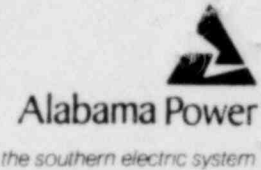


Alabama Power Company
600 North 18th Street
Post Office Box 2641
Birmingham, Alabama 35291
Telephone 205 250-1000

F. L. CLAYTON, JR.
Senior Vice President



January 30, 1981

Docket No. 50-364

Director of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Mr. A. T. Schwencer

JOSEPH M. FARLEY NUCLEAR PLANT - UNIT 2
GENERAL DESIGN CRITERIA 51

Gentlemen:

By letters dated August 15, 1980 and September 22, 1980 Alabama Power Company submitted fracture toughness data information to the NRC to demonstrate that the containment pressure boundary materials for Farley 2 were fabricated in accordance with the requirement of General Design Criteria (GDC) 51. In conjunction with that effort, a meeting was held between the NRC staff and our representatives on January 12, 1981 to identify the items relative to this issue that remained outstanding. Accordingly, the enclosed additional information, regarding the containment pressure boundary materials, documents conclusively that the requirements of GDC 51 have been met.

Also enclosed are proposed changes to FSAR Section 3.1.44 which clarifies our commitments regarding compliance with GDC 51. These changes will be incorporated into the FSAR when it is updated in accordance with 10CFR50.71(e).

Should you have any questions regarding this matter, please advise.

Yours very truly,

F. L. Clayton, Jr.
F. L. Clayton, Jr.

BOO!
S
1/1

Aperture Dist.
SEND Dugs to PM
after filming

FLCjr/RWS:rt

Enclosure

cc: Mr. R. A. Thomas
Mr. G. F. Trowbridge
Mr. L. L. Kintner
Mr. W. H. Bradford

w/enclosure

8102090315

P

THIS DOCUMENT CONTAINS
POOR QUALITY PAGES

3.1.44

CRITERION 51 - FRACTURE PREVENTION OF CONTAINMENT PRESSURE BOUNDARY

The reactor containment boundary shall be designed with sufficient margin to assure that under operating, maintenance, testing, and postulated accident conditions (1) its ferritic materials behave in a nonbrittle manner and (2) the probability of rapidly propagating fracture is minimized. The design shall reflect consideration of service temperatures and other conditions of the containment boundary material during operation, maintenance, testing, and postulated accident conditions, and the uncertainties in determining (1) material properties, (2) residual, steady-state, and transient stresses, and (3) size of flaws.

CONFORMANCE

Principal load-carrying components of ferritic materials used in the containment will not be exposed to the external environment. The ferritic material of the containment liner plate is designed to function as a leaktight membrane only.

In addition, Nil Ductility Transition Temperature (NDTT) requirements are not considered relevant for the design of the containment since this is a ligament type of structure wherein the brittle fracture of a ligament could not propagate to adjacent ligaments.

In all areas where the liner plate is the pressure resisting structural element without backup from the concrete, a minimum NDTT of 0 F has been specified, based on a minimum service temperature of 30 F. These areas are the containment access openings which are enclosed on the outside by heated buildings. The equipment hatch not protected by the auxiliary building may experience service temperatures as low as 0 F; this material has been specified to an NDTT of -30 F.

In all other areas, the liner plate has no structural function since it is backed up by concrete. Except for small locally thickened areas (up to 2 in.) in the floor and walls for crane brackets, anchorages for main steam pipe ruptures, frames, and similar items, the containment liner plate is 1/2-in. thick. No NDTT has been specified since the rules for NDTT from Section III of the ASME Code for Class B vessels apply to pressure vessels only. In addition, these rules are based on "Fracture Analysis Diagram Procedures for the Fracture-Safe Engineering Design of Steel Structures" by Pellini and Puzak and, as stated by the authors, are not applicable to plates less than 5/8-in. thick.

See Section 3.8 for details.

Although not classified as a part of the containment for the Farley Nuclear Plant, piping and penetrations through the containment pressure boundary out to the penetration isolation valves have been designed and fabricated with due consideration for brittle failure prevention.

A selective review of the design and materials used for the Farley Nuclear Plant was performed by the NRC staff, which confirmed compliance with Criterion 51. Documentation to support this conclusion was submitted to the NRC by Alabama Power Company letters dated August 15, 1980, September 22, 1980, and January 30, 1981.

CONTENTS

1. Main Steam Isolation Valves material test reports.
2. Main Steam spool pieces material test reports (steam generators to isolation valves.)
3. Feedwater Stop Check Valves material test reports
4. Feedwater spool pieces material test reports (steam generators to isolation valves.)
5. Flued head drawings for steam generator blowdown lines and steam generator blowdown sample lines.
6. Material test reports for Containment personnel hatch, piece marks 306-1 and 306-2
7. Material test report for Containment equipment hatch piece mark 72-3.
8. Drawings - See drawing index for subject.

(MSIVS)

INDEX OF RECORDS

Cust.: Bechtel Corporation

Cust. P.O.#: FNE 2-22

A&M/S.O., No.: 12341

Item No. 02

Dwg. No.: 21454-H

Rev. 2

Valve Serial No.: 6-341

ASME Section III Class: 2

Valve Description: 32"-600# W/E, Main Steam Trip Stop Valve

Addenda: ASME Pump & Valve Code March 1970

Plant Name: J.M. Farley Unit II

Location: Ashford, Alabama

Record Title	A&M Ident. No.	RT. No.	Heat No.	Ream- No.	Rec'd	Int. Pko
<u>GENERAL SECTION</u>						
Certified Design Spec.				X		X
Manufacturers Data Report				X		X
Certified as Constructed Dwg.				X		X
Certificate of Compliance				X		X
Deviation Requests & Approvals				X		X
BODY - C.M.T.R. with Charpy Data	6-341	K 3699	F 348	X		X
Rad. Shoot Sketch & Reader Sheets				X		X
U.T., Test Results				X		X
M.T., Test Results - Casting				X		X
M.T., Test Results - pipe mach. surf.				X		X
P.T., Test Results - seat & seal				X		X
Heat Treat Charts				X		X
Repair Charts & weld records				X		X
DISC - C.M.T.R. with Charpy Data	6-341	N/A	C1087 slab #6-B	X		X
M.T., Test Results				X		X
P.T., Test Results - Hardfacing				X		X
Weld Record - Hardfacing				X		X
Heat Treat Charts				X		X
COVER - C.M.T.R. with Charpy Data	6-341	N/A	C1087 slab #6-A	X		X
M.T., Test Results prior to overlay				X		X
U.T., Test Results				X		X
P.T., Test Results - overlay				X		X
Heat Treat Charts				X		X

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CCDS

Record Title	A&M Ident. #	Pt. No.	Heat No.	Form	Spec'd	In Pkg
LOAD KEY - C.M.T.R. with Charpy Data P.T., Test Results Heat Treat Charts	6-341	N/A	525240	x x x		x x x
STEM - C.M.T.R. P.T., Mach. Condition	6-341	N/A	535035	x x		x x
32" PIPE - C.M.T.R. N-2 Form, Taylor Forge	6-341	Code: JG-2 (c)- 32	802N67160	x x		x x
DISC POST - C.M.T.R. P.T. prior to weld Weld Record P.T. of Weld	6-341	N/A	A41221	x x x x		x x x x
DISC GUIDE - C.M.T.R. Disc Guide Fillet Weld Disc Guide Weld P.T.	11-341 12-341	N/A	73E052	x x x		x x x
PIPE TO BODY WELD M.T. Base Mat'l Body & Pipe Weld Record M.T. Weld Post Weld Heat Treat Radiography Reader Sheets Weld Rod Cert.				x x x x x x x		x x x x x x x
FINAL REPORTS Hydrostatic Test Report Final Inspection Report A&M Weld Material C.M.T.R.'s				x x x		x x x

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A&M

Auth. Insp.

Cust. Rep.

11-12-75

Report of Chemical Analysis and Physical Properties

Body for 32" 60" 1/4" 16-341

CUSTOMER Atwood & Morrill Co.

ORDER No. AM-9038

FILE No. A317-01

ADDRESS _____

PATTERN No. 16652-30268-603



DESIGNATION Q70

ATTENTION OF _____

SPECIFICATION ASTM A216 Gr. WCB

DATE 5-14-74

EAT No.	C	Mn	Si	P	S	Cr.	Ni	Mo	V-Notch Plus 30°F	Yield P. S. I.	Tensile P. S. I.	Elong. Per Cent.	Red. of Area Per Cent.	Catg. Serial #	R.T. Serial #	Per Ship
F348	.23	.77	.38	.019	.014				26-23-25	43,000	73,000	32.5	58.1	F348-1	K3659	1
									Mils Lateral Expansion	21-22-19				Certified Material		
									% Ductile Fracture	20-30-20				Test Report-Accepted		
-Notch Charpy	Plus 30°F	of heat	affected zone	Foot Pounds	120-120-114									by <i>W. L. Sharp</i>		
									Mils Lateral Expansion	86-83-79				DATE <i>6/18/74</i>		
									% Ductile Fracture	90-90-80				ATWOOD & MORRILL CO. INC.		
Maximum feasible volume Radiography acceptable in accordance with Para. 2314.2.1 of the March 1970 Addenda of the November 1968 Draft ASME Code for Pumps and Valves for Nuclear Power and ASTM E71, E94, E142, E186, and E280 as applicable.																
Acceptance standards to Para. 2314.2.1, E71, E186, E280 Levels 2 and 4 except Category D, E, F, and G Type defects are acceptable.																
100% Magnetic Particle Examination acceptable in accordance with Appendix B-3 of the November 1968 Draft ASME Code for Pumps and Valves for Nuclear Power, March 1970 Addenda.																
Acceptance Standards to Para. 314.5.2(b)																
Ultrasonic inspection of journal area acceptable in accordance with Para. 323.2 of the 1970 Winter Addenda of Section III ASME Boiler Code.																
Visual Inspection acceptable per MSS-SP-55																

Sign *W. L. Sharp*
RECEIVED
BY *W. L. Sharp*
6/18/74

REMARKS: 5-14-74 fed

APPROVED

BY A. L. Cook

DATE 7/19/74

ATWOOD & MORRILL CO. INC.



5-23-74

(J) 5/2/74

John Paul Jones, Authorized Inspector

RECEIVED
APR 18 1975
QCDS

QUAKER ALLOY CASTING CO.

BY M. M. Laidis
METALLURGIST

INDEX OF RECORDS

Just.: Bechtel Corporation

Cost. P.O.# : FNP 2-22

A&M S.O., No. : 12341

Item No. 02

Dwg. No. : 21454-H

Rev. 2

Valve Serial No. : 5-341

ASME Section III Class : 2

Valve Description : 32" - 600# W/E, Main Steam Trip Stop Valve

Addenda : ASME Pump & Valve Code March 1970

Plant Name : J.M. Farley Unit II

Location : Ashford, Alabama

Record Title	A&M Ident. No.	RT. No.	Heat No.	Perm. Non	Rec'd.	In. Pkg.
<u>GENERAL SECTION</u>						
Certified Design Spec.				x		x
Manufacturers Data Report				x		x
Certified as Constructed Dwg.				x		x
Certificate of Compliance				x		x
Deviation Requests & Approvals				x		x
BODY - C.M.T.R. with Charpy Data	5-341	K3541	F522			x
Rad. Shoot Sketch & Reader Sheets						x
U.T., Test Results				x		x
M.T., Test Results - Casting				x		x
M.T., Test Results - pipe mach. surf.				x		x
P.T., Test Results - seat & seal				x		x
Heat Treat Charts				x		x
Repair Charts & weld records				x		x
DISC - C.M.T.R. with Charpy Data	5-341	N/A	C1087 slab #6-B	x		x
M.T., Test Results				x		x
P.T., Test Results - Hardfacing				x		x
Weld Record - Hardfacing				x		x
Heat Treat Charts				x		x
COVER - C.M.T.R. with Charpy Data	5-341	N/A	C1087 slab #6-A	x		x
M.T., Test Results prior to overlay				x		x
U.T., Test Results				x		x
P.T., Test Results - overlay				x		x
Heat Treat Charts				x		x

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Record Title	A&M Ident. #	Rt. No.	Heat No.	Perm. Ion	Rec'd	In Pac
LOAD KEY - C.M.T.R. with Charpy Data P.T., Test Results <u>Heat Treat Charts</u>	5-341	N/A	526240	x x x		x x x
STEM - C.M.T.R. P.T., Mach. Condition	5-341	N/A	536099	x x		x x
32" PIPE - C.M.T.R. N-2 Form, Taylor Forge	5-341	Code: IG-2 (c)- 31	802N67160	x x x		x x x
DISC POST - C.M.T.R. P.T. prior to weld Weld Record P.T. of Weld	5-341	N/A	A41221	x x x x		x x x x
DISC GUIDE - C.M.T.R. Disc Guide Fillet Weld Disc Guide Weld P.T.	9-341 10-341	N/A	73E052	x x x		x x x
PIPE TO BODY WELD M.T. Base Mat'l Body & Pipe Weld Record M.T. Weld Post Weld Heat Treat Radiography Reader Sheets Weld Rod Cert.				x x x x x x x		x x x x x x x
FINAL REPORTS Hydrostatic Test Report Final Inspection Report A&M Weld Material C.M.T.R.'s				x x x		x x x

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APR 18 1975
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2-18-76

INDEX OF RECORDS

Cust.: Bechtel Corporation

Cust. P.O.# : FNP 2-22

A&M S.O. No.: 12341

Item No. 01

Dwg. No.: 21251-H

Rev. 7

Valve Serial No.: 4-341

ASME Section III Class: 2

Valve Description: 32"-600# W/E, Main Steam Trip Stop Valve

Addenda: ASME Pump & Valve Code March 1970 Addenda

Plant Name: J.M. Farley Unit II

Location: Ashford, Alabama

Record Title	A&M Ident. No.	RT. No.	Heat No.	Term- Non	Rec'd	In Pkg
GENERAL SECTION						
Certified Design Spec.				X		X
Manufacturers Data Report				X		X
Certified as Constructed Dwg.				X		X
Certificate of Compliance				X		X
Deviation Requests & Approvals				X		X
BODY - C.M.T.R. with Charpy Data	4-341	M1839	F3162	X		X
Rad. Shoot Sketch & Reader Sheets				X		X
U.T., Test Results				X		X
M.T., Test Results - Casting				X		X
M.T., Test Results - pipe mach. surf.				X		X
P.T., Test Results - seat & seal				X		X
Heat Treat Charts				X		X
Repair Charts & weld records				X		X
DISC - C.M.T.R. with Charpy Data	1-341		C1087 5B	X		X
M.T., Test Results				X		X
P.T., Test Results - Hardfacing				X		X
Weld Record - Hardfacing				X		X
Heat Treat Charts				X		X
COVER - C.M.T.R. with Charpy Data	4-341	N/A	3W6221	X		X
M.T., Test Results prior to overlay			Slab			
U.T., Test Results			105466	X		X
P.T., Test Results - overlay				X		X
Heat Treat Charts				X		X

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Record Title	A&M Ident. #	Rt. No.	Heat No.	Perm. Non	Rec'd	In p
LOAD KEY - C.M.T.R. with Charpy Data P.T., Test Results <u>Heat Treat Charts</u>	1-341	N/A	526240	x x x		x x x
STEM - C.M.T.R. P.T., Mach. Condition	4-341	N/A	536099	x x		x x
32" PIPE - C.M.T.R. N-2 Form, Taylor Forge	4-341	Code: JG-2 (c)- 26	802N67160	x x		x x
DISC POST - C.M.T.R. P.T. prior to weld Weld Record P.T. of Weld	1-341	N/A	A41221	x x x x		x x x x
DISC GUIDE - C.M.T.R. Disc Guide Fillet Weld Disc Guide Weld P.T.	1-341 & 2-341	N/A	73E052	x x x		x x x
PIPE TO BODY WELD M.T. Base Mat'l Body & Pipe Weld Record M.T. Weld Post Weld Heat Treat Radiography Reader Sheets Weld Rod Cert.				x x x x x x x		x x x x x x x
FINAL REPORTS Hydrostatic Test Report Final Inspection Report A&M Weld Material C.M.T.R.'s				x x x		

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A&M Auth. Insp.

Cust. Rep.

4-8-75

4-9-75

QUAKER ALLOY CASTING CO., MYERSTOWN, PA.

Report of Chemical Analysis and Physical Properties

YN-341

12341-01 Body 32"-400"

CUSTOMER Atwood & Morrill Co., Inc.

ORDER No. AM-9038

FILE No. _____

ADDRESS _____

PATTERN No. 11657-30268-602

DESIGNATION Q70

ATTENTION OF _____

SPECIFICATION ASTM A216 L

DATE 7-30-74

AT No.	C	Mn	Si	P	S	Cr.	Ni	Mo	V. Mach Fluor	Yield P. S. I.	Tensile P. S. I.	Elong. Per Cent.	Red. of Area Per Cent.	Catg	P.T. Serial #	Pcs. Shipper
3162	24	77	59	.018	.011				23-21-21	50,000	80,000	30.0	52.8	F3162-7	M159	1
									18-17-16							
									30-20-20							
									87-80-83							
									64-58-61							
									80-70-70							
Maximum feasible volume Radiography in accordance with Para. 2314.2.1 of the March 1970 Addenda of the Draft ASME Code for Pumps and Valves for Nuclear Power and ASTM E71, E94, E112, E186, and E200 as applicable. Acceptance standards to Para. 2314.2.1, E71, E186, E200, Levels 2 and 4 except Category D, E, F, and G-Type defects are not acceptable.																
100% Magnetic Particle Examination in accordance with Appendix B-3 of the Draft ASME Code for Pumps and Valves for Nuclear Power, March 1970 addenda. Acceptance Standards to Para 3114.5.2(b)																
Ultrasonic Inspection in accordance with Para. 323.2 of the 1970 Winter Addenda of Section III ASME Boiler Code.																
Visual Inspection per MSS-88																

APPROVED

BY A. J. Cook

DATE 8/15/74

ATWOOD & MORRILL CO. INC.

QUAKER ALLOY CASTING CO.

BY M. M. Leland
METALLURGIST

Certified Material
Test Report-Accepted

DATE 8-12-74
ATWOOD & MORRILL CO. INC.

