

Southern Nuclear  
Operating Company, Inc.  
40 Inverness Center Parkway  
Post Office Box 1295  
Birmingham, Alabama 35201-1295  
Tel. 205-992-5000



*Energy to Serve Your World*

May 14, 2009

Docket No.: 50-321

NL-09-0746

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

Edwin I. Hatch Nuclear Plant – Unit No. 1  
Response to Request for Additional Information  
Regarding Fourth Interval Inservice Inspection Program

Ladies and Gentlemen:

On December 19, 2008 SNC submitted a relief request (RR-01) for the fourth interval of the inservice inspection (ISI) program. By letter dated May 6, 2009 the NRC issued a request for additional information regarding RR-01. The NRC asked that SNC discuss the efforts taken to maximize weld examination coverage during the fourth 10-year ISI interval for the C-2-A reactor vessel weld listed in RR-01. The enclosure to this letter provides the SNC response.

This letter contains no NRC commitments. If you have any questions regarding this topic, please contact Mr. R. D. Baker at 205-992-7367.

Sincerely,

A handwritten signature in black ink that reads "Mark J. Ajluni". The signature is written in a cursive, flowing style.

M. J. Ajluni  
Manager, Nuclear Licensing

MJA/PAH/daj

Enclosure: Response to a Request for Additional Information Regarding  
Fourth Interval Inservice Inspection Program

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cc: Southern Nuclear Operating Company  
Mr. J. T. Gasser, Executive Vice President  
Mr. D. R. Madison, Vice President – Hatch  
Ms. P. M. Marino, Vice President – Engineering  
RTYPE: CHA02.004

U. S. Nuclear Regulatory Commission  
Mr. L. A. Reyes, Regional Administrator  
Ms. D. N. Wright, NRR Project Manager – Hatch  
Mr. J. A. Hickey, Senior Resident Inspector – Hatch

**Edwin I. Hatch Nuclear Plant-Unit No. 1  
Response to Request for Additional Information  
Regarding Fourth Interval Inservice Inspection Program**

