



CONNEX
PIPE SYSTEMS

Connex Pipe Systems, Inc.
1115 Gilman Street
Marietta
Ohio 45750
Telephone 814.373.7541
Fax 614.373.8480
Twx 810.486.2800

July 8, 1992

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

REF: Gulf States Utilities Co. -- Report of Defect
Dated June 18, 1992-RBG-37042
File No. G9.5 River Bend Station *U-12*
Document No. 50-458

Gentlemen:

Connex Pipe Systems, Inc. has completed its investigation of the defect discovered by Gulf States Utilities Co. (GSU) on the 12" Sch. 80 LR 90° Elbow SA234 W PC and subsequently, reported in accordance with the requirements of 10CFR21. The following is a summary of the steps that were taken during the investigation to determine an adequate corrective action.

Initial Corrective Action was to remove Ram Forge from Connex's Approved Vendors List until further investigation could be performed. This was documented on Connex's Corrective Action Request (CAR #92-007) and verified by copy of Connex's Approved Vendors List.

In addition, Connex was able to determine that the Ram Forge elbow was an isolated occurrence. This was based upon wall thickness measurements taken on numerous elbows at Connex --all of which contained acceptable wall thickness. (See attached Ultrasonic thickness readings)

Connex, accompanied by GSU, went to Ram Forge to determine the root cause and verify Corrective Action. (See Ram Forge Discrepancy Report) Further investigation while at Ram Forge disclosed the fact that this particular elbow required ten (10) heats to form the elbow within the dye. This was unusual since they normally require two (2) heats. An excess of scale caused by the additional heats necessitated a great deal of grinding. Consequently, the elbow was ground below wall and not visible to the eye. Ram Forge did not question the wall thickness because past experience had shown their elbows to be much heavier. This was demonstrated to Connex and GSU from readings taken on a grid pattern on elbows for other customers.

Ram Forge has stated that they will check all elbows for wall thickness on 100% of ASME III orders. The wall thickness measurements will be taken on a grid over the entire elbow. Connex was unable to verify implementation since there were no ASME III orders for elbows in-house at Ram Forge.

140377

A member of the Whessoe Group

9207150212 920708
PDR ADOCK 05000458
S PDR

JEM

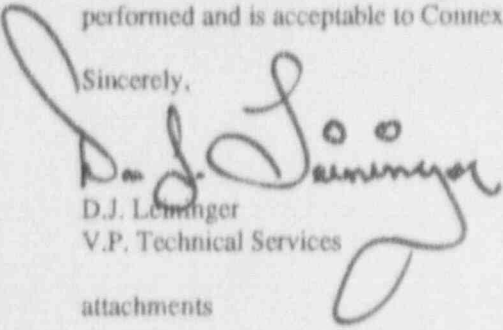


U.S. Nuclear Regulatory Commission
REF: Gulf States Utilities Co. -- Report of Defect
Dated June 18, 1992-RBG 37042
File No. G9.5 River Bend Station -- Unit #1
Document No. 50-458

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Prior to awarding Purchase Orders to Ram Forge, Connex shall audit their Quality System and assure provisions are in place to accomplish Ram Forge's corrective action and verify measurements taken on elbows at that time. Ram Forge will remain off Connex's Approved Vendors List until the audit is performed and is acceptable to Connex.

Sincerely,



D.J. Leminger
V.P. Technical Services

attachments

DJL:cak

cc: Ram Forge and Steel Inc.
P.O. Box 592
Industrial Park Road
Navasota, Texas 77868

Mr. D. C. Deddens
Senior Vice President
River Bend Nuclear Group
Gulf States Utilities
P.O. Box 220
St. Francisville, LA 70775

U. S. Nuclear Regulatory Commission
611 Ryan Plaza Drive
Suite 400
Arlington, TX 76011

NRC Resident Inspection
P.O. Box 1051
St. Francisville, LA 70775



CORRECTIVE ACTION REQUEST (CAR)

