



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-C5 Coil

CAF Metal Designation CF8MNMnMod

Material Spec CF8MNMnMOD

Ladle#1 Heat 30441

Original Chemistry

Cert Number 172810-1

Pour Date 8/8/2005

Element	Min	Actual	Max
C	0.04	0.05	0.07
MN	2.3	2.6	2.8
SI	0.0	0.3	0.7
CR	18.0	18.2	18.5
NI	13.0	13.3	13.5
MO	2.1	2.3	2.5
P	0.0	0.023	0.035
S	0.0	0.011	0.025
N	0.24	0.26	0.28

A handwritten signature in black ink, appearing to read 'Charles A. Ruud', is located above the printed name and title.

Respectfully Submitted,
Charles A. Ruud
Quality Assurance Manager

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Ladle#2 Heat 30442

Original Chemistry

Cert Number 172810-1

Pour Date 8/8/2005

Element	Min	Actual	Max
C	0.04	0.05	0.07
MN	2.3	2.4	2.8
SI	0.0	0.4	0.7
CR	18.0	18.2	18.5
NI	13.0	13.3	13.5
MO	2.1	2.3	2.5
P	0.0	0.033	0.035
S	0.0	0.013	0.025
N	0.24	0.24	0.28

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

Respectfully Submitted,
Charles A. Ruud
Quality Assurance Manager

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Purchase Order Number PPPL-FP-LTS-2

Pattern Number MCWF-C5 Coil

CAF Metal Designation CF8MNMnMod

Material Spec CF8MNMnMOD

Ladle#3 Heat 30445

Original Chemistry

Cert Number 172810-1

Pour Date 8/8/2005

Element	Min	Actual	Max
C	0.04	0.05	0.07
MN	2.3	2.4	2.8
SI	0.0	0.3	0.7
CR	18.0	18.3	18.5
NI	13.0	13.2	13.5
MO	2.1	2.4	2.5
P	0.0	0.03	0.035
S	0.0	0.01	0.025
N	0.24	0.25	0.28

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

Respectfully Submitted,
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Quality Assurance Manager

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Purchase Order Number PPPL-FP-LTS-2

Pattern Number MCWF-C5

CAF Metal Designation CF8MNMnMod

Material Spec CF8MNMnMOD

Weighted average of 3 heats - 30441(39%),30442(21%),30445(40%) Total Weight 31732 lbs.

Original Chemistry

Cert Number 172810-1

Pour Date 8/8/2005

Element	Min	Actual	Max
C	0.04	0.05	0.07
MN	2.3	2.5	2.8
SI	0.0	0.3	0.7
CR	18.0	18.2	18.5
NI	13.0	13.3	13.5
MO	2.1	2.3	2.5
P	0.0	0.028	0.035
S	0.0	0.011	0.025
N	0.24	0.25	0.28

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Purchase Order Number PPPL-FP-LTS-2

Pattern Number MCWF-C5 Coil

CAF Metal Designation CF8MNMnMod

Material Spec CF8MNMnMOD

Ladle#1 Heat 30441

Analysis performed by Wisconsin Centrifugal

Cert Number 172810-1

Pour Date 8/8/2005

Element	Min	Actual	Max
C	0.04	0.02	0.07
MN*	2.3	2.2	2.8
SI	0.0	0.3	0.7
CR	18.0	18.2	18.5
NI	13.0	13.5	13.5
MO	2.1	2.4	2.5
P	0.0	0.025	0.035
S	0.0	0.010	0.025
N	0.24	0.25	0.28

* See Corrective Action Number 1323.

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Pattern Number MCWF-C5 Coil

CAF Metal Designation CF8MNMnMod

Material Spec CF8MNMnMOD

Ladle#2 Heat 30442

Analysis performed by Wisconsin Centrifugal

Cert Number 172810-1

Pour Date 8/8/2005

Element	Min	Actual	Max
C	0.04	0.05	0.07
MN*	2.3	1.8	2.8
SI	0.0	0.4	0.7
CR	18.0	18.2	18.5
NI	13.0	13.4	13.5
MO	2.1	2.5	2.5
P	0.0	0.034	0.035
S	0.0	0.018	0.025
N	0.24	0.23	0.28

* See Corrective Action Number 1323.

