

Energy Industries of Ohio

Contract # S005242-F

Modular Coil Winding Form

A-2 Documentation Package

7/20/06

This A-2 Documentation consists of:

Part 1

Final documentation package Metal Tek Intl. – Pages 3 – 63
Latest revision 7/20/2006
Foundry documentation

Part 2

Final documentation package Major Tool - Pages 64 -
Latest revision
Machine shop documentation

Part 3

Metal Tek radiographic films from part 1 (shipped to PPPL)

Major Tool radiographic films from part 2 (shipped to PPPL)

Energy Industries of Ohio

Contract # S005242-F

Modular Coil Winding Forms

A-2 Documentation Package

**Part 1 – Metal Tek International
Casting Data Package**

7/20/06

**Note – Document #'s listed in the TOC (page 4) are not necessarily the same as the number hand written on the top of the document. Please use page # to find relevant document.

A-2 Documentation Package

List of Documents 7-20-06

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2	MTR for A-2 Shim revised 8/16/05	6
3	Lincoln weld metal product conformance spec Lot 30188513/78308	7
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7/20/06		

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Carondelet Division

8600 Commercial Blvd. - Pevely, MO 63070 USA
Phone: 636-479-4499 - Fax: 636-479-3399

Material Test Report

ENERGY INDUSTRIES OF OHIO

Purchase Order Number PPPL-FP-LTS-2

Pattern Number MCWF-A2

CAF Metal Designation CF8MNMnMod

Material Spec CF8MNMnMOD

Weighted average of 3 heats - 31032(42%),31042(22%),31045(36%) Total Weight 31570 lbs.

Date: 12/13/05

Cert Number 175410-1

Pour Date 9/26/2005

Element	Min	Actual	Max
C	0.04	0.04	0.07
MN*	2.3	2.9	2.8
SI	0.0	0.4	0.7
CR	18.0	18.3	18.5
NI	13.0	13.1	13.5
MO	2.1	2.3	2.5
P	0.0	0.034	0.035
S	0.0	0.012	0.025
N	0.24	0.25	0.28

*Over specification, see CA 1323.

PRODUCT ANALYSIS

Results of spectrometer analysis of cast on test bar after spectrometer preventive maintenance performed and at Wisconsin Centrifugal.

Element	CAF after PM			WC Analysis		
	Z1	Z2	Z3	Z1	Z2	Z3
SI	0.4	0.6	0.4	0.4	0.6	0.4
MN	2.7	2.5	2.7	2.5	2.3	2.5
CR	18.2	18.3	18.1	18.0	18.2	18.1
NI	13.0	13.1	13.0	13.2	13.3	13.2
MO	2.3	2.3	2.3	2.3	2.3	2.3
P	0.035	0.032	0.036	0.034	0.030	0.036
S	0.012	0.012	0.012	0.026	0.024	0.029

Respectfully Submitted,
Charles A. Ruud
Quality Assurance Manager

Superior Quality Engineered Metal Products

www.MetalTekInt.Com



Carondelet Division

8600 Commercial Blvd. - Pevely, MO 63070 USA
Phone: 636-479-4499 - Fax: 636-479-3399

Material Test Report

ENERGY INDUSTRIES OF OHIO

Purchase Order Number PPPL-FP-LTS-2 Heat Number 29198 Pour Date 4/28/2005
Pattern Number SE-141-073 COIL C SHIM (-3 thru -6 Parts) Cert Number S73220-2 and
SE-141-033 COIL A SHIM (-1 thru -6 Parts) Cert Number S76220-1
CAF Metal Designation CF8MNMnMod
Material Spec CF8MNMN MOD

Revised 8/16/05

Element	Min	Actual	Max
C	0.040	0.070	0.070
CR	18.000	18.100	18.500
MN	2.300	2.970	2.800
MO	2.100	2.450	2.500
N	0.240	0.255	0.280
NI	13.000	13.120	13.500
P*	0.000	0.013	0.015
S*	0.000	0.010	0.015
SI	0.000	0.700	0.500

MN & SI previously reported on CA 1308 and were accepted.

*P & S taken from test from heat parts were poured from and analyzed by wet chemistry, ASTM E1019-03 for sulfur and Gravimetric for phosphorous.

This report covers the eleven castings poured from heat 29198. Only parts listed above however will be shipped for this order. Each casting has a unique number stamped in the part adjacent to the pattern number to differentiate the part and subsequent reporting that will be traced to the casting.

Respectfully Submitted,
Charles A. Ruud
Quality Assurance Manager

Superior Quality Engineered Metal Products

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PRODUCT CONFORMANCE REPORT



Product	LNM 4455	Size(s) mm	1,2
Class	EN 12072-99: G 20 16 3 Mn L	Lot/Batch	3018513/78308
		Item No.	692129
Customer	EUROWELD MOORESVILLE N.C. 28117 UNITED STATES	Quantity	105,0 KG
		Customer ref.	P.O. : 05 - 46
		LSW Order No.	SD427896

Chemical analysis (%) EN10204 2.2

C	Si	Mn	P	S	Cr	Ni	Mo	Cu	N
0,01	0,5	7,3	0,015	0,001	20,3	15,4	2,9	0,1	0,19

Mechanical tests, all weld metal EN10204 2.2

Tensile testing					Impact testing		
Cond.	Temp.	Rp0.2	Rm	A5	Cond.	Temp.1	Av1
	°C	N/mm2	N/mm2	%		°C	J
AW	RT	407	623	41	AW	-196	67

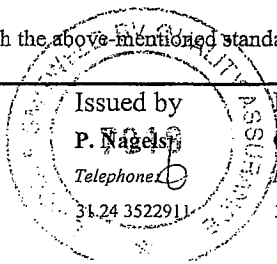
Additional information EN10204 2.2

Other tests

Remarks
Impact testing (individual values): 70J - 65J - 67J.

The product identified above has been manufactured, tested and supplied in compliance with a Quality Assurance Programme that fulfils the requirements of EN 29000/ ISO 9000/BS 5750 or similar standard.
We herewith certify that the product complies with the above-mentioned standards.
Certified ISO 9001:2000.

Company	Lincoln Smitweld B.V.	Registered Office	Nieuwe Dukenburgseweg 20 6534 AD NIJMEGEN	Post address	P.O. Box 253 6500 AG Nijmegen	Issued by	P. Nagels	Telephone	31 24 3522911	Function	QA Administrator	Date	22/03/2005	Cert.No.	3018513/7830	Fax:	31 24 3522200
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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

METALTEK INTERNATIONAL
 8600 Commercial Blvd.
 Pevely, MO 63070

August 16, 2005
 Lab No. 05P-2532
 P.O. No. 21324
 Page 1 of 2

Attention: Chuck Ruud

REPORT OF CHARPY IMPACT TEST

MATERIAL (SAMPLE ID): LNM 4455, LINCOLN LOT 3018513/78308
SPECIFICATION: ASTM A 370-03a
SPECIMEN TYPE: "A" Vee Notch
SPECIMEN SIZE: 10 mm x 10 mm
TEMPERATURE OF TEST: 293°K

BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
LNM4455-7	104	0.085	100
LNM4455-8	106	0.093	100
LNM4455-9	99	0.084	100
Average	103	0.087	100

Identification of tested specimen provided by client.


 Kari Schmitz, Director
 Materials Testing

KS/tlv



Certificate No. 0397-01
 Certificate No. 0397-02

AN OFFICIAL COPY OF TEST REPORT WILL BE PROVIDED BY THIS LABORATORY ON REQUEST.
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August 16, 2005
 Lab No. 05P-2532
 P.O. No. 21324
 Page 2 of 2

Attention: CHUCK RUUD

REPORT OF MECHANICAL TESTS

SAMPLE ID: LNM 4455, LINCOLN LOT 3018513/78308

Sample ID	Original Area Sq. Inches	Reduced Area Sq. Inches	Reduction in Area %	Yield Strength PSI	Tensile Strength PSI	Elongation (2.0" Gage Length)		Modules of Elasticity
						in.	%	
LNM4455	0.1932	0.0866	55.2	65200	95200	0.76	38.0	23.4

Round, reduced section tensiles

Yield taken at .2% offset

Tested in accordance with ASTM A 370-03a

Identification of tested specimens provided by the client.

KS/tlv


 Karl Schmitz, Director
 Materials Testing



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 Pevely, MO 63070

October 5, 2005
 Lab No. 05P-3096
 P.O. No. 21324
 Page 1 of 1

Attention: Chuck Ruud

REPORT OF CHARPY IMPACT TEST

MATERIAL (SAMPLE ID): WELD PLATE- 3018513 / 78308
SPECIFICATION: ASTM A 370-03a
SPECIMEN TYPE: "A" Vee Notch
SPECIMEN SIZE: 10 mm x 10 mm
TEMPERATURE OF TEST: -320°F
REQUIREMENTS: minimum 35 ft / lbs.

BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
3018513/78308-1	48	0.033	50
3018513/78308-2	65	0.045	50
3018513/78308-3	48	0.033	50
Average	54	0.037	50

Identification of tested specimen provided by client.

KS/tlv

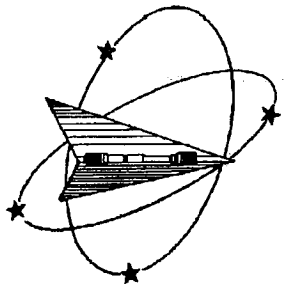

 Karl Schmitz, Director
 Materials Testing



Certificate No. 0397-01
 Certificate No. 0397-02

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 P.O. Box 388
 Westmoreland Drive
 Youngstown, Pa. 15696-0388 U.S.A.
 Telephone: 724-537-3131 Fax: 724-537-3151
 Website: www.wmtr.com
 WMT&R is a technical leader in the material testing industry.



Section 1 of 1
 WMT&R Report No. 5-35979
 Requisition No. 4972

October 18, 2005

CERTIFICATION

MetalTek International
 The Carondelet Division
 8600 Commercial Blvd.
 I-55 Industrial Park
 Pevely, MO 63070-1528

Attention: Jim Galaske

Subject: All processes, performed upon the material as received, were conducted at WMT&R, Inc. in accordance with the WMT&R Quality Assurance Manual, Rev. 9, dated 4/1/2000.
 The following tests were performed on this order: TENSILE

TENSILE RESULTS: ASTM E21-03a

SOAK TIME: 5 Minutes

SPEED OF TESTING: 0.0030 in./in./min., 0.0500 in./min./in.

MATERIAL: METALTEK CF8MNMNMOD

DISPOSITION: Report

Specimen ID	TestLog Number	Temp. °F	UTS ksi	0.2% YS ksi	Elong %	RA %	Modulus Msi	Ult. Load lbf	0.2% YLD. lbf	Orig. Dia. (in.)	Final Dia. (in.)	4D Orig GL (in.)	4D Final GL (in.)	Orig. Area (sq. in.)	Machine Number	AIUR
3018513/78308	C54936	-320	184.9	123.7	33	33	32.8	18470	12350	0.3566	0.2926	1.40	1.86	0.09987403	M9	R

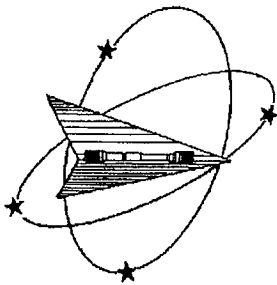
AIUR: A=ACCEPTABLE, U=UNACCEPTABLE, R=REPORT


 Roy E. Star
 Technical Services Manager / Tensile Supervisor

10-18-05
 October 18, 2005

KNOWINGLY OR WILLFULLY FALSIFYING OR CONCEALING A MATERIAL FACT ON THIS FORM OR MAKING FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR REPRESENTATIONS HEREIN COULD CONSTITUTE A FELONY PUNISHABLE UNDER FEDERAL STATUTES. THIS CERTIFICATE OR REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF WMT&R, INC.

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Youngstown, Pa. 15696-0388 U.S.A.

Telephone: 724-537-3131 Fax: 724-537-3151

Website: www.wmtr.com

WMTR is a technical leader in the material testing industry.



621-01 & 621-02



December 28, 2005

CERTIFICATION

Section 1 of 1

WMT&R Report No. 5-40960

P.O. No. 19386

Requisition No. 7743

MetalTek International
The Carondelet Division
8600 Commercial Blvd.
I-55 Industrial Park
Pevely, MO 63070-1528

Attention: Jim Galaske

Subject: All processes performed upon the material as received were conducted at WMT&R, Inc. in accordance with the WMT&R Quality Assurance Manual, Rev. 9, dated 4/7/2000.

The following tests were performed on this order: TENSILE

TENSILE RESULTS: ASTM E21-05

Requirements: UTS ksi (Min 95|Max ---) 0.2% YS ksi (Min 72|Max ---) 4D Elong. % (Min 32|Max ---) Modulus Msi (Min 21|Max ---)

SOAK TIME: 5 Minutes

SPEED OF TESTING: 0.003 in./in./min., 0.05 in./min./in.

MATERIAL: Metaltek CF8MNMnMOD

DISPOSITION: Acceptable

Specimen ID	Test Log Number	Temp. °F	UTS ksi	0.2% YS ksi	Elong %	RA %	Modulus Msi	Ult Load lbf	0.2% YLD. lbf	Orig. Dia. (in.)	Final Dia. (in.)	4D Orig GL (in.)	4D Final GL (in.)	Orig. Area (sq. in.)	Machine Number	AUAR
A2-Z1	C90232	-320	164.0	99.7	59	55	24.9	15870	9645	0.3510	0.2344	1.40	2.22	0.09676184	M9	A
A2-Z2	C90233	-320	166.8	100.3	56	53	25.1	16160	9713	0.3512	0.2419	1.40	2.19	0.09687214	M9	A
A2-Z3	C90234	-320	165.2	99.8	54	51	25.9	16010	9674	0.3513	0.2462	1.40	2.16	0.09692731	M9	A

AUAR: A=ACCEPTABLE, U=UNACCEPTABLE, R=REPORT

Customer supplied requirements.

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Matt Wojton
Roy E. Starbuck Wojton
Technical Services Manager / Tensile Supervisor

12-28-05
December 28, 2005

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METALTEK INTERNATIONAL
 8600 Commercial Blvd.
 Pevely, MO 63070

November 3, 2005
 Lab No. 05P-3331
 P.O. No. 21324
 Page 1 of 3


Attention: Chuck Ruud

REPORT OF CHARPY IMPACT TEST

MATERIAL (SAMPLE ID): A2- COIL, Z1, Z2, Z3
SPECIFICATION: ASTM A 370-03a
SPECIMEN TYPE: "A" Vee Notch
SPECIMEN SIZE: 10 mm x 10 mm
TEMPERATURE OF TEST: 77°K
REQUIREMENTS: 35 ft / lbs

BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
Z1-4	81	0.051	40
Z1-5	71	0.036	50
Z1-6	110	0.028	60
Average	87	0.038	50
SAMPLE ID	FOOT LBS.	LATERAL EXPANSION	% SHEAR
Z2-4	75	0.031	40
Z2-5	74	0.054	50
Z2-6	78	0.029	30
Average	76	0.038	40
SAMPLE ID	FOOT LBS.	LATERAL EXPANSION	% SHEAR
Z3-4	82	0.048	40
Z3-5	73	0.046	50
Z3-6	67	0.031	40
Average	74	0.042	43

Identification of tested specimen provided by client.


