

**L. M. Stinson (Mike)**  
Vice President

**Southern Nuclear  
Operating Company, Inc.**  
40 Inverness Center Parkway  
Post Office Box 1295  
Birmingham, Alabama 35201

Tel 205.992.5181  
Fax 205.992.0341



July 10, 2006

Docket Nos.: 50-321  
50-366

NL-06-1159

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

Edwin I. Hatch Nuclear Plant  
Third 10-Year Interval Inservice Inspection (ISI) Programs  
Submittal of Relief Requests

Ladies and Gentlemen:

Southern Nuclear Operating Company (SNC) hereby submits the enclosed relief requests for the Edwin I. Hatch Nuclear Plant-Units 1 & 2, Third 10-Year Interval ISI program. These relief requests are coverage relief requests where it is impractical to obtain more than 90% coverage and there is reasonable assurance of structural integrity. The relief requests are requested to be approved by December 22, 2006, to close out third interval activities.

This letter contains no NRC commitments. If you have any questions, please advise.

Sincerely,

A handwritten signature in black ink, appearing to read "L. M. Stinson".

L. M. Stinson

LMS/PAH/sdl

Enclosures:

1. RR-42, HNP – Unit 1 Reactor Pressure Vessel (RPV) Bottom Head Welds
2. RR-43, HNP – Unit 2 Reactor Pressure Vessel (RPV) Bottom Head Welds
3. RR-44, HNP – Units 1 & 2 Nozzle to Vessel Welds
4. RR-45, HNP – Unit 2 Reactor Pressure Vessel (RPV) Stabilizer Brackets
5. RR-46, HNP – Unit 1 Stainless Steel Pipe
6. RR-47, HNP – Unit 2 Carbon Steel Pipe to Inconel Safe-End Extension Piece
7. RR-48, HNP – Unit 1 Low Alloy Steel nozzle to 304 SS Safe End
8. RR-49, HNP – Unit 1 Carbon Steel Pipe to 304 SS Safe End Extension Piece
9. RR-50, HNP – Unit 2 Safe End to Seal Penetration Weld
10. RR-51, HNP – Unit 1 Reactor Pressure Vessel (RPV) Longitudinal Welds
11. RR-52, HNP – Units 1 & 2 Carbon Steel Piping Welds

12. RR-53, HNP – Unit 2 Austenitic Piping Welds
13. RR-54, HNP – Units 1 & 2 Carbon Steel Piping Welds
14. RR-55, HNP – Unit 2 Carbon Steel Pipe to 316 SS Elbow, Inconel Buttered
15. RR-56, HNP – Units 1 & 2 Austenitic Piping Welds
16. RR-57, HNP – Unit 1 Welded Attachments
17. RR-58, HNP – Unit 1 Nozzle-to-Shell for RHR Heat Exchanger Weld
18. RR-59, HNP – Unit 2 Nozzle-to-Shell for RHR Heat Exchanger Weld
19. RR-60, HNP – Unit 2 Flange-to-Shell for RHR Heat Exchanger Weld
20. RR-61, HNP – Unit 1 Reactor Pressure Vessel (RPV) to Flange Weld
21. RR-62, HNP – Unit 2 Upper Shell Ring to Lower Shell Ring for RHR Heat Exchanger Weld

cc: Southern Nuclear Operating Company  
Mr. J. T. Gasser, Executive Vice President  
Mr. D. R. Madison, General Manager – Plant Hatch  
RTYPE: CHA02.004

U. S. Nuclear Regulatory Commission  
Dr. W. D. Travers, Regional Administrator  
Mr. C. Gratton, NRR Project Manager – Hatch  
Mr. D. S. Simpkins, Senior Resident Inspector – Hatch

Enclosure 1

RR-42, HNP – Unit 1  
Reactor Pressure Vessel (RPV) Bottom Head Welds

**SOUTHERN NUCLEAR OPERATING COMPANY**  
**PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)**  
**RR-42**

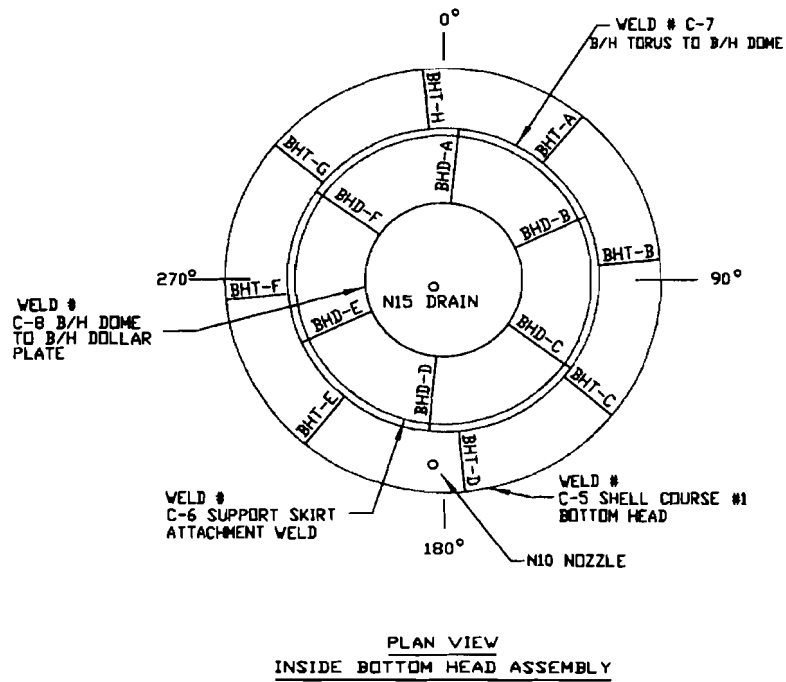
<b>Plant Site-Unit:</b>	Edwin I. Hatch Nuclear Plant-Unit 1.
<b>Interval-Interval Dates:</b>	3rd ISI Interval-January 1, 1996 through December 31, 2005.
<b>Requested Date for Approval and Basis</b>	Approval is requested by December 22, 2006 to close-out 3 <sup>rd</sup> Interval activities.
<b>ASME Code Components Affected:</b>	Class 1, ASME Section XI Category B-A, Item B1.21 and Item B1.22, reactor pressure vessel (RPV) bottom head welds.
<b>Applicable Code Edition and Addenda:</b>	ASME Section XI, 1989 Edition with no addenda.
<b>Applicable Code Requirements:</b>	Table IWB-2500-1, Examination Category B-A, Item B1.21 and Item B1.22 requires that 100% of the accessible length of each weld be examined. Per Code Case N-460, coverage greater than 90% is acceptable.
<b>Impracticality of Compliance</b>	It is impractical to examine these welds. As shown on Figures 1 and 2, the design is such that the support skirt is welded to the bottom head just inside of weld C-7 and there is no access to the subject welds located inside the support skirt. As a result, meridional welds BHD-A thru F and circumferential weld C-8 are completely inaccessible.
<b>Burden Caused by Compliance</b>	Examination of these welds cannot be performed without replacing the lower head region of the RPV with a new design.
<b>Proposed Alternative and Basis for Use</b>	While these welds cannot be examined, a large sample of bottom head weld seams have been examined using Appendix VIII techniques giving a large confidence factor that there is not an undetected weld degradation mechanism in the bottom head region. Bottom head meridional welds BHT-A, BHT-B, BHT-C, BHT-D, BHT-E, BHT-F, BHT-G, and BHT-H, plus bottom head circumferential weld C-7 were examined in 2006 and coverage was 100% for each weld. No indications were detected. Additionally, damage mechanisms should be minimal in the region of these welds. The RPV bottom head was clad on the inside after welding and there is a high level of hydrogen protection in this area; thereby, minimizing the probability of corrosion degradation or cracking initiated by corrosion. Pressure and thermal stresses were accounted for during design and these welds are located outside of the neutron flux area where damage due to embrittlement would be expected. Therefore, there is reasonable assurance that structural integrity will be maintained and, as a result, relief should be granted per 10 CFR 50.55a(g)(6)(i).

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-42**

<b>Duration of Proposed Relief Request:</b>	The proposed relief request is applicable for the 3 <sup>rd</sup> Interval.
<b>Precedents:</b>	None. During the 2 <sup>nd</sup> Interval only one of the welds was required to be examined by the 1980 Code.
<b>References:</b>	None
<b>Status:</b>	Awaiting NRC approval.

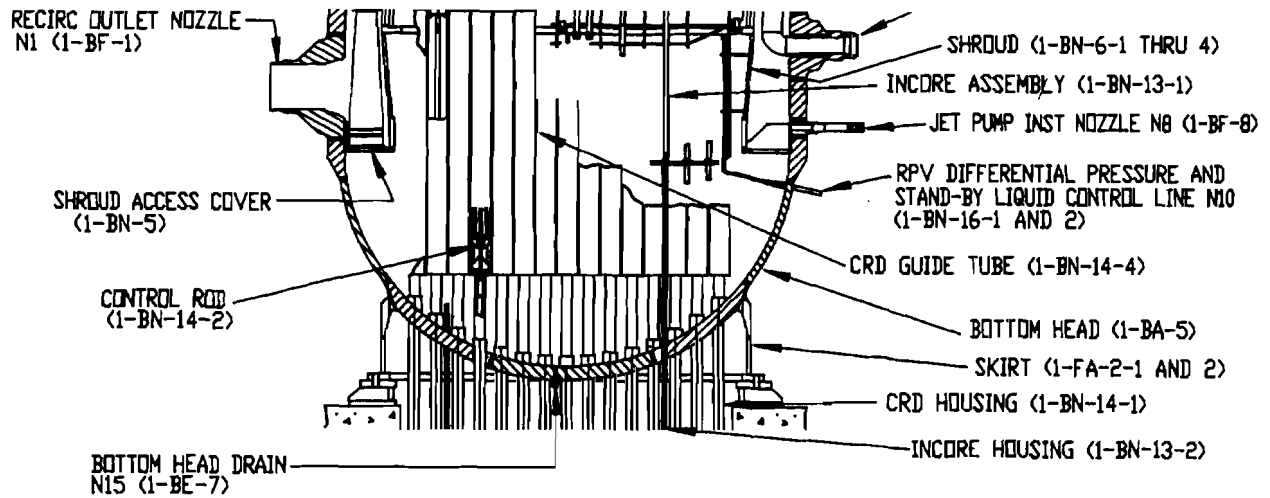
SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-42

FIGURE 1



**SOUTHERN NUCLEAR OPERATING COMPANY**  
**PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)**  
**RR-42**

**FIGURE 2**



**ELEVATION VIEW  
 BOTTOM HEAD**

Enclosure 2

RR-43, HNP – Unit 2  
Reactor Pressure Vessel (RPV) Bottom Head Welds

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-43**

<b>Plant Site-Unit:</b>	Edwin I. Hatch Nuclear Plant-Unit 2.
<b>Interval-Interval Dates:</b>	3rd ISI Interval-January 1, 1996 through December 31, 2005.
<b>Requested Date for Approval and Basis</b>	Approval is requested by December 22, 2006 to close-out 3 <sup>rd</sup> Interval activities.
<b>ASME Code Components Affected:</b>	Class 1, ASME Section XI Category B-A, Item B1.21 and Item B1.22, reactor pressure vessel (RPV) bottom head welds.
<b>Applicable Code Edition and Addenda:</b>	ASME Section XI, 1989 Edition with no addenda.
<b>Applicable Code Requirements:</b>	Table IWB-2500-1, Examination Category B-A, Item B1.21 and Item B1.22 requires that 100% of the accessible length of each weld be examined. Per Code Case N-460, coverage greater than 90% is acceptable.
<b>Impracticality of Compliance</b>	<p>As shown on Figures 1 and 2, the design is such that there is a support skirt welded to the bottom head between welds C-5 and C-7; however, the support skirt has a man-way which allows limited coverage of these welds. It is impractical to obtain any more appreciable coverage than shown below.</p> <ul style="list-style-type: none"><li>▪ HNP-2 bottom head dome meridional welds (2BHD-A through D) –The Control Rod Drives penetrate the bottom head in close proximity to these meridional welds creating a permanent interference, such that only about 27% to 28% of the length of each weld was examined. Appendix VIII examinations were used.</li><li>▪ HNP-2 bottom head torus meridional welds (2BHT-A through G) –The RPV support skirt was welded to the torus over these meridional welds creating a permanent interference over each weld, such that about 88% of the length of each weld was examined. Appendix VIII examinations were used.</li></ul>
<b>Burden Caused by Compliance</b>	Increasing the coverage of these welds would require replacing the RPV with a new design.

**SOUTHERN NUCLEAR OPERATING COMPANY**  
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**RR-43**

**Proposed  
Alternative and  
Basis for Use**

While these welds cannot be fully examined, a large sample of bottom head weld seams have been examined using Appendix VIII techniques giving a large confidence factor that there is not an undetected weld degradation mechanism in the bottom head region. In support of this conclusion, about 27% of the Bottom Head Dome weld seams, 88% of the Bottom Head Torus seams, and greater than 90% of the bottom head circumferential weld 2C-7 were examined in 2005 using Appendix VIII techniques. There were no recordable indications, except for porosity on three of the Bottom head Torus welds.

