NORTHEAST UTILITIES

THE CONNECTICUT LIGHT AND POWER COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
HOLYOKE WATER POWER COMPANY
NORTHEAST UTILITIES SERVICE COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

General Offices • Selden Street, Berlin, Connecticut

P.O. BOX 270
HARTFORD, CONNECTICUT 06141-0270
(203) 665-5000

March 25, 1993

Docket No. 50-423
B14422

Re: ASME Section XI
GL 90-05
10CFR50.55a(g)(6)(i)

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Gentlemen:

Millstone Nuclear Power Station, Unit No. 3
Relief Request from ASME Code Section XI Requirements

The purpose of this letter is to request, in response to NRC Generic Letter (GL) 90-05, relief from ASME Boiler and Pressure Vessel Code Section XI requirements pursuant to 10CFR50.55a(g)(6)(i). Attachment 1 provides a description of actions taken by Northeast Nuclear Energy Company (NNECO) to make interim repairs to the leak in service water piping line 3SWP-003-067-3 as an alternative to an IWA-7000 repair/replacement.

Consistent with the provisions of the GL, NNECO is submitting this relief request for an interim noncode repair. The Resident Inspector at Millstone Unit No. 3 has been informed of this planned interim repair and, as has been our practice, we will keep the Resident Inspector fully informed of all future repairs. Permanent code repair for this flaw is scheduled for the next refueling outage, expected to begin in August 1993.

Please contact us if you have any questions.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

J. F. Opeka
Executive Vice President

cc: T. T. Martin, Region I Administrator
V. L. Rooney, NRC Project Manager, Millstone Unit No. 3
P. D. Swetland, Senior Resident Inspector, Millstone Unit Nos. 1, 2, and 3

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P PDR

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Docket No. 50-423
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Attachment 1

Millstone Nuclear Power Station, Unit No. 3

Relief Request from ASME Code Section XI Requirements

March 1993

NORTHEAST UTILITIES

TRACKING FORM

FOR RELIEF REQUEST FROM ASME SECTION XI REQUIREMENTS

MUST BE COMPLETED AND FILED WITH NRC WITHIN 30 CALENDAR DAYS

UNIT: MILLSTONE UNIT 3 NCR # 393-018 DATE: 2/23/93

TIME: Eng. notified of leak at 0700 2/23/93

1.0 ORIGINATOR

Processing Time: should not exceed 24 hours.

1.1 COMPLETE SECTION 1 OF ENCLOSED FORM

Complete

1.2 NOTIFY RESIDENT NRC INSPECTOR

Person Contacted: Russ Arrighi Date: 2/23/93

1.3 FORWARD THIS FORM, NCR, AND NDE MEASUREMENTS TO NUSCO SUPERVISOR, STRESS ANALYSIS ENGINEERING UNIT

Originator: Gary Swider Date: 2/23/93

*Section 1 of RR Form, NCR & UT Forwarded to S. V. Dumas

##########

2.0 STRESS ANALYSIS UNIT Date Received 2/23/93

Processing Time: 72 hours from flaw detection for preliminary operability assessment.

25 calendar days from flaw detection for final operability assessment.

2.1 PRELIMINARY FLAW EVALUATION

Evaluation Completed By: Ray DeConto Date: 2/25/93

NORTHEAST UTILITIES

TRACKING FORM

FOR RELIEF REQUEST FROM ASME SECTION XI REQUIREMENTS

Notify Plant

Person Contacted: Gary Swider Date: 2/25/93

2.2 END OF CYCLE FLAW EVALUATION

Evaluation Completed By: Ray DeConto Date: 3/19/93

2.3 REVIEW RESULTS OF AUGMENTED INSPECTION

Reviewed By: Ray DeConto Date: 3/15/93

If additional inspections are required, notify plant.

No additional inspections are required.

2.4 FORWARD COMPLETED FORM TO NUCLEAR LICENSING

Supervisor, Stress Analysis Unit:

Thomas J. Lawson Date: 3/19/93

T. J. Mawson

##########

3.0 NUCLEAR LICENSING Date Received: _____

Processing Time: should not exceed 30 calendar days from flaw detection.

