Energy Industries of Ohio

Contract # S005242-F

Modular Coil Winding Form

B-1 Documentation Package

9/1/06

This B-1 Documentation consists of:

Part 1

Final documentation package Metal Tek Intl. – Pages 3 - 75
Latest revision 9/1/2006
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-1 Documentation Package

Part 1 – Metal Tek International
Casting Data Package

Revised 9/1/2006

**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-1 Documentation Package

List of Documents 9-1-06

4

MetalTek INTERNATIONAL

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-B1 Coil
CAF Metal Designation CF8MNMnMod
Material Spec CF8MNMnMOD

Cert Number 177210-1
Pour Date 11/11/2005

Weighted average of 3 heats –Ladle 1 #31558(35%),Ladle 2 #31576(28%),Ladle 3 #31579(37%) Total Weight 34109 lbs.

Element	Min	Actual	Max
C	0.04	0.04	0.07
MN	2.3	2.8	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	2.2	2.5
P*	0.0	0.036	0.035
S	0.0	0.012	0.025
N	0.24	0.25	0.28

*Over specification, see CA 1537.

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	31558	Button #1	0.04	0.3	2.9	18.4	13.0	2.3	0.25	0.032	0.012
CAF	31558	Button #2	*	0.3	2.7	18.3	12.9	2.3	*	0.034	0.013
WC	31558	Button #2	*	0.3	2.6	18.2	13.0	2.3	*	0.031	0.019
	Ladle # 2										
CAF	31576	Button #1	0.04	0.4	2.7	18.3	13.1	2.2	0.25	0.035	0.012
CAF	31576	Button #2	*	0.4	2.7	18.3	13.2	2.2	*	0.038	0.013
WC	31576	Button #2	*	0.4	2.6	18.2	13.3	2.2	*	0.037	0.020
	Ladle # 3										
CAF	31579	Button #1	0.04	0.4	2.9	18.3	13.1	2.2	0.25	0.040	0.012
CAF	31579	Button #2	*	0.4	2.9	18.3	13.1	2.3	*	0.032	0.012
WC	31579	Button #2	*	0.4	2.7	18.1	13.2	2.3	*	0.038	0.019

Respectfully Submitted,
Charles A. Ruud
Quality Assurance Manager

Superior Quality Engineered Metal Products

MetalTek INTERNATIONAL

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 1
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

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

Cond.	Temp. °C	Rp0.2 N/mm2	Rm N/mm2	A5 %
AW	RT	407	623	41

Impact testing

Cond.	Temp.1 °C	Av1 J
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	Issued by	Function	Date	Cert.No.
Lincoln Smitweld B.V.	P. Nagels	QA Administrator	22/03/2005	3018513/7830

Registered Office
Nieuwe Dukenburgseweg 20
6534 AD NIJMEGEN

Post address
P.O. Box 253
6500 AG Nijmegen

Telephone
31.24 3522911

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

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

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METALTEK INTERNATIONAL
8600 Commercial Blvd.
Pevely, MO 63070

August 16, 2005
Lab No. 05P-2532
P.O. No. 21324

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) in.	Elongation (2.0" Gage Length) %	Modules of Elasticity
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

KS/tlv

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METALTEK INTERNATIONAL
8600 Commercial Blvd.
Pevely, MO 63070

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

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.

Karl Schmitz, Director
Materials Testing

KS/tlv

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.

ACCREDITED
621-01 & 621-02

Accredited Nadcap Materials Testing Laboratory

CERTIFICATION

October 18, 2005

WMT&R Report No. 5-35979
Requisition No. 4972

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.
DISPOSITION: Report
MATERIAL: METALTEK CF8MNMNMOD

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	A\U\R
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

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

Roy E. Stanmatt Wojton
Technical Services Manager ___ Tensile Supervisor

10-18-05
October 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.

ACCREDITED
621-01 & 621-02

Accredited Nadcap
Materials Testing Laboratory

December 6, 2005

CERTIFICATION

Section 1 of 1

WMT&R Report No. 5-39384
P.O. No. 19386 Release#25
Requisition No. 7730

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 E21-05
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	A\U\R
B1	Z1	C78929	-320	175.7	105.9	44	45	28.7	16880	10170	0.3497	0.2595	1.40	2.02	0.09604641	M9	A
B1	Z2	C78930	-320	165.0	95.4	46	49	26.8	15860	9168	0.3498	0.2486	1.40	2.04	0.09610135	M9	A
B1	Z3	C78931	-320	154.0	94.7	49	74	22.1	14820	9113	0.3500	0.1772	1.40	2.08	0.09621128	M9	A

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

Requirements supplied by MetalTek International.

Roy E. Starr\Matt Wojton
Technical Services Manager\ Tensile Supervisor

12-6-05
December 6, 2005

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METALTEK INTERNATIONAL
8600 Commercial Blvd.
Pevely, MO 63070

December 16, 2005
Lab No. 05P-3729
P.O. No. 21324

Attention: Chuck Ruud

REPORT OF CHARPY IMPACT TEST

MATERIAL (SAMPLE ID): B1 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°K

REQUIREMENTS: 50 ft / lbs min

BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
Z1-4	145	0.090	90
Z1-5	130	0.072	90
Z1-6	132	0.070	90
Average	136	0.077	90
SAMPLE ID	**FOOT LBS.**	**LATERAL EXPANSION**	**% SHEAR**
Z2-4	165	0.086	90
Z2-5	152	0.086	90
Z2-6	155	0.091	90
Average	157	0.088	90
SAMPLE ID	**FOOT LBS.**	**LATERAL EXPANSION**	**% SHEAR**
Z3-4	168	0.068	90
Z3-5	148	0.067	80
Z3-6	124	0.078	90
Average	147	0.071	87

Identification of tested specimen provided by client.

Karl Schmitz, Director
Materials Testing

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METALTEK INTERNATIONAL
8600 Commercial Blvd.
Pevely, MO 63070

December 16, 2005
Lab No. 05P-3729
P.O. No. 21324

Attention: Chuck Ruud

REPORT OF CHARPY IMPACT TEST

MATERIAL (SAMPLE ID): B1 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 min

BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
Z1-1	92	0.055	80
Z1-2	87	0.045	80
Z1-3	82	0.046	80
Average	87	0.049	80

SAMPLE ID	FOOT LBS.	LATERAL EXPANSION	% SHEAR
Z2-1	80	0.041	80
Z2-2	89	0.050	80
Z2-3	88	0.048	90
Average	86	0.046	83

SAMPLE ID	FOOT LBS.	LATERAL EXPANSION	% SHEAR
Z3-1	84	0.051	70
Z3-2	96	0.056	80
Z3-3	92	0.050	80
Average	91	0.052	77

Identification of tested specimen provided by client.

Karl Schmitz, Director
Materials Testing

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

MEMBER ACIL

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METALTEK INTERNATIONAL
8600 Commercial Blvd.
Pevely, MO 63070

December 16, 2005
Lab No. 05P-3729
P.O. No. 21324

Attention: Chuck Ruud

REPORT OF MECHANICAL TESTS

SAMPLE ID: B1 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	0.1886	0.1238	34.4	23.1	40600	84600	0.97	48.5
Z2	0.1901	0.1232	35.2	22.5	47300	91000	0.82	41.0
Z3	0.1964	0.1007	48.7	22.6	42000	82500	1.05	52.5

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.

Karl Schmitz, Director
Materials Testing

KS/tlv

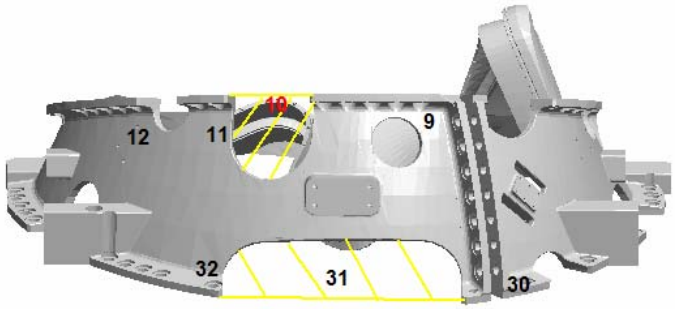
B-1 COIL WELD MAP

Defect Number	Drawing View	Length Inches	Width Inches	Depth Inches	Over 20% wall Over 1 inch Over 10^2 inches Yes/No
1	LEFT	16	2	1	YES
2	LEFT	7	2	1.25	YES
3	LEFT	24	12	.75	YES
4	LEFT	18	7	1	YES
5	LEFT	5	2	1.50	YES
6	LEFT	2	2	1	YES
7	BOTTOM	4	3	THRU	YES
8	BOTTOM	14	3	2	YES
9	BACK	17	3	.75	YES
10	BACK	9.50	2	1.50	YES
11	BACK	7.50	1.75	1.50	YES
12	BACK	13	5	THRU	YES
13	RIGHT	6	3	1.25	YES
14	RIGHT	14	1	1	YES
15	RIGHT	9.50	1.50	.50	YES
16	RIGHT	8	4	2.75	YES
17	RIGHT	7	6	2.25	YES
18	RIGHT	10.25	2	.75	YES
19	RIGHT	8	2.50	.75	YES
20	RIGHT	7	6	.75	YES
21	RIGHT	16	6	1.50	YES
22	RIGHT	7	4.50	.75	YES
23	RIGHT	7	4	.75	YES
24	RIGHT	10	2	THRU	YES
25	RIGHT	13	4	1	YES
26	RIGHT	11	4	.75	YES
27	RIGHT	35	8	1	YES
28	RIGHT	7	1.50	1.50	YES
29	RIGHT	13	4	.75	YES
30	BACK	8	6	THRU	YES
31	BACK	5	2	2	YES
32	BACK	13	2	.75	YES
33	TOP	3	3	1.50	YES
21 RT1	RIGHT	3	3	THRU	YES
22 RT 1	RIGHT	3	3	THRU	YES
7 RT 1	BOTTOM	6	4	THRU	YES

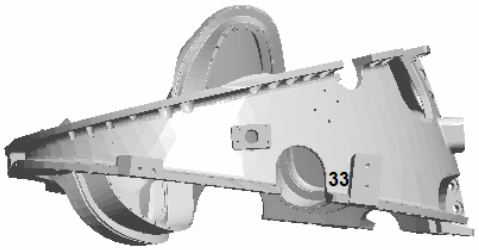
2/7/06

2/16/06

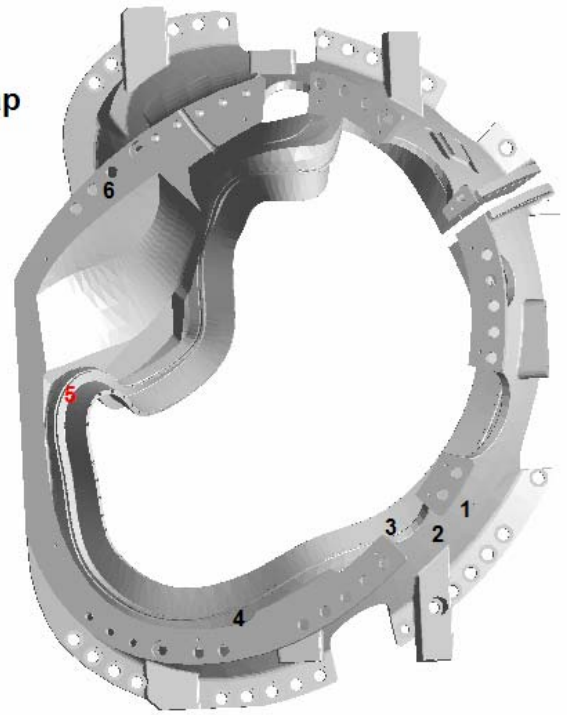
B-1 Weldmap
Back View



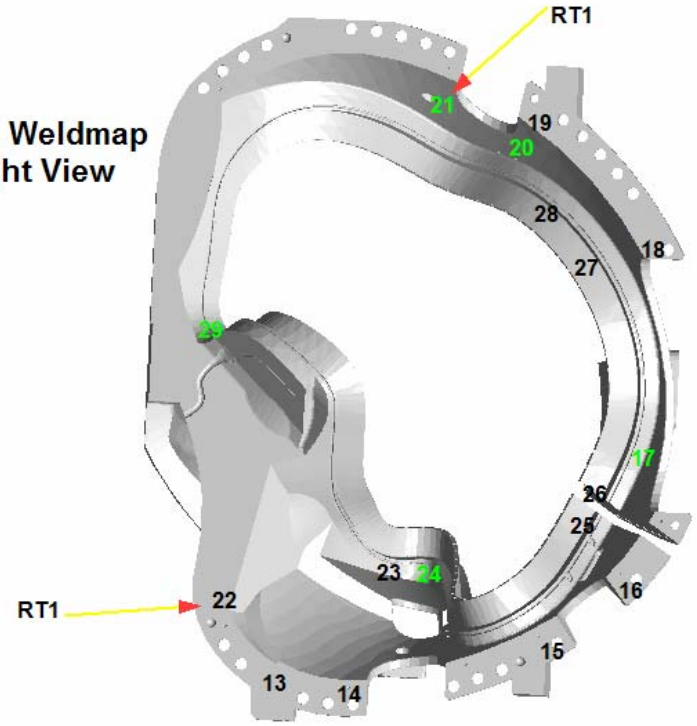
Top View



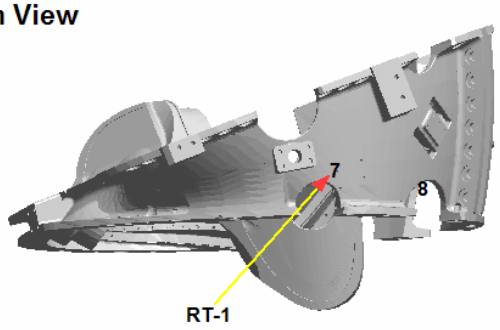
B-1 Weldmap
Left View



B-1 Weldmap
Right View



B-1 Weldmap
Bottom View



TEAM COOPERHEAT-MQS, INC.