Additionally, damage mechanisms should be minimal in the region of these welds. The RPV bottom head was clad on the inside after welding and there is a high level of hydrogen protection in this area; thereby, minimizing the probability of corrosion degradation or cracking initiated by corrosion. Pressure and thermal stresses were accounted for during design and these welds are located outside of the neutron flux area where damage due to embrittlement would be expected. Therefore, there is reasonable assurance that structural integrity will be maintained and, as a result, relief should be granted per 10 CFR 50.55a(g)(6)(i).

**Duration of  
Proposed  
Relief Request:**

The proposed relief request is applicable for the 3<sup>rd</sup> Interval.

**Precedents:**

None. During the 2<sup>nd</sup> Interval only one of the welds was required to be examined by the 1980 Code.

**References:**

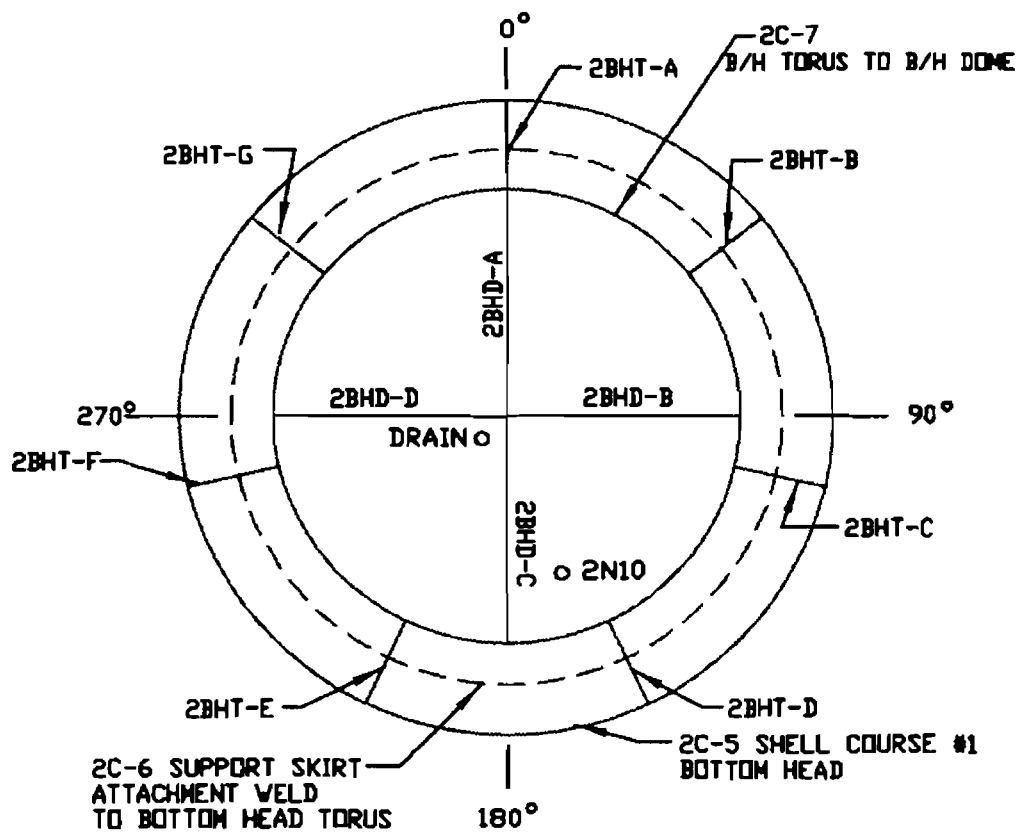
None

**Status:**

Awaiting NRC approval.

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PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-43

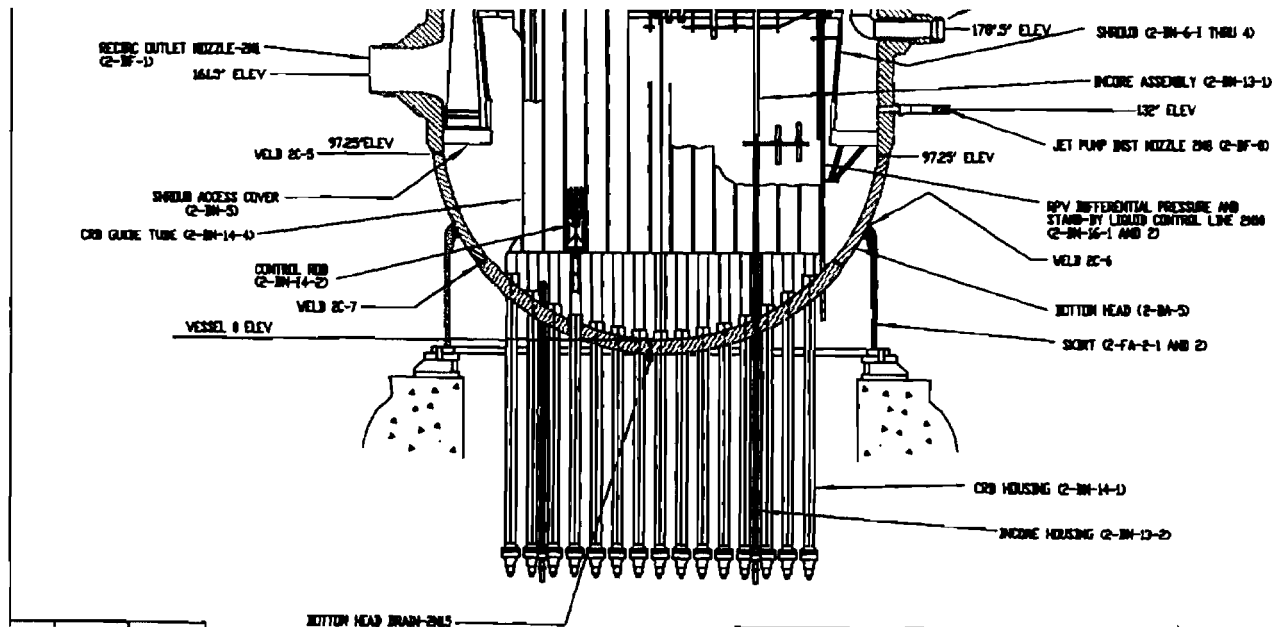
FIGURE 1



PLAN VIEW  
INSIDE BOTTOM HEAD ASSEMBLY

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 PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
 RR-43

FIGURE 2



ELEVATION VIEW  
 BOTTOM HEAD

Enclosure 3

RR-44, HNP – Units 1 & 2  
Nozzle to Vessel Welds

**SOUTHERN NUCLEAR OPERATING COMPANY**  
**PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)**  
**RR-44**

<b>Plant Site-Unit:</b>	Edwin I. Hatch Nuclear Plant-Units 1 and 2.
<b>Interval-Interval Dates:</b>	3rd ISI Interval-January 1, 1996 through December 31, 2005.
<b>Requested Date for Approval and Basis</b>	Approval is requested by December 22, 2006 to close-out 3 <sup>rd</sup> Interval activities.
<b>ASME Code Components Affected:</b>	Class 1, ASME Section XI Category B-D, Item B3.90, nozzle to vessel welds. Unit 1 welds are shown in Table RR-44-1 and Unit 2 welds are shown in Table RR-44-2.
<b>Applicable Code Edition and Addenda:</b>	ASME Section XI, 1989 Edition with no addenda.
<b>Applicable Code Requirements:</b>	Table IWB-2500-1, Examination Category B-D, Item B3.90 requires that the examination volume shown in Figures IWB-2500-7(a) through (d) be met. Per Code Case N-460, coverage greater than 90% is acceptable.
<b>Impracticality of Compliance</b>	Coverage was limited due to the geometry of the nozzles and in some cases the proximity of other nozzles or components. When automated scanning was limited, qualified supplemental manual examinations were used to increase the coverage where possible; therefore, coverage was maximized to the extent practical and it would be impractical to obtain any more appreciable coverage.
<b>Burden Caused By Compliance</b>	Increasing the coverage would require replacing the RPV with a new design.
<b>Proposed Alternative and Basis for Relief</b>	<p>Coverage was limited due to the geometry of the nozzles and in some cases the proximity of other nozzles or components, as defined in the attached tables. In general, the barrel type nozzle configuration [Section XI Figure IWB-2500-7(a)] had less coverage than the flange type nozzle configuration [Section XI Figure IWB-2500-7(b)]. In most cases, examination for axially oriented flaws could not be performed from the nozzle side of the weld due to the configuration of the nozzle; however, the presence of an axial flaw does not have a significant impact on the structural integrity of a nozzle weld. Adequate scanning for the detection of circumferentially oriented flaws was obtained for these welds, which provides reasonable assurance of structural integrity. Therefore, relief should be granted per 10 CFR 50.55a(g)(6)(i).</p> <p>While the amount of scanned volume is limited by the nozzle configuration, calculated coverage generally increased for those nozzles using Performance Demonstration Initiative (PDI) examination techniques versus those examined</p>

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PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-44**

using pre-PDI methodology. The coverage increase is due primarily to the allowance of single-sided coverage for these PDI examinations versus the earlier two beam direction examination requirements. Additionally, while it is not practical to re-calculate the coverage using NRC approved Code Case N-613-1, a general overview indicates that given the same scanning limitations, coverage would be significantly greater for most nozzles because of the reduced examination volumes defined in the Code Case.

<b>Duration of Proposed Alternative:</b>	The proposed alternative is applicable for the 3 <sup>rd</sup> Interval.
<b>Precedents:</b>	None.
<b>References:</b>	None
<b>Status:</b>	Awaiting NRC approval.

**SOUTHERN NUCLEAR OPERATING COMPANY**  
**PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)**  
**RR-44**

<b>TABLE RR-44-1</b>			
<b>Weld Number</b>	<b>Description</b>	<b>Coverage</b>	<b>Basis for Limited Coverage</b>
1B11\1N1A 1B11\1N1B	Recirculation Outlet Shell to Nozzle Weld	65%-70%	Pre-Performance Demonstration Initiative (PDI) Examination. Flange type nozzle geometry [Figure IWB-2500-7(b)] limited scans for axial flaws to about 40 to 50% coverage. When scanning for circumferential flaws there are limitations due to the nozzle geometry, plus a welded support ring/bracket restricts coverage for about a 90 <sup>0</sup> sector. Supplemental manual coverage was used to increase coverage. Total 45 <sup>0</sup> /60 <sup>0</sup> coverage for circumferential flaws was about 70% to 80%.
1B11\1N2A 1B11\1N2B 1B11\1N2D 1B11\1N2E 1B11\1N2G 1B11\1N2H 1B11\1N2K	Recirculation Inlet Nozzle to Shell Weld	42%-44%	Pre-PDI Examination. Barrel type nozzle geometry [Figure IWB-2500-7(a)] severely limited 0 <sup>0</sup> scans and scans for axial flaws. When scanning for circumferential flaws there are limitations due to the nozzle geometry, plus a welded support ring/bracket restricts coverage for about a 130 <sup>0</sup> sector. Supplemental manual coverage was used to increase coverage. Total 45 <sup>0</sup> /60 <sup>0</sup> coverage for circumferential flaws was about 40% to 60%.
1B11\1N2C 1B11\1N2F 1B11\1N2J	Recirculation Inlet Nozzle to Shell Weld	51%	Post-PDI Examination. These have the same limitations as the other N2 nozzles, except that, by using qualified procedures credit was taken for single-sided examinations.
1B11\1N3A 1B11\1N3B 1B11\1N3D	Main Steam Shell to Nozzle Weld	63%	Pre-PDI Examination. Flange type nozzle geometry limited scans for axial flaws to about 55% to 60% coverage. When scanning for circumferential flaws there are scanning limitations due to the nozzle geometry. 45 <sup>0</sup> /60 <sup>0</sup> coverage for circumferential flaws was about 80% to 90%.
1B11\1N3C	Main Steam Shell to Nozzle Weld	38%	Pre-PDI Examination. Unlike the remaining three main steam nozzles, this nozzle is a barrel type nozzle geometry severely limited 0 <sup>0</sup> scans and scans for axial flaws. When scanning for circumferential flaws there are scanning limitations due to the nozzle geometry. 45 <sup>0</sup> /60 <sup>0</sup> coverage for circumferential flaws was about 30% to 45%.