 Karl Schmitz, Director
 Materials Testing



Certificate No. 0397-01
 Certificate No. 0397-02

AN OFFICIAL COPY OF TEST REPORT WILL BE PROVIDED BY THIS LABORATORY ON REQUEST.
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November 3, 2005
 Lab No. 05P-3331
 P.O. No. 21324
 Page 2 of 3

Attention: Chuck Ruud

REPORT OF CHARPY IMPACT TEST

MATERIAL (SAMPLE ID): A2- COIL, Z1, Z2, Z3
SPECIFICATION: ASTM A 370-03a
SPECIMEN TYPE: "A" Vee Notch
SPECIMEN SIZE: 10 mm x 10 mm
TEMPERATURE OF TEST: + 293°
REQUIREMENTS: *Ch 50* 60 ft / lbs

BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
Z1-4	180	0.111	90
Z1-5	158	0.076	80
Z1-6	174	0.096	80
Average	171	0.094	83
SAMPLE ID	FOOT LBS.	LATERAL EXPANSION	% SHEAR
Z2-4	160	0.091	90
Z2-5	204	0.066	90
Z2-6	170	0.092	90
Average	178	0.083	90
SAMPLE ID	FOOT LBS.	LATERAL EXPANSION	% SHEAR
Z3-4	140	0.096	90
Z3-5	140	0.076	90
Z3-6	148	0.056	90
Average	143	0.076	90

Identification of tested specimen provided by client.

Karl Schmitz
 Karl Schmitz, Director
 Materials Testing



Certificate No. 0397-01
 Certificate No. 0397-02

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 Pevely, MO 63070

November 3, 2005
 Lab No. 05P-3331
 P.O. No. 21324
 Page 3 of 3

Attention: Chuck Ruud

REPORT OF MECHANICAL TESTS

SAMPLE ID: A-2 COIL, Z1, Z2, Z3

Sample ID	Original Area Sq. Inches	Reduced Area Sq. Inches	Reduction in Area %	Modulus of Elasticity	Yield Strength PSI	Tensile Strength PSI	Elongation (2.0" Gage Length)	
							in.	%
Z1	0.1948	0.1007	48.3	22.5 Msi	44400	83200	1.13	56.5
Z2	0.1924	0.0755	60.8	21.7 Msi	42100	83700	1.14	57.0
Z3	0.1987	0.0774	61.0	22.3 Msi	43300	84300	1.10	55.0

Round, reduced section tensiles
 Yield taken at .2% offset
 Tested in accordance with ASTM A 370-03a
Identification of tested specimens provided by the client.

KS/tlv


 Karl Schmitz, Director
 Materials Testing



Certificate No. 0397-01
 Certificate No. 0397-02

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A-2 Coil Weld Map – Metal Tek

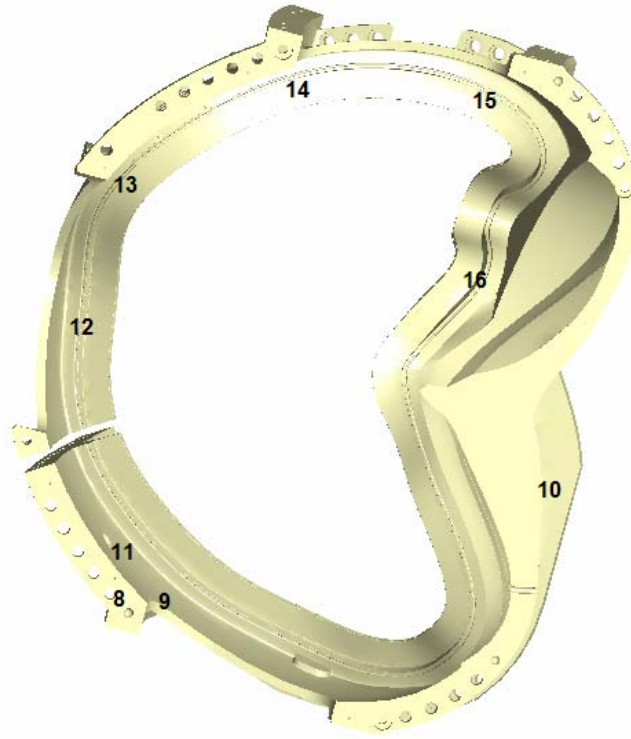
Map of all major welds exceeding 20% of wall, over 1 inch or over 10² inches

Defect Number	Drawing View	Length (inches)	Width (inches)	Depth (inches)
1	Right	4 ³ / ₄	2	1 ¹ / ₈
2	Right	2 ¹ / ₂	2 ⁷ / ₈	1
3	Right	16	3	Thru
4	Right	23	2 ¹ / ₂	2
5	Right	6 ³ / ₄	2 ³ / ₄	2 ¹ / ₂
6	Right	5 ³ / ₄	3 ¹ / ₂	1 ¹ / ₂
7	Right	11	1 ¹ / ₈	¹ / ₄
8	Front	2 ³ / ₄	3	2
9	Front	4 ³ / ₄	2 ³ / ₄	2
10	Front	2 ¹ / ₂	2 ¹ / ₂	1
11	Front	13	3	2
12	Front	8	3	2
13	Front	9 ¹ / ₄	2 ¹ / ₂	Thru
14	Front	6	2 ¹ / ₂	1
15	Front	7 ³ / ₄	6 ¹ / ₂	¹ / ₂
16	Front	11	4 ¹ / ₂	1
17	Right	4 ¹ / ₂	4	1
18	Right	4 ¹ / ₄	2 ¹ / ₂	Thru
19	Right	3 ⁷ / ₈	3 ³ / ₄	1 ¹ / ₈
20	Back	4	3 ³ / ₄	1 ¹ / ₈
21	Back	29	4	Thru
22	Back	7	1 ³ / ₄	1
23	Back	6	3 ¹ / ₄	1 ¹ / ₂
24	Back	13 ³ / ₄	1 ¹ / ₂	1
25	Back	13 ¹ / ₂	1 ¹ / ₂	³ / ₄
26	Back	10	1 ³ / ₄	1 ¹ / ₂
27	Back	10 ¹ / ₂	1	³ / ₄
28	Back	5	3	1 ¹ / ₄

A-2 Coil Weld Map – Metal Tek

Map of all major welds exceeding 20% of wall, over 1 inch or over 10² inches

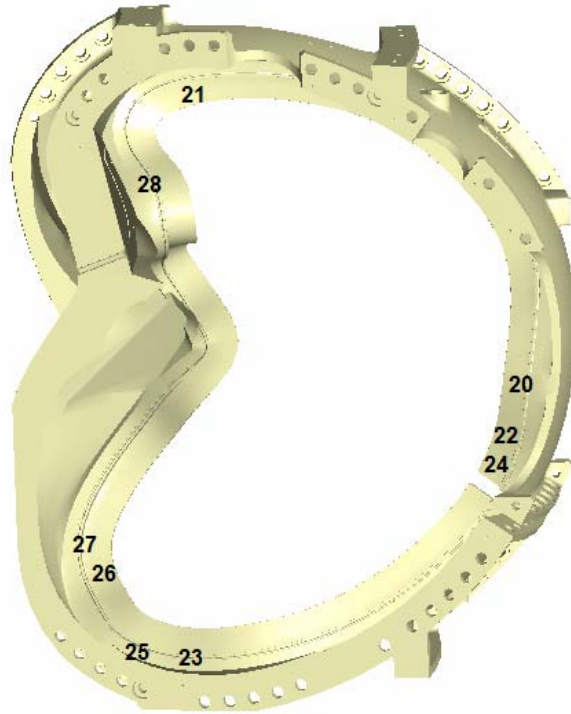
A-2
Front



A-2 Coil Weld Map – Metal Tek

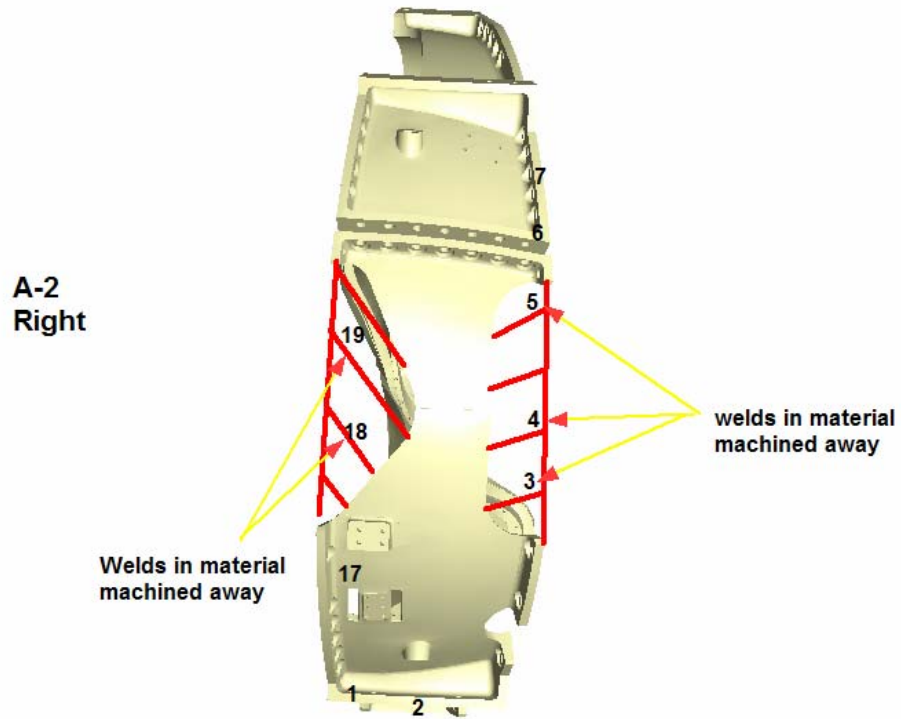
Map of all major welds exceeding 20% of wall, over 1 inch or over 10² inches

A-2
Back



A-2 Coil Weld Map – Metal Tek

Map of all major welds exceeding 20% of wall, over 1 inch or over 10² inches



TEAM COOPERHEAT-MQS, INC.

CERTIFIED RADIOGRAPHIC INSPECTION REPORT

FORM 6061-RT- 002 Rev.2

5512 W. State St. Milwaukee, WI 53208 Tel:(414)771-3060 Fax:(414)771-9481 (800)818-6403 www.cooperheat-mqs.com

CUSTOMER		DATE	WORK ORDER NO.
NAME METAL TEK INTERNATIONAL		10/07/2005	361-02661
ADDRESS 8600 COMMERCIAL BLVD		P.O. NUMBER 22409	XRAY X
CITY PEVELY STATE MO ZIP 63070			GAMMA
PROCEDURE SPECIFICATION ASTM E94-93	ACCEPTANCE CRITERIA MSS-SP-54-1999	SHEET _____ OF _____	

PART NUMBER	Serial No	View	No Apparent Indications		Incomplete Penetration		Shrinkage		Film Artifacts		REMARKS
			Acceptable	Rejected	Dross or Slag	Porosity	Lack of Fusion Gas Cracks	Hot Tears	Under cut	Surface	
MCWFA-2	2	1-2	✓								
		2-3		R					R		
Z103990		3-4	✓								
HT# M175410		4-5	✓								
CO 40851		5-6	✓					2-3			
		6-7	✓					2-3			
		7-8		R				4			
		8-9	✓					2			
		9-10	✓								
		10-11	✓					1-2			
		11-12	✓		2						
		12-13		R					R		
		13-14	✓		2				1-2		
		15	✓								
		16-17	✓								
		17-18	✓								
		18-19	✓								
		19-20	✓								
		20-21	✓								
		21-22		R					R		
		22-23	✓								
		23-24		R					R		
		24-25		R					R		
		25-26	✓					2			
		26-27	✓								

NO. ACCEPTED	Φ	NO. REJECTED	1	MQS TECH. NO.	12970	SHT.	REV.
COMMENTS				CUST. RSS NO.		SHT.	REV.
				REVIEWER	<i>John Petroske</i>		
				CERTIFIED NDT LEVEL (RT)			
				John Petroske RT II Exp. 01/08			

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ADDRESS 8600 COMMERCIAL BLVD		P.O. NUMBER	XRAY X
CITY PEVELY STATE MO ZIP 63070		22409	GAMMA
PROCEDURE SPECIFICATION	ACCEPTANCE CRITERIA	SHEET ____ OF ____	
ASTM E94-93	MSS-SP-54-1999		

PART NUMBER	Serial No	View	No Apparent Indications		Incomplete Penetration		Shrinkage		Film Artifacts		REMARKS
			Acceptable	Rejected	Dross or Porosity	Lack of Fusion Gas Cracks	Hot Under Tears cut	Surface			
MCWFA-2	1	27-28	✓	R			R	R			
		28-29	✓							✓	
Z103990		29-1	✓								
HT# M175410		30-31	✓							✓	
CO 40851		31-32		R				R			
		32-33	✓								
		33-34	✓							✓	
		34-35	✓		1						
		35-36		R	5			R			
		37-38		R				R			
		38-39	✓		1						
		39-40	✓								
		41-42	✓							✓	
		43-44		R	4						
		44-45	✓				1				
		45-46	✓								
		46-47	✓							✓	
		47-48	✓								
		48-49	✓								
		50-51	✓							✓	
		51-52	✓								✓
		52-53		R				R			
		54-55	✓				1				
		55-56		R				4	R		
		57-58	✓								

NO. ACCEPTED	Φ	NO. REJECTED	1	MQS TECH. NO.	12970	SHT.	REV.
COMMENTS				CUST. RSS NO.		SHT.	REV.
				REVIEWER	<i>John Petroske</i>		
				CERTIFIED NDT LEVEL (RT)			
				John Petroske RT II Exp. 01/08			

TEAM COOPERHEAT-MQS, INC.

