DUKE POWER COMPANY
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January 28, 1988

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

Subject: McGuire Nuclear Station, Unit 1
Docket No. 50-369
ASME Code Section XI Requirements
Relief Request No. 88-01

Gentlemen:

Pursuant to 10CFR 50.55a(g)(5)(iii), find attached the subject request for relief from ASME Code Section XI Requirements pertaining to McGuire Nuclear Station's Nuclear Service Water system piping.

Pursuant to 10CFR 170.3(y), 170.12(c), and 170.21 find enclosed an application fee of $150.00.

Should there be any questions concerning this letter, please contact Steve LeRoy of Duke Licensing at (704)373-6233.

Very truly yours,

Hal B. Tucker

Hal B. Tucker

SEL/219/jgc

Attachment

xc: Dr. J. Nelson Grace
Regional Administrator, Region II
U.S. Nuclear Regulatory Commission
101 Marietta St., NW, Suite 2900
Atlanta, GA 30323

Mr. Darl Hood
U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Washington, D.C. 20555

Mr. W.T. Orders
NRC Resident Inspector
McGuire Nuclear Station

A047 w/check $150 #18475814
1/1

DUKE POWER COMPANY

McGUIRE NUCLEAR STATION RELIEF REQUEST NO. 88-01

REQUEST FOR RELIEF FROM ASME CODE SECTION XI
REQUIREMENT DETERMINED TO BE IMPRACTICAL

1. Component for Which Relief is Requested:

A. Name and Number:

Weld Numbers RN1F 841A, RN 507-2, and 1RN-EXP4B-1

The pipe size for these welds is 24". Weld number RN1F 841A is a pipe to 90 degrees elbow weld. The pipe material is Grade B SA106 and the elbow is SA 234 WPB. Weld number RN 507-2 is a base metal repair to the elbow. Note: A small hole was cut in the bottom of the elbow approximately 2" from the pipe to allow for water drainage. Thickness for pipe and elbow is 0.375". Weld number 1RN-EXP4B-1 is a seal weld repair made to a small eroded section of old weld metal where the bellows to seal weld is located. The bellows material is SA 240T321. These welds are on the Unit 1 Nuclear Service Water System (RN) which has a low design pressure of 35 PSIG and temperature of 95 degrees-F.

B. Function:

The Nuclear Service Water System (RN) is a Nuclear Safety Related open cooling system that provides cooling water from Lake Norman or the Standby Nuclear Service Water Pond (SNSWP) to various requirements, and is the normal supply of water for the Containment Ventilation Cooling Water System (RV).

C. ASME III Code Class:

Equivalent Class 3

D. Materials and Welds

Weld RN1F 841A is a pipe to 90 degrees elbow groove weld on 24" pipe with a joint thickness of 0.375". Weld RN 507-2 is a base metal repair to 24" elbow with a joint thickness of 0.375". Weld number 1RN-EXP4B-1 is a seal weld made in the portion of the weld where the bellows is welded to the pipe. Bellows material is SA 240T321 with a thickness of 0.032". Piping material is Grade B SA 106 and the 90 degrees elbow is SA 234 WPB material.

2. ASME Code Section XI Requirement That Has Been Determined to be Impractical:

ASME B and PV Code Section XI, 1980 Edition through Winter 1980 Addenda, Article IWA-4400, IWD-5000

3. Basis for Requesting Relief:

Hydrostatic testing of welds referenced in Section A of this request would be impractical based on the following reason:

A. The section of piping containing the subject welds cannot be adequately isolated for the required hydrostatic testing due to the design of the butterfly valves that would be required for isolation of the piping. The pump capacity to pressurize the line is not available to offset the inherent leakage of the butterfly valves used for isolation. To perform the required hydrostatic testing would place Duke under the burden of involuntarily removing Unit 1 from service.

4. Alternative Testing:

All welding shall be subject to a Dye Penetrant (PT) or Magnetic Particle (MT) inspection on weld root pass and also final welding pass. For weld number 1RN-EXP4B-1, only one weld pass is required; therefore, a Dye Penetrant inspection will be performed on this weld. Base metal repair will have a Radiographic inspection (RT) of the final weld. An inservice leak test at system pressure and temperature will also be performed on both welds.