ORGANIZATION GSU
JOB NO. EB634

DATE 6-10-91
CAR # 92-007
PAGE 1 OF 2

CONTROLLING DOCUMENT
PO # EB634-2 ITEM 1

SURVEILLANCE/AUDIT TOPIC
VENDOR MIN WALL VIOLATION

WHERE FOUND
GSU

DISCUSSED WITH
N. BROWN D LEININGER GSU & RAM

INITIATOR
K.A. WELCH

APPROVED BY
K.A. Welch 6-10-92

CONTRACT MANAGEMENT
 AUDIT SURVEILLANCE

REQUIREMENT
CONNEX'S PURCHASE ORDER REQUIRES MATERIAL TO BE MANUFACTURED AND SUPPLIED AS 12" SCH 80 LR 90° ELL WITH 2 1/2" LG TANG BOTH ENDS SA-234-WPC ONE EA C BORED TO MATCH SCH 60 NOM I.D.

FINDING ISOLATED OCCURENCE REPETITIVE GENERIC UNDETERMINED

CONTRARY TO THE ABOVE REQUIREMENT RAM FORGE SUPPLIED THE MATERIAL WITH A WALL THICKNESS LESS THAN THE MANUFACTURER MIN WALL OF .602". THE ACTUAL WALL IN THE NEAL AREA IS .378". THE MATERIAL WAS DIRECT SHIPPED FROM RAM TO GSU. GSU ACCEPTED THE MATERIAL AND LATER FOUND THE NON-CONFORMANCE

* SEE SHEET 2 OF 2
REPORTABLE EVALUATION NOT REPORTABLE REPORTABLE
* UNDER INVESTIGATION
EVALUATOR _____
DATE _____

CAUSE - TO BE INVESTIGATED AT RAM, 2nd 6-10-91
NO WALL THICKNESS MEASUREMENTS WERE TAKEN IN THE BODY OF THE ELL. ONLY OVER ENDS 2x
6-10-92

RECOMMENDED ACTION(S) REMEDIAL CORRECTIVE INVESTIGATIVE
REMOVE RAM FROM CONNEX AVL UNTIL INVESTIGATION IS COMPLETE AND RAM HAS PROVIDED CORRECTIVE MEASURES THAT CAN SATISFY CONNEX THAT THIS CONDITION CAN BE ELIMINATED IN FUTURE ORDERS. INVESTIGATE 10 CFR 21. RAM TO SEND CAR TO CONNEX.

SCHEDULED COMPLETION DATE 6-20-92
RESPONSIBILITY FOR CORRECTIVE ACTION K.A. Welch

CORRECTIVE ACTION MOA K.A. Welch STATEMENT ACCEPTED STATEMENT NOT ACCEPTED
DATE 6-10-92

CORRECTIVE ACTION TAKEN
Connex - SAME AS ABOVE RECOMMENDED - COMPLETED 6-10-92
CONNEX - 10 CFR 21 INVESTIGATION IS IN PROCESS 6-18-92
RAM - See Attached Corrective Action from Ram 6-18-92

DATE COMPLETED 6-18-92
APPROVED (RESPONSIBILITY AUTHORITY) K.A. Welch

VERIFICATION OF CORRECTIVE ACTION
See Attached Connex AVL - See GSU Letter to NRC DATED 6-10-92
See Attached Ram Forge Discrepancy Report DATED 6-10-92

CORRECTIVE ACTION MOA K.A. Welch ACCEPTED NOT ACCEPTED
DATE 7-7-92

DISTRIBUTION: CEO ALL DEPARTMENT MANAGERS ANI



CORRECTIVE ACTION REQUEST (CAR)
(CONTINUATION SHEET)

ORGANIZATION GSU

JOB NO. EB634

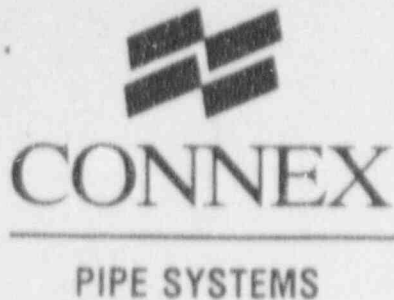
DATE 6-10-91

CAR # 92-007

PAGE 2 OF 2

10 CFR 21 INVESTIGATION:

- PER GP-1 CONNEX HAS DETERMINED THAT A POTENTIAL EXIST FOR A PART 21, SINCE THE MATERIAL WAS ACCEPTED BY GSU.
- GSU HAS RETURN THE MATERIAL TO CONNEX FOR REPAIR
- CONNEX HAS REQUESTED GSU TO EVALUATE THE CONDITION TO DETERMINE WHETHER A SUBSTANCIAL SAFETY HAZARD COULD HAVE OCCURED AS A RESULT OF THE CONDITION.
- GSU REPORTED THE DEFECT ON 6-12-92 TO THE NRC.