RADIOGRAPHIC TECHNIQUE SHEET

FORM 20.3-61 Rev. 4

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

CUSTOMER RSS NO.: _____ SHEET: _____ REV: _____

MQS TECH. NO.: 13205

MQS RSS NO.: _____

CUSTOMER METALTEK INTERNATIONAL/ CARONDOLET DIV. DATE: 1/14/2006

PART NO. MCWF-B DESCRIPTION B-COIL MATERIAL SS

TOTAL NUMBER OF VIEWS 107 NUMBER X-RAY VIEWS 107 NUMBER GAMMA RAY VIEWS 0

MACH(s) MAKE(s) VARIAN MODEL(s) L200 S/N(s) 20 MAX KV(s) 7500

SOURCE(s) N/A

PROCEDURE SPECIFICATION ASTM E94-93 ACCEPTANCE CRITERIA MSS-SP-54-1999

MQS PROCEDURE NO. 20.H.010 REV. 0 PENETRAMETER SPEC. ASTM E142-86

PROCESSING: AUTOMATIC X PROCESSOR B2000 MANUAL ___ TEMPERATURE 27.5

TECHNICIAN JP, SS, ST NDT LEVEL II APPROVED BY C. RUDOLPH NDT LEVEL III

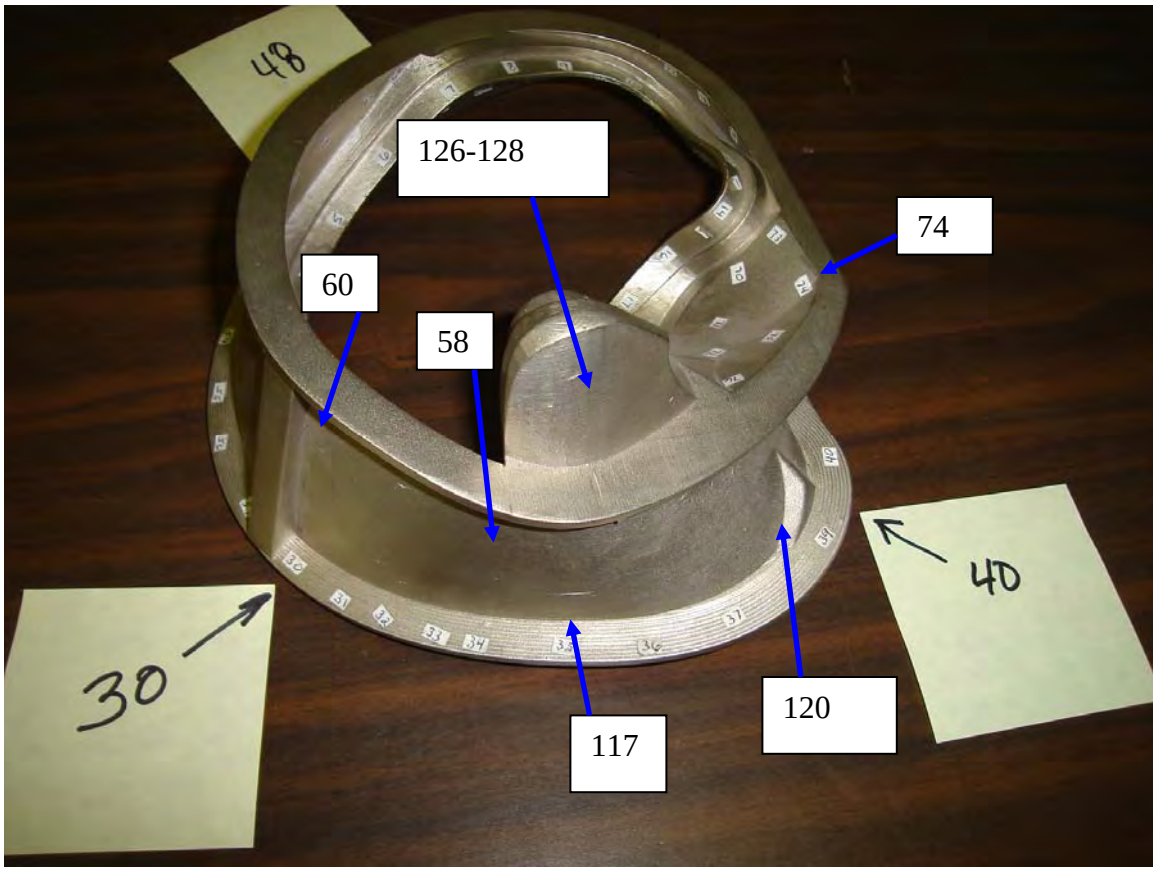
VIEW IDENTIFICATION		SEE ATTACHED					
SOURCE/X-RAY MACH USED		VARIAN					
CURIES OR KV		7500					
MA OR PULSES		N/A					
SOURCE TO FILM DISTANCE		*					
EXPOSURE TIME OR RADS		*					
MATERIAL THICKNESS		*					
MATERIAL GROUP		*					
PENETRAMETRER SIZE/(AMT)	GP. 1	*					
SHIM BLOCK SIZE	GP.	N/A					
FILM SIZE		*					
FILM TYPE/BRAND		*					
PB SCREEN, FRONT		.010					
PB SCREEN, BACK		.010					
SENSITIVITY		2-2T					
FILTER TYPE/LOCATION		N/A					
MASKING TYPE/LOCATION		N/A					
ANGLE		N/A					
NO. OF FILMS IN CASSETTE		*					
VIEWING: SING./DOUB./BOTH		BOTH					
FOCAL SPOT SIZE		2 MM					
SKETCH AND/OR REMARKS		*					
GEOMETRIC UNSHARPNESS		N/A			** ATTACHEDD PHOTOS		

View	SFD	Exposure Time	Film Type	Film Size	IQI
1-2	65"	55 KR	AA-M125-T	14 x 17	(2)50, 80, 100
2-3	65"	55 KR	AA-M125-T	14 x 17	(2)50, 80, 100
3-4	65"	55 KR	AA-M125-T	14 x 17	(2)50, 80, 100
4-5	70"	60 KR	AA-M125-T	14 x 17	(2)50, 80, 100
5-6	65"	55 KR	AA-M125-T	14 x 17	(2)50, 80, 100
6-7	65"	55 KR	AA-M125-T	14 x 17	(2)50, 80, 100
7-8	55"	45 KR	AA-M100-T	14 x 17	(2)50, 80, (2)100
8-9	55"	45 KR	AA-M125-T	14 x 17	(2)50, 80, 100
9-10	65"	55 KR	AA-M100-T	14 x 17	(2)50, 80, (2)100
10-11	90"	110 KR	D8-M100-T	14 x 17	(2)50, 80, 100
11-12	65"	65 KR	AA-M100-T	14 x 17	(2)50, 80, (2)100
12-13	65"	65 KR	AA-M100-T	11 x 14	(2)50, 80, 100
13-14	80"	80 KR	AA-M100-T	14 x 17	(2)50, 80, 100
14-15	80"	120 KR	AA-M100-T	11 x 14	(2)50, 80, 100
15-16	80"	150 KR	/D8//A-M100-T/	14 x 17	(2)50, (2)80, (2)100, (2)120
16-17	68"	67 KR	AA-M100-T	14 x 17	(2)50, 80, (2)100
17-18	68"	67 KR	AA-M100-T	14 x 17	(2)50, 80, (2)100
18-19	80"	85 KR	M100	7 x 17	(2)50
19-20	80"	85 KR	M100	7 x 17	(2)50
20-21	72"	70 KR	AA-M100-T	14 x 17	(2)50, 80, (2)100
21-22	58"	55 KR	AA-M125-T	11 x 14	(2)50, 80, 100
22-23	70"	80 KR	AA-M100-M125-TT	14 x 17	(2)50, 80, 100
23-24	68"	73 KR	AA-M100-T	14 x 17	(2)50, 80, 100
24-25	80"	80 KR	AA-M125-T	14 x 17	(2)50, 80, 100
25-26	70"	75 KR	AA-M100-T	14 x 17	(2)50, 80, 100
26-27	73"	70 KR	AA-M125-T	14 x 17	(2)50, 80, 100
27-28	73"	70 KR	AA-M125-T	14 x 17	(2)50, 80, 100
28-29	72"	70 KR	AA-M125-T	14 x 17	(2)50, 80, 100
29-1	68"	65 KR	AA-M125-T	14 x 17	(2)50, 80, 100
30-31	72"	30 KR	T-T	14 x 17	(2)50
31-32	72"	30 KR	T-T	14 x 17	(2)50
V33	72"	400 KR	D8-D8	14 x 17	200, 220
34-35	72"	30 KR	T-T	14 x 17	(2)50
36-37	72"	30 KR	T-T	14 x 17	(2)50
V38	72"	70 KR	T-M125-T	14 x 17	50, (2)100
39-40	72"	30 KR	T-T	14 x 17	(2)50
40-41	72"	30 KR	T-T	14 x 17	(2)50
42-43	72"	30 KR	T-T	14 x 17	(2)50
43-44	72"	30 KR	T-T	14 x 17	(2)50
V45	72"	70 KR	T-T	14 x 17	(2)100
46-47	72"	30 KR	T-T	14 x 17	(2)50
48-49	72"	30 KR	T-T	14 x 17	(2)50

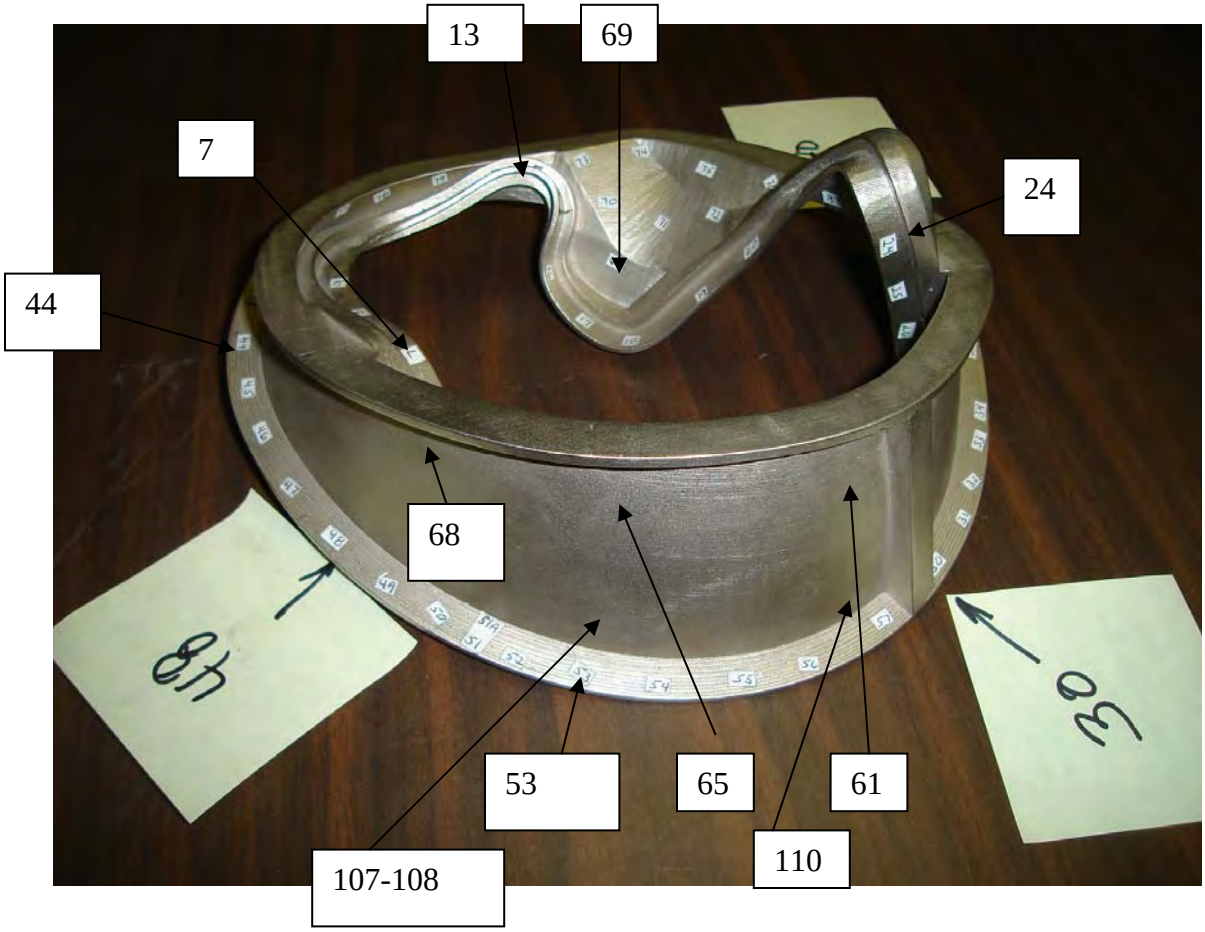
View	SFD	Exposure Time	Film Type	Film Size	IQI
49-50	72"	30 KR	T-T	14 x 17	(2)50
V51	72"	400 KR	D8-D8	14 x 17	200, 220
V51 A	72 "	400 KR	D8-D8	14 x 17	200, 220
52-53	72"	30 KR	T-T	14 x 17	(2)50
53-54	72"	30 KR	T-T	14 x 17	(2)50
54-55	72"	30 KR	T-T	14 x 17	(2)50
55-56	72"	30 KR	T-T	14 x 17	(2)50
56-57	72"	30 KR	T-T	14 x 17	(2)50
58-59	90"	50 KR	M100-M125	14 x 17	(2)30, 40
59-60	90"	60 KR	T-M100-M125	14 x 17	(2)30, 40, 50
60-61	90"	75KR	D8-M100-D8	14 x 17	(2)30, (2)100
61-62	90"	50 KR	M100-M125	14 x 17	(2)30, 40
62-63	90"	50 KR	M100-M125	14 x 17	(2)30, 40
V64	90"	75 KR	D8-M100-D8	14 x 17	(2)30, 80, 100
63-65	90"	50 KR	M100-M125	14 x 17	(2)30, 40
65-66	90"	50 KR	M100-M125	14 x 17	(2)30, 40
66-67	90"	50 KR	M100-M125	14 x 17	(2)30, 40
67-68	90"	50 KR	M100-M125	14 x 17	(2)30, 40
V69	80"	35 KR	T-M125	14 x 17	(2)30, 40
70-71	80"	85 KR	AA-M100-T	14 x 17	30, 40, 50, 60, 80, 100
71-72	80"	115 KR	/D8-D8//T-DR-M100/	14 x 17	30, 40, 60, 80, (2)140, 160
73-74	72"	105 KR	/D8-AA//T-DR-M100/	14 x 17	30, 40, 50, 60, 100, 120, 140, 160
74-75	72"	95 KR	/AA//T-DR-M100	14 x 17	30, 40, 50, 60, 80, 100
75-76	72"	25 KR	/D8-AA//T-M100/	14 x 17	50, 100, 120, 160, 200
77-78	72"	25 KR	AA-M125-T	14 x 17	30, 100
78-79	72"	25 KR	AA-T	14 x 17	80, 120
80-81	72"	25 KR	T-T	14 x 17	(2)50
81-82	72"	25 KR	T-T	14 x 17	(2)50
82-83	72"	25 KR	T-T	14 x 17	(2)50
84-85	72"	25 KR	T-T	14 x 17	(2)50
85-86	72"	25 KR	T-T	14 x 17	(2)50
86-87	72"	25 KR	T-T	14 x 17	(2)50
87-88	72"	25 KR	T-T	14 x 17	(2)50
88-89	72"	25 KR	T-T	14 x 17	(2)50
89-90	72"	25 KR	T-T	14 x 17	(2)50
90-91	72"	25 KR	T-T	14 x 17	(2)50
91-92	72"	25 KR	T-T	14 x 17	(2)50
93-94	72"	25 KR	T-T	14 x 17	(2)50
94-95	72"	25 KR	T-T	14 x 17	(2)50
96-97	70"	150 KR	AA-T	14 x 17	100, 140, 160
97-98	70"	165 KR	AA-T	14 x 17	100, 140, 160
98-99	70"	195 KR	AA-DR-M125-T	14 x 17	50, 100, (2)160
99-100	70"	195 KR	D8-DR-M125-AA	14 x 17	50, 100, 160, 180