5. Why the Alternate Proposed Testing Will Provide an Acceptable Level of Quality and Safety, and Not Endanger the Public Health and Safety:

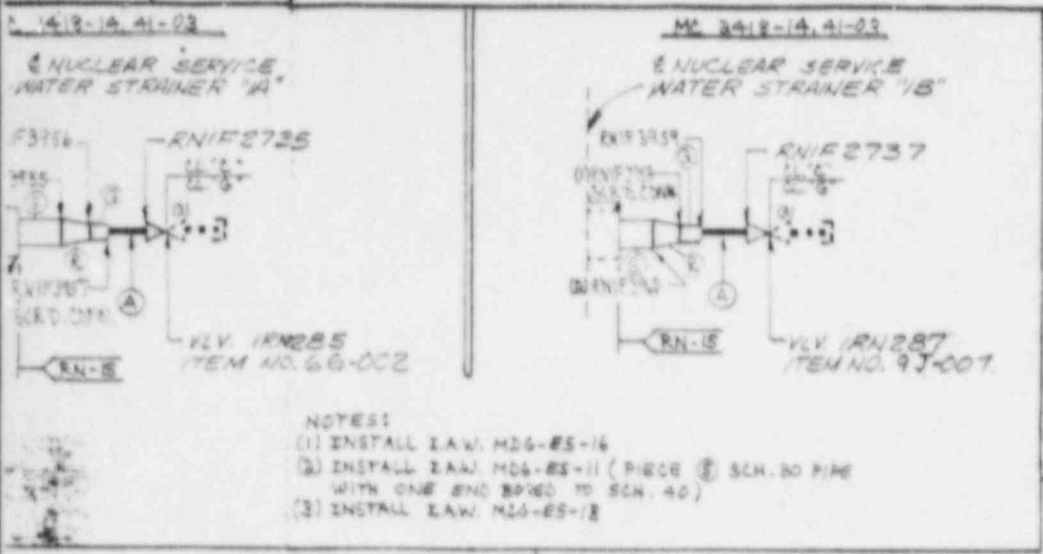
A. The ASME Code requires only a Dye Penetrant (PT) inspection or Magnetic Particle (MT) inspection on the finished weld surface for greater than 4" NPS. We impose an additional PT or MT inspection on the root pass weld which would detect any defects in the root weld.

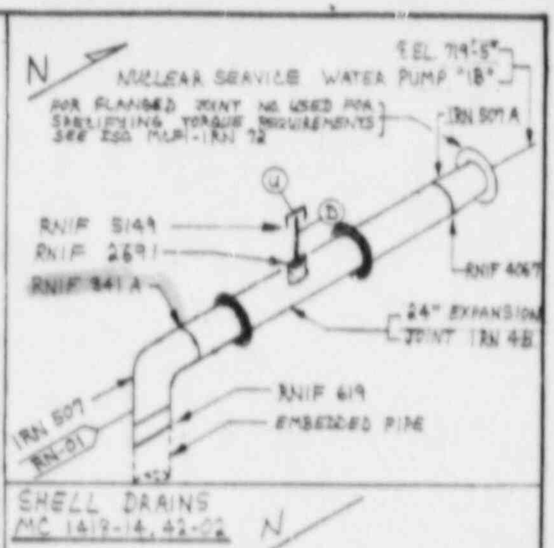
On a base metal repair, the ASME Code requires Magnetic Particle (MT) or Dye Penetrant (PT) inspection on the finished weld surface and also a Radiographic inspection (RT) of the final weld surface. We impose an additional Magnetic Particle (MT) or Dye Penetrant (PT) test on the root pass weld.