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FORM 6061-RT- 002 Rev.2

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CUSTOMER		DATE	WORK ORDER NO.
NAME METAL TEK INTERNATIONAL		10/07/2005	361-02661
ADDRESS 8600 COMMERCIAL BLVD		P.O. NUMBER	XRAY X
CITY PEVELY STATE MO ZIP 63070		22409	GAMMA
PROCEDURE SPECIFICATION ASTM E94-93	ACCEPTANCE CRITERIA MSS-SP-54-1999	SHEET ____ OF ____	

PART NUMBER	Serial No	View	No Apparent Indications		Incomplete Penetration		Shrinkage		Film Artifacts		REMARKS
			Acceptable	Rejected	Dross or Porosity	Lack of Fusion Gas Cracks	Hot Tears	Under Surface			
MCWFA-2	1	58-59	✓					1			
		59-60	✓		1						
Z103990		60-61	✓					2			
HT# M175410		61-62	✓					2			
CO 40851		62-63		R					R		
		63-64		R					R		
		64-65	✓							✓	
		65-66	✓							✓	
		66-67		R				R		✓	
		67-68		R				4			
		68-69		R			2	4			
		69-70	✓								
		70-71	✓					1			
		71-72		R				4			
		72-73		R			4				
		73-74	✓								
		74-75	✓				2				
		75-76	✓								
		76-77		R	3-4		4				
		77-78	✓								
		78-79	✓								
		79-80	✓								
		80-81	✓							✓	
		81-82	✓		2						

NO. ACCEPTED	NO. REJECTED	MQS TECH. NO.	SHT.	REV.
4	1	12970		
COMMENTS		CUST. RSS NO.	SHT.	REV.
		REVIEWER		
		John Petroske		
		CERTIFIED NDT LEVEL (RT)		
		John Petroske RT II Exp. 01/08		

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ADDRESS 8600 COMMERCIAL BLVD		P.O. NUMBER 22409	XRAY X
CITY PEVELY STATE MO ZIP 63070			GAMMA
PROCEDURE SPECIFICATION ASTM E94-93	ACCEPTANCE CRITERIA MSS-SP-54-1999	SHEET ____ OF ____	

PART NUMBER	Serial No	View	No Apparent Indications		Dross		Incomplete Penetration		Shrinkage		Film Artifacts		REMARKS
			Acceptable	Rejection	Inclusion	Porosity	Lack of Fusion	Gas Cracks	Hot Tears	Under cut	Surface		
MCWFA-2	1	82-83	✓		2								
		84-85	✓									✓	
Z103990		85-86	✓									✓	
HT# M175410		86-87	✓										
CO 40851		87-88	✓										
		88-89	✓									✓	
		89-90	✓									✓	
		90-91			R			4				✓	
		92-93	✓									✓	
		94-95			R				4			✓	
		95-96			R				4-5			✓	
		96-97			R				5			✓	
		97-98	✓						2-3			✓	
		98-99			R				4			✓	
		99-100			R			4	3-4			✓	
		100-101	✓					3	3			✓	
		102-103			R			4					
		103-104	✓						3				
		104-105	✓						3				
		106-107	✓										
		107-108	✓										
		108-109			R 5				2				
		109-110	✓						2				
		111-112	✓										
		112-113	✓						1				

NO. ACCEPTED	NO. REJECTED	MQS TECH. NO.	SHT.	REV.
φ	1	12970		
COMMENTS		CUST. RSS NO.	SHT.	REV.
		REVIEWER <i>John Petroske</i>		
		CERTIFIED NDT LEVEL (RT)		
		John Petroske RT II Exp. 01/08		

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CUSTOMER		DATE	WORK ORDER NO.
NAME METAL TEK INTERNATIONAL		10/07/2005	361-02661
ADDRESS 8600 COMMERCIAL BLVD		P.O. NUMBER 22409	XRAY X
CITY PEVELY STATE MO ZIP 63070			GAMMA
PROCEDURE SPECIFICATION ASTM E94-93	ACCEPTANCE CRITERIA MSS-SP-54-1999	SHEET ____ OF ____	

PART NUMBER	Serial No	View	No Apparent Indications		Dross		Incomplete Penetration		Shrinkage		Film Artifacts		REMARKS
			Acceptable	Rejected	Included	or Porosity	Lack of Fusion	Gas Cracks	Hot Tears	Under cut	Surface		
MCWFA-2	1	113-114	✓							1			
		115-116	✓										
Z103990		116-117	✓										
HT# M175410		118-119	✓							1			
CO 40851		119-120	✓						2				
		121-122	✓										
		122-123	✓									✓	
		123-124	✓			2							
		124-125		R							R		
		125-126		R							R		
		126-127	✓										
		127-128	✓								1		
		128-129		R							R		
		130-131	✓										
		131-132	✓						2				
		V133	✓										
		V134	✓										

NO. ACCEPTED	0	NO. REJECTED	1	MQS TECH. NO.	12970	SHT.	REV.
COMMENTS				CUST. RSS NO.		SHT.	REV.
				REVIEWER	<i>John Petroske</i>		
				CERTIFIED NDT LEVEL (RT)			
				John Petroske RT II Exp. 01/08			

TEAM COOPERHEAT-MQS, INC.

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FORM 6061-RT- 002 Rev.2

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CUSTOMER		DATE	WORK ORDER NO.
NAME METAL TEK INTERNATIONAL		12/19/2005	361-02763
ADDRESS 8600 COMMERCIAL BLVD		P.O. NUMBER Chuck Rudd	XRAY X
CITY PEVELY STATE MO ZIP 63070			GAMMA
PROCEDURE SPECIFICATION ASTM E94-93	ACCEPTANCE CRITERIA MSS-SP-54-1999	SHEET ____ OF ____	

PART NUMBER	Serial No	View	No Apparent Indications		Dross		Incomplete Penetration		Shrinkage		Film Artifacts		REMARKS
			Acceptable	Rejected	Included	or Porosity	Lack of Fusion	Gas Cracks	Hot Tears	Under cut	Surface		
MCWFA-2		2-3	✓									✓	
	(R1)	7-8	✓						2				
Z103990		12-13	✓						2				
HT# M175410		21-22	✓										
CO 40851		23-24	✓						1				
		24-25	✓									✓	
		31-32	✓										
		35-36	✓										
		37-38	✓										
		43-44	✓										*
		52-53	✓										
		55-56	✓										
		62-63	✓									✓	
		67A-63A	✓										
		66-67	✓									✓	
		67-68	✓									✓	
		68-69	✓									✓	
		71-72	✓						1-2	1		✓	
		72-73	✓									✓	
		76-77	✓										
		90-91	✓						1			✓	
		94-95	✓										
		95-96	✓										
		96-97	✓										
		99-100	✓						2				

NO. ACCEPTED	1	NO. REJECTED	0	MQS TECH. NO.	12970	SHT.	REV.
COMMENTS	* Extra shot Taken for densities.			CUST. RSS NO.		SHT.	REV.
				REVIEWER	<i>John Petroske</i>		
				CERTIFIED NDT LEVEL (RT)	John Petroske RT II Exp. 01/08		

TEAM COOPERHEAT-MQS, INC.

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FORM 6061-RT- 002 Rev.2

5512 W. State St. Milwaukee, WI 53208 Tel:(414)771-3060 Fax:(414)771-9481 (800)818-6403 www.cooperheat-mqs.com

CUSTOMER		DATE	WORK ORDER NO.
NAME <u>METAL TEK INTERNATIONAL</u>		<u>12/19/2005</u>	361-02763
ADDRESS <u>8600 COMMERCIAL BLVD</u>		P.O. NUMBER	XRAY X
CITY <u>PEVELY</u> STATE <u>MO</u> ZIP <u>63070</u>		<u>Chuck Rudd</u>	GAMMA
PROCEDURE SPECIFICATION	ACCEPTANCE CRITERIA	SHEET ____ OF ____	
ASTM E94-93	MSS-SP-54-1999		

PART NUMBER	Serial No	View	Acceptable	No Apparent Indications	Rejected	Inclusion	Dross or Slag	Porosity	Incomplete Penetration	Lack of Fusion	Gas Cracks	Shrinkage		Film Artifacts		REMARKS	
												Hot Tears	Under cut	Surface	Surface		
MCWFA-2		<u>98-99</u>	✓								<u>1</u>						
	(R1)	<u>102-103</u>	✓								<u>2-3</u>						
Z103990		<u>108-109</u>	✓														
HT# M175410		<u>124-125</u>	✓													✓	
CO 40851		<u>125-126</u>	✓													✓	
		<u>128-129</u>	✓														

NO. ACCEPTED <u>1</u>	NO. REJECTED <u>0</u>	MQS TECH. NO. <u>12970</u>	SHT.	REV.
COMMENTS		CUST. RSS NO.	SHT.	REV.
		REVIEWER <u>John Petroske</u> CERTIFIED NDT LEVEL (RT) John Petroske RT II Exp. 01/08		

MetalTek

INTERNATIONAL

RADIOGRAPHIC INTERPRETATION REPORT

CUSTOMER <i>Energy Industries of Ohio</i>	PURCHASE ORDER NUMBER <i>PPPL-FP-LTS-2</i>		DATE <i>12-28-05</i>	CONTROL NO. <i>40851</i>	PAGE <i>1 of 1</i>						
PART NO. <i>MCW FA-2</i>	SPECIFICATION <i>E186/E280</i>	CLASS <i>see spec</i>	TOTAL PIECES <i>1</i>	PIECES ACCEPTED <i>1</i>							
RADIOGRAPHED BY: <i>Kelley/Midgett</i>	INTERPRETED BY: <i>Kelley/Midgett</i>		ASNT LEVEL <i>II</i>								
FILM TYPE <i>29/59/80</i>	MATERIAL <i>CSGMMNMN Mod</i>	ISOTOPE <i>IRIDIUM 192 <input checked="" type="checkbox"/> COBALT 60</i>		CODE <i>ASTM E94 <input checked="" type="checkbox"/> ASME MIL-STD-453</i>							
	<input checked="" type="checkbox"/> VIEW	<input type="checkbox"/> PEN	<input type="checkbox"/> ACCEPT	<input type="checkbox"/> REJECT	<input type="checkbox"/> SHRIK	<input type="checkbox"/> INCLUSION	<input type="checkbox"/> POROSITY	<input type="checkbox"/> LINER	<input type="checkbox"/> SURFACE	<input type="checkbox"/> LOF/LOP	COMMENTS
<i>M175410</i>											
<i>R1</i>	<i>27-28</i>	<i>50/80</i>	<i>100</i>				<i>1</i>		<i>/</i>		



RADIOGRAPHIC STANDARD SHOOTING SKETCH

Customer <i>Energy Industries of OHIO</i>	Pattern Number <i>MCWFA-2</i>
Material <i>CF8MNMV mod</i>	Traceability Number
Film Manufacturer <i>Fuji</i>	Source Number <i>82ci IR. 192</i>
IQI LEVEL <u>2-2T</u> From CQP 401 <input checked="" type="checkbox"/> Other (Specify, E.G. 2-4T, 2-1T) <u>N/A</u>	

Exposures (views)	<i>27-28</i>											
Thickness (IN.)	<i>2 3/4 - 7"</i>											
S/F Distance (IN.)	<i>18"</i>											
Penetrameter	<i>50 80 100</i>											
Time (MIN.)	<i>2hr</i>											
Focal Spot (IN.)	<i>.1</i>											
Film Size (IN.)	<i>14X17</i>											
Screen Size (Pb) Front/Back	<i>.01</i>											
S.W.E./D.W.E.	<i>SWE</i>											
S.W.V./D.W.V.	<i>SWV</i>											
Film Type	<i>2959 80K2</i>											
Acceptance Standard	<i>E180 E280</i>											
Severity Level	<i>SP54</i>											

Shooting Sketch (Use Additional Pages as Needed)

See original Technique Drawing.

Technique Prepared By: Doug Midgett Level: II
 Technique Approved By: _____ Level: _____

Date: 12-28-05
 Date: _____

MetalTek

INTERNATIONAL

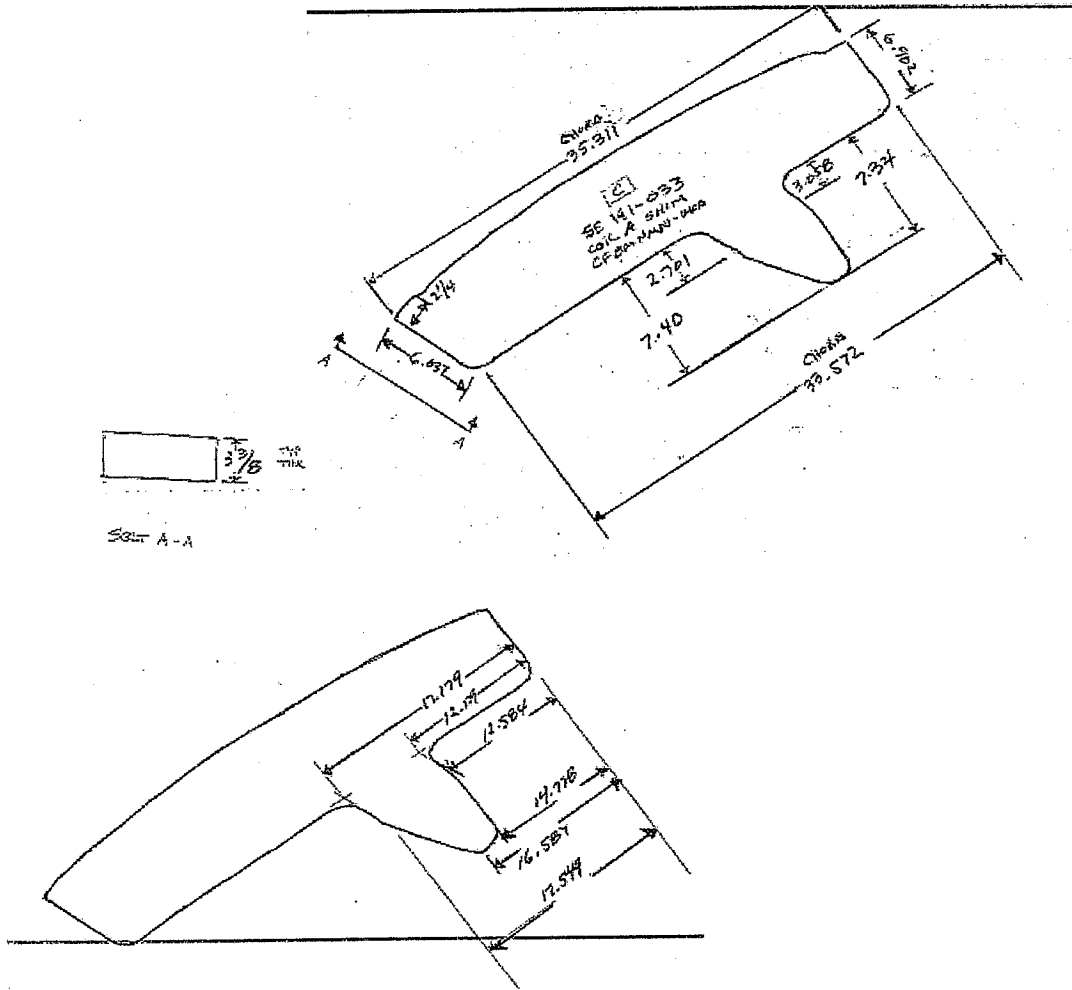
RADIOGRAPHIC INTERPRETATION REPORT

CUSTOMER <i>Energy Industries of Ohio</i>		PURCHASE ORDER NUMBER <i>PPL-FP-LTS-2</i>			DATE <i>12-16-05</i>		CONTROL NO. <i>40851</i>		PAGE <i>1 of 1</i>		
PART NO. <i>SE-141-033-2</i>		SPECIFICATION <i>E196</i>		CLASS <i>III</i>		TOTAL PIECES <i>1</i>		PIECES ACCEPTED <i>1</i>			
RADIOGRAPHED BY: <i>Kelley</i>			INTERPRETED BY: <i>Kelley</i>			ASNT LEVEL <i>II</i>					
FILM TYPE <i>80</i>	MATERIAL <i>CF8M N N M O A</i>			ISOTOPE <i>IRIDIUM 192 COBALT 60 /</i>				CODE <i>ASTM E94 / ASME MIL-STD-453</i>			
	V I E W	P E N E	A C C E P T	R E J E C T	S H R I N K	I N C L U S I O N	P O R O S I T Y	L I N E A R	S U R F A C E	L O F / L O P	COMMENTS
<i>MS 76220</i>											
<i>RT-2</i>	<i>A</i>	<i>50</i>	<i>/</i>								<i>Film Scratch</i>
	<i>B</i>	<i> </i>	<i>/</i>								
	<i>C</i>	<i> </i>	<i>/</i>			<i>1</i>			<i>/</i>		
	<i>D</i>	<i>↓</i>	<i>/</i>								