John Paul Jones

REVIEWED BY

ARM
J.C.B.
A

CCD
7-31-74

RECEIVED
MAY 07 1975

REGISTER CORPORATION

(P) 11 P

INDEX OF RECORDS

Cont.: Bechtel Corporation

Cont. P.O.# : FNP 2-22

A&M S.O. No.: 12341

Item No. ⁰¹

Dwg. No.: 21261-H

Rev. 7

Valve Serial No.: 3-341

ASME Section III Class : 2

Valve Description: 32"-600# W/E, Main Steam Trip Stop Valve

Addenda: ASME Pump & Valve Code March 1970 Addenda

Plant Name: J.M. Farley Unit II

Location: Ashford, Alabama

Record Title	A&M Ident. No.	RT. No.	Heat No.	Perm. No.	Rec'd.	In. Pkg.
GENERAL SECTION						
Certified Design Spec.				X		X
Manufacturers Data Report				X		X
Certified as Constructed Dwg.				X		X
Certificate of Compliance				X		X
Deviation Requests & Approvals				X		
BODY - C.M.T.R. with Charpy Data	3-341	M1505	F3185	X		X
Red. Shoot Sketch & Reader Sheets				X		X
U.T., Test Results				X		X
M.T., Test Results - Casting				X		X
M.T., Test Results - pipe mach. surf.				X		X
P.T., Test Results - seat & seal				X		X
Heat Treat Charts				X		X
Repair Charts & weld records				X		X
DISC - C.M.T.R. with Charpy Data	3-341		G1087-6B	X		X
M.T., Test Results				X		X
P.T., Test Results - Hardfacing				X		X
Weld Record - Hardfacing				X		X
Heat Treat Charts				X		X
COVER - C.M.T.R. with Charpy Data	3-341	N/A	G1087-6A	X		X
M.T., Test Results prior to overlay				X		X
U.T., Test Results				X		X
P.T., Test Results - overlay				X		X
Heat Treat Charts				X		X

RECEIVED
MAY 30 1975
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Record Title	A&M Ident. #	Rt. No.	Heat No.	Perm.		In
				Non	Rec'd	
LOAD KEY - C.M.T.R. with Charpy Data P.T., Test Results <u>Heat Treat Charts</u>	3-341	N/A.	525240	x		x
				x		x
				x		x
STEM - C.M.T.R. P.T., Mach. Condition.	3-341	N/A.	62587	x		x
				x		x
32" PIPE - C.M.T.R. N-2 Form, Taylor Forge	3-341	Code: JG-2 (c) - 25	802N67160	x		x
				x		x
DISC POST - C.M.T.R. P.T. prior to weld. Weld Record P.T. of Weld.	3-341	N/A.	A41221	x		x
				x		x
				x		x
				x		x
DISC GUIDE - C.M.T.R. Disc Guide Fillet Weld Disc Guide Weld P.T.	5-341 & 6-341	N/A.	73E052	x		x
				x		x
				x		x
PIPE TO BODY WELD M.T. Base Mat'l Body & Pipe Weld Record M.T. Weld Post Weld Heat Treat Radiography Reader Sheets Weld Rod Cart.				x		x
				x		x
				x		x
				x		x
				x		x
				x		x
				x		x
				x		x
FINAL REPORTS Hydrostatic Test Report Final Inspection Report A&M Weld Material C.M.T.R.'s				x		x
				x		x
				x		x

RECEIVED
MAY 30 1975
QCDS

3-12-75

Report of Chemical Analysis and Physical Properties

BoD4 for 2-600

CUSTOMER Atwood & Morrill Co., Inc.

ORDER No. 11M 903F

3-341

FILE No. _____

ADDRESS _____

PATTERN No. 114-52-30268-602

PA# FNP-2-22

DESIGNATION 070

ATTENTION OF _____

SPECIFICATION ASTM A216 L4 WCB

DATE 7-25-74

ATTENTION OF																
HEAT No.	C	Mn	Si	P	S	Cr.	Ni	Mu	Yield P. S. I.	Tensile P. S. I.	Elong. Per Cent.	Red. of Area Per Cent.	Coil Serial #	P.T. Serial #	Shi	
F3185	24	68	27	017	015				26-27-26	44,500	74,500	26.5	46.5	F3185-3	M1505	1
This material conforms to the chemical composition of the material.									20-21-21				Certified Material			
The material is free of defects.									30-21-30				Test Report-Accepted			
The material is free of defects.									24-26-20							
The material is free of defects.									68-70-65							
The material is free of defects.									80-80-70							
Maximum feasible volume Radiography in accordance with Para. 2314.2.1 of the March 1970 Addenda of the Draft ASME Code for Pumps and Valves for Nuclear Power and ASTM E71, E94, E112, E106, and E200 as applicable.																
Acceptance standards to Para. 2314.2.1, E71, E106, E200, Levels 2 and 4 except Category D, E, F, and G type defects are not acceptable.																
100% Magnetic Particle Examination in accordance with Appendix B-3 of the Draft ASME Code for Pumps and Valves for Nuclear Power, March 1970 addenda.																
Acceptance standards to Para 3114.5.2(b)																
Ultrasonic inspection in accordance with Para. 323.2 of the 1970 Winter Addenda of Section III ASME Boiler Code.																
Acceptance standards per MES-SP-55																

RECEIVED
MAY 17 1974
ATWOOD & MORRILL CO. INC.

RECEIVED
MAY 30 1975
OCCDS

MARKS: 20-24-74

7-26-74

APPROVED

BY A. L. Cook

DATE 8/9/74

ATWOOD & MORRILL CO., INC.

John Paul Jones Authorized Inspector
A. I. (P) HSB 11/2/74

QUAKER ALLOY CASTING CO.

BY Tom Landis
METALLURGY

INDEX OF RECORDS

Cust.: Bachtel Corporation

Cost. P.O.# : PNP 2-22

A&M S.O. No. : 12341

Item No. 01

Dwg. No. : 21261-H

Rev. 2

Valve Serial No. : 2-341

ASME Section III Class : 2

Valve Description : 32"-600# W/E, Main Steam Trip Stop Valve

Addenda : ASME Pump & Valve Code March 1970 Addenda

Plant Name : J.M. Farley Unit II

Location : Ashford, Alabama

Record Title	A&M Ident. No.	RT. No.	Heat No.	Perm. Y/N	Rec'd.	In. Pkg.
GENERAL SECTION						
Certified Design Spec.				X		X
Manufacturers Data Report				X		X
Certified as Constructed Dwg.				X		X
Certificate of Compliance				X		X
Deviation Requests & Approvals				X		X
BODY - C.M.T.R. with Charpy Data	2-341	ML329	F3100	X		X
Rad. Shop Sketch & Reader Sheets				X		X
U.T., Test Results				X		X
M.T., Test Results - Casting				X		X
M.T., Test Results - pipe mach. surf.				X		X
P.T., Test Results - seat & seal				X		X
Heat Treat Charts				X		X
Repair Charts & weld records				X		X
DISC - C.M.T.R. with Charpy Data	2-341	N/A	C1087 Slab #6B	X		X
M.T., Test Results				X		X
P.T., Test Results - Hardfacing				X		X
Weld Record - Hardfacing				X		X
Heat Treat Charts				X		X
COVER - C.M.T.R. with Charpy Data	2-341	N/A	C1087-6A Slab #6A	X		X
M.T., Test Results prior to overlay				X		X
U.T., Test Results				X		X
P.T., Test Results - overlay				X		X
Heat Treat Charts				X		X

RECEIVED
APR 18 1979
QCDs

Record Title	A&M Ident. #	RL. No.	Heat No.	Part Name	Rec'd	In. Pkg
LOAD KEY - C.M.T.R. with Charpy Data P.T., Test Results <u>Heat Treat Charts</u>	2-341	N/A	526240	x x x		x x x
STEM - C.M.T.R. P.T., Mach. Condition	2-341	N/A	62687	x x		x x
32" PIPE - C.M.T.R. N-2 Form, Taylor Forge		Code: JG-2 (c) 21	802N67160	x x		x x
DISC POST - C.M.T.R. P.T. prior to weld Weld Record P.T. of Weld	2-341	N/A	A41221	x x x x		x x x x
DISC GUIDE - C.M.T.R. Disc Guide Fillet Weld Disc Guide Weld P.T.	3-341 & 4-341	N/A	73E052	x x x		x x x
PIPE TO BODY WELD M.T. Base Mat'l Body & Pipe Weld Record M.T. Weld Post Weld Heat Treat Radiography Reader Sheets Weld Rod Cart.				x x x x x x x		x x x x x x x
FINAL REPORTS Hydrostatic Test Report Final Inspection Report A&M Weld Material C.M.T.R.'s				x x x		

RECEIVED
APR 8 1975
QCDS

A&M

Auth. Insp.

3-12-75
Cust. Rep.

Report of Chemical Analysis and Physical Properties

8024 - 32" - 60"

CUSTOMER Alwood & Morrill Co., Inc.

ORDER No. AM-9038

FILE No. 5/4

ADDRESS _____

PATTERN No. 16-652-30268-602

DESIGNATION 1

ATTENTION OF _____

SPECIFICATION ASTM A216 NUC

DATE 7-26-74

ATTENTION OF															
CAT No.	C	Mo	Si	P	S	Cr.	Ni	Mo	Yield P. S. I.	Tensile P. S. I.	Elong. Per Cent.	Red. of Area Per Cent.	Catg.	P.T.	
F3100	23	12	40	0.20	0.11				22-26-24	41.5-0	78.000	27.0	52.5	F3103-1	07132
									11-21-20"						
									20-30-30						
									84-81-86						
									63-59-64						
									70-70-80						
Maximum feasible volume Radiography in accordance with Para. 2314.2.1 of the March 1970 Addenda of the Draft ASME Code for Pumps and Valves for Nuclear Power and ASTM E71, E94, E112, E106, and E280 as applicable. Acceptance standards to Para. 2314.2.1, E71, E106, E280, Levels 2 and 4 except Category D, E, F, and G Type defects are not acceptable.										CHEMICAL & PHYSICAL REPORT CHECKED					
100% Magnetic Particle Examination in accordance with Appendix II-3 of the Draft ASME Code for Pumps and Valves for Nuclear Power, March 1970 addenda. Acceptance Standards to Para 3114.5:2(b)										DATE 7/31/74					
Ultrasonic inspection in accordance with Para. 323.2 of the 1970 Winter Addenda of Section III ASME Boiler Code										ALWOOD & MORRILL CO., INC.					
Visual inspection per MSS-SP-55															

RECEIVED
APR 18 1975
O.C.S.

REMARKS: 6-74 J.L.

REVIEWED BY



7-26-74

John Paul Jones

Authorized Inspector

APPROVED

A. L. Cook

DATE 8/9/74

ALWOOD & MORRILL CO., INC.

QUAKER ALLOY CASTING CO

BY M. M. Landis
METALURGIST

Verified A.M. sign off
A.I. (P. H. A. 11/1/74)

INDEX OF RECORDS

Cust.: Bachtel Corporation

Cust. P.O.# : PNP 2-22

A&M S.O., No. : 12341 Item No. 01 Dwg. No. : 21261H Rev. 7

Valve Serial No. : 1-341 ASME Section III Class : 2

Valve Description : 32" - 600# W/E, Main Steam T. p Stop Valve

Addenda : ASME Pump & Valve Code March 1970 Addenda

Plant Name : J.M. Farlay Unit II Location : Asaford, Alabama

Record Title	A&M Ident. No.	RT. No.	Heat No.	Perm. No.	Rec'd.	In. Pkt.
<u>GENERAL SECTION</u>						
Certified Design Spec.				X		X
Manufacturers Data Report				X		X
Certified as Constructed Dwg.				X		X
Certificate of Compliance				X		X
Deviation Requests & Approvals				X		X
BODY - C.M.T.R. with Charpy Data	1-341	M1328	F3137	X		X
Rad. Shoot Sketch & Reader Sheets				X		X
U.T., Test Results				X		X
M.T., Test Results - Casting				X		X
M.T., Test Results - pipe mach. surf.				X		X
P.T., Test Results - seat & seal				X		X
Heat Treat Charts				X		X
Repair Charts & weld records				X		X
DISC - C.M.T.R. with Charpy Data	4-341	N/A	G1087	X		X
M.T., Test Results			slab #			
P.T., Test Results - Hardfacing			6-B.	X		X
Weld Record - Hardfacing				X		X
Heat Treat Charts				X		X
COVER - C.M.T.R. with Charpy Data	1-341	N/A	G1087	X		X
M.T., Test Results prior to overlay			slab #			
U.T., Test Results			6-A.	X		X
P.T., Test Results - overlay				X		X
Heat Treat Charts				X		X

RECEIVED
APR 18 1975
QCDS

Record Title	A&M Ident. #	Rt. No.	Heat No.	Perm. Non	Rec'd	In Plc
LOAD KEY - C.M.T.R. with Charpy Data P.T., Test Results Heat Treat Charts	4-341	N/A	525240	x x x		x x x
STEM - C.M.T.R. P.T., Mach. Condition	1-341	N/A	62687	x x		x x
32" PIPE - C.M.T.R. N+2 Form, Taylor Forge	1-341	Code: JG-2 (c)- 20	802N67160	x x		x x
DISC POST - C.M.T.R. P.T. prior to weld Weld Record P.T. of Weld	4-341	N/A	A41221	x x x x		x x x x
DISC GUIDE - C.M.T.R. Disc Guide Fillet Weld Disc Guide Weld P.T.	7&8-341	N/A	73E052	x x x		x x x
PIPE TO BODY WELD M.T. Base Mat'l Body & Pipe Weld Record M.T. Weld Post Weld Heat Treat Radiography Reader Sheets Weld Rod Cert.				x x x x x x x		x x x x x x x
FINAL REPORTS Hydrostatic Test Report Final Inspection Report A&M Weld Material C.M.T.R.'s				x x x		x x x

RECEIVED
APR 18 1975
OCDS

2-24-75

Whitman

Report of Chemical Analysis and Physical Properties

CUSTOMER Atwood & Morrill Co., Inc.

ORDER No. AM-9038

Body for 600#
S/N 1-341 PT. 081
FILE No. A317-01

ADDRESS _____

PATTERN No. 16652-30268-602

DESIGNATION Q70

ATTENTION OF _____

SPECIFICATION ASTM A216 Gr. WCB

DATE 6-27-74

AT No.	C	Mn	Si	P	S	Cr.	Ni	Mo	V-Notch Plus 30°F	Yield P. S. I.	Tensile P. S. I.	Elong. Per Cent.	Red. of Area Per Cent.	Catg. Serial #	R.T. Serial #	Per Ship
3137	.27	.60	.45	.014	.020				21-25-23	20,500	81,500	28.5	54.8	F3137-4	M1323	1
									Mils Lateral Expansion 18-20-20							
									% Ductile Fracture 30-20-20							
									Charpy Plus 30°F of heat affected zone Foot Pounds 83-86-79							
									Mils Lateral Expansion 60-54-51							
									% Ductile Fracture 70-20-60							
<p>Maximum feasible volume Radiography in accordance with Para. 2314.2.1 of the March 1970 Addenda of the Draft ASME Code for Pumps and Valves for Nuclear Power and ASTM E71, E94, E112, E186, and E280 as applicable. Acceptance standards to Para. 2314.2.1, E71, E186, E280, Levels 2 and 4 except Category D, E, F, and G Type defects are not acceptable.</p> <p>100% Magnetic Particle Examination in accordance with Appendix E-3 of the Draft ASME Code for Pumps and Valves for Nuclear Power, March 1970 addenda. Acceptance Standards to Para 314.5:2(b)</p> <p>Ultrasonic Inspection in accordance with Para. 323.2 of the 1970 Winter Addenda of Section III ASME Boiler Code.</p> <p>Visual Inspection per MSS-SP-55</p>																

by *W. L. H. A.*
DATE 7/29/74
ATWOOD & MORRILL CO. INC.

See Attached
W. L. H. A.

RECEIVED
6-27-74
6-27-74

APPROVED
BY *John Paul Jones*
DATE 7/29/74
ATWOOD & MORRILL CO. INC.

QUAKER ALLOY CASTING CO.
BY *W. M. Landis*
METALLURGIST
at m results checked 8/2/74 J

John Paul Jones - Authorized Inspector

Atwood & Morrill Co.
Salem, Mass.

TEST CERTIFICATE

CONSIGNEE:

MILL ORDER NO.

CUSTOMER P.O.

18651-2

AM-10278

DP 92872 DD

S.O.# 12340-01102
12341-01102

SPECIFICATIONS:

A-516-71 Gr. 70

GRATES - PART 3

DISC

3/41-841 24341
3/42-341 3-241 12341-02
3/43-341 6-341 12

END TEST

O.K.

HOMOGENEITY TEST

CHEMICAL ANALYSIS

MELT NO.	C	Mn	P	S	Cu	Si	Ni	Cr	AlO	V	Ti	Al	B	Grain S
C1087	22	1.06	007	021		22								7-8

PHYSICAL PROPERTIES

MELT NO.	SLAB FIO.	YIELD PSI X100	TENSILE PSI X100	% ELONG. IN 2 "	% R.A.	BHN	Long. IMPACTS V-Notch +30°F.			Fracture Appearance % Shear	DESCRIPTION
C1087	6B	406	777	30			110	110	120	99-99-99	12- 3-3/4" x 28 Dia.
							Lateral Expansion in Inches .086 .092 .095				
Circles and tests norm. 1650°F ±25°F., held 1/2 hr. per inch min. and air cooled.											
Mill inspection by Atwood & Morrill Co.											
<div>APPROVED</div> <div>BY: <u>W. L. Morris</u></div> <div>DATE: <u>3/10/73</u></div> <div>ATWOOD & MORRILL CO. INC.</div> <div>RECEIVED MAR 30 1973 OCD</div> <div>CHEMICAL & PHYSICAL REPORT CHECKED BY: <u>W. L. Morris</u> DATE: <u>1-20-73</u></div> <div>ITEM # <u>01-02</u> DWG. # <u>12340</u> REF. # <u>12341</u></div>											

We hereby certify the above figures are correct as contained in the record of the company.
Authorized Inspector 4/24/73

SUPERVISOR-TESTING

Atwood & Morrill Co.
6 Salem, Mass.

Mill Order No.
18651-1

AN-10278

DP 92872 DD
SHE 12340 - 0124
12341 - 0130

RECIPIENT'S
A-515-71 Gr. 70

Cover

CIRCLES:
SHE 1-241 P
SHE 2-241 P
SHE 3-241 P

Q. K. S. K.

CHEMICAL ANALYSIS

MELT NO.	C	MIN	P	CP	SH	NI	CS	MO	V	FI	AI	B	GR
C1087	22	1.06	007	021	22								7- 700 70 128 300

PHYSICAL PROPERTIES

TEST NO.	DIAS NO.	VALD IN 3" TO	TENSILE PSI 3000	W. E. A.	SHV	LONG. INCHES IV-Notch +30°F.	Fracture Appearance % Shear	DESCRIPTION
C1087	6A	406	772	30	96	76 71 Lateral Expansion in inches .083 .060 .061	80-80-80 12- 5-1/2" x 28-1/2"	

Circles and tests norm. 1650°F. 425°F., held 1/2 hr. per inch min. and air cooled.
Mill inspection by Atwood & Morrill Co.

APPROVED

BY *W. Sullivan*

DATE 2/13/75

ATWOOD & MORRILL CO. INC.

CHEMICAL & PHYSICAL
REPORT CHECKED

BY *W. Sullivan*

DATE 1-24-75

RECEIVED

QCD
MAY 30 1971

ITEM # 01
DWG. #
REF. 12341

W. Sullivan

MAIN STEAM

One spool in each line outside containment up to isolation valve. Spool numbers are:

N11-EBB-3-7A

N11-EBB-3-4A

N11-EBB-3-1A

Fracture toughness data is indicated on copies of the N-2 forms included in this package. The SA-516 material specification requires normalizing for material as heavy as these spools, 2 5/16". Records of normalizing were not included in the documentation package. We assume they were retained by Grinnell, the spool fabricator. Material certification from manufacturer Taylor Forge is included in this package.