3.1 RELIEF REQUEST SUBMITTED

By: P. G. Patton Date: 3/19/93

Docket No. _____

NORTHEAST UTILITIES

FORM FOR RELIEF REQUEST FROM ASME SECTION XI REQUIREMENTS

UNIT: Millstone Unit 3 NCR # 393-018 DATE: 3/17/93

TIME: 1500

1.0 ORIGINATOR

1.1 DESCRIPTION OF FLAW

Leak in 3SWP-003-67-3 downstream of FW-33.

Piping/Component Drawing No.: CI-SWP-067

P&ID No.: EM 133B

1.2 IMPRACTICALITY OF CODE REPAIR

Repair cannot be completed in 72 hour LCO.

1.3 DESCRIPTION OF PROPOSED TEMPORARY REPAIR

Installation of soft rubber patch.

1.4 SAFETY SIGNIFICANCE: System Interaction Evaluation

Flooding: Pinhole leak at this time. Floor drains adequate for drainage.

Jet Spray: Leak sprays down at wall, no safety-related power supplies will be affected.

Loss of Flow: Temporary patch will prevent loss of flow.

Other Interactions: None

Failure Consequences? Can be isolated.

Impact to Safe Shutdown Capability? Total failure would result in loss of one train (SIH, RHS, RSS, redundant train would supply safe shutdown capability).

1.5 ROOT CAUSE INVESTIGATION

Root Cause Description: Classic wall loss due to turbulent flow downstream of elbow causing locally high flow velocities.

Other Systems Affected: SIH, CCI, HVQ

NORTHEAST UTILITIES

FORM FOR RELIEF REQUEST FROM ASME SECTION XI REQUIREMENTS

1.6 AUGMENTED INSPECTION (must be completed within 15 days of flaw detection)

Assessment of overall degradation of the affected system: Leak is typical of erosion/corrosion in SWP piping. These leaks do not result from large areas of damage but from very localized wall loss. An inspection program has been initiated for small bore piping.

Additional examinations required (based on root cause) - specify number of inspection locations - also specify frequency of inspections: [ten most susceptible and accessible locations for high energy piping systtem and five for moderate energy piping system]

Five additional locations were chosen, as listed below:

a) FW 17-1 "B" Train Supply
b) FW 65 "A" Train Supply
c) FW 31 "A" Train Supply
d) FW-29 "A" Train Supply
e) FW-39 "B" Train Supply

Description of areas selected for augmented inspection: Small bore piping.

2.0 STRESS ANALYSIS UNIT

2.1 DESIGN DETAILS

System: Service Water

Component: Pipe (CI-SWP-67 near FW-33)

Piping Size & Schedule: 3"O/.219"

Nominal Wall Thickness: .219"

Safety Code Class: Class 3

Material: SB466 No. 706

Design Pressure: 100 psig

Design/Operating Temperature: 95/33-75

Code Minimum Wall Thickness: .020

2.2 FLAW CHARACTERIZATION

Flaw Description/Size: (i.e., flaw size, adjacent wall thickness, single/multiple flaw, total area examined, etc.) The flaw is highly localized. The through wall portion of the flaw is 3/32" in diameter the adjacent wall/nomincal wall is .219".

NORTHEAST UTILITILS

FORM FOR RELIEF REQUEST FROM ASME SECTION XI REQUIREMENTS

Flaw Location: The flaw is located approximately 1" downstream of FW 33 at 6:00 facing southeast.

Examination Method: UT

Flaw Type: Pinhole due to erosion/corrosion (impingement attack).

Reference UT Measurement Report: Attached to NCR 393-018

2.3 PRELIMINARY FLAW EVALUATION SUMMARY

Preliminary Operability Assessment Details:

Method Used: Draft Code Case N513 (dated 8/13/92)

Limiting Flaw Size: Total flaw 3.5". Throughwall portion of flaw 1.75". Minimum wall outside throughwall portion of flaw must be at least 0.100 inches.

Period of Time to Reach Limiting Flaw Size: Expected to be greater than 1 year.

