

Lewis Sumner
Vice President
Hatch Project Support

Southern Nuclear
Operating Company, Inc.
40 Inverness Parkway
Post Office Box 1295
Birmingham, Alabama 35201
Tel 205.992.7279
Fax 205.992.0341



June 15, 2000

Docket Nos. 50-321
50-366

HL-5951

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

Edwin I. Hatch Nuclear Plant
Relief Requests Associated with
Implementation of ASME Section XI, Appendix VIII

Ladies and Gentlemen:

10 CFR 50.55a, as amended by Federal Register Notice 64 FR 51370 dated September 22, 1999, requires a phased-in implementation of the ASME Code, Section XI, 1995 Edition, 1996 Addenda, Appendix VIII. Initial implementation is required beginning May 22, 2000. Therefore, Supplements 1, 2, 3, and 8 of Appendix VIII are required to be implemented for inservice inspection (ISI) at Plant Hatch beginning with the Unit 1 fall 2000 (1R19) refueling outage. Through participation with the industry Performance Demonstration Initiative (PDI) and communication with the Electric Power Research Institute (EPRI), Southern Nuclear Operating Company (SNC) has determined that additional requests for relief will be required for implementation of Appendix VIII and portions of the associated later version of the ASME Section XI Code. Therefore, four new relief requests are attached for review by the NRC staff. Provided below is a brief summary of the subject relief requests.

RELIEF REQUEST	SUBJECT	DESCRIPTION
RR-32	Ultrasonic scanning of full penetration welds of nozzles in vessels.	Relief is requested from the requirements of ASME Section V, 1989 Edition, Article 4 as related to ultrasonic search unit scanning orientations and directions.
RR-33	Training requirements for nondestructive examination (NDE) personnel.	Request to use ASME Section XI, Code Case N-583 for the annual training requirements for NDE personnel.
RR-APP. VIII-1	RPV weld examinations.	Request to use alternative for the ultrasonic examination length sizing criteria specified in Appendix VIII.
RR-APP. VIII-2	Component weld with single side access for ultrasonic examination.	Relief is requested from the requirements for coverage and demonstration as related to single sided ultrasonic weld examinations.

RSU-001

A047

U. S. Nuclear Regulatory Commission

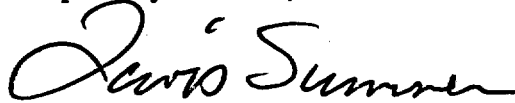
Page 2

June 15, 2000

The fall Plant Hatch Unit 1 outage is presently scheduled to begin on September 30, 2000. Therefore, SNC requests that the NRC staff review two of the attached relief requests on an expedited schedule. Relief Requests RR-APP. VIII-1 and RR-APP. VIII-2 are needed for implementation of the new ASME Section XI, Appendix VIII requirements this fall and SNC requests NRC review prior to August 15, 2000. The remaining two relief requests will not be required until subsequent outages, however, SNC requests NRC review prior to the end of 2000.

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

Respectfully submitted,



H. L. Sumner, Jr.

IFL/eb

Attachments:

1. ISI Program Request for Relief RR-32
2. ISI Program Request for Relief RR-33
3. ISI Program Request for Relief RR-APP. VIII-1
4. ISI Program Request for Relief RR-APP. VIII-2

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

ATTACHMENT 1

**SOUTHERN NUCLEAR OPERATING COMPANY
HATCH NUCLEAR PLANT, UNIT 1 & 2
THIRD 10-YEAR INTERVAL**

REQUEST FOR RELIEF NO. RR-32

**SOUTHERN NUCLEAR OPERATING COMPANY
HATCH NUCLEAR PLANT, UNIT 1 & 2
THIRD 10-YEAR INTERVAL
REQUEST FOR RELIEF NO. RR-32**