**SOUTHERN NUCLEAR OPERATING COMPANY**  
**PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)**  
**RR-44**

<b>TABLE RR-44-1</b>			
<b>Weld Number</b>	<b>Description</b>	<b>Coverage</b>	<b>Basis for Limited Coverage</b>
1B11\1N4A 1B11\1N4B 1B11\1N4C 1B11\1N4D	Feedwater Nozzle to Shell Weld	38%-40%	Pre-PDI Examination. Barrel type nozzle geometry severely limited 0° scans and scans for axial flaws. When scanning for circumferential flaws there are scanning limitations due to the nozzle geometry. Additionally, the proximity of the N11A/B nozzles restricts coverage. Supplemental manual coverage was used in the restricted coverage area to increase coverage. Total 45°/60° coverage for circumferential flaws was about 40% to 50%.
1B11\1N5A 1B11\1N5B	Core Spray Nozzle to Shell Weld	37%-42%	Post-PDI Examination for 1N5A and Pre-PDI Examination for 1N5B. Barrel type nozzle geometry severely limited 0° scans and scans for axial flaws. When scanning for circumferential flaws there are scanning limitations due to the nozzle geometry, plus the proximity of a welded support ring/bracket restricts coverage for about a 125° sector. Supplemental manual coverage was used in the area to increase coverage. Total 45°/60° coverage for circumferential flaws was about 35% to 50%.
1B11\1N6A 1B11\1N6B	Head Spray Nozzle to Head Weld	37%	Pre-PDI Examination. Barrel type nozzle geometry severely limited 0° scans and scans for axial flaws. When scanning for circumferential flaws there are scanning limitations due to the nozzle geometry and the curvature of the head. 45°/60° coverage for circumferential flaws was about 65% to 70%.
1B11\1N7	Vent Head To Nozzle Weld	45%	Pre-PDI Examination. Barrel type nozzle geometry severely limited 0° scans and scans for axial flaws. When scanning for circumferential flaws there are scanning limitations due to the nozzle geometry. 45°/60° coverage for circumferential flaws was about 80% to 85%.
1B11\1N8A 1B11\1N8B	Jet Pump Instrument Nozzle to Shell Weld	76%-81%	Pre-PDI Examination. Flange type nozzle geometry limited scans for axial flaws to about 50%. When scanning for circumferential flaws there was 100% coverage from the shell side.

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-44**

<b>TABLE RR-44-1</b>			
<b>Weld Number</b>	<b>Description</b>	<b>Coverage</b>	<b>Basis for Limited Coverage</b>
1B11N9	CRD Shell-To Nozzle Weld	42%	Pre-PDI Examination. Barrel type nozzle geometry severely limited 0° scans and scans for axial flaws. When scanning for circumferential flaws there are scanning limitations due to the nozzle geometry, plus the proximity of a welded support ring/bracket restricted 45°/60° coverage for about a 130° sector. Supplemental manual coverage was used in this area to increase coverage. Total 45°/60° coverage for circumferential flaws was about 65% in the unobstructed areas and about 5% to 15% in the obstructed area.

**SOUTHERN NUCLEAR OPERATING COMPANY**  
**PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)**  
**RR-44**

<b>TABLE RR-44-2</b>			
<b>Weld Number</b>	<b>Description</b>	<b>Coverage</b>	<b>Basis for Limited Coverage</b>
2B11\2N1A	Recirculation Outlet Shell to Nozzle Weld	57%	Pre-PDI Examination. Flange type nozzle geometry limited scans for axial flaws to about 40% to 50% coverage. When scanning for circumferential flaws there are scanning limitations due to the nozzle geometry. 45°/60° coverage for circumferential flaws was about 80% to 90%.
2B11\2N2C 2B11\2N2E 2B11\2N2H	Recirculation Inlet Nozzle to Shell Weld	60%	Pre-PDI Examination. Flange type nozzle geometry limited scans for axial flaws to about 50% coverage. When scanning for circumferential flaws there are scanning limitations due to the nozzle geometry. 45°/60° coverage for circumferential flaws was about 80% to 90%.
2B11\2N2A 2B11\2N2B 2B11\2N2D 2B11\2N2F 2B11\2N2G 2B11\2N2J 2B11\2N2K	Recirculation Inlet Nozzle to Shell Weld	82%	Post-PDI Examination. These have the same limitations as the other N2 nozzles, except that, by using qualified procedures credit was taken for single-sided examinations.
2B11\2N3A 2B11\2N3B	Main Steam Shell to Nozzle Weld	86%	Post-PDI Examination. These have the same limitations as the other N4 nozzles, except that, by using qualified procedures credit was taken for single-sided examinations.
2B11\2N3C 2B11\2N3D	Main Steam Shell to Nozzle Weld	56%	Pre-PDI Examination. Flange type nozzle geometry limited scans for axial flaws to about 50% coverage. When scanning for circumferential flaws there are scanning limitations due to the nozzle geometry. 45°/60° coverage for circumferential flaws was about 75% to 80%.
2B11\2N4A 2B11\2N4C	Feedwater Nozzle to Shell Weld	76%-77%	Post PDI Examination. Flange type nozzle geometry limited scans for axial flaws. When scanning for circumferential flaws there are scanning limitations due to the nozzle geometry, plus there is interference from adjacent nozzles that restricted 45°/60° coverage.

**SOUTHERN NUCLEAR OPERATING COMPANY**  
**PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)**  
**RR-44**

<b>TABLE RR-44-2</b>			
<b>Weld Number</b>	<b>Description</b>	<b>Coverage</b>	<b>Basis for Limited Coverage</b>
2B11\2N4B 2B11\2N4D	Feedwater Nozzle to Shell Weld	84%-86%	Post-PDI Examination. Flange type nozzle geometry limited scans for axial flaws. When scanning for circumferential flaws there are scanning limitations due to the nozzle geometry, plus there is interference from adjacent nozzles that restricted 45°/60° coverage.
2B11\2N5A 2B11\2N5B	Core Spray Nozzle to Shell Weld	88%	Post-PDI Examination. Flange type nozzle geometry limited scans for axial flaws. When scanning for circumferential flaws there are scanning limitations due to the nozzle geometry that restricted 45°/60° coverage.
2B11\2N6A 2B11\2N6B	Head Spray Nozzle to Head Weld	66%	Pre-PDI Examination. Flange type nozzle geometry limited scans for axial flaws. When scanning for circumferential flaws there are scanning limitations due to the nozzle geometry and the curvature of the head. 45°/60° coverage for circumferential flaws was about 86% to 87%.
2B11\2N7	Vent Head To Nozzle Weld	61%	Pre-PDI Examination. Barrel type nozzle geometry severely limited 0° scans and scans for axial flaws. When scanning for circumferential flaws there are scanning limitations due to the nozzle geometry. 45°/60° coverage for circumferential flaws was about 79% to 80%.
2B11\2N9	CRD Shell-To Nozzle Weld	84%	Post-PDI Examination. Barrel type nozzle geometry severely limited 0° scans and scans for axial flaws. When scanning for circumferential flaws there are scanning limitations due to the nozzle geometry and the proximity of the 2N4B nozzle.

Enclosure 4

RR-45, HNP – Unit 2  
Reactor Pressure Vessel (RPV) Stabilizer Brackets

**SOUTHERN NUCLEAR OPERATING COMPANY**  
**PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)**  
**RR-45**

<b>Plant Site-Unit:</b>	Edwin I. Hatch Nuclear Plant-Unit 2.
<b>Interval-Interval Dates:</b>	3rd ISI Interval-January 1, 1996 through December 31, 2005.
<b>Requested Date for Approval and Basis</b>	Approval is requested by December 22, 2006 to close-out 3 <sup>rd</sup> Interval activities.
<b>ASME Code Components Affected:</b>	Class 1, ASME Section XI Code Case N-509, Category B-K, Item B10.10, reactor pressure vessel (RPV) stabilizer brackets (SB1 through SB6)
<b>Applicable Code Edition and Addenda:</b>	ASME Section XI, 1989 Edition with no addenda.
<b>Applicable Code Requirements:</b>	Table IWB-2500-1, Code Case N-509, Category B-K, Item B10.10 requires that 100% of the length of each weld be examined. Per Code Case N-460, coverage greater than 90% is acceptable.
<b>Impracticality of Compliance</b>	There is no access on the lower side of the brackets due to the vicinity of the mating pieces of the support. As a result, approximately 68% of each bracket weld was examined. Appreciably increasing coverage is impractical.
<b>Burden Caused by Compliance</b>	Increasing coverage would require replacement of the existing RPV support system with new components that are fabricated with a design to allow examination.
<b>Proposed Alternative and Basis for Use</b>	These six RPV stabilizer brackets are welded to the shell to prevent the RPV from tilting during a seismic event. Since the function of these loads is for seismic restraint, these welds should not undergo fatigue during normal operation. Without a known failure mechanism and with approximately 68% of each lug examined, there is reasonable assurance of structural integrity; therefore, relief should be granted per 10 CFR 50.55a(g)(6)(i).
<b>Duration of Proposed Relief Request:</b>	The proposed relief request is applicable for the 3 <sup>rd</sup> Interval.
<b>Precedents:</b>	After these examinations were performed, the NRC approved Relief Request RR-41, which allowed the use of Code Case N-700 to select the welded attachments for examination on the Unit 1 reactor vessel. For Unit 1, per Code Case N-700, only the skirt weld was required to be examined with none of the subject stabilizer brackets required to be examined.

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-45**

**References:**     None

**Status:**        Awaiting NRC approval.

Enclosure 5

RR-46, HNP – Unit 1  
Stainless Steel Pipe

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-46**

<b>Plant Site-Unit:</b>	Edwin I. Hatch Nuclear Plant-Unit 1.
<b>Interval-Interval Dates:</b>	3rd ISI Interval-January 1, 1996 through December 31, 2005.
<b>Requested Date for Approval and Basis</b>	Approval is requested by December 22, 2006 to close-out 3 <sup>rd</sup> Interval activities.
<b>ASME Code Components Affected:</b>	Class 1, ASME Section XI Category B-F, Item B5.130, 304 stainless steel pipe to Inconel buttered carbon steel valve weld 1E11-1RHR-24A-R-12. This shop weld joins a 304 stainless steel extension piece to carbon steel valve 1E11-F060A. This carbon steel valve was buttered with INCO-WELD A and then machined to a final configuration. (The buttering was designed to be a minimum of 3/16" thick after machining). The buttered valve was then welded to the stainless steel extension piece. INCO-WELD A has properties similar to Inconel 182.
<b>Applicable Code Edition and Addenda:</b>	ASME Section XI, 1989 Edition with no addenda.
<b>Applicable Code Requirements:</b>	Table IWB-2500-1, Examination Category B-F, Item B5.130 requires that 100% of the length of each weld be examined. Per Code Case N-460, coverage greater than 90% is acceptable.
<b>Impracticality of Compliance:</b>	Coverage was 29% based on Performance Demonstration Initiative (PDI) procedural requirements. As shown in Figure 1, the examination is limited by the overall configuration of the weld joint. Once the leading edge of the transducer reaches the pipe/weld interface, scanning is stopped. Even with grinding on the weld, the PDI procedural requirements would not allow further examination due to the taper. Appreciably increasing the PDI coverage is impractical. With this configuration, coverage for circumferential flaws using a 45 <sup>0</sup> transducer is limited to the heat affected zone of the stainless steel extension piece side. When scanning for circumferential flaws using a 60 <sup>0</sup> refracted longitudinal (RL) wave, coverage is limited to (1) the heat affected zone of the stainless steel extension piece side, (2) the root of the weld, and (3) a portion of the INCO-WELD A buttering.
<b>Burden Caused by Compliance</b>	Obtaining more coverage would require replacement of the valve with one of another design or overlaying the weld.

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-46**

**Proposed  
Alternative and  
Basis for Use**

While the ultrasonic examination coverage was limited, alternatively, much of the area where potential circumferential stress corrosion cracking (SCC) would originate (weld root and the inside surface of adjacent material on each side of the weld) was examined with a 60° RL wave. Additionally, this weld was Induction Heat Stress Improved (IHSI) during the 1985/1986 refueling outage to reduce the potential for stress corrosion cracking.

Because of the limited coverage and the presence of Inconel, a flaw tolerance evaluation was performed for the weld by Structural Integrity Associates. The evaluation showed that the flaw tolerance is substantial even for a full circumferential crack. For example, a fully circumferential flaw with a depth of less than 43% of the wall would be acceptable for continued operation.

Although the limited coverage does not meet the ASME Code Section XI inspection coverage requirements, there remains reasonable assurance that the structural integrity of the joint will be maintained. This conclusion is based on: The potential for SCC at this location has been mitigated, (2) the examination covered much of the SCC susceptible area, and (3) the weld has been evaluated as having substantial tolerance to flaws. As a result, relief should be granted per 10 CFR 50.55a(g)(6)(i).

**Duration of  
Proposed Relief  
Request:**

The proposed relief request is applicable for the 3<sup>rd</sup> Interval.

**Precedents:**

None.