Evaluation Reference: Memo MCE-SA-93-064

2.4 END OF CYCLE FLAW EVALUATION SUMMARY

Final Operability Assessment Details:

Method Used: (i.e., LEFM, area reinforcement, wall thinning, ASME Code Case)

Draft Code Case N513 (dated 8/13/92)

Estimated Wall Erosion Rate: .0274 in/yr

Projected Flaw Size: Total flaw .94 in.; throughwall flaw .350"

Period of Time to Permanent Repair/Replacement: Permanent repair for this flaw is scheduled for the next refueling outage (7/31/93)

Provide a Discussion of Evaluation of Design Loading Conditions:

Loading conditions evaluated include: pressure, deadload, thermal and seismic. All Code stress equations were considered and were determined to be acceptable.

Evaluation Reference: Memos MCE-SA-93-064 & MCE-SA-93-078 and attached.

NORTHEAST UTILITIES

FORM FOR RELIEF REQUEST FROM ASME SECTION XI REQUIREMENTS

Discussion of Augmented Inspection Results:

Five additional inspections of susceptable components were performed. These five inspections resulted in the generation of three additional NCRs due to wall thinning. The NCRs (NCR 393-028, 030 and 031) were determined to be acceptable in Memo MCE-SA-93-078.

Expanded Augmented Inspection Requirements: None

2.5 FLAW MONITORING

Walkdown Frequency: (for leak monitoring)

At least once per shift.

Frequency of Follow-up NDE: (for erosion rate assessment)

At least once every three months.

2.6 ADDITIONAL COMMENTS (scope, limitations, and specific considerations)

None

2.7 EXCEPTIONS TO GL-90-05/DRAFT ASME CODE CASE

The evaluations were performed in accordance with GL 90-05 and the Draft ASME Code Case N513 (dated 8/13/92).

2.8 REFERENCES/INPUTS

NCRs 393 -018, 028, 030 & 031
Memos MP3-E-93-119 & 143
Memos MCE-SA-93-064, 078 and attached evaluations

cc: Originator; Supervisor, Stress Analysis Engineering Unit; Unit Director; Nuclear Records

PART 1

Objective: The objective of this evaluation is to qualify a pin hole leak in service water line 3SWP 003-067-3 as described in NCR 393-018 for structural integrity. This evaluation qualifies the piping through the end of the next scheduled refueling outage.

Parameters:The following parameters will be applied in this evaluation (Reference 1):

Pipe Size Nominal	Outside Dia. (in)	Schedule	Wall thick (in)	Design Pressure (psi)	Temp (F)	Material	Allowable Sh (psi)
3	3.500	nonstd	0.219	100	95	SB466 706	8700

1.0 SCOPE

This evaluation is applicable to:

a) Class 3 Section III Subsection ND piping
b) Operating conditions <200F, < 275 psig
c) Pipe, tube, fittings and flanges - NO WELDING
d) Structural integrity only. This does not demonstrate system operablity.
e) t-adj is used throughout this calculation. t-adj is always the predicted t-adj.

3.0 FLAW EVALUATION

This evaluation is applicable to non-planar (through wall holes) and is performed in accordance with Generic Letter 90-05 and DRAFT Code Case N513 (8/13/92) (Reference 3).

3.1 tmin and t-adj Determination

a) Determine tm per construction code (Reference 2).

tm = P * Do / (2 * (SE + Py) + A

P= presssure, psig
Do= outside diameter, in
S= stress allowable, psi
E= joint efficiency = 1.00
y= a coefficient = 0.4
A= additional thickness (corrosion allowance, threading, etc...)
= 0 for copper nickle pipe

Outside Dia. (in)	tm (in)	tmeas minimum (in)	Instrument + Calibrate Tolerance (in)	Years of Service (yrs)	Wear Rate (in/yr)	Remaining Life Required (yrs)	tadj (1) (in)
3.500	0.0200	0.141	0.003	7.67	0.0286	0.608	0.1206

Note 1) The t-adj value is the predicted remaining wall at the end of the next scheduled refueling outage (07/31/93 to 10/09/93) .
Note 2) This portion of the service water system has been operational since July 1985.
Note 3) The measured data is per Reference 5.

3.2 Branch reinforcement Evaluation Method (Reference 2)

a) tadj must be greater than 2*tm

Pipe Size Nominal	tadj	2*tm	
3	0.1206	0.0400	acceptable

b) The postulated circular diameter, d, shall not exceed the pipe nominal outside diameter.