- I. System/Component for Which Relief is Requested: ASME Section XI, 1989 Edition, Examination Category B-D, Full Penetration Welds of Nozzles in Vessels, Item B3.90, Figure IWB-2500-7(b).
- II. Code Requirement: ASME Section V, 1989 Edition, Article 4, Paragraphs; T-441.3.2.5 *Angle Beam Scanning*, T-441.3.2.6 *Scanning for Reflectors Oriented Parallel to the Weld*, and T-441.3.2.7 *Scanning for Reflectors Oriented Transverse to the Weld* require ultrasonic scanning with search units aimed in multiple orientations and directions.
- III. Code Requirement for Which Relief is Requested: Relief is requested from the strict requirements of ASME Section V, 1989 Edition, Article 4, Paragraphs; T-441.3.2.5, T-441.3.2.6, and T-441.3.2.7 as related to ultrasonic search unit scanning orientations and directions.
- IV. Basis for Relief: SNC is currently required to perform inservice examinations of vessel welds at Plant Hatch in accordance with the requirements of the 1989 Edition of the ASME Section XI Code. This Code edition invokes the examination volume requirements of Figure IWB-2500-7(b) for the Reactor Pressure Vessel (RPV) nozzle configurations. This Code edition also invokes the examination requirements of Appendix I, Article I-2000 which reference ASME Section V, Article 4 that is based on ultrasonic examination technology and methodology that is essentially twenty (20) years old. Recent 10 CFR 50.55a Rule changes have endorsed later versions of the ASME XI Code and mandated implementation of ASME Section XI, 1995 Edition and 1996 Addenda, Appendix VIII. Appendix VIII is based on the demonstrated capabilities of equipment, personnel and procedures to detect flaws within the examination volume of interest.
- V. Alternate Examination: Perform vessel nozzle-to-shell weld examinations scanning for reflectors oriented parallel to the weld in accordance with ASME Section XI Code Case N-613.
- VI. Justification for Granting Relief: Pursuant to 10 CFR 50.55a (a)(3)(i), SNC requests approval to use the alternative ultrasonic examination requirements of ASME Section XI, Code Case N-613 in lieu of the requirements of ASME Section XI Figure IWB-2500-7(b) at Plant Hatch. SNC also request approval to use Code Case N-613 in lieu of the requirements of ASME Section V, Article 4 for the performance of the required volumetric examinations as specified in Table IWB-2500-1, Category B-D, of the 1989 Edition of ASME Section XI.

The examination volume for the RPV pressure retaining nozzle-to-vessel welds extends far beyond the weld into the base metal, and is unnecessarily large. This extends the examination time significantly, and results in no net increase in safety, as the area being examined is a base

metal region which is not prone to inservice cracking and has been extensively examined before the vessel was put into service and during the first inservice examination.

The implementation of Code Case N-613 will provide added assurance that the RPV welds have remained free of service related flaws thus enhancing quality and ensuring plant safety and reliability. Use of this Code Case will also reduce the on-vessel examination time by as much as 12 hours/nozzle which results in potential significant cost savings and reduced personnel radiation exposure. Therefore, relief is warranted in accordance with 10 CFR 50.55a(a)(3)(i) since ultrasonic examination techniques demonstrated in accordance with the criteria of Appendix VIII provide 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.

Reference: ASME Section XI Code Case N-613 attached (pages 3 through 6).

CASE
N-613

CASE OF ASME BUILDER AND PRESSURE VESSEL CODE

Approval Date: July 20, 1988

See *Nuclear Index* for explanation
and any reaffirmation dates

Case N-613

Ultrasonic Examination of Full Penetration
Nozzles in Vessels, Examination Category B-D,
Item No's B3.10 and B3.90, Reactor Vessel-To-
Nozzle Welds, Fig. IWB-2500-7(a), (b), and (c)
Section XI, Division 1

Inquiry: What alternatives to the examination re-
quirements of Section XI, Appendix I and Section V,
Article 4 are permissible when performing ultrasonic
examination of reactor vessel-to-nozzle welds?

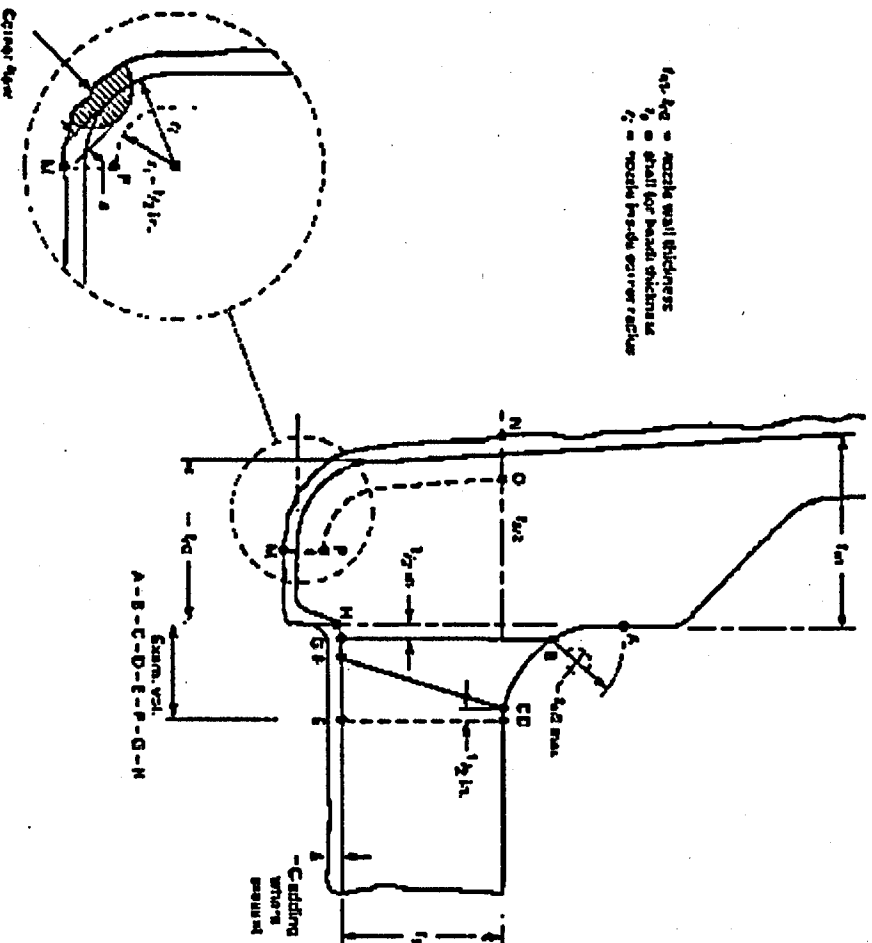
Reply: It is the opinion of the Committee that ultra-
sonic examination of Category B-D nozzles may be
conducted using techniques designed for detection and
sizing of surface and subsurface flaws within the ex-
amination volume (A-E-C-D-I-F-G-H), oriented in a
plane normal to the vessel inside surface and parallel
to the weld for Figs. 1 and 2, and oriented in a plane
normal to the nozzle inside surface and parallel to
the weld for Fig. 3.

