

Energy Industries of Ohio

Contract # S005242-F

Modular Coil Winding Form

B-2 Documentation Package

9/6/06

This B-2 Documentation consists of:

Part 1

**Final documentation package Metal Tek Intl. – Pages 3 -
Latest revision 9/6/2006
Foundry documentation**

Part 2

**Final documentation package Major Tool - Pages
Latest revision **Not generated yet**
Machine shop documentation**

NOTE - MTM – new EIO TOC is on page **??. Use this as a reference for
finding files in MTM portion of Doc package.**

Part 3

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

Major Tool radiographic films from part 2 (Not generated yet**)**

Energy Industries of Ohio

Contract # S005242-F

Modular Coil Winding Forms

B-2 Documentation Package

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

Revised 9/6/2006

**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.

B-2 Documentation Package

List of Documents 9-6-06

Doc #	Description	Page #
1	MTR for weighted average of chemistry –from CAF + ladle analysis from WC	5
2	MTR for B-2 Shim	6
3	Lincoln weld metal product conformance spec Lot 3018513/78308	7
4	St Louis Test Lab dated 8/16/05 mech test results at RT & CVN @ 293°k for Lincoln lot 3018513/78308	8
5	St Louis Test Lab dated 10/05/05 CVN @ -320°f for Lincoln lot 3018513/78308	10
6	Westmoreland mech test @ -320°F dated 10/18/05 Lot 3018513/78308	11
7	Westmoreland Tensile test report @ -320°F dated 3/28/06	12
8	St Louis Test Lab dated 3-16-06 – incl. tensile test results @ room temp & Charpy V Notch (CVN) at 77°K & 293°K	13
9	Weld map	20
10	MQS Radiographic Inspection Report dated 3/21/06	24
11	MTK Radiographic Interpretation Report dated 4/18/06	30
12	MTK Radiographic Interpretation Report & drawing for B-2 shim	32
13	B-2 Coil heat treat chart dated 3/3/06	34
14	B-2 Coil stress relief dated 4/22/06	35
15	B-2 Shim heat treat chart dated 1/23/06	36
16	MTK signed MTS B-2 Coil	37
17	MTK signed MTS B-2 Coil shim	48
18	Final inspection report B-2	51
19	C of C for B-2 Coil	52
20	Final Inspection report B-2 Shim	53
21	C of C for B-2 shim	54
22	EIO shipping release for B-2 Coil	55
9-6-06		



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-B2 Coil
 CAF Metal Designation CF8MNMnMod
 Material Spec CF8MNMnMOD

Cert Number S81340-1
 Pour Date 2/24/2006

Weighted average of 3 heats – Ladle 1 #32486 (40%), Ladle 2 #32487 (22%), Ladle 3 #32488 (38%) Total Weight 33544 lbs.

Element	Min	Actual	Max
C	0.04	0.04	0.07
MN	2.3	2.8	2.8
SI	0.0	0.3	0.7
CR	18.0	18.2	18.5
NI	13.0	13.1	13.5
MO	2.1	2.3	2.5
P	0.0	0.029	0.035
S	0.0	0.014	0.025
N	0.24	0.26	0.28

*Over specification, see CA 1536.

Comparison to WC Analysis

All analysis at CAF was performed after the preventive maintenance.

Lab	I.D.	Sample	C	Si	Mn	Cr	Ni	Mo	N	P	S
Ladle #1											
CAF	32486	Button #1	0.04	0.2	2.7	18.3	13.1	2.3	0.26	0.028	0.014
CAF	32486	Button #2	**	0.2	2.7	18.3	13.1	2.3	**	0.028	0.014
WC	32486	Button #2	**	0.2	2.7	18.1	13.2	2.2	**	0.026	0.030
Ladle #2											
CAF	32487	Button #1	0.04	0.3	2.8	18.3	13.1	2.3	0.25	0.030	0.014
CAF	32487	Button #2	**	0.3	2.8	18.3	13.1	2.3	**	0.030	0.014
WC	32487	Button #2	**	0.3	2.7	18.1	13.2	2.3	**	0.027	0.026
Ladle #3											
CAF	32488	Button #1	0.04	0.3	2.9	18.1	13.0	2.4	0.26	0.030	0.014
CAF	32488	Button #2	**	0.3	2.9	18.1	13.0	2.4	**	0.030	0.014
WC	32488	Button #2	**	0.3	2.6	18.0	13.2	2.4	**	0.027	0.026

Respectfully Submitted,
 Charles A. Ruud
 Quality Assurance Manager

Superior Quality Engineered Metal Products



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 31455 Pour Date 11/2/2005
Pattern Number SE-141-058 COIL B SHIM Cert Number 177360-1
CAF Metal Designation CF8MNMnMod S/N 2
Material Spec CF8MNMN MOD

Element	Min	Actual	Max
C	0.04	0.04	0.07
MN	2.3	2.8	2.8
SI	0.0	0.3	0.7
CR	18.0	18.3	18.5
NI	13.0	13.4	13.5
MO	2.1	2.2	2.5
P	0.0	0.030	0.035
S	0.0	0.010	0.025
N	0.24	0.24	0.28

The certificate is produced with EDP and valid without signature.

Respectfully Submitted,
Charles A. Ruud
Quality Assurance Manager

Superior Quality Engineered Metal Products

www.MetalTekInt.Com

PRODUCT CONFORMANCE REPORT



Product
Class.

ENM 4455
EN 12072-99 G 20 16 3 Min L

Size(s) mm
Lot/Batch
Item No.

1,2
3018513/78308
692129

Customer

EUROWELD
MOORESVILLE N.C. 28117
UNITED STATES

Quantity
Customer ref.
LSW Order No.

105,0 KG
P.O. 05-46
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. °C	Rp0.2 N/mm2	Rm N/mm2	A5 %	Cond.	Temp.1 °C	Av1 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

Fax:

31.24 3522200

Date

22/03/2005

Cert.No.

3018513/7830

2810 Clark Avenue • St. Louis, MO 63103-2574 • (314) 531-8080 • FAX (314) 531-8085
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

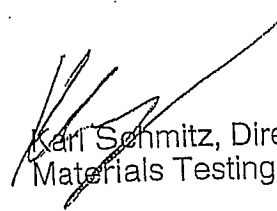
Attention: Chuck Ruud

REPORT OF CHARPY IMPACT TEST

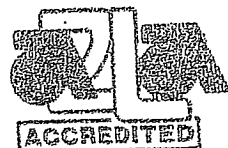
MATERIAL (SAMPLE ID): LNM 4455, LINCOLN LOT 3018513/78308
SPECIFICATION: ASTM A 370-03a
SPECIMEN TYPE: "A" Vee Notch
SPECIMEN SIZE: 10 mm x 10 mm
TEMPERATURE OF TEST: 293°K

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.


 Karl 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
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 Page 2 of 2

Attention: **CHUCK RUUD**

REPORT OF MECHANICAL TESTS

SAMPLE ID: LNM 4455, LINCOLN LOT 3018513/78308

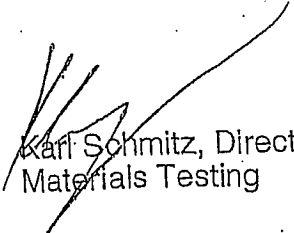
Sample ID	Original Area Sq. Inches	Reduced Area Sq. Inches	Reduction in Area %	Yield Strength PSI	Tensile Strength PSI	Elongation (2.0" Gage Length)		Modules of Elasticity
						in.	%	
LNM4455	0.1932	0.0866	55.2	65200	95200	0.76	38.0	23.4

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.


 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

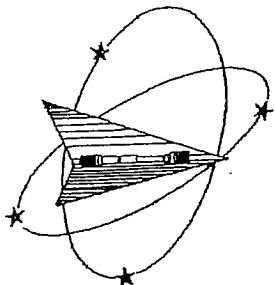

 Karl Schmitz, Director
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Westmoreland Mechanical Testing & Research, Inc.

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.



621-01 & 621-02

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. StarMat Wojton
Technical Services Manager Tensile Supervisor

10-18-05
October 18, 2005

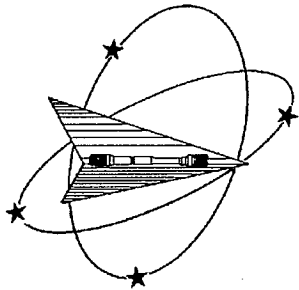
KNOWINGLY OR WILLFULLY FALSIFYING OR CONCEALING A MATERIAL FACT ON THIS FORM OR MAKING FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR REPRESENTATIONS HEREIN COULD CONSTITUTE A FELONY PUNISHABLE UNDER FEDERAL STATUTES. THIS CERTIFICATE OR REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN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

Testing Specialists for Aerospace, Automotive, and Material Testing Fields
Locations in Youngstown, PA U.S.A. - Tel. (724) 537-3131 and
Baltimore, U.S. - Tel. +44 (0) 1295 261211

14:29 OCT 18, 2005

14:29 OCT 18, 2005

14:29 OCT 18, 2005



Westmoreland Mechanical Testing & Research, Inc.