Pipe Size Nominal	d Outside Dia. (in)	Maximum Allow Flaw Length (in)	Predicted Total Flaw Circ Length (in)	
3	3.500	3.500	0.94	OK

The following branch connection reinforcement calculation is performed in accordance with ND 3643.3 (Reference 2).

Required reinforcement area = 1.07*tmh*d1

A1 = area provided by excess wall in the pipe = d2*(Th – tmh)

The mill tolerance on Th is ignored since UT is available.

Note: d2 has been set equal to the maximum allowable hole size.

Pipe Size Nominal	tmh (in)	d1 (in)	d2 (in)	tadj	Required Reinforce Area, in^2	Excess Pipe Area A1, in^2	
3	0.0200	3.50	3.50	0.1206	0.075	0.352	OK

c) Determination of unreinforced branch connection stresses per ND 3650

Pipe Size Nominal	tadj	Rmadj	h	t-adj SIF	SIF Per Figure NC3672.9	tnom SLP (psi)	tadj SLP (psi)
3	0.121	1.69	0.071	5.230	2.1	400	725

Pipe Size Nominal	tadj	Rmadj	tnom Section Modulus (in^3)	t-adj Section Modulus (in^3)
3	0.121	1.69	1.744	1.046

The following table presents both the tnom & t-adj corrected Code stress equations

Equation	Point Number	tnom Stress (psi)	t-adj Stress (psi)	Allowable Stress (psi)	t-adj Factor of Safety	
8 Sustained	87	642	1732	8700	5.02	OK
9 Occasional	87	1747	6318	10440	1.65	OK
10 Thermal	85	2882	11963	13050	1.09	OK
11 Sus + Th	85	3434	13694	21750	1.59	OK

d) An additional limitation is placed on the through wall portion of the maximum hole size. The through wall portion of the crack may not exceed d/2 or 5 inches.

tm	0.020 in
Additional Predicted Wall Thinning	0.017 in
Minimum Wall Required To Prevent Expansion of the Through Wall Flaw	0.037 in

Measured Thorugh Wall Portion of Flaw	3/32 in	
Maximum Allowed Through Wall Portion of Flaw (lesser of d/2 or 5 inches)	1.750 in	
Predicted Thorugh Wall Portion of Flaw (1)	0.350 in	OK

Note: 1) This value includes a .25 inch tolerance for the tranducer size.

References: 1) Stress Calculation 12179-NP(B)-X1914, Revision 2
2) ASME Section III 1971 Edition through the 1973 Summer Addenda
3) ASME Draft Code Case N513 (8/13/92) and GL 90-05
4) NCR 393-018
5) Attached UT data

Computer Storage: c:\123r3\90-05.rev\n393-18.wk3

PART 2

Objective: The objective of this evaluation is to determine the minimum wall which will still meet all Code equations. This is an iteritive process where the final tadj selected results in just meeting the limiting Code equation. An estimate of remaining life is also determined here.

Parameters: The following parameters will be applied in this evaluation (Reference 1):

Pipe Size Nominal	Outside Dia. (in)	Schedule	Wall thick (in)	Design Pressure (psi)	Temp (F)	Material	Allowable Sh (psi)
3	3.500	nonstd	0.219	100	95	SB466 706	8700

1.0 SCOPE

This evaluation is applicable to:

a) Class 3 Section III Subsection ND piping
b) Operating conditions <200F, < 275 psig
c) Pipe, tube, fittings and flanges – NO WELDING
d) Structural integrity only. This does not demonstrate system operablity.
e) t–adj is used throughout this calculation. t–adj is always the predicted t–adj.

3.0 FLAW EVALUATION

This evaluation is applicable to non–planar (through wall holes) and is performed in accordance with Generic Letter 90–05 and DRAFT Code Case N513 (8/13/92) (Reference 3).