View	SFD	Exposure Time	Film Type	Film Size	IQI
101-102	90"	95 KR	AA-M100-T	14 x 17	30, 70, 90
102-103	90"	50 KR	M100-M125	14 x 17	(2)30, 40
103-104	90"	130 KR	AA-DR50-T	14 x 17	30, 80, 100, 120
104-105	90"	50 KR	M100-M125	14 x 17	(2)30
106-107	90"	55 KR	M100-M125	14 x 17	(2)30, 40, 60
107-108	90"	50 KR	M100-M125	14 x 17	(2)30, 40
108-109	90"	50KR	M100-M125	14 x 17	(2)30, 40
109-110	90"	50 KR	M100-M125	14 x 17	(2)30, 40
110-111	90"	50 KR	M100-M125	14 x 17	(2)30, 40
111-112	90"	130 KR	AA-DR-T	14 x 17	(2)30, 120
112-113	90"	50 KR	M100-M125	14 x 17	(2)30, 40
113A-114	90"	130 KR	AA-DR-T	14 x 17	30, 40, 120
115-116	90"	50 KR	M100-M125	14 x 17	30
117-118	90"	120 KR	AA-M100-DR-T	14 x 17	30, 40, 60, 80, 100
118-119	90"	50 KR	M100-M125	14 x 17	(2)30, 40
119-120	90"	50 KR	M100-M125	14 x 17	(2)30, 40
120-121	90"	50 KR	M100-M125	14 x 17	(2)30, 40
121-122	90"	60 KR	T-M125	14 x 17	50. 60
123-124	90"	115 KR	AA-DR-M100-T	14 x 17	40, 60, 80
124-125	90"	115 KR	AA-DR-M100-T	14 x 17	30, 40, 60, 80
126-127	90"	50 KR	M100-M125	14 x 17	30, 40
127-128	90"	50 KR	M100-M125	14 X 17	30, 40

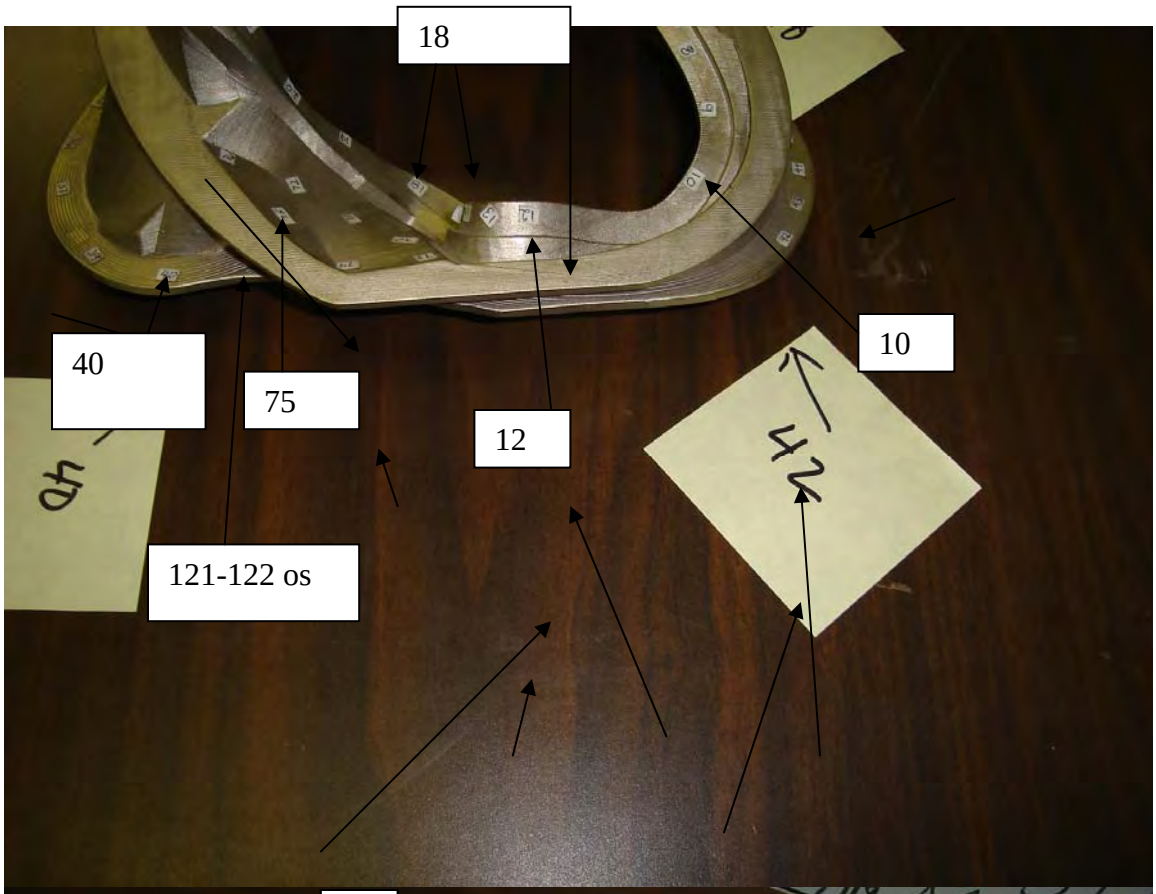
B Coil RT supplement
7-12-06

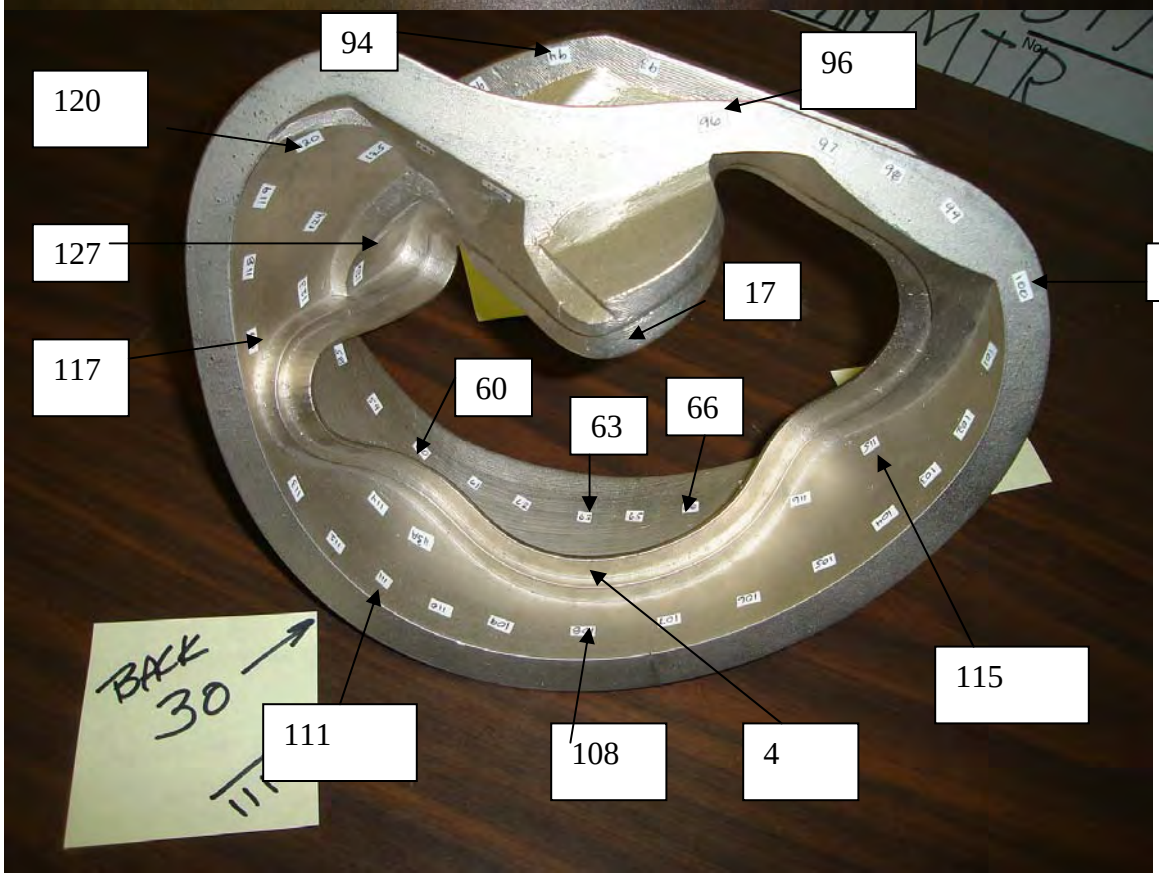


B Coil RT supplement
7-12-06

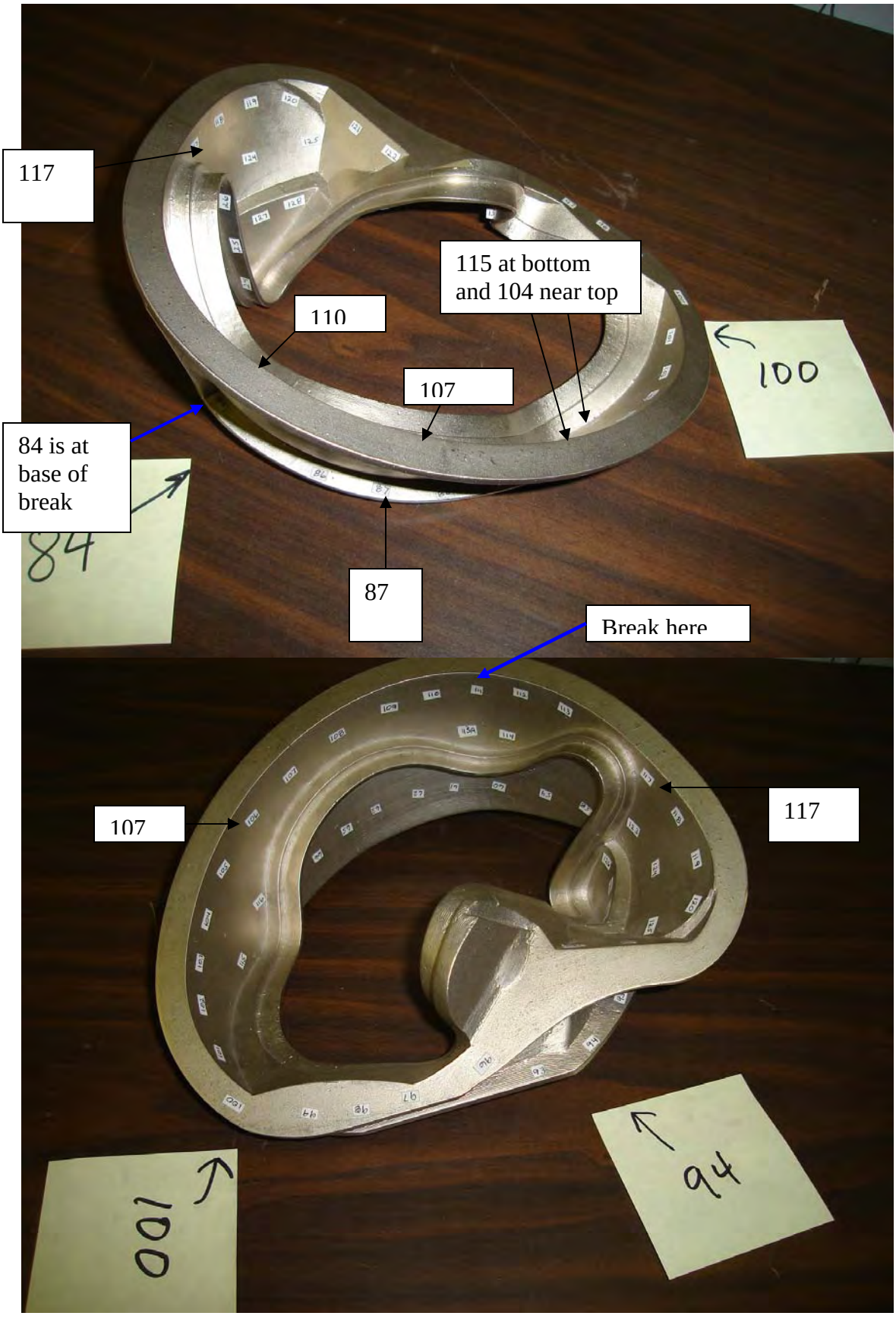


B Coil RT supplement part b
7-12-06





B Coil RT supplement part b
7-12-06



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 1/11/2006

P.O. NUMBER Chuck Rudd

WORK ORDER NO. 361-02763-2

XRAY X

GAMMA

PROCEDURE SPECIFICATION ASTM E94-93

ACCEPTANCE CRITERIA MSS-SP-54-1999

SHEET ____ OF ____

PART NUMBER	Serial No	View	No Apparent Indications: Accep-table	Rejected	Inclusion	Dross or Slag	Incomplete Penetration: Porosity	Lack of Fusion	Shrinkage: Gas	Cracks	Hot Tears	Under cut	Film Artifacts: Surface		REMARKS
MCWF-B-1		1-2	✓												
		2-3	✓							2-3					
E.I.O. C040851		3-4	✓							2					
		4-5		R						4-5					
M177210		5-6	✓							2					
		6-7	✓							2					
Z103989		7-8		R						4-5				✓	
		8-9	✓							2					
		9-10	✓							1-2				✓	
		10-11	✓										✓		
		11-12		R						5					
		12-13		R						5					
		13-14	✓							2-3					
		14-15	✓							2					
		15-16	✓												
		16-17	✓												
		17-18	✓												
		18-19	✓												
		19-20	✓												
		20-21	✓							1-2					
		21-22	✓												
		22-23	✓												
		23-24	✓										✓		
		24-25	✓												
		25-26	✓			2-3				2-3			✓	✓	

NO. ACCEPTED 0 NO. REJECTED 1

COMMENTS

MQS TECH. NO. SHT. REV. 1

CUST. RSS NO. SHT. REV.

REVIEWER John Petroske

CERTIFIED NDT LEVEL (RT)

John Petroske RT II Exp. 01/08

TEAM COOPERHEAT-MQS, INC.