1051

SUPP. 1 - MC

CASE (continued)
N-613

CASE OF ASME STEEL EXP. PRESSURE VESSEL CODE



NOTE:
(1) Examination regions are identified for the purpose of differentiating the acceptance standards in NB-3512.
(2) Examination volumes may be determined either by acceptance standards or the component as by mass, surface area or design drawings.

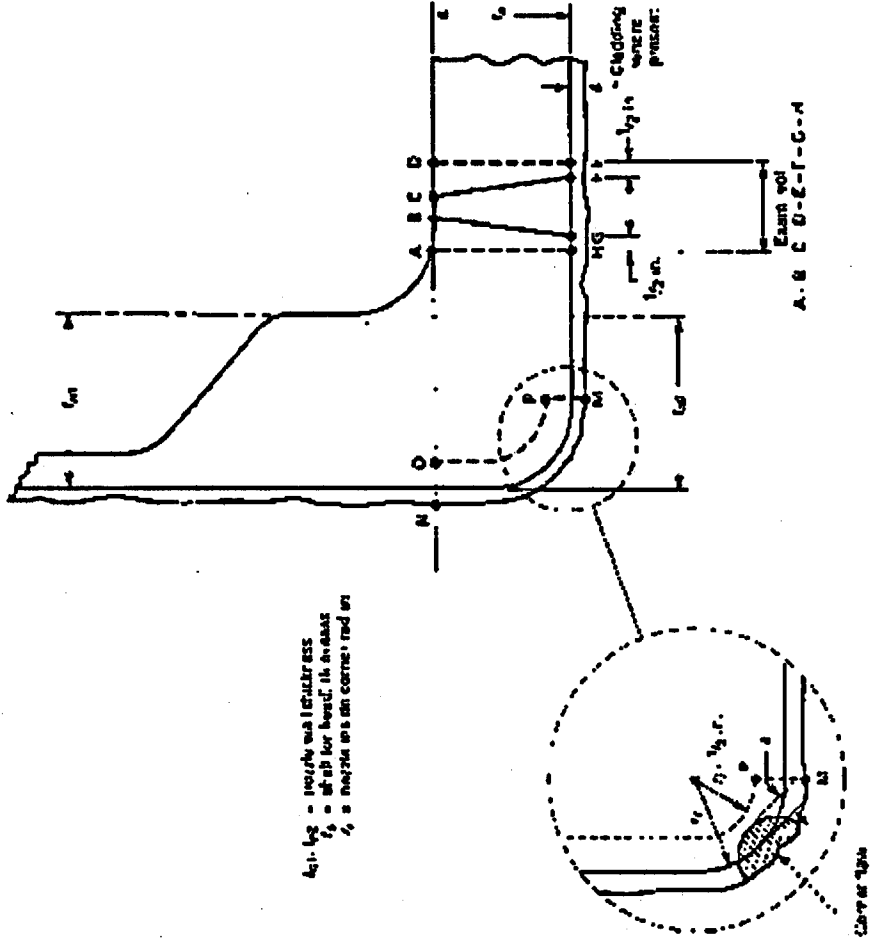
FIG. 1 NOZZLE IN SHELL OR HEAD
(Examination Zones for Barrel Type Nozzles Joined by Full Penetration Corner Welds)

SUPP. 2 - MC

1052

CASE (continued)
N-613

CASES OF ARMED BOLTUP AND PRESSURE VESSEL CASE.



t_n - nozzle wall thickness
 t_s - shell thickness
 D_n - nozzle diameter
 L_n - nozzle length

EXAMINATION REG. OR LINE: (1)
 Shell of nozzle and reg. or
 Attachment weld reg. or
 Nozzle or shell reg. or
 Nozzle inside to reg. or

EXAMINATION NO. AND LINE: (2)

C-D-E-F
 G-H-I-J
 A-B-C-D
 M-N-O-P

NOTES

- (1) Examination reg. or is identified for the purpose of conforming to the acceptance standards in AWS 2512.
- (2) Examination values may be determined either by direct measurements on the component or by measurements less than design drawings.

