

December 22, 2005

Mr. H. L. Sumner, Jr.
Vice President - Nuclear
Hatch Project
Southern Nuclear Operating
Company, Inc.
P.O. Box 1295
Birmingham, AL 35201-1295

SUBJECT: EDWIN I. HATCH NUCLEAR PLANT, UNITS 1 AND 2 RE: REQUEST FOR RELIEF FROM THE REQUIREMENTS OF THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) BOILER AND PRESSURE VESSEL CODE (CODE) (TAC NOS. MC6532 AND MC6533)

Dear Mr. Sumner:

By letter dated March 30, 2005, Southern Nuclear Operating Company, Inc. (the licensee), submitted a request for the use of alternatives to certain ASME Code Section XI requirements at Edwin I. Hatch Nuclear Plant, Units 1 and 2.

The relief request was submitted to continue use of the guidance contained in the Electric Power Research Institute (EPRI) proprietary report TR-113932, "BWR Vessel and Internals Project, Technical Basis for Revisions to Generic Letter 88-01 Inspection Schedules (BWRVIP-75)," dated October 1999, as revised by the Nuclear Regulatory Commission (NRC) staff's final Safety Evaluation dated May 14, 2002, in lieu of the licensee's commitments to Generic Letter 88-01 and NUREG-0313, Revision 2.

The NRC staff concluded that the licensee's proposed alternative provides an acceptable level of quality and safety. The NRC staff authorizes the proposed alternative for the fourth 10-year inservice inspection interval.

The NRC staff's Safety Evaluation is enclosed.

Sincerely,

/RA/

Evangelos Marinos, Branch Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-321 and 50-366

Enclosure: As stated

cc w/encls: See next page

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELIEF REQUEST ISI-ALT-3, VERSION 1.0

SOUTHERN NUCLEAR OPERATING COMPANY, INC.

EDWIN I. HATCH NUCLEAR PLANT, UNIT NOS. 1 AND 2

DOCKET NOS. 50-321 AND 50-366

1.0 INTRODUCTION

By letter dated March 30, 2005, Southern Nuclear Operating Company, Inc., (the licensee) for the Edwin I. Hatch Nuclear Plant, Unit Nos. 1 and 2 (Hatch, Units 1 and 2) submitted request for relief ISI-ALT-3 for the fourth 10-year inservice inspection (ISI) interval. The subject relief request was submitted to continue use of the guidance contained in the Electric Power Research Institute proprietary report TR-113932, "BWR Vessel and Internals Project, Technical Basis for Revisions to Generic Letter (GL) 88-01 Inspection Schedules (BWRVIP-75)," dated October 1999, as revised by the Nuclear Regulatory Commission (NRC) staff's final Safety Evaluation (SE) dated May 14, 2002, in lieu of the licensee's commitments to GL 88-01, "NRC Position on IGSCC [Intergranular Stress Corrosion Cracking] in BWR [Boiling Water Reactor] Austenitic Stainless Steel Piping," dated January 25, 1988, and NUREG-0313, Revision 2, "Technical Report on Material Selection and Process Guidelines for BWR Coolant Pressure Boundary Piping," dated January 1988. The subject relief request is a re-submittal of relief request RR-39 which was submitted for the third 10-year ISI. The NRC staff approved RR-39 by letter dated January 7, 2005.

2.0 REGULATORY EVALUATION

The ISI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Code) Class 1, 2, and 3 components is to be performed in accordance with Section XI of the ASME Code and applicable edition and addenda as required by 10 CFR 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(I). Section 50.55a(a)(3) states in part that alternatives to the requirements of paragraph (g) may be used, when authorized by the NRC, if the licensee demonstrates that: (I) the proposed alternatives would provide an acceptable level of quality and safety, or (ii) compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 components (including supports) shall meet the requirements, except the design and access provisions and the pre-service examination requirements, set forth in the ASME Code, Section XI, "Rules for Inservice Inspection (ISI) of Nuclear Power Plant Components," to the extent practical within the limitations of design, geometry, and materials of construction of the components. The

regulations require that inservice examination of components and system pressure tests conducted during the first 10-year interval and subsequent intervals comply with the requirements in the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(b) twelve months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. The fourth 10-year ISI interval for Hatch, Units 1 and 2, extends from January 1, 2006, through December 31, 2015. The ISI code of record for the fourth 10-year ISI interval for Hatch, Units 1 and 2, is the 2001 Edition through the 2003 Addenda of the ASME Section XI Code. The components (including supports) may meet the requirements set forth in subsequent editions and addenda of the ASME Code incorporated by reference in 10 CFR 50.55a(b) subject to the limitations and modifications listed therein and subject to commission approval.

3.0 TECHNICAL EVALUATION

3.1 Components for Which Relief is Requested

All high alloy steel welds and high nickel alloy welds covered by the augmented requirements of NUREG-0313 and GL 88-01.

3.2 Code Requirements

ASME Section XI, 2001 Edition through the 2003 Addenda, requires the following:

- IWB-2412 requires examinations to be completed in accordance with Table IWB-2412-1, except for the examinations that may be deferred until the end of the inspection interval. Table IWB-2412-1 defines a minimum and maximum number of examinations to be performed each inspection period.
- IWB-2430 provides scope expansion rules when flaws exceed the acceptance standards of Table IWB-3410-1.
- IWB-2500 requires components to be examined as specified in Table IWB-2500-1. The *Extent and Frequency of Examination* requires that all Category B-F welds be examined and that a minimum of 25% of Category B-J welds be examined over the ten-year ISI interval.