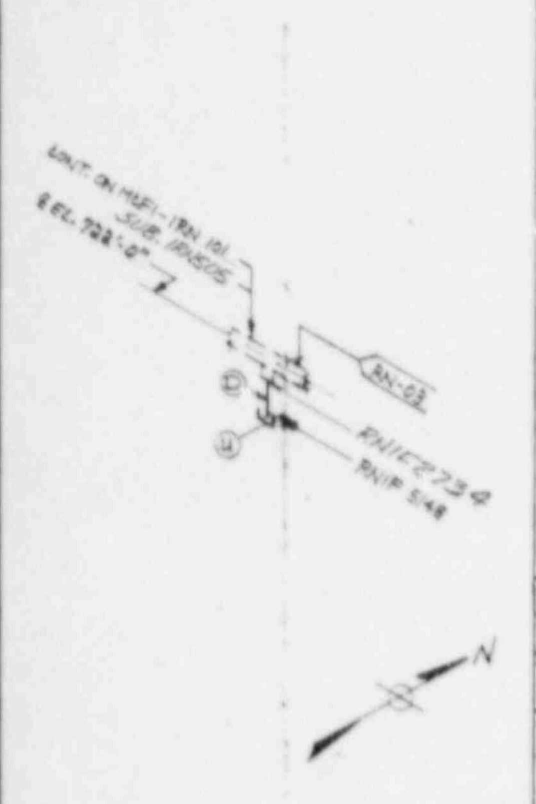
In addition to these tests, an inservice leak test at system pressure and temperature will be performed which would detect any through wall leaks or defects in the welds.

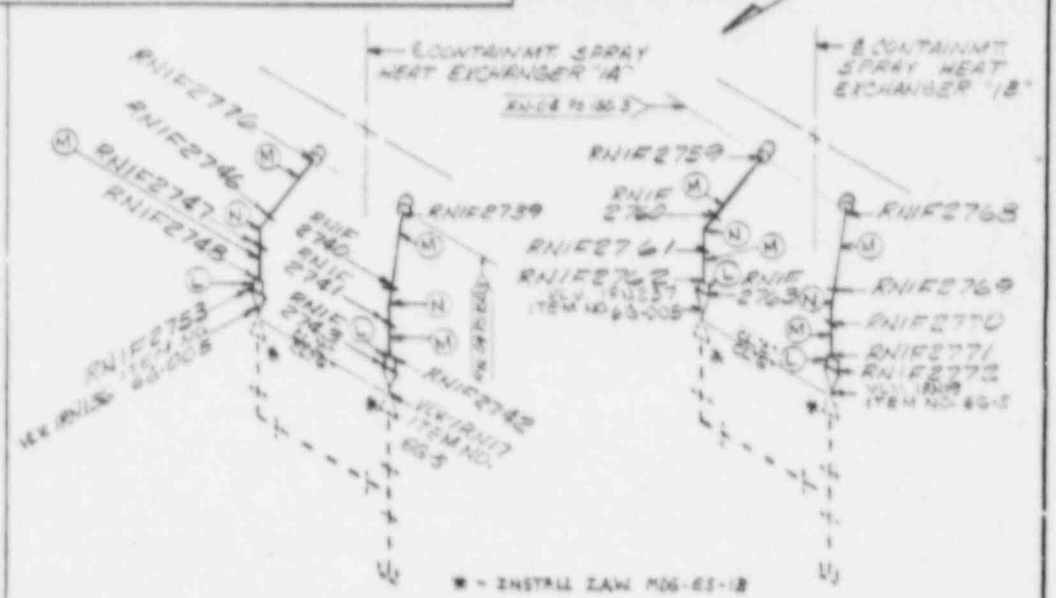
6. Implementation:

January 28, 1988









9	REV. TO ADD WELDS ... SHOWN IN DETAIL "E" (HANGER AMENDMENTS)				
8	REVISED TO CORRECT PIPE SPECIFICATIONS FOR MATERIAL MARKED "B"				DCL 5-5-77
7	SEE NCIR 3897 FOR CONNECT TO PUMPS ADDED FLANGED JOINT NOS 1-5.	RAL 2-23-77	DDI 2-24-77	2-25-77	2-28-77
6	ADDED EXPANSION JOINT 1RN 48, WELD 4067	MAW			DCL
5	REVISED TO ADD PIECES Q,R,S				DCL