FIG. 2 NOZZLE IN SHELL OR HEAD
 (Examination Zones in Flange Type Nozzle Joints by Full Penetration Butt Welds)

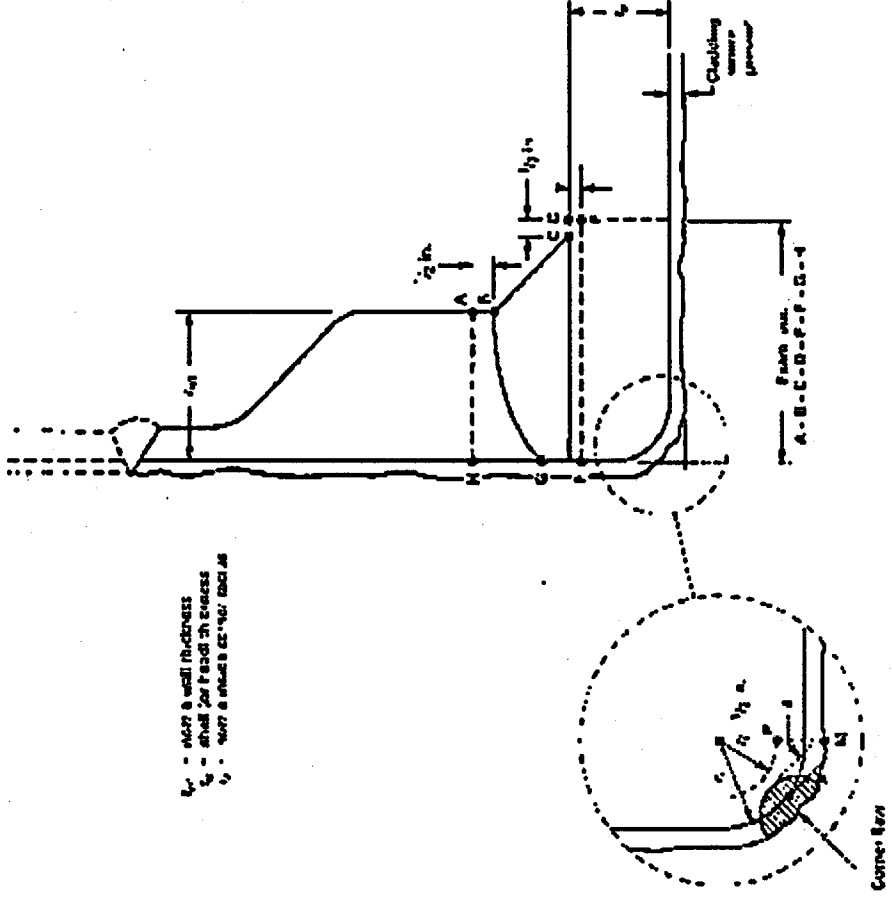
1053

SUPP. 2 - NC

CASE (continued)

N-613

CASES OF ASME BOILER AND PRESSURE VESSEL CODE



r_1 - inside & wall thickness
 r_2 - shell for head thickness
 h_1 - shell & inside corner radius

