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September 28, 2001

Docket Nos. 50-321
50-366

HL-6129

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

Edwin I. Hatch Nuclear Plant
Inservice Inspection Program
Submittal of Request for Relief

Ladies and Gentlemen:

Southern Nuclear Operating Company (SNC) submits Requests for Relief Nos. RR-34 and RR-35 for the Inservice Inspection Program for the Edwin I. Hatch Nuclear Plant, Units 1 and 2. The 1989 Edition of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Section XI requirement, from which the reliefs are requested, is with regard to the performance of volumetric examinations.

Table IWB-2500-1 of the ASME Section XI Code requires the volumetric examination of Reactor Pressure Vessel (RPV) nozzle inner radii sections. As an alternative, ASME Section XI Code Case N-648, approved on December 8, 2000, generally allows for the substitution of a visual (VT-1) examination for RPV nozzle inner radii sections instead of the volumetric examination requirements. Request for Relief No. RR-34, which would implement the alternative requirements of Code Case N-648, is provided in Attachment 1.

Likewise, Code Case N-307-2, approved by ASME on September 24, 1999 and incorporated in the 2000 Addenda of the ASME Section XI Code, reduces the required volume to include the outside diameter to a radial depth of 1/4" when performing volumetric examinations on RPV studs. Table IWB-2500-1 in the 2000 Addenda of the ASME Section XI Code also specifies that a volumetric or surface examination be performed when RPV studs are removed. Subsequently, Code Case 307-3 was developed to allow similar provisions for earlier editions of the ASME Section XI Code. Changing the examination requirements to a volumetric examination only reduces the necessary manpower and is consistent with the "As Low As Reasonably Achievable" (ALARA) principle. Request for Relief No. RR-35, which would implement the alternative requirements of Code Cases N-307-2 and N-307-3, is provided in Attachment 2.

Although technically correct, Code Case N-648 contained some errors pertaining to paragraph references. Attachment 3 contains the corrected version which will be published in a future ASME Code Case Supplement. Also, the referenced N-307-2 and draft N-307-3 are enclosed in Attachment 4.

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SNC also plans to submit similar relief requests for use at the Vogtle Electric Generating Plant and the Joseph M. Farley Nuclear Plant. This information should be used to minimize the NRC manpower necessary for reviewing these relief requests. SNC requests that the NRC review and approve these requests for relief.

Should there be any questions, please contact this office.

Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY



H. L. Sumner, Jr.

HLS/JMG

Attachments

1. Request for Relief No. RR-34
2. Request for Relief No. RR-35
3. Corrected Code Case N-648
4. Code Case N-307-2 and Draft N-307-3

cc: Southern Nuclear Operating Company
Mr. P. H. Wells, Nuclear Plant General Manager
SNC Document Management

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

ATTACHMENT 1
TO
SOUTHERN NUCLEAR OPERATING COMPANY
LETTER HL-6129

EDWIN I. HATCH NUCLEAR PLANT
INSERVICE INSPECTION PROGRAM
REQUEST FOR RELIEF RR-34

SOUTHERN NUCLEAR OPERATING COMPANY
HATCH NUCLEAR PLANT, UNITS 1 AND 2
INSERVICE INSPECTION PROGRAM
REQUEST FOR RELIEF NO. RR-34