LOWEST SERVICE METAL TEMPERATURE

Main Steam-During any operating condition when an accident could result in containment pressurization, the steam lines will be at a minimum temperature greater than 60°F.

During a refueling outage, the temperature of the line may be as low as 40°F; however, under these conditions any accident could not cause containment pressurization or create a pressure loading on the penetrations which would cause or propagate brittle fracture failures.

MAIN STEAM LINES

32" and 34.550 From Steam Gen. 1C to V001C- Grinnell ISO 2-2 & 2-5, D205300 and 301

<u>SPOOLS</u>	<u>REGISTER NO.</u>	<u>HEAT #</u>
N11-EBB-3-7A	JG-2-28A	KIAK
N11-EBB-7B	JG-2-28B	ANVK
N11-EBB-7C	JG-2-28C	ANVL
N11-EBB-1-6	JG-2-6	EFSS & EFWJ
N11-EBB-1-7	JG-2-7	EFWJ & EFZO
N11-EBB-1-8	JG-2-8	EFWJ
N11-EBB-1-9	JG-2-9	EFWJ
N11-EBB-1-10	JG-2-10	EFYY
N11-EBB-1-11	JG-2-11	EFZO & EFSS

32" and 34.550 From Steam Gen. 1B to V001B- Grinnell ISO 2-2 & 2-5, D205300 & 301

<u>SPOOLS</u>	<u>REGISTER NO.</u>	<u>HEAT #</u>
N11-EBB-3-4A	JG-2-22A	KIAK
N11-EBB-3-4B	JG-2-22B	ANVM
N11-EBB-3-4C	JG-2-22C	ANVJ
N11-EBB-1-1	JG-2-1	EFWJ
N11-EBB-1-3	JG-2-3	EFZO & EFYY
N11-EBB-1-4	JG-2-4	EFZO
N11-EBB-1-5	JG-2-5	EFYY

32" and 34.550 From Steam Gen. 1A to V001A- Grinnell ISO 2-3 & 2-4, D205300 & 301

<u>SPOOLS</u>	<u>REGISTER NO.</u>	<u>HEAT #</u>
N11-EBB-1-12	JG-2-12	EFWJ
N11-EBB-1-13	JG-2-13	EFWJ
N11-EBB-1-14	JG-2-14	EFWJ
N11-EBB-1-15	JG-2-15	EGET & EFWJ
N11-EBB-1-16	JG-2-16	EFWJ
N11-EBB-3-1A	JG-2-17A	KIAK
N11-EBB-3-1B	JG-2-17B	ANVH
N11-EBB-3-1C	JG-2-17C	ANVG

5. Seams: 1. H.T. Yes R.T. Full Efficiency 100 % **MAIN STEAM**
 2. H.T. Yes R.T. Full No. of Courses 2 **HEADER**

6. Heads: (a) Material T.S. (b) Material T.S.
 Location Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apes Angle Hemispherical Radius Flat Diameter Side to Press. (Conv. or Conc.)
 (a) _____
 (b) _____
 If removable, bolts used _____ Other fastening _____
 (Material, Spec. No., T.S., Size, Number) (Describe or attach sketch)

7. Jacket Closure: _____
 (Describe as gage and weld, bar, etc. If bar give dimensions, if bolted, describe or sketch)
 Drop Weight _____
 Charpy Impact 20 Avg. ft-lb
 at temp. of +10 °F

8. Design pressure 1085 psi at 600 °F

Items 9 and 10 to be completed for tube sections

9. Tube Sheets: Stationary. Material _____ Dia. _____ Thickness _____ in. Attachment _____
 (Kind & Spec. No.) (Subject to pressure) (Welded, Bolted)
 Floating. Material _____ Dia. _____ Thickness _____ in. Attachment _____
 10. Tubes: Material _____ U.D. _____ in. Thickness _____ inches or gage. Number _____ Type _____
 (St. or U)

Items 11-14 incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

11. Shell: Material _____ T.S. _____ Nominal Thickness _____ in. Corrosion Allowance _____ in. Dia. _____ ft. _____ in. Length _____ ft. _____ in.
 (Kind & Spec. No.) (Min. of Range Specified)

Seams: Long _____ H.T. 1 R.T. _____ Efficiency _____ %
 Girth _____ H.T. 1 R.T. _____ No. of Courses _____
 13. Ends (a) Material _____ T.S. _____ (b) Material _____ T.S. _____
 Location Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apes Angle Hemispherical Radius Flat Diameter Side to Press. (Conv. or Conc.)
 (a) Top, bottom, ends _____
 (b) Channel _____
 If removable, bolts used (a) _____ (b) _____ (c) _____ Other fastening _____
 (Describe or attach sketch)

Drop Weight _____
 Charpy Impact _____ ft-lb
 at temp. of _____ °F

14. Design pressure 1 psi at _____ °F

Items below to be completed for all vessels where applicable.

15. Safety Valve Outlets: Number _____ Size _____ Location _____

16. Nozzles:

Purpose (Inlet, Outlet, Drain)	Number	Dia. or Size	Type	Material	Thickness	Reinforcement Material	How Attached

17. Inspection Manholes, No. _____ Size _____ Location _____
 Openings: Handholes, No. _____ Size _____ Location _____
 Threaded, No. _____ Size _____ Location _____

Supports: Skirt _____ Lugs _____ (Number) _____ Other _____ (Describe) _____ Attached _____ (Where & How)
 (Yes or No) (Number)

If Postweld Heat-Treated.
 List other internal or external pressure with coincident temperature when applicable.

Items 4-6 incl. to be completed for single wall vessels, jackets of jacketed vessels, or shells of heat exchangers.

4. Shell: Material _____ Nominal Thickness 2-11/16 in. Corrosion Allowance 0 in. Dia. 2 ft. 10 1/2 in. Length 29 ft. 1-15/16 in.

5. Seams: Long _____ H.T.¹ _____ Yes _____ R.T. Full _____ Efficiency 100 %

Girth _____ H.T.¹ _____ Yes _____ R.T. Full _____ No. of Courses 3

**MAIN STEAM
HEADER**

6. Heads: (a) Material _____ T.S. _____ (b) Material _____ T.S. _____

Location (Top, bottom, ends)	Thickness	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Press. (Conv. or Conc.)
(a)								
(b)								

If removable, bolts used _____ Other fastening _____

(Material, Spec. No., T.S., Size, Number)

(Describe or attach sketch)

7. Jacket Closure: _____
(Describe as gage and weld, har, etc. If bargive dimensions, if bolted, describe or sketch)

Drop Weight _____
Charpy Impact 20 Avg. _____ ft.-lb.
at temp. of +10 °F

8. Design pressure² 1085 psi at 600 °F

Items 9 and 10 to be completed for tube sections

9. Tube Sheets: Stationary. Material _____ Dia. _____ Thickness _____ in. Attachment _____
(Kind & Spec. No.) (Subject to pressure) (Welded, Bolted)

Floating. Material _____ Dia. _____ Thickness _____ in. Attachment _____

10. Tubes: Material _____ O.D. _____ in. Thickness _____ inches or gage. Number _____ Type _____
(Str. or U)

Items 11-14 incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

11. Shell: Material _____ T.S. _____ Nominal Thickness _____ in. Corrosion Allowance _____ in. Dia. _____ ft. _____ in. Length _____ ft. _____ in.
(Kind & Spec. No.) (Min. or Range Specified)

Seams: Long _____ H.T.¹ _____ R.T. _____ Efficiency _____ %

Girth _____ H.T.¹ _____ R.T. _____ No. of Courses _____

13. Heads: (a) Material _____ T.S. _____ (b) Material _____ T.S. _____

Location	Thickness	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Press. (Conv. or Conc.)
(a) Top, bottom, ends								
(b) Channel								

If removable, bolts used (a) _____ (b) _____ (c) _____ Other fastening _____

(Describe or attach sketch)

Drop Weight _____
Charpy Impact _____ ft.-lb.
at temp. of _____ °F

14. Design pressure² _____ psi at _____ °F

Items below to be completed for all vessels where applicable.

15. Safety Valve Outlets: Number _____ Size _____ Location _____

16. Nozzles:

Purpose (Inlet, Outlet, Drain)	Number	Dia. or Size	Type	Material	Thickness	Reinforcement Material	How Attached

17. Inspection Manholes, No. _____ Size _____ Location _____

Openings: Handholes, No. _____ Size _____ Location _____

Threaded, No. _____ Size _____ Location _____

Supports: Skirt _____ Lugs _____ Legs _____ Other _____ Attached _____
(Yes or No) (Number) (Number) (Describe) (Where & How)

¹ If Postweld Heat-Treated.

² List other internal or external pressure with coincident temperature when applicable.

4. Shell: Material SA-516 T.S. 70000 Nominal Thickness 2-11/16 in. Allowance 0 in. Dia. 2 ft. 10 1/2 in. Length 14 ft. 4 3/4 in.
(Kind & Spec. No.) (Min. of Range Specified)

5. Seams: Long Dbl Butt H.T.¹ Yes R.T. Full Efficiency 100

Girth Dbl Butt H.T.¹ Yes R.T. Full No. of Courses 2

Heads: (a) Material T.S. (b) Material T.S.

Location (Top, bottom, ends)	Thickness	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Press. (Conv. or Conc.)
---------------------------------	-----------	-----------------	-------------------	---------------------	-----------------------	-------------------------	------------------	------------------------------------

(a) _____

(b) _____

If removable, bolts used _____ Other fastening _____
(Material, Spec. No., T.S., Size, Number) (Describe or attach sketch)

7. Jacket Closure: _____
(Describe as ogee and weld, lap, etc. If large give dimensions, if bolted, describe or sketch)

Drop Weight _____
Charpy Impact 20 Avg. ft-lb
at temp. of +10 °F

8. Design pressure² 1085 psi at 600 °F

Items 9 and 10 to be completed for tube sections

9. Tube Sheets: Stationary. Material _____ Dia. _____ Thickness _____ in. Attachment _____
(Kind & Spec. No.) (Subject to pressure) (Welded, Bolted)

Floating. Material _____ Dia. _____ Thickness _____ in. Attachment _____

10. Tubes: Material _____ O.D. _____ in. Thickness _____ inches or gage. Number _____ Type _____
(Str. or U)

Items 11-14 incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

11. Shell: Material _____ T.S. _____ Nominal Thickness _____ in. Allowance _____ in. Dia. _____ ft. _____ in. Length _____ ft. _____ in.
(Kind & Spec. No.) (Min. of Range Specified)

Seams: Long _____ H.T.¹ _____ R.T. _____ Efficiency _____ %

Girth _____ H.T.¹ _____ R.T. _____ No. of Courses _____

13. Heads (a) Material _____ T.S. _____ (b) Material _____ T.S. _____

Location	Thickness	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Press. (Conv. or Conc.)
----------	-----------	-----------------	-------------------	---------------------	-----------------------	-------------------------	------------------	------------------------------------

(a) Top, bottom, ends _____

(b) Channel _____

If removable, bolts used (a) _____ (b) _____ (c) _____ Other fastening _____
(Describe or attach sketch)

Drop Weight _____
Charpy Impact _____ ft-lb
at temp. of _____ °F

14. Design pressure² _____ psi at _____ °F

Items below to be completed for all vessels where applicable.

15. Safety Valve Outlets: Number _____ Size _____ Location _____

16. Nozzles:

Purpose (Inlet, Outlet, Drain)	Number	Dia. or Size	Type	Material	Thickness	Reinforcement Material	How Attached
-----------------------------------	--------	--------------	------	----------	-----------	---------------------------	--------------

17. Inspection Manholes, No. _____ Size _____ Location _____

Openings: Handholes, No. _____ Size _____ Location _____

Threaded, No. _____ Size _____ Location _____

Supports: Skirt _____ Lugs _____ Legs _____ Other _____ Attached _____
(Yes or No) (Number) (Number) (Describe) (Where & How)

¹ If Postweld Heat-Treated.

² List other internal or external pressure with coincident temperature when applicable.

STOMER **G. ANNELL INDUSTRIAL PIPING, INC.**
P.O. BOX 566
KERNERSVILLE, N.C. 27204

G+W Energy Products Group
GULF-WESTERN MANUFACTURING COMPANY

Paola, Kansas 66071
SPECIFICATION NO. SA-155
HEAT TREATMENT Stress Relief

STOMER ORDER NO. KER 7992-II OUR ORDER NO. 891138

**MAIN STEAM
HEADER**

WORKING LIST NO. 18982

CHEMISTRY AND PHYSICALS ATTACHED

HEAT UNSER	PHYSICAL PROPERTIES				CHEMICAL ANALYSIS							DESCRIPTION
	YIELD POINT OR YIELD STRENGTH AT <u>TEMP.</u> °F PSI	TENSILE STRENGTH PSI	ELONG. IN <u>IN.</u> %	RED. OF AREA %	C	MN	P	SI	MO	CR	NI	
												2-5/16" Min. Wall TAYLOR FORGE ITEM NO. & PC. 1A
												9' 8" lg. 2-11/16" P1
JIZO	FROM PLATE B-1											9' 8" lg. 2-11/16" P1
JHWO	FROM PLATE B-2											
												2-5/16" Min. Wall TAYLOR FORGE ITEM NO. & PC. 1C
												7' 4" lg. (2 Pcs) 2-11/16" P1.
CLAK	FROM PLATE B-6											

Handwritten: JF
P. 485

REMARKS:

Full Radiography OK Hydro tested at 4385 OK

FORM 1233-1 SUBSCRIBED AND SWORN TO BEFORE ME

NOTARY PUBLIC
MARGARET DONE
Miami County, Ks.
My Comm. Exp. Apr. 16, 1978

Handwritten: Oct 1974
Margaret Done
NOTARY PUBLIC

Handwritten: H. J. [Signature]
Quality Control

QUALITY CONTROL

CUSTOMER

ITT Grinnell Industrial Piping



Taylor Forge Division

GULF -

INDUSTRIAL PRODUCTS COMPANY

P.O. Box 485
Chicago, Illinois 60695

SPECIFICATION NO. See 4

HEAT TREATMENT

CUSTOMER ORDER NO. KER 7992-H

OUR ORDER NO. 191138

PACKING LIST NO. 295903-84-05
296037-33

Sheet 1 of 2

Raw Material: ASME SA51 Gr. 70

DESCRIPTION	CHARGE NO.	HEAT SYMBOL	MILL HEAT NO.	PHYSICAL PROPERTIES				CHEMICAL ANALYSIS										
				YIELD STRENGTH PSI	TENSILE STRENGTH PSI	ELONG. IN 2" %	RED OF AREA %	C	MN	P	S	SI	MO	CR	NI	CU	V	
TF Item				ASME SA15501.1 Gr. KCF-70, Section III Class 2, 1971, Inc'l Summer 1971 Addenda. - Heat Treatment Per TF HT-191138-601 Dtd 1-21-70														
16 - 32"OD x 1.033"Min Wall Pipe	601	EFYY	Y88574	47000	80400	27.0 8"		.24	1.00	.013	.019	.24						
Hydrostatic Test: 1975 PSI		EFYY	W92777	42300	74300	22.0		.25	.95	.014	.025	.19						
Total: 301'3 5/8" Code JG EBL 02-2		EFSS	W92777	47600	74000	25.0		.20	.98	.005	.020	.26						
Parent Lgth- Pc.		EFZO	W93815	44600	74000	25.0		.26	.99	.011	.03	.21						
X-Ray No.	No.	Heat		Pipe Qualification Tests Per ASME SA15501.1 Transverse Weld Test														
191138-501	2	EFYY		Check Analysis - Parent Metal														
"	3	"		# 76940														
"	4	EFWJ	EFYY	# 73310														
"	5	"	EFWJ	# Two side bend tests of weld from each specimen found to be satisfactory.														
"	6	"	EFZO	REPORT OF WELDING MATERIALS														
"	9	"	EFSS	TF Tests Per AB 2431.1														
"	10	"		Bare Electrodes - Spec. SFA 5.17 E1-14 & F72 E1-14 (Wire)														
"	11	"	Flux															
"	13	"	No.															
"	14	EFZO	1031	662836	74290	25.0		.22	1.10	.014	.018	.32	.01	.01	.02	.08	.01	
"	15	"	1031	036012	71300	37.9		.14	1.32	.015	.021	.44	.01	.04	.01	.03	.01	
"	16	"	1031	036018	71750	28.0		.21	1.14	.014	.017	.017	.01	.01	.02	.08	.01	
"	17	"	"	Covered Electrode - Spec. SFA 5.5 - Class E-9018-D1 (Rod)														
"	18	"	"	2K13B-20 77330 34.8														
"	19	"	"	2K13B-24 91220 27.0														
"	20	"	"	2K11B-26 88700 31.0														

REMARKS:

DEC 17

FEB 17

QC

QC

OK

T.W.



RECEIVED
FEB 17 1975
OCCS

Parts covered by report have been hydrostatic tested to the pressure indicated and were found to be satisfactory.
Longitudinal welds have been 100% radiographed for TF Spec. 41.122 Dtd 7-18-74 (Single Film) and were found to be satisfactory.
SUBSCRIBED AND SWORN TO BEFORE ME

THIS 11th DAY OF Nov. 19 74

Frank Schiele
NOTARY PUBLIC

DOCUMENTATION REVIEWED

Date 12-8-74

BECHTEL CORPORATION

By [Signature]

John Lins
QUALITY CONTROL

CUSTO

ITT Grinnell Industrial Piping



Taylor Forge Division

GULF INDUSTRIAL PRODUCTS COMPANY

Chicago, Illinois 60693

SPECIFICATION NO. See

HEAT TREATMENT

CUSTOMER ORDER NO. KER 7992-H

OUR ORDER NO. 191138

PACKING LIST NO. 295983-84-85

Sheet 1 of 2

296037-38

Raw Material: ASME SA 155 Gr. 70

DESCRIPTION	CHARGE NO.	HEAT SYMBOL	MILL HEAT NO.	PHYSICAL PROPERTIES				CHEMICAL ANALYSIS											
				YIELD STRENGTH PSI	TENSILE STRENGTH PSI	ELONG. IN. 2"	RED OF AREA %	C	MN	P	S	SI	MO	Cr	NI	CU			
TF Item				ASME SA155C1.1 Gr. KCF-70, Section III, Class 2, 1971, Inc'l Summer 1971 Addenda. - Heat Treatment Per TFWT-191138-601 Dtd 1-24-70															
10 - 32"OD x 1.033"Min Wall Pipe	601	EFYY	Y88574	47000	80400	27.0		.24	1.00	.013	.019	.24							
Hydrostatic Test: 1975 PSI		EFWJ	W92777	42300	74300	22.0		.25	.95	.014	.025	.19							
Total: 301'3 5/8" Code JG EBB 02-2		EFSS	W67160	47600	74000	25.0		.20	.98	.005	.020	.26							
Parent Lgth- Pc.		EFZO	W93815	44600	74000	25.0		.26	.99	.011	.03	.21							
X-Ray No.	No.	Length	Heat	Pipe Qualification Tests Per ASME SA155															
191138-601	2	20'0 1/8"	EFYY	Transverse Weld Test Check Analysis - Parent Metal															
"	3	20'0 1/8"	"	# 76940				.26	.96	.017	.021	.25							
"	4	20'1 1/2"	EFWJ					.25	1.00	.013	.023	.20							
"	5	19'6 3/8"	"					.25	.98	.015	.020	.18							
"	6	20'0 3/4"	"					.25	1.05	.010	.018	.24							
"	9	19'11 1/4"	"	# 73310															
"	10	20'2"	"	# Two side bend tests of weld from each specimen found to be satisfactory.															
"	11	20'0 1/4"	"	REPORT OF WELDING MATERIALS															
"	13	20'0 7/8"	"	TF Tests Per HB 24B1.1															
"	14	20'0 3/8"	EFZO	Bare Electrodes - Spec. SFA 5.17 E61-14 & F72 E61-14 (Wire)															
"	"	20'0"	"	1031	662836	74290	23.0	.22	1.10	.014	.018	.32	.01	.01	.02	.08			
"	"	19'10 3/8"	"	1031	036012	71300	37.9	.14	1.32	.015	.021	.44	.01	.04	.01	.08			
REMARKS:	"	20'1 1/2"	EFWJ	1031	036018	71750	28.0	.21	1.14	.014	.017	.017	.01	.01	.02	.08			
"	8	20'3"	"	Covered Electrode - Spec. SFA 5.5 - Class E-9018-D1 (Rod)															
"	19	21'11 5/8"	EFYY	2K15D-20	77050	34.8		.05	1.43	.010	.015	.47	.31	.03	.01	.03			
"	18	21'1 1/2"	EFSS	2K13B-24	91220	27.0		.037	1.41	.008	.013	.28	.28	.02	.015	.02			
"	"	"	"	2K11D-26	88700	31.0		.038	1.62	.009	.011	.39	.31	.01	.01	.02			

OK

GW

T.W.