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CAF Metal Designation CF8MNMnMod

Material Spec CF8MNMnMOD

Ladle#3 Heat 30445

Analysis performed by Wisconsin Centrifugal

Cert Number 172810-1

Pour Date 8/8/2005

Element	Min	Actual	Max
C	0.04	0.04	0.07
MN*	2.3	2.0	2.8
SI	0.0	0.3	0.7
CR	18.0	18.3	18.5
NI	13.0	13.3	13.5
MO	2.1	2.4	2.5
P	0.0	0.031	0.035
S	0.0	0.018	0.025
N	0.24	0.24	0.28

* See Corrective Action Number 1323.

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Cert Number 172810-1

Pattern Number MCWF-C5

Pour Date 8/8/2005

CAF Metal Designation CF8MNMnMod

Material Spec CF8MNMnMOD

Weighted average of 3 heats - 30441(39%),30442(21%),30445(40%) Total Weight 31732 lbs.

Analysis performed by Wisconsin Centrifugal

Element	Min	Actual	Max
C	0.04	0.04	0.07
MN*	2.3	2.0	2.8
SI	0.0	0.3	0.7
CR	18.0	18.2	18.5
NI	13.0	13.4	13.5
MO	2.1	2.4	2.5
P	0.0	0.030	0.035
S	0.0	0.015	0.025
N	0.24	0.24	0.28

* See Corrective Action Number 1323.

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Pattern Number MCWF-C5 Coil

CAF Metal Designation CF8MNMnMod

Material Spec CF8MNMnMOD

Ladle#1 Heat 30441

Retest after preventive maintenance

Cert Number 172810-1

Pour Date 8/8/2005

Element	Min	Actual	Max
MN	2.3	2.3	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	2.4	2.5
P	0.0	0.029	0.035
S	0.0	0.012	0.025

C & N not analyzed by spectrometer on retest.

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

Respectfully Submitted,
Charles A. Ruud
Quality Assurance Manager

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Material Spec CF8MNMnMOD

Ladle#2 Heat 30442

Retest after preventive maintenance

Cert Number 172810-1

Pour Date 8/8/2005

Element	Min	Actual	Max
MN*	2.3	1.8	2.8
SI	0.0	0.4	0.7
CR	18.0	18.3	18.5
NI	13.0	13.3	13.5
MO	2.1	2.5	2.5
P	0.0	0.034	0.035
S	0.0	0.012	0.025

- See Corrective Action Number 1323.
C & N not analyzed by spectrometer on retest.

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

Respectfully Submitted,
Charles A. Ruud
Quality Assurance Manager

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Pattern Number MCWF-C5 Coil

CAF Metal Designation CF8MNMnMod

Material Spec CF8MNMnMOD

Ladle#3 Heat 30445

Retest after preventive maintenance

Cert Number 172810-1

Pour Date 8/8/2005

Element	Min	Actual	Max
MN*	2.3	2.0	2.8
SI	0.0	0.3	0.7
CR	18.0	18.4	18.5
NI	13.0	13.3	13.5
MO	2.1	2.4	2.5
P	0.0	0.033	0.035
S	0.0	0.012	0.025

* See Corrective Action Number 1323.

C & N not analyzed by spectrometer on retest.

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Respectfully Submitted,
Charles A. Ruud
Quality Assurance Manager

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Cert Number 172810-1

Pattern Number MCWF-C5

Pour Date 8/8/2005

CAF Metal Designation CF8MNMnMod

Material Spec CF8MNMnMOD

Weighted average of 3 heats - 30441(39%),30442(21%),30445(40%) Total Weight 31732 lbs.

Retest after preventive maintenance

Element	Min	Actual	Max
MN*	2.3	2.1	2.8
SI	0.0	0.3	0.7
CR	18.0	18.3	18.5
NI	13.0	13.3	13.5
MO	2.1	2.4	2.5
P	0.0	0.032	0.035
S	0.0	0.012	0.025

* See Corrective Action Number 1323.

C & N not analyzed by spectrometer on retest.

A handwritten signature in black ink, appearing to read 'CAR', is positioned above the printed name of the Quality Assurance Manager.

Respectfully Submitted,
Charles A. Ruud
Quality Assurance Manager

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