Duke Power C:.mpany Catawba Nuclear Generation Department 4800-Concord Road York, SC 29745 WILLIAM R. McChillin, Jr. Vice President (803)831-3200 Office (803)831-3426 Fax



DUKE POWER

December 12, 1996

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

Subject: Duke Power Company

Catawba Nuclear Station, Unit 1

Docket No. 50-413

Request for Relief from 1989 edition of ASME Boiler

and Pressure Vessel Code, Section XI.

Serial No. 96-04

Pursuant to 10 CFR 50.55a (a) (3) (ii), Duke Power Company requests relief from the 1989 edition of ASME Boiler and Pressure Vessel Code, Section XI for Catawba Units 1.

Complete coverage of two welds in the Safety Injection System was not obtained during Unit 1 end-of-cycle 9 refueling outage. Complete coverage was not possible due to component thickness and geometric configurations. Duke Power Company believes that with the limited coverage obtained, an acceptable level of quality and safety has been achieved and public health and safety will not be endangered by allowing relief from the code requirements.

The attached Enclosure 1, Relief Request 96-04, provides a detailed description and justification for this request.

Should there be any questions concerning this request, please call D. Tower at (803) 831-3419.

Very truly yours,

William R. McCollum, Jr.

A0471/1

7612260062 761212 PDR ADOCK 05000413 PDR Document Control Desk Page 2 December 12, 1996

Attachment

XC:

- S.D. Ebneter, Regional Administrator Region II
- R.J. Freudenberger, Senior Resident Inspector Catawba Nuclear Station
- P.S. Tam, Senior Project Manager ONRR

ENCLOSURE 1 RELIEF REQUEST 96-04 ENCLOSURE 1 RELIEF REQUEST 96-04

DUKE POWER COMPANY

STATION CATAWBA UNIT 1

10-YEAR INTERVAL REQUEST FOR RELIEF NO. 96-04

I. System/Component(s) for Which Relief is Requested:

ASME Section XI Code Class: 1 Examination Category: B-J

Circumferential Piping Welds - Safety Injection System

Weld Number	Item Number
1NI148-10	B09.011.163
1NI148-11	B09.011.164

II. Code Requirement:

ASME Section XI, 1989 Edition, Examination Category B-J Pressure Retaining Welds In Piping, Table IWB-2500-1, Figure Number IWB-2500-8. Item Number B09.011 requires a volumetric examination of essentially 100% of the weld length and adjacent base material for all piping welds.

III. Code Requirement from which Relief is Requested:

Relief is requested for the above identified Class 1 Circumferential Piping Welds from meeting the coverage requirements as defined in ASME Section XI, Appendix III, Article III-4000, III-4420.

IV. Basis for Relief:

During the ultrasonic examination of the welds shown in Attachment 1, two directional coverage required by ASME Section XI, Appendix III as modified by Code Case N-460 could not be obtained. Causes of these limitations are single sided access and austenitic weld material. Where possible, a combination of angles and wave modes were used to maximize the coverage obtained. The weld and base metal at the component inside surface was covered from at least one direction with a minimum of one angle. The examinations were performed with a procedure and personnel qualified in accordance with ASME Section XI, Appendix VIII, 1992 Edition with 1993 Addenda. This procedure has been qualified for detection of far side flaws when examining through austenitic weld metal.

V. Alternate Examinations or Testing:

No additional examinations are planned for Weld ID Numbers 1NI148-10 and 1NI148-11. The use of radiography as an alternate volumetric examination method for Weld ID Numbers 1NI148-10 and 1NI148-11 is not practical due to component thicknesses and geometric configurations. Other restrictions making radiography impractical are the necessity to use double wall techniques due to inaccessibility of the ID surface and physical barriers prohibiting access for placement of source, film, number bands, etc. Duke Power Company will continue to use the most current ultrasonic techniques available to obtain maximum coverage for future examinations of these weld numbers.

VI. Justification for the Granting of Relief:

Although the coverage requirements of ASME Section XI, as defined in Appendix III could not be met, the amount of coverage obtained for these examinations provides an acceptable level of quality and integrity. Based on these evaluations, it is Duke Power Company's opinion that the limited coverage will not endanger the health and safety of the general public. Duke Power Company will perform UT examinations to the extent practical using procedures and personnel qualified in accordance with ASME Section XI, Appendix VIII, 1992 Edition with 1993 Addenda.