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.



621-01 & 621-02



7

March 28, 2006

CERTIFICATION

Section 1 of 1

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

WMT&R Report No. 6-25514

P.O. No. 19386

Requisition No. 7590

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 E21-05

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

Coil No.	Specimen	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	AU/R
B2	Z1	D29755	-320	168.9	102.0	48	36	24.7	16730	10100	0.3551	0.2840	1.40	2.07	0.09903557	M9	A
B2	Z2	D29756	-320	173.5	105.9	56	46	31.0	17160	10480	0.3549	0.2609	1.40	2.18	0.09892405	M9	A
B2	Z3	D29757	-320	175.1	103.8	47	45	26.4	17320	10273	0.3549	0.2638	1.40	2.06	0.09892405	M9	A

AU/R: A=ACCEPTABLE, U=UNACCEPTABLE, R=REPORT

Requirements provided by MetalTek International

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 WMTR, INC.

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Locations in Youngstown, PA U.S.A. ~ Tel. (724) 537-3131 and
Banbury U.K. ~ Tel. +44 (0) 1295 261211


Roy E. Starr
Technical Services Manager


Matt Wojcik
Tensile Supervisor

3-28-06
March 28, 2006

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METALTEK INTERNATIONAL
 8600 Commercial Blvd.
 Pevely, MO 63070

March 16, 2006
 Lab No. 06P-0930
 P.O. No. 21324
 Page 1 of 7

Attention: Chuck Ruud

REPORT OF CHARPY IMPACT TEST

MATERIAL (SAMPLE ID): B2, Z1
SPECIFICATION: ASTM A 370-03a
SPECIMEN TYPE: "A" Vee Notch
SPECIMEN SIZE: 10 mm x 10 mm
TEMPERATURE OF TEST: 293°K (+°70F)

BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
Z1-1	138	0.079	100
Z1-2	146	0.125	100
Z1-3	144	0.065	90
Average	143	0.090	97



3/16/06

Identification of tested specimen provided by client.


 Karl Schmitz, Director
 Materials Testing

KS/clm



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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March 16, 2006
 Lab No. 06P-0930
 P.O. No. 21324
 Page 2 of 7

Attention: Chuck Ruud

REPORT OF CHARPY IMPACT TEST

MATERIAL (SAMPLE ID): B2, Z1
SPECIFICATION: ASTM A 370-03a
SPECIMEN TYPE: "A" Vee Notch
SPECIMEN SIZE: 10 mm x 10 mm
TEMPERATURE OF TEST: 77°K (-320°F)

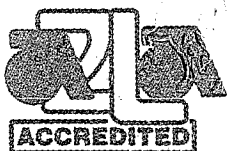
BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
Z1-4	70	0.040	80
Z1-5	62	0.038	80
Z1-6	55	0.036	70
Average	62	0.038	77


 3/16/06

Identification of tested specimen provided by client.

KS/cim


 Karl Schmitz, Director
 Materials Testing



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March 16, 2006
 Lab No. 06P-0930
 P.O. No. 21324
 Page 3 of 7

Attention: Chuck Ruud

REPORT OF CHARPY IMPACT TEST

MATERIAL (SAMPLE ID): B2, Z2
SPECIFICATION: ASTM A 370-03a
SPECIMEN TYPE: "A" Vee Notch
SPECIMEN SIZE: 10 mm x 10 mm
TEMPERATURE OF TEST: 293°K (+°70F)

BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
Z2-1	126	0.087	100
Z2-2	124	0.069	100
Z2-3	146	0.092	100
Average	132	0.083	100


 3/16/06

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March 16, 2006
 Lab No. 06P-0930
 P.O. No. 21324
 Page 4 of 7

Attention: Chuck Ruud

REPORT OF CHARPY IMPACT TEST

MATERIAL (SAMPLE ID): B2, Z2
SPECIFICATION: ASTM A 370-03a
SPECIMEN TYPE: "A" Vee Notch
SPECIMEN SIZE: 10 mm x 10 mm
TEMPERATURE OF TEST: 77°K (-320°F)

BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
Z2-4	78	0.054	90
Z2-5	60	0.049	90
Z2-6	60	0.032	50
Average	66	0.045	77


 3/16/06

Identification of tested specimen provided by client.

KS/clm


 Karl Schmitz, Director
 Materials Testing



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 Certificate No. 0397-02

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 Pevely, MO 63070

March 16, 2006
 Lab No. 06P-0930
 P.O. No. 21324
 Page 5 of 7

Attention: Chuck Ruud

REPORT OF CHARPY IMPACT TEST

MATERIAL (SAMPLE ID): B2, Z3
SPECIFICATION: ASTM A 370-03a
SPECIMEN TYPE: "A" Vee Notch
SPECIMEN SIZE: 10 mm x 10 mm
TEMPERATURE OF TEST: 293°K (+°70F)

BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
Z3-1	142	0.123	100
Z3-2	134	0.125	100
Z3-3	120	0.096	100
Average	132	0.115	100

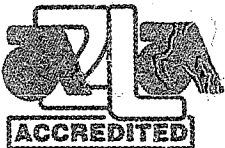
Identification of tested specimen provided by client.



3/16/06

KS/clm

[Signature]
 Karl Schmitz, Director
 Materials Testing



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 Certificate No. 0397-02

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March 16, 2006
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 P.O. No. 21324
 Page 6 of 7

Attention: Chuck Ruud

REPORT OF CHARPY IMPACT TEST

MATERIAL (SAMPLE ID): B2, Z3
SPECIFICATION: ASTM A 370-03a
SPECIMEN TYPE: "A" Vee Notch
SPECIMEN SIZE: 10 mm x 10 mm
TEMPERATURE OF TEST: 77°K (-320°F)

BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
Z3-4	60	0.045	60
Z3-5	65	0.030	50
Z3-6	64	0.038	60
Average	63	0.038	57

Identification of tested specimen provided by client.



File/06


 Gary Schmitz, Director
 Materials Testing

KS/clm



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

AN OFFICIAL COPY OF TEST REPORT WILL BE PROVIDED BY THIS LABORATORY ON REQUEST.
 NOT OFFICIAL WITHOUT THE RAISED SEAL OF ST. LOUIS TESTING LABORATORIES, INC.
 SEE REVERSE FOR CONDITIONS.



2810 Clark Avenue • St. Louis, MO 63103-2574 • (314) 531-8080 • FAX (314) 531-8085
 Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

METALTEK INTERNATIONAL
 8600 Commercial Blvd.
 Pevely, MO 63070

March 16, 2006
 Lab No. 06P-0930
 P.O. No. 21324
 Page 7 of 7

Attention: Chuck Ruud

REPORT OF MECHANICAL TESTS

SAMPLE ID: B2, Z1; B2, Z2; B2, Z3

Sample ID	Original Area Sq. Inches	Reduced Area Sq. Inches	Elastic Modulus	Reduction in Area %	Yield Strength PSI	Tensile Strength PSI	Elongation (2.0" Gage Length)	
							in.	%
B2, Z1	.1886	.1052	21.9	44.2	52,700	82,200	1.00	50.0
B2, Z2	.1987	.0962	22.0	51.6	56,300	84,000	1.03	51.5
B2, Z3	.2003	.0951	23.7	52.5	67,800	93,600	1.03	51.5

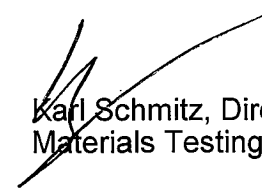
Round, reduced section tensiles

Yield taken at .2% offset

Tested in accordance with ASTM A 370-03a

Identification of tested specimens provided by the client.

KS/clm


 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.
 NOT OFFICIAL WITHOUT THE RAISED SEAL OF ST. LOUIS TESTING LABORATORIES, INC.
 SEE REVERSE FOR CONDITIONS.