Connex Pipe Systems, Inc.
1115 Gilman Street
Marietta
Ohio 45750
Telephone 614 373 7541
Fax 614 373 8480
Twx 810 486 2808

June 25, 1992

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

REF.: Gulf States Utilitie. Co. - Report of Defect
Dated June 18, 1992--RBG-37042
File No. G9.5 River Bend Station - Unit 1
Document No. 50-458

Gentlemen:

We have reviewed Gulf States Utilities' Report of Defect per 10CFR21 and offer the following clarifications and additional information:

The forged replacement elbow was purchased by Connex Pipe Systems on Purchase Order E8634-2 Item #1 from Ram Forge and shipped direct to Gulf States Utilities River Bend Station Unit 1 from Ram Forge and Steel Inc., P.O. Box 592, Industrial Park Road, Navasota, Texas 77868.

The elbow was then accepted by Gulf States Utilities River Bend Station - Unit 1 and was in the process of being machined when the defect was discovered. Upon notification by Gulf States, the elbow was returned to Connex to be repaired.

Connex reworked the elbow in accordance with ASME III NB-4130. The rework of the elbow was documented on Connex sketch E8630-1. The elbow was then returned to Gulf States Utilities River Bend Station Unit 1 along with the associated documentation.

In addition, Connex took immediate corrective action by removing Ram Forge from Connex's Approved Vendors List until a full investigation could be completed.



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

June 25, 1992

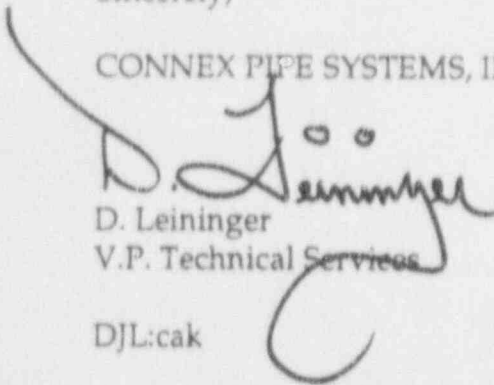
2 of 2

Preliminary results of our investigation indicate that this was an isolated occurrence; however, specific cause has yet to be determined.

We hope this additional information will help supplement the report issued by Gulf States Utilities.

Sincerely,

CONNEX PIPE SYSTEMS, INC.



D. Leininger
V.P. Technical Services

DJL:cak

cc: U.S. Nuclear Regulatory Commission
611 Ryan Plaza Drive
Suite 400
Arlington, TX 76011

NRC Resident Inspection
P.O. Box 1051
St. Francisville, LA 70775

Mr. D. C. Deddens
Senior Vice President
River Bend Nuclear Group
Gulf States Utilities
P.O. Box 220
St. Francisville, LA 70775



GULF STATES UTILITIES COMPANY

RIVER BEND STATION POST OFFICE BOX 220 ST. FRANCISVILLE, LOUISIANA 70775
AREA CODE 504 635-6094 346-8651

June 18, 1992
RBG- 37042
File No. G9.5

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

Gentlemen:

River Bend Station - Unit 1
Docket No. 50-458

Pursuant to the requirements of 10CFR21.21(c)(3), Gulf States Utilities Company (GSU) is submitting this written report of a defect in a forged replacement elbow. The specified location for the elbow is in a 12" feedwater line. The attached report provides the information required by 10CFR21.21.

Sincerely,

J. C. Dedeens
Senior Vice President
River Bend Nuclear Group

WHL *for JRH* *for MHZ*
WHO/LAE/VRH/DNL/DCH/NHZ/kvm

Attachment

~~9206240320~~
11 p.p.