VII. Implementation Schedule:

These examinations will continue to be scheduled in accordance with the requirements of ASME Section XI for future Inspection Intervals at Catawba Nuclear Station, Unit 1.

NDE Level III Review By:

ames J. Mc Grolle Date

11/20/96

Evaluated By:

Kerry Date

11/20/96

Reviewed By:

Date

11/20/96

Attachment 1

Description Table

Attachment 2

UT Examination Data

ASME Class 1 Inservice Inspection Request For Relief No. 96-04 For Catawba Unit 1 Based On ASME Section XI - 1989 Code

Attachment 1 Page 1 of 1

Item No.	Exam Category /Figure No.	System Or Component	Area To Be Examined	Reason For Request	Licensee Proposed Alternate Examination
B09.011.163	B-J IWB-2500-8	(NI) Safety Injection System	Class 1 Circumferential Piping Weld	Limited scan due to geometric configuration. Actual coverage obtained = 59.85%	None
B09.011.164	B-J IWB-2500-8	(NI) Safety Injection System	Class 1 Circumferential Piping Weld	Limited scan due to geometric configuration. Actual coverage obtained = 61.00%	None

ATTACHMENT 2 ASTOR9
FORM NDE-UT-16

					DUKE	POV	VER	COMP	ANY					FORM	NDE-UT-1G
	UL	TRAS	ONIC	CALIBRA	TION/EXA	MINA	TION	RECOR	D FOR	NDT-	136 INST	RUMENTS		RE	VISION 5
Station:		C	atawb	а	Unit:	1		Date:	6/18/9	6	Sheet Num	ber:	96	01018	
Procedur	re:	ND	E-600	Rev	17 FC	: N	/A	Couplar	nt:	ULTI	RAGEL II	Batch Nur	mber:	09	3001
Examine	r: Ja	y A. Ea	aton	an	H	Leve	el: 11	Manufa	acturer:	ST	AVELEY	Pyrometer	S/N:	MCNDE	27025
Examine	r. B.	Dale J	olly	B. Dale	and,	Leve	el: I	Serial I	No:	9	75K	_ Cal Du			
		REFE	RENCE	BLOCK	Low	1				S	MULATOR	BLOCK			
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	Tir		1	-4	e: Long.] She	ar 🛛	Pulse	22	2	Wave Mode	: Long. Sh	near 🛛	Pulse	222
		s.u.#2	Initials	-	Bi-Mo	da:		Damping	50	0		Bi-Modal []	Damping	500
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	1440	1450	19		al D Pt	-	-					Pulse Ed	-		. 6 . 0
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		12.163			0	角。		45	50	YES	YES	6/18/96 1430	-	96 1450	72°F
Reviewer: Larry Mau		19	14 7	Mauld	-	Level	CETAMOR	Date: 6/19/	1		ed Interector	mestill			Date: 426.96

FORM NDF-UT-1G

ATTACHMENT 2 PG 2 OF 9

			DUK	EPU	AEK	COIAIL	HIN						
ULTRA	SONIC	CALIBRAT	TION/EX	AMINA	TION	RECOR	D FOR	NDT-	136 INST	RUMENTS		REV	ISION 5
Station:	Catawba		Unit:	1		Date:	6/18/9	6	Sheet Num	ber:	960	1019	
rocedure:	NDE-600	Rev	7 F	C: N	I/A	Couplar	nt:	ULTI	RAGEL II	Batch Num	nber:	093	001
xaminer: Jay A	Eaton	Ch	4	Leve	el: II	Manufa	acturer:	ST	AVELEY	Pyrometer	S/N:	MCNDE	27025
xaminer: B. Dal	e Jolly	3 75%	CAR.	Leve	el: I	Serial I	No:	9	75K	_ Cal Du	e:	10/3/9	6
	FERENCE E		Line	2				S	MULATOR	BLOCK			
D: ROMF		Material	SS		SPACE TAXABLE	109319	ch Unit # 1 Reflecto 1"		RADIUS	ID: A093 Metal Path:	Search Unit 319 Ro	eflector Ty	pe: RADIUS
CABLES			Search Uni				Settings		5	Search Unit # 2		Se	ttings
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Initial Cal Time		Ser no:	42967	7		Display	FILT	1	Ser no:	43072	-	Display	FILT1
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Cal Check	5	Wedge:	MSW-QC			Reject	OF	F	Wedge:	MSW-QC		Reject	OFF
Time	1	Wave Mode	Long.] She	ear 🛛	Pulse	222	2	Wave Mode	: Long. She	ear 🛛	Pulse	222
Date s.u.#1 s.u.			Bi-Me	odal 🔲		Damping	500			Bi-Modal]	Damping	500
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FINAL		Dua	al 🗆 P	ulse Ech	0 🛛	Jack.	' 63		Dua	Pulse Ec	tho 🖾	Jack.	I MIN L
		Record In	ndications	Limit	ations	Scann		-	Direction	Exam Date			Surface
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809.011.16	4			37					-				
B09.012.16	4		\boxtimes	15		45	50	YES	YES	6/18/96 1430	6/18/9	5 1450	72°F