QC

FEB 17

EFWJ

Parts covered by report have been hydrostatic tested to the pressure indicated and were found to be satisfactory.
Longitudinal welds have been 100% radiographed per TF Spec. 41.122 Dtd 7-18-74 (Single Film) and were found to be satisfactory.
SUBSCRIBED AND SWORN TO BEFORE ME

DOCUMENTATION REVIEWED

satisfactor

THIS 11th DAY OF Nov. 19 74

Date 12-4-74
BECHTEL CORPORATION

Frank A. Schie
NOTARY PUBLIC

John L. Linn
QUALITY CONTROL



CUSTO

ITT Grinnell Industrial Piping



Taylor Forge Division

GULF INDUSTRIAL PRODUCTS COMPANY

P.O. Box 403
Chicago, Illinois 60601

SPECIFICATION NO. See A.

CUSTOMER ORDER NO. KER 7992-H

OUR ORDER NO. 191138

PACKING LIST NO. 295983-84-85
296037-33

Sheet 1 of 2

HEAT TREATMENT

Raw Material: ASME SA15501.1

DESCRIPTION	CHARGE NO.	HEAT SYMBOL	MILL HEAT NO.	PHYSICAL PROPERTIES				CHEMICAL ANALYSIS											
				YIELD STRENGTH	TENSILE STRENGTH	ELONG.	RED OF AREA	C	MN	P	S	SI	MO	CR	NI	CU	V		
				PSI	PSI	IN 2"	%	%											
TF Item				ASME SA15501.1 Gr. KCF-70, Section III Class 2, 1971, Inc'l Summer 1971 Addenda. - Heat Treatment Per TF HT-191138-601 Dtd 1-21-70															
10 - 32"OD x 1.033" Min Wall Pipe	601	EFYY	Y88574	47000	80400	27.0		.24	1.00	.013	.019	.24							
Hydrostatic Test: 1975 PSI		EFY4				8"													
Total: 301'3 5/8" Code JG EBB 02-2		EFMJ	W92777	42300	74300	22.0		.25	.95	.014	.025	.19							
Parent Lgth- Pc.		EFSS	W92777	47600	74000	25.0		.20	.98	.005	.020	.26							
X-Ray No.		EFZO	W93815	44600	74000	25.0		.26	.99	.011	.03	.21							
191138-601	2	EFYY		Pipe Qualification Tests Per ASME SA155				Check Analysis - Parent Metal											
"	3	"	"	Transverse Weld Test				.26	.96	.017	.021	.25							
"	4	EFMJ	EFY4	# 76940				.25	1.00	.018	.023	.20							
"	5	"	EFMJ	# 73310				.25	.98	.015	.020	.18							
"	6	"	EFZO	# 73310				.25	1.05	.010	.018	.24							
"	9	"	EFSS	# Two side bend tests of weld from each specimen found to be satisfactory.															
"	10	"	"	REPORT OF WELDING MATERIALS															
"	11	"	"	TF Tests Per MB 24B1.1															
"	13	"	Flux	Bare Electrodes - Spec. SFA 5.17 E1-14 & F72 E1-14 (Wire)															
"	14	EFZO	No.	SFA 5.17 E1-14 & F72 E1-14 (Wire)															
"	15	"	1031	662836	74290	23.0		.22	1.10	.014	.018	.32	.01	.01	.02	.08	.0		
"	16	"	1031	036012	71300	37.2		.14	1.32	.014	.021	.44	.01	.04	.01	.08	.0		
"	17	"	"	036018	71750	28.0		.21	1.14	.014	.017	.017	.01	.01	.02	.08	.0		
REMARKS:	18	EFMJ	1031	Covered Electrode - Spec. SFA 5.5 - Class E-9018-D1 (Rod)															
"	8	"	"	2K5B-20	77350	34.8		.05	1.43	.010	.015	.47	.31	.03	.01	.03	.0		
"	19	EFYY	"	2K43B-24	91220	27.0		.037	1.41	.008	.013	.28	.28	.02	.015	.02	.0		
"	18	EFSS	"	2K41E-26	88700	31.0		.033	1.62	.009	.011	.39	.31	.01	.01	.02	.0		



Parts covered by this report have been hydrostatic tested to the pressure indicated and were found to be satisfactory.

100% radiographed per TF Spec. 11.122 Dtd 7-18-74 (Single Film) and were found to be satisfactory

SUBSCRIBED AND SWORN TO BEFORE ME

DOCUMENTATION REVIEWED

THIS 11th DAY OF Nov. 19 74

Frank A. Schiele
NOTARY PUBLIC

Date 12-4-74
BECHTEL CORPORATION

John Sims
QUALITY CONTROL

My Commission Expires Dec. 18, 1975

ITT Grinnell Industrial Piping

GW

Taylor-Frazer Division

GULF + 4

INDUSTRIAL PRODUCTS COMPANY

P.O. Box 485
Chicago, Illinois 60620

SPECIFICATION NO

ASTM A. C1. 1

Trade A - 70

HEAT TREATMENT

Normalized & Hot Re-
rolled

CUSTOMER ORDER NO. KER 7992-H

OUR ORDER NO. 151138

Sheet 2 of 2

PACKING LIST NO. 295983-84-85

Material: ASTM A516 Gr. 70

DESCRIPTION	CHARGE NO.	HEAT SYMBOL	MILL HEAT NO.	PHYSICAL PROPERTIES				CHEMICAL ANALYSIS									
				YIELD STRENGTH PSI	TENSILE STRENGTH PSI	ELONG. IN 8" %	RED OF AREA %	C	MN	P	S	SI	MO	CR	NI		
1 - 36"OD x 1.154"Min Wall Pipe Hydrostatic Test: 1850 PSI Total: 20'0"	604	EFZO	W93815	42600	73800	21.0		.26	.99	.011	.03	.21					
		EFZO		Pipe Qualification Tests Per ASTM A155				Check Analysis - Parent Metal									
		"	"	74950				.28	.98	.015	.021	.21					
Parent Lgth- X-Ray No. Heat Length 191183-604A-3 EFZO 20'0"				Two side bend tests of weld found to be satisfactory.													
<div>DOCUMENTATION REVIEWED Date 12-4-74 TECHNICAL VERIFICATION By J. A. Smith</div> <div>QA QI QF GT T. W.</div>																	

REMARKS: Part covered by this report has been hydrostatic tested to the pressure indicated and was found to be satisfactory. Longitudinal weld has been 100% radiographed per TF 41.10 Dtd 11/16/70 and was found to be satisfactory.

SUBSCRIBED AND SWORN TO BEFORE ME

11th DAY OF Nov. 19 74

Frank W. Schell
NOTARY PUBLIC

Mr. Geraldson Expires Dec. 18, 1975

DOCUMENTATION REVIEWED
Date 12-4-74
TECHNICAL INFORMATION
By T. S. Jones



RECEIVED
FEB 17 1975
QCDs

7 FEB 17 1975

7

John Sims

QUALITY CONTROL

CUSTOMER

ITT Grinnell Industrial Piping



Taylor Forge Division

GULF INDUSTRIAL PRODUCTS COMPANY

P.O. Box 485
Chicago, Illinois 60679

SPECIFICATION NO. Sec L

HEAT TREATMENT

CUSTOMER ORDER NO. KER 7992-H

OUR ORDER NO. 191138

PACKING LIST NO. 295983-84-85

Sheet 1 of 2

296037-38

Raw Material: ASME SA506 Gr. 70

DESCRIPTION	CHARGE NO.	HEAT SYMBOL	MILL HEAT NO.	PHYSICAL PROPERTIES				CHEMICAL ANALYSIS									
				YIELD STRENGTH PSI	TENSILE STRENGTH PSI	ELONG. IN. 2" %	RED OF AREA %	C	MN	P	S	SI	MO	CR	NI	CU	V
16 - 32"OD x 1.033" Min Wall Pipe Hydrostatic Test: 1975 PSI Total: 301'3 5/8" Code JG EBB 02-2 Parent Lgth- Pc. X-Ray No. No. Length	601	EFYY	Y88574	47000	80400	27.0		.24	1.00	.013	.019	.24					
		EFMJ	W92777	42300	74300	22.0		.25	.95	.014	.025	.19					
		EFSS	W92777	47600	74000	25.0		.20	.98	.005	.020	.26					
		EFZO	W93815	44600	74000	25.0		.26	.99	.011	.03	.21					
191138-601	2	20'0 1/8"	EFYY	Pipe Qualification Tests Per ASME SA155 Transverse Weld Test				Check Analysis - Parent Metal									
"	3	20'0 1/8"	"														
"	4	20'1 1/2"	EFWJ	# 76940				.26	.96	.017	.021	.25					
"	5	19'6 3/8"	"					.25	1.00	.013	.023	.20					
"	6	20'0 3/4"	"					.25	.98	.015	.020	.18					
"	9	19'11 1/4"	"					.25	1.05	.010	.018	.24					
"	10	20'2"	"	# Two side bend tests of weld from each specimen found to be satisfactory.													
"	11	20'0 1/4"	"	REPORT OF WELDING MATERIALS													
"	13	20'0 7/8"	"	TF Tests Per HB 2431.1													
"	14	20'0 3/8"	EFZO	Bare Electrodes - Spec. SFA 5.17 E1-14 & F72 E1-14 (Wire)													
"	"	20'0"	1031	662836	74290	23.0		.22	1.10	.014	.018	.32	.01	.01	.02	.03	
"	"	19'10 3/8"	1031	036012	71300	37.9		.14	1.32	.015	.021	.44	.01	.04	.01	.08	
REMARKS:	1	20'1 1/2"	EFMJ	1031	036018	71750	28.0	.21	1.14	.014	.017	.017	.01	.01	.02	.08	
"	8	20'3"	"	Covered Electrode - Spec. SFA 5.5 - Class E-9018-D1 (Rod)													
"	19	21'11 5/8"	EFYY	245B-20	77330	34.8		.05	1.43	.010	.015	.47	.31	.03	.01	.03	
"	18	21'1 1/2"	EFSS	2443B-24	91220	27.0		.037	1.41	.008	.013	.28	.28	.02	.015	.02	
"	"	"	"	2441B-26	88700	31.0		.038	1.62	.009	.011	.39	.31	.01	.01	.02	



RECEIVED
FEB 17 1974
O.C.D.S.

Parts covered by report have been hydrostatic tested to the pressure indicated and were found to be satisfactory.

Longitudinal welds have been 100% radiographed per TF Spec. 41.122 Dtd 7-18-74 (Single Film) and were found to be satisfactory.

SUBSCRIBED AND SWORN TO BEFORE ME

DOCUMENTATION REVIEWED

satisfactory

THIS 11th DAY OF Nov. 19 74

Date 12-4-74

BECHTEL CORPORATION

By [Signature]

John Lind

QUALITY CONTROL

Frank A. Schiele
NOTARY PUBLIC

CUSTOM IIT Grinnell Industrial Piping

Taylor Age Division
GULF + WESTERN INDUSTRIAL PRODUCTS COMPANY

Chicago, Illinois 60600

SPECIFICATION NO. ASTM A252 Cl. 1
Grade X-70
HEAT TREATMENT Normalized & Hot Rolled.

CUSTOMER ORDER NO. KTR 7992-H

OUR ORDER NO. 191138

PACKING LIST NO. 295647-48

Raw Material: ASTM A516 Gr. 70

DESCRIPTION	CHARGE NO. Item	HEAT SYMBOL	MILL HEAT NO.	PHYSICAL PROPERTIES				CHEMICAL ANALYSIS							
				YIELD STRENGTH PSI	TENSILE STRENGTH PSI	ELONG. IN 8"	RED OF AREA %	C	MN	P	S	SI	MO	CR	NI
1 - 24"OD x 1.000"Min Wall Pipe Hydrostatic Test: 2375 PSI Total: 20'0" Code JG EBD 18-54 Parent Lgth- X-Ray No. • Pc. No. Length 191138-602-1 1 20'0"	602	EFWI	T83079	46200	79200	20.0		.26	1.03	.012	.024	.23			
				Pipe Qualification Tests Per ASTM A155				Check Analysis-Parent Metal							
				Transverse Weld Test											
					78600			.26	1.03	.010	.020	.21			
				Two side bend tests of weld found to be satisfactory.											
4 - 36"OD x 1.154"Min Wall Pipe Hydrostatic Test: 1850 PSI Total: 65'11 13/16" Code JG EBD 02-9 Parent Lgth- X-Ray No. Heat Length 191138-604A-1 EFZO 20'0" " -604A-2 EFYA 20'0" " -604A-3 EFZO 20'0" " -604B-1 EFWI 6'11 13/16"	604	EFZO EFYA EFWI	Y93915 D82407 Y88334	42600 42300 45200	73800 74400 75800	23.0 26.0 26.0		.26 .27 .27	.99 .95 .99	.011 .011 .010	.03 .016 .027	.21 .25 .23			
				Pipe Qualification Tests Per ASTM A155				Check Analysis-Parent Metal							
				Transverse Weld Test											
					74950			.28	.98	.015	.021	.21			
				Two side bend tests of weld found to be satisfactory.											

REMARKS: Parts covered by this report have been hydrostatic tested to the pressure indicated and were found to be satisfactory. Longitudinal and seams have been 100% radiographed per TF 41.10 Ltd 11/16/70 and were found to be satisfactory.

RECEIVED
OCT 17 1975
QCDS

SUBSCRIBED AND SWORN TO BEFORE ME
THIS 19th DAY OF Oct. 1974

Francis A. Schine
NOTARY PUBLIC

My Commission Expires Dec. 18, 1975

DOCUMENTATION REVIEWED

Date 10/28/79

BY

John Smith
QUALITY CONTROL

CUSTOMER ITT Grinnell Industrial Piping



Taylor Forge Division

GULF + 1

INDUSTRIAL PRODUCTS COMPANY

P.O. Box 410
Chicago, Illinois 60600

ASME 95 Cl. 1

SPECIFICATION NO.

Gr. 1-70, Sect. I

HEAT TREATMENT

Class 2, 1971, Incl

Summer 1971 Addenda

Heat treatment per TP Spec. 191123-501

191123-501 1-11-71

CUSTOMER ORDER NO. KER 7992-II

OUR ORDER NO. 191139

PACKING LIST NO. 296626-27

Raw Material: ASME SA516 Gr. 70

DESCRIPTION	CHARGE NO. TT Item	HEAT SYMBOL	MILL HEAT NO.	PHYSICAL PROPERTIES				CHEMICAL ANALYSIS									
				YIELD STRENGTH PSI	TENSILE STRENGTH PSI	ELONG. %	RED OF AREA %	C	MN	P	S	SI	MO	CR	NI	CU	V
- 32"OD x 1.053" Min Wall Pipe Hydrostatic Test: 1975 PSI Total: 20'1 3/8"	601	EGET	E88756	51600	82600	25.0		.23	1.04	.013	.017	.24					
		EGET		Pipe Qualification Tests Per ASME SA155				Check Analysis - Parent Metal									
		(EFSS)		73310													
Parent Lgth- Pc. X-Ray No. No. 191136-501 17		EGET	E88756					.23	.99	.014	.015	.33					
				1/4" side Bend tests of weld found to be satisfactory per SA155.													
				INSPECTION OF WELDING MATERIALS													
				TP Tests Per HB 2431.1													
		Flux No.	Dare Electrodes - Spec. SFA 5.17 E6-14 & F72 E6-14 (Wire)														
		1031	G62835	74250	78000	28.0		.22	1.10	.014	.018	.32	.01	.01	.02	.09	.0
			Covered Electrode - Spec. SFA 5.5 - Class E-9018-D1 (Rod)														
			2K5E-20	77800	74800	24.8		.05	1.43	.010	.015	.47	.31	.03	.01	.03	.0

REMARKS: Part covered by this report has been hydrostatic tested to the pressure indicated and was found to be satisfactory. Longitudinal weld seam has been 100% radiographed per TP Spec. 41.122 Std 7-18-74 and was found to be satisfactory. (Incl. film)

DOCUMENTATION REVIEWED

Date 11/14/75

BECHTEL CORPORATION

By [Signature]

SUBSCRIBED AND SWORN TO BEFORE ME

THIS 16th DAY OF Dec. 19 71

[Signature]
NOTARY PUBLIC

My Commission Expires Dec. 18, 1975



[Signature]
QUALITY CONTROL

RECEIVED
FEB 17 1975
QCDS

ITT GRINNE CORPORATION
WELDING PRODUCTS DIVISION
PRINCETON, KY.

OUR
ORDER NO. 0012 C

BRANCH
ORDER NO. List 1150-F

CUSTOMER'S
ORDER NO.

DATE June 21, 1975

DESCRIPTION OF FITTING	PHYSICAL PROPERTIES FITTING MATERIAL				CHEMICAL ANALYSIS								HEAT CODE OR HEAT NO.	FITTING IDENT. NO.
	HEAT TREAT MENT	YIELD POINT P.S.I.	TENSILE STRENGTH P.S.I.	ELONG IN 2" %	C	MN	P	S	SI					
ASME SA-234 WPC														
12" OD x 1.033" TH 90° LR ELB	F	49900	86100	*23.4	.27	.87	.018	.015	.37		JG-02-3-1	ANCK	A-106.6	
		FULL SIZE, CHARPY V-NOTCH, PLUS 10°F. LONGITUDINAL BAR												
		% SHEAR - 40, 45, 25; AVERAGE 36.7												
		FT. LBS. - 34, 36, 35; AVERAGE 35.0												
		LATERAL EXPANSION - .027, .028, .028; AVG. .028												
*Standard round test specimen used for tensile properties														
The above fitting was manufactured and tested in strict compliance with ASME, Section III, Class 2.														
We certify that the fittings listed hereon comply with the requirements of ASME Specification SA 234. They were produced in accordance with the Materials Manufacturers Quality System Program, accepted by the American Society of Mechanical Engineers as evidenced by the issuance of Quality Systems Certificate (Materials) Number N-834.														
The fittings represented by this Metallurgical Report will meet the requirements as to hardenability.														