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

U.S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011

NRC Resident Inspector
P.O. Box 1051
St. Francisville, LA 70775

Connex Pipe Systems, Inc.
1115 Gilman Avenue
Marietta, OH 45750
Attn: Mr. Kevin Welch

ATTACHMENT

GULF STATES UTILITIES COMPANY
River Bend Station - Unit 1
Report of a Defect Per 10CFR21
Connex Pipe Systems, Inc.

1. Name and address of individual(s) informing the NRC:

Mr. J. C. Deddens, Senior Vice President,
Gulf States Utilities Company

Address: Post Office Box 220
St. Francisville, LA 70775

2. Identification of the facility, the activity, or the **basic component** supplied for the facility or activity which fails to comply or contains a **defect**:

The **basic component** containing a **defect** was a forged replacement elbow, Connex sketch E-8634-1. The specified location of the elbow is at the first elbow off of reactor pressure vessel feedwater nozzle N4A.

3. Identification of the firm constructing or supplying the **basic component** which fails to comply or contains a **defect**:

Connex Pipe Systems, Inc.
1115 Gilman Avenue
Marietta, OH 45750

4. Nature of the **defect** or failure to comply and the **safety hazard** which is created:

The **defect**, revealed by Ultrasonic testing (UT) of the forged elbow involved numerous areas where the required code and design minimum wall thickness was not maintained. The nominal wall thickness was 0.688 and the code minimum thickness was 0.535". The minimum wall thickness measured was 0.378". Because GSU discovered this **deviation** prior to installation there was no operational impact. However, due to the gross reduction in wall thickness a **substantial safety hazard** could have been created had this defect remained uncorrected because the specified location is the first elbow off of reactor pressure vessel feedwater nozzle N4A, an unisolable portion of the reactor coolant pressure boundary.

5. The date on which the information of the defect or failure to comply was obtained:

A condition report (CR) was issued indentifying the minimum wall violations on June 5, 1992. GSU's evaluation of the condition per 10CFR21 determined the condition to be reportable on June 18, 1992.

6. In the case of a basic component which contains a defect or fails to comply, the number and location of all the components in use at, supplied for, or being supplied for one or more facilities or activities subject to the regulations of 10CFR21:

The affected basic component is the forged elbow, Connex sketch E-8634-1, supplied to GSU as a one-time replacement part.

7. The corrective action which has been, or will be taken; the name of the individual or organization responsible for the action; and the length of time that has been or will be taken to complete the action:

GSU returned the forged elbow to the supplier. The component was reworked to ASME III, NB-4130 and returned to GSU.

8. Any advice related to the defect or failure to comply about the facility, activity, or basic component that has been, is being, or will be given to purchasers or licensees:

Not applicable.

Connex Pipe Systems, Inc.

E-8634

No. QA2

NONCONFORMANCE REPORT

<u>Nelson Brown</u> ORIGINATED BY		<u>Projects</u> DEPT		<u>6/8/92</u> DATE		CODE/CLASS	
CONTRACT E- <u>8634</u>		SKETCH- <u>NA</u>		ASME SECTION <u>III</u>		CLASS <u>I</u>	
ITEM DESCRIPTION - <u>12" SCH 80 LR 90° Ell</u> <u>WITH 2 1/2" LG TANG BUTTWELDS SA-231-WRC</u> <u>ONE END C'ROISED TO MATCH SCH 60 NOM I.D.</u>				P.O. <u>E-8634-2 item 1</u>		TAGGING	
				DOC. REF _____		<input type="radio"/> NOT REQUIRED	
				SUPPLIER <u>RAM FORGE</u>		<input checked="" type="radio"/> NCR YELLOW TAG	
						<input type="radio"/> TROUBLE (HOLD) TAG	

EXISTING CONDITION ELL RETURNED FROM JOBSITE TO CONNEX BASED ON A UT CHECK FOR WALL THICKNESS. MIN WALL FOR 12" SCH 80 IS .602" AREAS ON THIS FITTING REPORTED TO BE AS LOW AS .378". SEE ATTACHED UT REPORT FOR TOTAL EXTENT OF UNDERWALL CONDITIONS. IN ADDITION THE JOBSITE INDICATED THAT THE SURFACE OF THE I.D. WAS ROUGH AND IRREGULAR.