**Enclosure**

**Response to a Request for Additional Information  
Regarding Fourth Interval Inservice Inspection Program**

# Enclosure

## Response to a Request for Additional Information Regarding Fourth Interval Inservice Inspection Program

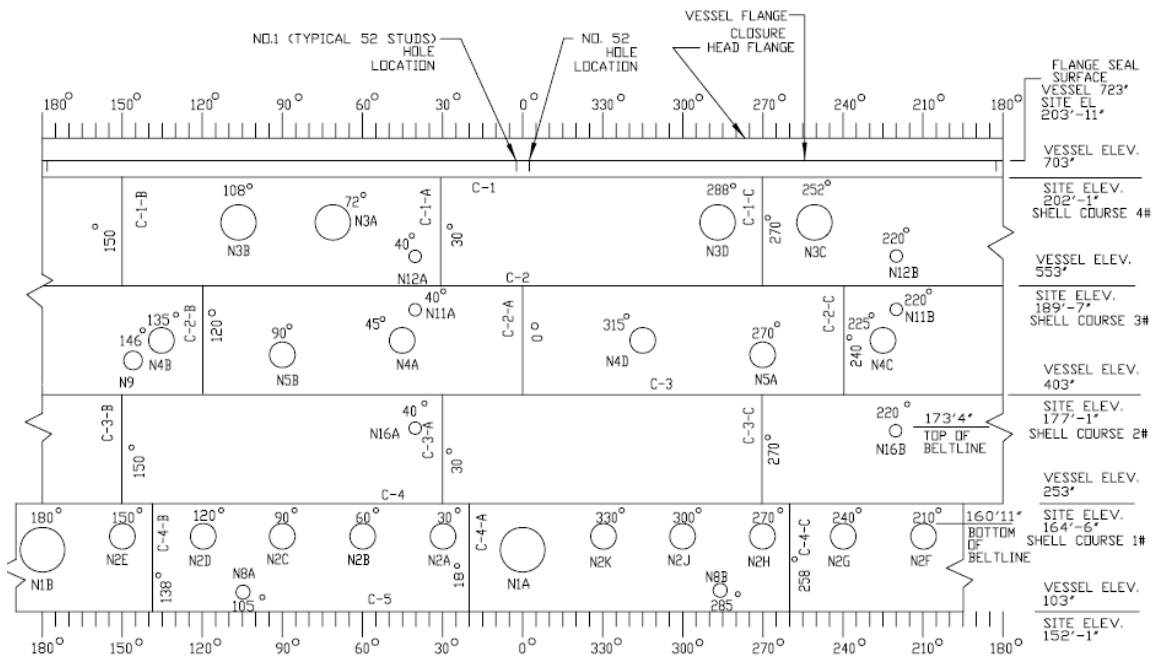
### RAI

Discuss what efforts were taken to maximize weld examination coverage during the fourth 10-year ISI interval for the C-2-A weld. Discuss any additional tests or procedures that provide additional assurance regarding the structural integrity of the longitudinal welds listed in RR-01.

### SNC Response

#### Background

As shown in the figure below, the Hatch Unit 1 (HNP-1) reactor pressure vessel (RPV) shell was fabricated from four shell courses welded together. Each of these shell courses has three longitudinal welds; therefore, there is a total of 12 longitudinal shell welds. The reactor vessel was installed at Hatch such that the lower three courses of the vessel shell were located behind a concrete bio-shield.



From a regulatory perspective, the construction permit was granted on September 30, 1969 and per 10 CFR 50.55a(g)(1) for a facility whose construction permit was issued before January 1, 1971, components only have to meet the examination and examination update requirements of 10 CFR 50.55a(g)(4) and (g)(5) to the extent practical. The 1<sup>st</sup> interval inservice examination requirements for HNP-1 were based on the 1974 Edition of Section XI with addenda through Summer 1975, which required that 10% of each longitudinal shell weld and 5% of each circumferential shell weld be examined.

## Enclosure

### Response to a Request for Additional Information Regarding Fourth Interval Inservice Inspection Program

Therefore, during construction, small access doors were installed in the concrete bio-shield to provide limited outside diameter (OD) access.

Because of the limited OD access, when the NRC issued the augmented examination requirement specified in 10 CFR 50.55a(g)(6)(ii)(A), it was determined that examination of the vessel shell welds from the inside diameter (ID) of the RPV must be attempted, because there was insufficient access from the OD. However, the RPV was not designed to provide access for such examinations, and obstructions such as core shroud support rods, piping internal to the vessel, guide rods, and brackets limited the ID examinations. Additionally, because the upper portion of the RPV insulation package was being removed for replacement at that time, it was determined that it would be appropriate to increase coverage by performing supplemental OD examinations on accessible portions of the upper shell courses.

#### Response – Maximization of Coverage

For the 4<sup>th</sup> ISI Interval, as a result of the limitations observed during the previous ID examinations, in order to maximize weld examination coverage, SNC required the examination vendor to develop a lower profile scanning package that could fit between the vessel wall and the obstructions. This newly developed scanning package was used for the examinations covered by relief request RR-01 and its use significantly increased the examination coverage of the ID weld examinations. With the use of this new scanning package four welds had 90% or greater coverage, five of the welds had 77% to 83% coverage, and two of the welds had 69% to 71% coverage.

However, weld C-2-A, which is a lower fluence weld located in shell course 3, has a permanently installed steam dryer guide rod located in direct alignment with the weld. The distance between the inside of the guide rod and the RPV surface is only 4-inches and access beneath the rod could not be obtained, even with the newly developed lower profile scanning package. Additionally, as shown in Figure RR-01-01 of Relief Request RR-01, Core Spray piping (the “L” shaped piping) and the Feedwater Sparger (the horizontal piping) are mounted to the inside surface of the vessel wall. The proximity of this piping to the weld and the vessel wall prevented any scanning of the lower portion of the weld. Therefore, scanning was only performed on the upper portion of the weld.

#### Response – Additional Tests or Procedures

Additional tests or procedures were not considered necessary to provide reasonable assurance of the structural integrity of the longitudinal welds. The welds in shell courses 1 and 2, which are subject to the highest neutron fluence, had an average coverage of approximately 80% and the welds in the shell courses 3 and 4 which have the lowest fluence had an average coverage of approximately 77%. This coverage is adequate to verify the condition of the vertical weld population and thus provide reasonable assurance that the structural integrity of these welds is being maintained.