The findings reported by this Metallurgical Report will meet the following requirements as to hardness. Direct Hardness Number, Max. 107"

HEAT TREATMENT • LEGEND • A = NORMALIZED

B = NORMALIZED AND TEMPERED

C = NORMALIZED D = STRESS RELIEVED

K = HEAT TREATED PER SPECIFICATION ON ORDER F : HOT FORMED BETWEEN 1150 AND 1800°F AND COOLED IN STILL AIR

SUBSCRIBED AND SWORN TO BEFORE ME

THIS _____ DAY OF _____ 19____

I HEREBY CERTIFY THIS TO BE A TRUE AND CORRECT REPORT ACCORDING TO RECORDS IN THE POSSESSION OF THIS CORPORATION.

NOTARY PUBLIC

Robert D. Innes

MILL TEST CERTIFICATE

SOLD TO Grinnell Corporation
Kernersville, North Carolina
 SHIP TO Same for Alabama Power

ITT GRINNEL CORPORATION
 WELDING PRODUCTS DIVISION
 PRINCETON, KY.

Kernersville

DATE June 21, 1975

OUR ORDER NO. 0012 C
 BRANCH ORDER NO. List 1159-F
 CUSTOMER'S ORDER NO. _____

DESCRIPTION OF FITTING	PHYSICAL PROPERTIES FITTING MATERIAL				CHEMICAL ANALYSIS								HEAT CODE OR HEAT NO.	SPECIFICATION - FITTING MATERIAL
	HEAT TREAT- MENT	YIELD POINT P.S.I.	TENSILE STRENGTH P.S.I.	ELONG IN 2" %	C	MN	P	S	SI					
ASME SA-234 WPC														A-106.2
32" OD x 1.033" THK 90° IR		45900	84500	*27.3	.27	.95	.012	.012	.35		JG-02-3-1	ANVJ		
FULL SIZE, CHARPY V-NOTCH, PLUS 10°F. LONGITUDINAL BAR														
FT. LBS. - 37, 35, 35; Average 35.7														
% SHEAR - 45, 40, 40; Average 41.7														
LATERAL EXPANSION - .029, .028, .028; Avg. .028														
*Standard round test specimen used for tensile properties The above fitting was manufactured and tested in strict compliance with ASME, Section III, Class 2. We certify that the fittings listed hereon comply with the requirements of ASME Specification SA 234. They were produced in accordance with the Materials Manufacturers Quality System Program, accepted by the American Society of Mechanical Engineers as evidenced by the issuance of Quality Systems Certificate (Materials) Number N-334.														
The fitting represented by this Metallurgical Report will meet the following as to hardness, Brinell Hardness Number, Max. 147H.														

HEAT TREATMENT - LEGEND - A = NORMALIZED

B = NORMALIZED AND TEMPERED

C = NORMALIZED QUENCHED, & TEMPERED

D = STRESS RELIEVED

E = HEAT TREATED PER SPECIFICATION ON ORDER F = HOT FORMED BETWEEN 1150 AND 1800°F AND COOLED IN STILL AIR

SUBSCRIBED AND SWORN TO BEFORE ME

THIS _____ DAY OF _____ 19____

I HEREBY CERTIFY THIS TO BE A TRUE AND CORRECT REPORT ACCORDING
 TO RECORDS IN THE POSSESSION OF THIS CORPORATION.

Robert D. [Signature]

SOLD TO: ITT Grinnell Corporation
Kernersville, North Carolina

SHIP TO: Same for Alabama Power

ITT GRINDING CORPORATION
WELDING PRODUCTS DIVISION
PRINCETON, KY.

OUR ORDER NO. 001 (V)
BRANCH ORDER NO. List 1152-F
CUSTOMER'S ORDER NO.

[illegible]

HEAT TREATMENT . LEGEND . A = NORMALIZED B = NORMALIZED AND TEMPERED C = NORMALIZED, QUENCHED, & TEMPERED D : STRESS RELIEVED

E = HEAT TREATED PER SPECIFICATION ON ORDER F : HOT FORMED BETWEEN 1150 AND 1800°F AND COOLED IN STILL AIR

SUBSCRIBED AND SWORN TO BEFORE ME

THIS _____ DAY OF _____ 19____

I HEREBY CERTIFY THIS TO BE A TRUE AND CORRECT REPORT ACCORDING TO RECORDS IN THE POSSESSION OF THIS CORPORATION.

NOTARY PUBLIC

Robert D. Jones

MILL TEST CERTIFICATE

SOLD TO Grinnell Corporation
Kernersville, North Carolina
 SHIP TO Same for Alabama Power

ITT GRINNELL CORPORATION
 WELDING PRODUCTS DIVISION
 PRINCETON, KY.

Kernersville

DATE July 14, 1975

OUR ORDER NO. 0012

BRANCH ORDER NO. List 1150-F

CUSTOMER'S ORDER NO.

DESCRIPTION OF FITTING	PHYSICAL PROPERTIES FITTING MATERIAL				CHEMICAL ANALYSIS								HEAT CODE OR HEAT NO.	SPECIFICATION - FITTING MATERIAL
	HEAT TREATMENT	YIELD POINT P.S.I.	TENSILE STRENGTH P.S.I.	ELONG. IN 1" %	C	MN	P	S	SI					
ASME SA-234 WPC														A-106
32"ODx1.033" MW 90° LR EL	F	45800	84500	27.3	.27	.95	.012	.012	.35		JG-02-3-1	ANVH		
Ditto	F			(Same as above)							"	ANVC		
FULL SIZE, CHARPY V-NOTCH, PLUS 10°F. LONGITUDINAL BAR														
FT. LBS. - 37, 35, 35; AVERAGE 35.7														
% SHEAR - 45, 40, 40; AVERAGE 41.7														
LATERAL EXPANSION - .029, .028, .028; AVG. .028														
* Standard round test specimen used for tensile properties														
The above fittings were manufactured and tested in strict compliance with ASME, Section III, Class 2.														
*The fittings represented by this Metallurgical Report will meet the following requirements as to hardness. Brinell Hardness Number, Max. 197.														
We certify that the fittings listed herein comply with the requirements of ASME Specification SA-234. They were produced in accordance with the Materials Manufacturers Quality System Program accepted by the American Society of Mechanical Engineers and evidenced by the issuance of Quality Systems Certificate (Materials) Number N-836.														

Revised 9-3-75
Revised
Bea Corp.
JF RLF
2302

HEAT TREATMENT - LEGEND - A = NORMALIZED B = NORMALIZED AND TEMPERED C = NORMALIZED, QUENCHED, & TEMPERED D = STRESS RELIEVED
 E = HEAT TREATED PER SPECIFICATION ON ORDER F = HOT FORMED BETWEEN 1150 AND 1800°F AND COOLED IN STILL AIR
 SUBSCRIBED AND SWORN TO BEFORE ME
 THIS _____ DAY OF _____ 19____
 I HEREBY CERTIFY THIS TO BE A TRUE AND CORRECT REPORT ACCORDING TO RECORDS IN THE POSSESSION OF THIS CORPORATION.

Robert D. Jensen

MILL TEST CERTIFICATE

SOLD TO Grinnell Corporation
Kernersville, North Carolina
 SHIP TO Same for Alabama Power

ITT GRINNELL CORPORATION
 WELDING PROCESS DIVISION
 PRINCETON KY.

Kernersville

DATE July 14, 1975

OUR
 ORDER NO. 0012

BRANCH
 ORDER NO. List 1152-F

CUSTOMER'S
 ORDER NO. _____

DESCRIPTION OF FITTING	PHYSICAL PROPERTIES FITTING MATERIAL				CHEMICAL ANALYSIS							HEAT CODE OR HEAT NO	FITTING MATERIAL
	HEAT TREAT MENT	YIELD POINT P.S.I.	TENSILE STRENGTH P.S.I.	ELONG. IN %	C	MN	P	S	SI				
ASME SA-234 WPC													A-106C
32"ODx1.033" MH 90° LR EL	F	45800	84500	27.3	.27	.95	.012	.012	.35		JG-02-3-1	ANVH	
Ditto	F			(Same as above)							"	ANVG	
FULL SIZE, CHARPY V-NOTCH, PLUS 10°F. LONGITUDINAL BAR FT. LBS. - 37, 35, 35; AVERAGE 35.7 % SHEAR - 45, 40, 40; AVERAGE 41.7 LATERAL EXPANSION - .029, .028, .028; AVG. .028													
* Standard round test specimen used for tensile properties The above fittings were manufactured and tested in strict compliance with ASME, Section III, Class 2.													
*The fittings represented by this Metallurgical Report will meet the following requirements as to hardness: Brinell Hardness Number, Max. 197". We certify that the fittings listed herein comply with the requirements of ASME Specification SA-234. They were produced in accordance with the Materials Manufacturers Quality Signage Program acceptable by the American Society of Mechanical Engineers as evidenced by the issuance of Quality Systems Certificate (Materials) Number N-834.													

Reviewed 9-3-75
Returned
Brinell Corp.
2302

HEAT TREATMENT - LEGEND - A = NORMALIZED

B = NORMALIZED AND TEMPERED

C = NORMALIZED, QUENCHED, & TEMPERED

D = STRESS RELIEVED

E = HEAT TREATED PER SPECIFICATION ON ORDER F : HOT FORMED BETWEEN 1150 AND 1800°F AND COOLED IN STILL AIR

SUBSCRIBED AND SWORN TO BEFORE ME

I HEREBY CERTIFY THIS TO BE A TRUE AND CORRECT REPORT ACCORDING
 TO RECORDS IN THE POSSESSION OF THIS CORPORATION.

THIS _____ DAY OF _____ 19____

Robert D. Lewis

MILL TEST CERTIFICATE

SOLD TO Grinnell Corporation
Kernersville, North Carolina
 SHIP TO Same for Alabama Power

ITT GRINNELL CORPORATION
 WELDING PRODUCTS DIVISION
 PRINCETON, KY.

Kernersville

DATE July 16, 1975

OUR ORDER NO. C
 BRANCH ORDER NO. List 1159-F
 CUSTOMER'S ORDER NO. _____

DESCRIPTION OF FITTING	PHYSICAL PROPERTIES FITTING MATERIAL				CHEMICAL ANALYSIS								HEAT CODE OR HEAT NO.	SPECIFICATION FITTING MATERIAL
	HEAT TREAT MENT	YIELD POINT P.S.I.	TENSILE STRENGTH P.S.I.	ELONG IN 2" %	C	MN	P	S	SI					
ASME SA-234 WPC														A-106 C
32" OD x 1.033" mm 90° IR ELB	F	49900	86100	*23.4	.27	.87	.018	.015	.37		JG-02-3-1		ANVL	
FULL SIZE, CHARPY V-NOTCH, PLUS 10°F. LONGITUDINAL BAR FT. LBS. - 34, 36, 35; AVERAGE - 35 % SHEAR - 40, 45, 25; AVERAGE - 36.7 LATERAL EXPANSION - .027, .028, .028; AVG. - .028														
*Standard round test specimen used for tensile properties The above fitting was manufactured and tested in strict compliance with ASME, Section III, Class 2. The fittings represented by this Metallurgical Report will meet the following requirements as to hardness. Brinell Hardness Number, Max. 197. We certify that the fittings listed herein comply with the requirements of ASME Specification SA-234. They were produced in accordance with the Materials Manufacturers Quality Systems Program, accredited by the American Society of Mechanical Engineers as evidenced by the issuance of Quality Systems Certificate (Materials) Number N-834.														

Reviewed 9-3-75
Robert D. Grinnell
Booth Co.
 31
 601
 2312

HEAT TREATMENT - LEGEND - A = NORMALIZED B = NORMALIZED AND TEMPERED C = NORMALIZED QUENCHED, & TEMPERED D = STRESS RELIEVED
 E = HEAT TREATED PER SPECIFICATION ON ORDER F = HOT FORMED BETWEEN 1150 AND 1800°F AND COOLED IN STILL AIR
 SUBSCRIBED AND SWORN TO BEFORE ME
 THIS _____ DAY OF _____ 19____
 I HEREBY CERTIFY THIS TO BE A TRUE AND CORRECT REPORT ACCORDING TO RECORDS IN THE POSSESSION OF THIS CORPORATION.

Robert D. Grinnell

14" FDWTR Stop Valve

EXHIBIT 1 MANUFACTURERS DATA REPORT FOR VALVES AND PUMPS OR VALVES

As Required by the Provisions of the ASME Code/Notes

1. Manufacturer By: Rockwell Manufacturing Company, Raleigh Plant
1900 S. Saunders Street, Raleigh, North Carolina 27603 User No. 36-54818
(Name & Address of Manufacturer)

2. Manufacturer For: Alabama Power Company
600 North 18th Street, Birmingham, Alabama Order No. FM-2-20
(Name and Address)

3. Other: Alabama Power Company

4. Location of Piping: Hudson County, Alabama (5 miles south of Columbia)

5. Pumper Valve Identification: Serial No. 1Q-80 Body Heat No. 6964 W-2
1 1/2" 4006 JANTY Stop Valve
(Brief description of service for which equipment was designed)

(a) Drawing No. PD 423593 Rev. D Prepared by Rockwell Manufacturing Company

(b) National Board No. 52

6. Design Conditions: 1600 442 ASME Code for Pumps and Valves for Nuclear Power
(Temperature)

7. The materials, design, construction, and workmanship comply with ASME CODE FOR NUCLEAR POWER Class 2

Edition: 1968 Approval Date: March, 1970 Class No. 1384-2
Gasket Retainer

Marking	Material Spec. No.	Manufacturer	Remarks
(a) Castings:			
<u>6964W</u>	<u>A 216 WCB</u>	<u>Lebanon Steel</u>	<u>Body</u>
<u>7863W</u>	<u>A 216 WCB</u>	<u>Lebanon Steel</u>	<u>Bonnet</u>
(b) Packings:			
<u>110443</u>	<u>SA 182 F11</u>	<u>Sharon Steel</u>	<u>Disc</u>
<u>K54403</u>	<u>A 461 GR 660</u>	<u>Carpenter Technology</u>	<u>Gasket Retainer</u>
<u>6013030</u>	<u>A 105 GR 11</u>	<u>Republic Steel</u>	<u>Disc Cap</u>

Q 2A 18:05

*Signatures and initials for material blanks, as indicated on drawings, may also be provided if (1) a form is used (2) information in items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

FORM 104-1 (back)

Marking	Manufacturer's Name	Manufacturer	Material
(c) Rod(s)			
(d) Other Parts			
E25105	A-106 GR. B	USS	Drain Nipple
E25105	A-106 GR. B	USS	Equalizer
6013030	A-105 GR. II	Republic Steel	Drain Cap

B. Hydrostatic test 3250 psi

CERTIFICATION OF DESIGN

Design information on file at: Rockwell Manufacturing Company, Raleigh, North Carolina 27603
 Stress analysis report on file at: N/A
 Design specifications certified by: Sabin Crocker, Jr. (1) Prof. Eng. Signr: Conn. Reg. No. 7903
 Stress analysis report certified by: N/A (1) Prof. Eng. Signr: N/A Reg. No. N/A
 (1) Signature not required. List name only.

We certify that the statements made in this report are correct.

Date: _____ 19____ Signed: Rockwell Mfg. Co. By: Blake E. Hildreth, Jr.
 (Manufacturer) Manager, Quality Assurance
 Certificate of Authorization No. N-257 expires: 1/12/74

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State of Province of North Carolina and employed by Lumbermens Mutual Casualty Co. of Long Grove, Illinois have inspected the equipment described in this Data Report on Nov. 19 1973, and state that to the best of my knowledge and belief, the Manufacturer has constructed this equipment in accordance with the applicable Subsections of ASME Code, Section III.
 By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described in this Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected with this inspection.

Date: Nov. 19 1973

Richard H. McCoy Commission: NEC-11 NA 5207
 (Inspector) (National Board, State, Province and No.)

Q 2A 18.05

REPORT OF CHEMICAL ANALYSIS AND PHYSICAL PROPERTIES

CUSTOMER Rockwell Mfg. Company ORDER NO. 56-47682 FILE NO. NUA1129-23
Raleigh Plant
 ADDRESS 1900 S. Saunders Street PATTERN NO. 180430 L DESIGNATION WCB-N
Raleigh, N. Carolina--27603
 ATTENTION OF Metallurgical Dept. SPECIFICATION ASTM-A216 Gr. (WCB) BMCQ1023 9/14/72

HEAT NO.	C	Si	Mn	P	S	Cr	Ni	Mo	Cu	Cl/Ta	YIELD P. S. I.	TENSILE P. S. I.	ELONG. PERCENT	RED. OF AREA PERCENT	Cstg. Code	PCS SHIPPED
644 69144W U-2	.21	.38	.93	.014	.015						53,000	78,500	32.0	55.5	C71	1
Heat Treatment--N-1725°F--1740°F--3 Hrs. 1630°F--1660°F--4 Hrs. W.Q. T-1210°F--1260°F--5 Hrs.																
V-Notch Charpy at Plus 30°F.						Lateral Expansion				% Fibrous Fracture						
			53						.050					84		
			54						.052					84		
			56						.053					86		

N

Rockwell
 RALEIGH PLANT
 RALEIGH, N. C.
 APPROVED
 1-30-73
 C.O.
 MET. LAB.

REMARKS: Magnetic particle Inspected & Approved per LSF-MT-D to LSF-MT-ACC-STD.3.
 Source Inspected at our plant

STATE OF PENNSYLVANIA, COUNTY OF LEBANON, SS.
 I, _____, DO hereby certify that the foregoing is a true and correct copy of the original as the same was presented to and subscribed before me

14th DAY OF September 1972
Edward U. Brown
 EDWARD U. BROWN, Notary Public
 Lebanon, Lebanon County
 My Commission Expires January 30, 1973

Reviewed
 J. J. D. [unclear]
 B. [unclear] 9/21/73

LEBANON STEEL FOUNDRY

BY *[Signature]*
John F. Hoff - J.A. Dyet

FORM NPV-1 MANUFACTURERS' DATA REPORT FOR NUCLEAR PUMPS OR VALVES*

As Required by the Provisions of the ASME Code Rules

Rockwell Manufacturing Company, Raleigh Plant
1900 S. Saunders Street, Raleigh, North Carolina 27603 Order No. 36-54818

1. Manufactured by: (Name & Address of Manufacturer)

Alabama Power Company
600 North 18th Street, Birmingham, Alabama Order No. FNP-2-20

2. Manufactured for: (Name and Address)

Alabama Power Company

3. Owner

Hudson County, Alabama (5 miles south of Columbia)

4. Location of Plant

Pump or Valve Identification: Serial No. JR-35 Body Heat No. 4413E-1

14" 4006 JMNTY Stop Valve

(Brief description of service for which equipment is being designed)

(a) Drawing No. PD-423593 Rev. D Prepared by Rockwell Manufacturing Company

(b) National Board No. 54

6. Design Conditions: 1600 psi 442 °F
(Pressure) (Temperature)
Design ASME Code for Pumps and Valves for Nuclear Power
7. The material, design, construction, and workmanship complies with ASME BOILER AND PRESSURE VESSEL CODE, Class: 2

Edition: 1968 Address: Denver, March, 1970 Case No. 1384-2

Gasket Retainer

[illegible]

Q 2A 18.05

* Supplemental drawings in format: listing information on drawings may be used provided (1) size is 8 1/2" x 11", (2) information is drawn; 3, 7, 9, and 10; (3) this data is not included on such drawings; and (3) each drawing is numbered and number of sheets is recorded at top of this form.