**References:**

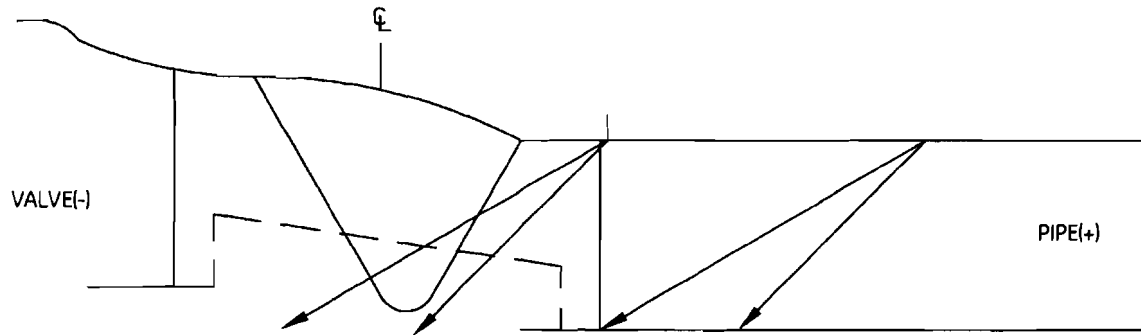
None

**Status:**

Awaiting NRC approval.

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-46**

FIGURE 1



Enclosure 6

RR-47, HNP – Unit 2  
Carbon Steel Pipe to Inconel Safe-End Extension Piece

**SOUTHERN NUCLEAR OPERATING COMPANY**  
**PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)**  
**RR-47**

<b>Plant Site-Unit:</b>	Edwin I. Hatch Nuclear Plant-Unit 2.
<b>Interval-Interval Dates:</b>	3rd ISI Interval-January 1, 1996 through December 31, 2005.
<b>Requested Date for Approval and Basis:</b>	Approval is requested by December 22, 2006 to close-out 3 <sup>rd</sup> Interval activities.
<b>ASME Code Components Affected:</b>	Class 1, ASME Section XI Category B-F, Item B5.130, carbon steel pipe to Inconel safe-end extension piece – weld 2B21-1FW-12AA-8.
<b>Applicable Code Edition and Addenda:</b>	ASME Section XI, 1989 Edition with no addenda.
<b>Applicable Code Requirements:</b>	Table IWB-2500-1, Examination Category B-F, Item B5.130 requires that 100% of the length of each weld be examined. Per Code Case N-460, coverage greater than 90% is acceptable.
<b>Impracticality of Compliance:</b>	Pre-Performance Demonstration Initiative (Pre-PDI) coverage was about 75%. As shown on Figure 1, this Inconel weld joins a carbon steel pipe to a Inconel extension piece. On the Inconel side of the weld, there is a weld overlay which extends up to the edge of the weld. The examination was performed using an automated system utilizing 45 <sup>0</sup> shear wave and 45 <sup>0</sup> /60 <sup>0</sup> Refracted longitudinal wave search units. Coverage for circumferentially oriented flaws was essentially 100% with scans for axial flaws being limited to the carbon steel pipe side. It is impractical to appreciably increase code coverage.
<b>Burden Caused by Compliance:</b>	Obtaining more coverage would require replacement of the Feedwater nozzle safe-end configuration and associated thermal sleeve to eliminate the overlay obstruction or alternately the overlay would need to be extended over 2B21-1FW-12AA-8.
<b>Proposed Alternative and Basis for Use:</b>	This weld had a mechanical stress improvement process (MSIP) performed on it in 1994 which mitigated the potential for stress corrosion cracking (SCC). With the SCC mitigation and the high level of coverage for circumferential flaws there is reasonable assurance of structural integrity. Therefore, relief should be granted per 10 CFR 50.55a(g)(6)(i).
<b>Duration of Proposed Relief Request:</b>	The proposed relief request is applicable for the 3 <sup>rd</sup> Interval.

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-47**

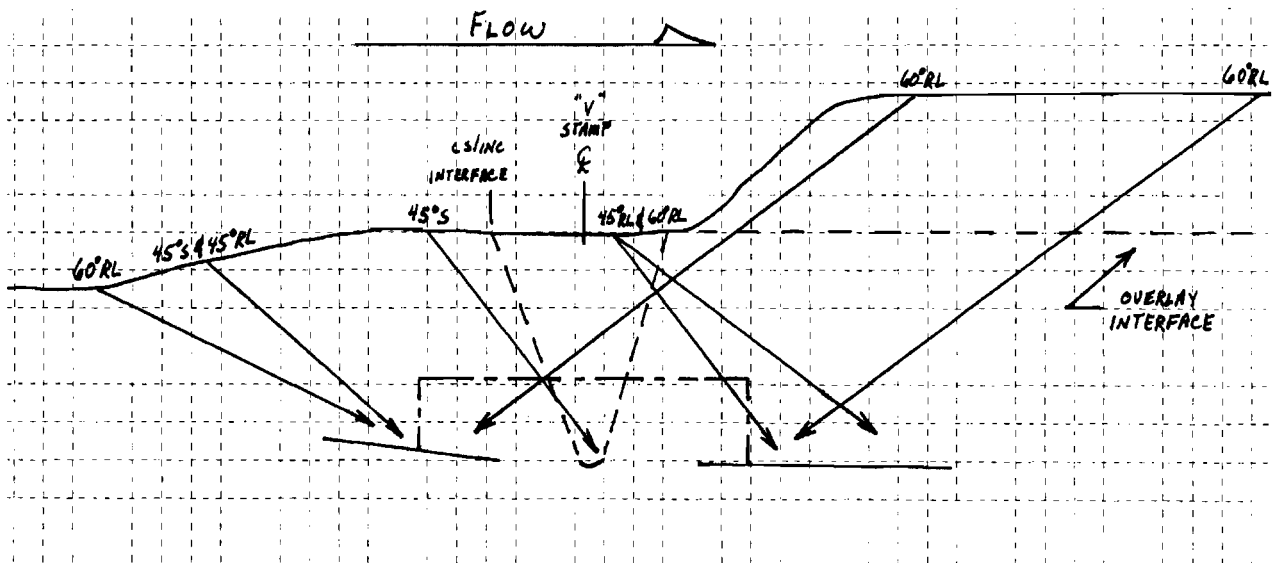
**Precedents:**     None.

**References:**     None

**Status:**     Awaiting NRC approval.

SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-47

FIGURE 1



Enclosure 7

RR-48, HNP – Unit 1  
Low Alloy Steel nozzle to 304 SS Safe End

**SOUTHERN NUCLEAR OPERATING COMPANY**  
**PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)**  
**RR-48**

<b>Plant Site-Unit:</b>	Edwin I. Hatch Nuclear Plant-Unit 1.
<b>Interval-Interval Dates:</b>	3rd ISI Interval-January 1, 1996 through December 31, 2005.
<b>Requested Date for Approval and Basis</b>	Approval is requested by December 22, 2006 to close-out 3 <sup>rd</sup> Interval activities.
<b>ASME Code Components Affected:</b>	Class 1, ASME Section XI Category B-F, Item B5.10, low alloy steel nozzle to 304 stainless steel safe-end joined by Inconel welds 1B31-1RC-28A-1 and 1B31-1RC-28B-1.
<b>Applicable Code Edition and Addenda:</b>	ASME Section XI, 1989 Edition with no addenda.
<b>Applicable Code Requirements:</b>	Table IWB-2500-1, Examination Category B-F, Item B5.10 requires that 100% of the length of each weld be examined. Per Code Case N-460, coverage greater than 90% is acceptable.
<b>Impracticality of Compliance:</b>	Coverage was 77% for 1B31-1RC-28A-1 and 85% for 1B31-1RC-28B-1 based on Performance Demonstration Initiative (PDI) procedural requirements. As shown in Figures 1 and 2, the examination is limited by the presence of an adjacent weld overlay. The overlay adjacent to 1B31-1RC-28A-1 is closer to the weld edge than the one adjacent to 1B31-1RC-28B-1; therefore, the coverage for 1B31-1RC-28B-1 is greater. 45 <sup>0</sup> and 60 <sup>0</sup> refracted longitudinal coverage scanning for circumferential flaws was 100%. It is impractical to obtain appreciably more coverage.
<b>Burden Caused by Compliance:</b>	Obtaining more coverage would require replacement of the Recirculation nozzle safe-ends for the two nozzles to eliminate the overlay obstruction. The existing stainless steel overlay can not be practically extended over Inconel welds 1B31-1RC-28A-1 and 1B31-1RC-28B-1.
<b>Proposed Alternative and Basis for Use:</b>	These welds were stress improved using the induction heat stress improvement (IHSI) process during the 1985/1986 outage, which mitigated the potential for stress corrosion cracking (SCC). With the SCC mitigation and the high level of coverage for circumferential flaws there is reasonable assurance of structural integrity. Therefore, relief should be granted per 10 CFR 50.55a(g)(6)(i).
<b>Duration of Proposed Relief Request:</b>	The proposed relief request is applicable for the 3 <sup>rd</sup> Interval.

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-48**

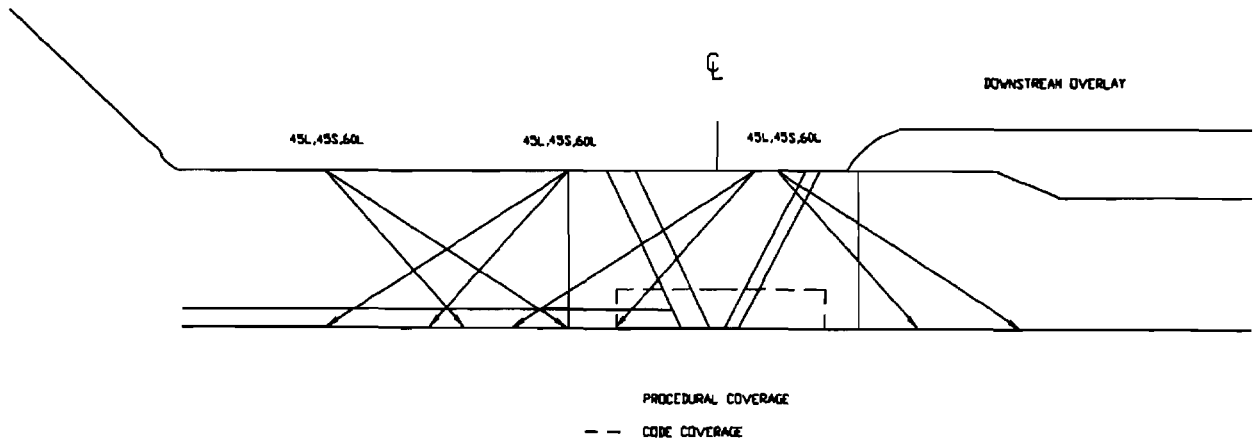
**Precedents:**     None.

**References:**     None

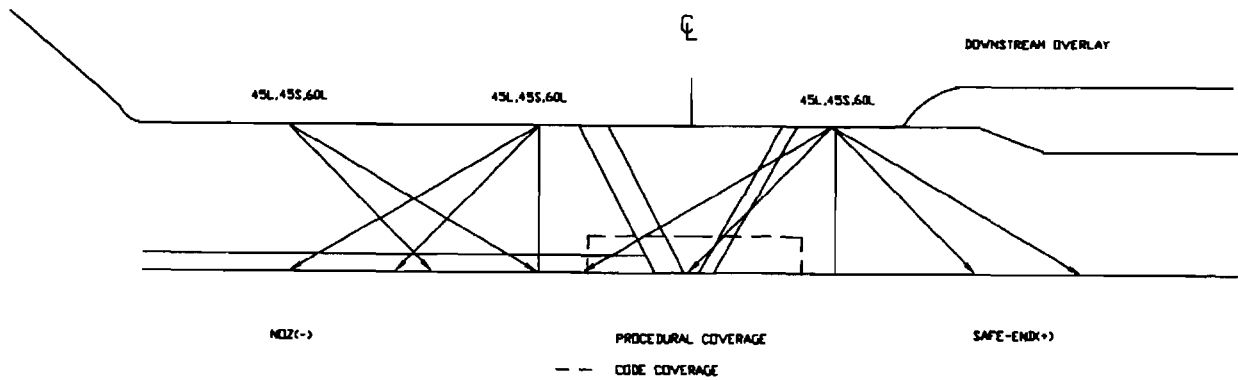
**Status:**     Awaiting NRC approval.

