos.: 50-348
50-364

NEL-02-0229

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

Joseph M. Farley Nuclear Plant
Supplemental Response for NRC Bulletin 2002-02
Reactor Pressure Vessel Head Degradation and
Vessel Head Penetration Nozzle Inspection Programs

Ladies and Gentlemen:

In our letter dated August 23, 2002 responding to Nuclear Regulatory Commission (NRC) Bulletin 2002-02, "Reactor Pressure Vessel Head Degradation and Vessel Head Penetration Nozzle Inspection Programs," dated August 9, 2002, Southern Nuclear Operating Company (SNC) committed to supply requested information concerning our supplemental inspection program planned for the Farley Nuclear Plant (FNP) Unit 1 spring 2003 refueling within 30 days of completing the FNP Unit 2 fall 2002 supplemental inspection.

In fulfillment of this commitment and in accordance with 10 CFR 50.54(f), SNC hereby submits the attached information addressing the planned FNP Unit 1 spring 2003 inspection activities and the future supplemental inspection program for both FNP units. Results from the recently concluded fall 2002 Unit 2 inspection will be provided under separate cover.

This letter contains NRC commitments regarding planned FNP Unit 1 spring 2003 inspection activities. If you have any questions, please advise.

A096

Mr. J. B. Beasley, Jr., states he is a Vice President of Southern Nuclear Operating Company, is authorized to execute this oath on behalf of Southern Nuclear Operating Company and to the best of his knowledge and belief, the facts set forth in this letter are true.

Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY

J. B. Beasley, Jr.

Sworn to and subscribed before me this 4th *day of* November, *2002.*

Marie H. Bui
Notary Public

My commission expires: 06/07/2005

DWD/sdl: Bulletin 2002-02 Supplemental Response 2.doc

Attachment

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

U. S. Nuclear Regulatory Commission, Washington, D. C.
Mr. F. Rinaldi, NRR 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
Supplemental Response for NRC Bulletin 2002-02
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FNP Supplemental Inspection Program

As discussed in Southern Nuclear Operating Company (SNC)'s August 23, 2002 letter responding to NRC Bulletin 2002-02 regarding the reactor pressure vessel (RPV) head and vessel head penetration (VHP) nozzle inspection plans for Farley Nuclear Plant (FNP) Unit 1, SNC chose to delay submittal of those plans pending completion of the fall 2002 inspection of FNP Unit 2 so that the results of that inspection and other emergent industry experience could be considered. The Unit 2 inspection has been completed (the results will be submitted under separate cover) and incorporated into the planning for the FNP Unit 1 spring 2003 inspection activities, which are described below in accordance with the pertinent provisions of Bulletin 2002-02 (reproduced in bold text). Also addressed is the future supplemental inspection program for both FNP units.

(1) Within 30 days of the date of this bulletin:

A. PWR addressees who plan to supplement their inspection programs with non-visual NDE methods are requested to provide a summary discussion of the supplemental inspections to be implemented. The summary discussion should include EDY, methods, scope, coverage, frequencies, qualification requirements, and acceptance criteria.

SNC Response to NRC Item (1) A.:

SNC has evaluated the current status of FNP Unit 1 with regard to accrued Effective Full Power Years (EFPY) and Effective Degradation Years (EDY), calculated in accordance with Equation 2.2 in Electric Power Research Institute (EPRI) Material Reliability Program (MRP) document MRP-48 ("PWR Materials Reliability Program Response to NRC Bulletin 2001-01," August 2001). As of the upcoming refueling outage set to begin March 29, 2003, Unit 1 will be at 17.5 EDY.

In consideration of the seriousness of the RPV head integrity issue and recent industry experience, during this upcoming outage SNC commits to perform supplemental non-destructive examination (NDE) of the Unit 1 VHP nozzles in addition to a bare metal visual (BMV) inspection of the RPV head.

The scope of this supplemental inspection will consist of volumetric non-destructive examination (NDE) of all 69 control rod drive mechanism (CRDM) nozzles plus the head vent (70 VHP nozzles total). The methods used will be ultrasonic testing (UT) and eddy current testing (ECT).

The volumetric NDE techniques used will cover the entire wall thickness of the penetration nozzles from the ID surface. Inspection coverage will extend 360 degrees around each nozzle and encompass at least the heat affected zone of the J-groove nozzle attachment weld. Removal of obstructions (e.g. thermal sleeves with centering rings blocking inspection probe travel) is planned to permit full inspection coverage of the area of interest in all 70 VHP nozzles. SNC continues to work with our inspection services vendor to identify and resolve physical limitations to improve inspection coverage. Any limitations in the final inspection coverage achieved will be noted when the inspection results are reported.

Personnel performing the volumetric NDE will be required to have current Level II or III certification and additional training in VHP nozzle flaw evaluation. EPRI has conducted MRP mockup blind sample

examination demonstrations with the planned inspection services vendor (Westinghouse), and the NDE techniques that will be used at FNP have been evaluated and accepted by SNC Level III examination personnel based on these demonstrations. Only procedure techniques have been demonstrated at this time; personnel qualification testing similar to ASME Section XI, Appendix VIII is not yet available.

ECT or dye penetrant testing (PT) will be performed on the VHP nozzle J-groove welds as required to help resolve discrepancies between volumetric NDE cracking indications and visual leakage indications or to further characterize any J-groove weld indications found. Thus NDE of the J-groove weld will be performed if there is visual indication of suspected leakage but little or no corresponding UT indication of cracking in the nozzle tube material. NDE of the J-groove weld will also be performed for any nozzle where a BMV exam cannot be performed.

The acceptance criteria for the NDE will be determined based on the length, depth and location of each identified indication. It is anticipated that flaws not evaluated to be acceptable will be remediated. The approach for flaw evaluations will be to locate and size the flaw, apply the growth rate identified in EPRI document MRP-55 ("Crack Growth Rates for Evaluating Primary Water Stress Corrosion Cracking (PWSCC) of Thick-Wall Alloy 600 Material," July 18, 2002) to the next inspection interval and evaluate using ASME flaw tolerance methods with acceptance criteria as modified by the NRC recommendation letter ("Flaw Evaluation Criteria," Jack Strosnider, NRC, to Alex Marion, NEI, November 21, 2001).

SNC plans to work with the EPRI MRP and NRC to determine the nature and frequency of future supplemental inspections for both FNP units.