NUCLEAR SAFETY RELATED

PROJECT McGUIRE

DUKE PIPING CLASS: CLASS III (ANSI B 31.7) LEVEL I & II

SYSTEM TITLE & SYMBOL: NUCLEAR SERVICE WATER RN-01, RN-15 PS 151-B; RN-03 RN-04 PS 150-B

BUILDING: AUXILIARY

FLANGED JOINT NO USED 5

REQUIREMENTS

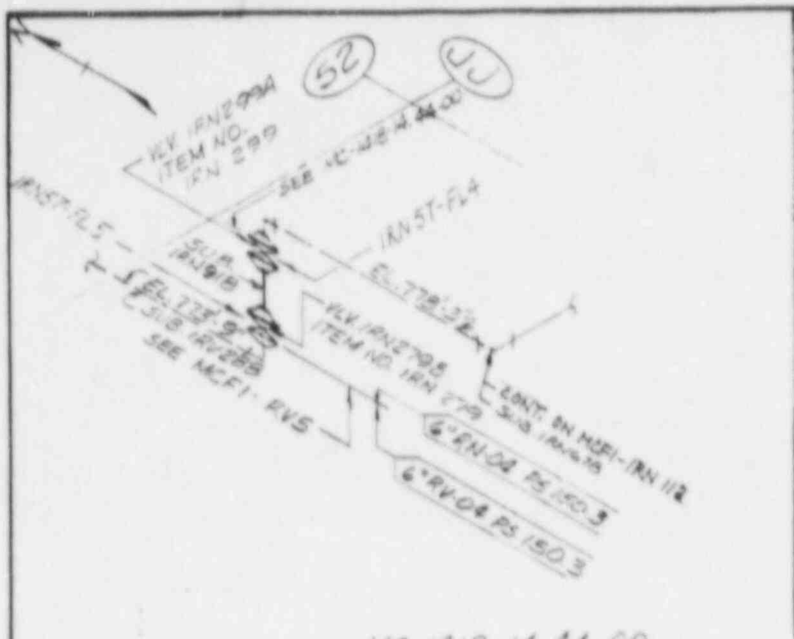
...R TO PROCESS CONTROL ...RMATION OF FIELD ...S FOR NDE REQUIREMENTS.

NO.	REVISION	ORIG. / DATE	CHKD / DATE	MECH DATE (APPROVED)	Q A DATE (APPROVED)
10	...	RDT 6-21-77	6-21-77	HKS 6-24-77	6-24-77
4	ADDED PIECE MAT. DES. "P" AND WELDS 3909 TO 3914	MAW 9-23-76	9-23-76	9-27-76	DCL 9-29-76
3	REV. TO CORRECT ITEM NOS. FOR VLVS. 1RN19 & 1RN17 + DELETE 1RN919 PER MC-1418-3.44-00	RDT 2-18-76	JHP 2-18-76	2-23-76	2-23-76
2	REV. SPECS. FOR MAT. MK. A, G & I TO A-312 OR A-376.	MAW 2-5-76	JHP 2-5-76	MCB 2-5-76	2-6-76
1	ADD RNIF2966 thru RNIF2969.	MAW 1-23-76	LT 1-23-76	MCB 1-23-76	1-26-76
0	REL. FOR CONSTRUCTION	MAW 1-12-76	LT 1-12-76	MCB 1-13-76	1-19-76

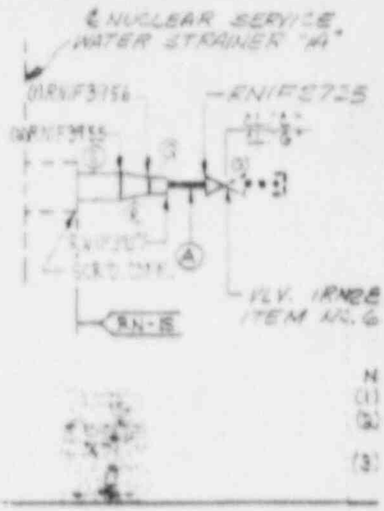
DRAWING NO.
MC-1418-14.24-00
MC-1418-14.41-03
MC-1418-14.42-02
MC-2418-14.41-03