Reviewer:
Larry Mauldin Law Mauldin | Level: Date: Authorized Inspector | Level: Date: 6/19/96 | Level: Date: 6/26.96

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	ULTRASON	IC CALIBRAT	TION/EX	AMIN	ATION	RECOF	RD FOR	R NDT	-136 INST	RUMENTS		REVI	SION 5
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Procedure:	NDE-6	000 Rev	7 F	C: 1	N/A	Coupla	nt:	ULT	RAGEL II	Batch Nur	mber:	0930	01
Examiner:	Jay A. Eaton	and		Lev	rel: II	Manuf	acturer:	ST	TAVELEY	Pyrometer	S/N: M	CNDE 2	7025
Examiner:	B. Dale Jolly	BON	a Dall	Lev Lev	/el: I	Serial	No:	9	75K	Cal Du	ie:	10/3/96	
	REFEREN		Lac	13					SIMULATOR	BLOCK			
-	ROMPAS A09319	Material:	SS		-				RADIUS	ID: N	CONTRACTOR CONTRACTOR	ector Type	e: N/A
C	ABLES		Search Uni	t#1			Settings			Search Unit # 2		Setti	ngs
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BO	9 011 164					67		YES		6/18/96 1451	6/18/96 15	000	72°F

			0.		
Reviewer: Laux Mauldin	Level:	Date: 6-19-96	Authorized Inspector	nsell	Date: 6:26.96
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REQUEST FOR RELIEF 96-04

ATTACHMENT 2 PB 4 OF 9

	DUKE POWER COM	PANV		FORM NDE-UT-4
	ISI LIMITATION REPO			Revision 1
Component/Weld ID: 1NI148-10	Item No:	B09.011.163	Remarks:	
D	SURFACE E	BEAM DIRECTION	< WELD TAPER	1
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FROM L to L	INCHES FROM WO			
ANGLE: □ 0 □ 45 ⊠ 60 ⊠ Other	60°L FROM	1 _ 0 _ DEG to _ 360 _ DEG		
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ANGLE: 0 0 45 0 60 0 Other	FROM	DEG to		
Prepared By: Jay Eaton	Level: II Date: 6/	18/96 Sketch(s) attached	yes 🗆 no	Sheet / of 3
Reviewed By: Larry Mauldin Law Ma	Md/s Date: 6/19/96	Authorized Inspector: West Y	neall	Date: 7.24-96

REQUEST FOR RELIEF 96-04 ATTACHMENT 2 POSOF9

			POWER C				NDE-91-1
							Revision 0
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		Area Calcula	ition		Vo	lume Calcula	tion
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		and the second second second second	Cov	erage Calcu	lations		
Scan #	Angle	Beam Direction	Area Examined (sq.in.)	Length Examined (in.)	Volume Examined (cu.in.)	Volume Required (cu.in.)	Parcent Coverage
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Circ.	45	CW	.34	34.4	11.7	26.83	43.61
Circ.	45	ccw	.34	34.4	11.7	26.83	43.61
					48.17 ÷	80.49 x	100= 59.85