3.1 tmin and t–adj Determination

a) Determine tm per construction code (Reference 2).

tm = P * Do / (2 * (SE + Py) + A

P= presssure, psig
Do= outside diameter, in
S= stress allowable, psi
E= joint efficiency = 1.00
y= a coefficient = 0.4
A= additional thickness (corrosion allowance, threading, etc...)
= 0 for copper nickle pipe

Outside Dia. (in)	tm (in)	tmeas minimum (in)	Instrument + Calibrate Tolerance (in)	Years of Service (yrs)	Wear Rate (in/yr)	Remaining Life Required (yrs)	tadj (1) (in)
3.500	0.0200	0.141	0.003	7.67	0.0286	0.608	0.0906
			Instrument + Calibration Tolerance (in)				0.003
			Estimated minimum wall required (in)				0.0936
						USE	0.1

Remaining Life (yrs)	1.33
USE	1.00

Note 1) The t–adj value is selected.
Note 2) This portion of the service water system has been operational since July 1985.
Note 3) The measured data is per Reference 5.

3.2 Branch reinforcement Evaluation Method (Reference 2)

a) tadj must be greater than 2*tm

Pipe Size Nominal	tadj	2*tm	
3	0.0906	0.0400	acceptable

b) The postulated circular diameter, d, shall not exceed the pipe nominal outside diameter.

Pipe Size Nominal	d Outside Dia. (in)	Maximum Allow Flaw Length (in)	Predicted Total Flaw Circ Length (in)	
3	3.500	3.500	0.94	OK

The following branch connection reinforcement calculation is performed in accordance with ND 3643.3 (Reference 2).

Required reinforcement area = 1.07*tmh*d1
A1 = area provided by excess wall in the pipe = d2*(Th – tmh)
The mill tolerance on Th is ignored since UT is available.
Note: d2 has been set equal to the maximum allowable hole size.

Pipe Size Nominal	tmh (in)	d1 (in)	d2 (in)	tadj	Required Reinforce Area, in^2	Excess Pipe Area A1, in^2	
3	0.0200	3.50	3.50	0.0906	0.075	0.247	OK

c) Determination of unreinforced branch connection stresses per ND 3650

Pipe Size Nominal	tadj	Rmadj	h	t–adj SIF	SIF Per Figure NC3672.9	tnom SLP (psi)	tadj SLP (psi)
3	0.091	1.70	0.053	6.367	2.1	400	966

Pipe Size Nominal	tadj	Rmadj	tnom Section Modulus (in^3)	t–adj Section Modulus (in^3)
3	0.091	1.70	1.744	0.806

The following table presents both the tnom & t-adj corrected Code stress equations:

Equation	Point Number	tnom Stress (psi)	t-adj Stress (psi)	Allowable Stress (psi)	t-adj Factor of Safety	
8 Sustained	87	642	2555	8700	3.40	OK
9 Occasional	87	1747	9799	10440	1.07	OK
10 Thermal	85	2882	18894	13050	0.69	NO GOOD
11 Sus + Th	85	3434	21449	21750	1.01	OK

Failure of Eq 10 is acceptable if Eq 11 is met

d) An additional limitation is placed on the through wall portion of the maximum hole size. The through wall portion of the crack may not exceed d/2 or 5 inches.

tm	0.020 in
Additional Predicted Wall Thinning	0.038 in
Minimum Wall Required To Prevent Expansion of the Through Wall Flaw	0.058 in

Measured Thorugh Wall Portion of Flaw	3/32 in	
Maximum Allowed Through Wall Portion of Flaw (lesser of d/2 or 5 inches)	1.750 in	
Predicted Thorugh Wall Portion of Flaw (1)	0.350 in	OK

Note: 1) This value includes a .25 inch tolerance for the tranducer size.

References: 1) Stress Calculation 12179-NP(B)-X1914, Revision 2
2) ASME Section III 1971 Edition through the 1973 Summer Addenda
3) ASME Draft Code Case N513 (8/13/92) and GL 90-05
4) NCR 393-018
5) Attached UT data

Computer Storage: c:\123r3\90-05.bem\393e-18.wk3

Prepared By: R.E. DeLo 3/19/93

Reviewed By: Prem C. Godbee 3/19/93

MAR-17-1993 12:35 FROM 6455786663 83 36446337464 TO 8585431 P.82

EROSION/CORROSION ULTRASONIC CALIBRATION DATA SHEET

(2)Plant Millstone (3)Unit III (5)Component Designation 1"WJ3

(4)System Service Water (8)Iso. No. NA (331)Line No. 3-SWP-003-67-3

(337)Diameter 3" (338)Grid Size 1" (339)T_{nom} .219" (340)T_{act} .191"