Welcome to

MetalTek

INTERNATIONAL



SE-141-033-2

MS76220-1

12/28/05

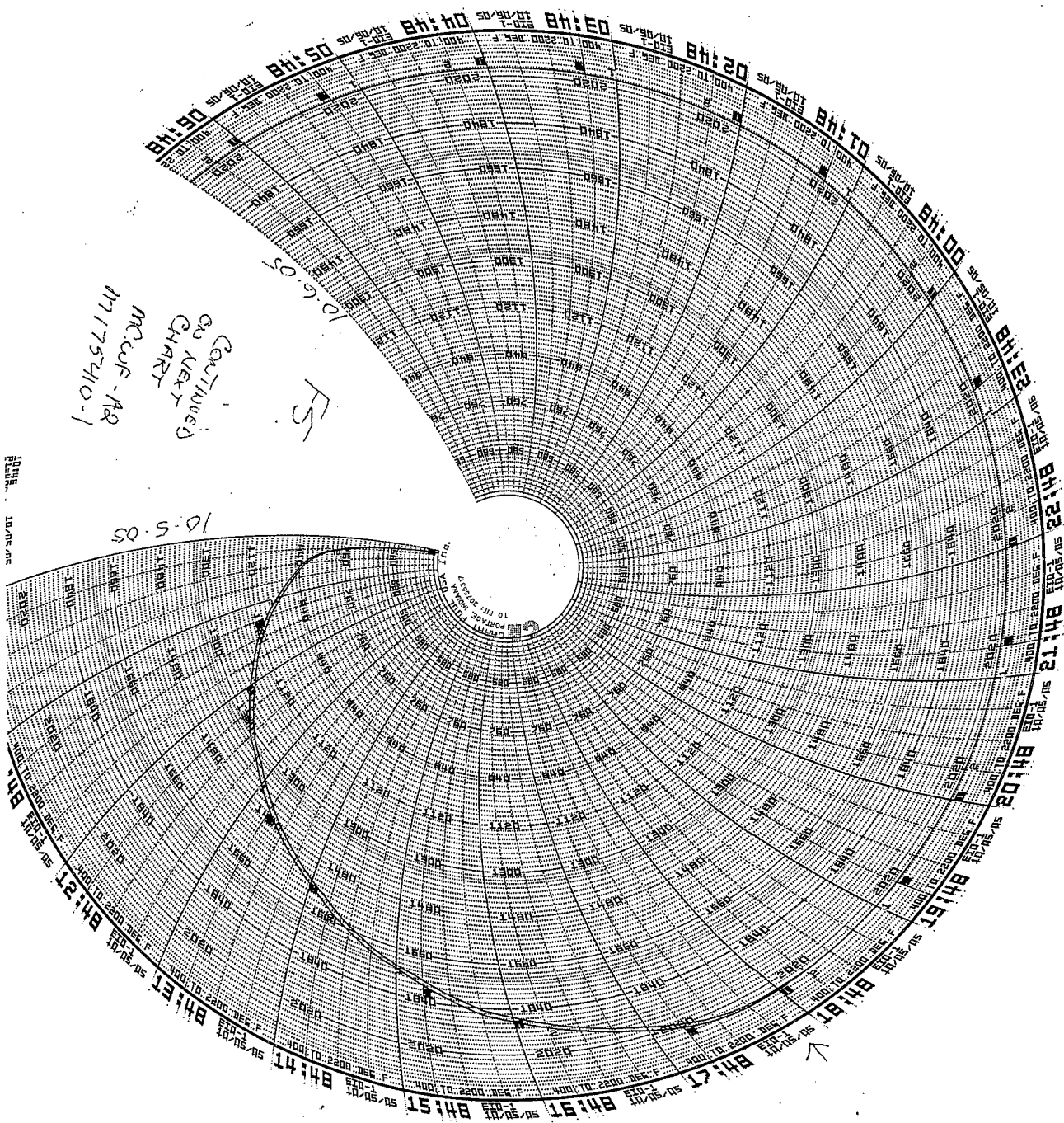
JJOHNSON

EIO

MCWF - R2 C012

F-5

175210-1

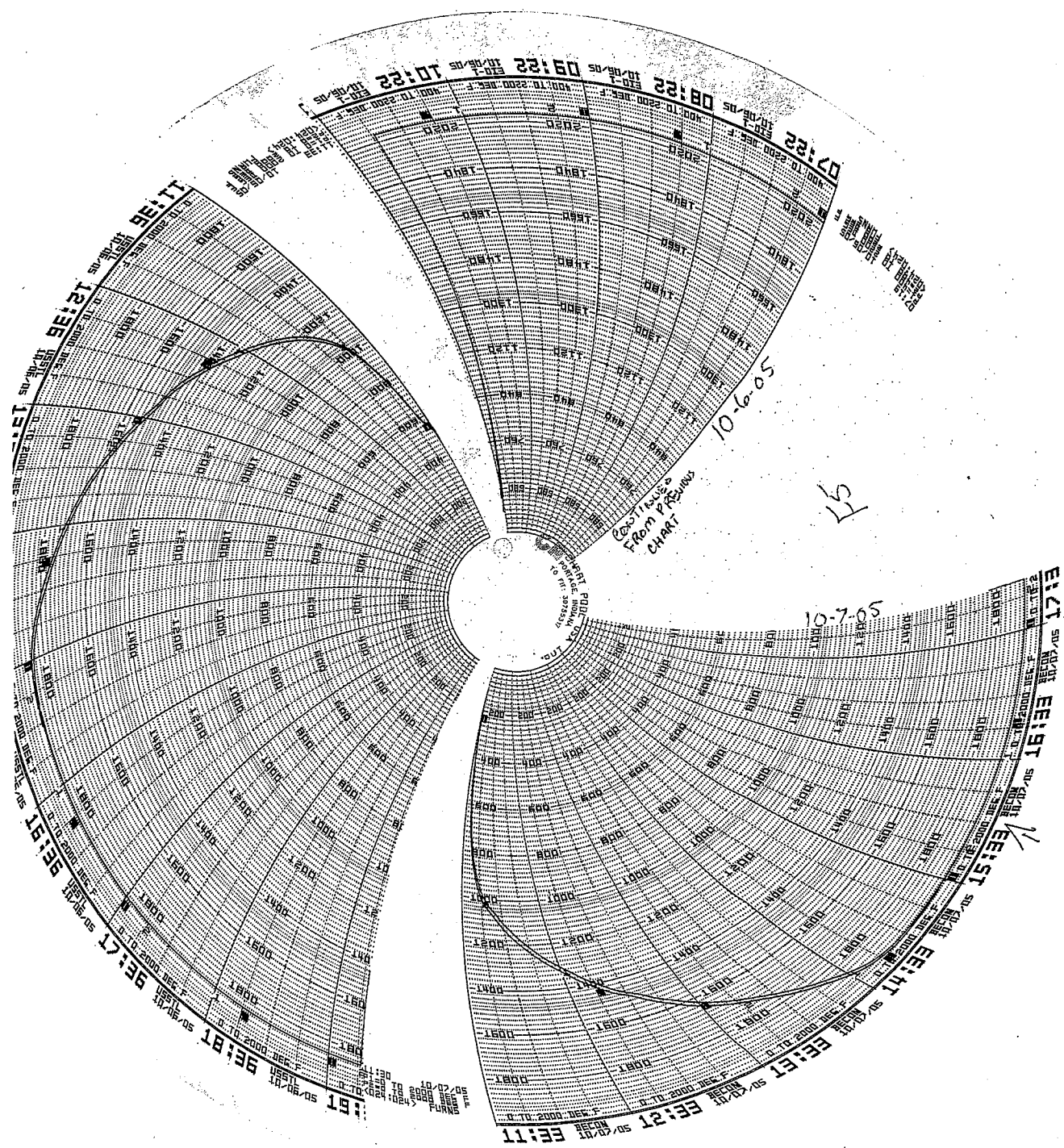


EIO

MCWF-A2

F-5

175410-1



EIO

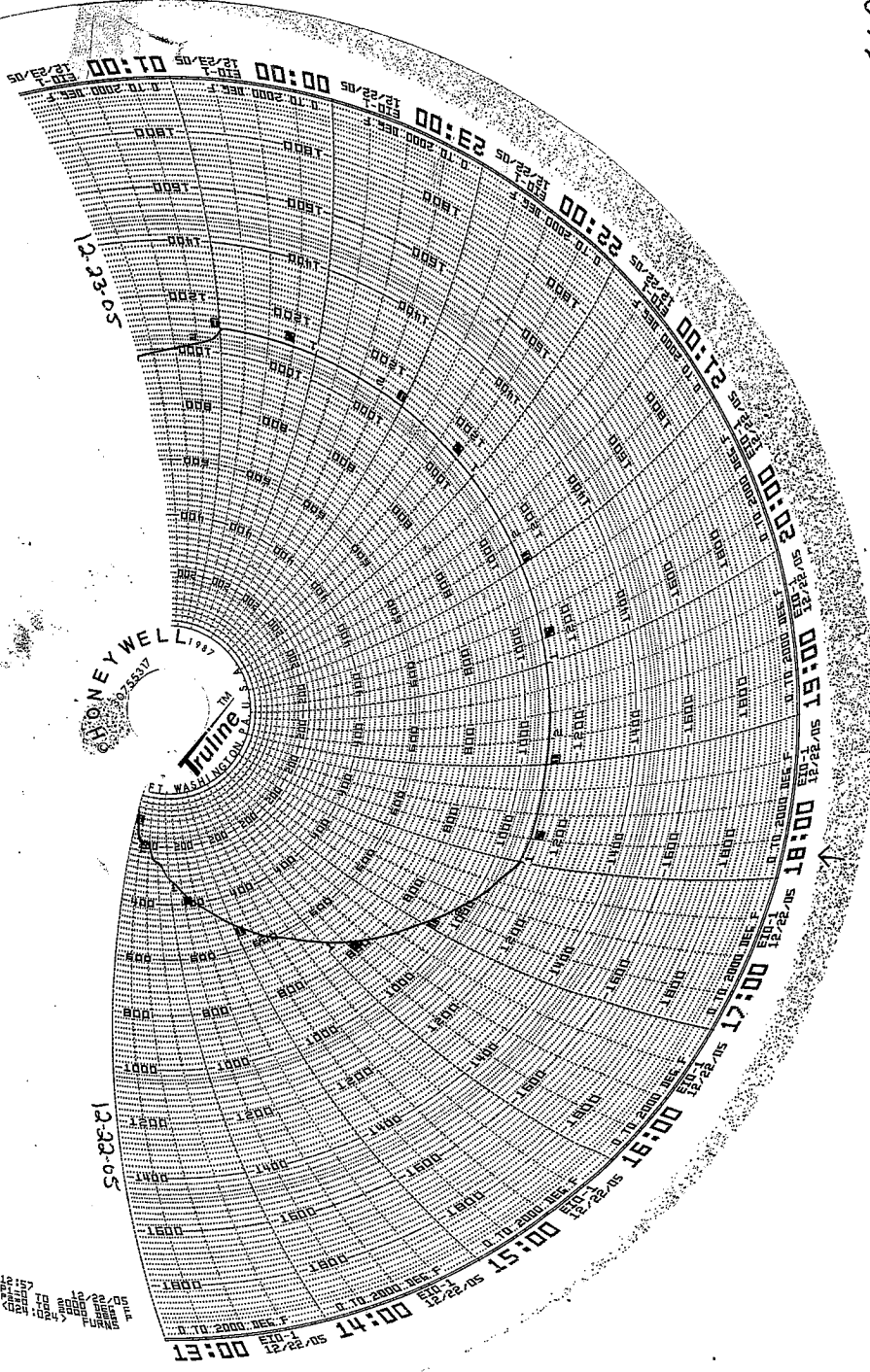
MCWF A-2 COLL

F-5

175410-1

MCWF-A2
POST WELD H.T.
M175410-1

F5



1800
 1700
 1600
 1500
 1400
 1300
 1200
 1100
 1000

Energy Industries of Ohio
Manufacturing and Test Sequence (MTS) A 2 Coil

1 OF 11 CO# 40851 Dated 3-9-05 Revision: Rev 9 Dated Issued:9/26/05

OPER. #	STATION	DESCRIPTION OF PROCESS	Name	Date
10	QUALITY RELEASE	REVIEW AND APPROVE MTS. RECEIVED APPROVAL FROM EIO ON xxxx FROM _Pete D._ SIGNED QUALITY MANAGER	<i>CDN</i>	<i>9/24/05</i>
15	PATTERN NPAT SOP 0100REV2	APPLY APPROPRIATE PART NUMBER, SERIAL NUMBER, AND FOUNDRY MARK, TO THE PATTERN. CAST ON TEST BARS AND CAST ON BLOCKS (extra 3"x3"x1" specimens) REQUIRED, ID AS TO COIL NUMBER AND ZONE LOCATION.	<i>AS</i>	<i>9/24/05</i>
20	COREMAKE CORE SOP 0100 REV 6 CALIBRATION PER CORE SOP 0200R4/0300R6	MAKE CORES IN SAND MIXTURES AS DESCRIBED BY METALTEK ENGINEERING AND VERIFIED IN MODELING TRIALS. METALTEK CORE SOP 0100 REV 6) CORE WASH WITH ZIRCONIUM CORE WASH. (CALIBRATION OF EQUIPMENT REQUIRED PER CORE SOP 0200,R4 / 0300,R6) VERIFY COUNT AND INSPECT.	<i>SS</i>	<i>9/26-05</i>
30	MOLD MOLD SOP 0400 REV 8 CALIBRATION PER MOLD SOP 0900 REV 5 PREPARATION PER MOLD SOP 1100R2/1200R2/1300R1 SAND TESTING PER MOLD SOP 1400R2/1500R3/1600R2	MOLD PER WORK INSTRUCTIONS IN MAPICS ROUTING AND SOPS REFERENCED. ENGINEER OF RECORD - ROGER BROMAN, CONSULT ON MOLD-RELATED CONCERNS. MOLD MATERIALS REQUIRED PER MAPICS BOM. NOTIFY ENGINEER OF ANY SUBSTITUTIONS. <i>Change Fire crackers</i>	<i>SS</i>	<i>9-26-05</i>
40	POUR MELT SOP 0100R5 MELT SOP 0700R2 MELT SOP 0600R2	METAL MUST BE AOD REFINED OR AOD INGOT. VIRGIN METAL ADDITIONS ALLOWED. RECORD POURING TEMPERATURE: <i>2750</i> CASTING POURED AT: <i>2750</i> DATE: <i>9/27/05</i> HEAT #'s: <i>31041, 31042, 31043, 31044, 31045</i> ELAPSED POUR TIME <i>1 min 10 sec</i> KEEL BLOCKS POURED: <i>NA</i> Sample from ladle to be analyzed for final chemical analysis and reported on material certifications. Sample Taken by: <i>gn</i> Analyzed: <i>A.A.</i> Date: <i>9-27-05</i>	<i>SR</i>	<i>9/27/05</i>
50	MELT SOP 0800R2	SHAKEOUT	<i>CA</i>	<i>10/1</i>
60	ARC RISE SOP 0100R1	REMOVE RISERS AS DIRECTED BY SUPERVISOR.	<i>MW</i>	<i>10-11-05</i>