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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: Acceptable	Rejected	Inclusion	Dross or Slag	Incomplete Penetration: Porosity	Lack of Fusion	Shrinkage: Gas	Cracks	Hot Tears	Under cut	Surface	Film Artifacts	REMARKS
MCWF-B-1		27	✓												
		28	✓												
E.I.O. C040851		29	✓						2						
		29-1	✓												
M177210															
Z103989															

NO. ACCEPTED 0

NO. REJECTED 1

COMMENTS

MQS TECH. NO. SHT. REV. 1

CUST. RSS NO. SHT. REV.

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WORK ORDER NO. 361-02763-2

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: Acceptable	Rejected	Inclusion	Dross or Slag	Porosity	Incomplete Penetration: Lack of Fusion	Gas	Cracks	Shrinkage: Hot Tears	Under cut	Surface	Film Artifacts	REMARKS
MCWF-B-1		30-31	✓										✓		
		31-32	✓												
E.I.O. C040851		V33	✓												
		34-35	✓												
M177210		36-37	✓												
		V38	✓											✓	
Z103989		39-40	✓										✓		
		40-41	✓												
		42-43	✓												
		43-44	✓											✓	
		V45	✓												
		46-47	✓												
		48-49		R					5						
		49-50		R					3			R			
		V51	✓												
		V51A	✓												
		52-53	✓												
		53-54	✓												
		54-55	✓												
		55-56	✓												
		56-57	✓												
		58-59	✓										✓		
		59-60		R								R			
		60-61		R							5	R			
		61-62		R								R			

NO. ACCEPTED 0

NO. REJECTED 1

COMMENTS

MQS TECH. NO. | SHT. | REV. 1

CUST. RSS NO. | SHT. | REV.

REVIEWER John Petroske

CERTIFIED NDT LEVEL (RT)

John Petroske RT II Exp. 01/08

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XRAY X

GAMMA

PROCEDURE SPECIFICATION ASTM E94-93

ACCEPTANCE CRITERIA MSS-SP-54-1999

SHEET ____ OF ____

PART NUMBER	Serial No	View	No Apparent Indications: Acceptable	Rejected	Incomplete Penetration: Inclusion	Dross or Slag	Porosity	Lack of Fusion	Shrinkage: Gas	Cracks	Hot Tears	Under cut	Film Artifacts: Surface		REMARKS
MCWF-B-1		62-63		R							R				
		V64	✓												
E.I.O. C040851		63-65	✓						1				✓		
		65-66	✓						1				✓		
M177210		66-67	✓						2						
		67-68	✓						2						
Z103989		V69		R						R					
		70-71		R						R					
		71-72	✓												
		73-74	✓												
		74-75	✓	R RBK					1 RBK				✓		
		75-76	✓	R RBK					1½ RBK				✓		
		77-78	✓												
		78-79	✓												
		80-81	✓											✓	
		81-82	✓								3				
		82-83		R							4				
		84-85		R					5						
		85-86		R					5		4-5				
		86-87		R							4-5				
		87-88	✓								3				
		88-89	✓								2				
		89-90		R								R			
		90-91	✓						2						
		91-92	✓						2						

NO. ACCEPTED 4 NO. REJECTED 1

COMMENTS

MQS TECH. NO. SHT. REV. 1

CUST. RSS NO. SHT. REV.

REVIEWER John Petroske

CERTIFIED NDT LEVEL (RT)

John Petroske RT II Exp. 01/08

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XRAY X

GAMMA

PROCEDURE SPECIFICATION ASTM E94-93

ACCEPTANCE CRITERIA MSS-SP-54-1999

SHEET ____ OF ____

PART NUMBER	Serial No	View	No Apparent Indications: Acceptable	No Apparent Indications: Rejected	Incomplete Penetration: Inclusion	Dross or Slag	Porosity	Lack of Fusion	Shrinkage: Gas	Shrinkage: Cracks	Hot Tears	Under cut	Film Artifacts: Surface	Film Artifacts:	REMARKS
MCWF-B-1		93-94	✓												
		94-95	✓		X				2				R		
E.I.O. C040851		96-97	✓												
		97-98	✓												
M177210		98-99	✓												
		99-100	✓												
Z103989		101-102	✓												
		102-103	✓												
		103-104	✓								2				
		104-105			R					R					
		106-107	✓												
		107-108	✓												
		108-109	✓										✓		
		109-110	✓												
		110-111	✓												
		111-112	✓										✓		
		112-113	✓											✓	
		113-114	✓												
		115-116			R				5			R			
		117-118	✓											✓	
		118-119	✓								1				
		119-120	✓										✓	✓	
		120-121	✓			1			1						
		121-122	✓												

NO. ACCEPTED 0 NO. REJECTED 1

COMMENTS

MQS TECH. NO. SHT. REV. 1

CUST. RSS NO. SHT. REV.

REVIEWER John Petroske

CERTIFIED NDT LEVEL (RT)

John Petroske RT II Exp. 01/08

TEAM COOPERHEAT-MQS, INC.

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DATE 1/11/2006

WORK ORDER NO. 361-02763-2

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: Accep-table	Rejected	Incomplete Penetration: Inclusion	Dross or Slag	Porosity	Lack of Fusion	Shrinkage: Gas	Cracks	Hot Tears	Under cut	Film Artifacts: Surface		REMARKS
MCWF-B-1	123-124			R					3						E446
	124-125		✓		2-3								✓		
E.I.O. C040851	126-127		✓										✓	✓	
	127-128			R						R			✓	✓	
M177210															
Z103989															

NO. ACCEPTED 4

NO. REJECTED 1

COMMENTS

MQS TECH. NO. SHT. REV. 1

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	PURCHASE ORDER NUMBER	DATE	CONTROL NO.	PAGE
E.I.O	PPPL-FP-LTS-2	2-11-06	40851	1 of 2

PART NO.	SPECIFICATION	CLASS	TOTAL PIECES	PIECES ACCEPTED
MCWFB-1	E446/E186/E280	SeeSpec	1	

RADIOGRAPHED BY:	INTERPRETED BY:	ASNT LEVEL
Kelley	Kelley	II

FILM TYPE	MATERIAL	ISOTOPE	CODE
29/59/80	CF8M/MN/MN MOD	IRIDIUM 192 COBALT 60 ✓	ASTM E94 ✓ ASME MIL-STD-453

M177210-1	VIEW	PENE	ACCEPT	REJECT	SHRINK	INCLUSION	POROSITY	LINEAR	SURFACE	LOF/LOP	COMMENTS
R1	4-5	50 80 100		X			4				
	7-8	↓	✓				1		✓		
	11-12		✓				1		✓		
	12-13		✓				2		✓		
	48-49	50	✓			1	1		✓		
	49-50	↓		X						X	
	59-60	30 40 50	✓				2		✓		
	60-61	30/100		X				X			
	61-62	30/40		X	4						
	62-63	↓	✓		2				✓		
	69	↓		X				X			
	70-71	30 60 40 80 50 100	✓			2	2				
	82-83	50	✓				1		✓		
	84-85	↓	✓		2						
	85-86		✓		2		2		✓		
	86-87		✓				1		✓		
	89-90		✓						✓		
	94-95	↓	✓				2		✓		
	104-105	30	✓			1	2		✓		
↓	115-116	↓	✓			2	1		✓		

MetalTek INTERNATIONAL

RADIOGRAPHIC INTERPRETATION REPORT

CUSTOMER	PURCHASE ORDER NUMBER	DATE	CONTROL NO.	PAGE
E.I.O	PPPL-FP-LTS-2	2-11-06	40851	2 of 2

PART NO.	SPECIFICATION	CLASS	TOTAL PIECES	PIECES ACCEPTED
MCWFB-1	E446/E186/E280	See Spec	1	1

RADIOGRAPHED BY:	INTERPRETED BY:	ASNT LEVEL
Kelley / Midgett	Kelley / Midgett	II

FILM TYPE	MATERIAL	ISOTOPE	CODE
29/59/80	CF8MNMN MOD	IRIDIUM 192 COBALT 60 /	ASTM E94 / ASME MIL-STD-453

	VIEW	PENE	ACCEPT	REJECT	SHRINK	INCLUSION	POROSITY	LINEAR	SURFACE	LOF/LOP	COMMENTS
M177210-1											
R1	123-124	40 60 80		X			4			X	
↓	127-128	30/40	/				1				
R2	4-5	50 80 100	/				1		/		
	49-50	50		X						X	
	60-61	30/100	/			1	1		/		
	61-62	30/40	/			2	1		/		
	69	↓	/						/		
↓	123-124	40 60 80	/		1	1	2				
R3	49-50	50	/			2	1		/		

Metalitek INTERNATIONAL

RADIOGRAPHIC STANDARD SHOOTING SKETCH

Customer	EI.O	Pattern Number	MCWFB-1
Material	CF8MNMN MOD	Traceability Number	
Film Manufactuer	FUJI	Source Number	CO60 22 CI
IQI LEVEL 2-2T From CQP 401 X Other (Specify, E.G. 2-4T, 2-1T) N/A			

Exposures (views)	4-5	7-8	11-12	12-13	48-49	49-50	59-60	6061	6162	62-63	69	70-71
Thickness (IN.)	2 3/4 - 8 1/2	→	→	→	3"	→	1 3/4 - 4"	1 3/4 →	1 3/4 - 2"	→	1 1/2"	1 1/2 - 4"
S/F Distance (IN.)	20"	→	→	→	→	→	→	→	→	→	→	→
Penetrameter	50/80/100	→	→	→	50	→	30/40/50	30/100	30/40	→	→	30/40/80/30/100
Time (MIN.)	1hr 55min	→	→	→	17min	→	16min	17min + 1hr 45min	16min	→	15min	20min
Focal Spot (IN.)	.1	→	→	→	→	→	→	→	→	→	→	→
Film Size (IN.)	14X17	→	→	→	→	→	→	→	→	→	→	→
Screen Size (Pb) Front/Back	.01	→	→	→	→	→	→	→	→	→	→	→
S.W.E./D.W.E.	SWE	→	→	→	→	→	→	→	→	→	→	→
S.W.V/D.W.V.	SWV	→	→	→	→	→	→	→	→	→	→	→
Film Type	29X2/80X2/59	→	→	→	80X2	→	29/80/59	29/80	29/59	→	→	29X2/80X2/59
Acceptance Standard	E186/E280	→	→	→	E186	→	E446	E446/E280	E446	→	→	E446/E186
Severity Level	See	SPEC.	→	→	→	→	→	→	→	→	→	→

Shooting Sketch (Use Additional Pages as Needed)

See Original Technique

Technique Prepared By: Ron Kelley Level: II Date: 2-11-06

Technique Approved By: _____ Level: _____ Date: _____

Metal Tek INTERNATIONAL

RADIOGRAPHIC STANDARD SHOOTING SKETCH

Customer	E.I.O	Pattern Number	McWFB-1
Material	CF8MNMN Mod	Traceability Number	
Film Manufactuer	FUJI	Source Number	C060 22.CI
IQI LEVEL 2-2T From CQP 401 X Other (Specify, E.G. 2-4T, 2-1T) N/A			

Exposures (views)	82-83	84-85	85-86	86-87	89-90	94-95	104-105	115-116	123-124	127-128		
Thickness (IN.)	2 1/4"	→				→	1 3/4"	→		1 3/4"		
S/F Distance (IN.)	20"	→								→		
Penetrameter	50	→				→	30	→	40 80 60	30/40		
Time (MIN.)	9min	→				→	16min	→	20min	16min		
Focal Spot (IN.)	.1	→								→		
Film Size (IN.)	14X17	→								→		
Screen Size (Pb) Front/Back	.01	→								→		
S.W.E./D.W.E.	SWE	→								→		
S.W.V/D.W.V.	SWV	→								→		
Film Type	80K2	→				→	29/59	→	29X2 59 80X2	29/59		
Acceptance Standard	E186	→				→	E446	→	E446 E186	E446		
Severity Level	See	Spec.	→							→		

Shooting Sketch (Use Additional Pages as Needed)

See Original Technique

Technique Prepared By: RonKelley Level: II Date: 2-11-06

Technique Approved By: _____ Level: _____ Date: _____

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MetalTek INTERNATIONAL

RADIOGRAPHIC INTERPRETATION REPORT

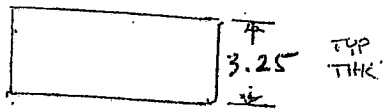
CUSTOMER	PURCHASE ORDER NUMBER	DATE	CONTROL NO.	PAGE
E.I.O.	PPPL-FP-LTS-2	2-24-06	40851	1 of 1

PART NO.	SPECIFICATION	CLASS	TOTAL PIECES	PIECES ACCEPTED
SE-141-058 Bshim	E186	SeeSpec	1	1

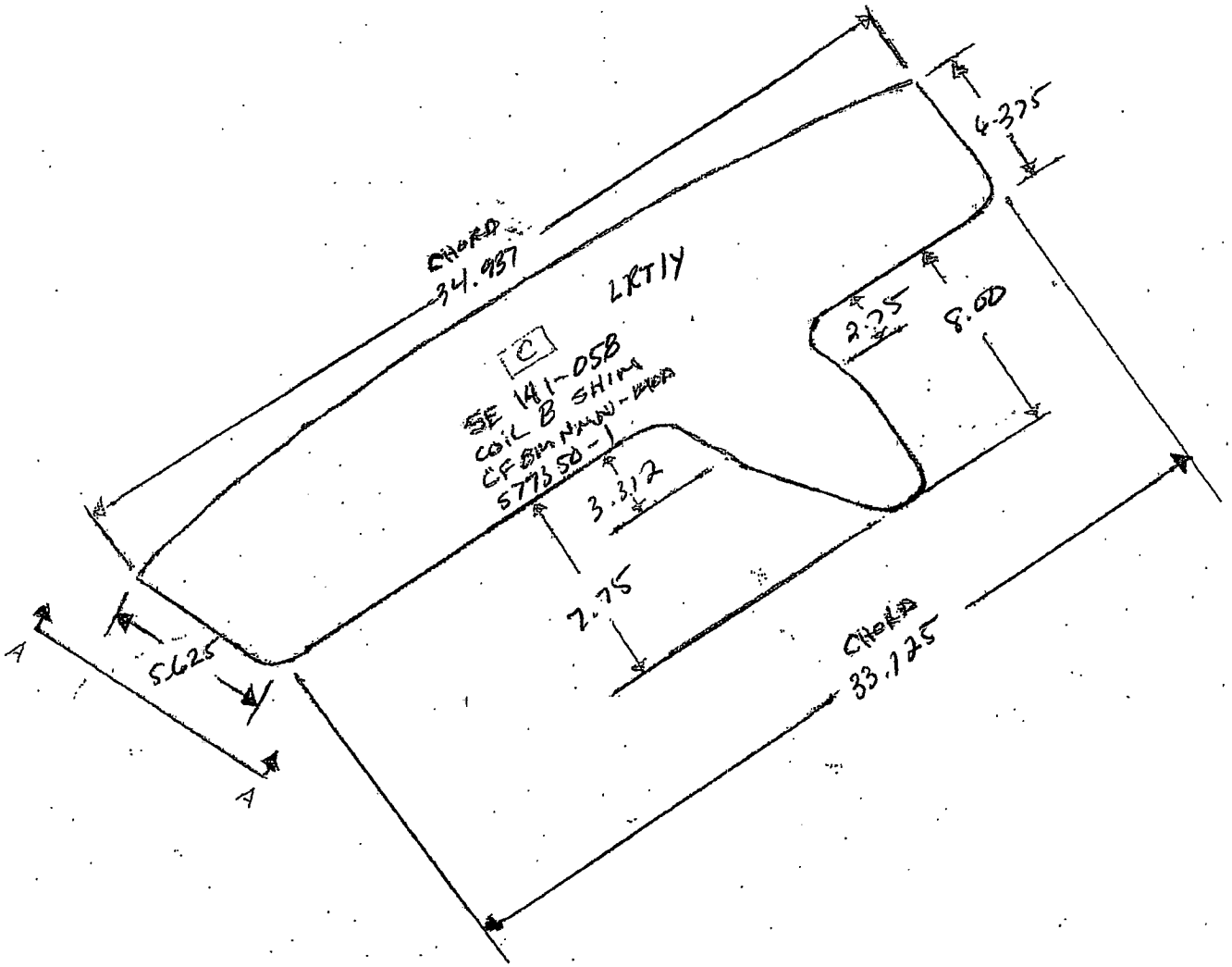
RADIOGRAPHED BY:	INTERPRETED BY:	ASNT LEVEL
Kelley	Kelley	II