(341)Component Description Horizontal Straight **(51)Temp. NA

(344)Surface Unpainted Note: Substance on Surface between Rows 3+4 Restricted Scanning

Instrument:

(16)Model No. T-Scope (17)S/N 5230C (124)Freq. Fixed

Transducer:

(132)Mfg. Streetel (133)S/N A2046 (131)Size .250" (134)Freq. 5mHz

Cal. Block:

(332)S/N 93-5308 (333)Type 90-10 CuNi

(335) Block Thickness	(336) Instrument Reading	(136) Calibration Checks	
.100" - .300"	.100" - .300"	Initial Cal.	1609
.100" - .300"	.098" - .299"	Intermediate	1703
NA	NA	Intermediate	NA
"	"	Intermediate	"
"	"	Intermediate	
.100" - .300"	.098" - .300"	Final Cal.	1712

(342)Instrument Tolerance ± 0.001" Intersects, Scan + Map

(345)Calibration Tolerance ± 0.002"

(343)Grid Verified as correct J.J.

(49)Examiner:

(Print) John Jacobson (Sign) [signature] Level II Date 2-23-93

(50)Reviewer:

(Print) D.R. MacNeill (Sign) [signature] Level III Date 2-25-93

*(Refer to Appendix B of NU NDE Procedure Manual to fill in each block)
**For extreme temperatures only.

FIGURE 4

Main Section (0)
Rows : 7 Cols : 11 Direction : Clockwise Offset : 0

	A	B	C	D	E	F	G	H	I	J	K	Ro
1	0.226	0.229	0.223	0.221	0.222	0.141	0.189	0.217	0.219	0.223	0.222	0.
2	0.225	0.225	0.222	0.222	0.224	0.153	0.169	0.221	0.221	0.221	0.223	0.
3	0.226	0.227	0.226	0.221	0.224	0.207	0.210	0.211	0.221	0.224	0.225	0.
4	0.226	0.228	0.224	0.222	0.228	0.220	0.208	0.218	0.221	0.225	0.224	0.
5	0.225	0.225	0.224	0.223	0.225	0.204	0.216	0.225	0.220	0.224	0.223	0.
6	0.225	0.228	0.224	0.223	0.224	0.216	0.222	0.223	0.221	0.223	0.225	0.
7	0.230	0.227	0.222	0.221	0.225	0.219	0.219	0.222	0.221	0.224	0.225	0.
	A	B	C	D	E	F	G	H	I	J	K	
ColMx	0.230	0.229	0.226	0.223	0.228	0.220	0.222	0.225	0.221	0.225	0.225	
ColMn	0.225	0.225	0.222	0.221	0.222	0.141	0.169	0.211	0.219	0.221	0.222	
Delta	0.005	0.004	0.004	0.002	0.006	0.079	0.053	0.014	0.002	0.004	0.003	
Ave	0.226	0.227	0.224	0.222	0.225	0.194	0.205	0.220	0.221	0.223	0.224	

Section Summary
Maximum Reading = 0.230 (7, A) Average = 0.219
Minimum Reading = 0.141 (1, F) Standard Deviation = 0.015
Total Readings = 77

MAR-17-1993 11:39 FROM 6455788663 83 36446337464 TO 8585431 P.02

Notes

FILE NAME: 6E.2 FW33
DOS FILE NAME: SW2FW33.DAT
FILE TYPE: GRID
DATE & TIME CREATED: 02/23/93 16:04
DATE & TIME LAST MODIFIED: 02/23/93 17:06
FILE DESCRIPTION: 1217.CP.SWP.67
ALLOW MANUAL READINGS: Y
UPPER LEFT LOCATION: A1
LOWER RIGHT LOCATION: K7
OPERATOR ID: J.JACOBSON
INSTRUMENT ID: 5230C
PROBE ID: A2046
MATERIAL VELOCITY:
INCHES OR MM: I