EXAMINATION VOLUME NOZZLE
 C-D-E-F-G
 H-I-J-K
 L-M-N-O-P

EXAMINATION VOLUME HEAD
 A-B-C-D-E-F-G-H-I
 J-K-L-M-N-O-P
 Q-R-S-T-U-V-W-X-Y-Z
 AA-AB-AC-AD-AE-AF-AG-AH-AI-AJ-AM-AN-AO-AP-AQ-AR-AS-AT-AU-AV-AW-AX-AY-AZ-BA-
 BB-BC-BD-BE-BF-BG-BH-BI-BJ-BK-BL-BM-BN-BO-BP-BQ-BR-BS-BT-BU-BV-BW-BX-BY-BZ-CA-
 CB-CC-CD-CE-CF-CG-CH-CI-CJ-CK-CL-CM-CN-CO-CP-CQ-CR-CS-CT-CU-CV-CW-CX-CY-CZ-DA-
 DB-DC-DD-DE-DF-DG-DH-DI-DJ-DK-DL-DM-DN-DO-DP-DQ-DR-DS-DT-DU-DV-DW-DX-DY-DZ-EA-
 EB-EC-ED-EE-EF-EG-EH-EI-EJ-EK-EL-EM-EN-EO-EP-EQ-ER-ES-ET-EU-EV-EW-EX-EY-EZ-FA-
 FB-FC-FD-FE-FF-FG-FH-FI-FJ-FK-FL-FM-FN-FO-FP-FQ-FR-FS-FT-FU-FV-FW-FX-FY-FZ-GA-
 GB-GC-GD-GE-GF-GG-GH-GI-GJ-GK-GL-GM-GN-GO-GP-GQ-GR-GS-GT-GU-GV-GW-GX-GY-GZ-HA-
 HB-HC-HD-HE-HF-HG-HI-HJ-HK-HL-HM-HN-HO-HP-HQ-HR-HS-HT-HU-HV-HW-HX-HY-HZ-IA-
 IB-IC-ID-IE-IF-IG-IH-II-IJ-
 IK-IL-IM-IN-IO-IP-
 IQ-IR-IS-IT-
 IU-IV-IW-IX-IY-IZ-
 JA-JB-JC-JD-JE-JF-
 JG-JH-
 JI-
 JK-
 JL-
 JM-
 JN-
 JO-
 JP-
 JQ-
 JR-
 JS-
 JT-
 JU-
 JV-
 JW-
 JX-
 JY-
 JZ-
 KA-KB-KC-KD-
 KE-
 KF-
 KG-
 KH-
 KI-
 KJ-
 KK-
 KL-
 KM-
 KN-
 KO-
 KP-
 KQ-
 KR-
 KS-
 KT-
 KU-
 KV-
 KW-
 KX-
 KY-
 KZ-
 LA-LB-LC-LD-
 LE-
 LF-
 LG-
 LH-
 LI-
 LJ-
 LK-
 LL-
 LM-
 LN-
 LO-
 LP-
 LQ-
 LR-
 LS-
 LT-
 LU-
 LV-
 LW-
 LX-
 LY-
 LZ-
 MA-MB-MC-MD-
 ME-
 MF-
 MG-
 MH-
 MI-
 MJ-
 MK-
 ML-
 MM-
 MN-
 MO-
 MP-
 MQ-
 MR-
 MS-
 MT-
 MU-
 MV-
 MW-
 MX-
 MY-
 MZ-
 NA-NB-NC-ND-
 NE-
 NF-
 NG-
 NH-
 NI-
 NJ-
 NK-
 NL-
 NM-
 NN-
 NO-
 NP-
 NQ-
 NR-
 NS-
 NT-
 NU-
 NV-
 NW-
 NX-
 NY-
 NZ-
 OA-OB-OC-OD-
 OE-
 OF-
 OG-
 OH-
 OI-
 OJ-
 OK-
 OL-
 OM-
 ON-
 OO-
 OP-
 OQ-
 OR-
 OS-
 OT-
 OU-
 OV-
 OW-
 OX-
 OY-
 OZ-
 PA-PB-PC-PD-
 PE-
 PF-
 PG-
 PH-
 PI-
 PJ-
 PK-
 PL-
 PM-
 PN-
 PO-
 PP-
 PQ-
 PR-
 PS-
 PT-
 PU-
 PV-
 PW-
 PX-
 PY-
 PZ-
 QA-QB-QC-QD-
 QE-
 QF-
 QG-
 QH-
 QI-
 QJ-
 QK-
 QL-
 QM-
 QN-
 QO-
 QP-
 QQ-
 QR-
 QS-
 QT-
 QU-
 QV-
 QW-
 QX-
 QY-
 QZ-
 RA-RB-RC-RD-
 RE-
 RF-
 RG-
 RH-
 RI-
 RJ-
 RK-
 RL-
 RM-
 RN-
 RO-
 RP-
 RQ-
 RR-
 RS-
 RT-
 RU-
 RV-
 RW-
 RX-
 RY-
 RZ-
 SA-SB-SC-SD-
 SE-
 SF-
 SG-
 SH-
 SI-
 SJ-
 SK-
 SL-
 SM-
 SN-
 SO-
 SP-
 SQ-
 SR-
 SS-
 ST-
 SU-
 SV-
 SW-
 SX-
 SY-
 SZ-
 TA-TB-TC-TD-
 TE-
 TF-
 TG-
 TH-
 TI-
 TJ-
 TK-
 TL-
 TM-
 TN-
 TO-
 TP-
 TQ-
 TR-
 TS-
 TT-
 TU-
 TV-
 TW-
 TX-
 TY-
 TZ-
 UA-UB-UC-UD-
 UE-
 UF-
 UG-
 UH-
 UI-
 UJ-
 UK-
 UL-
 UM-
 UN-
 UO-
 UP-
 UQ-
 UR-
 US-
 UT-
 UY-
 UZ-
 VA-VB-VC-VD-
 VE-
 VF-
 VG-
 VH-
 VI-
 VJ-
 VK-
 VL-
 VM-
 VN-
 VO-
 VP-
 VQ-
 VR-
 VS-
 VT-
 VU-
 VV-
 VW-
 VX-
 VY-
 VZ-
 WA-WB-WC-WD-
 WE-
 WF-
 WG-
 WH-
 WI-
 WJ-
 WK-
 WL-
 WM-
 WN-
 WO-
 WP-
 WQ-
 WR-
 WS-
 WT-
 WU-
 WV-
 WW-
 WX-
 WY-
 WZ-
 XA-XB-XC-XD-
 XE-
 XF-
 XG-
 XH-
 XI-
 XJ-
 XK-
 XL-
 XM-
 XN-
 XO-
 XP-
 XQ-
 XR-
 XS-
 XT-
 XU-
 XV-
 XW-
 XX-
 XY-
 XZ-
 YA-YB-YC-YD-
 YE-
 YF-
 YG-
 YH-
 YI-
 YJ-
 YK-
 YL-
 YM-
 YN-
 YO-
 YP-
 YQ-
 YR-
 YS-
 YT-
 YU-
 YV-
 YW-
 YX-
 YY-
 YZ-
 ZA-ZB-ZC-ZD-
 ZE-
 ZF-
 ZG-
 ZH-
 ZI-
 ZJ-
 ZK-
 ZL-
 ZM-
 ZN-
 ZO-
 ZP-
 ZQ-
 ZR-
 ZS-
 ZT-
 ZU-
 ZV-
 ZW-
 ZX-
 ZY-
 ZZ