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-48**

**FIGURE 1  
COVERAGE PLOT FOR 1B31-1RC-28A-1**



**FIGURE 2  
COVERAGE PLOT FOR 1B31-1RC-28B-1**



Enclosure 8

RR-49, HNP – Unit 1  
Carbon Steel Pipe to 304 SS Safe End Extension Piece

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-49**

<b>Plant Site-Unit:</b>	Edwin I. Hatch Nuclear Plant-Unit 1.
<b>Interval-Interval Dates:</b>	3rd ISI Interval-January 1, 1996 through December 31, 2005.
<b>Requested Date for Approval and Basis</b>	Approval is requested by December 22, 2006 to close-out 3 <sup>rd</sup> Interval activities.
<b>ASME Code Components Affected:</b>	Class 1, ASME Section XI Category B-F, Item B5.130, carbon steel pipe to 304 stainless steel safe-end extension piece welds with Inconel welds 1E21-1CS-10A-18A and 1E21-1CS-10B-19A.
<b>Applicable Code Edition and Addenda:</b>	ASME Section XI, 1989 Edition with no addenda.
<b>Applicable Code Requirements:</b>	Table IWB-2500-1, Examination Category B-F, Item B5.130 requires that 100% of the length of each weld be examined. Per Code Case N-460, coverage greater than 90% is acceptable.
<b>Impracticality of Compliance:</b>	Coverage was 73% to 74% based on Performance Demonstration Initiative procedural requirements. As shown in Figure 1, the examination is limited by the overall configuration of the weld joint. 45 <sup>0</sup> and 60 <sup>0</sup> refracted longitudinal coverage scanning for circumferential flaws was 100%. Scans for axially oriented flaws were limited to the pipe side. It is impractical to obtain appreciably more coverage
<b>Burden Caused by Compliance:</b>	Obtaining more coverage would require replacement of the Core Spray nozzle safe-end configurations for the two nozzles.
<b>Proposed Alternative and Basis for Use:</b>	These welds had a mechanical stress improvement process (MSIP) performed on them in 1994 which mitigated the potential for stress corrosion cracking (SCC). With the SCC mitigation and the high level of coverage for circumferential flaws there is reasonable assurance of structural integrity. Therefore, relief should be granted per 10 CFR 50.55a(g)(6)(i).
<b>Duration of Proposed Relief Request:</b>	The proposed relief request is applicable for the 3 <sup>rd</sup> Interval.

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-49**

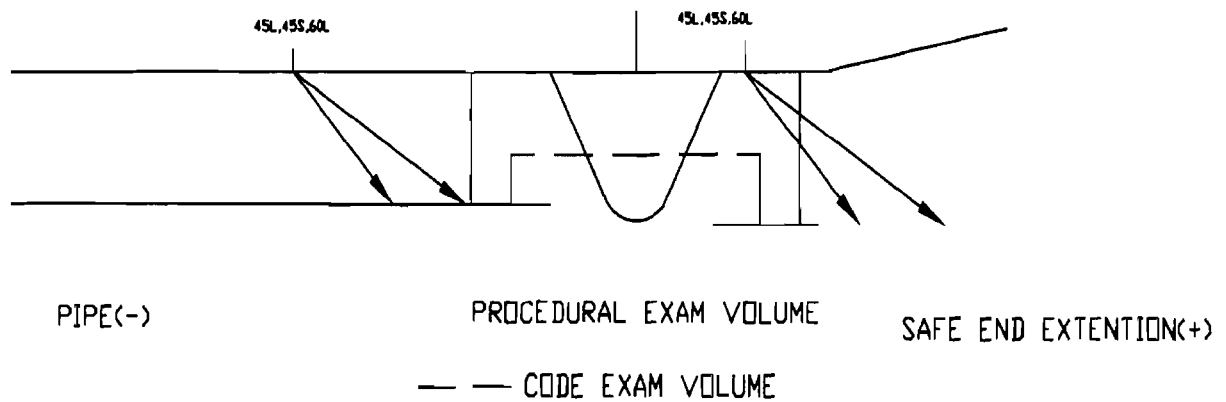
**Precedents:**     None.

**References:**     None

**Status:**     Awaiting NRC approval.

**SOUTHERN NUCLEAR OPERATING COMPANY**  
**PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)**  
**RR-49**

**FIGURE 1**



Enclosure 9

RR-50, HNP – Unit 2  
Safe End to Seal Penetration Weld

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-50**

<b>Plant Site-Unit:</b>	Edwin I. Hatch Nuclear Plant-Unit 2.
<b>Interval-Interval Dates:</b>	3rd ISI Interval-January 1, 1996 through December 31, 2005.
<b>Requested Date for Approval and Basis</b>	Approval is requested by December 22, 2006 to close-out 3 <sup>rd</sup> Interval activities.
<b>ASME Code Components Affected:</b>	Class 1, ASME Section XI Category B-J, Item B9.11, austenitic piping welds: 2B31-1RC-4JP-A-2      Safe End To Seal Penetration Weld 2B31-1RC-4JP-B-2      Safe End To Seal Penetration Weld
<b>Applicable Code Edition and Addenda:</b>	ASME Section XI, 1989 Edition with no addenda.
<b>Applicable Code Requirements:</b>	Table IWB-2500-1, Examination Category B-J, Item B9.11 requires that 100% of the length of each weld be examined. Per Code Case N-460, coverage greater than 90% is acceptable.
<b>Impracticality of Compliance:</b>	Pre-Appendix VIII coverage was limited to 75% due to the configuration. The examination limitations for these welds are due to the design of components which restricts the access for ultrasonic examinations (UT). As shown in figure 1, there is no access on the seal penetration side because of a large upward taper starting near the weld; therefore, the examination could only be performed from the safe-end side. 100% coverage was obtained for circumferentially oriented flaws and 50% for axially oriented flaws. Appreciably increasing coverage is impractical.
<b>Burden Caused by Compliance:</b>	Obtaining more coverage would require replacement of the Jet Pump nozzle safe-end configurations for the two nozzles.
<b>Proposed Alternative and Basis for Use:</b>	Each of these welds was stress improved in 1994 to protect against stress corrosion cracking using the mechanical stress improvement process (MSIP), which mitigated the potential for stress corrosion cracking (SCC). With the SCC mitigation and the high level of coverage for circumferential flaws there is reasonable assurance of structural integrity. Therefore, relief should be granted per 10 CFR 50.55a(g)(6)(i).
<b>Duration of Proposed Relief Request:</b>	The proposed relief request is applicable for the 3 <sup>rd</sup> Interval.

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-50**

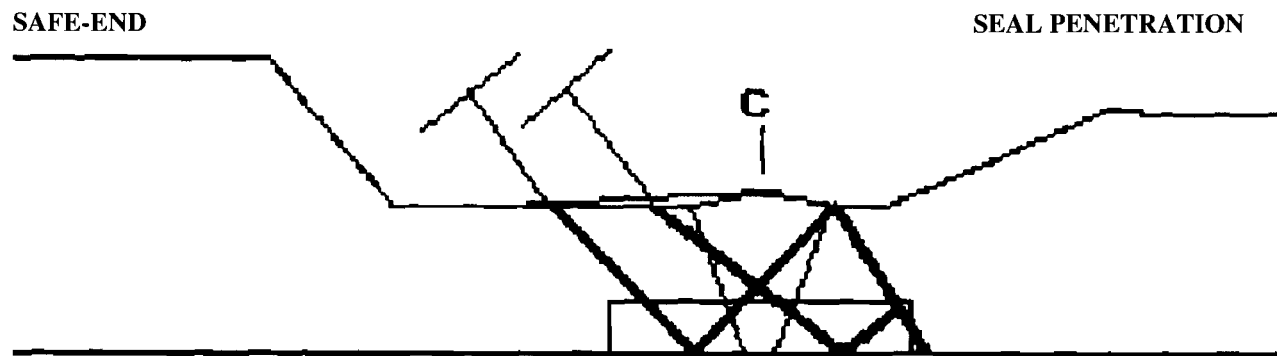
**Precedents:**     None.

**References:**     None

**Status:**         Awaiting NRC approval.

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-50**

**FIGURE 1**



Enclosure 10

RR-51, HNP – Unit 1  
Reactor Pressure Vessel (RPV) Longitudinal Welds

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-51**

<b>Plant Site-Unit:</b>	Edwin I. Hatch Nuclear Plant-Unit 1.
<b>Interval-Interval Dates:</b>	3rd ISI Interval-January 1, 1996 through December 31, 2005.
<b>Requested Date for Approval and Basis</b>	Approval is requested by December 31, 2006 to close-out 3 <sup>rd</sup> Interval activities.
<b>ASME Code Components Affected:</b>	Class 1, ASME Section XI Category B-A, Item B1.12 reactor pressure vessel (RPV) longitudinal welds, as shown in Table R-51-1.
<b>Applicable Code Edition and Addenda:</b>	ASME Section XI, 1989 Edition with no addenda.
<b>Applicable Code Requirements:</b>	Table IWB-2500-1, Examination Category B-A, Item B1.12 requires that 100% of the accessible length of each weld be examined. Per Code Case N-460, coverage greater than 90% is acceptable.
<b>Impracticality of Compliance:</b>	As shown in Table R-51-1, coverage could not be obtained for seven welds. Appreciably increasing coverage was impractical due to the interferences described in Table R-51-1.
<b>Burden Caused by Compliance:</b>	Obtaining more coverage would require replacement of the RPV or the design of a new automated examination tool.
<b>Proposed Alternative and Basis for Use:</b>	10 CFR 50.55a(g)(6)(ii)(A)(2) required that licensees augment their reactor pressure vessel examination by implementing once, as part of the inservice inspection interval in effect on September 8, 1992, the examination requirements for reactor vessel shell welds specified in Item B1.10 of Examination Category B-A, "Pressure Retaining Welds in Reactor Vessel," in Table IWB-2500-1 of subsection IWB of the 1989 Edition of Section XI. Per 10 CFR 50.55a(g)(6)(ii)(A)(3) licensees with fewer than 40 months remaining in the inservice inspection interval in effect on September 8, 1992 could defer the augmented reactor vessel examination to the first period of the next inspection interval. HNP-1, met this criteria; therefore, the augmented examinations were deferred until the 1st period of the 3rd interval. Additionally, as allowed, the augmented examination was used as a substitute for the reactor vessel shell weld examinations normally scheduled for the 3 <sup>rd</sup> inspection interval.

**SOUTHERN NUCLEAR OPERATING COMPANY**  
**PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)**  
**RR-51**

Examination coverage was reported by letters dated January 19, 1999 and February 5, 1999. Pursuant to 10 CFR 50.55a(g)(6)(ii)(A)(5) the NRC granted approval by letter from Herbert N. Berkow to H. L. Sumner, Jr. dated March 11, 1999 with the caveat that weld C-4-B be examined if the obstructing tie rod is removed or if technology became available for examination with the tie rod in place. The NRC concluded that the proposed alternative provided an acceptable level of quality and safety. (SNC will attempt to examine behind C-4-B during the examinations scheduled for February 2008 if equipment allows). Sufficient coverage was obtained during the examinations to assure the structural integrity of the welds. Therefore, relief should be granted per 10 CFR 50.55a(g)(6)(i).

<b>Duration of Proposed Relief Request:</b>	The proposed relief request is applicable for the 3 <sup>rd</sup> Interval.
<b>Precedents:</b>	March 11, 1999 NRC Safety Evaluation for augmented RPV examinations.
<b>References:</b>	None
<b>Status:</b>	Awaiting NRC approval.

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-51**

<b>TABLE RR-51-1</b>		
<b>Weld Number</b>	<b>Coverage</b>	<b>Basis for Limited Coverage</b>
C-2-A	78%	OD examination. Proximity of insulation support ring.
C-3-A	45%	ID Examination. Proximity of a specimen bracket and jet pump riser braces.
C-3-B	79%	ID Examination. Proximity of jet pump riser braces and shroud modification hardware.
C-3-C	80%	ID Examination. Proximity of a specimen bracket and jet pump riser braces.
C-4-A	73%	ID Examination. Manipulator lower limit and proximity of shroud gusset plates.
C-4-B	0%	ID Examination. Proximity of shroud modification hardware (tie rod).
C-4-C	73%	ID Examination. Manipulator lower limit and proximity of shroud gusset plates.

Enclosure 11

RR-52, HNP – Units 1 & 2  
Carbon Steel Piping Welds

**SOUTHERN NUCLEAR OPERATING COMPANY**  
**PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)**  
**RR-52**

<b>Plant Site-Unit:</b>	Edwin I. Hatch Nuclear Plant-Units 1 and 2.
<b>Interval-Interval Dates:</b>	3rd ISI Interval-January 1, 1996 through December 31, 2005.
<b>Requested Date for Approval and Basis</b>	Approval is requested by December 31, 2006 to close-out 3 <sup>rd</sup> Interval activities.
<b>ASME Code Components Affected:</b>	Class 1, ASME Section XI Category B-J, Item B9.11, carbon steel piping welds as shown in Table RR-52-1 (Unit 1) and Table RR-52-2 (Unit 2).
<b>Applicable Code Edition and Addenda:</b>	ASME Section XI, 1989 Edition with no addenda.
<b>Applicable Code Requirements:</b>	Table IWB-2500-1, Examination Category B-J, Item B9.11 requires that 100% of the length of each weld be examined. Per Code Case N-460, coverage greater than 90% is acceptable.
<b>Impracticality of Compliance:</b>	As shown in Table RR-52-1 (Unit 1) and Table RR-52-2 (Unit 2), coverage could not be obtained for certain welds. Appreciably increasing coverage was impractical due to the interferences described in Table RR-52-1 and Table RR-52-2.
<b>Burden Caused by Compliance:</b>	Compliance would require replacement of the existing valves and branch connections with new components fabricated with a special design to allow examination.
<b>Proposed Alternative and Basis for Use:</b>	The examination limitations for these are inherent to the design of the components, which restricts the access for the examinations. The ultrasonic examinations are primarily a one-sided examination from the pipe side of the weld; however, because they are performed on carbon steel, coverage from two beam directions was obtained, except in limited areas. The ultrasonic examination performed should provide reasonable assurance of structural integrity, especially since coverage for circumferential cracking was high for these welds. Therefore, relief should be granted per 10 CFR 50.55a(g)(6)(i).
<b>Duration of Proposed Relief Request:</b>	The proposed relief request is applicable for the 3 <sup>rd</sup> Interval.
<b>Precedents:</b>	None.