READINGS

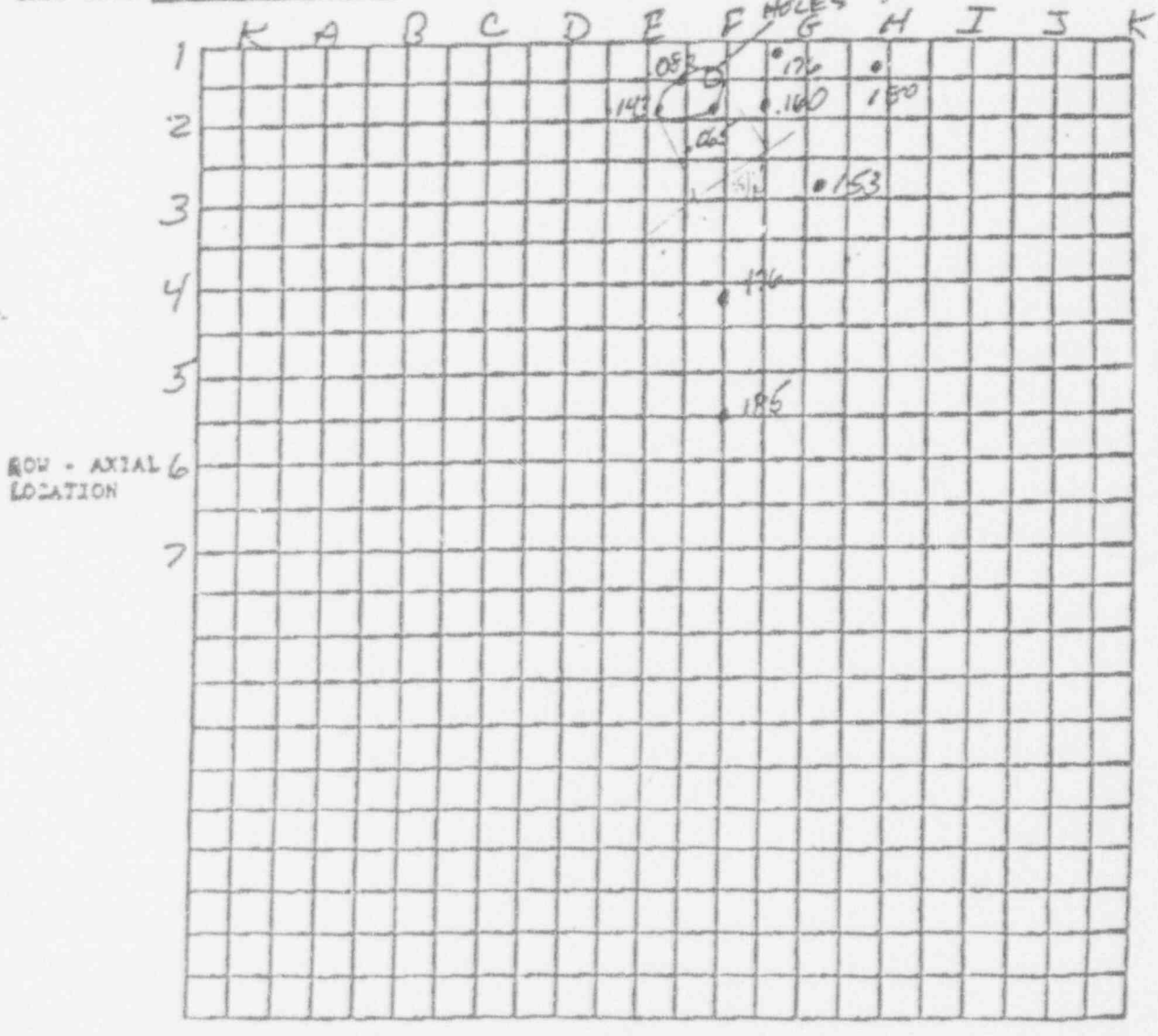
FIGURE 3

35WP-603-67-3

COMPONENT ID FW33 EXAMINER John Jack DATE 2-23-93

PLANT/UNIT McGuire III SYSTEM Service Water

GRID SIZE 14 COLUMN - CIRCUMFERENTIAL LOCATION



SKETCH OF COMPONENT SHOWING GRID LOCATIONS FOR THE EXTENT OF THE REDUCED THICKNESS AREAS

MILLSTONE II ULTRASONIC [illegible]

