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May 17, 2001

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U.S. Nuclear Regulatory Commission  
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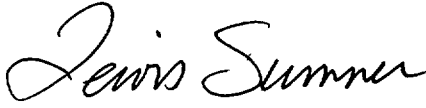
Edwin I. Hatch Nuclear Plant  
Third 10-Year Interval Inservice Inspection (ISI) Program,  
Additional Information Pursuant to NRC SE for Adoption of BWRVIP-75

Ladies and Gentlemen:

By letter dated June 23, 2000, Southern Nuclear Operating Company (SNC) submitted a request in accordance with 10CFR50.55a(3)(i) to adopt the Boiling Water Reactors Vessel and Internals Project (BWRVIP) alternative (BWRVIP-75) for the examination of Reactor Coolant System (RCS) piping at Plant Hatch. The NRC issued a Safety Evaluation (SE) on October 10, 2000 approving the use of BWRVIP-75 with some provisions. The purpose of this letter is to inform the staff of the status of SNC actions relative to the SE provisions. Enclosure 1 provides a discussion of each provision or open item contained in the SE. SNC does not expect that any additional correspondence will be required pursuant to this subject other than that required by the subject document (i.e., BWRVIP-75) and as related to routine ISI summary reporting.

Should you have any questions in this regard, please contact this office.

Respectfully submitted,

  
H. L. Sumner, Jr.

IFL/eb

Enclosure: Response to the Provisions and Open Items in the NRC's SE for SNC's Submittal for the Adoption of BWRVIP-75

cc: (See next page.)

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cc: Southern Nuclear Operating Company  
Mr. P. H. Wells, Nuclear Plant General Manager  
SNC Document Management (R-Type A02.001)

U.S. Nuclear Regulatory Commission, Washington, D.C.  
Mr. L. N. Olshan, Project Manager - Hatch

U.S. Nuclear Regulatory Commission, Region II  
Mr. L. A. Reyes, Regional Administrator  
Mr. J. T. Munday, Senior Resident Inspector - Hatch

## Enclosure

### Response to the Provisions and Open Items in the NRC's SE for SNC's Submittal for the Adoption of BWRVIP-75

#### **Staff Evaluation Section 2.2 - Item 4**

The NRC Staff stated that SNC should rank the welds proposed not to be inspected during the forthcoming (Fall 2000 Unit 1 Outage 1R19) outage utilizing a ranking process similar to that of BWRVIP-75, Section 4. The ranking process should be performed by a panel knowledgeable of the intergranular stress-corrosion cracking (IGSCC) mechanism and its impact on the subject piping systems to identify the locations of greatest safety significance with respect to changes in the IGSCC inspection program. The staff also recommended that SNC give additional consideration to those locations having attributes that would promote IGSCC, or where IGSCC could be accelerated by crevice corrosion or thermal fatigue.

The NRC indicated that if the welds proposed not to be inspected during the fall Unit 1 outage ranked in the top 10% of safety significance, they should be inspected within the period specified by the proposed revisions to the BWRVIP-75 report. The staff also requested that SNC, in its report of inspection results following the outage, discuss in general terms the ranking process utilized and the ranking of the weldments in general.

#### **SNC Response**

SNC contracted with an independent consulting firm with significant historical knowledge and experience with NRC GL 88-01, NUREG-0313, BWRVIP-61, IGSCC, and issues related to BWR RCS piping. SNC requested this consultant to perform a detailed review of the BWRVIP-75 report and the NRC SE, the NRC SE for SNC's BWRVIP-75 submittal, and the examination, mitigation, and repair history for all weldments within the scope of BWRVIP-75 for both Hatch Units. SNC personnel worked with the consultant and on May 2, 2001 the consultant provided a report which ranks all welds within the NUREG 0313/BWRVIP-75 scope. SNC personnel are presently reviewing the report so that the associated ISI plans for both Hatch Units can be updated to incorporate ranking, sample size, and examination schedule requirements. SNC review of the report resulted in the conclusion that none of the welds deferred from the 1R19 outage scope were included in the top 10% ranking of safety significance. Therefore, no additional examinations will be required during the next inspection period specified by the BWRVIP-75 report.

On behalf of Plant Hatch, SNC received NRC approval to utilize ASME Section XI code Case N-532 (ref. ISI Program Relief Request RR-14). Code Case N-532 provides an alternative to the 90-day reporting requirements for ISI performed during an outage. As an alternative, SNC submits a summary report (ASME XI OAR-1 Report) at the end of each ISI period (40-months). This report is typically submitted to the NRC within 6-months of the end of each ISI period. The fall Hatch Unit 1 Outage (1R19) was the first outage in the second period of the third ISI ten-year interval. The second period ends on September 5<sup>th</sup>, 2002 and includes one additional Unit 1 outage (1R20). Therefore, SNC will include the information requested by the NRC in the summary report for the second ISI period.