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-52**

**References:**     None

**Status:**        Awaiting NRC approval.

**SOUTHERN NUCLEAR OPERATING COMPANY**  
**PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)**  
**RR-52**

<b>TABLE RR-52-1</b>			
<b>Weld Number</b>	<b>Description</b>	<b>Coverage</b>	<b>Basis for Limited Coverage</b>
1B21-1MS-24B-10	Pipe to Elbow	49%	Post-PDI Examination. An dual-sided examination of this carbon steel weld was performed for 49% of the circumference of the weld. The remaining portion of the weld was obstructed by a welded pipe support.
1B21-1FW-18A-15	Elbow to Tee	75%	Pre-PDI Examination. A single-sided examination of this carbon steel weld was performed with 100% coverage obtained for circumferential flaws from the elbow side. Coverage for axial flaws was limited to the elbow side.
1R11-1RHR-24A-R-9	Valve to Pipe	75%	Pre-PDI Examination. A single-sided examination of this carbon steel weld was performed with 100% coverage obtained for circumferential flaws from the pipe side. Coverage for axial flaws was limited to the pipe side.
1E21-1CS-10A-7	Valve To Elbow	65%	Post-PDI Examination. A single-sided examination of this carbon steel weld was performed from the elbow side; however, the curvature of the elbow limited coverage to 65%.
1E51-1CIC-4-D-23	Pipe to Valve	68%	Pre-PDI Examination. A single-sided examination of this carbon steel weld was performed with 100% coverage obtained for circumferential flaws from the pipe side. Coverage for axial flaws was limited to the pipe side.

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-52**

<b>TABLE RR-52-2</b>			
<b>Weld Number</b>	<b>Description</b>	<b>Coverage</b>	<b>Basis for Limited Coverage</b>
2E21-1CS-10A-1	Valve-To-Pipe	73%	Pre-PDI Examination. A single-sided examination of this carbon steel weld was performed with 63% of the volume covered in two beam directions and an additional 20% from a single direction.
2E21-1CS-10A-10	Elbow-to-Pipe	100% UT 75% MT	Post-PDI Examination. A single-sided examination of this carbon steel weld was performed with 100% of the volume covered by UT examinations. Due to a clamp that could not be moved at that time only 75% of the surface examination was completed. It was determined to move the clamp at a later date and perform the surface exam; however, Relief Request RR-40, which eliminated surface examinations for this piping, was subsequently approved by the NRC.
2E41-1HPCI-10-D-1	Branch Connection-To-Elbow	89%	Pre-PDI Examination. A single-sided examination of this carbon steel weld was performed with 100% coverage obtained for circumferential flaws and 78% coverage for axial flaws. The coverage for the axial flaws was limited by the branch connection configuration.

Enclosure 12

RR-53, HNP – Unit 2  
Austenitic Piping Welds

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-53**

<b>Plant Site-Unit:</b>	Edwin I. Hatch Nuclear Plant-Unit 1.
<b>Interval-Interval Dates:</b>	3rd ISI Interval-January 1, 1996 through December 31, 2005.
<b>Requested Date for Approval and Basis</b>	Approval is requested by December 31, 2006 to close-out 3 <sup>rd</sup> Interval activities.
<b>ASME Code Components Affected:</b>	Class 1, ASME Section XI Category B-J, Item B9.11, austenitic piping welds as shown in Table RR-53-1.
<b>Applicable Code Edition and Addenda:</b>	ASME Section XI, 1989 Edition with no addenda.
<b>Applicable Code Requirements:</b>	Table IWB-2500-1, Examination Category B-J, Item B9.11 requires that 100% of the length of each weld be examined. Per Code Case N-460, coverage greater than 90% is acceptable.
<b>Impracticality of Compliance:</b>	The examination limitations for these are inherent to the design of components (e.g., pumps, valves, crosses, and tees) which severely restricts the access for ultrasonic examinations shown in Table RR-53-1. With few exceptions, the examinations are primarily a single-sided examination from the pipe side of the weld. Appreciably increasing coverage was impractical due to the limitations described in Table RR-53-1.
<b>Burden Caused by Compliance:</b>	Compliance would require replacement of the existing pumps, valves, crosses, and tees with new components fabricated with a special design to allow examination.
<b>Proposed Alternative and Basis for Use:</b>	Each of these welds was stress improved using the induction heating stress improvement (IHSI) during the 1985/1986 outage except for 1E21-1CS-10B-20A, 1B31-1RC-4JP-A-2, and 1B31-1RC-4JP-B-2 which received a Mechanical Stress Improvement Process (MSIP) in 1993. Additionally, all are protected by effective hydrogen water chemistry except for 1E11-1RHR-24B-R-14 and 1E21-1CS-10B-20A, where credit was not taken because of stagnant conditions. The ultrasonic examination performed from at least one side of the weld in conjunction with the resistant materials, the stress improvement, and the hydrogen protection should provide reasonable assurance of structural integrity. Therefore, relief should be granted per 10 CFR 50.55a(g)(6)(i).
<b>Duration of Proposed Relief Request:</b>	The proposed relief request is applicable for the 3 <sup>rd</sup> Interval.

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-53**

**Precedents:**     None.

**References:**     None

**Status:**     Awaiting NRC approval.

**SOUTHERN NUCLEAR OPERATING COMPANY**  
**PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)**  
**RR-53**

<b>TABLE RR-53-1</b>			
<b>Weld Number</b>	<b>Description</b>	<b>Coverage</b>	<b>Basis for Limited Coverage</b>
1E21-1CS-10B-20A	Safe-end Extension to Safe-end	75%	Post-PDI Examination. A single sided exam of each weld was performed from the pipe side using Performance Demonstration Initiative (PDI) qualified procedures. Since these procedures have not been qualified by PDI for examination beyond the centerline of the weld the coverage is defined as 50%. Additionally, scans looking for axial flaws were performed on the Safe-end Extension side, so the composite coverage was 75%. This weld was stress improved in 1993 using the MSIP process.
1B31-1RC-4A-10A 1B31-1RC-12BR-E-1 1E11-1RHR-24B-R-14	Branch Connection to Cap Branch Connection to Pipe Pipe to Tee	50%	Post-PDI Examination. A single sided exam of each weld was performed from the pipe side using Performance Demonstration Initiative (PDI) qualified procedures. Since these procedures have not been qualified by PDI for examination beyond the centerline of the weld the coverage is defined as 50%. These welds were stress improved during the 1985/1986 outage using the IHSI process.
1B31-1RC-4A-1A	Branch Connection to Cap	63%	Pre-PDI Examination. Essentially a single-sided examination with little or no access from the cap side due to its configuration. This weld was stress improved during the 1985/1986 outage using the IHSI process.
1B31-1RC-4JP-A-2 1B31-1RC-4JP-B-2	Safe-end to Penetration Seal	50%	Pre-PDI Examination. Essentially a single-sided examination with no access from the Penetration Seal because it tapered upward at about a 45° slope near the edge of the weld. These welds were stress improved in 1993 using the MSIP process.
1B31-1RC-12AR-F-1 1B31-1RC-12AR-G-1 1B31-1RC-12AR-K-1 1B31-1RC-28A-11BC 1B31-1RC-28A-14BC	Branch Connection to Pipe Branch Connection to Pipe Branch Connection to Pipe Pipe to Branch Connection Pipe to Branch Connection	75%	Pre-PDI Examination. 100% credit was taken for a single-sided examination from the pipe side (and over the weld) for scans looking for circumferential flaws. Scanning for axial flaws was performed on the pipe side but could not be performed on the branch connection side due to its configuration. These welds were stress improved during the 1985/1986 outage using the IHSI process.
1B31-1RC-12AR-H-1 1B31-1RC-12AR-J-1	Reducer to Pipe Branch Connection to Pipe	42-43%	Pre-PDI Examination. A partial single-sided examination from the pipe side with no access from the component side due to the configuration. These welds were stress improved during the 1985/1986 outage using the IHSI process.
1B31-1RC-22AM-2	Pipe to Cross	77%	Pre-PDI Examination. Essentially a single-sided examination with limited access from the cross side due to the configuration. This weld was stress

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-53**

<b>TABLE RR-53-1</b>			
<b>Weld Number</b>	<b>Description</b>	<b>Coverage</b>	<b>Basis for Limited Coverage</b>
			improved during the 1985/1986 outage using the IHSI process.
1B31-1RC-22AM-3	Cross to Pipe	67%	Pre-PDI Examination. Essentially a single-sided examination with limited access from the cross side due to the configuration. This weld was stress improved during the 1985/1986 outage using the IHSI process.
1B31-1RC-28A-13 1B31-1RC-28A-15	Valve to Elbow Pipe to Tee	62%	Pre-PDI Examination. Essentially a single-sided examination with limited access from the component side due to the configuration. These welds were stress improved during the 1985/1986 outage using the IHSI process.

Enclosure 13

RR-54, HNP – Units 1 & 2  
Carbon Steel Piping Welds

**SOUTHERN NUCLEAR OPERATING COMPANY**  
**PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)**  
**RR-54**

<b>Plant Site-Unit:</b>	Edwin I. Hatch Nuclear Plant-Units 1 and 2.
<b>Interval-Interval Dates:</b>	3rd ISI Interval-January 1, 1996 through December 31, 2005.
<b>Requested Date for Approval and Basis</b>	Approval is requested by December 31, 2006 to close-out 3 <sup>rd</sup> Interval activities.
<b>ASME Code Components Affected:</b>	Class 2, ASME Section XI Category C-F-2, Item C5.51, carbon steel piping welds as shown in Table RR-54-1 and Table RR-54-2.
<b>Applicable Code Edition and Addenda:</b>	ASME Section XI, 1989 Edition with no addenda.
<b>Applicable Code Requirements:</b>	Table IWB-2500-1, Examination Category C-F-2, Item C5.51 requires that 100% of the length of each weld be examined. Per Code Case N-460, coverage greater than 90% is acceptable.
<b>Impracticability of Compliance:</b>	As shown in Table RR-54-1 (Unit 1) and Table RR-54-2 (Unit 2), coverage could not be obtained for certain welds. Appreciably increasing coverage was impractical due to the limitations described in Table RR-54-1 and Table RR-54-2.
<b>Burden Caused by Compliance:</b>	Compliance would require replacement of the existing valves and elbows with new components fabricated with a special design to allow examination.
<b>Proposed Alternative and Basis for Use:</b>	The ultrasonic examinations are primarily a single-sided examination from the pipe side of the weld; however, because they are performed on carbon steel, coverage from two beam directions was obtained, except in limited areas. The ultrasonic examination performed should provide reasonable assurance of structural integrity, especially since coverage for circumferential cracking was good for these welds. Therefore, relief should be granted per 10 CFR 50.55a(g)(6)(i).
<b>Duration of Proposed Relief Request:</b>	The proposed relief request is applicable for the 3 <sup>rd</sup> Interval.
<b>Precedents:</b>	None.
<b>References:</b>	None
<b>Status:</b>	Awaiting NRC approval.

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-54**

<b>TABLE RR-54-1</b>			
<b>Weld Number</b>	<b>Description</b>	<b>Coverage</b>	<b>Basis for Limited Coverage</b>
1E11-2RHR-16B-HXO-2	Elbow to Valve	75%	Post-PDI Examination. A single-sided examination from the elbow side. Coverage for axial flaws was limited to the elbow side; however, coverage for circumferential cracking was near 100%.
1N11-2MSAR-10C-SSR-4	Pipe to Valve	86%	Post-PDI Examination. A single-sided examination from the pipe side. Coverage for axial flaws was limited to the pipe side; however, coverage for circumferential cracking was near 100%.
1E21-2CS-16A-TS-S	Pipe To Elbow	50%	Post-PDI Examination. The configuration limited the scanning to the pipe side. The weld crown condition prohibited the use of a 1-1/2 V-Path; therefore, only a 1/2 V-path was used and 50% coverage was obtained.
1E11-2RHR-16B-SH-8A	Pipe to Valve	81%	Pre-PDI Examination - A single-sided examination from the pipe side. Coverage for axial flaws was limited to the pipe side; however, coverage for circumferential cracking was near 100%.
1E41-2HPCI-14-R-39	Pipe to Valve	78%	Pre-PDI Examination - A single-sided examination from the pipe side. Coverage for axial flaws was limited to the pipe side; however, coverage for circumferential cracking was near 100%.
1T48-2CPI-18-PIT-2	Pipe to Flange	65%	Pre-PDI Examination - A single-sided examination from the pipe side. Coverage for axial flaws was limited to the pipe side; however, coverage for circumferential cracking was near 100%.