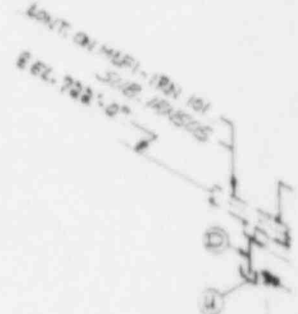
SYSTEM ISO. NO. MCFI-1RN57

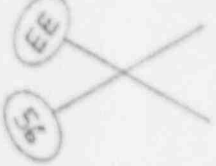
REV NO 14



MC-1418-14.44.00







13	ADD REF [illegible]	[illegible]	[illegible]	[illegible]
14	THRU WALL [illegible] 1RN EBT [illegible] TO 93-007 PER NSM 24529	[illegible]	[illegible]	[illegible]
12	DELETED WELDS AND FLANGE JOINTS (SEE NOTE); ADDED MAT. U, WELD NO'S 5148 AND 5149 (LAYOUT DWG. AND VOL. 23, 240)			

NOTE:
THESE WELDS AND FLANGE JOINTS WERE ALL DELETED PER REV. 12 OF THIS DWG. - RNIF 2692 THRU 2733, 2821, 2822, 2966 THRU 2969, 3909 THRU 3914, 4618, 4619, 4821 THRU 4824; 1RN 57-FL 1, 1RN 57-FL 2, 1RN 57-FL 3. ALSO DELETED HANGER NO'S RN 39-R2, RN 39-R4, RN 39-R6.

MC-2418-14.41-01
NC-2418-14.41-04

CAST FLANGED JOINT NO USED — 5

BILL OF MATERIALS (CLASS 3) C.S. CLEANLINESS - LEVEL II

D 8" PIPE · SA-106 · GRADE B · SCH. 40

U 1/2" PIPE CAP, SA-105 OR (SA-234, WPB), 3000#, F.S.S.W.

C 8" x 2" RED. INSERT · F.S.S.W. · SA-105 3000#
B 8" PIPE · SA-106 · GRADE B · SCH. 40
B 8" 90° ELBOW · F.S.S.W. · SA-105 · 3000 #

BILL OF MATERIALS (CLASS 3) S.S. CLEANLINESS - LEVEL II

A 8" PIPE SA-312 OR SA-376 TP304 SCH. 80
[illegible] RED. [illegible] 3000# (CL3)
R 3" x 1" RED. [illegible] (CL3) SCH-40
S 3" PIPE SA-312 TP-304 SCH80 (CL3)