[Signature] 6/8/92
 VALIDATED BY - DEPT - DATE

Nelson Brown 6/8/92
 SIGNATURE DATE

DISPOSITION REPAIR UNDER THE RULES OF ASME III SUB SECTION NB 4130 WITH AN APPROVED WELDING PROCEDURE PER THE ATTACHED REPAIR PROCEDURE E-8634-RP-1.

CWO# 7300

CHIEF INSPECTOR TO REMOVE NCR TAG WHEN DISPOSITION IS COMPLETE

Nelson Brown 6/8/92
 SIGNATURE DATE

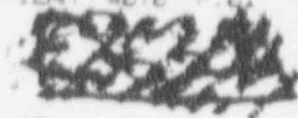
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		<u>Ribonell</u> ANI CONCURS <u>6-9-92</u> DATE
		CUSTOMER CONCURS _____ DATE _____

RECORD REVIEW CODE _____	FINAL DISPOSITION COMPLETED _____ DATE _____	DISPOSITION COMPLETED AND VERIFIED SIGNATURE _____ DATE _____
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QUALITY CONTROL
INSPECTION REPORT

INFORMATION ONLY

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PAGE 1 of

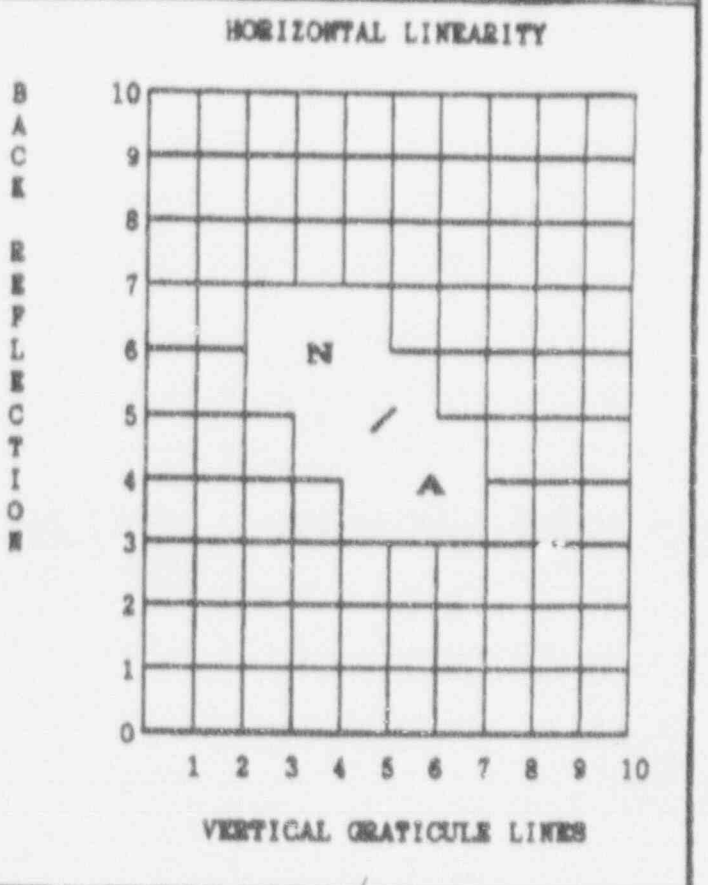


QCIP NO./QCI: QCI 328 REV 4	DATE: 6-5-92	EQUIPMENT ID: 1-F022-012-037-1	SIGNATURE: <i>Robert Briley</i>	INITIALS R/E/B	
() MWO R145249 () MR () QCL () MONITORING	INSPEC RESULTS: () SAT () UNSAT	UNSAT CLOSURE: DATE _____ MWOB _____ CR _____ PCN _____	SYSTEM CODE 107 Q-CLASS: () Q1 () Q3 () N/A () Q2 () ASDC	MAINT. DISC. () EM () IC () MM () BG () TSI	NOTE NO. QCTE-018 N/A QCTE-005 11-8-92
PROCEDURES/DWGS/ RELATED DOCUMENTS: INS-17-004 / EP-17 F	MANHRS:			STORES REQ: N/A	

RESULTS
S/U/N

ITEM NO.	ATTE CODE	TOTAL OBSER	UNSAT OBSER	ATTRIBUTE DESCRIPTION	INIT. INSP	RE-INSP
1.	T04	2	1	NDE TESTING	U.	.