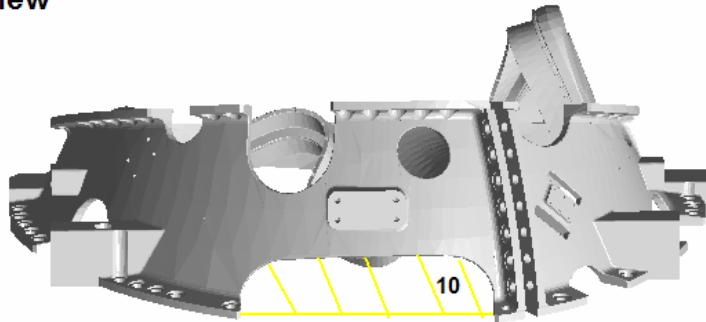


B-2 Coil Weld Map – Metal Tek

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	Left	4 ½	1 ¾	1 ½
2	Left	9 ¼	5 ¾	½
3	Left	6 ¼	1 ¾	2 ½
4	Left	9	2 ¾	2
5	Left	6	2 ½	Thru
6	Left	10	1 ½	¾
7	Top	6 ¼	2	Thru
8	Bottom	7	2 ¼	Thru
9	Right	7	2	1 ½
10	Back	2	2	Thru
11	Left	6 ¼	4 ¼	Thru

Back View



B-2 Coil Weld Map – Metal Tek

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

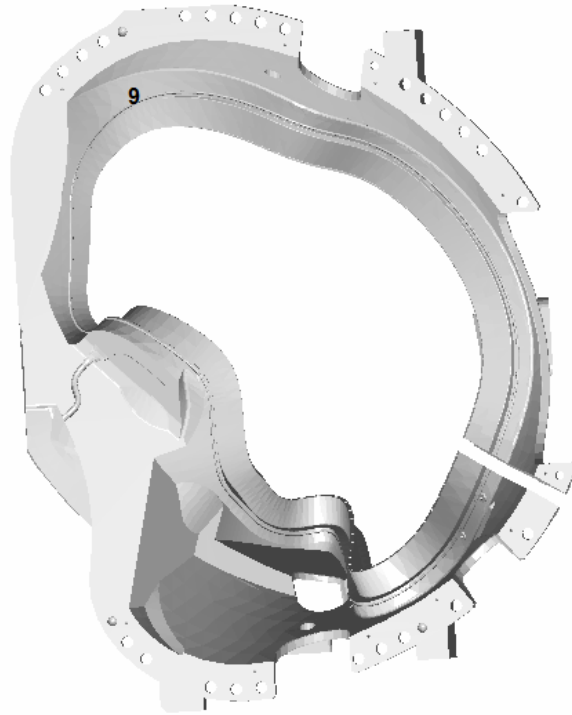
Left View



B-2 Coil Weld Map – Metal Tek

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

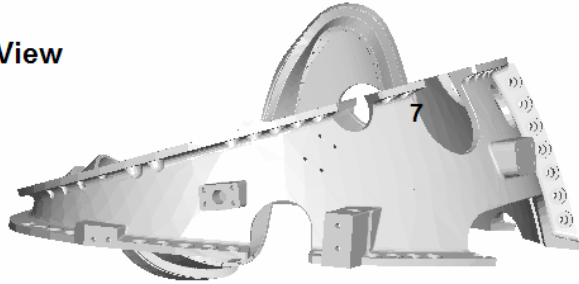
Right View



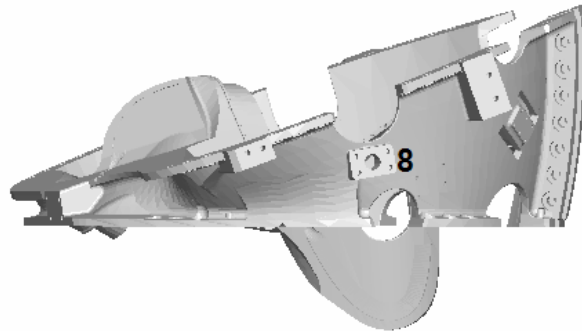
B-2 Coil Weld Map – Metal Tek

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

Top View



Bottom View



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		3/21/2006	361-03040
ADDRESS 8600 COMMERCIAL BLVD		P.O. NUMBER	XRAY X
CITY PEVELY STATE MO ZIP 63070		Chuck Rudd	GAMMA
PROCEDURE SPECIFICATION	ACCEPTANCE CRITERIA	SHEET ____ OF ____	
ASTM E94-93	MSS-SP-54-1999		

PART NUMBER	Serial No	View	No Apparent Indications		Dross		Incomplete Penetration		Shrinkage		Film Artifacts		REMARKS
			Acceptable	Rejected	Inclusion	Porosity	Lack of Fusion	Gas Cracks	Hot Tears	Under cut	Surface		
MCWF-B2	1-2	✓											
	2-3			R							R		
E.I.O. C040851	3-4			R							R		
	4-5	✓											
M581340	5-6	✓											
	6-7	✓							2				
Z103989	7-8	✓										✓	
	8-9	✓							2-3			✓	
	9-10	✓										✓	
	10-11	✓										✓	
	11-12	✓										✓	
	12-13	✓										✓	
	13-14			R							R		
	14-15	✓											
	15-16	✓											
	16-17	✓										✓	
	17-18	✓							2				
	18-19	✓											
	19-20	✓											
	20-21	✓										✓	✓
	21-22	✓											
	22-23	✓											
	23-24	✓								1			
	24-25	✓											✓
	25-26	✓											

NO. ACCEPTED	NO. REJECTED	MQS TECH. NO.	SHT.	REV. 1
0	1	13205		
COMMENTS		CUST. RSS NO.	SHT.	REV.
		REVIEWER		
		CERTIFIED NDT LEVEL (RT)		
		John Petroske		
		John Petroske RT II Exp. 01/08		

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		3/21/2006	361-03040
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	Inclusion	Porosity	Lack of Fusion	Gas Cracks	Hot Tears	Under cut	Surface		
MCWF-B2	26-27		✓										
	27-28		✓										
E.I.O. C040851	28-29		✓										
	29-1		✓										
MS81340	30-31			R						R			
	31-32		✓										
Z103989	V33		✓										
	34-35		✓										
	36-37		✓									✓	
	V38		✓										
	39-40		✓						1				
	40-41		✓		2								
	42-43		✓										
	43-44		✓										
	V45		✓										
	46-47		✓										
	48-49		✓		1								
	49-50		✓										
	V51		✓										
	V51A		✓										
	52-53		✓										
	53-54		✓										
	54-55		✓										
	55-56		✓										
	56-57		✓										

NO. ACCEPTED	φ	NO. REJECTED	1	MQS TECH. NO.	13205	SHT.	REV. 1
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.

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	3/21/2006	361-03040
ADDRESS	8600 COMMERCIAL BLVD	P.O. NUMBER	XRAY X
CITY	PEVELY STATE MO ZIP 63070	Chuck Rudd	GAMMA
PROCEDURE SPECIFICATION	ACCEPTANCE CRITERIA	SHEET	OF
ASTM E94-93	MSS-SP-54-1999		

PART NUMBER	Serial No	View	No Apparent Indications		Dross		Incomplete Penetration		Shrinkage		Film Artifacts		REMARKS
			Acceptable	Rejected	Inclusion	or Porosity	Lack of Fusion	Gas Cracks	Hot Tears	Under cut	Surface		
MCWF-B2	58-59	✓											
	59-60	✓							2				
E.I.O. C040851	60-61			R							R		
	61-62	✓							2				
M581340	62-63	✓							2				
	64	✓											
Z103989	63-65	✓							2				
	65-66	✓											
	66-67	✓							2				
	67-68	✓							2-3				
	69			R						R		✓	
	70-71	✓											
	71-72	✓											
	73-74	✓										✓	
	74-75	✓											
	75-76	✓										✓	✓
	77-78	✓											
	78-79	✓											
	80-81	✓							2				
	81-82	✓											
	82-83			R						4			
	84-85			R						4			
	85-86			R						4			
	86-87	✓								1			
	87-88			R						3-4			

NO. ACCEPTED	Φ	NO. REJECTED	1	MQS TECH. NO.	13205	SHT.	REV. 1
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

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		3/21/2006	361-03040
ADDRESS 8600 COMMERCIAL BLVD		P.O. NUMBER	XRAY X
CITY PEVELY STATE MO ZIP 63070		Chuck Rudd	GAMMA
PROCEDURE SPECIFICATION	ACCEPTANCE CRITERIA	SHEET ____ OF ____	
ASTM E94-93	MSS-SP-54-1999		

PART NUMBER	Serial No	View	No Apparent Indications		Dross or Penetration		Shrinkage		Film Artifacts		REMARKS
			Acceptable	Rejected	Inclusion	Porosity	Lack of Fusion	Gas Cracks	Hot Tears	Under Surface	
MCWF-B2	88-89			R				4			
	89-90			R					R		
E.I.O. C040851	90-91	✓					2-3				
	91-92	✓									
M581340	93-94	✓									
	94-95			R	4			4			
Z103989	96-97	✓									
	97-98	✓									
	98-99	✓									
	99-100	✓			2						
	101-102	✓									
	102-103	✓									
	103-104			R				3-4			
	104-105			R				3-4			
	106-107	✓									
	107-108	✓									
	108-109	✓									
	109-110	✓									
	110-111	✓									
	111-112			R					R		
	112-113			R					R		
	113A-114			R					R		
	115-116			R					R		
	117-118	✓									
	118-119	✓									

NO. ACCEPTED	Φ	NO. REJECTED	1	MQS TECH. NO.	13205	SHT.	REV. 1
COMMENTS				CUST. RSS NO.		SHT.	REV.
				REVIEWER	<i>John Petroske</i>		
				CERTIFIED	NOT LEVEL (RT)		
				John Petroske RT II Exp. 01/08			

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		3/21/2006	361-03040
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	Inclusion	or Porosity	Lack of Fusion	Gas Cracks	Hot Tears	Under cut	Surface		
MCWF-B2	119-120		✓										
	120-121		✓										
E.I.O. C040851	121-122		✓										
	123-124		✓										
M581340	124-125		✓										
	126-127		✓										
Z103989	127-128		✓										
	35-36		✓									✓	
	47-48		✓										

NO. ACCEPTED	0	NO. REJECTED	1	MQS TECH. NO.	13205	SHT.	REV. 1
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.