FILM TYPE: 80 | MATERIAL: CF8M NMN MMA | ISOTOPE: IRIDIUM 192 / COBALT 60 ✓ | CODE: ASTM E94 / ASME / MIL-STD-453

	VIEW	PENE	ACCEPT	REJECT	SHRINK	INCLUSION	POROSITY	LINEAR	SURFACE	LOF/LOP	COMMENTS
M177360-1 RT.1	A	50	✓						✓		
	B	↓	✓		3	2			✓		
	C		✓						✓		
	D		✓						✓		

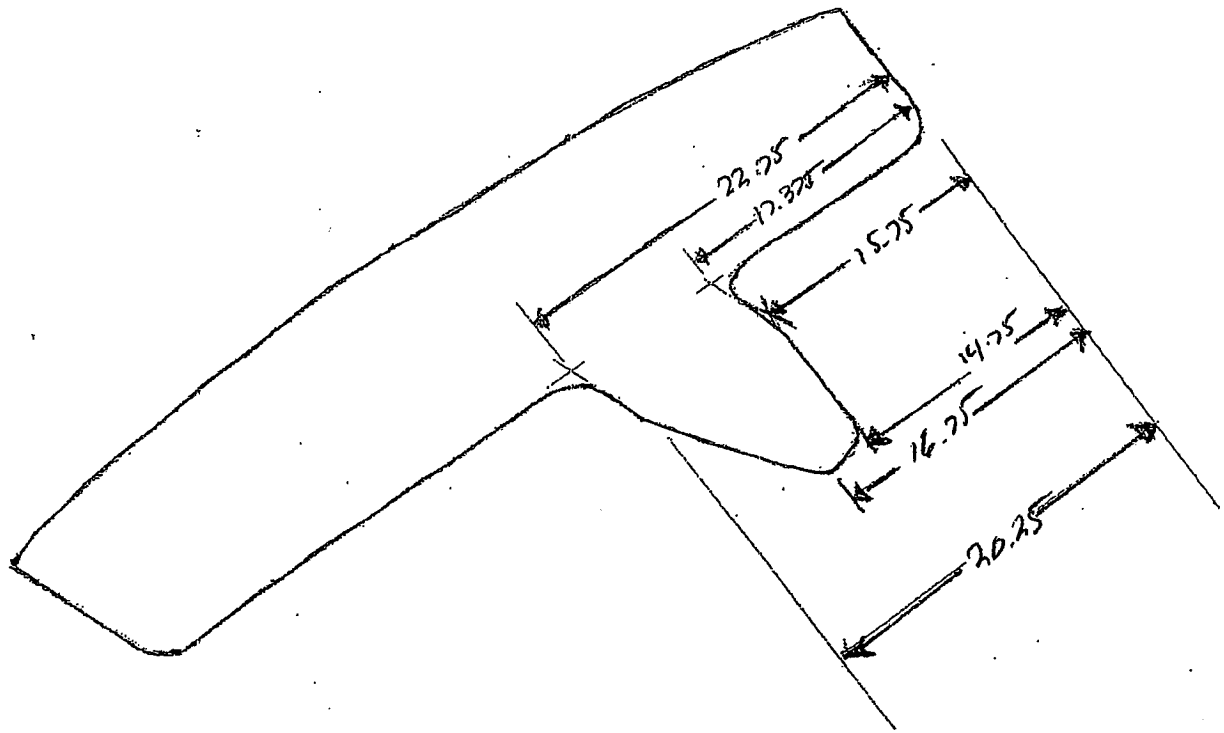


SECT A-A

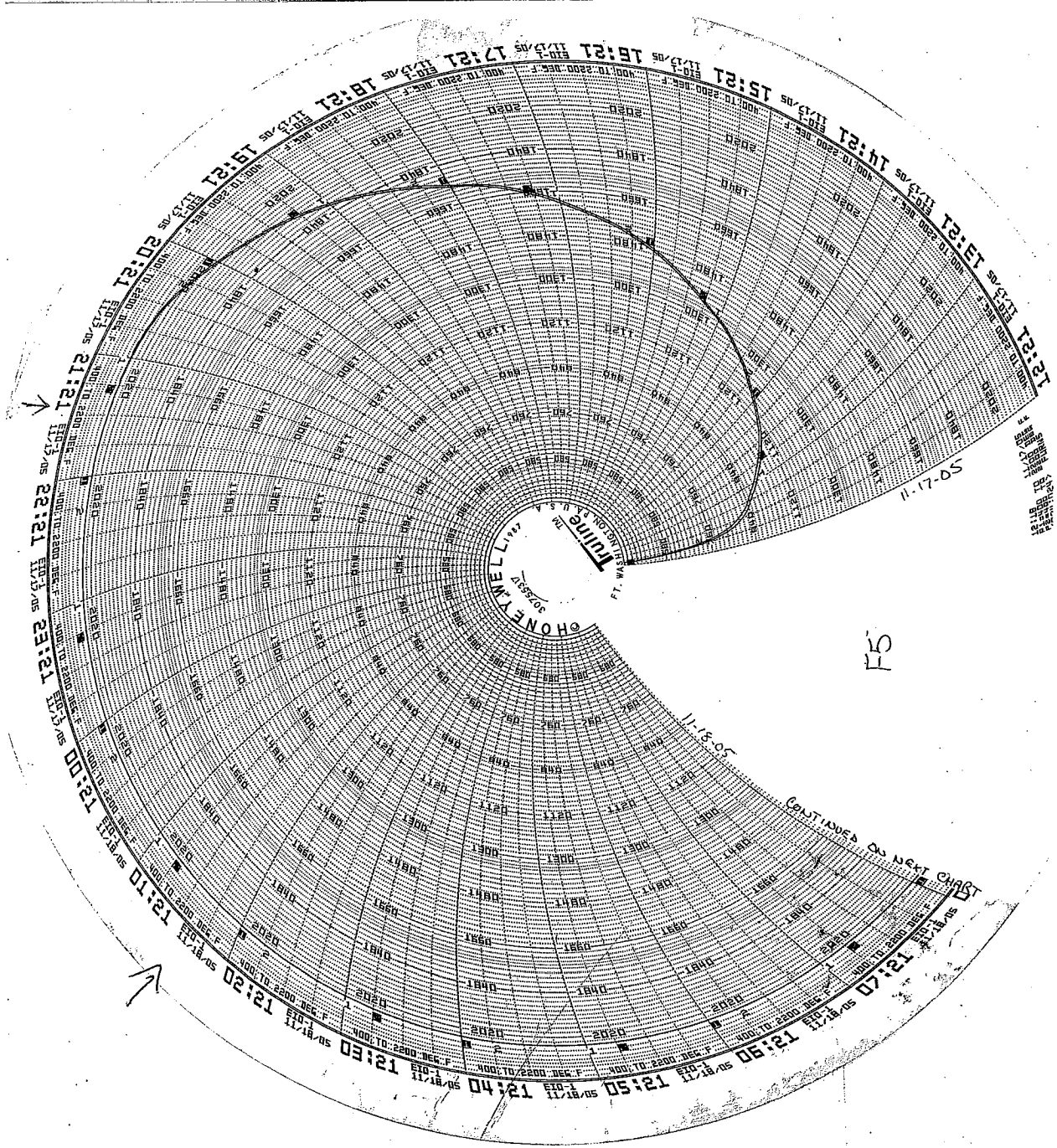


HIM SE 141-058
SKETCH 2/27/06

PAGE 1 OF 2

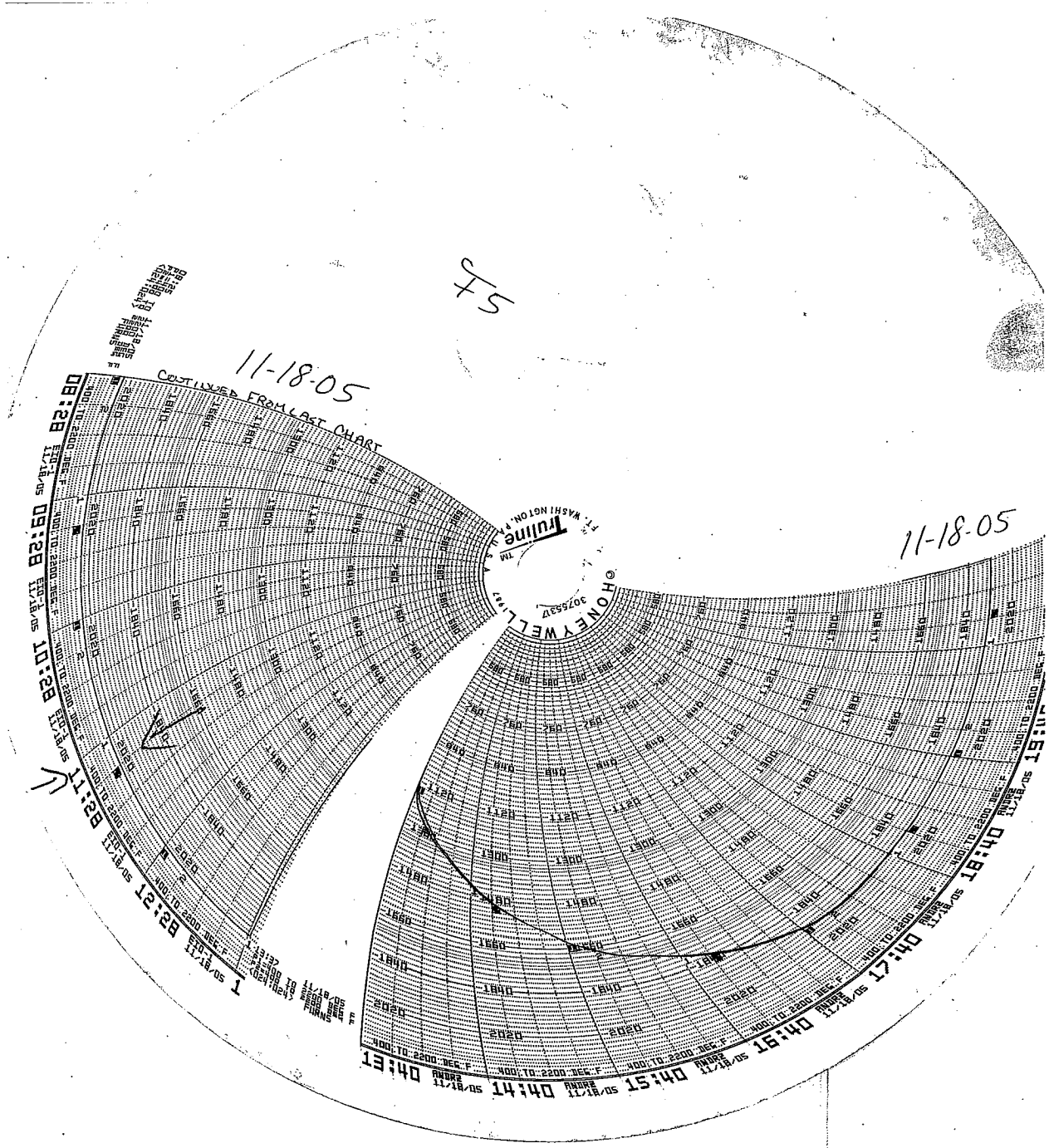


SHIM SE 141-058
SKETCH 2/22/06



E10 11-17-05

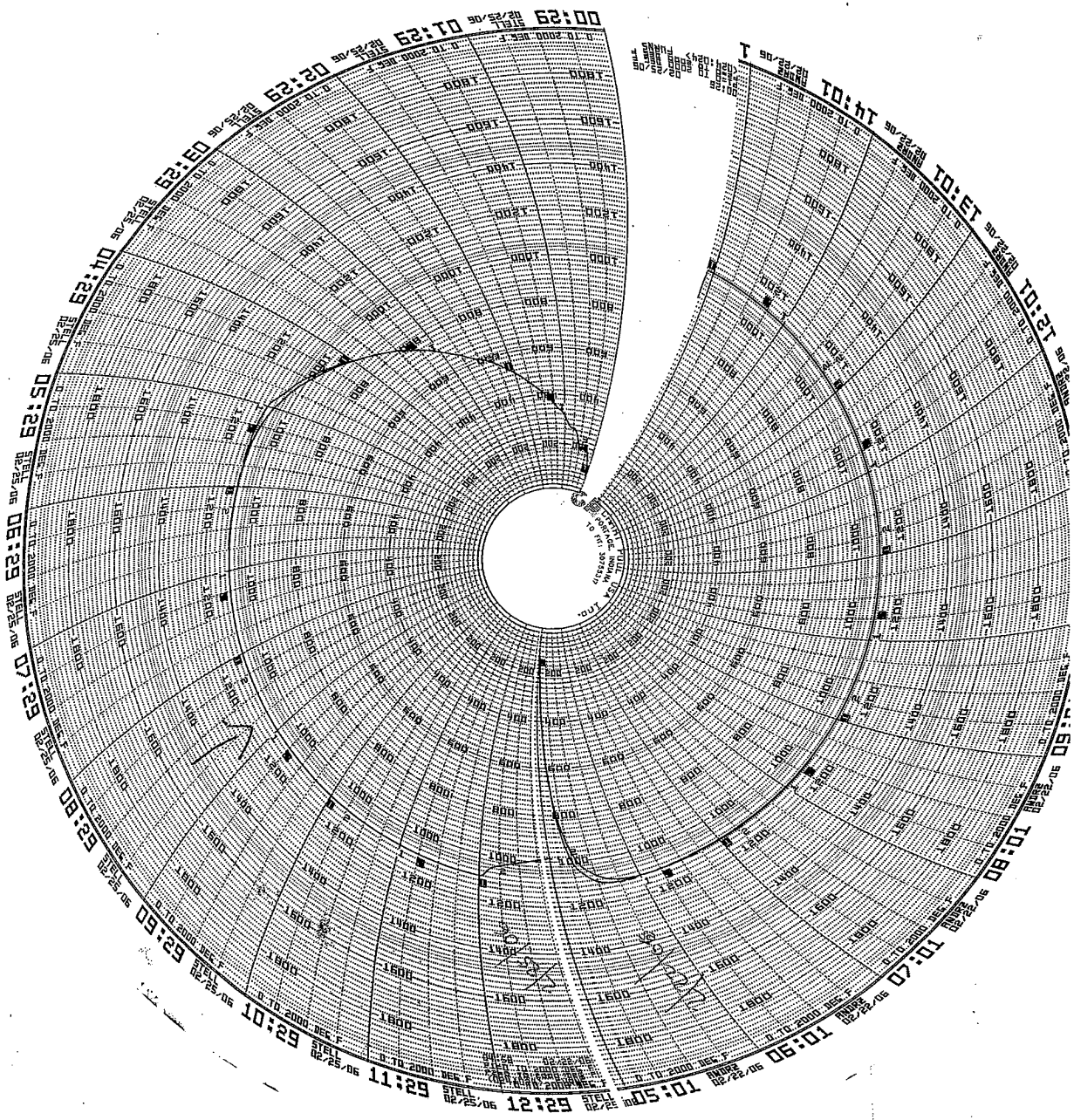
B1 177210-1



E10 11-17-05

B1 177210-1

E10 2-25-06
STRESS RELIEVR
B1 1M7210-1



6

E10 1-22-06

A4
176190-1 1Pc

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

Energy Industries of Ohio
Manufacturing and Test Sequence (MTS) B-1 COIL
1 OF 11 **CO# 40851 Dated 3-9-05 Revision: Rev 9 Dated Issued:8/30/05**

OPER. #	STATION	DESCRIPTION OF PROCESS	Name	Date
10	QUALITY RELEASE	REVIEW AND APPROVE MTS. RECEIVED APPROVAL FROM EIO FROM _Pete D._ SIGNED QUALITY MANAGER		10/27/05
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.		
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.		11/1/05
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.		11/6/05
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: 2750 CASTING POURED AT: 2750 DATE: 11-11-05 HEAT #'s: 3576-3579 ELAPSED POUR TIME KEEL BLOCKS POURED: NA Yes Sample from ladle to be analyzed for final chemical analysis and reported on material certifications. Sample Taken by: IW GH Analyzed: GH Date: 11-11-05	RC LT JQ CW CS SK IW	11-11-05
50	MELT SOP 0800R2	SHAKEOUT		11/20/05
60	ARC RISE SOP 0100R1	REMOVE RISERS AS DIRECTED BY SUPERVISOR.	TW	11-22-05

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.	FS 1	11/17/05
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	11/18
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 GSWA SOP 0100R3	SWING GRIND TO REMOVE RISER REMAINS AND FLASH IF REQUIRED.		11-23-05
100	GRIND GCHI SOP 0100R2	CHIP AND HAD GRIND SURFACE OF PART AS REQUIRED FOR CONTOUR.		11-24-06 A.B
110	SAND BLAST BLAS SOP 0100R6	SANDBLAST (REMOVE ALL BLAST MATERIAL FROM CASTING) SANDBLASTING WILL BE DONE USING RECYCLED SHARP ANGULAR AGGREGATE.		CS 11-24
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF X-RAY . EIO NOTIFIED ON 11/30 DCMA NOTIFIED ON 11/30	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 1-13-06
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 ___✓___ MARK UP DEFECTS AND SEND THE CASTING TO STEP 140.	RT – LEVEL II	ABK 1-18-06
140	WELD SOP 0100 REV 7	EXCAVATE ANY DEFECTS FOUND DURING 100% RT INSPECTION. ✓		1-31-06
150	GRIND GCHI SOP 0100R2	CHIP AND HAND GRIND EXCAVATION AS REQUIRED.		DWP 2-1-06

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 ✓. MARK AND REPAIR AT STEP 190.	VT - LEVEL II KLA	2/2/06
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 ___1_____	LP - LEVEL II MFP 2-2	
180	WELD SOP 0100 REV 7	EXCAVATE ANY DEFECTS FOUND DURING 100% VISUAL AND LP INSPECTION.	TAD	2/2/06
190	GRIND GCHI SOP 0100R2	CHIP AND HAND GRIND EXCAVATION OR VISUAL DEFECTS AS REQUIRED.	KB/DB	2/5/06
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	2-6-06
210	SAND BLAST BLAS SOP 0100R6	SANDBLAST (REMOVE ALL BLAST MATERIAL FROM CASTING) SANDBLASTING WILL BE DONE USING RECYCLED SHARP ANGULAR AGGREGATE.	CA	2/6/06
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	2-7
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF WELD STEP. EIO NOTIFIED ON 2/1 DCMA NOTIFIED ON 2/1	Q ENG OR QA MGR	BC
230	QA APPROVAL HOLD POINT	QA TO APPROVE ELECTRODE PRIOR TO USE. PROCEDURE USED: _____, _____, _____ LIST ALL MATERIAL/LOTS USED: 18308, _____, _____ QUALITY ENG. Name: CR Date: 2/1		
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	BJ	

		REV 0 (Vertical) FOR WELDS <8" - WPS 15-GMAW-CF8MNMN MOD REV 2						
250	GRIND GCHI SOP 0100R2	HAND GRIND WELDS.					CA	2/9
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 ___M___ WASH AND SEND TO STEP 280. IF REJECTED CHECK HERE ___V___ Hold weld til after XRAY					LP - LEVEL II CC	2/10/06
270	REPEAT	REPEAT STEPS S180 TO S250AS REQUIRED TILL CLEAR THROUGH VISUAL INSPECTION & PENETRANT INSPECTION. IF OK CHECK HERE _____ AND PROCEED TO STEP 280.					SK LP to	
280	REPEAT STEPS	SUPPLEMENTAL REPAIR STEPS	1ST	2ND	3RD	4TH	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)						

After RT

		FOR WELDS <8" - WPS 15-GMAW-CF8MNMN MOD REV 2		SKID			