FIG. 3 NOZZLE IN SHELL OR HEAD
 (Examination Zones in Set-On Type Nozzles Deleted by Full Penetration Corner Welds)

SUPP. 3 - NC

1154

ATTACHMENT 2

**SOUTHERN NUCLEAR OPERATING COMPANY
HATCH NUCLEAR PLANT, UNIT 1 & 2
THIRD 10-YEAR INTERVAL**

REQUEST FOR RELIEF NO. RR-33

**SOUTHERN NUCLEAR OPERATING COMPANY
HATCH NUCLEAR PLANT, UNIT 1 & 2
THIRD 10-YEAR INTERVAL
REQUEST FOR RELIEF NO. RR-33**

- I. System/Component for Which Relief is Requested: All components subject to ultrasonic examination.
- II. Code Requirement: ASME Section XI, 1989 Edition, Appendix VII, Article-4000, paragraph VII-4240 ANNUAL TRAINING.
- IV. Code Requirement for Which Relief is Requested: Relief is requested from the requirement of ASME Section XI, 1989 Edition, Appendix VII, Article-4000, Paragraphs VII-4240 for a minimum of 10 hours of annual training for Level I, II, and III NDE personnel.
- VI. Basis for Relief: The 1989 Edition of ASME Section XI, Appendix VII was developed prior to the requirements for the NDE Performance Demonstration Initiative (PDI). The ASME Section XI Code Committee recognized that with the implementation of ASME Section XI, Appendix VIII and the PDI, that the requirements of Appendix VII, paragraph VII-4240 did not adequately address the type, extent, and frequency of training required to maintain ultrasonic examination proficiency. Therefore, Code Case N-583 was developed in response to an inquiry related to training requirements and was subsequently incorporated into the 1998 Edition with 1999 Addenda of ASME Section XI, Appendix VII.

Paragraph 2.4.1.1.1 of Federal Register (Volume 64, No. 183 dated September 22, 1999 contained the following statement, "The NRC had determined that this requirement (*10 hours of training on an annual basis*) was inadequate for two reasons. The first reason was that the training does not require laboratory work and examination of flawed specimens. Signals can be difficult to interpret and, as detailed in the regulatory analysis for this rule making, experience and studies indicate that the examiner must practice on a frequent basis to maintain the capability for proper interpretation. The second reason is related to the length of training and its frequency. Studies have shown that an examiner's capability begins to diminish within approximately 6 months if skills are not maintained. Thus, the NRC had determined that 10 hours of annual training is not sufficient practice to maintain skills, and that an examiner must practice on a more frequent basis to maintain proper skill levels... The PDI program has adopted a requirement for 8 hours of training, but it is required to be hands-on practice. In addition, the training must be taken no earlier than 6 months prior to performing examinations at a licensee's facility. PDI believes that 8 hours will be acceptable relative to an examiner's abilities in this highly specialized skill area because personnel can gain knowledge of new developments, materials failure modes, and other pertinent topics through other means. Thus, the NRC has decided to adopt in the Final Rule the PDI position on this matter. These changes are reflected in 10 CFR 50.55a(b)(2)(xiv)".

The September 22, 1999 version of 10 CFR 50.55a(b)(2)(xiv) states: "(xiv) Appendix VIII personnel qualification. All personnel qualified for performing ultrasonic examinations in accordance with Appendix VIII shall receive 8 hours of annual hands-on training on specimens

that contain cracks. This training must be completed no earlier than 6 months prior to performing ultrasonic examinations at a licensee's facility."

Code Case N-583 responded to an inquiry related to an alternative to the annual training requirements of Appendix VII-4240. The reply states "... supplemental practice may be used to maintain UT personnel examination skills. Personnel shall practice UT techniques by examining or by analyzing prerecorded data from materials or welds containing flaws similar to those that may be encountered during inservice examinations. This practice shall be at least 8 hr per year and shall be administered by an NDE Instructor or Level III; no examinations required."