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

NAME METAL TEK INTERNATIONAL
 ADDRESS 8600 COMMERCIAL BLVD
 CITY PEVELY STATE MO ZIP 63070

DATE 4/07/2006

WORK ORDER NO.
361-03104

P.O. NUMBER
Chuck Rudd

XRAY X

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	Inclusion	Porosity	Lack of Fusion	Gas Cracks	Hot Tears	Under cut	Surface		
MCWF-B2	RI	2-3	✓										
		3-4	✓										
E.I.O. C040851		13-14	✓									✓	
		30-31	✓										
M581340		60-61		R				R	2			✓	
		66-69	✓										
Z103989		82-83	✓									✓	
		84-85	✓										
		85-86	✓										
		87-88	✓										
		88-89	✓										
		89-90		R									
		94-95		R				4		R			
		103-104	✓										
		104-105	✓										
		111-112	✓										
		112-113	✓										
		113A-114	✓										
		115-116		R						R		✓	

NO. ACCEPTED 0

NO. REJECTED 1

MQS TECH. NO. 13205

SHT. REV. 1

COMMENTS

CUST. RSS NO.

SHT. REV.

REVIEWER John Petroske
 CERTIFIED NDT LEVEL (RT)

John Petroske RT II Exp. 01/08

MetalTek

INTERNATIONAL

RADIOGRAPHIC INTERPRETATION REPORT

CUSTOMER <i>Energy Ind. of Ohio</i>		PURCHASE ORDER NUMBER <i>PPPL-FP-LTS-2</i>				DATE <i>4-18-06</i>		CONTROL NO. <i>40851</i>		PAGE <i>1 of 1</i>		
PART NO. <i>MCWFB-2</i>		SPECIFICATION <i>E446/E280</i>		CLASS <i>see spec</i>		TOTAL PIECES <i>1</i>		PIECES ACCEPTED <i>1</i>				
RADIOGRAPHED BY: <i>Midgett / Kelley</i>				INTERPRETED BY: <i>Midgett / Kelley</i>				ASNT LEVEL <i>II</i>				
FILM TYPE <i>29/59/80</i>		MATERIAL <i>CF8MNMN mod</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>M581340</i>												
<i>R2</i>		<i>60-61</i>	<i>30/100</i>	<i>/</i>		<i>2</i>		<i>1</i>	<i>/</i>			
		<i>89-90</i>	<i>50</i>		<i>X</i>					<i>X</i>		
		<i>115-116</i>	<i>30</i>	<i>/</i>		<i>2</i>						
		<i>94-95</i>	<i>50</i>		<i>X</i>			<i>X</i>		<i>DM</i>	<i>X</i>	
<i>R3</i>		<i>89-90</i>	<i>50</i>	<i>/</i>				<i>1</i>				
		<i>94-95</i>	<i>6</i>	<i>/</i>				<i>2</i>	<i>/</i>			

Metaltek INTERNATIONAL

RADIOGRAPHIC STANDARD SHOOTING SKETCH

Customer <u>Energy Ind. of OHIO</u>	Pattern Number <u>MCWFB-2</u>
Material <u>CF8MNMV mod</u>	Traceability Number
Film Manufacturer <u>Fuji</u>	Source Number <u>21.5 ci c060</u>
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)	<u>60-61</u>	<u>89-90</u>	<u>94-95</u>	<u>115-116</u>														
Thickness (IN.)	<u>1 3/4"</u>	<u>2 1/4"</u>	→		<u>1 3/4"</u>													
S/F Distance (IN.)	<u>20"</u>	→																
Penetrameter	<u>30/100</u>	<u>50X2</u>	→		<u>30X2</u>													
Time (MIN.)	<u>17m</u> <u>1 1/2 55m</u>	<u>9m</u>	→		<u>17m</u>													
Focal Spot (IN.)	<u>.1</u>	→																
Film Size (IN.)	<u>14X17</u>	→																
Screen Size (Pb) Front/Back	<u>.01</u>	→																
S.W.E./D.W.E.	<u>SWE</u>	→																
S.W.V/D.W.V.	<u>SWV</u>	→																
Film Type	<u>29/80</u>	<u>80X2</u>	→		<u>29/59</u>													
Acceptance Standard	<u>E446</u> <u>E280</u>	<u>E186</u>	→		<u>E446</u>													
Severity Level	<u>see spec</u>																	

Shooting Sketch (Use Additional Pages as Needed)

view 60-61 is shot with 29 film for 30pene
Then shoot a seperate shot with 80 film for 100pene.

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

Date: 4-18-06
Date: _____

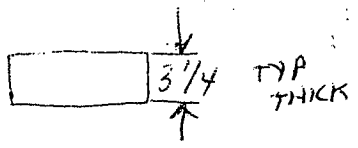
MetalTek

INTERNATIONAL

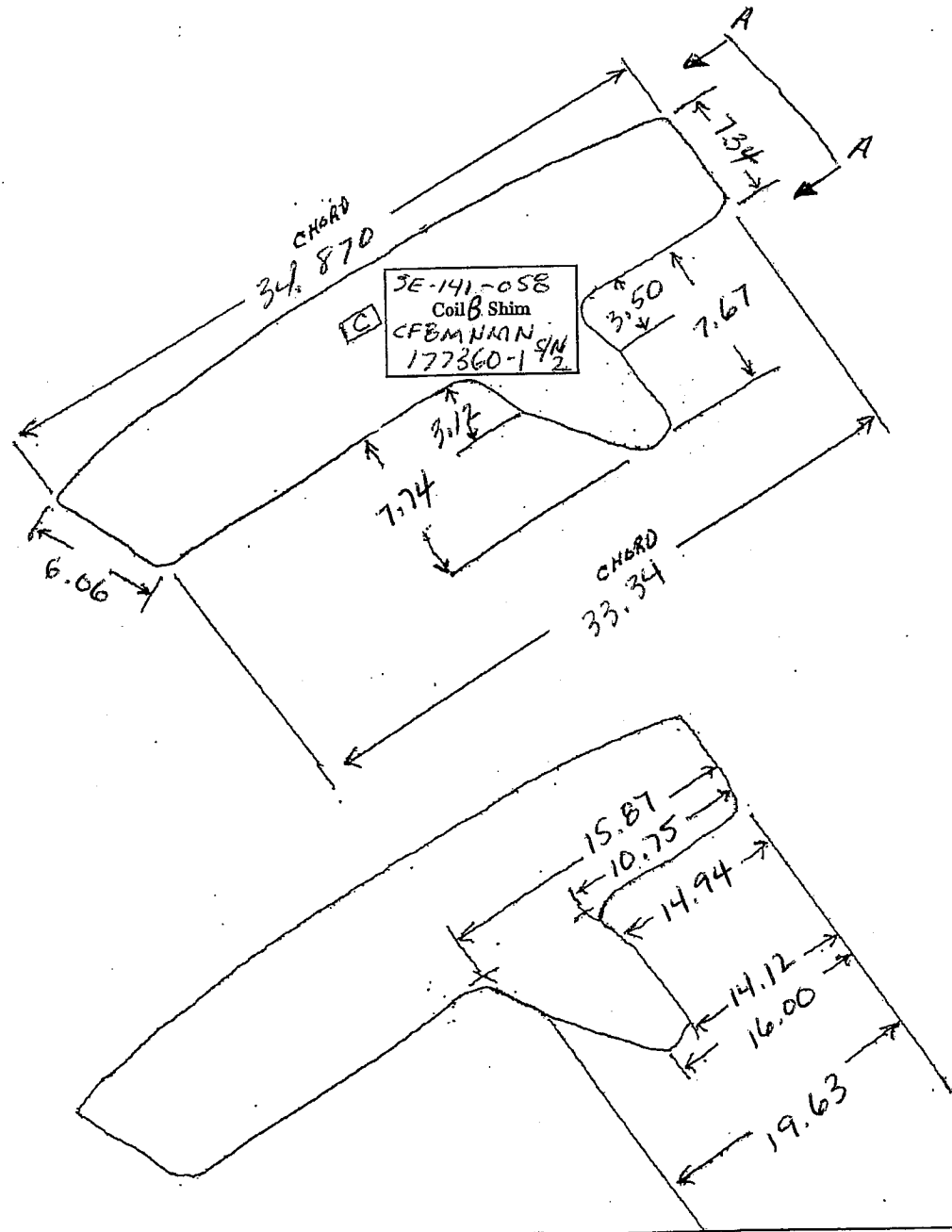
4

RADIOGRAPHIC INTERPRETATION REPORT

CUSTOMER FIO		PURCHASE ORDER NUMBER PPPL-FP-LTS-2			DATE 4-24-06		CONTROL NO. 40851		PAGE 1 of 1			
PART NO. SE141-058 B Shim		SPECIFICATION E186		CLASS III		TOTAL PIECES 1		PIECES ACCEPTED 1				
RADIOGRAPHED BY: <i>M. J. [Signature]</i>				INTERPRETED BY: <i>M. J. [Signature]</i>			ASNT LEVEL II					
FILM TYPE SO		MATERIAL CF8MVMN-MON			ISOTOPE IRIDIUM 192			CODE COBALT 60 ✓ ASTM E94 ✓ ASME MIL-STD-453				
		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
M177360-1												
RT.2		A	50	/								
		B		/		3						
		C		/			2	2				
		D	6	/								