**Energy Industries of Ohio
Manufacturing and Test Sequence (MTS) A 2 Coil**

2 OF 11 CO# 40851 Dated 3-9-05 Revision: Rev 9 Dated Issued:9/26/05

70	HEAT TREAT HEAT SOP 0103R5	SOLUTION ANNEAL. MAKE SURE TO BLOCK ALL FLANGES OF FORM AND RACETRACK TO MINIMIZE CREEP DISTORTION. Soak Temp: 2050F, Soak Time: At least 7 hours, Quench Type: Air Cool MAKE SURE TEST MATERIAL IS PLACED IN THE CORRECT ZONE.	DLS	10/5/05
80	PHYSICAL TESTING	OBTAIN TEST SPECIMENS AND SUBMIT FOR PHYSICAL TESTING. REPORT RESULTS AS PART OF STEP 530. DCMA IS TO WITNESS CHARPY TESTING AT LAB.	WH	10/6
NOTE		THE ORDER OF CLEANING PROCESSES MAY BE ALTERED DUE TO CAPACITY CONSTRAINTS. HOLD POINTS AND COMPLIANCE WILL NOT BE COMPROMISED. EIO WILL BE ADVISED OF ALL CHANGES THAT MAY RESULT IN A REQUEST FOR DEVIATION FROM REQUIREMENTS.		
90	GRIND GSA SOP 0100R3	SWING GRIND TO REMOVE RISER REMAINS AND FLASH IF REQUIRED.	<i>[Signature]</i>	10/11/05
100	GRIND GCHI SOP 0100R2	CHIP AND HAD GRIND SURFACE OF PART AS REQUIRED FOR CONTOUR.	DWP T.V	P.N
110	SAND BLAST BLAS SOP 0100R6	SANDBLAST (REMOVE ALL BLAST MATERIAL FROM CASTING) SANDBLASTING WILL BE DONE USING RECYCLED SHARP ANGULAR AGGREGATE.	P.N	CHT, Pre X-ray blast 11-02-05
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF X-RAY. EIO NOTIFIED ON <u>10/19</u> DCMA NOTIFIED ON <u>10/19/05</u>	Q ENG OR QA MGR	<i>[Signature]</i>
120	X-RAY AT MQS MQS PROCEDURE 20.H.010 REV 0	X-RAY PER TECHNIQUE # 12726 USE CALIBRATED DENSITOMETER FOR DENSITY VERIFICATION. WHEN MARKING USE BLACK MARKERS. ATTACH TECHNIQUE, READER SHEET FOR ALL RADIOGRAPHS. MUST INDICATE RADIOGRAPHER AND ASNT CERTIFICATION LEVEL ON READER SHEET.	RT - LEVEL II DWM	11-11-05
130	X-RAY CQP 401 REV 5	X-RAY INTERPRETATION. ACCEPTANCE MSS SP 54. ATTACH TECHNIQUE, READER SHEET FOR ALL RADIOGRAPHS. MUST INDICATE RADIOGRAPHER AND ASNT CERTIFICATION LEVEL ON READER SHEET. IF OK CHECK HERE <input type="checkbox"/> AND SEND TO STEP 160. REJECTED CHECK HERE <input checked="" type="checkbox"/> MARK UP DEFECTS AND SEND THE CASTING TO STEP 140.	RT - LEVEL II	DWM 11-11-05
140	WELD SOP 0100 REV 7	EXCAVATE ANY DEFECTS FOUND DURING 100% RT INSPECTION.	TLS 11-14-05	
150	GRIND GCHI SOP 0100R2	CHIP AND HAND GRIND EXCAVATION AS REQUIRED.	WH	11/14

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160	INTERIM VISUAL INSPECTION CQP-500 REV 4	VISUALLY INSPECT 100% of COMPONENT ACCORDING TO ASTM A802 LEVEL 3 IN NON MACHINED AREAS AND LEVEL 2 IN MACHINED AREAS. IF OK CHECK HERE _____ IF REJECTED CHECK HERE <input checked="" type="checkbox"/> . MARK AND REPAIR AT STEP 190.	VT - LEVEL II KA	11/15
170	INTERIM 100% L.P. CQP 0300 REV 10	L.P. 100% OF COMPONENT. ACCEPTANCE PER ASTM A903. ACCEPTANCE CRITERIA- LEVEL 1 FOR HIGH STRESSED AREAS, LEVEL 2 FOR ALL OTHER AREAS. SEE LP DRAWING. IF OK CHECK HERE _____ GO TO 190. IF REJECTED CHECK HERE <input checked="" type="checkbox"/>	LP - LEVEL II TRS	11/15
180	WELD SOP 0100 REV 7	EXCAVATE ANY DEFECTS FOUND DURING 100% VISUAL AND LP INSPECTION.	TRS	11/17/05
190	GRIND GCHI SOP 0100R2	CHIP AND HAND GRIND EXCAVATION OR VISUAL DEFECTS AS REQUIRED.	CA	11-20-05
200	L.P. EXCAVATION CQP-300 REV 10	L.P. ALL EXCAVATIONS PRIOR TO WELDING TO ENSURE REMOVAL OF DEFECT. ACCEPTANCE PER A903. ACCEPTANCE CRITERIA-LEVEL 1 FOR HIGH STRESSED AREAS, LEVEL 2 FOR ALL OTHER AREAS. SEE LP DRAWING. IF OK CHECK HERE <input checked="" type="checkbox"/> IF REJECTED SEND BACK TO STEP 190	LP - LEVEL II TRS	11-25
210	SAND BLAST BLAS SOP 0100R6	SANDBLAST (REMOVE ALL BLAST MATERIAL FROM CASTING) SANDBLASTING WILL BE DONE USING RECYCLED SHARP ANGULAR AGGREGATE.	AB	
220	WELD MAP	MAP ALL MAJOR WELDS WITH DIGITAL PHOTO/MAPS INDICATING LOCATION. SERIALIZE DEFECTS ON CASTING, USE SCALE IN PHOTOS AND DOCUMENT SIZE. THIS IS TO BE PERFORMED BY SUPERVISOR, INSPECTION LEAD MAN OR THEIR DESIGNEE, FILE WITH QA. USE YELLOW MARKER. SUBMIT MAP WITHIN 24 HOURS OF START OF WELDING. MUST INDICATE ON MAP ALL MAJOR WELDS, DEFINED AS GREATER THAN 20% OF THE WALL OR 1 INCH WHICHEVER IS LESS OR 10 SQUARE INCHES APPROXIMATLY 3.3"X3.3".	JB	11-17 11-18
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF WELD STEP. EIO NOTIFIED ON <u>11/19</u> DCMA NOTIFIED ON <u>11/19</u>	Q ENG OR QA MGR	CA
230	QA APPROVAL HOLD POINT	QA TO APPROVE ELECTRODE PRIOR TO USE. PROCEDURE USED: <u>15-GMAW-CF8MNMN/MOD</u> LIST ALL MATERIAL/LOTS USED: <u>3018513/78308</u> QUALITY ENG. Name: <u>11/19</u> Date: <u>CA</u>		
240	WELD SOP 0100 REV 7	WELD REPAIR DEFECTS AS MARKED. FOR WELDS <2" - WPS 10-SMAW-CF8MNMN MOD REV 1(Flat) or 25 SMAW-CF8MNMN MOD.	RBD	11/20

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		REV 0 (Vertical) FOR WELDS <8" - WPS 15-GMAW-CF8MNMN MOD REV 2					
250	GRIND GCHI SOP 0100R2	HAND GRIND WELDS.					RBD
260	L.P. WELD CQP 0300 REV 10	L.P. WELD REPAIRS ACCEPTANCE PER ASTM A903. ACCEPTANCE CRITERIA-LEVEL 1 FOR HIGH STRESSED AREAS, LEVEL 2 FOR ALL OTHER AREAS. SEE LP DRAWING. IF OK CHECK HERE <input checked="" type="checkbox"/> WASH AND SEND TO STEP 280. IF REJECTED CHECK HERE _____					LP - LEVEL II CC 12/9/05
270	REPEAT	REPEAT STEPS S180 TO S250AS REQUIRED TILL CLEAR THROUGH VISUAL INSPECTION & PENETRANT INSPECTION. IF OK CHECK HERE _____ AND PROCEED TO STEP 280.					N/A
280	REPEAT STEPS	SUPPLEMENTAL REPAIR STEPS	1 ST	2ND	3 RD	4 TH	5TH
S180	WELD SOP 0100 REV 7	EXCAVATE ANY DEFECTS FOUND DURING RADIOGRAPHY.					
S190	GRIND GCHI SOP 0100R2	CHIP AND HAND GRIND EXCAVATION OR VISUAL DEFECTS AS REQUIRED.					
S200	L.P. EXCAVATION CQP-300 REV 10	L.P. ALL EXCAVATIONS PRIOR TO WELDING TO ENSURE REMOVAL OF DEFECT. ACCEPTANCE PER A903. ACCEPTANCE CRITERIA-LEVEL 1 FOR HIGH STRESSED AREAS, LEVEL 2 FOR ALL OTHER AREAS. SEE LP DRAWING.					LP - LEVEL II
S210	WELD MAP	MAP ALL MAJOR WELDS WITH DIGITAL PHOTO/MAPS INDICATING LOCATION. SERIALIZE DEFECTS ON CASTING, USE SCALE IN PHOTOS AND DOCUMENT SIZE. THIS IS TO BE PERFORMED BY SUPERVISOR, INSPECTION LEAD MAN OR THEIR DESIGNEE, FILE WITH QA. USE YELLOW MARKER. MUST INDICATE ON MAP ALL MAJOR WELDS, DEFINED AS GREATER THAN 20% OF THE WALL OR 1 INCH WHICHEVER IS LESS OR 10 SQUARE INCHES APPROXIMATLY 3.3"X3.3". SUBMIT MAP WITHIN 24 HOURS OF START OF WELDING.					
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF WELD STEP. EIO NOTIFIED ON _____ DCMA NOTIFIED ON _____					Q ENG OR QA MGR
S220	QA APPROVAL HOLD POINT	QA TO APPROVE ELECTRODE PRIOR TO USE. PROCEDURE USED: _____, _____, _____ MATERIAL /LOT USED : _____, _____, _____ QUALITY ENG. Name: _____ Date: _____					
S230	WELD SOP 0100 REV 7	WELD REPAIR DEFECTS AS MARKED. FOR WELDS <2" - WPS 10-SMAW-CF8MNMN MOD REV 1(Flat) or 25 SMAW-CF8MNMN MOD REV 0 (Vertical)					✓

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		FOR WELDS <8" - WPS 15-GMAW-CF8MNMN MOD REV 2							
S240	GRIND GCHI SOP 0100R2	HAND GRIND WELDS.							
S250	L.P. WELD CQP 0300 REV 10	L.P. WELD REPAIRS ACCEPTANCE PER ASTM A903. ACCEPTANCE CRITERIA-LEVEL 1 FOR HIGH STRESSED AREAS, LEVEL 2 FOR ALL OTHER AREAS. SEE LP DRAWING. IF OK CHECK HERE _____ WASH AND SEND TO STEP 280. IF REJECTED CHECK HERE _____ AND RETURN TO STEP S180.	LP - LEVEL II	OK REJ	OK REJ	OK REJ	OK REJ		
	REPEAT	REPEAT STEPS S180 TO S250 AS REQUIRED TILL CLEAR THROUGH VISUAL INSPECTION & PENETRANT INSPECTION.	QA ENG.						
280	TEST MAG PERM SOP MAG PERM 100, REV 1	TEST MAG PERMEABILITY REPAIR AREAS TEST AT LEAST EVERY 2 INCH SQUARE OF WELD. ACCEPTANCE 1.02. IF OK CHECK HERE <input checked="" type="checkbox"/> AND GO TO STEP 300. IF REJECTED CHECK HERE _____.				CA		12/9	
290	GRIND GCHI SOP 0100R2	GRIND AREAS OF NON COMPLIANCE AND RETURN TO STEP 280. REPEAT UNTIL COMPLIANCE IS ACHIEVED.					NA		
300	X-RAY (NOTE)	IF RADIO GRAPHED AREAS ARE GREATER THAN FOUR TO FIVE INCHES THE CASTING WILL BE SENT TO MQS. SEND TO MQS CHECK HERE <input checked="" type="checkbox"/> . RADIOGRAPH AT CAF CHECK HERE _____.			QA ENGINE ER			RBK 12/16/05	
310 A	MQS X-RAY DEFECTS REPAIRED BY WELDING	X-RAY PER TECHNIQUE # 12726 USE CALIBRATED DENSITOMETER FOR DENSITY VERIFICATION. ALL RT REJECTS, INCLUDING SURFACE DEFECTS WILL BE VERIFIED BY RT. ATTACH TECHNIQUE, READER SHEET FOR ALL RADIOGRAPHS. MUST INDICATE RADIOGRAPHER AND ASNT CERTIFICATION LEVEL ON READER SHEET.			LEVEL II			RBK 12/19/05	
310 B	CAF X-RAY DEFECTS REPAIRED BY WELDING CQP 401 REV 5	X-RAY PER TECHNIQUE # 12726 USE CALIBRATED DENSITOMETER FOR DENSITY VERIFICATION. ALL RT REJECTS, INCLUDING SURFACE DEFECTS WILL BE VERIFIED BY RT. ATTACH TECHNIQUE, READER SHEET FOR ALL RADIOGRAPHS. MUST INDICATE RADIOGRAPHER AND ASNT CERTIFICATION LEVEL ON READER SHEET.			RT - LEVEL II		NA		
320	X-RAY CQP 401 REV 5	X-RAY INTERPRETATION. ACCEPTANCE MSS SP 54. ATTACH TECHNIQUE, READER SHEET FOR ALL RADIOGRAPHS. MUST INDICATE RADIOGRAPHER AND ASNT CERTIFICATION LEVEL ON READER SHEET. IF OK CHECK HERE <input checked="" type="checkbox"/> AND SEND TO STEP 340. REJECTED CHECK HERE _____ MARK UP DEFECTS AND SEND THE CASTING TO STEP S321.			RT - LEVEL II			RBK 12/21/05	
	REPEAT STEPS	SUPPLEMENTAL REPAIR STEPS	1 ST	2 ND	3 RD	4 TH	5 TH		