FORM NEV-1 (back)

Mark No.	Material Spec. No.	Manufacturer	Description
(c) Bolting			
(d) Other Parts			
E 25105	A-106 GR. B	USS	Drain Nipple
E 25105	A-106 GR. B	USS	Equalizer
6013030	A-105 GR. II	Republic Steel	Drain Cap

B. Hydrostatic test 3250 psi.

CERTIFICATION OF DESIGN

Design information on file at Rockwell Manufacturing Company, Raleigh, North Carolina 27603
 Stress analysis report on file or: N/A
 Design specifications certified by Sabin Crocker, Jr. (1) Prof. Eng. State Conn. Reg. No. 7903
 Stress analysis reports certified by N/A (1) Prof. Eng. State N/A Reg. No. N/A
 (1) Signature (not required). List names only.

We certify that the statements made in this report are correct.

Date 19 Signed Rockwell Mfg. Co. By Blake E. Hildreth, Jr.
 (Manufacturer) Manager, Quality Assurance
 Certificate of Authorization No. N-257 expires 1/12/74

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State of Province of North Carolina and employed by Lumbermens Mutual Casualty Co. of Long Grove, Illinois have inspected the equipment described in this Data Report on NEV-1 10-73, and state that to the best of my knowledge and belief the Manufacturer has constructed this equipment in accordance with the applicable Subsections of ASME Code, Section III.
 By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described in this Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date: Nov. 19 19 73

Q 2A 18 05

Kenneth H. Kelly Commission No. NEB 5207
 (Inspector) (National Board, State, Province and Reg.)

REPORT OF CHEMICAL ANALYSIS AND PHYSICAL PROPERTIES

CUSTOMER - Rockwell Mfg. Company
 ADDRESS - Raleigh Plant
 1900 S. Saunders Street
 Raleigh, N. Carolina--27603
 ATTENTION OF - Metallurgical Dept.

ORDER NO. 36-47681

FILE NO. NUA1180-220

PATTERN NO. 180430

DESIGNATION WCB-X

ASTM-A213 Gr. (WCB)RMC01023 3/16/72

HEAT NO	C	Si	Mn	P	S	Cr	Ni	Mo	Cu	Cb/Ta	YIELD P. S. I.	TENSILE P. S. I.	ELONG PERCENT	RED OF AREA PERCENT	Cstg. Code	PC S. F.
413E	.19	.44	.81	.014	.017						54,000	76,000	27.0	60.3	A33	1
30-1																
Heat Treatment--N-1720°F--1735°F--5 Hrs.																
1640°F--1660°F--4 Hrs. W.Q.																
T-1165°F--1175°F--5 Hrs.																
V-Notch Charpy at Plus 30°F.																
Lateral Expansion																
% Fibrous Fracture																
			53						.04S					50		
			55						.051					52		
			54						.051					52		

REMARKS: Magnetic particle Inspected & Approved per LSF-MT-D to LSF-MT-ACC-STD-3.
 Source Inspected at our plant.

3-22-72

MAR 21 1972

STATE OF PENNSYLVANIA, COUNTY OF LEBANON, SS.
 SWORN TO AND SUBSCRIBED BEFORE ME

THIS 16th DAY OF March 19 72

Q2A 18.05

*Reviewed
 R. L. Ansel
 Because 10/1/73*

LEBANON STEEL FOUNDRY

BY *Carol Phillips*

As Required by the Provisions of the 1986 Code Rules

[illegible]

FORM NPV-1 (back)

Item No.	Material Spec. No.	Manufacturer	Remarks
(c) Bolting			
(d) Other Parts			
E 25105	A 106 GR B	USS	Drain Nipple
E 25105	A 106 GR B	USS	Equalizer
6013030	A-105 GR II	Republic Steel	Drain Cap

8. Hydraulic test 3250 psi

CERTIFICATION OF DESIGN

Design information on file at Rockwell Manufacturing Company, Raleigh, North Carolina 27603
 Stress analysis report on file at N/A
 Design specifications certified by Sabin Crocker, Jr. (1) Prof. Eng. Stamp Conn. Reg. No. 7903
 Stress analysis report certified by N/A (1) Prof. Eng. Stamp N/A Reg. No. N/A
 (1) Signature not required. List name only.

We certify that the statements made in this report are correct.

Date 12/21/73 19 73 Signed Rockwell Mfg. Co. By Blake E. Hildreth, Jr.
 (Manufacturer) Manager, Quality Assurance
 Certificate of Authorization No. N-257 expires 1/02/74

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State of Province of North Carolina and employed by Lumbermens Mutual Casualty Co. of Long Grove, Illinois have inspected the equipment described in this Data Report on 12/21/73 19 73, and state that to the best of my knowledge and belief, the Manufacturer has constructed this equipment in accordance with the applicable Subsections of ASME Code, Section III.
 By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described in this Data Report. Furthermore, neither the Inspector nor his employee shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date December 21 19 73

C. D. Beloney
 (Inspector)

Commission NB 5111
 (National Board, State, Province and City)

Q 2A 18.05

REPORT OF CHEMICAL ANALYSIS AND PHYSICAL PROPERTIES

CUSTOMER: Rockwell Mfg. Company
 ADDRESS: Raleigh Plant
 1900 S. Saunders Street
 Raleigh, N. Carolina--27603
 Metallurgical Dept.

ORDER NO: 36-47681
 FILE NO: NUA1129-22
 PATTERN NO: 180430
 DESIGNATION: WCB-N
 SPECIFICATION: ASTM-A216 Gr. (WCB)RMC01023
 DATE: 9/22/72

HEAT NO	C	Si	Mn	P	S	Cr	Ni	Mo	Cu	Cb/Ta	YIELD P. S. I.	TENSILE P. S. I.	ELONG PERCENT	RED OF AREA PERCENT	Cstg. Code	PCS SHIPPED
79E	.18	.52	.90	.019	.011						55,000	77,000	29.0	63.0	C20	1
4679E																
Heat Treatment--N-1725°F--1740°F--6 Hrs.																
1625°F--1670°F--4 Hrs. W.Q.																
T-1170°F--1185°F--5 Hrs.																
V-Notch Charpy Impact at Plus 30°F.																
	40								.039				46			
	44								.043				48			
	48								.043				48			
	50								.043				48			
Lateral Expansion																
% Fibrous Fracture																

N

FEB 28 1973

MARKS: Magnetic particle Inspected & Approved per LSF-MT-D to LSF-MT-ACC. Std. 3.
 Source Inspected at our plant.

Rockwell
 RALEIGH PLANT
 RALEIGH, N. C.
 APPROVED
 9-28-73
 C. O.
 MET. LAB.

STATE OF PENNSYLVANIA, COUNTY OF LEBANON, SS.
 I, J. SCHWANG, JR., Notary Public,
 do hereby certify that the foregoing is a true and correct copy of the original report of chemical analysis and physical properties as submitted to me for recording.

WILLIAM J. SCHWANG, JR., Notary Public
 Lebanon, Lebanon County
 My Commission Expires January 11, 1978

Reviewed
 R. L. Aubel
 BECHTEL
 10/22/73

Metzschke
 G. R. E.
 9/22/72

LEBANON STEEL FOUNDRY

BY: Carroll S. Huston

CANN & SAUL STEEL CO.

ROVER, TORO, PA. 18900

Report of Physical Tests and/or Chemical Compositions

SR-54817
54818

D-1

1/4/72

Customer's Order No.

36-51884

Cann & Saul Order No.

15735

ROCKWELL MFG. COMPANY
1900 SOUTH SAUNDERS ST.
RALEIGH, N.C. 27603

PURCHASING DEPT.

Discs

N

CHEMICAL COMPOSITIONS

WIRE NO.	C	MN	P	S	SI	CR	NI	CU	CO	CB	Cu	V
110443	.15	.50	.012	.013	.77	1.33	.12	.51			.12	.05

PHYSICAL TESTS

FROM	TEST NUMBER	CARBON	TENSILE PT. LBS.	TENSILE PER SQUARE IN. LBS.	BROUSE AT LBS.	ESTIMATED TENSILE LBS.	ELONG. %	REDUCTION AREA	REDUCTION %	PLATE
ing	15735 1	.505	YS. 15,100	YS. 2% 75,500	18,900	914,500	25.0	.079	60.5	
Impacts		43.0	25.0	28.9	Ft. Lbs.	@ Plus 30°				
Touch		.040"	.023"	.032"	Lat. Exp.					
		20 30 30	% Shear							

OTHER TESTS

NELL 192/202

REC. A388 REV. 7 Dated 12/13/71

AL TEMP. TEMP. 1260°F

PROPERTY: Special Heat Treatment: BMC-02271 (Q82 NUCLEAR)-1977
IMPACT "V" 30°F 20" LAT. EXP. 0% SHEAR.

11

201 MAX.

IF ABOVE TESTS COVER THE FOLLOWING MATERIAL:

- DISC FORGINGS PER PART 427069 ON DKG. A-427069

CKWELL & CUSTOMER

CANN & SAUL STEEL CO.

JAN 29 1973

QC-Q2A 18.05

[Signature]
1-4-73

[Signature]
B-4-73

[Signature]

APPROVED
1-30-73
C-0
MET. LAB.

LEBANON STEEL FOUNDRY

LEBANON, PA. 17044

REPORT OF CHEMICAL ANALYSIS AND PHYSICAL PROPERTIES

54818

CUSTOMER Rockwell Mfg. Company ORDER NO. 38-50885 FILE NO. NUB515-20
Paleigh Plant ADDRESS 1900 S. Saunders Street PATTERN NO. 180946 DESIGNATION WCB-N
Paleigh, N. Carolina--27603 METALLURGICAL DEPT. ASTM-A216 Gr. (WCB-N) DMC01023 DATE 11/10/72

AT NO.	C	Si	Mn	P	S	Cr	Ni	Mo	Cu	Cb/Ta	YIELD P. S. I.	TENSILE P. S. I.	ELONG PERCENT	RED. OF AREAS PERCENT	CSLg. Code	PCS SHIPPED
33W	.18	.55	.81	.017	.012						53,000	79,500	26.0	60.3	HW109	1.
8630 7963W RL#	1 + HRH 6														HW110	1
	e11														HW111	1
															HW112	1
															HW113	1
															HW114	1
V-Notch Charpy Impact Value at Plus 30°F											Lateral Expansion		% Fibrous Fracture			
			51								.044			45		
			51								.036			40		
			51								.043			43		

REMARKS: Magnetic particle Inspected & Approved per LSF-MT-WF to LSF-MT-ACC-STD-3.

DEC 6 1972

STATE OF PENNSYLVANIA, COUNTY OF LEBANON, SS.

WITNESSES AND SUBSCRIBED BEFORE ME

10th DAY OF November 1972

Attest: *Albert D. L. H.*
 Notary Public - Lehigh Valley

*Reviewed
 Foundry Sub
 Bechtel #24/73*

Bonwith

LEBANON STEEL FOUNDRY

BY *David P. Kravitz*
John G. Graft - C.R. Dept.

12-8-72
 C.O.

FEEDWATER

One spool in each line outside containment up to check valve. Spool numbers are:

N21-DBB-1-16

N21-DBB-1-4

N21-DBB-1-10

Fracture toughness data is not available.

Pipe spools for all three lines were fabricated by Phoenix Steel Corporation which has been previously approved as acceptable by the NRC staff. Material test report included in this package.

FEEDWATER LINES

14" From Steam Gen. 1A to FCV 478 Grinnell ISO 2-8 and 2-10, D205304 and 305

<u>SPOOL</u>	<u>REGISTER #</u>	<u>HEAT #</u>
N21-EBD-4-17	JG-18-35	54641
N21-DBB-1-16	JG-18-34	43029
N21-DBB-1-15	JG-18-33	43029
N21-DBB-1-14	JG-18-32	223969
N21-DBB-1-13	JG-18-31	223969 & 223680
N21-DBB-1-12	JG-18-30	223969
N21-DBB-1-11	JG-18-29	223680
N21-DBB-1-18	JG-18-276	42868
N21-EBD-4-10	JG-18-10	533488
N21-EBD-4-11	JG-18-11	533488
N21-EBD-4-12	JG-18-12	54641

14" From Steam Gen. 1B to FCV-488 Grinnell ISO 2-7 and 2-9, D205305 and 304

<u>SPOOL</u>	<u>REGISTER #</u>	<u>HEAT #</u>
N21-EBD-4-4	JG-18-4	533488
N21-EBD-4-5	JG-18-5	533488
N21-EBD-4-6	JG-18-6	533488
N21-DBB-1-4	JG-18-22	43029
N21-DBB-1-3	JG-18-21	43029
N21-DBB-1-2	JG-18-20	223969
N21-DBB-1-1	JG-18-19	64034

14" From Steam Gen. 1C to FCV 498 Grinnell ISO 2-8 and 2-9, D205304 and 305

<u>SPOOL</u>	<u>REGISTER #</u>	<u>HEAT #</u>
N21-EBD-4-16	JG-18-16	N52100
N21-EBD-4-17	JG-18-17	54641
N21-EBD-4-18	JG-18-18	N52100
N21-DBB-1-5	JG-18-23	62177
N21-DBB-1-6	JG-18-24	223969
N21-DBB-1-7	JG-18-25	223680 & 223969
N21-DBB-1-8	JG-18-26	223969
N21-DBB-1-9	JG-18-27	43029
N21-DBB-1-10	JG-18-28	43029

PHOENIX STEEL CORPORATION

TUBE DIVISION
PHOENIXVILLE, PENNA.

CERTIFICATE OF INSPECTION AND TESTS

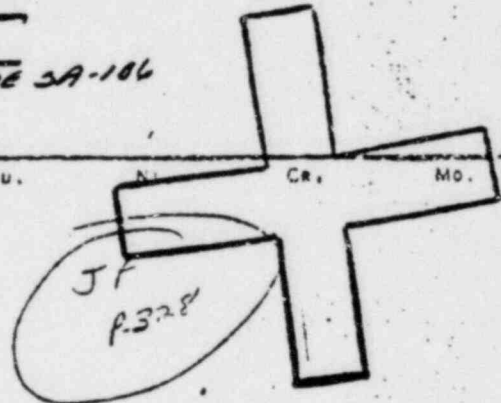
25.4
FEED WATER LINE
OUTSIDE CONTAINMENT
TP STOP VALVE

DATE: 9-7-73	DATE SHIPPED: 9-6-73	MILL ORDER NO. T-5759-G-290 (15)
STANDARD PIPE & SUPPLY CO., INC. 301 CITY LINE AVENUE BALA-CYNWYD, PENNSYLVANIA 19004		CUSTOMER ORDER NO. W-6754
		CAR NO.
		MATERIAL: SEAMLESS <input checked="" type="checkbox"/> PIPE <input type="checkbox"/> TUBE, HOT FINISHED
SHIP TO: <i>Gunnell Corp. # L-28013</i>		SPECIFICATION: ASTM A-106-B (O.H.)

NO. PCS.	OD	WALL	LENGTH	TOTAL FT.	TOTAL WT.	HEAT NO.
	14.000"	x .938"				43029

REVIEWED BY B. Thompson
DATE 6-29-76
DCCA Conforms w/ ASME SA-106

C	Mn.	P.	S.	Si	Cu.	Ni	Cr.	Mo.	V.
43029	.26	.83	.013	.027	.20				



HEAT NO.	TENSILE (KSI)	YIELD (KSI)	% ELONG. IN 2"	% RA	ROCKWELL	HARDNESS BRINELL	GRAIN SIZE
43029	74.5	39.0	30.00				

JOMINY DISTANCE - 10TH	ROCKWELL C	FLATTENING OI	HYDROSTATIC PSI 2800
1 2 4 6 8 10 12 14 16 20 24 28 32			

PHOENIX STEEL CORPORATION hereby certifies that the above material was produced in accordance with the specifications and the requirements of the inspection and tests as contained in the contract and as shown above. For properties or characteristics for which no methods of inspection or testing are prescribed in the specifications, the examination and testing procedures of the PHOENIX STEEL CORPORATION have been applied. Based upon such inspection and tests, the material furnished has been determined to conform to the requirements of said specifications.

P. W. Roberts
9-1-118.05 PNP-210
10-1-118.05

United States Steel Corporation

LORAIN

WORKS

STANDARD SWORN TEST REPORT TUBULAR PRODUCTS

JP
RSC

6-2-72 DATE

TENIAL

Sm/s

GRADE C

ENTMENT

Q-1-A18.05
FNP. 210

ASTM A106

CUSTOMER'S ORDER NO.

CHA-0708

C
U
S
T
O
M
E
R

NAME
GRINWELL CORP

U.S. STEEL ORDER NO.

AC-92515

ADDRESS

INVOICE NO.

NEW-9164

CITY AND STATE

COPIES OR LOT NO.	SIZE O. D.	WT/FT OR WALL THICKNESS	HEAT NUMBER	HYDRO. TEST PRESSURE MIN. P.S.I.	MECHANICAL PROPERTIES			CHEMICAL ANALYSIS (%)						
					YIELD STRENGTH P.S.I.	TENSILE STRENGTH P.S.I.	ELONG. IN. 2"	C	Mn	P	S	Si	Mo	-
	14"	594	1152100	2200	53200	87200	365	30	100	0.010	0.020	0.20		
		(560)	JP-EED-119-1											
			FLATTENING TESTS OK											

REVIEWED BY
S. J. Thompson
DATE 6-28-72
DECA Confirmed 5705 mg 9a-10a

RECEIVED
JUN 9 1972
GRINWELL CORP
RECEIVED

STATE OF OHIO
COUNTY OF LORAIN

SS

A. T. Bird

BEING DARY SWORN ACCORDING TO
LAW, DEPOSES AND SAYS THAT THE FIGURES SET FORTH ABOVE ARE CORRECT, AS
CONTAINED IN THE RECORDS OF THE COMPANY.

SWORN AND SWORN TO BEFORE ME THIS
DAY OF June 19 72

A. T. Bird
(SIGNATURE OF DEPOSITOR)

E. L. [Signature]
(DEPARTMENT HEAD)

NOTARY PUBLIC

MY COMMISSION EXPIRES Sept 20 1976

DS

Q-1-A18.05 FNP-210

TUBE DIVISION
PHOENIXVILLE, PENNA.

(467) ✓

PHOTOGRAPH OF INSPECTION AND TESTS

0-17-74	10-16-74	T-7177-A-20 (38B)
Specialty Pipe & Tube, Inc.		W-6472
		MATERIAL: SEAMLESS <input checked="" type="checkbox"/> PIPE <input type="checkbox"/> TUBE, HOT FINISHED
		SPECIFICATION: ASME SA-106-B (O.H.)