SEC A-A



Inspected By: *[Signature]* Date Inspected: 4-26-06

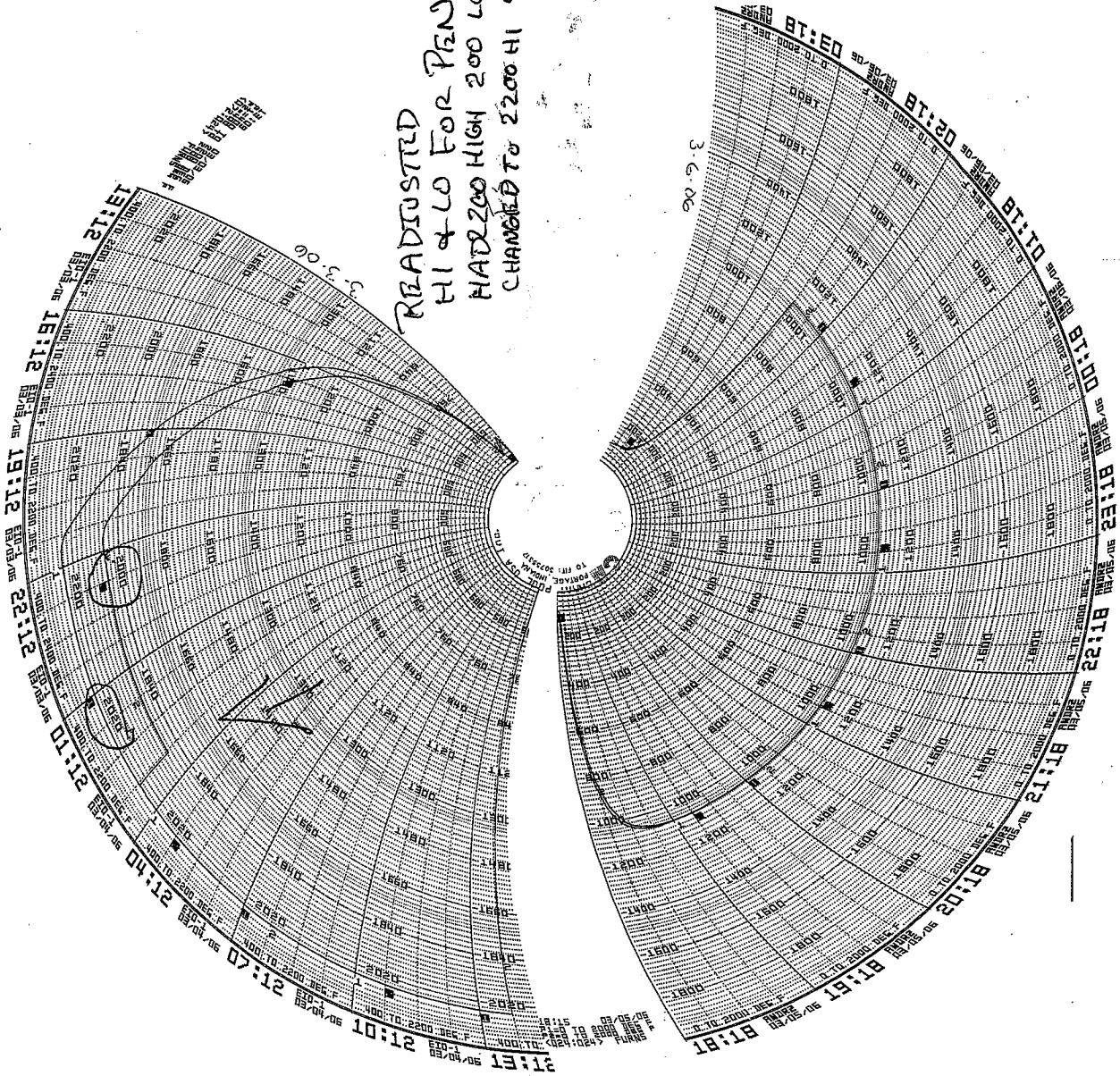
E10 3-3-06

B2

MS 81340-1

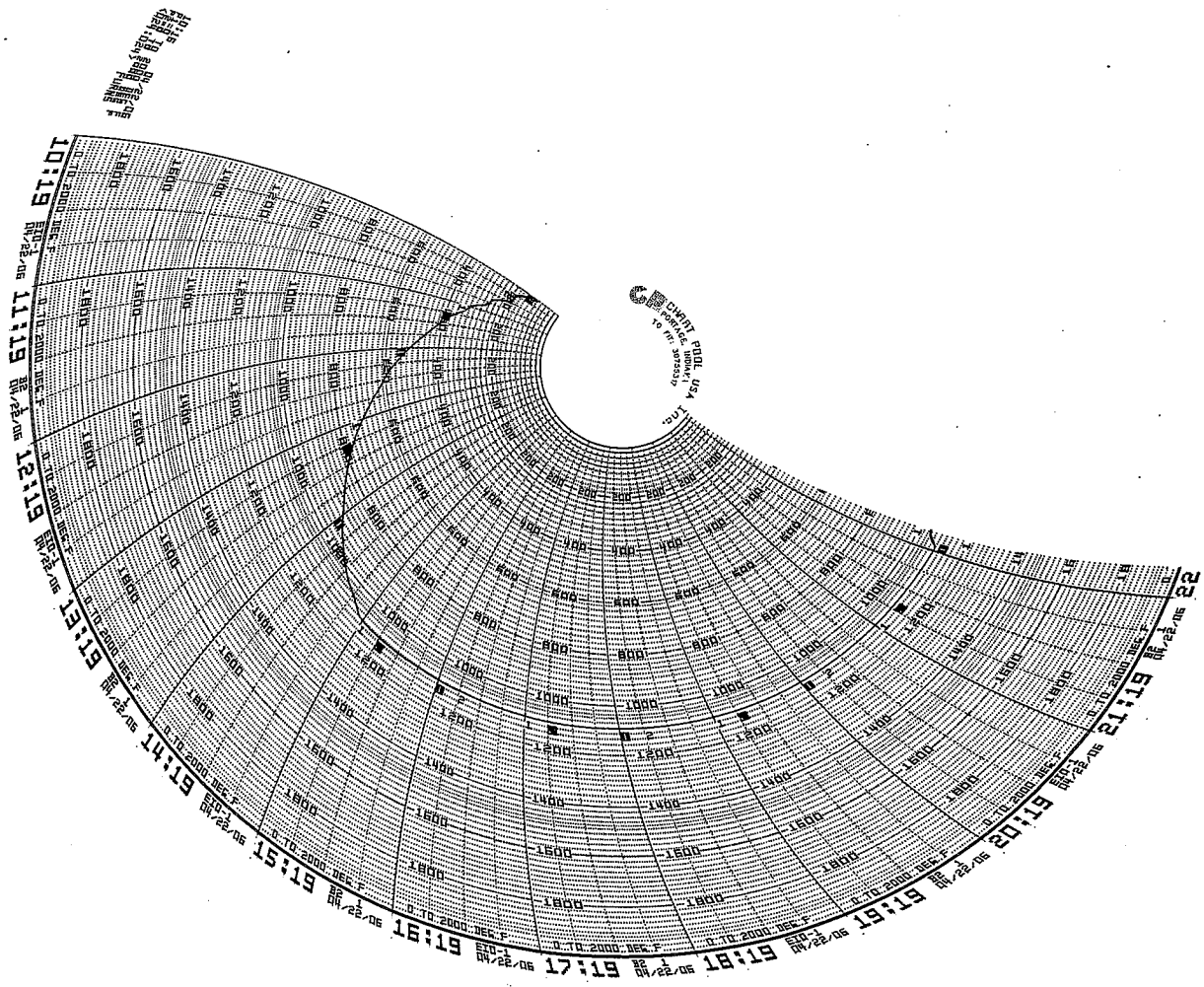
1 Pc

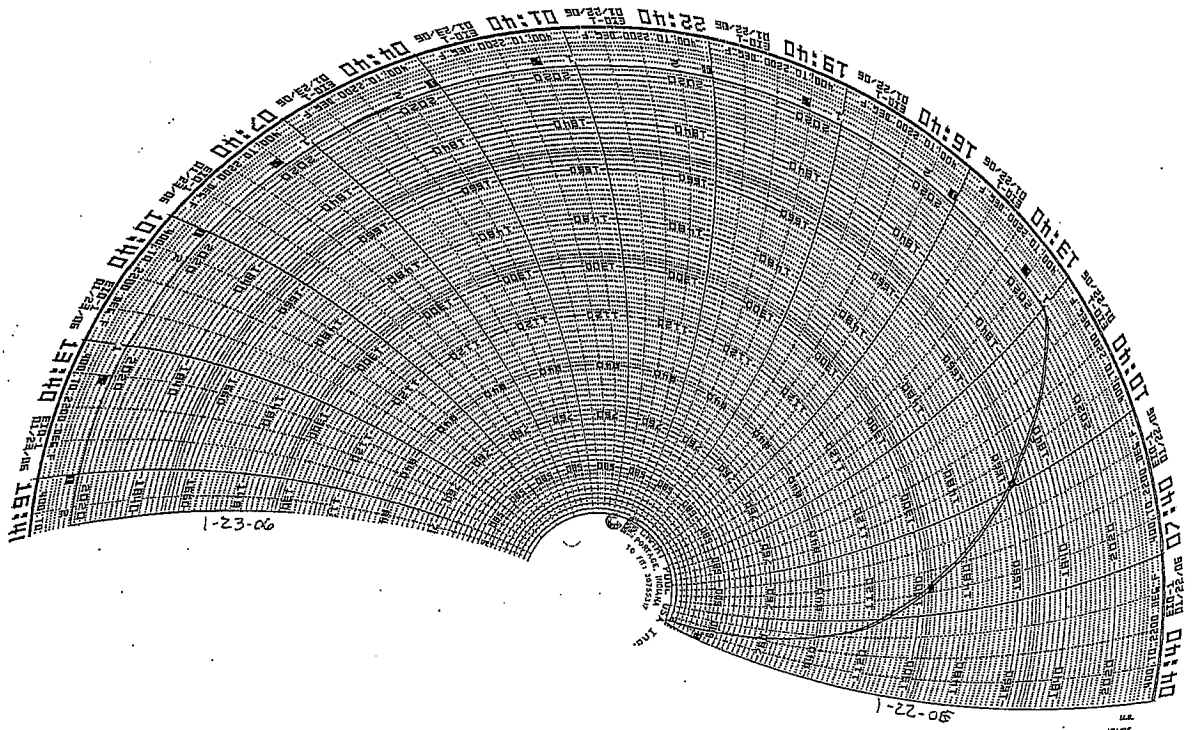
READJUSTED
HI & LO FOR PEN #2
HAD 200 HIGH 200 LO
CHANGED TO 2200 HI 400 LO



Manufacturing Order # M173700
 Cert # as Scheduled 173700-3
 Alloy HPNBM2
 # of Pieces to be Changed 2
 Revised Cert # to be Stamped

EIO 4-22-06
B2 C014
MS 81340-1
1 PC





1-23-06

90-22-1

F5

NO
SCALE
FOR
RECORDING
OR
REPRODUCTION

B SHIMS
177360-1 6Pcs.
SERIAL #'S 1 THRU 6

E10 1-22-06

Energy Industries of Ohio
 Manufacturing and Test Sequence (MTS) ALL Coils B 2 COIL
 1 OF 11 CO# 40851 Dated 3-9-05 Revision: Rev10 Dated Issued: 2-2-06

OPER. #	STATION	DESCRIPTION OF PROCESS	Name	Date
10	QUALITY RELEASE	REVIEW AND APPROVE MTS. RECEIVED APPROVAL FROM EIO ON xxxxx FROM <u>Pete D.</u> SIGNED QUALITY MANAGER	<i>PA</i>	2/2/06
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>RB</i>	2/5
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>RB</i>	2/7/06
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>RB</i>	2/24/06
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: <u>2750</u> CASTING POURED AT: <u>2750</u> DATE: <u>2/25/06</u> HEAT #'s: <u>32486, 87, 88, 89, 90</u> ELAPSED POUR TIME <u>64 sec</u> KEEL BLOCKS POURED: <u>NA</u> <u>yes</u> Sample from ladle to be analyzed for final chemical analysis and reported on material certifications. Sample Taken by: <u>SR</u> Analyzed: <u>ALT</u> Date: <u>2/25</u>	<i>SR</i>	2/25/06
50	MELT SOP 0800R2	SHAKEOUT	<i>CA</i>	2/28/06
60	ARC RISE SOP 0100R1	REMOVE RISERS AS DIRECTED BY SUPERVISOR.	<i>DRS</i>	2-8-06

Energy Industries of Ohio

Manufacturing and Test Sequence (MTS) ALL Coils B 2 COIL

2 OF 11 CO# 40851 Dated 3-9-05 Revision: Rev10 Dated Issued:2-2-06

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.	F5.2 3/3/06	KMR
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	3/4
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 GSAW SOP 0100R3	SWING GRIND TO REMOVE RISER REMAINS AND FLASH IF REQUIRED.	TJ	3/6/06
100	GRIND GCHI SOP 0100R2	CHIP AND HAND GRIND SURFACE OF PART AS REQUIRED FOR CONTOUR.	M.B.G 3-09-06	
110	SAND BLAST BLAS SOP 0100R6	SANDBLAST (REMOVE ALL BLAST MATERIAL FROM CASTING) SANDBLASTING WILL BE DONE USING RECYCLED SHARP ANGULAR AGGREGATE.	3/9/06	CS