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-54**

<b>TABLE RR-54-2</b>			
<b>Weld Number</b>	<b>Description</b>	<b>Coverage</b>	<b>Basis for Limited Coverage</b>
2E11-2RHR-24B-R-3	Pipe to Valve	84%	Post-PDI Examination. A single-sided examination from the pipe side. Coverage for axial flaws was limited to the pipe side; however, coverage for circumferential cracking was near 100%.
2E21-2CS-14A-CTS-1	Valve-To-Pipe	76%	Pre-PDI Examination - A single-sided examination from the pipe side. Coverage for axial flaws was limited to the pipe side; however, coverage for circumferential cracking was near 100%.

Enclosure 14

RR-55, HNP – Unit 2  
Carbon Steel Pipe to 316 SS Elbow, Inconel Buttered

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-55**

<b>Plant Site- Unit:</b>	Edwin I. Hatch Nuclear Plant-Unit 2.
<b>Interval-Interval Dates:</b>	3rd ISI Interval-January 1, 1996 through December 31, 2005.
<b>Requested Date for Approval and Basis</b>	Approval is requested by December 31, 2006 to close-out 3 <sup>rd</sup> Interval activities.
<b>ASME Code Components Affected:</b>	<p>Class 1, ASME Section XI Category B-F, Item B5.130, carbon steel pipe to Inconel buttered 316 Nuclear Grade (NG) stainless steel elbow. This includes welds 2E11-1RHRM-24A-10 and 2E11-1RHRM-24B-10. These welds originally joined 304 stainless steel piping to carbon steel piping. Drawings indicate that the carbon steel piping was buttered in the shop with Inconel, machined, and then stress relieved. During the 1984 pipe replacement to replace the 304 stainless steel piping with 316 NG stainless steel piping, a cut was made at each weld. The Inconel butter remained and possibly a portion of the original weld remained as a "safe-end". This "safe-end" was then machined,, welded to the 316 NG stainless steel with Inconel 82, and then Induction Heat Stress Improved (IHSI).</p>
<b>Applicable Code Edition and Addenda:</b>	ASME Section XI, 1989 Edition with no addenda.
<b>Applicable Code Requirements:</b>	Table IWB-2500-1, Examination Category B-F, Item B5.130 requires that 100% of the length of each weld be examined.
<b>Impracticality of Compliance:</b>	<p>The Performance Demonstration Initiative (PDI) examinations were performed in February 2005 with a total coverage of 76% (no scans for axially oriented flaws were possible due to the configuration) These welds consists of a thick elbow with the weld tapering down to the thinner carbon steel piping. Additionally, there is dip on the carbon steel side near the edge of the weld butter. From the 2005 coverage plots, there was no coverage for scans looking for axial flaws due to the configuration. For scans looking for circumferentially oriented cracking the following coverage was obtained:</p> <p>45-degree shear wave – 100% of the base metal 45-degree Refracted Longitudinal wave (RL) – 78% of the required volume 60-degree RL – 91% of the required volume</p> <p>This configuration does not meet PDI requirements for examination of dissimilar metal welds and it would be impractical to appreciably increase the coverage.</p>

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-55**

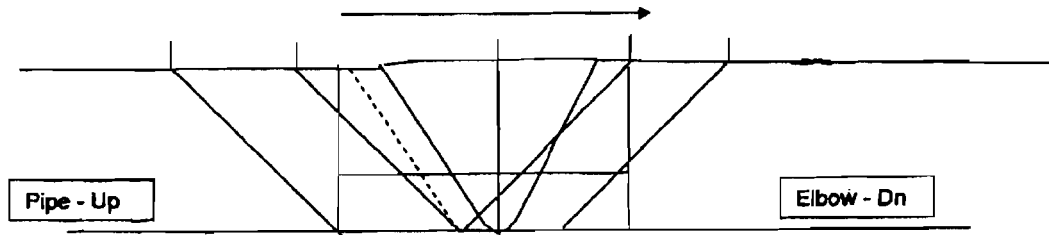
<b>Burden Caused by Compliance</b>	Compliance would require replacement of the existing valves with new components fabricated with a special design to allow examination.
<b>Proposed Alternative and Basis for Use:</b>	While the ultrasonic examination coverage was limited, the area of interest for potential stress corrosion cracking in this weld joint (Inconel butter and the Inconel 82 weld - the carbon steel pipe and the 316 NG pipe is relatively immune) was scanned with the 45-degree RL transducer from the stainless steel elbow side as shown on Figure 1 and scanned from both sides with the 60-degree RL transducer as shown on figure 2. With the coverage for circumferential flaws in the area of interest there is reasonable assurance of structural integrity. Therefore, relief should be granted per 10 CFR 50.55a(g)(6)(i).
<b>Duration of Proposed Relief Request:</b>	The proposed relief request is applicable for the 3 <sup>rd</sup> Interval.
<b>Precedents:</b>	None.
<b>References:</b>	None
<b>Status:</b>	Awaiting NRC approval.

**SOUTHERN NUCLEAR OPERATING COMPANY**  
**PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)**  
**RR-55**

**FIGURE 1**

Hatch Unit 2  
Sheet No. S05H2U107  
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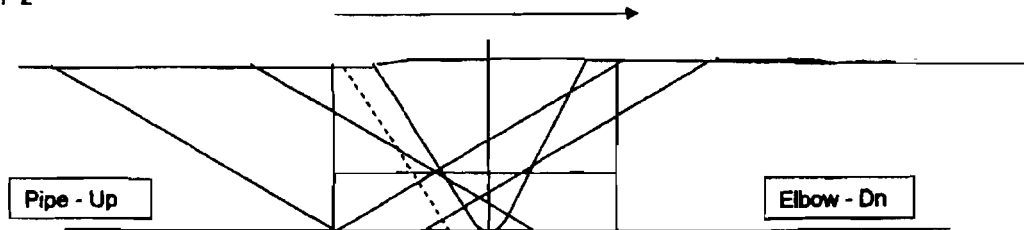
**Code Coverage Plot for the 45° RL**



**FIGURE 2**

Hatch Unit 2  
Sheet No. S05H2U108  
PAGE 2 OF 2

**Code Coverage Plot for the 60° RL**



Enclosure 15

RR-56, HNP – Units 1 & 2  
Austenitic Piping Welds

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-56**

<b>Plant Site-Unit:</b>	Edwin I. Hatch Nuclear Plant-Units 1 and 2.
<b>Interval-Interval Dates:</b>	3rd ISI Interval-January 1, 1996 through December 31, 2005.
<b>Requested Date for Approval and Basis</b>	Approval is requested by December 31, 2006 to close-out 3 <sup>rd</sup> Interval activities.
<b>ASME Code Components Affected:</b>	Class 1, ASME Section XI Category B-J, Item B9.11, austenitic piping welds as shown in Table RR-56-1.
<b>Applicable Code Edition and Addenda:</b>	ASME Section XI, 1989 Edition with no addenda.
<b>Applicable Code Requirements:</b>	Table IWB-2500-1, Examination Category B-J, Item B9.11 requires that 100% of the length of each weld be examined. Per Code Case N-460, coverage greater than 90% is acceptable.
<b>Impracticality of Compliance:</b>	The examination limitations for these are inherent to the design of components (e.g., pumps, valves, elbows, crosses, and tees) which severely restricts the access for the ultrasonic examinations shown in Table RR-56-1. With few exceptions, the examinations are primarily a one-sided examination from the pipe side of the weld and it would be impractical to appreciably increase the coverage.
<b>Burden Caused by Compliance</b>	Compliance would require replacement of the existing reactor recirculation pumps, valves, tees, and crosses with new components fabricated with a special design to allow examination.
<b>Proposed Alternative and Basis for Use:</b>	Per the NRC staff positions found in Generic Letter 88-01 these welds are considered resistant to Intergranular Stress Corrosion Cracking (IGSCC) and are defined as Category A. Each of these welds was stress improved using the induction heating stress improvement (IHSI) or Mechanical Stress Improvement Process (MSIP) and all are protected by effective hydrogen water chemistry except for 2E11-1RHRM-24A-13 which is not considered to be protected due to due to stagnant conditions. The ultrasonic examination performed from at least one side of the weld in conjunction with the resistant materials, the stress improvement, and the hydrogen protection should provide reasonable assurance of structural integrity. Therefore, relief should be granted per 10 CFR 50.55a(g)(6)(i).

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-56**

**Duration of  
Proposed Relief  
Request:**      The proposed relief request is applicable for the 3<sup>rd</sup> Interval.

**Precedents:**      None.

**References:**      None

**Status:**      Awaiting NRC approval.

**SOUTHERN NUCLEAR OPERATING COMPANY**  
**PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)**  
**RR-56**

**TABLE RR-56-1**

<b>Weld Number</b>	<b>Description</b>	<b>Coverage</b>	<b>Basis for Limited Coverage</b>
1G31-1RWCUM-6-D-4	316NG Pipe to Valve	50%	Post-PDI Examination. A single sided exam of each weld was performed from the pipe side using Performance Demonstration Initiative (PDI) qualified procedures. Since these procedures have not been qualified by PDI for examination beyond the centerline of the weld the coverage is defined as 50%. This weld was stress improved in 1993 using the MSIP process.
1G31-1RWCUM-6-D-5	Valve to 316NG Elbow	50%	Post-PDI Examination. A single sided exam of each weld was performed from the elbow side using Performance Demonstration Initiative (PDI) qualified procedures. Since these procedures have not been qualified by PDI for examination beyond the centerline of the weld the coverage is defined as 50%. This weld was stress improved in 1993 using the MSIP process.
1G31-1RWCUM-6-D-14	316NG Elbow to Valve	50%	Post-PDI Examination. A single sided exam of each weld was performed from the elbow side using Performance Demonstration Initiative (PDI) qualified procedures. Since these procedures have not been qualified by PDI for examination beyond the centerline of the weld the coverage is defined as 50%. This weld was stress improved in 1993 using the MSIP process.
2B31-1RCM-28AD-3	Valve to 316NG Pipe	50%	Post-PDI Examination. A single sided exam of each weld was performed from the pipe side using Performance Demonstration Initiative (PDI) qualified procedures. Since these procedures have not been qualified by PDI for examination beyond the centerline of the weld the coverage is defined as 50%. This weld was stress improved during the 1984 outage using the IHSI process.
2B31-1RCM-28AD-5	316NG Pipe to 316 NG Cross	50%	Post-PDI Examination. A single sided exam of each weld was performed from the pipe side using Performance Demonstration Initiative (PDI) qualified procedures. Since these procedures have not been qualified by PDI for examination beyond the centerline of the weld the coverage is defined as 50%. This weld was stress improved during the 1984 outage using the IHSI process.
2B31-1RCM-28BD-5	316NG Pipe to 316 NG Cross	50%	Post-PDI Examination. A single sided exam of each weld was performed from the pipe side using Performance Demonstration Initiative (PDI) qualified procedures. Since these procedures have not been qualified by PDI for examination beyond the centerline of the weld the coverage is defined as 50%. This weld was stress improved during the 1984 outage using the IHSI process.

**SOUTHERN NUCLEAR OPERATING COMPANY**  
**PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)**  
**RR-56**

<b>TABLE RR-56-1</b>			
<b>Weld Number</b>	<b>Description</b>	<b>Coverage</b>	<b>Basis for Limited Coverage</b>
2B31-1RCM-12AF-1	316NG Manifold to 316NG Pipe	73%	Pre-PDI Examination. Essentially a one sided examination with little or no access from the manifold side due to its configuration. This weld was stress improved during the 1984 outage using the IHSI process.
2B31-1RCM-12BA-1	316NG Manifold to 316NG Pipe	73%	Pre-PDI Examination. Essentially a one sided examination with little or no access from the manifold side due to its configuration. This weld was stress improved during the 1984 outage using the IHSI process.
2B31-1RCM-28AD-1	Pump to 316NG Pipe	62%	Pre-PDI Examination. Essentially a one sided examination with little or no access from the manifold side due to its configuration. This weld was stress improved during the 1984 outage using the IHSI process.
2B31-1RCM-28AS-8	316NG Elbow to valve	62%	Pre-PDI Examination. Essentially a one sided examination with little or no access from the manifold side due to its configuration. This weld was stress improved during the 1984 outage using the IHSI process.
2B31-1RCM-28AS-10	316NG Elbow to pump	62%	Pre-PDI Examination. Essentially a one sided examination with little or no access from the manifold side due to its configuration. This weld was stress improved during the 1984 outage using the IHSI process.
2B31-1RCM-28BD-3	316NG Elbow to valve	62%	Pre-PDI Examination. Essentially a one sided examination with little or no access from the manifold side due to its configuration. This weld was stress improved during the 1984 outage using the IHSI process.
2E11-1RHRM-24A-13	316NG Elbow to 316NG Tee	86%	Pre-PDI Examination. 100% coverage on both sides scanning for axial indications. 100% coverage on the Elbow side scanning for circumferential flaws. Coverage on the Tee side scanning for circumferential flaws was limited to 57% due to the tee configuration. This weld was stress improved during the 1984 outage using the IHSI process.
2G31-1RWCUM-6-D-14	316NG Pipe to Valve	84%	Pre-PDI Examination. 100% coverage side scanning for circumferential indications and 68% coverage scanning for axial indications. This weld was stress improved during the 1984 outage using the IHSI process.
2G31-1RWCUM-6-D-16	316NG Pipe to Valve	82%	Pre-PDI Examination. 65% coverage side scanning for circumferential indications and 100% coverage scanning for axial indications. This weld was stress improved during the 1984 outage using the IHSI process.