VII. Alternate Examination: Use ASME Section XI Code Case N-583.

VI. Justification for Granting Relief: Pursuant to 10 CFR 50.55a (a)(3)(i), SNC requests approval to use the alternative annual NDE personnel training requirements defined in ASME Section XI, Code Case N-583. 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 power plants within the United States. These Appendix VIII requirements will be implemented at Plant Hatch via the industry PDI. Implementation of Appendix VIII, via the PDI, provides for more stringent requirements for qualification and demonstration of personnel, equipment and procedure utilized for ISI.

The application of Code Case N-583, in conjunction with the requirements for ASME Section XI, Appendix VIII, will provide adequate assurance that Level I, II and III NDE personnel receive sufficient supplemental practice to maintain their ultrasonic examination skills. Therefore, relief is warranted in accordance with 10 CFR 50.55a(a)(3)(i) since use of Code Case N-583 in conjunction with the 1995 Edition, 1996 Addenda of ASME Section XI, Appendix VIII provide 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.

Reference: ASME Section XI Code Case N-583 attached.

CASES OF ASME BOILER AND PRESSURE VESSEL CODE

Approval Date: August 14, 1997
See Numeric Index for expiration
and any reaffirmation dates.

Case N-583
Annual Training Alternative
Section XI, Division 1

Inquiry: What alternative to the annual training requirements of Appendix VII-4240 may be used?

Reply: It is the opinion of the Committee that, as an alternative to the requirements of Appendix VII-4240, supplemental practice may be used to maintain UT personnel examination skills. Personnel shall practice UT techniques by examining or by analyzing prerecorded data from material or welds containing flaws similar to those that may be encountered during inservice examinations. This practice shall be at least 8 hr per year and shall be administered by an NDE Instructor or Level III; no examination is required.

ATTACHMENT 3

**SOUTHERN NUCLEAR OPERATING COMPANY
HATCH NUCLEAR PLANT, UNIT 1 & 2
THIRD 10-YEAR INTERVAL**

REQUEST FOR RELIEF NO. RR-APP. VIII-1

**SOUTHERN NUCLEAR OPERATING COMPANY
HATCH NUCLEAR PLANT, UNIT 1 & 2
THIRD 10-YEAR INTERVAL
REQUEST FOR RELIEF NO. RR-APP. VIII-1**

- I. System/Component for Which Relief is Requested: ASME Section XI, Class 1, Examination Category B-A, Item no. B1.10, Reactor Pressure Vessel (RPV) Shell welds and B1.20 RPV Head welds.
- II. Code Requirement: ASME Section XI, 1995 Edition, 1996 Addenda, Appendix VIII, Supplement 4, Subparagraph 3.2(b), length sizing acceptance criteria, requires that flaw lengths, estimated by ultrasonics, be the true length $-\frac{1}{4}$ inch $+1$ inch.
- V. Code Requirement for Which Relief is Requested: Relief is requested to not use the length sizing acceptance criteria specified by Appendix VIII, Supplement 4, Subparagraph 3.2(b).
- VI. Basis for Relief: 10 CFR 50.55a, as amended by Federal Register Notice 64 FR 51370, dated September 22, 1999, requires the implementation of the ASME Code, Section XI, 1995 Edition, 1996 Addenda, Appendix VIII, Supplements 4 and 6 for the ultrasonic examination of RPV shell and head welds. The required implementation date for Supplements 4 and 6 is November 22, 2000. The length sizing acceptance criteria in this edition of Supplement 4 is not in agreement with the Performance Demonstration Initiative (PDI) Program. The PDI has been used to qualify RPV inspection procedures, equipment, and personnel. This sizing criteria difference was resolved in ASME Section XI Code Case N-622, however, Code Case N-622 has not been endorsed by the Nuclear Regulatory Commission (NRC) via inclusion in Regulatory Guide 1.147 and the revised criteria were not included in the 10 CFR 50.55a, Final Rule. The NRC previously agreed that this was an oversight in drafting the Rule and that it will be corrected in the next revision of the Rule.
- V. Alternate Examination: In lieu of the length sizing requirements the ASME Section XI, 1995 Edition, 1996 Addenda, Appendix VIII, Supplement 4, Subparagraph 3.2(b), the length sizing acceptance criteria of 0.75 inch RMS error, as utilized by the PDI, will be used.
- VI. Justification for Granting Relief: Qualifications administered by the PDI have used a length sizing acceptance criteria of 0.75 inch RMS error since the inception of these demonstrations in 1994. This length sizing tolerance is included in ASME Code Case N-622. Relief for use of this Code Case has been previously granted by the NRC.

The NRC performed an assessment of the PDI program in 1995. As a part of this assessment, the NRC reviewed exceptions to the ASME Code, which were parts of the PDI Program. The assessment report states that that NRC "does not take exception" to the 0.75-inch RMS error length sizing tolerance (Ref. 1).