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S321	WELD SOP 0100 REV 7	EXCAVATE ANY DEFECTS FOUND DURING RADIOGRAPHY.			NA		
S322	L.P. EXCAVATION CQP-300 REV 10	L.P. ALL EXCAVATIONS PRIOR TO WELDING TO ENSURE REMOVAL OF DEFECT. ACCEPTANCE PER A903. ACCEPTANCE CRITERIA-LEVEL 1 FOR HIGH STRESSED AREAS, LEVEL 2 FOR ALL OTHER AREAS. SEE LP DRAWING.	LP - LEVEL II				
S323	WELD MAP	MAP ALL MAJOR WELDS WITH DIGITAL PHOTO/MAPS INDICATING LOCATION. SERIALIZE DEFECTS ON CASTING, USE SCALE IN PHOTOS AND DOCUMENT SIZE. THIS IS TO BE PERFORMED BY SUPERVISOR, INSPECTION LEAD MAN OR THEIR DESIGNEE, FILE WITH QA. USE YELLOW MARKER. MUST INDICATE ON MAP ALL MAJOR WELDS, DEFINED AS GREATER THAN 20% OF THE WALL OR 1 INCH WHICHEVER IS LESS OR 10 SQUARE INCHES APPROXIMATELY 3.3"X3.3". SUBMIT MAP WITHIN 24 HOURS OF START OF WELDING. SUBMIT MAP WITHIN 24 HOURS OF START OF WELDING.					
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF WELD STEP. EIO NOTIFIED ON _____ DCMA NOTIFIED ON _____	Q ENG OR QA MGR				
S324	QA APPROVAL HOLD POINT	QA TO APPROVE ELECTRODE PRIOR TO USE. PROCEDURE USED: _____, _____, _____ MATERIAL /LOT USED : _____, _____, _____ QUALITY ENG. Name: _____ Date: _____					
S325	WELD SOP 0100 REV 7	WELD REPAIR DEFECTS AS MARKED. FOR WELDS <2" - WPS 10-SMAW-CF8MNMN MOD REV 1(Flat) or 25 SMAW-CF8MNMN MOD REV 0 (Vertical) FOR WELDS <8" - WPS 15-GMAW-CF8MNMN MOD REV 2					
S326	GRIND GCHI SOP 0100R2	HAND GRIND WELDS.					
S327	L.P. WELD CQP 0300 REV 10	L.P. WELD REPAIRS ACCEPTANCE PER ASTM A903. ACCEPTANCE CRITERIA-LEVEL 1 FOR HIGH STRESSED AREAS, LEVEL 2 FOR ALL OTHER AREAS. SEE LP DRAWING. IF OK CHECK HERE _____ WASH AND SEND TO STEP S328. IF REJECTED CHECK HERE _____ AND RETURN TO STEP S321.	LP - LEVEL II	OK REJ	OK REJ	OK REJ	OK REJ
S 328 A	MQS X-RAY DEFECTS REPAIRED BY WELDING	X-RAY PER TECHNIQUE # 12726 USE CALIBRATED DENSITOMETER FOR DENSITY VERIFICATION. ALL RT REJECTS, INCLUDING SURFACE DEFECTS WILL BE VERIFIED BY RT. ATTACH TECHNIQUE, READER SHEET FOR ALL RADIOGRAPHS. MUST INDICATE RADIOGRAPHER AND ASNT CERTIFICATION LEVEL ON READER SHEET.	RT- LEVE L II				

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N/A
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S 328 B	CAF X-RAY DEFECTS REPAIRED BY WELDING CQP 401 REV 5	X-RAY PER TECHNIQUE # 12726 USE CALIBRATED DENSITOMETER FOR DENSITY VERIFICATION. ALL RT REJECTS, INCLUDING SURFACE DEFECTS WILL BE VERIFIED BY RT. ATTACH TECHNIQUE, READER SHEET FOR ALL RADIOGRAPHS. MUST INDICATE RADIOGRAPHER AND ASNT CERTIFICATION LEVEL ON READER SHEET.	RT - LEVE L II		
S 329	X-RAY CQP 401 REV 5	X-RAY INTERPRETATION. ACCEPTANCE MSS SP 54. ATTACH TECHNIQUE, READER SHEET FOR ALL RADIOGRAPHS. MUST INDICATE RADIOGRAPHER AND ASNT CERTIFICATION LEVEL ON READER SHEET. IF OK CHECK HERE _____ AND SEND TO STEP 340. REJECTED CHECK HERE _____ MARK UP DEFECTS AND SEND THE CASTING TO STEP S321.	RT - LEVE L II		
	REPEAT	REPEAT STEPS S321 TO S329 AS REQUIRED TILL CLEAR THROUGH VISUAL, PENETRANT AND RT INSPECTION.	QA ENG.		
340	SAND BLAST BLAS SOP 0100R6	SANDBLAST (REMOVE ALL BLAST MATERIAL FROM CASTING) SANDBLASTING WILL BE DONE USING RECYCLED SHARP ANGULAR AGGREGATE.		DS	
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF VISUAL AND LP STEPS. EIO NOTIFIED ON <u>12/16</u> DCMA NOTIFIED ON <u>12/16</u>		Q ENG OR QA MGR	OK
350	FINAL VISUAL INSPECTION CQP-500 REV 4	VISUALLY INSPECT 100% of COMPONENT ACCORDING TO ASTM A802 LEVEL 3 IN NON MACHINED AREAS AND LEVEL 2 IN MACHINED AREAS. IF OK CHECK HERE <input checked="" type="checkbox"/> . SEND TO STEP 453. IF REJECTED CHECK HERE _____. MARK AND REPAIR. INITIAL WHEN COMPLETE. MUST BE PERFORMED BY LEVEL II in VT.		VT - LEVEL II KA	12/21
360	FINAL L.P. CQP 0300 REV 10	FINAL L.P. 100% OF COMPONENT. ACCEPTANCE PER ASTM A903. ACCEPTANCE CRITERIA-LEVEL 1 FOR HIGH STRESSED AREAS, LEVEL 2 FOR ALL OTHER AREAS. SEE LP DRAWING. IF OK CHECK HERE <input checked="" type="checkbox"/> WASH AND SEND TO STEP 453. IF REJECTED CHECK HERE _____		LP - LEVEL II JS	12/21
380	WELD SOP 0100 REV 7	EXCAVATE ANY DEFECTS FOUND DURING FINAL PENETRANT INSPECTION.			NA
385	GRIND GCHI SOP 0100R2	CHIP AND HAD GRIND EXCAVATION AS REQUIRED.			↓

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390	L.P. EXCAVATION CQP-300 REV 10	L.P. ALL EXCAVATIONS PRIOR TO WELDING TO ENSURE REMOVAL OF DEFECT. ACCEPTANCE PER A903. IF OK CHECK HERE _____ IF REJECTED SEND BACK TO STEP 385.	LP - LEVEL II	
400	WELD MAP	MAP ALL MAJOR WELDS WITH DIGITAL PHOTO/MAPS INDICATING LOCATION. SERIALIZE DEFECTS ON CASTING, USE SCALE IN PHOTOS AND DOCUMENT SIZE. THIS IS TO BE PERFORMED BY SUPERVISOR, INSPECTION LEAD MAN OR THEIR DESIGNEE, FILE WITH QA. USE YELLOW MARKER. SEND MAPS WITHIN 24 HOURS OF WELDING. MUST INDICATE ON MAP ALL MAJOR WELDS, DEFINED AS GREATER THAN 20% OF THE WALL OR 1 INCH WHICHEVER IS LESS OR 10 SQUARE INCHES APPROXIMATLY 3.3"X3.3".		
420	QA APPROVAL HOLD POINT	QA TO APPROVE ELECTRODE PRIOR TO USE. PROCEDURE USED: _____ MATERIAL/LOT USED: _____ QUALITY ENG. Name: _____ Date: _____		
430	WELD SOP 0100 REV 7	WELD REPAIR DEFECTS AS MARKED. FOR WELDS <2" - WPS 10-SMAW-CF8MNMN MOD REV 1(Flat) or 25 SMAW-CF8MNMN MOD REV 0 (Vertical) FOR WELDS <8" - WPS 15-GMAW-CF8MNMN MOD REV 2		
440	GRIND GCHI SOP 0100 REV 2	HAND GRIND WELDS.		
450	L.P. WELDS CQP 0300 REV 10	L.P. WELD REPAIRS ACCEPTANCE PER ASTM A903. IF OK CHECK HERE _____ WASH AND SEND TO STEP 453. IF REJECTED CHECK HERE _____ AND RETURN TO STEP 440.	LP - LEVEL II	
	REPEAT	REPEAT STEPS 350 TO 450 AS REQUIRED TILL WELDS CLEAR FINAL LIQUID PENETRANT INSPECTION. DOCUMENT REWORK ON A SUPPLEMENTAL MTS	QA ENG.	
451	TEST MAG PERM SOP MAG PERM 100, REV 1	TEST MAG PERMEABILITY REPAIR AREAS. RECORD ON WELD MAP LIST. TEST AT LEAST EVERY 2" SQUARE OF WELD. ACCEPTANCE 1.02. IF OK CHECK HERE _____ AND GO TO STEP 430. IF REJECTED CHECK HERE _____.		
452	GRIND GCHI SOP 0100R2	GRIND AREAS OF NON COMPLIANCE AND RETURN TO STEP 451. REPEAT UNTIL COMPLIANCE IS ACHIEVED.		
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF LAYOUT. EIO NOTIFIED ON <u>12/16</u> DCMA NOTIFIED ON <u>12/16</u> APPROVAL RECEIVED ON <u>NA</u>	Q ENG OR QA MGR	<i>CAH</i>

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453	INTERIM LAYOUT SOP LAYOUT 0100	INSPECT CASTING TO VERIFY DIMENSIONS. THIS STEP MAY BE MOVED. NOTE: THE FIRST PART PRODUCED OF EACH TYPE A, B AND C WILL BE DIMENSIONED BY LAWTON PATTERN. IF DIMENSIONED BY LAWTON IT WILL BE DOCUMENTED HERE. Subsequent casting done internally per Romer Arm.	JA	12/29
455	HEAT TREAT	STRESS RELIEF. Load casting into cold furnace. Ramp up to 1100 F at rate of 200 F per hour. Hold at temp 4 hours. Furnace cool to 500 F at 50 F per hour. Air cool. Submit furnace charts to QA.	KUE	12/15
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF VISUAL AND LP STEPS. EIO NOTIFIED ON <u>12/22</u> DCMA NOTIFIED ON <u>12/22</u>	Q ENG OR QA MGR	chr
460	FINAL VISUAL INSPECTION CQP-500 REV 4	VISUALLY INSPECT 100% of COMPONENT ACCORDING TO ASTM A802 LEVEL 3 ALL CONDITIONS. THIS STEP MAY BE UNNECESSARY IF OK AT STEP 350. IF OK CHECK HERE <input checked="" type="checkbox"/> IF REJECTED CHECK HERE <u> </u> . MARK AND REPAIR AT STEP 510. MUST BE PERFORMED BY LEVEL II in VT.	VT - LEVEL II KA	12/27
470	FINAL L.P. CQP 0300 REV 10	FINAL L.P. 100% OF COMPONENT. ACCEPTANCE PER ASTM A903. ACCEPTANCE CRITERIA-LEVEL 1 FOR HIGH STRESSED AREAS, LEVEL 2 FOR ALL OTHER AREAS. SEE LP DRAWING. THIS STEP MAY BE UNNECESSARY IF OK AT STEP 360. IF OK CHECK HERE <input checked="" type="checkbox"/> WASH AND SEND TO STEP 500. IF REJECTED CHECK HERE <u> </u> . DOCUMENT REPAIRS USING A SUPPLEMENTAL MTS.	LP - LEVEL II JSR	12/29
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF MAG PERM STEPS. EIO NOTIFIED ON <u>12/22</u> DCMA NOTIFIED ON <u>12/22</u>	Q ENG OR QA MGR	chr
500	FINAL MAG PERM INSPECTION SOP MAG PERM 100, REV 1	PERFORM MAG PERM TESTING WITH SEVRIN GAUGE. ACCEPTANCE 1.02. CHECK THE ENTIRE SURFACE ON A 6"BY6" GRID. REPORT RESULTS. USE A 6" SQUARE BLOCK TO INDICATE TEST LOCATIONS AND RECORD RESULTS. COMPLIANT AREAS WILL NOT BE MARKED. MARK NONCOMPLIANT AREAS WITH AN "X" FOR REPAIR. OK CHECK HERE <input checked="" type="checkbox"/> AND GO TO STEP 530. IF REJECTED CHECK HERE <u> </u> .	chr	12/29
510	GRIND GCHI SOP 0100 REV 2	HAND GRIND WITH SUITABLE CONE OR OTHER SIMILAR GRINDER AS REQUIRED TO ENSURE REMOVAL OF MATERIAL TO ACHIEVE MAG PERM REQUIREMENT. CIRCLE AREA REMEDIATE FOR RETEST.	NA	
520	RETEST MAG PERM SOP MAG PERM 100, REV 1	RETEST MAG PERMEABILITY AT FAILED TEST POINTS. MARK NONCOMPLIANT AREAS WITH AN "X" FOR REPAIR. ACCEPTANCE 1.02. IF OK CHECK HERE <u> </u> . IF REJECTED CHECK HERE <u> </u> RETURN TO STEP 510.	NA	
530	DOC. REVIEW	REVIEW DOCUMENTS AS REQUIRED IN CAF CHECKLIST, ALL DOCUMENTS NOTED TO BE ACCESSIBLE FOR AUDITING. (SHIPPER, C OF C, M.T.R., M.T.S., INSPECTION REPORT, X-RAY READER SHEETS AND HEAT TREAT CHARTS)	12/29	chr

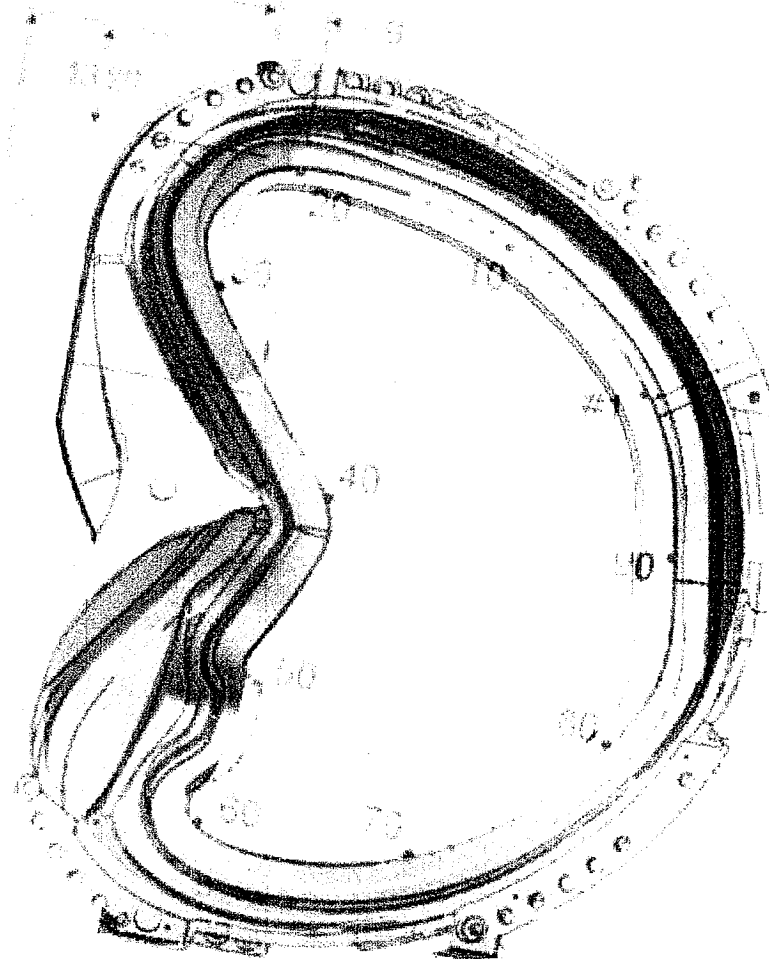
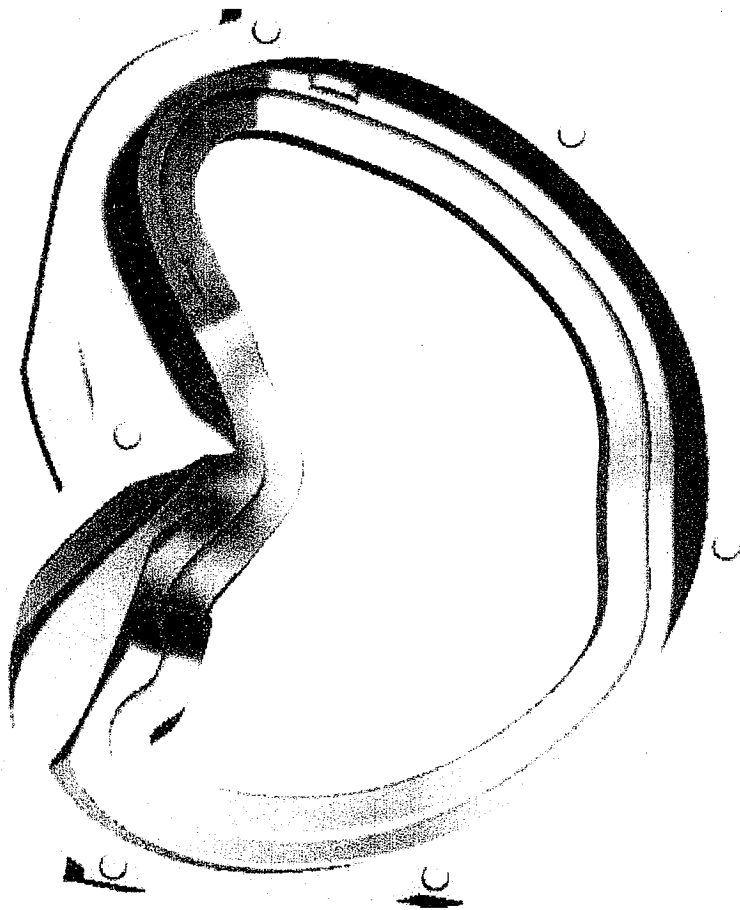
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NOTICE	RELEASE FROM EIO	PROVIDE DOCUMENTS TO EIO. SENT ON <u>12/28</u> BY <u>Ch</u> RECEIVED RELEASE FROM EIO ON <u>+12/29</u>	Q ENG OR QA MGR	<u>Ch</u>
540	PACK AND SHIP	PACKAGE AND SHIP TO MAJOR TOOL.		
1000	REVISION HISTORY	ORIGINAL 12-14-04. Approved 12-14-04. Revision level 1- Revised 1-26-05 new page 8, correct High stress areas, Revision level 2 3-16-05, delete LO step 455. Revision 3 3-28-05 Added note regarding hold point at weld step 400. Revision level 4 written for C-2 casting 4-18-05. Rev 5 added Layout SOP# and note regarding first casting layout responsibility. 5-10-05. Rev 6 added word LOT to weld material steps. 5-29-05. Rev 7 6-14-05 added "LOT" to weld step on supplement page. Rev. 8 7-29-05 added stress relief, deleted weld hold points, added vertical weld procedure, and several editorial changes. REV 9 8-28-05 - MODIFIED RT STEPS AND ADDED REQUIREMENT TO RT ALL RT DEFECTS INCLUDING SURFACE.	CARUUD	