Prepared By: Jay Eaton

Level: II Date: 7/22/96

Reviewed By: Larry Mauldin Law Mouldy Level: III Date: 7/22/96

C. 43

ATTACHMENT 2 PS 60F9 NDE-UT-5 **DUKE POWER COMPANY** Revision 1 UT PROFILE/PLOT SHEET WELD **EXAMINATION SURFACE 2 EXAMINATION SURFACE 1** 1.28 - No COVERAGE .42" X1.85" = .777 = .78 59.14 -COVERED BY GO'L AX - Not COVERED BY 45°C - 100% COVERAGE 1.5 \$60% 450/60°L ANIAL: 2 2.0562 2.06 59 IN A-B-C 45° C12. .78 -. 06 = .72 sg M. COVERAGE A: 42 (.7+.9) = .3450 D.E.F.G .34 SQMCOVERAGE 3 7) Component ID/Weld No. LNI 148-10 Remarks: Profile taken 90 270 at:_ 0' Item No: Bo9.011.163 Date: 7 7296 Level: II Examiner: 180 Sheet 3 of 3 Level: ZZZ Date: 7.22.96 raulder Reviewed By: Date: 7240

Authorized Inspector: U

REQUEST FOR RELIEF 96-04.
ATTACHMENT 2 PB 70F9

	DUKE POWER COM	MPANY		FORM NDE-UT-4
	ISI LIMITATION REF			Revision 1
Component/Weld ID: 1NI148-11	Item N	o: B09.011.164	Remarks:	
☑ NO SCAN ☐ LIMITED SCAN	SURFACE	BEAM DIRECTION 1 ☑ 2 ☐ cw ☐ ccw	< WELD TAPER	
FROM L to L	INCHES FROM WO	to0.7"		
ANGLE: □ 0 □ 45 □ 60 □ Other				
☑ NO SCAN ☐ LIMITED SCAN	SURFACE	BEAM DIRECTION 1	< VALVE CONF	IGURATION
FROM L to L				
ANGLE: □ 0 □ 45 ⋈ 60 ⋈ Other	FRO	OM _ 0 _ DEG to _ 360 _ DEG		
☐ NO SCAN ☐ LIMITED SCAN	SURFACE	BEAM DIRECTION		
FROM L to L				
ANGLE: 0 0 45 0 60 Other	FR:	OM DEG toDEG		
☐ NO SCAN ☐ LIMITED SCAN	SURFACE			
FROM L to L ANGLE: 0 0 45 0 60 0 0the		OM DEG to		
Prepared By: Jay Eaton	Level: II Date:	6/18/96 Sketch(s) attached 🖂	yes 🗓 no	Sheet / of 3
Reviewed By: Larry Mauldin	Date: 6/19/96	Authorized Inspector: Poleut	most	Date: 7.24.96

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Astronomic Viterania			Examination	on Volume/A	rea Defined	and a second second second second	and the same of the same
☐ Bas	e Metal	Ø W	eld	☐ Near Sur	face \square	Bolting	☐ Inner Radius
-		Area Calcula	ation		Volu	ume Calcula	tion
			Cov	verage Calcu	lations		
Scan#	Angle	Beam Direction	Area Examined (sq.in.)	verage Calcu Length Examined (in.)	Volume Examined (cu.in.)	Volume Required (cu.in.)	Percent Covera
Scan#	Angle		Area Examined	Length Examined	Volume Examined	Required	Percent Covera 84.91 49.04

33.36 ÷ 54.69 × 100 = 61%

day

Prepared By: Jay Eaton

Level: II

Date: 7/22/96

Reviewed By: Larry Mauldin

Reviewed By: Larry Mauldin

ATTACHMENT 2 PG 9 OF 9 NDE-UT-5 **DUKE POWER COMPANY Revision 1** UT PROFILE/PLOT SHEET **EXAMINATION SURFACE 2** WELD **EXAMINATION SURFACE 1** 47,PE YALVE 2 EYAM AREA .5 No CONGRESEASE .33 X 1.6 = .528 = .53 \$9. W. III-COVERS D BY GOL' Ax. Not Covered By 45G M-100% COVERAGE 60°LA 1.5 45° CIR. 45% 60°L AXIDL: D-E-F-G A.B.C .5 x.3 = .075 : .08 sq.W A= = (.7"+.9") = .264 .53 - . 08 : . 45 5 9.1M. COVERAGE A= .26 SQ 14. 2.5 3 Component ID/Weld No. 1NI148-11 Remarks: Profile taken 90 270 at:___0 Item No: B09.011.164 Date: 7/22/96 Level: IL Examiner: 180 Sheet 3 of 3 Level: III Date: Reviewed By:

Date:

Authorized Inspector:

Car Jan