Note: NG refers to nuclear grade piping that is resistant to intergranular stress corrosion cracking

Enclosure 16

RR-57, HNP – Unit 1  
Welded Attachments

**SOUTHERN NUCLEAR OPERATING COMPANY**  
**PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)**  
**RR-57**

<b>Plant Site-Unit:</b>	Edwin I. Hatch Nuclear Plant-Unit 1.
<b>Interval-Interval Dates:</b>	3rd ISI Interval-January 1, 1996 through December 31, 2005.
<b>Requested Date for Approval and Basis</b>	Approval is requested by December 31, 2006 to close-out 3 <sup>rd</sup> Interval activities.
<b>ASME Code Components Affected:</b>	Class 1, ASME Section XI, Code Case N-509, Category B-K, Item 10.20, welded attachments:  1E41-1HPCI-10-D-7HL-1 and 2
<b>Applicable Code Edition and Addenda:</b>	ASME Section XI, 1989 Edition with no addenda.
<b>Applicable Code Requirements:</b>	Table IWB-2500 of Code Case N-509, Examination Category B-K, Item 10.20 requires that 100% of the length of each weld be examined. Per Code Case N-460, coverage greater than 90% is acceptable.
<b>Impracticality of Compliance:</b>	This configuration consists of two lugs welded to the pressure-retaining boundary with insufficient distance between them to perform an examination. Three sides of each lug was examined for a total of 57% coverage. Increasing coverage is impractical.
<b>Burden Caused by Compliance</b>	Compliance would require replacement of the existing lugs with new lugs fabricated with a special design to allow examination.
<b>Proposed Alternative and Basis for Relief</b>	The surface examination performed on three sides of each lug should provide reasonable assurance of structural integrity. Therefore, relief should be granted per 10 CFR 50.55a(g)(6)(i).
<b>Duration of Proposed Relief Request:</b>	The proposed relief request is applicable for the 3 <sup>rd</sup> Interval.
<b>Precedents:</b>	None.
<b>References:</b>	None
<b>Status:</b>	Awaiting NRC approval.

Enclosure 17

RR-58, HNP – Unit 1  
Nozzle-to-Shell for RHR Heat Exchanger Weld

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-58**

<b>Plant Site-Unit:</b>	Edwin I. Hatch Nuclear Plant-Unit 1.
<b>Interval-Interval Dates:</b>	3rd ISI Interval-January 1, 1996 through December 31, 2005.
<b>Requested Date for Approval and Basis</b>	Approval is requested by December 31, 2006 to close-out 3 <sup>rd</sup> Interval activities.
<b>ASME Code Components Affected:</b>	Class 2, ASME Section XI, Code Category C-B, Item C2.21, nozzle to shell examinations for RHR Heat Exchanger weld 1E11-2HX-B-O.
<b>Applicable Code Edition and Addenda:</b>	ASME Section XI, 1989 Edition with no addenda.
<b>Applicable Code Requirements:</b>	Table IWB-2500-1, Examination Category C-B, Item C2.21 requires examination per Figure IWC-2500-4.
<b>Impracticality of Compliance:</b>	Only 68% coverage was obtained. Due to the configuration there was no scanning from the nozzle side and scans for axial flaws were limited to approximately 50%. About 90% coverage was obtained for circumferential cracking from the shell side in at least one beam direction. It would be impractical to appreciably increase the coverage.
<b>Burden Caused by Compliance</b>	Compliance would require replacement of the existing heat exchanger with a new heat exchanger fabricated with a special design to allow examination.
<b>Proposed Alternative and Basis for Use:</b>	The 90% coverage obtained for circumferential cracking from the shell side (in at least one beam direction); provides reasonable assurance that structural integrity is being maintained; therefore, relief should be granted per 10 CFR 50.55a(g)(6)(i).
<b>Duration of Proposed Relief Request:</b>	The proposed relief request is applicable for the 3 <sup>rd</sup> Interval.
<b>Precedents:</b>	None.
<b>References:</b>	None
<b>Status:</b>	Awaiting NRC approval.

Enclosure 18

RR-59, HNP – Unit 2  
Nozzle-to-Shell for RHR Heat Exchanger Weld

**SOUTHERN NUCLEAR OPERATING COMPANY**  
**PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)**  
**RR-59**

<b>Plant Site-Unit:</b>	Edwin I. Hatch Nuclear Plant-Unit 2.
<b>Interval-Interval Dates:</b>	3rd ISI Interval-January 1, 1996 through December 31, 2005.
<b>Requested Date for Approval and Basis</b>	Approval is requested by December 31, 2006 to close-out 3 <sup>rd</sup> Interval activities.
<b>ASME Code Components Affected:</b>	Class 2, ASME Section XI, Code Category C-B, Item C2.21, nozzle to shell examinations for RHR Heat Exchanger weld 2E11-2HX-A-O.
<b>Applicable Code Edition and Addenda:</b>	ASME Section XI, 1989 Edition with no addenda.
<b>Applicable Code Requirements:</b>	Table IWB-2500-1, Examination Category C-B, Item C2.21 requires examination per Figure IWC-2500-4.
<b>Impracticability of Compliance:</b>	Only 85% coverage was obtained. Due to the configuration there was no scanning from the nozzle side and scans for axial flaws were limited to approximately 50%. However, essentially 100% coverage was obtained for circumferential cracking from the shell side in two beam directions. It would be impractical to appreciably increase the coverage.
<b>Burden Caused by Compliance</b>	Compliance would require replacement of the existing heat exchanger with a new heat exchanger fabricated with a special design to allow examination.
<b>Proposed Alternative and Basis for Use:</b>	The 100% coverage obtained for circumferential cracking from the shell side provides reasonable assurance that structural integrity is being maintained; therefore, relief should be granted per 10 CFR 50.55a(g)(6)(i).
<b>Duration of Proposed Relief Request:</b>	The proposed relief request is applicable for the 3 <sup>rd</sup> Interval.
<b>Precedents:</b>	None.
<b>References:</b>	None
<b>Status:</b>	Awaiting NRC approval.

Enclosure 19

RR-60, HNP – Unit 2  
Flange-to-Shell for RHR Heat Exchanger Weld

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-60**

<b>Plant Site-Unit:</b>	Edwin I. Hatch Nuclear Plant-Unit 2.
<b>Interval-Interval Dates:</b>	3rd ISI Interval-January 1, 1996 through December 31, 2005.
<b>Requested Date for Approval and Basis</b>	Approval is requested by December 31, 2006 to close-out 3 <sup>rd</sup> Interval activities.
<b>ASME Code Components Affected:</b>	Class 2, ASME Section XI, Code Category C-A, Item C1.20, flange to shell examinations for RHR Heat Exchanger weld 2E11-2HX-A-3.
<b>Applicable Code Edition and Addenda:</b>	ASME Section XI, 1989 Edition with no addenda.
<b>Applicable Code Requirements:</b>	Table IWB-2500-1, Examination Category C-A, Item C1.20 requires examination per Figure IWC-2500-1.
<b>Impracticability of Compliance:</b>	Only 70% composite coverage was obtained. Due to the configuration there was no scanning from the flange side. Circumferential scanning from the shell side was performed for axial cracking. Essentially 90% coverage was obtained for circumferential cracking from the shell side. It would be impractical to appreciably increase the coverage obtained.
<b>Burden Caused by Compliance</b>	Compliance would require replacement of the existing heat exchanger with a new heat exchanger fabricated with a special design to allow examination.
<b>Proposed Alternative and Basis for Use:</b>	The 90% coverage obtained for circumferential cracking from the shell side provides reasonable assurance that structural integrity is being maintained; therefore, relief should be granted per 10 CFR 50.55a(g)(6)(i).
<b>Duration of Proposed Relief Request:</b>	The proposed relief request is applicable for the 3 <sup>rd</sup> Interval.
<b>Precedents:</b>	None.
<b>References:</b>	None
<b>Status:</b>	Awaiting NRC approval.

Enclosure 20

RR-61, HNP – Unit 1  
Reactor Pressure Vessel (RPV) to Flange Weld

**SOUTHERN NUCLEAR OPERATING COMPANY**  
**PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)**  
**RR-61**

<b>Plant Site-Unit:</b>	Edwin I. Hatch Nuclear Plant-Unit 1.
<b>Interval-Interval Dates:</b>	3rd ISI Interval-January 1, 1996 through December 31, 2005.
<b>Requested Date for Approval and Basis</b>	Approval is requested by December 31, 2006 to close-out 3 <sup>rd</sup> Interval activities.
<b>ASME Code Components Affected:</b>	Class 1, ASME Section XI Category B-A, Item B1.30, reactor pressure vessel (RPV) to flange weld, 1B11\C-1.
<b>Applicable Code Edition and Addenda:</b>	ASME Section XI, 1989 Edition with no addenda.
<b>Applicable Code Requirements:</b>	Table IWB-2500-1, Examination Category B-A requires that essentially 100% of the weld be examined.
<b>Impracticality of Compliance:</b>	<p>Composite coverage was calculated as 52%. It is impractical to obtain significantly more coverage than obtained. Examinations were performed from the OD of the RPV shell and from the top of the flange, as follows:</p> <ul style="list-style-type: none"><li>▪ No scans were performed from the flange side of the weld (except those from the top) due to the flange configuration. Approximately 80% coverage was obtained from the top of the flange.</li><li>▪ From the shell side, scans for axially oriented flaws were limited to about 49%.</li><li>▪ From the shell side, scans for circumferentially oriented flaws were performed from one beam direction over about 76% of the required volume. The limitation was the inability to reach the outer quarter of the examination volume. This volume was scanned to the extent practical with a 70<sup>0</sup> transducer.</li></ul>
<b>Burden Caused by Compliance</b>	Compliance would require replacement of the RPV with a RPV fabricated with a special design to allow examination of the flange.
<b>Proposed Alternative and Basis for Use:</b>	Adequate coverage for circumferential flaws was obtained to assure that the structural integrity of the flange is being maintained. Therefore, relief should be granted per 10 CFR 50.55a(g)(6)(i).

**SOUTHERN NUCLEAR OPERATING COMPANY  
PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)  
RR-61**

**Duration of  
Proposed  
Alternative:**      The proposed alternative is applicable for the 3<sup>rd</sup> Interval.

**Precedents:**      None.

**References:**      None

**Status:**      Awaiting NRC approval.

Enclosure 21

RR-62, HNP – Unit 2

Upper Shell Ring to Lower Shell Ring for RHR Heat Exchanger Weld

**SOUTHERN NUCLEAR OPERATING COMPANY**  
**PROPOSED RELIEF REQUEST IN ACCORDANCE WITH 10 CFR 50.55a(g)(5)(iii)**  
**RR-62**

<b>Plant Site-Unit:</b>	Edwin I. Hatch Nuclear Plant-Unit 2.
<b>Interval-Interval Dates:</b>	3rd ISI Interval-January 1, 1996 through December 31, 2005.
<b>Requested Date for Approval and Basis</b>	Approval is requested by December 31, 2006 to close-out 3 <sup>rd</sup> Interval activities.
<b>ASME Code Components Affected:</b>	Class 2, ASME Section XI, Code Category C-A, Item C1.10, Upper Shell Ring To Lower Shell Ring examinations for RHR Heat Exchanger weld 2E11-2HX-A-2.
<b>Applicable Code Edition and Addenda:</b>	ASME Section XI, 1989 Edition with no addenda.
<b>Applicable Code Requirements:</b>	Table IWB-2500-1, Examination Category C-A, Item C1.10 requires examination per Figure IWC-2500-1.
<b>Impracticability of Compliance:</b>	Only 78% coverage was obtained. There was limited examination on the downstream side of the weld due to four permanently welded support brackets. The total length of the subject weld is 220". There are 4 support bracket 24" in length each (96" total). Only 124" could be examined on the downstream side of the weld, (56%), while 100% was examined on the upstream side of the weld. Increasing coverage is impractical.
<b>Burden Caused by Compliance</b>	Compliance would require replacement of the existing heat exchanger with a new heat exchanger fabricated with a special design to allow examination.
<b>Proposed Alternative and Basis for Use:</b>	The ultrasonic examination performed should provide reasonable assurance of structural integrity, especially since coverage from one side was 100%. Therefore, relief should be granted per 10 CFR 50.55a(g)(6)(i).
<b>Duration of Proposed Relief Request:</b>	The proposed relief request is applicable for the 3 <sup>rd</sup> Interval.
<b>Precedents:</b>	RR-5 which was approved by NRC Letter dated June 16, 1997 (TAC Nos. M93918 and M93919).
<b>References:</b>	None
<b>Status:</b>	Awaiting NRC approval.