Q. PCS.	QD	SALL	LENGTH	TOTAL FT.	TOTAL WT.	HEAT NO.
---------	----	------	--------	-----------	-----------	----------

.14.000" x .938"

64034

Q. PCS.	QD	SALL	LENGTH	TOTAL FT.	TOTAL WT.	HEAT NO.
4034	.22	1.01	.010	.034	.26	

REVIEWED BY
B. Thompson
DATE 7-12-76
DCCA

Q. PCS.	TENSILE (KSI)	YIELD (KSI)	ELONG. IN IN.	HA	HARDNESS FALL - BRINELL	GRAIN SIZE
4034	80.0	49.5	26.00	(.505" Test Specimen)		



Q. PCS.	QD	SALL	LENGTH	TOTAL FT.	TOTAL WT.	HEAT NO.
1	2	4	6	8	10	12

RECEIVED
FEB 17 1977
QCDS

RE PHOENIX STEEL CORPORATION... THE ABOVE MATERIAL... THE COMPANY'S... THE STANDARD... USED UPON SUCH INSPECTION...

SPECIALTY PIPE & TUBE, INC.

CERTIFICATE OF CONFORMANCE

467

(ITT Grinnell Corp. KER-11625-R)

DATE Oct. 23 19 74

OLD TO Capitol Pipe & Steel Products, Inc. YOUR ORDER NO. D-71859-75N

THIS IS TO CERTIFY THAT THE MATERIAL FURNISHED ON THE ABOVE ORDER CONFORMS TO THE FOLLOWING CHEMICAL AND PHYSICAL ANALYSIS AS COPIED FROM REPORTS FURNISHED US BY OUR SUPPLIER:

SPECIFICATION AND GRADE	ASME SA-106-B					
SIZE	14.000"OD					
WALL	.938"					
YIELD ST. (=PSI)						
TENSILE (=PSI)						
ELONG. %						
CARBON						
MANGANESE						
PHOSPHORUS						
SULPHUR						
SILICON						
CHROME						
NICKEL						
HEAT NO.	64034					
MANUFACT. BY						
TEST PRESSURE						

STATE OF OHIO

COUNTY OF TRUMBULL

SS

SEEN, READ AND SUBSCRIBED BEFORE ME, A NOTARY PUBLIC, IN AND FOR THE ABOVE STATE AND COUNTY, THIS DAY AND DATE.

DATED _____

RECEIVED
FEB 17 1975

QCDS

STEEL DIVISION
PITTSBURGH, PENNA.

CERTIFICATE OF INSPECTION AND TESTS

DATE 11-30-72	DATE 11-28-72	MILL ORDER NO. T-3875-A-130 (1421)
Specialty Pipe & Tube, Inc.		CUSTOMER ORDER NO. W-6151
		CAR NO.
		MATERIAL: SEAMLESS <input checked="" type="checkbox"/> PIPE <input type="checkbox"/> TUBE, HOT FINISHED
<div style="border: 1px solid black; border-radius: 50%; padding: 10px; display: inline-block;"> JF P375 </div>		SPECIFICATION: ✓ ASME SA-106-B (O.N.)

PCS.	OD	WALL	LENGTH	TOTAL FT.	TOTAL WT.	HEAT NO.
	14.000"	.938"				42868

REVIEWED BY B. Thompson
 DATE 6-28-76
 DCCA

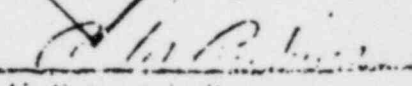
ST. NO.	YIELD (KSI) ✓	TENSILE (KSI) ✓	ELONG. IN 2" ✓	HA ✓	CO.	ITEM #
2868	78.8	89	.012	.022	.22	Itt Grinnell Ind. P.O.# MCR-9336-M CH# P-15105 PART# JF 88-491-1 CODE# JF DEB 491-1 ITEM# 2

ST. NO.	YIELD (KSI) ✓	TENSILE (KSI) ✓	ELONG. IN 2" ✓	HA ✓	POCKWELL	IRTHWELL	SIZE
2868	78.8	44.0	30.00				

OK
 G
 T.V.

OK
 HYDROSTATIC
 2868

THE STEEL CORPORATION HEREBY CERTIFIES THAT THE ABOVE MATERIALS HAVE BEEN INSPECTED AND TESTED IN ACCORDANCE WITH THE SPECIFICATIONS AND THE RESULTS OF SUCH INSPECTION AND TESTS AS CONTAINED IN THE CERTIFICATE AS SHOWN ABOVE. FOR PROPERTIES OR CHARACTERISTICS FOR WHICH NO PROVISION FOR INSPECTION OR TESTING ARE PRESENTED IN THE SPECIFICATIONS, THE STANDARD STEEL INSPECTION AND TESTING PRACTICES OF THE STEEL CORPORATION HAVE BEEN APPLIED. UPON SUCH INSPECTION AND TESTS, THE ABOVE MATERIALS HAVE BEEN APPROVED AS FULFILLING THE REQUIREMENTS OF SAID SPECIFICATIONS.


 J. W. Smith

Q-1-AIR00 FNI 210

TUBE DIVISION
PHOENIXVILLE, PENNA.

CERTIFICATE OF INSPECTION AND TESTS

14" Sch 60 B/C

1-1-74	DATE SHIPPED: 12-28-73	MILL ORDER NO. 7-5534-B-10 (105D)
Capital Pipe & Steel Prod., Inc.		CUSTOMER ORDER NO. 64211-00
		CAR NO.
		MATERIAL: SEAMLESS <input type="checkbox"/> PIPE <input type="checkbox"/> TUBE, HOT FINISHED
		SPECIFICATION: ASTM A-105-C (O.H.) ASME SA-105-C (O.H.)

	WALL	LENGTH	TOTAL FT.	TOTAL WT.	HEAT NO.
74.000" x .594"					53342B

JF
P321

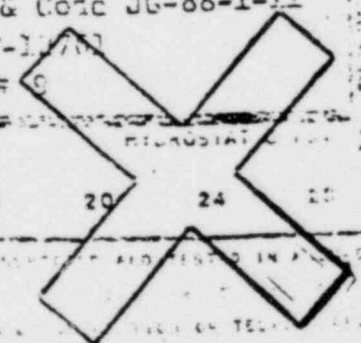
C	P	S	SI	CU	NI	CR	MO
.32	.77	.010	.028	.23			

REVIEWED BY
J L Havelson
DATE 12-5-75
DCCA

TENSILE (PSI)	YIELD (KSI) ()	% ELONG. IN 2"	% RA	ROCKWELL	HARDNESS BRINELL	GRAIN SIZE
51.5	51.1	37.00				

AND SHOWN TO BEFORE
THE DAY OF JANUARY 1974.
[Signature]
ROBERT FENLAC
WELD ENGINEER, CHESTER COUNTY
WELDER'S REG. 4. 1974

Itt Grinnell Ind.
P.O.# Ker-7985
Part & Code JG-88-1-11
Ch# P-11701
Item# 9



FLATTENING 0.1
ROCKWELL C 6 8 10 12 14 16 20 24 28 32
2040
Q-1418.05 FNP-210

CERTIFICATE OF INSPECTION AND TEST

DATE SHIPPED: 6-29-74	MILL ORDER NO. T-5534-D-10 (152A)
Capitol Pipe & Steel Prod., Inc. P. O. Box 471 Bala Cynwyd, Pa. 19004	CUSTOMER ORDER NO. 64211-00
	CAR NO. PC 544161
	MATERIAL: SEAMLESS <input checked="" type="checkbox"/> PIPE <input type="checkbox"/> TUBE, HOT FINISHED
REVIEWED BY <i>B. Thompson</i> DATE 7-2-76 DCCA	SPECIFICATION: ASTM A-105-C (O.H.) ASME SA-105-C (O.H.)

PCS.	OD	WALL	LENGTH	TOTAL FT.	TOTAL WT.	HEAT NO.
	14.000"	.594"				5464i

DOCUMENTATION REVIEWED
Date 9-10-74
BECHTEL CORPORATION
By *[Signature]*



JF
P.443

PCS.	OD	WALL	LENGTH	TOTAL FT.	TOTAL WT.	HEAT NO.
464	.28	.63	.011	.028	.22	

Itt Grinnell Ind.
Capitol S.I. AN-4586A
P.O.# KER-6929

Ch# P-12753

Item# 1

AT NO.	TENSILE (KSI)	YIELD (KSI)	% ELONG. IN 2"	% RA	HARDNESS ROCKWELL	GRAIN SIZE
--------	---------------	-------------	----------------	------	-------------------	------------

4641 77.4 47.8 38.00

UNSUBSCRIBED AND SHOWN TO BEFORE
F. L. H. 2ND DAY OF JULY 1974.

[Signature]
ORIGINAL FILED IN PHOENIXVILLE PUBLIC
NOTINGHOUSE BOROUGH, CHESTER COUNTY
EXPIRES FEB. 4, 1978

RECEIVED
FEB 17 1975
QCDS

MINIY DISTANCE - 16TH			ROCKWELL C			FLATTENING OK			HYDROSTATIC PSI			2040
1	2	4	6	8	10	12	14	16	20	24	28	32

PHOENIX STEEL CORPORATION HEREBY CERTIFIES THAT THE ABOVE MATERIALS HAVE BEEN INSPECTED AND TESTED IN ACCORDANCE WITH THE METHODS PRESCRIBED IN THE APPLICABLE SPECIFICATIONS AND THE RESULTS OF SUCH INSPECTION AND TESTS AS CONTAINED IN THE COMPANY'S RECORDS AS SHOWN ABOVE. FOR PROPERTIES OR CHARACTERISTICS FOR WHICH NO METHODS OF INSPECTION OR TESTING ARE PRESCRIBED IN THE SPECIFICATIONS, THE STANDARD MILL INSPECTION AND TESTING PRACTICES OF THE PHOENIX STEEL CORPORATION HAVE BEEN APPLIED. UPON SUCH INSPECTION AND TESTS, THE ABOVE MATERIALS HAVE BEEN APPROVED AS FULFILLING THE REQUIREMENTS OF SAID SPECIFICATIONS.

[Signature]
ENGINEER OF TESTS

PHOENIX STEEL CORPORATION

TUBE DIVISION
PHOENIXVILLE, PENNA.

CERTIFICATE OF INSPECTION AND TESTS

Universal Cylindrical
109A
ACR

JP
P-120

DATE SHIPPED: 10-4-72

MILL ORDER NO. 10-01-A (6)

CUSTOMER ORDER NO. 1-00197

CAR NO.

SPECIFICATION: 1081 01-17-B (0.01)

MATERIAL: SEAMLESS TUBE

CONTRACT NO.

P. O. REP-0983
COUNT JP-DEB-7151

NO.	PCS.	OD	WALL	LENGTH	TOTAL FT.	TOTAL WT.	HEAT NO.
		14.080	X .938		125 FT.		62177

REVIEWED BY
B. Thompson
DATE 7-14-76
DCCA

Q-1-A18.05
FNP. 210

NO.	C.	M.	P.	S.	SL.	CR.	N.	MO.	CL.
62177									

RECEIVED

OCT 23 1972

GR: NELL CORP.
KERNERSVILLE PLANT

HEAT NO.	TENSILE (KSI)	YIELD (KSI)	% ELONG. IN 2"	% RA	ROCKWELL	BRINELL	GRAIN SIZE
72.3	72.3	42.5	34.00				

Q.C. ACCEPTED
J. T. ... 11/12/72

SUBSCRIBED AND SWORN TO BEFORE ME
THIS 4TH DAY OF OCTOBER, 1972.
[Signature]
NORMAN LEE MILLER, NOTARY PUBLIC
PHOENIXVILLE BOROUG, CHESTER COUNTY
MY COMMISSION EXPIRES FEB. 4, 1974

FLANGE	FLATTENING	FLARING	CRUSH	HYDROSTATIC PSI
MINIMUM DISTANCE - 16TH.	1 2 4 6 8 10 12 14 16 20 24 28 32			

THE PHOENIX STEEL CORPORATION HEREBY CERTIFIES THAT THE ABOVE MATERIALS HAVE BEEN INSPECTED AND TESTED IN ACCORDANCE WITH THE METHODS PRESCRIBED IN THE APPLICABLE SPECIFICATIONS AND THE RESULTS OF SUCH INSPECTION AND TESTS AS CONTAINED IN THE COMPANY'S RECORDS ARE AS SHOWN ABOVE. FOR PROPERTIES OR CHARACTERISTICS FOR WHICH NO METHODS OF INSPECTION OR TESTING ARE PRESCRIBED IN THE SPECIFICATIONS, THE STANDARD MILL INSPECTION AND TESTING PRACTICES OF THE PHOENIX STEEL CORPORATION HAVE BEEN APPLIED. BASED UPON SUCH INSPECTION AND TESTS, THE ABOVE MATERIALS HAVE BEEN APPROVED AS FULFILLING THE REQUIREMENTS OF SAID SPECIFICATIONS.

ST 0155 RD

ENGINEER OF TESTS

Q-1-A18.05 FNP-210

Q-1-A18.05 FNP-210

ARMCO STEEL CORPORATION
AMBRIDGE WORKS
Ambridge, Pennsylvania

REPORT OF TESTS

CUSTOMER Grinnell Corp.
SPECIFICATION ASTOR-ALCO. + ASME - SA106
MATERIAL Seale. Gr. B steel Pipe

CUSTOMER

SPECIFICATION *ASTM-A106 + ASME-SA106*

MATERIAL Under En. Bated Paper

DATE

OUR ORDER NO 08/22/305-0005

CUSTOMER'S ORDER NO. CHA-312

[illegible]

THE CHEMICAL ANALYSES AND PHYSICAL OR MECHANICAL TESTS REPORTED ABOVE ARE CORRECT AS CONTAINED IN THE RECORDS OF THE CORPORATION.

ARMCO STEEL CORPORATION

Henry A. ...
... Co.

HARRY FORD,
B. & O. Co.

ARMCO STEEL CORPORATION
AMBRIDGE WORKS
Ambridge, Pennsylvania

REPORT OF TESTS

CUSTOMER Drumell Corp.
SPECIFICATION ASTM-A106 + ASTM-A106
MATERIAL Carbon Steel Pipe

SPECIFICATION ASTM-A106 + ASME-SA106

MATERIAL *Amber En Bottled Pipe*

CUSTOMER

SPECIFICATION ASTOR-HICK & ASHME-SALO

MATERIAL Black, 2 1/2 Mch, 1 Kape

317

OUR ORDER NO 024321306-0005

CUSTOMER'S ORDER NO. CHA-2102

[illegible]

THE CHEMICAL ANALYSES AND PHYSICAL OR MECHANICAL TESTS REPORTED ABOVE ARE CORRECT AS CONTAINED IN THE RECORDS OF THE CORPORATION.

ARMCO STEEL CORPORATION

C. J. Van Dine

U. S. & C. Co.

10 x 112 1/2 x 11 1/2

~B6B~

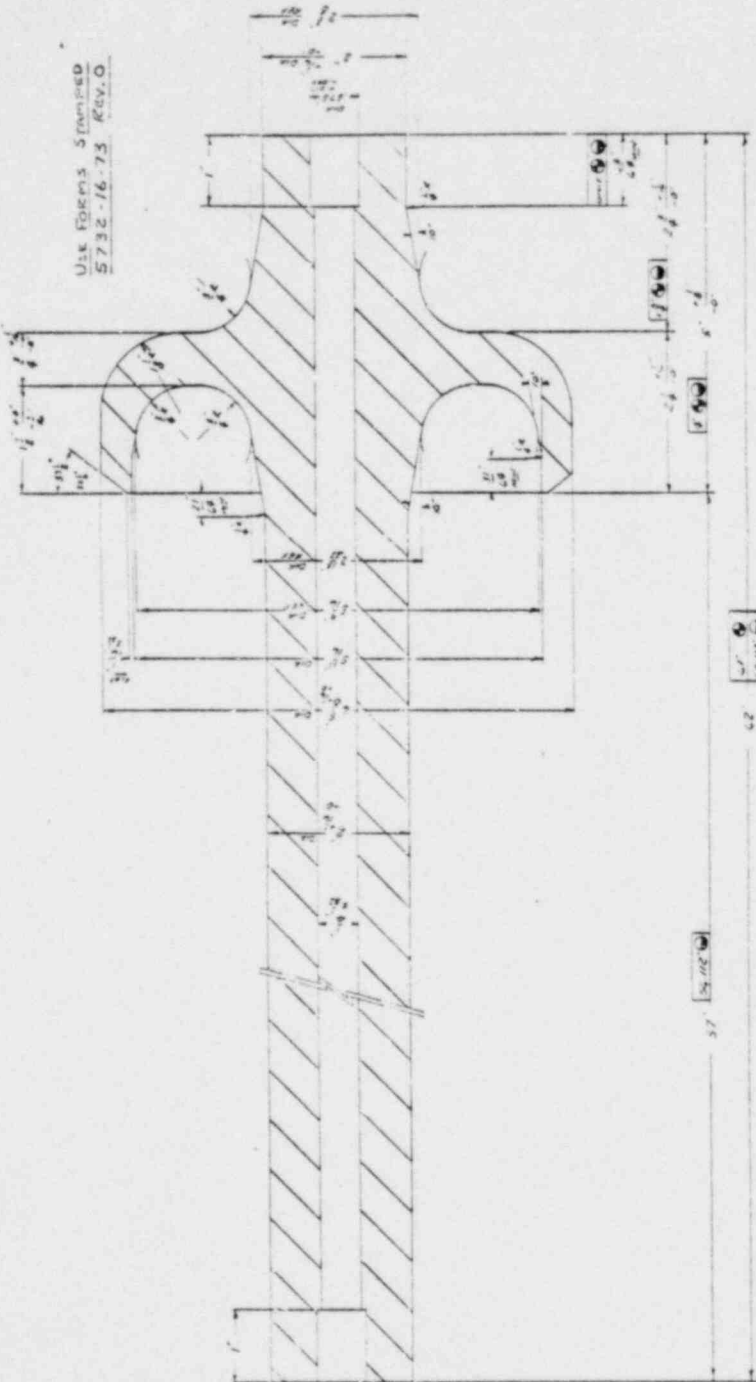
250/
FINISH ALL OVER
PERMANENT & RESIST TO WEAR

UNIT #2

Penetration Flued Head Fittings for
Steam Generator Blockhead Sample

P.O. ITEM	QTY	UNIT	DESCRIPTION	TOTAL PLANT NO.
10	51		Q2P15X3/8" CBB-4A	
10	52		Q2P15X3/8" CBB-4B	
10	53		Q2P15X3/8" CBB-4C	

Use Forms Stamped
5732-16-75 Rev. O



RECORD SEPIA

NOTES TO EFFECT IN 15 MIN. WORKING ORDER
WORKING TO 15 MIN. 15 MIN. WORKING ORDER

Check the drawing for any changes in the
drawing. If any changes are made, the drawing
must be revised and the revision must be
checked by the engineer.

George J. Hays
ENGINEER

MADE IN U.S.A.
UNIT #2 - 15 MIN. 15 MIN.