INSTRUMENT : K.B. DM SCOPE	SERIAL NO. : 390008
TRANSDUCER TYPE : DUAL	SERIAL NO. : A03079
TRANSDUCER SIZE: 0.375"	FREQUENCY : 8 MHz
CALIBRA. STD. SN. QCTE-005	CALIBRA. BLOCK DEP: AMBIENT
<input checked="" type="checkbox"/> A-SCAN <input checked="" type="checkbox"/> METERED/ DIGITAL	SCANNING TECHNIQUE: <input checked="" type="checkbox"/> SPOT <input checked="" type="checkbox"/> CONTINUOUS
VELOCITY: 0.23Z	HORIZONTAL LINEARITY <input checked="" type="checkbox"/> ACCEPT <input checked="" type="checkbox"/> REJECT
MATERIAL TYPE: <input checked="" type="radio"/> C/S <input type="radio"/> S/S OTHER	COMPONENT TEMP: AMBIENT



INSPECTOR ROBERT E BRILEY JR.	LEVEL II	DATE 6-5-92
INSPECTOR DUSTIN IRLBECK	LEVEL IT	DATE 6-5-92

REVIEWED BY: _____ REF.#/COMP.#
200322/FW5010037 LZ
200323/FW5010037 P3

NOTE: SEE ATTACHED SHEETS FOR READINGS
READINGS TAKEN AT LOWEST POINT WITHIN GRID. 100% SCAN PERFORMED.

GULF STATES UTILITIES
RIVER BEND STATION

Component Data Report

REFERENCE #: 200322 COMPONENT ID: FWS010037L2 TYPE: Elbow
DRAWING NO.: EP-17F DESCRIPTION : MWO#R145249, ELBOW(PRESERVICE)

TEST DATE : 06/04/92 INSTRUMENT: DM-SCOPE, QCTE#018
OPERATOR : R.BRILEY PROBE I.D.: A03079
IMPT. FILE: FWS037L2 VELOCITY : N/A

NOMINAL WALL: 0.688 MINIMUM MEAS: 0.378
CODE MINIMUM: 0.535 MINIMUM LOC.:(T ,10)
AVERAGE MEAS: 0.700

REMARKS- FWS010037L2, R145249 (PRE-SERVICE INSPECTION)
UPSTREAM AND DOWNSTREAM EXAM NOT PERFORMED, ELBOW EXAMINED
100% PRIOR TO WELDING AND INSTALLATION.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
A-	606	678	659	657	659	640	644	641	647	642	492	530	504	551	558	587	587	621	700	724	742
B-	661	659	677	646	648	663	667	695	687	698	667	642	518	565	584	617	617	678	700	711	736
C-	688	677	680	669		615	618	627	610	616	656	639	605	712		672	685	697	705	719	732
D-	666				658	661					661	661	643	668	661	659	677	665	663	670	682
E-	71	660	71	666		666	672	694	690	692	690	683	667		605	668	665	675	665	676	
F-	585	691	680	684	689	715	752	745	737	724	732	734	730	742	757	748	676	683	669		651
G-	619	698	685	673	687	740	768	758	744	738	736	744	748	752	752	747	740	755	692	668	694
H-	598	681	676	707	773	779	788	776	776	769	757	765	772	785	778	787	793	780	748	722	699
I-	605	749	787	762	789	804	818	801	801	777	772	781	803	803	789	789	777	772	757	725	703
J-	604	630	799	662	661	654	654	641	632	607	603	814	825	840	849	837	852	851	789	728	708
K-	645	736	811	804	872	872	878	861	837	815	820	851	849	852	873	852	845	830	801	771	725
L-	656	783	822	820	839	837	837	838	820	810	806	810	810	836	834	819	820	809	788	766	744
M-	698	771	788	795	798	803	795	795	807	797	786	799	799	802	795	796	797	798	756	747	740
N-	680	745	772	775	787	778	777	768	769	764	770	767	766	766	780	786	787	775	749	743	736
O-	677	727	762	763	790	789	756	754	747	748	756	749	753	779	774	772	760	749	747	739	715
P-	647	709	699	710	727	722	728	734	722	712	714	718	712	726	736	733	729	727	730	712	724
Q-	619	680	693	683	668	686	688	681	675	666		675	700	702	707	711	705	707	715	724	742
R-	625	677	687	682	681	668	681	610	608	621	647	634	649	668	684	688	697	706	712	714	728
S-	597	575	667	660	599	578	510	506	540	494	497	534	560	625	621	607	627	632	711	730	739
T-	590	673	659	636	590	531	499	526	479	378	358	518	565	593	579	593	610	611	704	721	741
U-	605	665	674	622	599	577	554	641	648	557	524	501	582	588	588	602	611	670	705	718	748