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF X-RAY . EIO NOTIFIED ON _____ DCMA NOTIFIED ON _____	Q ENG OR QA MGR	
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 ABK	3-29-06
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 _____ 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 ABK	3-29-06
140	WELD SOP 0100 REV 7	EXCAVATE ANY DEFECTS FOUND DURING 100% RT INSPECTION.	TAD	3/30/06
150	GRIND GCHI SOP 0100R2	CHIP AND HAND GRIND EXCAVATION AS REQUIRED.	TU	3/31/06

Energy Industries of Ohio
Manufacturing and Test Sequence (MTS) ALL Coils B 2 COIL
 3 OF 11 CO# 40851 Dated 3-9-05 Revision: Rev10 Dated Issued:2-2-06

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 <u>✓</u> . MARK AND REPAIR AT STEP 190.	VT - LEVEL II TRC	3/31
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 <u>✓</u>	LP - LEVEL II TRC	3/31
180	WELD SOP 0100 REV 7	EXCAVATE ANY DEFECTS FOUND DURING 100% VISUAL AND LP INSPECTION.	TAD	4/1/06
190	GRIND GCHI SOP 0100R2	CHIP AND HAND GRIND EXCAVATION OR VISUAL DEFECTS AS REQUIRED.	TU	4/2/06
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 _____ IF REJECTED SEND BACK TO STEP 190	LP - LEVEL II TRC	4/2/06
210	SAND BLAST BLAS SOP 0100R6	SANDBLAST (REMOVE ALL BLAST MATERIAL FROM CASTING) SANDBLASTING WILL BE DONE USING RECYCLED SHARP ANGULAR AGGREGATE.	ct/rs	
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".	DB	3/31
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF WELD STEP. EIO NOTIFIED ON <u>3/27</u> DCMA NOTIFIED ON <u>3/27</u>	Q ENG OR QA MGR	DB
230	QA APPROVAL HOLD POINT	QA TO APPROVE ELECTRODE PRIOR TO USE. PROCEDURE USED: _____ LIST ALL MATERIAL/LOTS USED: <u>78308</u> QUALITY ENG. Name: <u>BC</u> Date: <u>4/3/06</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	TAD	4/3/06

Energy Industries of Ohio
Manufacturing and Test Sequence (MTS) ALL Coils B 2 COIL
 4 OF 11 CO# 40851 Dated 3-9-05 Revision: Rev10 Dated Issued:2-2-06

		REV 0 (Vertical) FOR WELDS <8" - WPS 15-GMAW-CF8MNMN MOD REV 2	JAD	4/3/06
250	GRIND GCHI SOP 0100R2	HAND GRIND WELDS.	TU	4/4/06
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	4-6-06
270	REPEAT	REPEAT STEPS S180 TO S250AS REQUIRED TILL CLEAR THROUGH VISUAL INSPECTION & PENETRANT INSPECTION. IF OK CHECK HERE _____ AND PROCEED TO STEP 280.		NA
280	REPEAT STEPS	SUPPLEMENTAL REPAIR STEPS		
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)		