NDE REQUIREMENTS

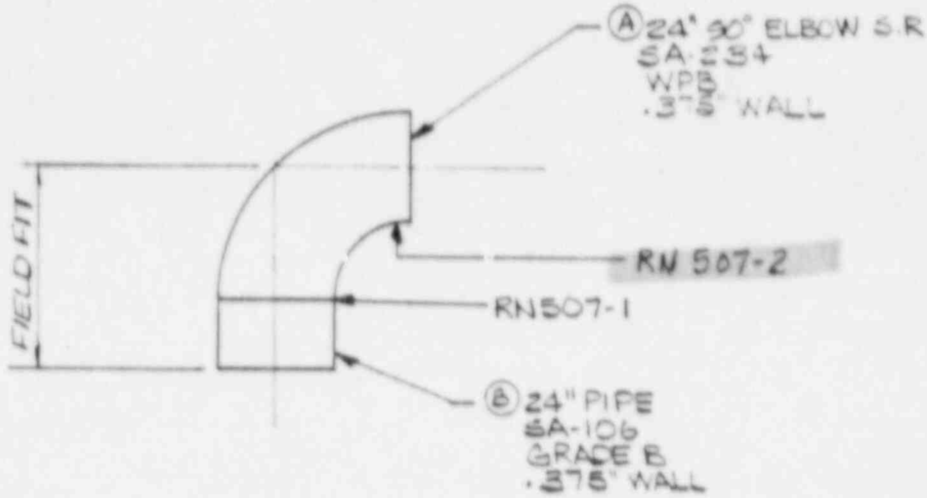
REFER TO PROCESS CONT INFORMATION OF FIELD WELDS FOR NDE REQU MENTS

11	DELETE [illegible] — DELETE WELDS [illegible]	[illegible]	[illegible]

FORM F-4A	REVISION 4

MATERIAL IDENT.	HEAT NO.	PIECE NO
A		
B		

FABRICATION SKETCH



APPLICABLE CODE

ANSI B 31.7 CL. 3

CLEANNESS CLASSIFICATION

LEVEL II

SYSTEM TITLE AND SYMBOL

NUCLEAR SERVICE WATER

RN-01 PS 150.3

PROCESS CONTROL CHECK LIST

FOR WELDING, HEAT TREATMENT, & NON-DESTRUCTIVE EXAMINATION

WELD NUMBER	WELD DATA SHEET NO.	REV NO.	PERFORMANCE TEST NO.	REV NO.	NDE PROCEDURE	REV NO	HEAT TREAT DATA SHEET NO.	REV NO
RN507-1	L-202 L-303	3 7	L-152 L-153	3 2	L-22	3	NA	NA
RN507-2								

NO.	REMARKS	ORIG'D / DATE	CHK'D / DATE	MECH / DATE	WELD / DATE	QA / DATE
1	ADDED WELD 507-2 FOR REPAIR OF HOLE IN PIPE - PER W.R. 133367	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0	REL. FOR CONSTRUCTION	NAW 5-13-75	LFT 5-13-75	MCB 5-15-75	[illegible] 5-15-75	[illegible] 5-15-75

APPROVED

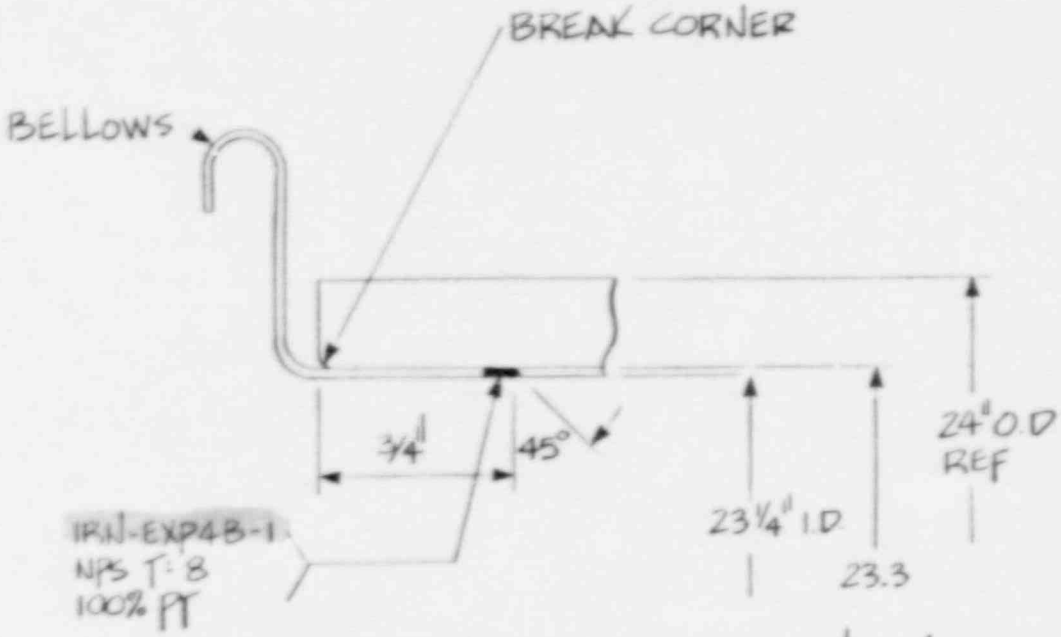
DUKE POWER COMPANY
CONSTRUCTION DEPARTMENT
PROJECT McGUIRE

TITLE
SYSTEM RN
DWG. MC-2418-14.41-02
McFI-IRN 57

REV. NO. 1

SUBASSEMBLY NUMBER RN507

EXPLODED VIEW



SEAL WELD REPAIR IS APPROX. 6" LONG