THICKNESS COLOR CODING

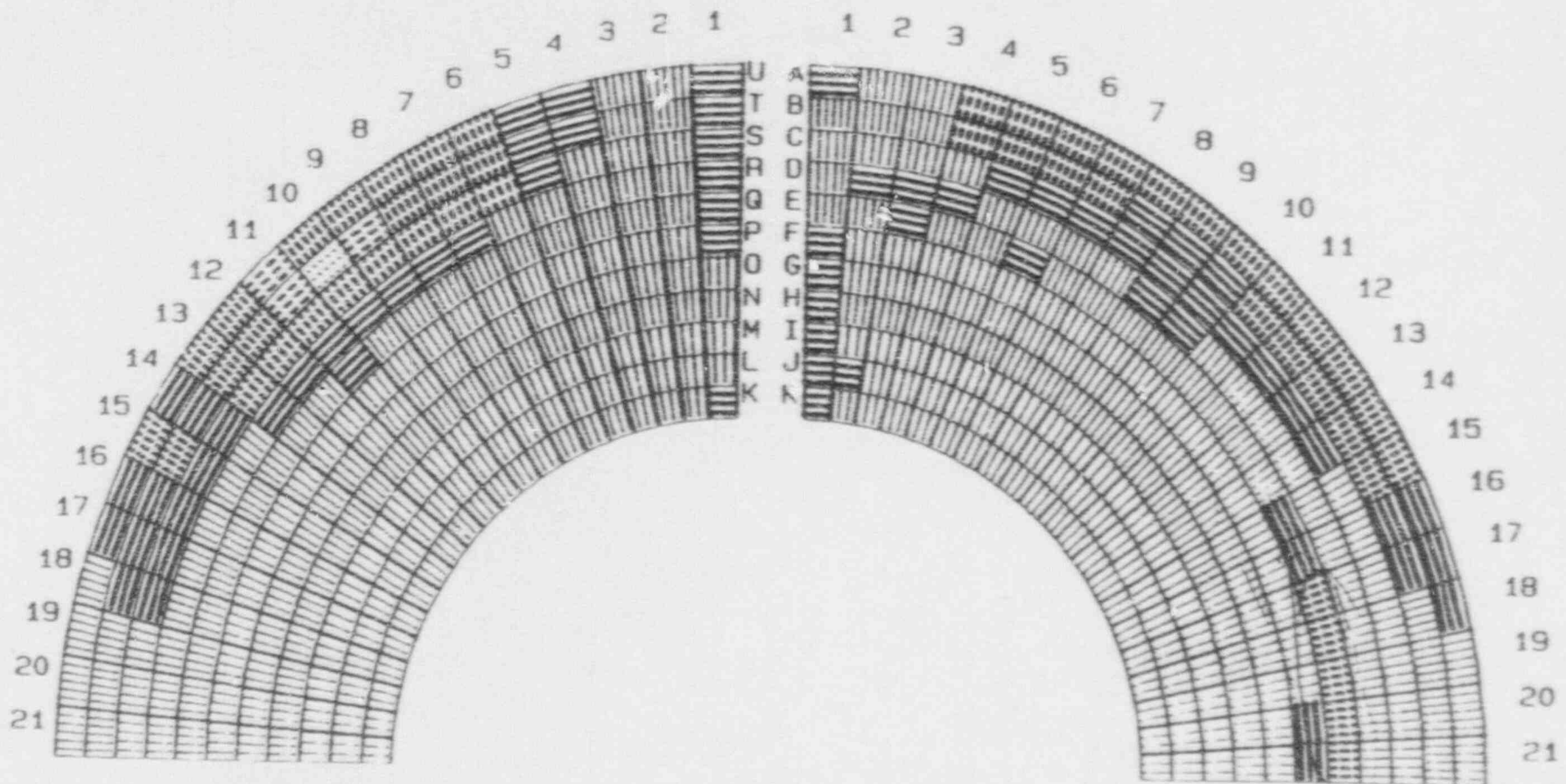
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- t <= 566