~~1ST~~ 2ND 3RD 4TH 5TH

TAD 4/21/06

Rec'd
WA
5325

NA

Energy Industries of Ohio
Manufacturing and Test Sequence (MTS) ALL Coils B 2 COIL
 6 OF 11 CO# 40851 Dated 3-9-05 Revision: Rev10 Dated Issued: 2-2-06

S321	WELD SOP 0100 REV 7	EXCAVATE ANY DEFECTS FOUND DURING RADIOGRAPHY.	TRP	CA			
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 CC	CC			
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.	J B 4/13	JB 4-19			
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF WELD STEP. EIO NOTIFIED ON <u>4/7</u> DCMA NOTIFIED ON <u>4/7</u>	Q ENG OR QA MGR	BC			
S324	QA APPROVAL HOLD POINT	QA TO APPROVE ELECTRODE PRIOR TO USE. PROCEDURE USED: _____ MATERIAL /LOT USED : <u>78308</u> QUALITY ENG. Name: <u>BC</u> Date: <u>4/13</u>					
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	WP	TED 4/24			
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 CC	OK OK REJ REJ	OK OK REJ REJ	OK OK REJ 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 PWH 4-18 Reg	Acc 20K 4-22			

see pages 5 should be on S 328B

Energy Industries of Ohio
Manufacturing and Test Sequence (MTS) ALL Coils B 2 COIL

7 OF 11 CO# 40851 Dated 3-9-05 Revision: Rev10 Dated Issued:2-2-06

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 <input checked="" type="checkbox"/> AND SEND TO STEP 340. REJECTED CHECK HERE <input type="checkbox"/> 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.	NA					
340	SAND BLAST BLAS SOP 0100R6	SANDBLAST (REMOVE ALL BLAST MATERIAL FROM CASTING) SANDBLASTING WILL BE DONE USING RECYCLED SHARP ANGULAR AGGREGATE.		CA					to 455
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF VISUAL AND LP STEPS. EIO NOTIFIED ON <u>4/17</u> DCMA NOTIFIED ON <u>4/12</u>		Q ENG OR QA MGR					CA
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 type="checkbox"/> SEND TO STEP 453. IF REJECTED CHECK HERE <input type="checkbox"/> MARK AND REPAIR. INITIAL WHEN COMPLETE. MUST BE PERFORMED BY LEVEL II in VT.		VT - LEVEL II					NA
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 type="checkbox"/> WASH AND SEND TO STEP 453. IF REJECTED CHECK HERE <input type="checkbox"/>		LP - LEVEL II					
380	WELD SOP 0100 REV 7	EXCAVATE ANY DEFECTS FOUND DURING FINAL PENETRANT INSPECTION.							
385	GRIND GCHI SOP 0100R2	CHIP AND HAD GRIND EXCAVATION AS REQUIRED.							

Energy Industries of Ohio
Manufacturing and Test Sequence (MTS) ALL Coils B 2 COIL
8 OF 11 **CO# 40851 Dated 3-9-05 Revision: Rev10 Dated Issued:2-2-06**

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 III	
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 APPROXIMATELY 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 _____ DCMA NOTIFIED ON _____ APPROVAL RECEIVED ON _____	Q ENG OR QA MGR	

Energy Industries of Ohio
Manufacturing and Test Sequence (MTS) ALL Coils B 2 COIL
 9 OF 11 CO# 40851 Dated 3-9-05 Revision: Rev10 Dated Issued:2-2-06

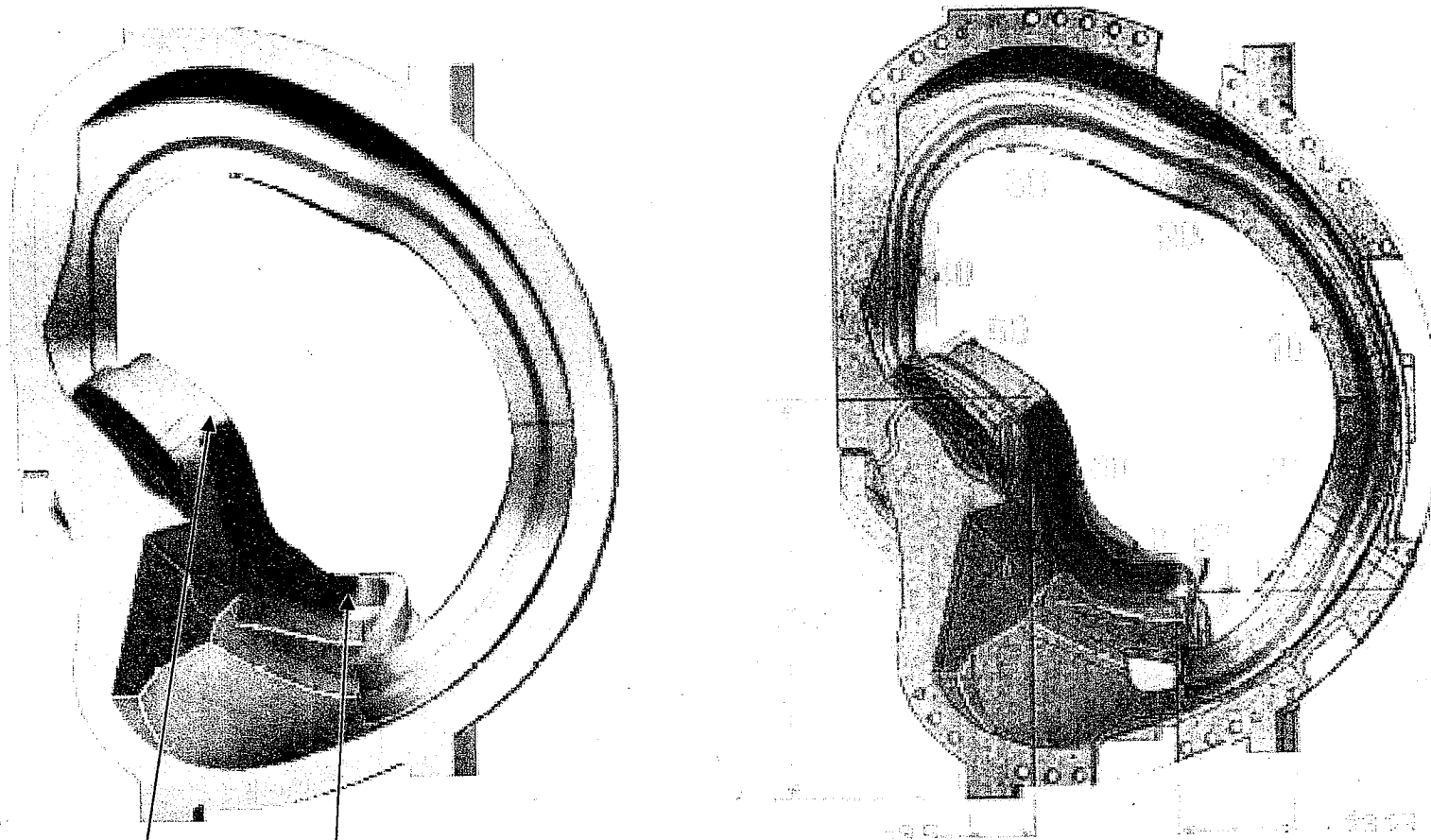
453	INTERIM LAYOUT SOP LAYOUT 0100	INSPECT CASTING TO VERIFY DIMENSIONS. THIS STEP MAY BE MOVED. NOTE: THE FIRST PART PRODUCED OF EACH TYPE A, B AND C WILL BE DIMENSIONED BY LAWTON PATTERN. IF DIMENSIONED BY LAWTON IT WILL BE DOCUMENTED HERE. Subsequent casting done internally per Romer Arm.	JL complete	
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.	DLS	4-22-06 F5-1
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF VISUAL AND LP STEPS. EIO NOTIFIED ON _____ DCMA NOTIFIED ON _____	Q ENG OR QA MGR	
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 _____. MARK AND REPAIR AT STEP 510. MUST BE PERFORMED BY LEVEL II in VT.	VT - LEVEL II BC	f-24
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 _____. DOCUMENT REPAIRS USING A SUPPLEMENTAL MTS.	LP - LEVEL II	JPS 4/24/06
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF MAG PERM STEPS. EIO NOTIFIED ON _____ DCMA NOTIFIED ON _____	Q ENG OR QA MGR	
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" BY 6" 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 <input checked="" type="checkbox"/>	CJA	4/26/06
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.	CJA	4/26/06
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 <input checked="" type="checkbox"/> IF REJECTED CHECK HERE _____ RETURN TO STEP 510.	CJA	4/26/06
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)	Ch	

Energy Industries of Ohio

Manufacturing and Test Sequence (MTS) ALL Coils B 2 COIL

10 OF 11 CO# 40851 Dated 3-9-05 Revision: Rev10 Dated Issued:2-2-06

NOTICE	RELEASE FROM EIO	PROVIDE DOCUMENTS TO EIO. SENT ON <u>4/24</u> BY <u>[Signature]</u> RECEIVED RELEASE FROM EIO ON <u>4/24</u>	Q ENG OR QA MGR <u>[Signature]</u>	
540	PACK AND SHIP	PACKAGE AND SHIP TO MAJOR TOOL. MARK ON CASTING THE COIL NUMBER e.g. "A-1"	<u>[Signature]</u>	<u>[Signature]</u>
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. 1-9-06 Rev 10 – added note to mark casting in step 540.	CARUUD	



High Stressed Area as seen from the drag side.