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 _____AND GO TO STEP 300. IF REJECTED CHECK HERE _____.		NA			
290	GRIND GCHI SOP 0100R2	GRIND AREAS OF NON COMPLIANCE AND RETURN TO STEP 280. REPEAT UNTIL COMPLIANCE IS ACHIEVED.					
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_____. RADIOGRAPH AT CAF CHECK HERE ✓.		QA ENGINEER			ABK 2-11-06
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			ABK 2-11-06
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			ABK 2-11-06
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 _____ AND SEND TO STEP 340. REJECTED CHECK HERE ___X___ MARK UP DEFECTS AND SEND THE CASTING TO STEP S321.		RT - LEVEL II			ABK 2-11-06
	REPEAT STEPS	SUPPLEMENTAL REPAIR STEPS	1ST XRAY Reject 2-20-06	2ND Accept 2-20-06	3RD	4TH	5TH

SBat 3284

30/8/06

S321	WELD SOP 0100 REV 7	EXCAVATE ANY DEFECTS FOUND DURING RADIOGRAPHY.	TD	TD			
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 APPROXIMATLY 3.3"X3.3". SUBMIT MAP WITHIN 24 HOURS OF START OF WELDING. SUBMIT MAP WITHIN 24 HOURS OF START OF WELDING.	N/A	NA			
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF WELD STEP. EIO NOTIFIED ON 2/5 DCMA NOTIFIED ON 2/5	Q ENG OR QA MGR DC				
S324	QA APPROVAL HOLD POINT	QA TO APPROVE ELECTRODE PRIOR TO USE. PROCEDURE USED: _____, _____, _____ MATERIAL /LOT USED : 7830, _____, _____, _____ 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	JC WP				
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 CC 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 RSed	Acc 2/20/06			

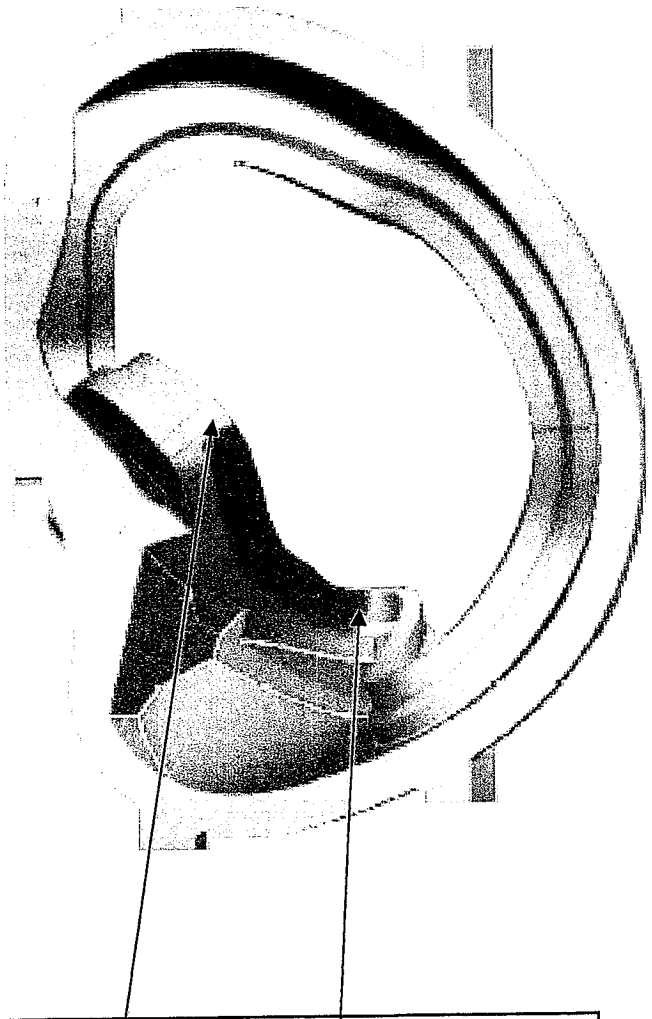
At CAR

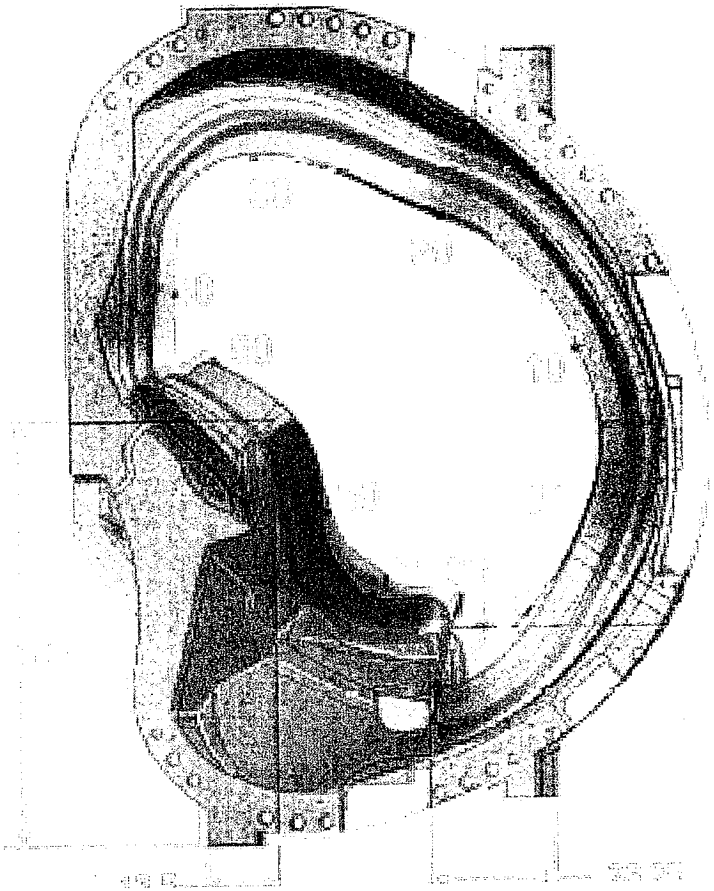
S 328 B	CAF X-RAY DEFECTS REPAIRED BY WELDING CQP 401 REV 5	X-RAY PER TECHNIQUE # 12726 USE CALIBRATED DENSITOMETER FOR DENSITY VERIFICATION. **ALL RT REJECTS, INCLUDING SURFACE DEFECTS WILL BE VERIFIED BY RT.** ATTACH TECHNIQUE, READER SHEET FOR ALL RADIOGRAPHS. MUST INDICATE RADIOGRAPHER AND ASNT CERTIFICATION LEVEL ON READER SHEET.	RT - LEVEL II	N/A			
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 - LEVEL II	OK DWH			
	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.			CGD	2-28-06	
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 _____ NA			Q ENG OR QA MGR		
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 ✓. 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 KLA	2/28	
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 ✓ WASH AND SEND TO STEP 453. IF REJECTED CHECK HERE _____			LP - LEVEL II KLA	2/28	
380	WELD SOP 0100 REV 7	EXCAVATE ANY DEFECTS FOUND DURING FINAL PENETRANT INSPECTION.			N/A		
385	GRIND GCHI SOP 0100R2	CHIP AND HAD GRIND EXCAVATION AS REQUIRED.			✓		

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	N.A
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 11/29/05 DCMA NOTIFIED ON 11/29/05 APPROVAL ~~RECEIVED~~ ON N/A	Q ENG OR QA MGR	Cfn

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.	Lawton CAR	12/5/05
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.	F5-1	DLS 2-25-06
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF VISUAL AND LP STEPS. EIO NOTIFIED ON 2/15 DCMA NOTIFIED ON 2/15	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 ✓. IF REJECTED CHECK HERE _____. MARK AND REPAIR AT STEP 510. MUST BE PERFORMED BY LEVEL II in VT.	VT - LEVEL II KLA	2-28-06
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 ✓ WASH AND SEND TO STEP 500. IF REJECTED CHECK HERE _____. DOCUMENT REPAIRS USING A SUPPLEMENTAL MTS.	LP - LEVEL II KLA 2-28-06	2080 2/28/06
NOTICE	WITNESS NOTIFICATION	PROVIDE NOTICE TO EIO AND DCMA AT LEAST FIVE DAYS IN ADVANCE OF MAG PERM STEPS. EIO NOTIFIED ON 2/15 DCMA NOTIFIED ON 2/15	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"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 ✓ AND GO TO STEP 530. IF REJECTED CHECK HERE _____.	TLC	2-28-06
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.	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 _____. IF REJECTED CHECK HERE _____ RETURN TO STEP 510.		
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)		

NOTICE	RELEASE FROM EIO	PROVIDE DOCUMENTS TO EIO. SENT ON 2/28 BY CAR. RECEIVED RELEASE FROM EIO ON 2/28.	Q ENG OR QA MGR	CAR
540	PACK AND SHIP	PACKAGE AND SHIP TO MAJOR TOOL. Changed 1-9-06 **MARK ON CASTING THE COIL NUMBER "B-1"**	CAR	
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	





High Stressed Area as seen from the drag side.