RED AREA INDICATES HIGH STRESSED AREA



MetalTek International – Carondelet Division
Manufacturing and Test Sequence (MTS) Coil Shim A COIL S/N 2
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OPER. #	STATION	DESCRIPTION OF PROCESS	Name	Date
10	QUALITY RELEASE	REVIEW AND APPROVE MTS. RECEIVED APPROVAL FROM EIO ON 11-1-05 FROM Pete D. SIGNED QUALITY MANAGER. SHADED BOXES NEED NOT BE SIGNED.	CAR	11-1-05
20	PATTERN NPAT SOP 0100REV2	APPLY APPROPRIATE PART NUMBER, SERIAL NUMBER, FOUNDRY MARK, TO THE PATTERN.		
30	MOLD	MOLD PER WORK INSTRUCTIONS IN MAPICS ROUTING AND SOPS REFERENCED. MOLD MATERIALS REQUIRED PER MAPICS BOM. NOTIFY ENGINEER OF ANY SUBSTITUTIONS. MOLD SOP 0400 REV 8 CALIBRATION PER MOLD SOP 0900 REV 5 PREPARATION PER MOLD SOP 1100R2/1200R2/1300R1 SAND TESTING PER MOLD SOP 1400R2/1500R3/1600R2		
40	POUR MELT SOP 0100R5 MELT SOP 0700R2 MELT SOP 0600R2	METAL MUST BE AOD REFINED OR AOD INGOT. VIRGIN METAL ADDITIONS ALLOWED. HEAT #: <u>29190</u> Sample from ladle to be analyzed for final chemical analysis and reported on material certifications. Sample Taken by: <u>SR</u> Analyzed: <u>GH</u>	JG	4/28/05
50	MELT SOP 0800R2	SHAKEOUT		
60	ARC RISE SOP 0100R1	REMOVE RISERS AS DIRECTED BY SUPERVISOR.		
70	HEAT TREAT HEAT SOP 0103R5	SOLUTION ANNEAL. MINIMUM 4 HOURS AT 2050 F. AIR COOL.	DLS	6/2/05
80	GRIND GSWA SOP 0100R3 GCHI SOP 0100R2	SWING GRIND TO REMOVE RISER REMAINS AND FLASH IF REQUIRED. CHIP AND HAND GRIND SURFACE OF PART AS REQUIRED.		
90	SAND BLAST BLAS SOP 0100R6	SANDBLAST (REMOVE ALL BLAST MATERIAL FROM CASTING) SANDBLASTING WILL BE DONE USING RECYCLED SHARP ANGULAR AGGREGATE.		
100	VISUAL INSPECTION CQP-500 REV 4	VISUALLY INSPECT 100% of COMPONENT ACCORDING TO ASTM A802 LEVEL 3 ALL CONDITIONS. IF OK CHECK HERE <input checked="" type="checkbox"/> . IF REJECTED CHECK HERE <input type="checkbox"/> . MARK AND REPAIR AT STEP 130OR 140 IF WELDING IS REQUIRED. MAY PERFORM STEPS 110 AND 120 TOGETHER.	VT - LEVEL II KA	12/27

MetalTek International – Carondelet Division
Manufacturing and Test Sequence (MTS) Coil Shim A COIL S/N 2
Dated 12-14-04 Revision:1 Dated Issued:10-25-05 Page 2 of 3

120	100% L.P. CQP 0300 REV 10	L.P. 100% OF COMPONENT. ACCEPTANCE PER ASTM A903. ACCEPTANCE CRITERIA- LEVEL 2. IF OK CHECK HERE <u> </u> GO TO 150. IF REJECTED CHECK HERE <u> X </u> MARK AND REPAIR AT STEP 130 OR 140 IF WELDING IS REQUIRED.	LP - LEVEL II	SSB 12-27-05
130	GRIND GCHI SOP 0100R2	HAND GRIND DEFECTS. CONFIRM REPAIRS VISUALL AND BY LP. ACCEPTANCE AS NOTED ABOVE. IF OK, CHECK HERE <u> ✓ </u> AND GO TO STEP 170. IF WELDING IS NEEDED GO TO STEP 130.	CA	12/27/05
140 IF NEEDED		IF REPAIRS BY WELDING ARE REQUIRED DOCUMENT ON SUPPLEMENTAL MTS ON LAST PAGE.		
150	CAF X-RAY DEFECTS REPAIRED BY WELDING CQP 401 REV 5	X-RAY PER TECHNIQUE: SE-141-073-C SHIM. USE CALIBRATED DENSITOMETER FOR DENSITY VERIFICATION. ATTACH TECHNIQUE, READER SHEET FOR ALL RADIOGRAPHS. MUST INDICATE RADIOGRAPHER AND ASNT CERTIFICATION LEVEL ON READER SHEET.	RT - LEVEL II DM	12-16
160	X-RAY CQP 401 REV 5	X-RAY INTERPRETATION. ACCEPTANCE MSS SP 54. ATTACH TECHNIQUE, READER SHEET FOR ALL RADIOGRAPHS. MUST INDICATE RADIOGRAPHER AND ASNT CERTIFICATION LEVEL ON READER SHEET. IF OK CHECK HERE <u> ✓ </u> AND SEND TO STEP 200. REJECTED CHECK HERE <u> </u> MARK UP DEFECTS. DOCUMENT REPAIRS ON S10 TO S70.	RT - LEVEL II DM	12-16
	REPEAT	REPEAT STEPS S10 TO S70 AS REQUIRED TILL WELDS CLEAR X-RAY.	QA ENG.	NA
170	SAND BLAST BLAS SOP 0100R6	SANDBLAST (REMOVE ALL BLAST MATERIAL FROM CASTING) SANDBLASTING WILL BE DONE USING RECYCLED SHARP ANGULAR AGGREGATE.		
180	LAYOUT SOP 0100 ORIGINAL	INSPECT CASTING TO VERIFY DIMENSIONS. THIS MAY BE PERFORMED EARLIER IF DESIRED. SUBMIT RPORT TO QA.		12/28/05
190	FINAL VISUAL INSPECTION CQP-500 REV 4	VISUALLY INSPECT 100% of COMPONENT ACCORDING TO ASTM A802 LEVEL 2 ALL CONDITIONS. IF OK CHECK HERE <u> ✓ </u> . IF REJECTED CHECK HERE <u> </u> . MARK AND REPAIR DOCUMENT REWORK ON A SUPPLEMENTAL MTS	VT - LEVEL II KA	12-28
200	FINAL L.P. CQP 0300 REV 10	FINAL L.P. 100% OF COMPONENT. ACCEPTANCE PER ASTM A903. ACCEPTANCE CRITERIA- LEVEL 2 ALL AREAS. IF OK CHECK HERE <u> ✓ </u> WASH AND SEND TO NEXT STEP. IF REJECTED CHECK HERE <u> </u> MAKE REPAIRS AND DOCUMENT ON SUPPLEMENTL MTS.	LP - LEVEL II	SSB 12-27-05
210	FINAL MAG PERM INSPECTION SOP MAG PERM 100, REV 1 GRIND GCHI SOP 0100 REV 2	PERFORM MAG PERM TESTING WITH SEVRIN GAUGE. ACCEPTANCE 1.02. CHECK THE ENTIRE SURFACE ON A 6"BY6" GRID. REPORT RESULTS. HAND GRIND WITH SUITABLE CONE OR OTHER SIMILAR GRINDER AS REQUIRED TO ENSURE REMOVAL OF MATERIAL TO ACHIEVE MAG PERM REQUIREMENT.	CA	12-29-05
220	DOC. REVIEW	REVIEW DOCUMENTS ALL DOCUMENTS NOTED TO BE ACCESSIBLE FOR AUDITING. (C OF C, M.T.R., SIGNED M.T.S., LAYOUT INSPECTION REPORT, X-RAY READER SHEETS AND HEAT TREAT CHARTS)		

MetalTek International – Carondelet Division
Manufacturing and Test Sequence (MTS) Coil Shim A COIL S/N 2
Dated 12-14-04 Revision:1 Dated Issued:10-25-05 Page 3of 3

NOTICE	RELEASE FROM EIO	PROVIDE DOCUMENTS TO EIO. SENT ON _____ BY _____ RECEIVED RELEASE FROM EIO ON _____.	Q ENG OR QA MGR	
	PACK AND SHIP	PACKAGE AND SHIP TO MAJOR TOOL.		
1000	REVISION HISTORY	ORIGINAL 12-14-04. Rev1 complete rewrite due to specification changes.	CARUUD	
FOR VT&LP/ FOR RT				
SUPPLEMENTAL MTS FOR WELD REPAIRS.				
S10	WELD SOP 0100 REV 7	EXCAVATE ANY DEFECTS.		
S20	L.P. EXCAVATION CQP-300 REV 10	L.P. ALL EXCAVATIONS PRIOR TO WELDING TO ENSURE REMOVAL OF DEFECT. ACCEPTANCE PER A903. ACCEPTANCE CRITERIA- LEVEL 2.	LP - LEVEL II	LP - LEVEL II
S30	WELD MAP	MAP ALL WELDS WITH DIGITAL PHOTO/MAPS. SERIALIZE DEFECTS ON CASTING, USE SCALE IN PHOTOS AND DOCUMENT SIZE. THIS IS TO BE PERFORMED BY SUPERVISOR, INSPECTION LEAD MAN OR THEIR DESIGNEE, FILE WITH QA.. USE YELLOW MARKER. MUST SEND REPORT ON ALL AJOR WELDS, DEFINED AS OVER 20% OF WALL THICKNESS OR 1 INCH WHICHEVER IS LESS OR 10 SQUARE INCHES TO CUSTOMER. MAJOR WELDS YES _____, REPORT SENT BY _____ DATE _____ NO MAJOR WELDS CHECK HERE _____ AND GO TO STEP 170.		
S40	QA APPROVAL HOLD POINT	QA TO APPROVE ELECTRODE PRIOR TO USE. PROCEDURE USED: _____ MATERIAL USED: _____ QUALITY ENG. Name: _____ Date: _____		
S50	WELD SOP 0100 REV 7	WELD REPAIR DEFECTS AS MARKED. FOR WELDS <2" - WPS 10-SMAW-CF8MNMN MOD REV 1 FOR WELDS <8" - WPS 15-GMAW-CF8MNMN MOD REV 2		
S60	GRIND GCHI SOP 0100R2	HAND GRIND WELDS.		
S70	L.P. WELD CQP 0300 REV 10	L.P. WELD REPAIRS ACCEPTANCE PER ASTM A903. ACCEPTANCE CRITERIA-LEVEL 2. IF OK CHECK HERE _____ WASH AND SEND TO STEP 300. IF REJECTED CHECK HERE _____ AND RETURN TO STEP 220.	LP - LEVEL II	LP - LEVEL II
	REPEAT	REPEAT STEPSS10 TO S70 AS REQUIRED TILL CLEAR THROUGH VISUAL INSPECTION & PENETRANT INSPECTION.	QA ENG.	QA ENG.
S80	TEST MAG PERM SOP MAG PERM 100, REV 1	TEST MAG PERMEABILITY REPAIR AREAS RECORD ON WELD MAP LIST. TEST AT LEAST 5 POINTS PER WELD. ACCEPTANCE 1.02. IF OK CHECK HERE _____ AND GO TO STEP 170. GRIND AS NEEDED TO REMEDIATE.		

UA

✓



4

Corrective Action 1308
Carondelet Division - CA / PA / RGA Database
Corrective Action Type NCR
Date 6/13/2005
CA Originator C. Ruud
Pattern Number: C and A Coil Shims 11 Pieces

Description of Defect / Non-Conformance

Chemistry for 11 shim castings is out of specification.

Root Cause

Chemistry specification was not changed in system and not communicated to Lab personnel.

Corrective Action

Specification was corrected in system and Lab personnel trained. Mag permeability was checked on the parts and are less than 1.02u.

Verification of Corrective Action

Chemistries were checked on subsequent parts and are within specification.

Preventive Action

Create Inspection and Test Plan summarizing all requirements.

Estimated Completion Date

6/15/05

Actual Completion Date

Complete.

A handwritten signature in black ink, appearing to read "C. Ruud".

Signed: C. Ruud

CC: Roger Broman, Barry Craig, Joe Edwards, E.J. Kubick

Nonconformance Report: CA 1323 (phosphorus levels exceeds specification limits for castings C1- C4 and A1 and C1 shim and four Type C and six A coil shims)

Project Disposition:

The erroneous levels were due to calibration errors with the spectrometer. As reported in MTK's attached report, preventive maintenance has since been performed on the spectrometer. The reported chemistry will be accepted for the castings and shims noted above. The specification chemistry will not be changed at this time.