MetalTek International – Carondelet Division

Manufacturing and Test Sequence (MTS) B Coil Shim SN -2

Dated 12-14-04 Revision:1

Dated Issued:10-25-05

Page 1 of 3

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>31455</u> Sample from ladle to be analyzed for final chemical analysis and reported on material certifications. Sample Taken by: <u>I. Winston</u> Analyzed: <u>G. Hurt</u>	<i>J. Galante</i>	<i>11-3-05</i>
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.	<i>F5-1</i>	<i>DLS 1-22-06</i>
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.	<i>Jg</i>	<i>4-24-06</i>
90	SAND BLAST BLAS SOP 0100R6	SANDBLAST (REMOVE ALL BLAST MATERIAL FROM CASTING) SANDBLASTING WILL BE DONE USING RECYCLED SHARP ANGULAR AGGREGATE.	<i>EGS</i>	<i>4-25-06</i>
100	VISUAL INSPECTION CQP-500 REV 4	VISUALLY INSPECT 100% of COMPONENT ACCORDING TO ASTM A802 LEVEL 3 ALL CONDITIONS. IF OK CHECK HERE _____ IF REJECTED CHECK HERE _____ MARK AND REPAIR AT STEP 130OR 140 IF WELDING IS REQUIRED. MAY PERFORM STEPS 110 AND 120 TOGETHER.	VT - LEVEL II <i>Performed at 190</i>	

MetalTek International – Carondelet Division
Manufacturing and Test Sequence (MTS) B Coil Shim SN -2

Dated 12/14/045 Revision: 1 Dated Issued:10-26-05 Page 2of 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 _____ GO TO 150. IF REJECTED CHECK HERE _____ MARK AND REPAIR AT STEP 130 OR 140 IF WELDING IS REQUIRED.	LP - LEVEL II <i>su 200</i>	
130	GRIND GCHI SOP 0100R2	HAND GRIND DEFECTS. CONFIRM REPAIRS VISUALL AND BY LP. ACCEPTANCE AS NOTED ABOVE. IF OK, CHECK HERE _____ AND GO TO STEP 170. IF WELDING IS NEEDED GO TO STEP 130.		<i>NA</i>
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 <i>ZBK</i>	<i>4/26/06</i>
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 _____ AND SEND TO STEP 200. REJECTED CHECK HERE _____ MARK UP DEFECTS. DOCUMENT REPAIRS ON S10 TO S70.	RT - LEVEL II <i>ZBK</i>	<i>4/26/06</i>
	REPEAT	REPEAT STEPS S10 TO S70 AS REQUIRED TILL WELDS CLEAR X-RAY.	QA ENG.	
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.	<i>JA</i>	<i>4/26</i>
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 <input checked="" type="checkbox"/> IF REJECTED CHECK HERE _____ . MARK AND REPAIR DOCUMENT REWORK ON A SUPPLEMENTAL MTS	VT - LEVEL II <i>BC</i>	<i>4-26</i>
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 <input checked="" type="checkbox"/> WASH AND SEND TO NEXT STEP. IF REJECTED CHECK HERE _____ MAKE REPAIRS AND DOCUMENT ON SUPPLEMENTL MTS.	LP - LEVEL II <i>JS</i>	<i>4-26</i>
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.	<i>CA</i>	<i>4-26</i>
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)	<i>CA</i>	

MetalTek International – Carondelet Division

Manufacturing and Test Sequence (MTS) B Coil Shim SN -2

Dated 12-14-04 Revision:1

Dated Issued:10-25-05

Page 3 of 3

NOTICE	RELEASE FROM EIO	PROVIDE DOCUMENTS TO EIO. SENT ON <u>4/20</u> BY <u>Ch</u> . RECEIVED RELEASE FROM EIO ON <u>4/26</u> .	Q ENG OR QA MGR	<u>Ch</u>
	PACK AND SHIP	PACKAGE AND SHIP TO MAJOR TOOL.		
1000	REVISION HISTORY	ORIGINAL12-14-04. Rev1 complete rewrite due to specification changes.	CARUUD	

SUPPLEMENTAL MTS FOR WELD REPAIRS.

FOR VT&LP/ FOR RT

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 STEPS10 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.		



17

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-B2 COIL

Order PPPL-FP-LTS-2

ASTM Metal CF8MNMN MOD

Date 4/26/2006

Type Description	Cert Number	Procedure	Acceptance Criteria	Actual
Liquid Penetrant	S81340-1	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	S81340-1	SOP Mag Perm 100 Rev 1	<1.02	Acceptable
Radiographic	S81340-1	Technique # 12726	MSS SP 54	Acceptable
Visual	S81340-1	CQP - 500 REV 4	ASTM A802 LEVEL 2	Acceptable

Liquid Penetrant

Technician: Jim Shanahan
ASNT Level II

Visual

Technician: Bob Carlton
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-B2 COIL

ASTM CF8MNMN MOD

Date 4/26/2006

Cert Number

S81340-1

A handwritten signature in black ink, appearing to read "CAR", 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 ENERGY INDUSTRIES OF OHIO
Pattern: SE-141-058 COIL B SHIM
S/N 2

Order PPPL-FP-LTS-2

ASTM Metal CF8MNMN MOD

Date 4/26/2006

Type Description	Cert Number	Procedure	Acceptance Criteria	Actual
Liquid Penetrant	177360-1	CQP - 300 Rev 9	ASTM A903 Level II	Acceptable
Mag Perm	177360-1	SOP Mag Perm 100 Rev 1	<1.02	Acceptable
Radiographic	177360-1	Technique # 12726	MSS SP 54	Acceptable
Visual	177360-1	CQP - 500 REV 4	ASTM A802 LEVEL 2	Acceptable

Liquid Penetrant

Technician: Jim Shanahan
ASNT Level II

Visual

Technician: Bob Carlton
ASNT Level II

Respectfully Submitted,
Charles A. Ruud
Quality Assurance Manager

Superior Quality Engineered Metal Products

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3

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Phone: 636-479-4499 - Fax: 636-479-3399

Certificate of Conformance

ENERGY INDUSTRIES OF OHIO

Order Number PPPL-FP-LTS-2

Pattern SE-141-058 COIL B SHIM S/N 2

ASTM CF8MNMN MOD

Date 4/26/2006

Cert Number

177360-1

A shim for B-2 coil was poured from heat number 31455. No weld repairs were necessary.

A handwritten signature in black ink, appearing to read "Charles A. Ruud", is written over a white background.

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

EIO
Energy Industries of Ohio
SUPPLIER QUALITY RELEASE

		Date: 4-26-06
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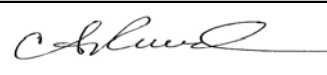
I. General Information:		
Project Name:	Modular Coil Winding Form B2	
PO No:	NCSX-SOW-141-02-01	Rev.: 10
Supplier:	MetalTek	
Procurement Agent:	EIO	
Shipment:	<input checked="" type="checkbox"/> Partial <input type="checkbox"/> Final	

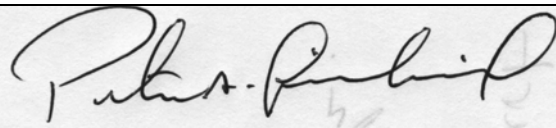
II. Material Description
Casting B2 coil and shim

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
Variances – See attached package for CA's and deviations

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

V. Supplier Quality Representative Sign Off		
	X 	4-26-06
Supplier Quality Representative (SQR) Print/Type Name	Supplier Quality Representative (SQR) Signature	Date

VI. Supplier Approval For Shipment		
Procurement Agent Notified of Shipment	Date: 11-23-05	
Required Vendor Data Ready for Shipment	Date: 11-23-05	
Peter A Djordjevich	 X	4-26-06

EIO
Energy Industries of Ohio
SUPPLIER QUALITY RELEASE

		Date: 4-26-06
--	--	---------------

I. General Information:		
Project Name:	Modular Coil Winding Form B2	
PO No:	NCSX-SOW-141-02-01	Rev.: 10
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.