MetalTek International – Carondelet Division
Manufacturing and Test Sequence (MTS) B Coil Shim SN -1
Dated 12-14-04 Revision:1 Dated Issued:10-25-05

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 #: 31455 Sample from ladle to be analyzed for final chemical analysis and reported on material certifications. Sample Taken by: I. Winston Analyzed: G. Hunt	J. Golaske	11-3-05
50	MELT SOP 0800R2	SHAKEOUT	CA	11/4/05
60	ARC RISE SOP 0100R1	REMOVE RISERS AS DIRECTED BY SUPERVISOR.	Jcoleman	2-23-06
70	HEAT TREAT HEAT SOP 0103R5	SOLUTION ANNEAL. MINIMUM 4 HOURS AT 2050 F. AIR COOL.	KMR	FS-1 1-22-06
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.	JQ 1-23-06	
90	SAND BLAST BLAS SOP 0100R6	SANDBLAST (REMOVE ALL BLAST MATERIAL FROM CASTING) SANDBLASTING WILL BE DONE USING RECYCLED SHARP ANGULAR AGGREGATE.	CS	2/23
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	JDR 2/24

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 CC	2/24/06
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.	N/A	
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 RDK 2-24-06	
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 RDK 2-24-06	
	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.	2-27-06	
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 ✓. IF REJECTED CHECK HERE _____. MARK AND REPAIR DOCUMENT REWORK ON A SUPPLEMENTAL MTS	VT LEVEL II JDR	2/24 2-28-06
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 ✓ WASH AND SEND TO NEXT STEP. IF REJECTED CHECK HERE _____ MAKE REPAIRS AND DOCUMENT ON SUPPLEMENTL MTS.	LP - LEVEL II JDR	2/27/06
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.	JDR	2/28/06
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)		

NOTICE	RELEASE FROM EIO	PROVIDE DOCUMENTS TO EIO. SENT ON 2/28 BY CAR. RECEIVED RELEASE FROM EIO ON 2/28.	Q ENG OR QA MGR	CAR
	PACK AND SHIP	PACKAGE AND SHIP TO MAJOR TOOL.	CAR	
1000	REVISION HISTORY	ORIGINAL DRAFT 10-25-05	CARHUD	CAR

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 MAJOR WELDS. FILE WITH QA. 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 WELDER CERTS MUST BE SENT TO EIO/PPPL.		
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.		

NA

Disposition of NCR 1537 February 10, 2006

The 0.001% over the maximum of 0.035% phosphorus and will be accepted for B1. However since the physical properties of the alloy is dependent upon consistent chemistry, NCSX requests that Metaltek do its best to conform to the chemistry as presently stated in the specification. Deviations will be considered on a case by case basis.

Approved by:

Phil Heitzenroeder

Digitally signed by Phil Heitzenroeder
DN: CN = Phil Heitzenroeder, C = US, O = PPPL, OU = Mech. Eng. Division
Reason: I am approving this document
Date: 2006.02.10 12:52:44 -05'00'

Technical representative

Brad Nelson

Digitally signed by Brad Nelson
DN: cn=Brad Nelson, c=US, o=ORNL, ou=FED, email=nelsonbe@ornl.gov
Date: 2006.02.13 08:48:22 -05'00'

Responsible line manager

MetalTek INTERNATIONAL

Corrective Action 1537
Carondelet Division
Corrective Action Type NCR
Date 1-13-06
CA Originator C. Ruud
Applies to: B-1 Coil

Description of Defect / Non-Conformance
Phosphorus levels in material produced for B-1 coil casting exceed specification limits in PPPL Specification NCSX-CSPEC-141-03-07 Rev 10. Phosphorus is 0.001% over the maximum of 0.035%.

Root Cause
We have no way to remove phosphorus from the melt and do not intentionally add phosphorus. These results are consistent with our charge material analysis.

Corrective Action
Pending.

Verification of Corrective Action
Chemistry analysis of next coil, A-4 and 5. Phosphorus levels were within the required specification.

Preventive Action
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.

Verification Of Preventative Action
Pending

Estimated Completion Date
1-20-06

Actual Completion Date
1-20-06

Signed: C. Ruud

CC: B. Craig, J. Edwards, E.J. Kubick, J. Markham, J. Galaske

NCSX Corrective Action Resolution Response

CA # 1538
Date: Feb. 6, 2006
NCSX Response: This CA addresses 7 areas on B1 which deviates from the model dimensions as detailed in the attached. NCSX agrees with EIO's planned action plan, as summarized below. Other than area 1, NCSX leaves the decision about the necessity of pattern changes up to EIO.
Area 1: Areas of the flange are outside of tolerance range. EIO proposes to add stock in low areas and grind high areas to bring into tolerance, as well as to add stock to cre box to prevent reoccurance. NCSX concurs- the casting stock addition should be handled as a weld repair.
Area 2: Opposite of area 1 but not related has excess stock. EIO will remove excess during processing. NCSX concurs.
Area 3: loss of machine stock ranging from 3/8-9/16". EIO feels that since 1" of machine stock was planned, sufficient remains. This is an EIO decision, but it appears reasonable to NCSX.
Area 4 is a thin shell wall condition similar to A1. NCSX reviewed the details and concurs with EIO's recommendation to use as is. This will be acceptable for future B's and NCSX will submit a RFD.
Area 5: Parts of the wing area interface may be high and it is not certain if other areas are out of tolerance. EIO will get better data during layout scans and may need to bring some areas into tolerances. NCR's may be needed if all areas are not brought into compliance.
Area 6: wing interface appears to be high, EIO plans to remove metal as required. NCSX concurs with this plan.
Area 7: wing interface appears to be high, but details need to be clarified in subsequent scans; EIO plans to remove metal as required. NCSX concurs with this plan.

Approved by:

Phil Heitzenroeder

Digitally signed by Phil Heitzenroeder
DN: CN = Phil Heitzenroeder, C = US, O = PPPL, OU = Mech. Eng. Division
Reason: I agree to the terms defined by the placement of my signature on this document
Date: 2006.02.07 14:38:54 -05'00'

Tech. Rep.

Brad Nelson

Digitally signed by Brad Nelson
DN: cn=Brad Nelson, c=US, o=ORNL, ou=FED, email=nelsonbe@ornl.gov
Date: 2006.02.07 16:12:17 -05'00'

Responsible Line Manager

MetalTek INTERNATIONAL
Carondelet Division
8600 Commercial Blvd. • Pevely, MO 63070 USA
Phone: 636-479-4499 • Fax: 636-479-3399
E-Mail: Charles.Ruud@MetalTekInt.com

Corrective Action 1538
Carondelet Division
Corrective Action Type NCR
Date 1-13-06 **Revised 1-26-06**
CA Originator C. Ruud
Applies to: B-1 Coil

Description of Defect / Non-Conformance
Scan performed by 3D Scanco indicated that the coil deviates from the model in some areas.

Root Cause
Detailed analysis has been performed. See report below.

Corrective Action
Addressed in each area below.

Verification of Corrective Action
A scan will be performed with our equipment to verify dimesions.

Preventive Action
Pending.

Verification Of Preventative Action
Pending

Estimated Completion Date
Prior to shipment of B-1.

Actual Completion Date

Signed: C. Ruud

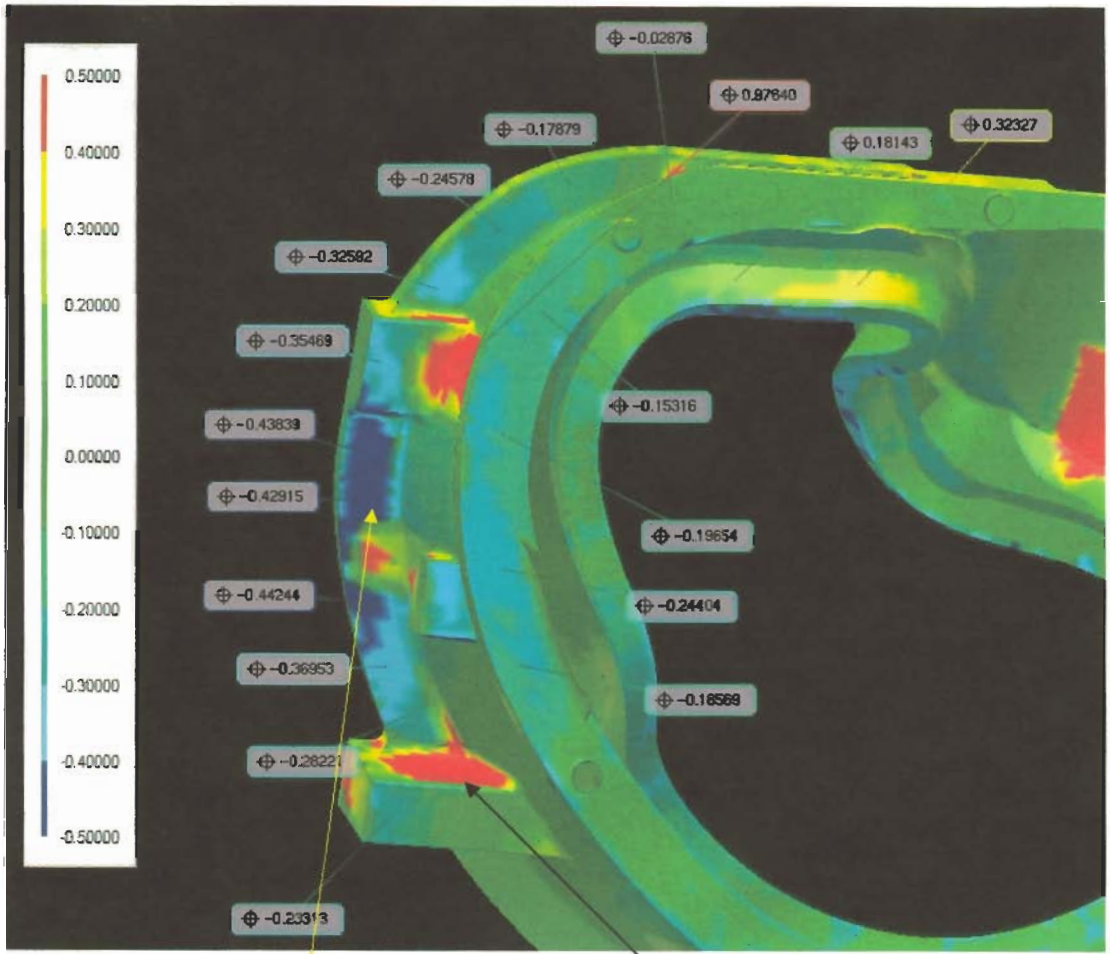
CC: B. Craig, J. Edwards, E.J. Kubick, J. Markham, R. Broman

Coil B-1 Layout Analysis

1-21-06 Roger Broman / MetalTekInt - Carondelet Div.

Areas of Note

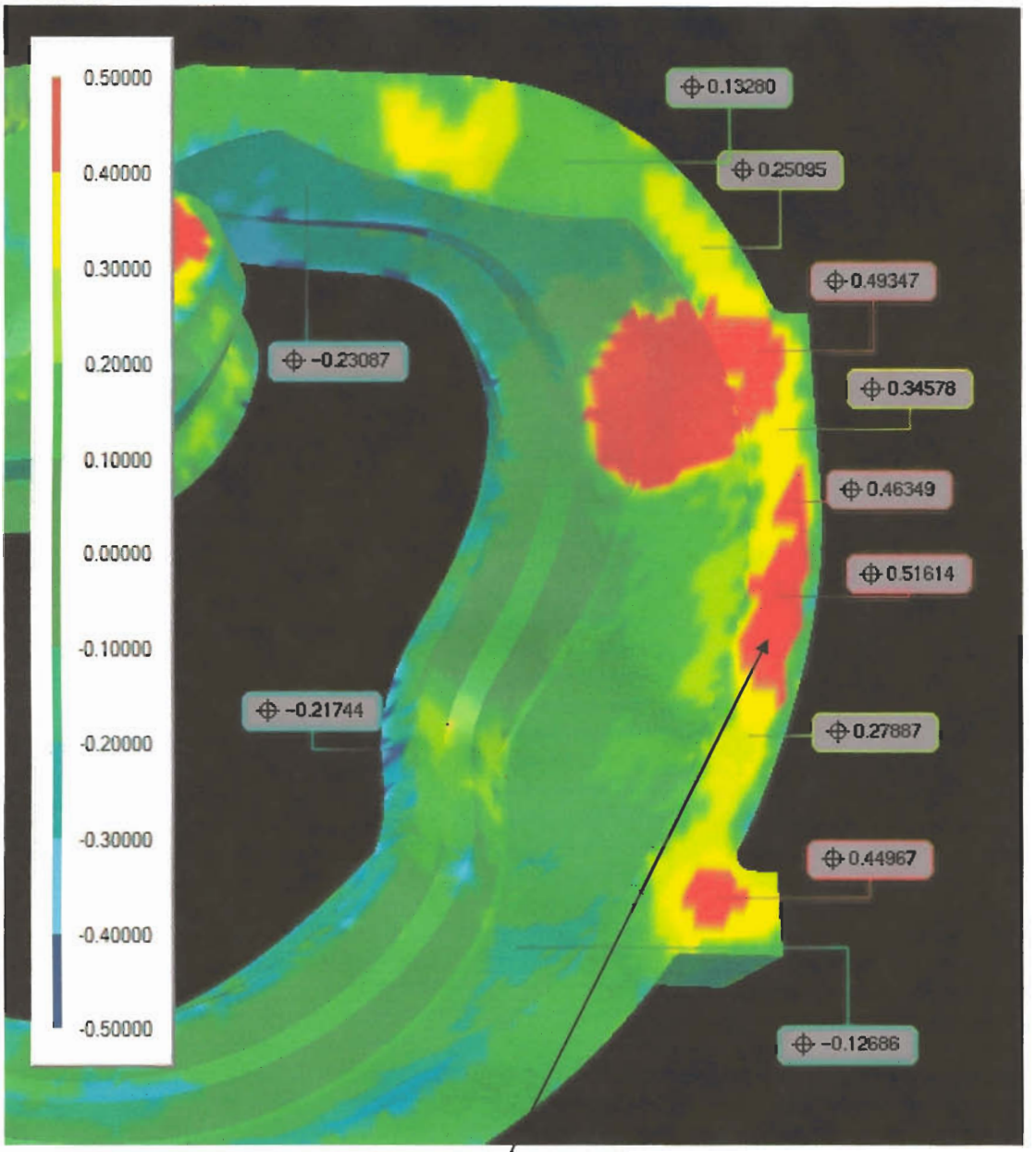
Area 1:



An area on the back-side of the cope flange is showing a surface profile approximately 7/16" below expected. This area will be addressed for Coil B-2 by adding approximately 7/16" stock into this area in corebox #9. On B-1 we will build up this are by welding. The opposite side will require additional machining to remove the excess.