DATA SHEET

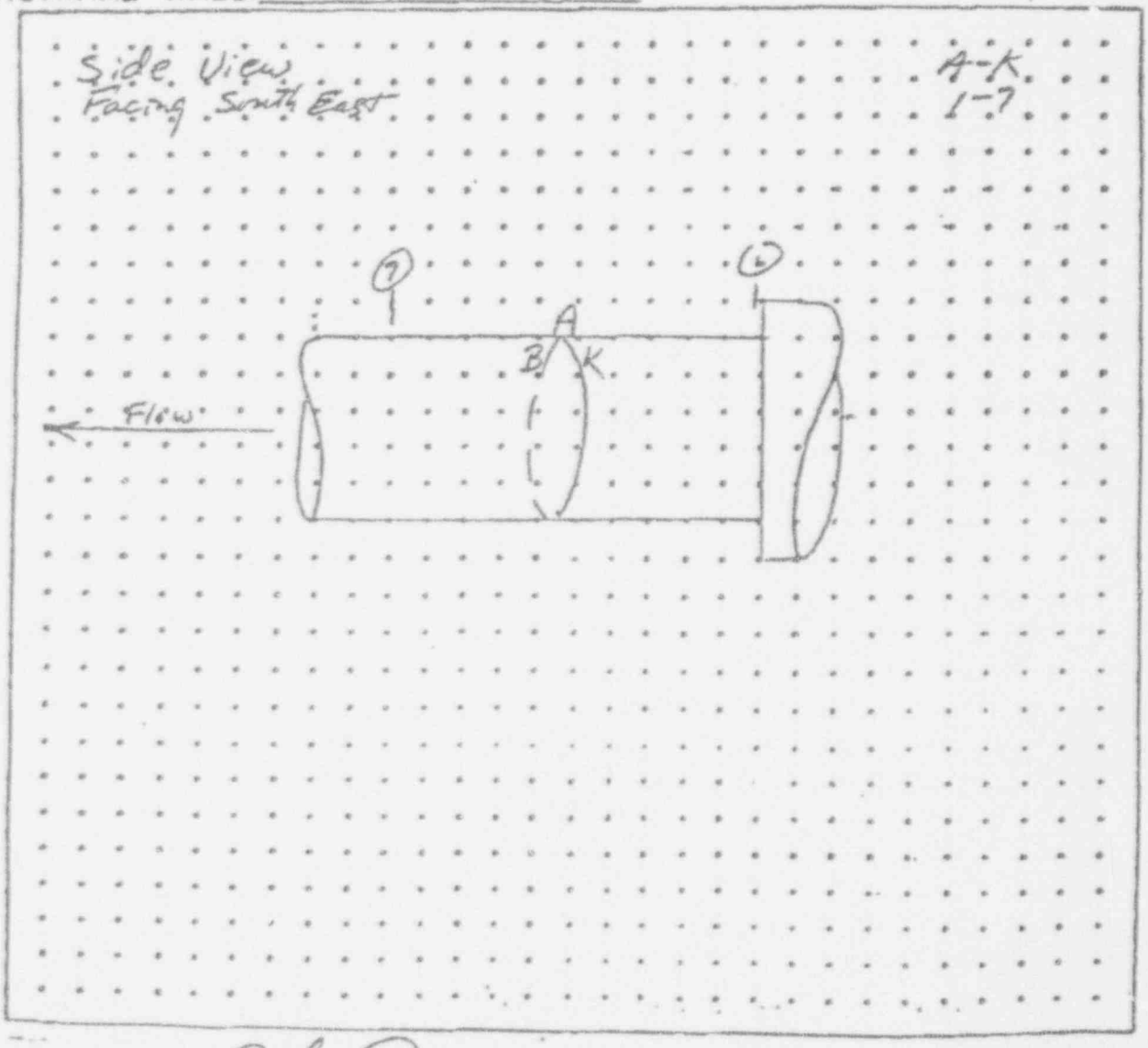
DRAWING NUMBER: 12179-CF SWP-67 SH2 of 5

LINE NUMBER: 3-SWP-003-67-3

COMPONENT TYPE: Horizontal Straight COMPONENT NUMBER: FW33

SIZE: 3" SCHEDULE: _____

NOMINAL WALL: .219"



INSPECTOR: [signature] DATE: 2-23-93