NP DWG 573216

DATE	BY	CHKD	APP'D	REVISION
6-12-50	W.B.H.			1
6-12-50	W.B.H.			2
6-12-50	W.B.H.			3
6-12-50	W.B.H.			4
6-12-50	W.B.H.			5
6-12-50	W.B.H.			6
6-12-50	W.B.H.			7
6-12-50	W.B.H.			8
6-12-50	W.B.H.			9
6-12-50	W.B.H.			10
6-12-50	W.B.H.			11
6-12-50	W.B.H.			12
6-12-50	W.B.H.			13
6-12-50	W.B.H.			14
6-12-50	W.B.H.			15
6-12-50	W.B.H.			16
6-12-50	W.B.H.			17
6-12-50	W.B.H.			18
6-12-50	W.B.H.			19
6-12-50	W.B.H.			20
6-12-50	W.B.H.			21
6-12-50	W.B.H.			22
6-12-50	W.B.H.			23
6-12-50	W.B.H.			24
6-12-50	W.B.H.			25
6-12-50	W.B.H.			26
6-12-50	W.B.H.			27
6-12-50	W.B.H.			28
6-12-50	W.B.H.			29
6-12-50	W.B.H.			30
6-12-50	W.B.H.			31
6-12-50	W.B.H.			32
6-12-50	W.B.H.			33
6-12-50	W.B.H.			34
6-12-50	W.B.H.			35
6-12-50	W.B.H.			36
6-12-50	W.B.H.			37
6-12-50	W.B.H.			38
6-12-50	W.B.H.			39
6-12-50	W.B.H.			40
6-12-50	W.B.H.			41
6-12-50	W.B.H.			42
6-12-50	W.B.H.			43
6-12-50	W.B.H.			44
6-12-50	W.B.H.			45
6-12-50	W.B.H.			46
6-12-50	W.B.H.			47
6-12-50	W.B.H.			48
6-12-50	W.B.H.			49
6-12-50	W.B.H.			50
6-12-50	W.B.H.			51
6-12-50	W.B.H.			52
6-12-50	W.B.H.			53
6-12-50	W.B.H.			54
6-12-50	W.B.H.			55
6-12-50	W.B.H.			56
6-12-50	W.B.H.			57
6-12-50	W.B.H.			58
6-12-50	W.B.H.			59
6-12-50	W.B.H.			60
6-12-50	W.B.H.			61
6-12-50	W.B.H.			62
6-12-50	W.B.H.			63
6-12-50	W.B.H.			64
6-12-50	W.B.H.			65
6-12-50	W.B.H.			66
6-12-50	W.B.H.			67
6-12-50	W.B.H.			68
6-12-50	W.B.H.			69
6-12-50	W.B.H.			70
6-12-50	W.B.H.			71
6-12-50	W.B.H.			72
6-12-50	W.B.H.			73
6-12-50	W.B.H.			74
6-12-50	W.B.H.			75
6-12-50	W.B.H.			76
6-12-50	W.B.H.			77
6-12-50	W.B.H.			78
6-12-50	W.B.H.			79
6-12-50	W.B.H.			80
6-12-50	W.B.H.			81
6-12-50	W.B.H.			82
6-12-50	W.B.H.			83
6-12-50	W.B.H.			84
6-12-50	W.B.H.			85
6-12-50	W.B.H.			86
6-12-50	W.B.H.			87
6-12-50	W.B.H.			88
6-12-50	W.B.H.			89
6-12-50	W.B.H.			90
6-12-50	W.B.H.			91
6-12-50	W.B.H.			92
6-12-50	W.B.H.			93
6-12-50	W.B.H.			94
6-12-50	W.B.H.			95
6-12-50	W.B.H.			96
6-12-50	W.B.H.			97
6-12-50	W.B.H.			98
6-12-50	W.B.H.			99
6-12-50	W.B.H.			100

BECHTEL POWER CORP.

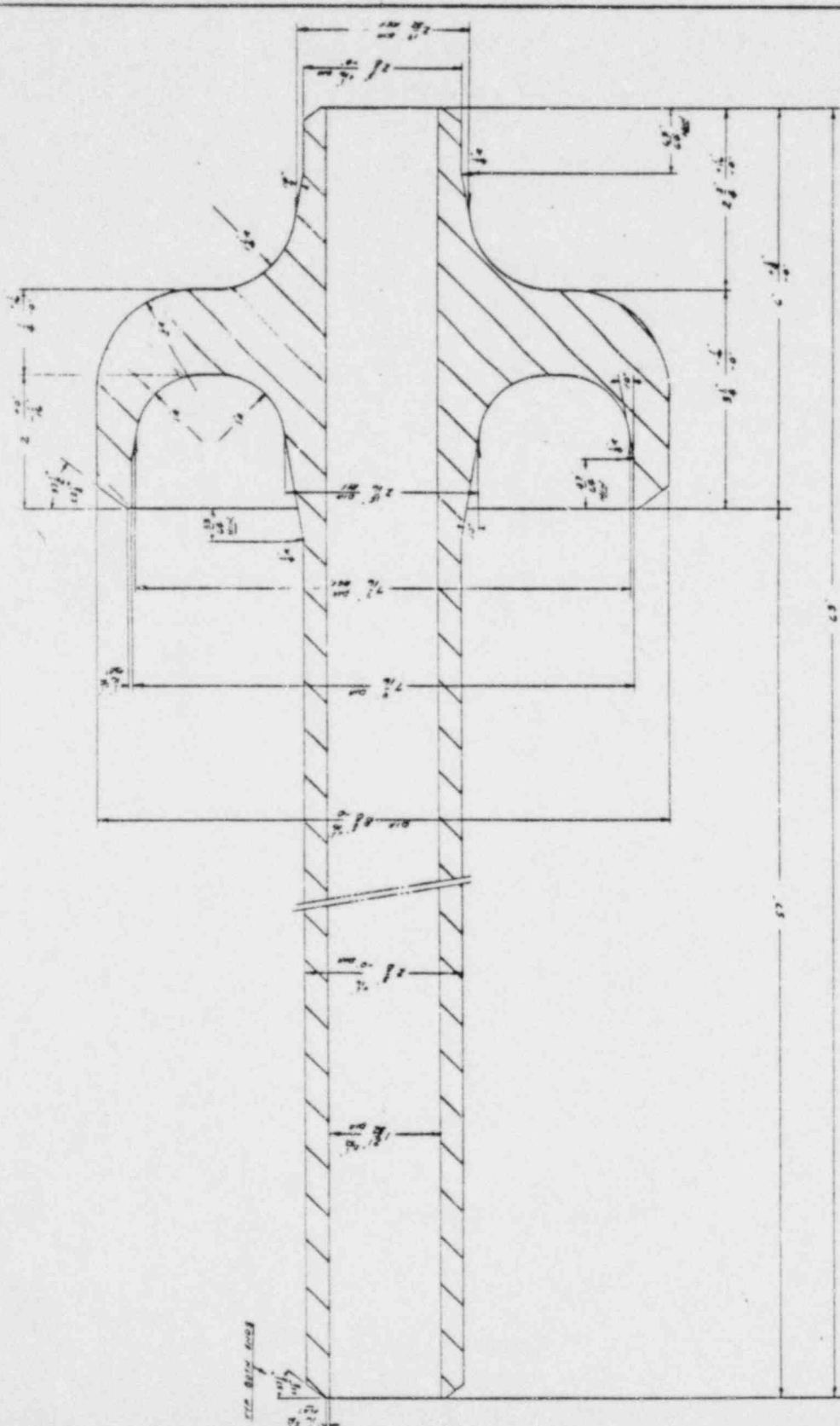
RECEIVED
DEC 11 1974

NO. NO 7597 - 03/20

7547-20-m18-22-3

42-4-5738	29
42-4-5738	20
42-4-5738	21

250 / FINISH ALL OVER



ON 22ND AUGUST 1960

UNIT 2 - PMP 2-100
NF DWG 573207

07-1007

0101 000 112
0101 000 112

	DATE	TIME	SUP ORDER	COPY
	6-7-80	19:20	60-A-5182	5

UNIT #2

Penetration Flued Head Fittings & Steam Generator Blowdown

P.O. PLANTS	PEN. NO.	TOTAL PLANT NO.
3	7	Q2G24X2" CBH-3A
3	8	Q2G24X2" CBH-3B
3	9	Q2G24X2" CBH-3C

RECORDED 5111A

25



MATERIAL HEAT NUMBER SHEET

Material Types:

1. Welded Assemblies
2. Non-Welded Code Matl.
3. Non Code Matl.

Piece-Mark	Serial No.	Material Heat No.	Matl. Type	Piece-Mark	Serial No.	Material Heat No.	Matl. Type
73-A	-	STIFF & INSERT ASSY.	1	38-A	-43-	SHELL R. ASSY.	1
77-1 ^L	-2-	802K53910 K30498-3		38-1	-93-	R7462385 T1596-6-5	
73-B	-	STIFF & INSERT ASSY.	1	38-A	-44-	SHELL R. ASSY.	1
77-1 ^R	-1-	802K53910 K30498-2		38-1	-92-	R7462385 T1597-4-1	
305-A	-	LOCK SLEEVE ASSY.	1	38-A	-45-	SHELL R. ASSY.	1
306-1	1-2	802K78860 L30115-1		38-1	-133-	R7462386 T1714-6-2	
306-2	1-2	801K08329 K10547-1					
306-3	1-2	801K24180 L30303-1		38-B	-41-	SHELL R. ASSY.	1
306-4	1-2	do do		38-1	-129-	R7462386 T1707-12-2	
306-5	-1-	801K08329 K10547-1					
306-6	1-8	801K06110 L10132-1		38-B	-42-	SHELL R. ASSY.	1
304-7	-1-	801K08329 K10547-1		38-1	-128-	R7462386 T1704-8-3	
8-A	-37-	SHELL R. ASSY.	1	38-B	-43-	SHELL R. ASSY.	1
38-1	-87-	R7462385 T1604-5-6		38-1	-127-	R7462386 T1690-4-1	
38-A	-38-	SHELL R. ASSY.	1				
38-1	-86-	R7462385 T1605-3-6					
						7047-Q-0009B	
38-A	-39-	SHELL R. ASSY.	1			A 18.04	
38-1	-85-	R7462385 T1606-7-1					
38-A	-40-	SHELL R. ASSY.	1				
38-1	-84-	R7462385 T1579-13-3					
38-A	-41-	SHELL R. ASSY.	1				
38-1	-95-	R7462385 T1607-4-2					
38-A	-42-	SHELL R. ASSY.	1				
38-1	-94-	R7462385 T1608-5-5					

RECEIVED
APR 04 1979

QCDS

Data taken from records in accordance with applicable CB&I QA Manual.

CB&I Shop QA R. E. HesterDate 1-7-74

REV
BY
CHKD
DATE

Reviewed (for material covered by code):

Authorized Inspector (Shop): H. J. WhiteDate 1-7-74

Contract No.
71-2065-2

Nr
Sh 1

OF 42W

BETHLEHEM STEEL CORPORATION
METALLURGICAL DEPARTMENT
REPORT OF TESTS AND ANALYSIS

PLANT BURNS HARBOR	SHIPMENT NO. 803-14917	DATE SHIPPED 06-30-73	CAR OR VEHICLE NO. PC LOUISVILLE LN PRR 480367
-----------------------	---------------------------	--------------------------	---

PAGE 3

SOLD TO

CHICAGO BRIDGE & IRON CO
BOX 277
BIRMINGHAM AL 35202

SHIP TO

CHICAGO BRIDGE & IRON CO
BOYLES AL

DESCRIPTION & SPECIFICATION CUSTOMER ORDER NO. SSCO ORDER NO.	SERIAL NUMBER	HEAT NUMBER	SIZE & QUANTITY					YIELD STRENGTH	TENSILE STRENGTH	ELONG. IN. %	BEND	HARDNESS	
			No. Pcs.	Thickness	Width or Dia.	Length	Weight					Rockwell C	Brinell
STEEL PLATES- MS-652 REV 0 & QAS 318 REV 0 ASME CHARPY V NOTCH OF 20 FT LB AT MINUS 30 DEG F PER NB-2300													
CO 2065-2 SHEET 65 GH 025-3995A													
	L 30115-01	802K78860	1	1- 1/2	70	324	9638	49500	72000	26%	OK		

I certify that the requirements
of the specification numbers
shown hereon have been met.

PLATE NORMALIZED AND STAMPED MT

HEAT NUMBER	CHEMICAL ANALYSIS											McQUARD- GRAM 1
	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Ti	
802K78860	.20	1.02	.007	.026	.25							61

SUBSCRIBED AND SWORN TO BEFORE ME
THIS 27 DAY OF July 1973
John Carter Carter
NOTARY PUBLIC
PORTER COUNTY INDIANA
MY COMMISSION EXPIRES MAY 10, 1976

I certify the above results to be correct as contained in the records of the Bethlehem Steel Corporation.

C. W. Roe

B. F. Fiedoruk

BETHLEHEM STEEL CORPORATION
METALLURGICAL DEPARTMENT
REPORT OF TESTS AND ANALYSIS

PLANT BURNS HARBOR	SHIPMENT NO. 803-14217	DATE SHIPPED 06-30-73	CAR OR VEHICLE NO. PC LOUISVILLE LN PRR 480367	PAGE 4
-----------------------	---------------------------	--------------------------	---	--------

SOLD TO

CHICAGO BRIDGE & IRON CO
BOX 277
BIRMINGHAM AL 35202

SHIP TO

CHICAGO BRIDGE & IRON CO
BOYLES AL

DESCRIPTION & SPECIFICATION CUSTOMER ORDER NO. BSC ORDER NO.	SERIAL NUMBER	HEAT NUMBER	SIZE & QUANTITY				YIELD STRENGTH	TENSILE STRENGTH	ELONG. IN. %	BEND	HARDNESS	
			No. Pcs.	Thickness	Width or Dia.	Length					Type	Value
STEEL PLATES- MS-652 REV 0 & QAS 318 REV 0 ASME CO 2065-2 SHEET 65 GH 025-3995												
	K 10547-01	801K08329	1	1/2	76	402	4328	56100	77500	3"24	OK	

We certify that the requirements
of the specification numbers
shown hereon have been met.

PLATE NORMALIZED AND STAMPED MT

HEAT NUMBER	CHEMICAL ANALYSIS											McQUAD GRAM
	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Ti	
801K08329	.21	1.15	.011	.029	.26							5/8

SUBSCRIBED AND SWORN TO BEFORE ME
THIS 27 DAY OF July 1973
Quayle Carter Carter
NOTARY PUBLIC
PORTER COUNTY INDIANA
MY COMMISSION EXPIRES MAY 10, 1976

I certify the above results to be correct as contained in the records of the Bethlehem Steel Corporation.

C. W. Roe

E. J. Friedman

CHIEF METALLURGIST

MATERIAL HEAT NUMBER SHEET

Material Types:

1. Welded Assemblies
2. Non-Welded Code Matl.
3. Non Code Matl.

Piece-Mark	Serial No.	Material Heat No.	Matl. Type	Piece-Mark	Serial No.	Material Heat No.	Matl. Type
70-A	-	EQUIP. Door ASSY	1				
72-3	-1-	802J14990 ✓ K11919-1					
72-3	-2-	802J14990 ✓ K11576-1					
72-4	142	801J13870 K10231-1					
72-9	1456	801K04330 K10202-1					
72-12	1428	801K00010 K47002-1A					
72-10	1456	801K04530 K10202-1					
72-1	142	801J00760 K30548-1					
72-2	142	801J00760 K30548-1					
72-11	R24	R-24					
72-14	R25	R-25					
72-15	R21	R-21					
71-1	-1-	801K04530 K10202-1					
71-A	-	BARREL ASSY	1				
72-5	144	801K00010 K47002-1A					
72-6	148	801K04530 K10202-1					
72-7	-1-	801K02660 K30431-1					
72-7	-2-	801K02660 K30431-2					
72-8	1440	801K04530 K10202-1					

7047-Q-00098
A18.04

RECEIVED
APR 04 1979
QCDS

Data taken from records in accordance with applicable CB&I QA Manual.
CB&I Shop QA R. E. Hunter Date 1-2-74

Reviewed (for material covered by code):
Authorized Inspector (Shop) W. J. White

Date 1-2-74

REV
BY
CHKD
DATE

Contract No.
71-2065-2

No. 28
Sh 1 of 1

BETHLEHEM STEEL CO. CORPORATION
METALLURGICAL DEPARTMENT
REPORT OF TESTS AND ANALYSIS

SHIPMENT NO. 803-07600 DATE SHIPPED 03-28-73 CAR OR VEHICLE NO. ECK MILLER TRLR 000123 PAGE 1

CHICAGO BRIDGE & IRON CO
BOX 277
BIRMINGHAM AL 35202

SHIP TO CHICAGO BRIDGE & IRON CO
BOYLES AL

DESCRIPTION & SPECIFICATION CUSTOMER ORDER NO. BSCC ORDER	SERIAL NUMBER	HEAT NUMBER	SIZE & QUANTITY				YIELD STRENGTH	TENSILE STRENGTH	ELONG. IN. %	BEND	HARDNESS		RED. %
			No. Pcs.	Thickness	Width or Dia.	Length					Type	Value	
EL PLATES- MS-661 REV O & QAS-321 CHARTY V NOTCH IMPACT OF 20 FT LB AT MINUS 50 2065-2 SHEET 51 GH 025-2658C					SA516 GR 70 PVQ & ASME SECT 3 LONG DEG F PER NB 2300								
K 11576-01802J14990	1	3	63	373	19972	B 61000 T 61200	78800 81000	2 28					
K 11919-01802J14990	1	3	63	373	19972	B 59800 T 59400	81700 81700	2 28					

Verify that the requirements
of the specification numbers
shown hereon have been met.

PLATES QUENCHED AND TEMPERED AND STAMPED MT

HEAT NUMBER	CHEMICAL ANALYSIS										McQUAD-200 GRAIN SIZE
	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Ti	
02J14990	.23	1.08	.006	.019	.24						6/8

SUBSCRIBED AND SWORN TO BEFORE ME
THIS 3 DAY OF April 1973
J. Curtis Carlson
NOTARY PUBLIC
PORTER COUNTY INDIANA
MY COMMISSION EXPIRES MAY 10, 1975

C. W. Roe 1/1/1973



DRAWING INDEX

1. MAIN STEAM SYSTEM

P & ID, D-205033, Sht. 1, Rev. 10 and Sht. 2, Rev. 10
Isometrics 2-4, Rev. 3 & 2-5, Rev. 5
Main Steam Isolation Valve, 21261 H, Rev. 8
Flued Head, 573201 Rev. 1

2. FEEDWATER

P & ID, D-205073, Rev. 7 and D-205007, Rev. 9
Isometrics, 2-9, Rev. 1 & 2-10, Rev. 2
Feedwater Stop Check Valve, PD-423593, Rev. 0
Flued Head, 573204, Rev. 2

3. CONTAINMENT HATCHES & PENETRATIONS

Personnel Lock Sleeve Assy., 305, Rev. 3
Equipment Door Barrel Assy., 71, Rev. 3
Equipment Door Assy., 70, Rev. 3
Penetration Assy., 60, Rev. 3
Penetration Assy., 59, Rev. 2

4. P & ID LEGENDS

Bechtel Standards, D-175016, Sht. 1, Rev. 1 and Sht. 2, Rev. 1
Westinghouse Standards, D-175044, Rev. 2