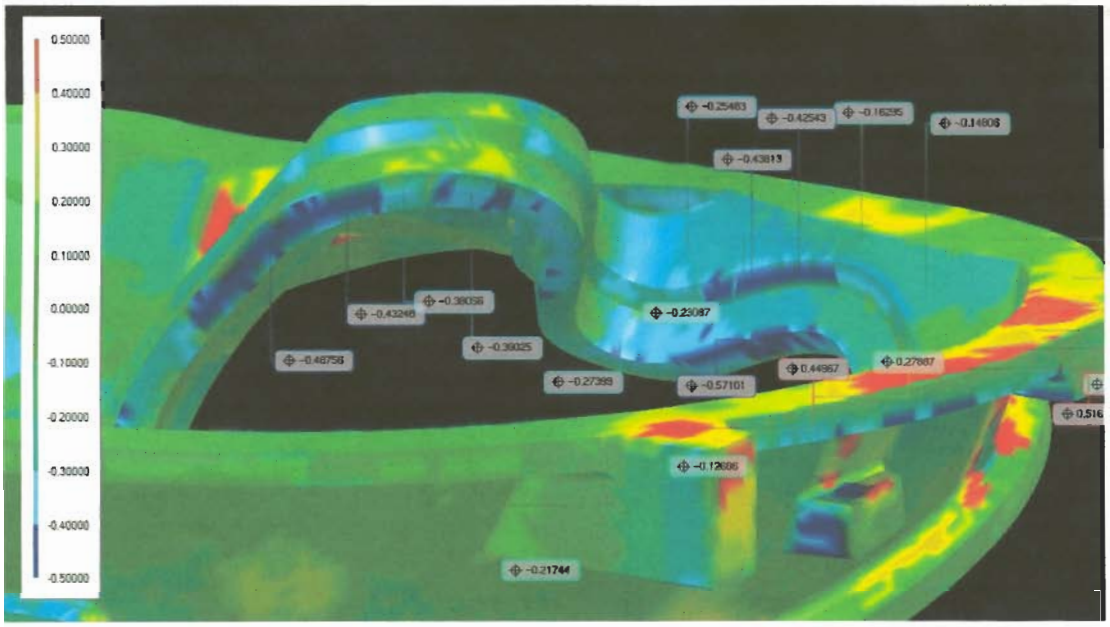
The red area on the side of the ear is not a riser pad or any other expected condition. This will need to be further analyzed with our scan

Area 2:



This area is on the opposite side of the flange of Area 1, but cannot be immediately related to Area 1. A riser sits directly over this spot and the excess stock could be a result of the riser contact not being cut down flush to the flange. At this point, as planned, all of the riser contact areas show the same excess stock condition. They will be worked down closer to the intended flange surface later in the process.

Area 3:

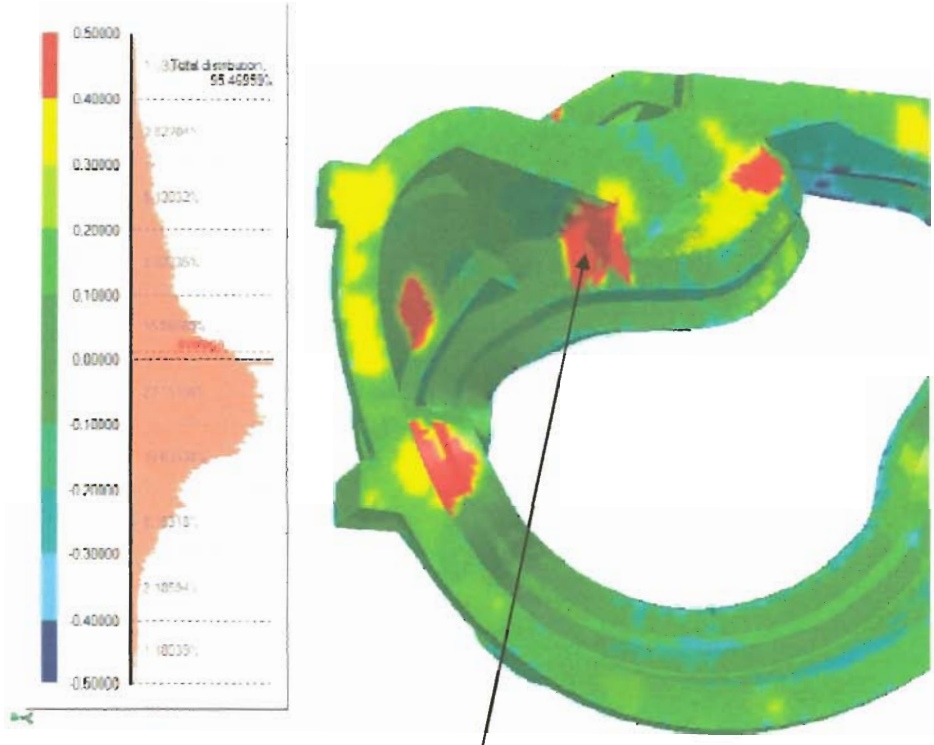


There are a few areas around the race track that display a loss of machine stock anywhere from 3/8" to 9/16". There was 1" machine stock planned in this area, so stock still remains, but the tooling will be inspected for flaws and repaired as needed.

Area 4: (see page 8 of the Scanco report)

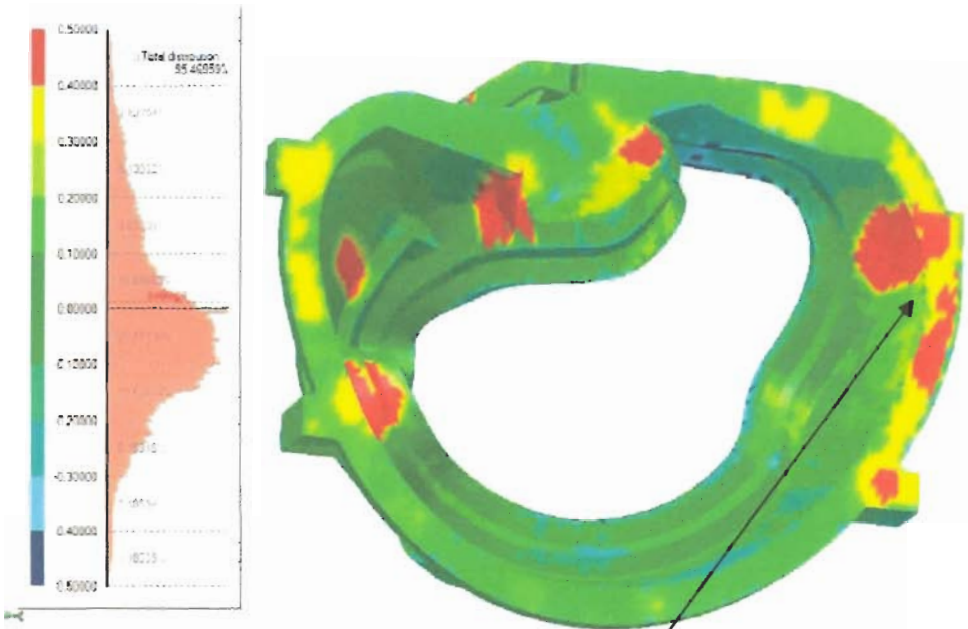
Overall wall thickness shows a condition very similar to the A coils we have processed. Scanco's analysis shows wall thicknesses in the range of 1.21" to 1.54" which is what we would have expected based on Coil A results. No action is planned for this condition. We recommend use as is.

Area 5:



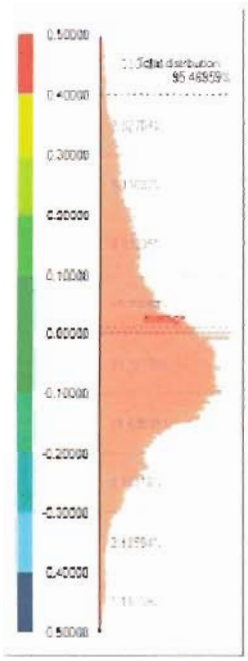
This wing area interface contains a riser pad that will require removal. The rest of the interface seems to be within a +/- 0.2" profile, but due to the color scheme used I cannot tell if it tends toward the plus or minus side of that tolerance. Our layout scan will be clearer in this regard.

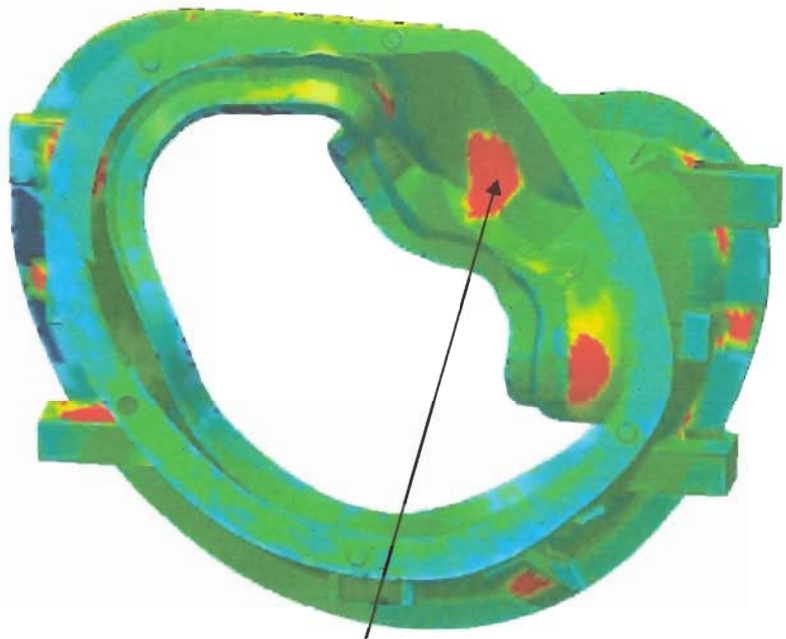
Area 6:



The narrow wing interface here is partially covered by a riser contact that will require removal. The balance of the area is 0.2-0.4" above the intended profile and will require material to be removed.

Area 7:





This wing area interface contains a riser pad that will require removal. The balance of the area is contained within the +/- 0.2" tolerance band, but once again due to the color scheme, I am not able to discern which side of the tolerance the part tends toward. Our scan will show this clearly.

MetalTek INTERNATIONAL

Carondelet Division

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

Final Inspection Report

Customer ENERGY INDUSTRIES OF OHIO

Pattern: MCWF-B1 COIL

Order PPPL-FP-LTS-2

ASTM Metal CF8MNMN MOD

Date 2/28/2006

Type Description	Cert Number	Procedure	Acceptance Criteria	Actual
Liquid Penetrant	177210-1	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	177210-1	SOP Mag Perm 100 Rev 1	<1.02	Acceptable
Radiographic	177210-1	Technique # 12726	MSS SP 54	Acceptable
Visual	177210-1	CQP - 500 REV 4	ASTM A802 LEVEL 2	Acceptable

Liquid Penetrant
Technician: Kevin Anderson
ASNT Level II

Visual
Technician: Kevin Anderson
ASNT Level II

Respectfully Submitted,
Charles A. Ruud
Quality Assurance Manager

MetalTek INTERNATIONAL

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-B1 COIL

ASTM CF8MNMN MOD

Date 2/28/2006

Cert Number

177210-1

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

MetalTek INTERNATIONAL

Carondelet Division

8600 Commericial 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 1

Order: PPPL-FP-LTS-2

ASTM Metal: CF8MNMN MOD

Date: 2/28/2006

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: Kevin Anderson
ASNT Level II

Visual
Technician: Kevin Anderson
ASNT Level II

Respectfully Submitted,
Charles A. Ruud
Quality Assurance Manager

MetalTek INTERNATIONAL

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-141-058 COIL B SHIM	S/N 1	
ASTM	CF8MNMN MOD		Date 2/28/2006

Cert Number
177360-1

A shim for B-1 coil was poured from heat number 31455. No weld repairs were necessary.

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

EIO
Energy Industries of Ohio
SUPPLIER QUALITY RELEASE

		Date: 2-28-06

I. General Information:			
Project Name:	Modular Coil Winding Form B1		
PO No:	NCSX-SOW-141-02-01	Rev.:	10
Supplier:	MetalTek		
Procurement Agent:	EIO		
Shipment:	☒ Partial ☐ Final		

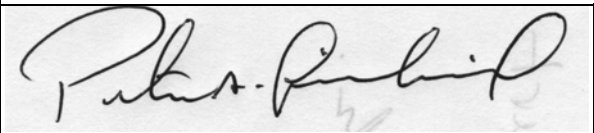
II. Material Description
Casting B1 Coil

III. Release Checklist	
Plan Requirements Complete?	☒ Yes ☐ No ☐ N/A (If identified "No" provide explanation in comments section below)
Variances?	☒ Yes ☐ No ☐ N/A (If identified "No" provide explanation in comments section below)
Princeton Notified of Shipment?	☒ Yes ☐ No ☐ N/A (If identified "No" provide explanation in comments section below)
DCMA Notified of Shipment?	☒ Yes ☐ No ☐ N/A (If identified "No" provide explanation in comments section below)
☒ Conditional ☐ 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 	2-28-06
Supplier Quality Representative (SQR) Print/Type Name	Supplier Quality Representative (SQR) Signature	Date

VI. Supplier Approval For Shipment		
Procurement Agent Notified of Shipment	Date: 2-28-06	
Required Vendor Data Ready for Shipment	Date: 2-28-06	
Peter A Djordjevich	 X	2-28-06

EIO
Energy Industries of Ohio
SUPPLIER QUALITY RELEASE

		Date: 2-28-06

I. General Information:			
Project Name:	Modular Coil Winding Form B1		
PO No:	NCSX-SOW-141-02-01	Rev.:	10
Supplier:	MetalTek		
Procurement Agent:	EIO		
Shipment:	☒ Partial ☐ 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.