Approvals:

**Phil
Heitzenroeder**

Digitally signed by Phil Heitzenroeder
DN: CN = Phil Heitzenroeder, C = US,
O = PPPL, OU = Mech. Eng. Division
Reason: I agree to 'specified' portions
of this document
Date: 2006.02.21 11:49:56 -05'00'

Procurement Technical Representative

**Brad
Nelson**

Digitally signed by Brad Nelson
DN: cn=Brad Nelson, c=US,
o=ORNL, ou=FED,
email=nelsonbe@ornl.gov
Date: 2006.02.21 14:16:12
-05'00'

Responsible Line Manager:



Corrective Action 1323
Carondelet Division - CA / PA / RGA Database
Corrective Action Type NCR
Date 7/27/2005
CA Originator C. Ruud
Applies to: Coil castings C-1, C-2, C-3, C-4 and A-1 and C 1 shim and four C coil and six A coil shims

Description of Defect / Non-Conformance

Phosphorus levels in material produced to date exceed specification limits. Both phosphorus and sulfur readings reported erroneously in certifications.

Certification reports have shown phosphorus and sulfur levels in the <.01% range. Independent laboratory data confirmed phosphorus in the .018 to .033% range and sulfur in the .005 to .022% range. Actual levels of some tests are above those in PPPL Specification NCSX-CSPEC-141-03-07 Rev 7.

Nonconformance was first suspected as a result of analysis of zoned attached test specimens volunteered by MetalTek International as response to PPPL questions on weighted average chemical analysis and quality of blending in the gating system. Nonconformance was verified on the bars used in the study and has been extended to evaluation of previously poured products.

Root Cause

Specification limits were set below the levels achievable through use of available raw materials. Spectrometer did not properly calibrate for phosphorus and sulfur at levels of specification due to equipment malfunction.

The chemical specification of EIO heats uses alloy CF8MNMn-Mod which incorporates a type standard calibration with a certified reference material (CRM) BS180. This enables the operator of the spectrometer to match the elemental concentrations of this alloy with corrective factors. These factors are determined by analyzing the CRM and having them compared with the calibration curves for each element. The phosphorus and sulfur content have very low measured intensities due to low concentrations. Intermittent failure of the spectrometer intensity measuring card caused higher intensity readings for phosphorus and sulfur. Subsequent checks with the CRM resulted in low corrective factors that were not detected. This in turn resulted in low reported concentrations for the EIO samples. All the major elements, which are measured on other intensity cards, have been closely monitored and matched very well with the CRM and thus were reported correctly.

Corrective Action

Modification to specification for phosphorus and sulfur will be requested. Limits will be set based on process capability and consistent with other stainless steel grades. Replacement of deficient card in spectrometer will be made upon delivery.

Subsequent immediate analysis of chemistry results, obtained by wet analysis, is attached and demonstrate top of specification for sulfur and over specification for phosphorus. The spectrometer manufacturer has performed an analysis to determine the cause of the malfunction and verified that the intensity card has an intermittent fault and must be replaced. The card has been ordered and scheduled for replacement on August 15, 2005.

Until the card is replaced we will be performing additional type standardizations to ensure accurate sulfur and phosphorus analysis. Additionally, for coils made until the card is replaced, an independent laboratory will perform a verification of the chemical analysis.

Verification of Corrective Action

Will be determined at a later date.

Preventive Action

In addition to spectrometer faults, we have identified that the specification ranges for sulfur and phosphorus is unattainable. Analysis and specifications for virgin charge materials predict sulfur at 0.040% maximum and phosphorus at 0.040% maximum. We have no way to remove phosphorus from the melt and do not intentionally add phosphorus. So, the confirmed coil analyses, along with analyses of virgin material heats, demonstrate sulfur in the range of 0.010% to 0.022% and phosphorus in the range of 0.018% to 0.033%. These results are consistent with our charge material analysis. We will request a deviation for phosphorus in the subject parts and also request a permanent specification change to 0.040% maximum for both phosphorus and sulfur, to allow us to provide non-discrepant material. This change will not affect, in any way, the physical properties or material performance because all coils and test material exhibited sulfur and phosphorus within the new ranges despite inaccurate reporting. Other actions: Specifications have been added to the BS 180 standard and the type standard will be measured against the criteria.

Estimated Completion Date

August 15, 2005

Actual Completion Date TBD

Signed: C. Ruud



CC: Jim Galaske, Barry Craig, Joe Edwards, E.J. Kubick

Guide to St Louis Testing Report Dated 7-26-05

Sample name	Sample origin
A1Z1	Cast on bar A-1 coil, zone 1
A1Z2	Cast on bar A-1 coil, zone 2
A1Z3	Cast on bar A-1 coil, zone 3
C1	Cast on bar C-1 coil
C2Z1	Cast on bar C-2 coil, zone 1
C2Z2	Cast on bar C-2 coil, zone 2
C2Z3	Cast on bar C-2 coil, zone 3
C3Z1	Cast on bar C-3 coil, zone 1
C3Z2	Cast on bar C-3 coil, zone 2
C3Z3	Cast on bar C-3 coil, zone 3
F1	Final analysis button from ladle for C-4 coil
F2	Final analysis button from ladle for C-4 coil
F3	Final analysis button from ladle for C-4 coil
P1	Preliminary analysis button from ladle for C-4 coil

Testing is underway of the heat used to pour the four C coil and six A coil shims.

*Attachment to
CA 1323*



Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

July 26, 2005
Lab No. 05C-0608
Invoice No. 59891
P.O. No. 21324
Page 1 of 1

METALTEK INTERNATIONAL
8600 Commercial Blvd.
Pevely, MO 63070

Attention: Chuck Ruud

REPORT OF CHEMICAL ANALYSIS

SAMPLE ID: A1 Z1, A1 Z2, A1 Z3, C1, C2 Z1, C2 Z2, C2 Z3,
C3 Z1, C3 Z2, C3 Z3, F1, F2, F3, P1

RESULTS: %

ANALYTE	A1Z1	A1Z2	A1Z3
Sulfur	.013	.005	.010
Phosphorus	.025	.023	.018

ANALYTE	C1	C2Z1	C2Z2	C2Z3
Sulfur	.014	.022	.018	.015
Phosphorus	.018	.024	.021	.025

ANALYTE	C3Z1	C3Z2	C3Z3
Sulfur	.013	.014	.012
Phosphorus	.024	.025	.021

ANALYTE	F1	F2	F3	P1
Sulfur	.014	.015	.012	.010
Phosphorus	.029	.033	.028	.030

Sulfur Test Method: ASTM E1019-03

Phosphorous Test Method: Colormetric

Identification of tested specimen provided by the client.

Robin E. Sinn
Laboratory Director





Corrective Action 1525
Carondelet Division
Corrective Action Type NCR
Date 1-9-06
CA Originator C. Ruud
Applies to: A-2 Coil

Description of Defect / Non-Conformance

A-2 Coil has excess stock in 2 areas.

Root Cause

Excess material is feed pads for risers. They were not removed during arc air operation. There is no work instruction for the A coil.

Corrective Action

Remove excess material at CAF. Verify repairs.

Verification of Corrective Action

Inspect coil prior to shipping.

Preventive Action

Create work instruction for arc air process.

Verification Of Preventative Action

Work instruction completed and will be verified on A-4.

Estimated Completion Date

1-20-06

Actual Completion Date

Signed: C. Ruud

A handwritten signature in black ink, appearing to be "C. Ruud".

CC: R. Broman, B. Craig, J. Edwards, E.J. Kubick, J. Markham, B. Carlton



Corrective Action 1530
Carondelet Division
Corrective Action Type NCR
Date 1-11-06
CA Originator C. Ruud
Applies to: A-2 Coil

Description of Defect / Non-Conformance

Markings on A-2 Coil are incorrect. Serial number "A-2" was not on coil.

Root Cause

Serial numbers in core box was not changed to A-2. Certification number on A-2 was in an area that was repaired and as a result it was ground off.

Corrective Action

Serial numbers in the core box have been changed. The MTS has been revised to have the markings verified at final inspection.

Verification of Corrective Action

Numbers in A-5 were checked on 1-12-06 prior to pouring and found to be compliant.

Estimated Completion Date

Prior to pouring of A-5.

Actual Completion Date

1/12/06

A handwritten signature in black ink, appearing to be "C. Ruud".

Signed: C. Ruud

CC: R. Broman, B. Craig, J. Edwards, E.J. Kubick, J. Markham, B. Carlton



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Carondelet Division

8600 Commercial Blvd. - Pevely, MO 63070 USA
Phone: 636-479-4499 - Fax: 636-479-3399

Final Inspection Report

Customer ENERGY INDUSTRIES OF OHIO
Pattern: MCWF-A2 COIL

Order PPPL-FP-LTS-2

ASTM Metal CF8MNMN MOD

Date 12/29/2005

Type Description	Cert Number	Procedure	Acceptance Criteria	Actual
Liquid Penetrant	175410-1	CQP - 300 Rev 9	SEE NOTE	Acceptable
Notes Acceptance per ASTM A903. Acceptance criteria - level 1 for high stressed areas, level 2 for all other areas.				
Mag Perm	175410-1	SOP Mag Perm 100 Rev 1	<1.02	Acceptable
Radiographic	175410-1	Technique # 12726	MSS SP 54	Acceptable
Visual	175410-1	CQP - 500 REV 4	ASTM A802 LEVEL 2	Acceptable

Liquid Penetrant

Technician: Jim Shanahan
ASNT Level II

Visual

Technician: Kevin Anderson
ASNT Level II

Respectfully Submitted,
Charles A. Ruud
Quality Assurance Manager

Superior Quality Engineered Metal Products

www.MetalTekInt.Com



Carondelet Division

8600 Commercial Blvd. - Pevely, MO 63070 USA
Phone: 636-479-4499 - Fax: 636-479-3399

Certificate of Conformance

ENERGY INDUSTRIES OF OHIO

Order Number PPPL-FP-LTS-2

Pattern MCWF-A2 COIL

ASTM CF8MNMN MOD

Date 12/29/2005

Cert Number

175410-1

A handwritten signature in black ink, appearing to read "C. Ruud", is positioned in the lower right quadrant of the page.

We certify that we have complied in accordance with the drawings(s) and specifications(s) listed on the above purchase order. The articles furnished were made and/or processed from parts and/or materials in accordance with all applicable drawings(s) and specifications(s) pursuant to the afore mention purchase order.

Respectfully Submitted,
Charles A. Ruud
Quality Assurance Manager

Superior Quality Engineered Metal Products

www.MetalTekInt.Com



Carondelet Division

8600 Commercial Blvd. - Pevely, MO 63070 USA
Phone: 636-479-4499 - Fax: 636-479-3399

Final Inspection Report

Customer Name: ENERGY INDUSTRIES OF OHIO

Pattern: SE-141-033 COIL A SHIM
S/N 2

Order Number: PPPL-FP-LTS-2

ASTM Metal CF8MNMN MOD

Date 12/28/2005

Type Description	Cert Number	Procedure	Acceptance Criteria	Actual
Liquid Penetrant	S76220-1	CQP - 300 Rev 9	ASTM A903 Level II	Acceptable
Mag Perm	S76220-1	SOP Mag Perm 100 Rev 1	<1.02	Acceptable
Radiographic	S76220-1	Technique # 12726	MSS SP 54	Acceptable
Visual	S76220-1	CQP - 500 REV 4	ASTM A802 LEVEL 2	Acceptable

Liquid Penetrant

Technician: Sharon Bader
ASNT Level II

Visual

Technician: Kevin Anderson
ASNT Level II

Respectfully Submitted,
Charles A. Ruud
Quality Assurance Manager



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Carondelet Division

8600 Commercial Blvd. - Pevely, MO 63070 USA
Phone: 636-479-4499 - Fax: 636-479-3399

Certificate of Conformance

ENERGY INDUSTRIES OF OHIO

Order Number PPPL-FP-LTS-2

Pattern SE-141-033 COIL A SHIM S/N 2

Alloy CF8MNMnMOD Date 12/29/2005

Cert Number

S76220-1

A shim for A-2 coil was poured from heat number 29198. No weld repairs were necessary.

A handwritten signature in black ink, appearing to read "CAR", with a long horizontal line extending to the right.

We certify that we have complied in accordance with the drawings(s) and specifications(s) listed on the above purchase order. The articles furnished were made and/or processed from parts and/or materials in accordance with all applicable drawings(s) and specifications(s) pursuant to the afore mention purchase order except as noted by corrective actions.

Respectfully Submitted,
Charles A. Ruud
Quality Assurance Manager

Superior Quality Engineered Metal Products

www.MetalTekInt.Com

EIO
Energy Industries of Ohio
SUPPLIER QUALITY RELEASE

		Date: 12-29-05
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I. General Information:		
Project Name:	Modular Coil Winding Form A2	
PO No:	NCSX-SOW-141-02-01	Rev.: 9
Supplier:	MetalTek	
Procurement Agent:	EIO	
Shipment:	<input checked="" type="checkbox"/> Partial <input type="checkbox"/> Final	

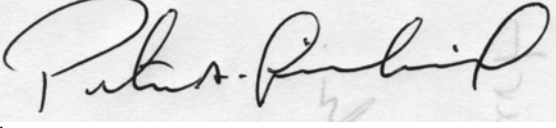
II. Material Description	
Casting A2 Coil Shim A coil S/N 2	

III. Release Checklist	
Plan Requirements Complete?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A (If identified "No" provide explanation in comments section below)
Variances?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A (If identified "No" provide explanation in comments section below)
Princeton Notified of Shipment?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A (If identified "No" provide explanation in comments section below)
DCMA Notified of Shipment?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A (If identified "No" provide explanation in comments section below)
<input checked="" type="checkbox"/> Conditional <input type="checkbox"/> Unconditional	Explain conditional releases in comments section.

IV. Comments	
Metallurgical variance per NCR 1323 & WC specs (Pending PPPL approval and final disposition) Manganese high	

By signing below you acknowledge that the casting has met all applicable standards and contractual requirements

V. Supplier Quality Representative Sign Off		
Charles Ruud	X	12-29-05
Supplier Quality Representative (SQR) Print/Type Name	Supplier Quality Representative (SQR) Signature	Date

VI. Supplier Approval For Shipment		
Procurement Agent Notified of Shipment	Date: 12-29-05	
Required Vendor Data Ready for Shipment	Date: 12-29-05	
Peter A Djordjevich	 X	12-29-05

EIO
Energy Industries of Ohio
SUPPLIER QUALITY RELEASE

		Date: 12-29-05
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I. General Information:		
Project Name:	Modular Coil Winding Form A2	
PO No:	NCSX-SOW-141-02-01	Rev.: 9
Supplier:	MetalTek	
Procurement Agent:	EIO	
Shipment:	<input checked="" type="checkbox"/> Partial <input type="checkbox"/> Final	
Supplier's Representative Print/Type Name	Supplier's Signature	Date

1. Enter:
Project Name
PO Number
Supplier
Procurement Agent

2. Enter a brief description of items being released, including applicable drawing number(s), dash or item number(s), drawing revision letter, specification(s), and serial number(s).

3. Self-Explanatory

4. Record any unusual circumstance, such as a conditional release.

5. The Supplier's representative shall sign and date.

7. Signature and date of the Supplier's authorized representative indicating shipping date.

8. In case of partial release, the supplier shall maintain copies of each sequential "Supplier Quality Release" and establish complete accountability of material release on final shipment.

9. Supplier shall include a copy of the completed form with each shipment.