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Response to the Provisions and Open Items in the NRC's SE  
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### Staff Evaluation Section 2.3 - Additional BWRVIP-75 Open Items

#### Open Item 3.1

The NRC states that, to reduce the inspection sample size below 25% for Category A welds, two mitigation measures are required with resistant material providing one. Hydrogen Water Chemistry (HWC) is an acceptable second mitigation method.

#### SNC Response to Open Item 3.1

Plant Hatch maintains an acceptable HWC program for both Units, therefore, Hatch qualifies for the reduced inspection sample size for Category A welds.

#### Open Item 3.2

The NRC Staff discussed concerns with the long term effectiveness of stress improvement mitigation measures in conjunction with resistant material for Category B welds. The staff recommended that, for plants that used IHSI to mitigate IGSCC, but do not comply fully with the recommendations of EPRI report TR-112076, "Induction Heating Stress Improvement Effectiveness on Crack Growth in Operating Plants (BWRVIP-61)," January 1999 (i.e., properly applied SI and qualified UT), that the inspection frequency be revised to 25% every 6 years, or 25% every 10 years under HWC conditions. When NMCA is implemented in HWC conditions, the inspection frequency may be reduced to 10% of the population every 10 years.

#### SNC Response to Open Item 3.2

There are no Category B welds on either of the Hatch Units. Therefore, this open item is not applicable to Hatch.

#### Open Item 3.3

The Staff recommends that the inspection frequency for Category C welds treated with the IHSI process be 50% every 10 years and 25% every 10 years under NWC and HWC conditions, respectively. When NMCA is implemented in HWC conditions, the inspection frequency may be reduced to 10% every 10 years for plants in compliance with the recommendations of the BWRVIP-61 report.

#### SNC Response to Open Item 3.3

As discussed in SNC's submittal, both Units at Hatch are maintained on an effective HWC program and NMCA has been implemented for both Units. Additionally, the recommendations discussed in BWRVIP-61 were addressed within an inspection scope developed by an independent consulting firm with significant historical knowledge and experience with NRC GL 88-01, NUREG-0313, BWRVIP-61, IGSCC, and issues related to BWR RCS piping, thus meeting the objectives identified in BWRVIP-61. Therefore, SNC meets the criteria to utilize the 10% sample size every 10 years for Category C welds.

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Response to the Provisions and Open Items in the NRC's SE  
for SNC's Submittal for the Adoption of BWRVIP-75

Open Item 3.4

The staff disagrees with the BWRVIP's categorization of weld overlay repairs made with material non resistant to IGSCC as Category E, since both the base material and the overlay material are not resistant to IGSCC. The staff does not agree that inspection relief should be given to such welds, and that they should be categorized as Category F.

The staff recommends the following inspection frequency for Category E welds; after three successive satisfactory inspections (once every two refueling cycles) where no indication of crack growth or new cracking is found, the Category E welds repaired by weld overlay using resistant material may be inspected at a frequency of 25% every 10 years under NWC, and 10% every 10 years when HWC and/or NMCA is implemented.

SNC Response to Open Item 3.4

All Category E welds at Plant Hatch were applied using resistant weld material and all are full structural overlays, therefore, there are no Category F welds at Hatch. All weld overlays have been examined at least three times by IGSCC qualified techniques and personnel since they were applied. No significant crack growth or new cracks have been reported in any of the Category E welds. Since Hatch implements an acceptable HWC program and has implemented NMCA, at least 10% of the Category E welds will be examined every 10 years.

Open Item 3.5

The staff disagrees with Section 3.5.1.2 of the BWRVIP-75 report, which provides inspection guidelines for cracked welds that have been mitigated by a stress improvement process.

SNC Response to Open Item 3.5

There are no welds at Plant Hatch containing know cracks that have been mitigated by a stress improvement process. All welds with known crack indications have been repaired using the weld overlay process and are thus Category E welds. Therefore, Open Item 3.5 is not applicable to Plant Hatch.

Open Item 3.6

The Staff disagrees with the BWRVIP-75 report recommendations for sample expansion criteria for Category A, B, and C weldments and requires the sample expansion criteria of NRC GL 88-01 be followed. The Staff also does not agree with the sample expansion criteria for Category E welds and believes that samples should be expanded whenever significant circumferential crack growth is identified. The Staff recommends that the sample expansion criteria for Category E welds should follow the same scheme as originally proposed in the BWRVIP-75 report for Category A, B, and C welds and that such welds should follow the inspection schedule of corresponding Category D welds.

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Response to the Provisions and Open Items in the NRC's SE  
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*SNC Response to Open Item 3.6*

SNC agrees with the Staff position relative to sample expansion and examination frequency. The guidance of NRC GL 88-01 will be utilized for all Category A, B, and C welds and the original recommendations of BWRVIP-75 will be utilized for Category E welds respectively.