Conversations between NRC Staff and representatives from PDI were held on January 12, 2000. In this conversation, it was acknowledged that the 0.75-inch RMS length sizing criteria should have been addressed in the modifications provided for Supplement 4 to Appendix VIII in 10 CFR 50.55a(b)(2)(xv)(C). It was also stated that this would be corrected in future

revisions (Ref. 2). Therefore, application of the alternative length sizing criteria of the PDI provides an acceptable level of quality and safety and is warranted per 10 CFR 50.55a(a)(3)(i).

VII. Implementation Schedule: The relief request is applicable for the Third 10-Year Interval. Appendix VIII, Supplement 4 will be implemented by November 22, 2000, as required by the final rule.

VIII. Relief Request Status: Submitted to NRC for review and approval.

References:

1. NRC Assessment of the PDI Program, Jack R. Strosnider, Chief Materials and Chemical Engineering Branch, to Bruce J. Sheffel, Chairman, PDI, March 6, 1996, Table 2, Item 94-005, p34.
2. Meeting Summary, Teleconference between NRC and representatives from PDI, D. G. Naujock, Metallurgist, NDE & Metallurgy Section, to Edmund J. Sullivan, Chief NDE & Metallurgy Section, Chemical Engineering Branch, Division of Engineering, U.S. NRC, March 6, 2000.

ATTACHMENT 4

**SOUTHERN NUCLEAR OPERATING COMPANY
HATCH NUCLEAR PLANT, UNIT 1 & 2
THIRD 10-YEAR INTERVAL**

REQUEST FOR RELIEF NO. RR-APP. VIII-2

**SOUTHERN NUCLEAR OPERATING COMPANY
HATCH NUCLEAR PLANT, UNIT 1 & 2
THIRD 10-YEAR INTERVAL
REQUEST FOR RELIEF NO. RR-APP. VIII-2**

- I. System/Component for Which Relief is Requested: Component welds with single side access, subject to ultrasonic examination using Appendix VIII of the 1995 Edition with 1996 Addenda of ASME Section XI.
- II. Code Requirement: 10 CFR 50.55a(b)(2)(xv)(A), 10 CFR 50.55a(b)(2)(xv) G, and 10 CFR 50.55a(b)(2)(xvi), define new requirements for examination coverage and qualification demonstration. These requirements are applicable to both piping and Reactor Pressure Vessel weld examinations.
- III. Code Requirement for Which Relief is Requested: Relief is requested from the requirements for coverage and demonstration as related to single sided ultrasonic weld examinations.
- IV. Basis for Relief: The Performance Demonstration Initiative (PDI) Program is in agreement with the 10 CFR 50.55a Rule regarding single side access for piping. The Rule requires that if access is available, the weld shall be scanned in each of the four directions (parallel and perpendicular to the weld where required). Coverage credit may be taken for single side exams on ferritic piping. However, for austenitic piping, a procedure must be qualified with flaws on the inaccessible side of the weld.

Previously issued RPV qualifications do not meet the new requirements for single side access, that are listed in the Final Rule, 10 CFR 50.55a(b)(2)(xv)(G)(1), (2), and 10 CFR 50.55a(b)(2)(xvi)(A). However, these qualifications were demonstrated as being capable of detecting the relevant flaws for the subject weld configurations.

- V. Alternate Examination: As qualified through the PDI, the best available techniques will be used from the accessible side of austenitic component and RPV shell welds, as appropriate. SNC actively participates on the PDI committee and will follow this issue to ensure that appropriate improvements in examination technology are utilized at Plant Hatch when they become available.

The Electric Power Research Institute (EPRI), which functions as the industry PDI administrator, has committed to notify utilities and PDQS certificate holders, which list single side qualifications, of these differences. New certificates will be issued as amended single side procedures are demonstrated and qualified. Since there are currently no qualified procedures, relief is warranted per 10 CFR 50.55a(g)(6)(i).

- VI. Justification for Granting Relief

Austenitic Piping Welds: Current technology is not capable of reliably detecting or sizing flaws on the far side of an austenitic weld for configurations common to US nuclear applications. In lieu of a full single side qualification, PDI offers a best effort approach which demonstrates that the best available technology is applied. PDI Performance Demonstration

Qualification Summary (PDQS) austenitic piping certificates list the limitation that single side examination is performed on a best efforts basis. This will require that the far side of the weld, which can only be accessed from one side, must be listed as an area of no coverage.

RPV Shell Welds: RPV qualifications have been performed which met all requirements of the ASME Code and the PDI Program at the time of qualification. Some of these qualifications list a single side capability. However, these demonstrations do not meet the new requirements for single side access, qualifications that are listed in the Final Rule, 10 CFR 50.55a(b)(2)(xv)(G)(1), (2), and 10 CFR 50.55a(b)(2)(xvi)(A).

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.