- I. System/Component(s) for Which Relief is Requested: Examination of Reactor Pressure Vessel (RPV) nozzle inner radii, ASME Code Category B-D, Item B3.20 or B3.100, other than the Boiling Water Reactor Feedwater (FW) nozzles and operational Control Rod Drive (CRD) return line nozzles.
- II. Code Requirement: The 1989 edition of ASME Section XI, Table IWB-2500-1, Examination Category B-D, Item B3.20 and B3.100, requires the volumetric examination of the RPV nozzle inside radius section.
- III. Code Requirement from Which Relief is Requested: Relief is requested from the requirement of performing the volumetric examination.
- IV. Basis for Relief: ASME Code Case N-648, approved by ASME on December 8, 2000, allows for the substitution of a visual (VT-1) examination in lieu of the volumetric examination requirements as specified in Table IWB-2500-1, except for BWR FW nozzles and operational CRD return line nozzles. Code Case N-648 contained errors pertaining to paragraph references. Attachment 3 contains the corrected version which will be published in a future ASME Code Case Supplement.
- V. Alternate Examination: A VT-1 examination will be performed on the areas specified in Figure IWB-2500-7.
- VI. Justification for Granting Relief: The concept of allowing the substitution of a visual (VT-1) examination in lieu of the volumetric examination requirements as specified in Table IWB-2500-1 originally included only pressurized water reactor (PWR) nozzles. In the initial discussions between Westinghouse, the NRC and the ASME Code Committee, it was noted that, for PWRs, the ultrasonic examination had been performed generally in conjunction with a first period "40-month" examination or during the ten-year vessel ISI examination. In addition, remote visual examinations using specialized underwater cameras were routinely performed of the RPV interior surface, usually in conjunction with the ten-year vessel ISI examination. Discussions with the NRC and Westinghouse in early 2000 demonstrated the examination capabilities and visual resolution (VT-3) of past examinations performed on the nozzle inside radius areas. The NRC accepted elimination of the nozzle inner radius volumetric examinations, provided that VT-1 examinations were performed on the applicable nozzles. In subsequent discussions by the ASME Code Committees, it was determined that, with the exception of BWR FW nozzles and active CRD return lines, BWR RPV nozzles should also be included in the scope of the Code Case N-648. The BWR FW nozzles and active CRD return lines are excluded because of NUREG 0619. The Code Case was subsequently approved by ASME.

Pursuant to 10 CFR 50.55a (a)(3)(i), SNC requests approval to use the alternative examination requirements specified in ASME Section XI, Code Case N-648. The alternative use of Code Case N-648 provides an acceptable level of quality and safety.
- VII. Implementation Schedule: The relief request is applicable for the Third 10-Year Interval.
- VIII. Relief Request Status: Submitted to NRC for review and approval.

ATTACHMENT 2
TO
SOUTHERN NUCLEAR OPERATING COMPANY
LETTER HL-6129

EDWIN I. HATCH NUCLEAR PLANT
INSERVICE INSPECTION PROGRAM
REQUEST FOR RELIEF RR-35

SOUTHERN NUCLEAR OPERATING COMPANY
HATCH NUCLEAR PLANT, UNITS 1 AND 2
INSERVICE INSPECTION PROGRAM
REQUEST FOR RELIEF NO. RR-35

- I. System/Component(s) for Which Relief is Requested: Examination of Class 1 bolting, ASME Code Category B-G-1.
- II. Code Requirement: The 1989 edition of ASME Section XI, Table IWB-2500-1, Examination Category B-G-1:
- (a) Exam Figure IWB-2500-12 for Item B6.30 requires the examination volume be defined as the full volume of the load-bearing portion of the stud.
 - (b) Table IWB-2500-1 requires that the examinations include both a surface and volumetric method when the studs are removed.
 - (c) Table IWB-2500-1 does not allow deferral for Items B6.20, "RPV Closure Studs, In Place," B6.40, "Threads in Flange," and B6.50, "Closure Washers, Bushings."
- III. Code Requirement from Which Relief is Requested: Relief is requested from the following:
- (a) Item B6.30 Exam Figure IWB-2500-12 requirement that the examination volume be defined as the full volume of the load-bearing portion of the stud.
 - (b) Table IWB-2500-1 requirement that the examinations include both a surface *and* volumetric method when the studs are removed.
 - (c) Table IWB-2500-1 disallowing deferral for Items B6.20, "RPV Closure Studs, In Place," B6.40, "Threads in Flange," and B6.50, "Closure Washers, Bushings."
- IV. Basis for Relief:
- (a) In ASME Code Case N-307-2, which was passed by ASME on September 24, 1999 and incorporated in the 2000 Addenda of the ASME Section XI Code, the required volume was reduced to include the outside diameter to a radial depth of $\frac{1}{4}$ " when performing volumetric examinations on RPV studs.
 - (b) Table IWB-2500-1 in the 2000 Addenda of the ASME Section XI Code specifies that a volumetric *or* surface examination be performed when RPV studs are removed. Code Case N-307-3 was developed to allow similar provisions for earlier editions of the Code. The only difference is the surface examination may be eliminated when performing volumetric examinations from the end of the stud or from the center-drilled hole. Changing the examination requirements to a volumetric examination only reduces the necessary manpower and is consistent with the ALARA principle. Typically, extensive cleaning of the heavy and contaminated studs is required prior to the fluorescent magnetic particle (MT) examination, which created logistic problems. Studs not properly cleaned may give false indications. Performing only a volumetric (UT) examination does not require extensive cleaning and does not generally create logistic problems. To perform the volumetric examination, only one end of the stud is required to be accessible and the total preparation and examination time is reduced by a factor of 10.
 - (c) Examination of RPV studs in place, flange ligaments and ligament bushings are often performed simultaneously while in the vessel cavity. Beginning with the 1995 ASME Section XI with 1996 Addenda, the Code allows for deferral of these items to the end of the inspection interval. The scheduling option will allow for more efficient coordination and reduce examination time for exams performed in the cavity, thus reducing radiation exposure.

SOUTHERN NUCLEAR OPERATING COMPANY
HATCH NUCLEAR PLANT, UNITS 1 AND 2
INSERVICE INSPECTION PROGRAM
REQUEST FOR RELIEF NO. RR-35
(continued)

- V. Alternate Examination: For ultrasonic inspections, Southern Nuclear Operating Company (SNC) proposes to use the alternative methods and direction specified in ASME Code Case N-307-3. A copy of Code Case N-307-2 and a draft of Code Case N-307-3 are attached for reference. Code Case N-307-3 was passed by the ASME Main Committee on February 16, 2001 as ISI-00-33 in BPV#00-13 and is scheduled for publication in the next ASME Supplement. In addition, the volumetric examinations will be performed with procedures and personnel qualified in accordance with ASME Section XI Appendix VIII as required by the September 22, 1999, version of 10 CFR 50.55a.

Deferrals for scheduling purposes will be optional and utilized provided a ten-year maximum duration is not exceeded between examinations. A "re-zeroing" of examinations will be necessary if the scheduling option is chosen.

- VI. Justification for Granting Relief: Pursuant to 10 CFR 50.55a (a)(3)(i), SNC requests approval to use the alternative examination requirements specified in ASME Section XI, Code Case N-307-3. Effective May 22, 2000, the requirements of ASME Section XI, 1995 Edition and 1996 Addenda, Appendix VIII are applicable for inservice inspection (ISI) at all nuclear electric generating plants within the United States. The Appendix VIII requirements will be implemented at SNC plants via the industry Performance Demonstration Initiative (PDI). Implementation of Appendix VIII, via the PDI, provides for more stringent requirements for qualification and demonstration of personnel, equipment, and procedures utilized for ISI.

Pursuant to 10 CFR 50.55a(a)(3)(i), the alternative use of Code Case N-307-2 and N-307-3, along with optional scheduling allowances, provides an acceptable level of quality and safety.

- VII. Implementation Schedule: The relief request is applicable for the Third 10-Year Interval.
- VIII. Relief Request Status: Submitted to NRC for review and approval.

ATTACHMENT 3
TO
SOUTHERN NUCLEAR OPERATING COMPANY
LETTER HL-6129

ASME SECTION XI CODE CASE N-648 (CORRECTED)

SOUTHERN NUCLEAR OPERATING COMPANY
HATCH NUCLEAR PLANT, UNITS 1 AND 2
INSERVICE INSPECTION PROGRAM

**CASE
N-648**

CASES OF ASME BOILER AND PRESSURE VESSEL CODE

Approval Date: December 8, 2000
Expiration Date: December 8, 2003

**Case N-648
Alternative Requirements for Inner Radius
Examinations of Class 1 Reactor Vessel Nozzles
Section XI, Division 1**

Inquiry: What alternative to the inservice examination requirements of Table IWB-2500-1, Examination Category B-D may be used for reactor vessels?

Reply: It is the opinion of the Committee that a VT-1 examination of the surface M-N in Figs.

IWB-2500-7(a) through (d) in the 1998 Edition may be performed in lieu of the volumetric examination required by Table IWB-2500-1, Examination Category B-D, Item No. B3.20 or Item No. B3.100, for inservice examination of reactor vessel nozzles other than BWR feedwater nozzles and operational control rod drive return line nozzles.

Crack-like surface flaws exceeding the acceptance criteria of *Table IWB-3510-3* in the 1998 Edition are unacceptable for continued service unless the reactor vessel meets the requirements of IWB-3142.2, IWB-3142-3, or IWB-3142.4.

Note: An editorial change to Code Case N-648 is in process to correct the paragraph reference in the reply from Table IWB-3513-3 to Table IWB-3510-3, as specified above.

**ATTACHMENT 4
TO
SOUTHERN NUCLEAR OPERATING COMPANY
LETTER HL-6129**

**ASME SECTION XI CODE CASES N-307-2 AND
N-307-3 (DRAFT)**

SOUTHERN NUCLEAR OPERATING COMPANY
HATCH NUCLEAR PLANT, UNITS 1 AND 2
INSERVICE INSPECTION PROGRAM

CASE
N-307-2

CASES OF ASME BOILER AND PRESSURE VESSEL CODE

Approval Date: September 24, 1999
See Numeric Index for expiration
and any reaffirmation dates.

Case N-307-2
Revised Ultrasonic Examination Volume for Class
1 Bolting, Table IWB-2500-1, Examination
Category B-G-1, When the Examinations Are
Conducted From the End of the Bolt or Stud or
From the Center-Drilled Hole
Section XI, Division 1

Inquiry: When ultrasonic examinations are conducted from the end of the bolt or stud or from the center-drilled hole of bolts or studs to satisfy the examination requirements of Table IWB-2500-1, Examination Category B-G-1, may the examination volume be limited to the cylindrical region defined by A-B-C-D-E-F-A in Fig. 1?

Reply: It is the opinion of the Committee that, when conducting ultrasonic examinations from the end of the bolt or stud or from the center-drilled hole of bolts or studs to satisfy the examination requirements of Table IWB-2500-1, Examination Category B-G-1, the examination volume may be limited to the cylindrical region defined by A-B-C-D-E-F-A in Fig. 1.

SOUTHERN NUCLEAR OPERATING COMPANY
HATCH NUCLEAR PLANT, UNITS 1 AND 2
INSERVICE INSPECTION PROGRAM

CASE (continued)
N-307-2

CASES OF ASME BOILER AND PRESSURE VESSEL CODE

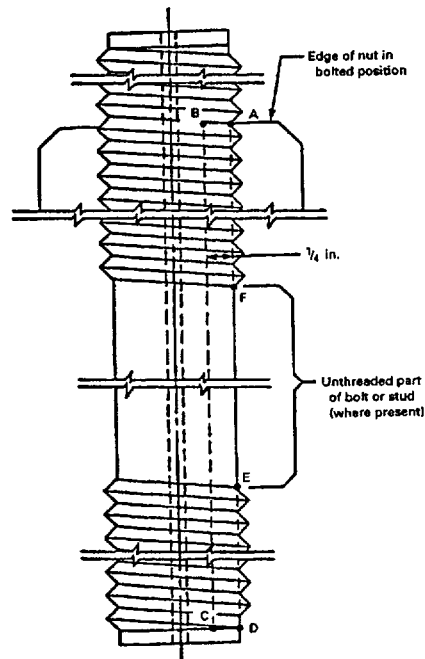


FIG. 1 REVISED EXAMINATION VOLUME

SOUTHERN NUCLEAR OPERATING COMPANY
HATCH NUCLEAR PLANT, UNITS 1 AND 2
INSERVICE INSPECTION PROGRAM

DRAFT CODE CASE
(Main Committee passed ISI 00-33 in BPV LB#00-13)

**CASE
N-307-3**

CASES OF ASME BOILER AND PRESSURE VESSEL CODE

Approval Date: February 16, 2001

Case N-307-3

**Examination of Class 1 Bolting, Table-2500-1,
Examination Category B-G-1
Section XI, Division 1**

Inquiry: When ultrasonic examinations are conducted from the end of the bolt or stud or from the center-drilled hole of bolts or studs to satisfy the examination requirements of Table IWB-2500-1, Examination Category B-G-1, may the examination volume be limited to the outer cylindrical region defined in A-B-C-D-E-F-A in Fig. 1, and may the surface examination requirement of Table IWB-2500-1, Examination Category B-G-1, Item, B6.30, Reactor Vessel Studs when removed, be eliminated?

Reply: It is the opinion of the Committee that, when conducting the ultrasonic examination from the end of the bolt or stud or from the center-drilled hole of bolts or studs to satisfy the requirements of Table IWB-2500-1, Examination Category B-G-1, the examination volume may be limited to the cylindrical region defined by A-B-C-D-E-F-A in Fig. 1, and the surface examination requirement of Table IWB-2500-1, Examination Category B-G-1, Item, B6.30, Reactor Vessel Studs when removed, may be eliminated.

Applicability: 1974 Edition up to and including the 1999 Addenda.