3.3 Relief Requested

The licensee proposes to use the schedules and frequencies specified in the BWRVIP-75 in lieu of the above listed Code requirements when examining high alloy steel welds and high nickel alloy welds. The *Examination Method* listed in Table IWB-2500-1 is not affected by this request.

3.4 Licensee's Basis

By letter dated May 14, 2002, the NRC issued its final SE of BWRVIP-75 (Technical Basis for Revisions to GL 88-01 Inspection Schedules). In that safety evaluation, the NRC staff concluded that, "licensee implementation of the guidelines of BWRVIP-75 report, as modified, will provide an acceptable level of quality for inspection of the safety-related components."

Additionally, the NRC concluded that, "the revised BWRVIP-75 guidance is acceptable for licensee referencing as the technical basis for relief from, or as an alternative to, the ASME Code and 10 CFR 50.55a, in order to use the sample schedules and frequencies specified in the revised BWRVIP-75 report that are less than those required by the ASME Code."

The licensee concludes that the use of BWRVIP-75 as defined by the NRC final SE in lieu of the above specified requirements, will provide an acceptable level of quality and safety. Therefore, approval should be granted pursuant to 10 CFR 50.55a(a)(3)(I).

3.5 NRC Staff Evaluation

The BWRVIP-75 report was submitted to the NRC for staff review by letter dated October 27, 1999. The BWRVIP-75 report proposed revisions to the scope and frequencies of inspections of Categories A through E welds as defined in GL 88-01, "NRC Position on IGSCC in BWR Austenitic Stainless Steel Piping," dated January 25, 1988, and NUREG-0313, Revision 2, "Technical Report on Material Selection and Process Guidelines for BWR Coolant Pressure Boundary Piping," dated January 1988, for both normal water chemistry and hydrogen water chemistry (HWC) conditions. The proposed revisions were based on the consideration of inspection results and service experience gained by the industry since the issuance of GL 88-01, and included additional knowledge regarding the benefits of improved BWR water chemistry.

The NRC staff reviewed the BWRVIP-75 report, as supplemented, and found that the revised guidance of the BWRVIP-75 report, with the modifications as described in the NRC staff's final SE dated May 14, 2002, is acceptable for inspection of the subject safety-related Class 1 piping welds. One modification of significant note is the staff evaluation of Open Item 3.8 (Effective HWC and NMCA Programs) in the NRC staff's final SE dated May 14, 2002, which states:

The staff agrees that it is not necessary to monitor ECP [electrochemical corrosion potential] in multiple locations or at the most conservative location; however, it should be clearly stated in the BWRVIP-75 report that licensees which take credit for HWC should verify and validate that an effective HWC program (i.e., available at least 80 percent of the time and an ECP of -230 mV or less), in accordance with the staff-approved BWRVIP-62 guidelines, has been achieved for welds in every piping system for which HWC credit is taken. Based on the discussions held with the BWRVIP during the public meeting on this issue, the BWRVIP agreed to incorporate this into a revised BWRVIP-75 report. Regarding the use of factors of improvement (FOI) to determine the effectiveness of a licensee's HWC program, the staff disagrees with the BWRVIP on this issue; therefore, at this time, the staff is not approving the use of FOI for BWR austenitic stainless steel piping. With this modification to the BWRVIP-75 report, the staff considers Open Item 3.8 to be adequately resolved.

Currently, BWRVIP-62 has not been approved by the NRC staff. In order for the licensee to take credit for HWC, the licensee would be required to verify and validate their program in accordance with the to-be-determined NRC "staff-approved BWRVIP-62 guidelines" or the recommendations in the NRC staff's initial SE dated September 15, 2000, Open Item 3.1. These recommendations were also provided in the NRC staff's May 14, 2002, final SE, in Open Item 3.8.

The licensee's alternative examination would use sample scope and frequencies specified in the BWRVIP-75 report that are less than those required by the ASME Code. The NRC staff has concluded that licensee implementation of the guidelines in the BWRVIP-75 report, as modified, will provide an acceptable level of quality for inspection of the safety-related components addressed. Further, the NRC staff found that the BWRVIP-75 guidance, as revised by the staff's final SE dated May 14, 2002, is acceptable for licensee referencing as the technical basis for relief from, or as an alternative to, the ASME Code and 10 CFR 50.55a.

While these inspections can be credited toward ASME Section XI requirements, inspections of those welds outside the GL 88-01 scope are not affected and are not included in this relief approval. The findings and conclusions in the staff's final BWRVIP-75 SE are not applicable to any welds or piping (e.g., socket welds, carbon steel piping, etc.) other than those within the original scope of GL 88-01 and NUREG-0313, Rev. 2 (e.g., those in BWR piping made of austenitic stainless steel four inches or larger in nominal diameter and exposed to reactor coolant at a temperature above 200EF during power operation, and to reactor pressure vessel attachments and appurtenances).

4.0 CONCLUSION

The NRC staff has reviewed the licensee's proposal in relief request ISI-ALT-3 to adopt and utilize the guidance contained in the BWRVIP-75 report as an alternative, in accordance with 10 CFR 50.55a(a)(3)(I), in lieu of its commitments to inspect in accordance with GL 88-01. Based on the NRC staff's review of the licensee's justification, the NRC staff finds the licensee's use of the BWRVIP-75 report, as revised to reflect the response to the open items in the NRC staff's May 14, 2002, final SE for BWRVIP-75, provides an acceptable level of quality and safety. Therefore, pursuant to 10 CFR 50.55a(a)(3)(I), the NRC staff authorizes the proposed alternative in relief request ISI-ALT-3, for Hatch, Units 1 and 2, for the fourth 10-year ISI.

All other ASME Code, Section XI requirements for which relief was not specifically requested and approved in this relief request remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

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Date: December 22, 2005

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