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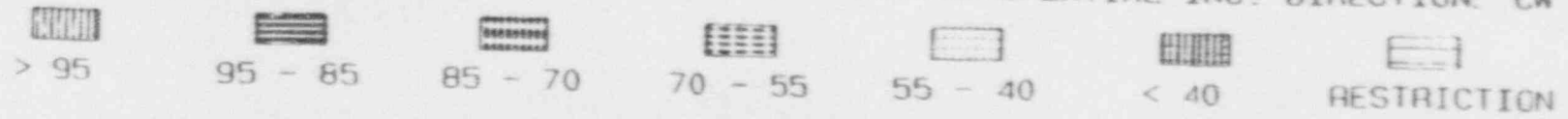
COMPANY NAME: GULF STATES UTILITIES
PLANT/UNIT...: RIVER BEND STATION
REFERENCE # : 200322
COMPONENT ID: FWS010037L2
DESCRIPTION : MW0#R145249, ELBOW (PRESERVICE)
TEST DATE...: 06/04/92
INSP. INT...: I=-1.03890 (I=Lr/KOc)

NOMINAL WALL.....: 0.688
CODE MINIMUM.....: 0.535
MINIMUM MEASURED: 0.378
AVERAGE MEASURED: 0.700
AXIAL REFERENCE :
RING #1 POSITION: 0.00 in. DS
RING SPACING.....: 2.00 in.



AXIAL INC. DIRECTION: DS

CIRCUMFERENTIAL INC. DIRECTION: CW



EROSION / CORROSION DATA WORK SHEET

TYPE: ELBOW

REF. # : 2003ZZ

DATE: 06/05/92

Comp. I.D. : EW5010037LZ
 Report File : EW5037LZ
 Description : ELBOW

Dwg. # : EP-17F
 Angle : 90°
 WMO # : 2145249

GRID INFO

	Upstream	Component	Downstream
Outside Diameter	<u>N</u>	<u>12"</u>	<u>N</u>
Axial Range (rings)	<u>A</u>	<u>Z1</u>	<u>A</u>
Circ. Range	<u>A</u>	(A-Z, AA, AB, AC...)	<u>A</u>
Axial (ring) Ref.		<u>N</u>	
Ring 1 Loc.		<u>A</u>	
Ring Spacing	<u>3"</u>		
Axial Direction	US or DS		
Circ. Direction	CW or CCH		

TEST INFO

	Upstream	Component	Downstream
Nom. Wall	<u>N</u>	<u>0.688</u>	<u>N</u>
Min. Wall	<u>A</u>	<u>0.533</u>	<u>A</u>

TEST SUMMARY

Operator Name : _____
 Instrument # : DM Scope - QCTE # 39-0008
 Probe # : A03075
 Cal. Block # : QCTE-005 Due 11/08/92

Remarks: PRE-SERVICE INSPECTION
UPSTREAM AND DOWNSTREAM NOT PERFORMED. ELBOW
EXAMINED 100% PRIOR TO WELDING & INSTALLATION

Sketch:

