CUSTOMER	UMD	S.O.		DATE	1/22/2014
ADDRESS	Duluth, MN.	SERVICE ENGINEER		M.N.	
		Coen File	20D-0485-1		
BOILER MFG	Nebraska	TYPE	NS-E-74	BURNER MFG	Coen
RATING	80,000 PPH	FUEL	OIL	GAS	Nat.
CONTROL SYSTEM		POSITIONING		METERING	Parallel w/ O2 Trim

TYPE CPF-27 | COAL | BOILER# 4

READING	UNITS													
Steam Pressure, Drum	PSIG	153	150	149	146	145	140	142	142	141	142			
Steam Pressure Header	PSIG	131	132	133	132	133	133	133	133	133	134			
Submaster Output	0-100%	100	90	80	70	60	50	40	30	20	14			
Steam Flow Rcdr.	KPPH	79.7	72.0	63.8	54.6	49.0	40.0	32.1	23.4	14.9	7.9			
Gas Flow Rcdr.	KSCFH	100.2	90.0	80.6	70.3	60.3	50.3	39.2	29.7	19.7	13.5			
Air Flow Rcdr.	0-100%	100	90	80	69	59	50	40	30	20	14			
W.B. Press	INWC	9.0	7.8	5.5	4.1	2.9	2.0	1.2	0.5	Sl-	Sl-			
Furnace Press.	INWC	4.0	2.8	2.1	1.4	0.90	0.50	0.1	-0.1	-0.3	-0.35			
Outlet Press.	IN W.C.	-0.25	-0.35	-0.35	-0.40	-0.40	-0.35	-0.35	-0.40	-0.40	-0.45			
Regulated Gas Press	PSIG	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.7	14.7			
Burner Gas Press	PSIG	4.2	3.1	2.1	1.6	1.1	0.6	~~	~~	~~	~~			
Air PV	%	100	90	80	70	60	50	40	30	20	14			
Fuel PV	%	100	90	80	70	60	50	40	30	20	14			
Air Control Out	%	100	84	77	67	57	48	39	26	18	0			
FD Inlet Damper	%	100	67	56	46	38	31	25	16	7	0			
WB Inlet Damper	%	99	67	56	46	38	31	24	16	7	1			
Fuel Control Out	%	100	84	79	69	57	49	38	29	19	0			
Gas Valve Out	%	100	70	60	49	41	36	27	20	11	0			Valve P Display
AC Valve Position	#	9.5	7	6.25	5.5	4.5	4	3.5	2.75	2	1			
O2 In Situ	%	3.1	3.0	3.0	3.0	3.0	3.0	3.5	4.0	5.4	8.3			Wet Msmt
O2 RSP	%	3.0	3.0	3.0	3.0	3.0	3.0	3.3	3.8	5.5	8.5			
O2 Out	%	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0			
O2 Controller Mode	Man / Auto	Man	Man	Man	Man	Man	Man	Man	Man	Man	Man			
O2 Portable	%	3.7	3.6	3.5	3.5	3.8	3.9	4.3	5.0	6.5	9.5			Dry Msmt
CO Portable	PPM	0	0	0	0	0	0	0	0	0	47			
NOX Portable	PPM	99	106	112	112	126	125	118	119	103	57			
Drum Level	INWC	0.0	0.0	-0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
FW Valve Out	%	65	50	47	39	33	27	21	16	13	9			
FW Valve Bypassed	Y / N	N	N	N	N	N	N	N	N	N	N			
FW Flow	KPPH	77.8	72.1	62.8	53.5	46.8	38.5	31.6	24.0	16.2	7.1			
FW Header Pressure	PSIG	234	246	245	240	240	238	240	240	235	235			
FW Temperature	DEGF	235	235	235	235	235	235	235	235	236	236			
Stack Temp.	DEGF	523	493	472	452	435	414	396	378	362	357			

REMARKS:

New control system commissioning.

CUSTOMER	UMD		S.O.		DATE	1/21/2014	
ADDRESS	Duluth, MN.		SERVICE ENGINEER		M.N.		
			Coen File	20D-0485-1			
BOILER MFG	Nebraska	TYPE	NS-E-74	BURNER MFG	Coen	TYPE	CPF-27
RATING	80,000 PPH			FUEL	OIL #2	GAS	COAL
CONTROL SYSTEM		POSITIONING		METERING:	Parallel w/ O2 Trim		BOILER# 4

Use 40404 Cap

READING	UNITS												
Steam Pressure, Drum	PSIG	154	150	150	149	142	142	142	143	142	142		
Steam Pressure Header	PSIG	132	133	135	135	133	133	133	133	133	133		
Submaster Output	0-100%	100	90	80	70	60	50	40	30	20	16		
Steam Flow Rcdr.	KPPH	81	78	70	59.5	53	44.5	35	26.5	17.1	13.5		
Oil Flow **	GPM	11-13	10.5-11	9.5-10.5	8.2-9	6.9-7.9	5.8-6.7	4.5-5.4	2.8-3.4	2.2-2.6	1.9-2.2		
Air Flow Rcdr.	0-100%	100	90	80	70	60	50	40	30	20	15		
W.B. Press	INWC	8.4	7.4	6.6	4.5	3.4	2.2	1.2	0.6	0.0	Neg		
Furnace Press.	INWC	4.05	3.5	3.0	1.9	1.4	0.75	0.3	0.0	-0.2	-0.25		
Outlet Press.	IN W.C.	-0.25	-0.3	-0.35	-0.35	-0.32	-0.41	-0.45	-0.38	-0.4	-0.43		
Oil Supply Pressure	PSIG	163	163	163	164	165	166	167	169	171	172		
Regulated Oil Pressure	PSIG	130	128	125	121	116	112	110	106	102	100		
Burner Oil Pressure	PSIG	76	74	72	70	66	64	60	56	49	46		
Atom Steam Supply	PSIG	128	129	132	133	131	131	132	132	132	132		
Burner Steam Pressure	PSIG	87	85	84	82	79	76	74	71	66	63		
Air PV	%	100	90	80	70	60	50	40	30	20	15		
Fuel PV **	%	93-100	82-94	78-84	66-73	56-63	48-55	37-44	28-34	18-21	16-18		
Air Control Out	%	95	87	84	72	63	51	42	33	21	13		
FD Inlet Damper	%	91	75	67	52	43	34	26	20	10	4		
WB Inlet Damper	%	91	75	67	52	43	34	26	20	10	4		
Fuel Control Out	%	100	87	78	68	59	49	39	30	19	0		
Fuel Control Mode	Man / Auto	**Manual only due to oil flow oscillation**											
Oil Valve Out	%	100	85	66	57	47	39	31	23	10	0		Valve P Display
O2 In Situ	%	3.5	3.5	3.6	3.6	3.6	3.6	3.8	4.3	5.0	5.2		Wet Msmt
O2 RSP	%	3.5	3.5	3.5	3.5	3.5	3.5	3.8	4.2	5.0	5.5		
O2 Out	%	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0		
O2 Controller Mode	Man / Auto	Man	Man	Man	Man	Man	Man	Man	Man	Man	Man		
O2 Portable	%	3.8	3.6	4.0	4.1	4.0	4.0	4.2	4.8	5.7	6.1		Dry Msmt
CO Portable	PPM	0	0	0	0	0	0	0	0	0	0		
NOX Portable	PPM	108	107	102	106	114	140	147	134	90	75		
Drum Level	INWC	0.0	-0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
FW Valve Out	%	70	68	53	44	37	31	23	17	13	12		
FW Valve Bypassed	Y / N	N	N	N	N	N	N	N	N	N	N		
FW Header Pressure	PSIG	232	235	240	240	240	236	236	238	238	234		
FW Temperature	DEGF	236	236	236	236	236	236	236	236	236	236		
FW Flow	KPPH	80.4	76.5	68.4	57.6	53.4	41.7	34.9	26.0	20.2	12.5		
Stack Temp.	DEGF	527	517	501	473	450	431	407	388	366	361		

REMARKS:
Oil flowmeter pulse output is too low and causes oscillation in the flow rate.
New control system commissioning.
Until the oil flow transmitter is replaced, oil must be fired in manual.

CUSTOMER	UMD		S.O.		DATE	1/20/2014	
ADDRESS	Duluth, MN.		SERVICE ENGINEER		M.N.		
			Coen File	20D-12496-1			
BOILER MFG	Nebraska	TYPE NS-E-76	BURNER MFG	Coen	TYPE	QLN- 3.4	
RATING	78,500 PPH		FUEL	OIL	GAS	Nat. COAL	
CONTROL SYSTEM		POSITIONING	METERING	Parallel w/ O2 Trim		BOILER#	3

READING	UNITS													
Steam Pressure, Drum	PSIG	155	151	150	146	138	148	144	138	134	135			
Steam Pressure Header	PSIG	137	132	136	134	130	140	137	133	130	133			
Submaster Output	0-100%	95	90	80	70	60	50	40	30	20	10			
Steam Flow Rcdr.	KPPH	73	71.5	68.5	54.6	48.7	39.8	31.8	26.3	15.5	6.6			
Gas Flow Rcdr.	KSCFH	94.6	89.5	79.5	69.5	59.5	49.5	39.5	29.5	19.5	10.3			
Air Flow Rcdr. ***	0-100%	113	107	95	83	72	60	47	36	23	13			
W.B. Press	INWC	10.4	8.2	6.8	5.0	3.5	2.3	1.2	0.4	Sl. -	Sl. -			
Furnace Press.	INWC	3.6	3.0	2.2	1.5	0.95	0.45	0.04	Sl. -	Sl. -	Neg.			
Outlet Press.	IN W.C.	-0.32	-0.30	-0.36	0.38	-0.35	-0.40	-0.41	-0.43	-0.40	-0.35			
Regulated Gas Press	PSIG	20.6	21.4	22.1	22.4	22.6	22.9	23.0	23.0	23.0	23.0			
Inner Spud Pess.	PSIG	6.6	5.8	4.5	3.3	2.3	1.6	1.1	0.6	0.35	~~			
Outer Spud Press.	PSIG	16.9	15.3	12.4	9.6	7.2	5.0	3.3	1.9	0.9	~~			
Core Gas Press.	PSIG	16.9	15.3	12.4	9.6	7.2	5.0	3.3	1.9	0.9	~~			
Air PV	%	95	90	80	70	60	50	40	30	20	10			
Fuel PV	%	95	90	80	70	60	50	40	30	20	10			
Air Control Out	%	87	81	74	65	59	51	43	32	23	1			
Fuel Control Out	%	100	78	62	58	54	51	39	30	23	0			
Gas Valve Out	%	100	44	25	20	16	13	11	8	6	0			Gas X value
O2 In Situ	%	3.4	3.1	3.1	3.0	3.0	3.0	3.0	3.3	4.0	5.3			Wet Msmt
O2 RSP	%	3.0	3.0	3.0	3.0	3.0	3.0	3.1	3.3	4.0	5.1			
O2 Out	%	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0			
O2 Controller Mode	Man / Auto	Man	Man	Man	Man	Man	Man	Man	Man	Man	Man			
O2 Portable	%	4.0	3.8	3.7	3.7	3.8	3.8	3.8	4.1	5.0	6.2			Dry Msmt
CO Portable	PPM	0	0	0	0	0	0	0	0	0	0			
NOX Portable	PPM	34	38	40	43	42	45	50	47	48	15			
Drum Level	INWC	-0.4	0.0	0.1	0.0	0.2	0.0	0.0	0.0	0.1	0.3			
FW Valve Out	%	100	96	88	75	62	58	47	40	25	7			
FW Valve Bypassed	Y / N	Y	N	N	N	N	N	N	N	N	N			
FW Header Pressure	PSIG	241	241	243	254	256	253	250	244	245	245			
FW Temperature	DEGF	234	234	234	235	236	236	236	236	236	236			
FW Flow	KPPH	80	72	65	55.5	49	41.5	34.5	25	17	8			
Stack Temp.	DEGF	461	452	441	427	413	404	388	375	365	361			

REMARKS:
Port handle up=gas position.
New control system commissioning.
*** A.F recorder scaled to provide separation between pens.

CUSTOMER	UMD	S.O.		DATE	1/21/2014
ADDRESS	Duluth, MN.	SERVICE ENGINEER		M.N.	
		Coen File	20D-12496-1		
BOILER MFG	Nebraska TYPE NS-E-76	BURNER MFG	Coen	TYPE	QLN- 3.4
RATING	78,500 PPH	FUEL	OIL #2	GAS	COAL
CONTROL SYSTEM	POSITIONING	METERING:	Parallel w/ O2 Trim		BOILER# 3

Use 30108 Cap and **align cap drilling to air lanes in register**.
IM Nozzle body, #8 Mixer w/ Whirlplate, 0.270 oil restrictor

READING	UNITS													
Steam Pressure, Drum	PSIG	155	154	147	148	142	139	139	140	139	139			
Steam Pressure Header	PSIG	133	139	133	135	133	132	132	134	133	134			
Submaster Output	0-100%	100	90	80	70	60	50	40	30	20	12			
Steam Flow Rcdr.	KPPH	83	69	62	55.5	45.5	36	30	25.2	16	7.5			
Oil Flow	GPM	12.2	11.0	9.8	8.6	7.4	6.1	4.9	3.6	2.4	1.5			
Air Flow Rcdr. ***	0-100%	120	108	96	84	72	60	48	36	24	14			
W.B. Press	INWC	10.8	7.7	6.3	4.7	3.2	2.0	1.0	0.3	Sl. -	Neg.			
Furnace Press.	INWC	4.9	3.4	2.7	1.9	1.2	0.6	0.2	Sl. -	Sl. -	Neg.			
Outlet Press.	IN W.C.	-0.3	-0.35	-0.4	-0.4	-0.40	-0.4	-0.35	-0.38	-0.35	Neg.			
Oil Supply Pressure	PSIG	116	121	123	126	129	132	134	137	139	141			
Burner Oil Pressure	PSIG	105	103	93	83	72	62	52	45	37	30			
Burner Steam Pressure	PSIG	125	123	115	105	93	82	72	65	56	47			
Air PV	%	100	90	80	70	60	50	40	30	20	12			
Fuel PV	%	100	90	80	70	60	50	40	30	20	12			
Air Control Out	%	99	83	76	68	60	52	44	32	24	20			
Fuel Control Out	%	100	87	78	68	59	49	39	30	19	0			
Oil Valve Out	%	77	66	57	50	44	37	31	25	17	10			Oil X value
O2 In Situ	%	3.6	3.5	3.6	3.6	3.5	3.6	3.7	4.1	5.1	5.7			Wet Msmt
O2 RSP	%	3.5	3.5	3.5	3.5	3.5	3.5	3.7	4.0	5.0	5.5			
O2 Out	%	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0			
O2 Controller Mode	Man / Auto	Man	Man	Man	Man	Man	Man	Man	Man	Man	Man			Dry Msmt
O2 Portable	%	4.3	4.2	4.2	4.2	4.3	4.5	4.5	4.9	6.3	6.5			
CO Portable	PPM	120	39	19	3	0	0	0	0	0	23			
NOX Portable	PPM	93	103	103	105	109	117	118	107	67	27			
Drum Level	INWC	-0.2	0.1	0.0	0.0	0.1	0.4	0.3	0.1	0	0.1			
FW Valve Out	%	100	86	83	79	63	50	46	38	25	12			
FW Valve Bypassed	Y / N	Y	N	N	N	N	N	N	N	N	N			
FW Header Pressure	PSIG	262	280	250	250	255	255	255	252	252	252			
FW Temperature	DEGF	235	236	236	236	236	236	236	236	236	236			
FW Flow	KPPH	82	73	60.5	57.5	49	38	32	27	18	3.5			
Stack Temp.	DEGF	491	471	455	440	423	405	390	379	366	358			

REMARKS:
Port handle down = Oil position.
New control system commissioning.
*** A.F recorder scaled to provide separation between pens.

CUSTOMER	UMD	S.O.	13-0380	DATE	3/19/2014
ADDRESS	Duluth, MN.	SERVICE ENGINEER		M.N.	
		Coen File	20D-12531-1		
BOILER MFG	Nebraska	TYPE	NS-c-53	BURNER MFG	Coen
RATING	40,000 PPH	FUEL	OIL	GAS	Nat. COAL
CONTROL SYSTEM		METERING:	Parallel		BLR # 2

READING	UNITS													
Date														
Data As Found/Final														
Steam Pressure, Drum	PSIG	144	150	141	145	144	142	142	142	142	140			Boiler Gauge
Steam Pressure Header	PSIG	128.6	135.9	129.4	133.3	132.2	132.4	132.6	132.6	132.9	131.4			Panel Indicator
Submaster Output	0-100%	100	90	80	70	60	50	40	30	20	10			Siemens 353
Steam Flow Rcdr.	KPPH	41.8	35.1	32.8	29.6	26.4	21.5	17.5	13.1	8.6	5.6			RAI Recorder
Gas Flow Controller PV	%	100	90	80	70	60	50	40	30	20	10			Siemens 353
Gas Flow Rcdr. EU	KSCFH	50.3	45.4	40.5	35.3	30.2	25.2	20.2	15.1	10.1	5.1			RAI Recorder
Air Flow Controller PV	%	99	90	80	70	60	50	40	30	20	10			Siemens 353
Air Flow Rcdr.	%	99	90	80	70	60	50	40	30	20	10			RAI Recorder
W.B. Press, Manometer	INWC	7.6	6.3	5.5	4.1	3	2	1.2	0.6	0.1	0			Panel Manometer
Furnace Press.	INWC	2.4	1.8	1.4	1	0.6	0.3	0	-0.1	-0.2	-0.2			Panel Manometer
Outlet Press.	IN W.C.	-0.1	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.35	-0.4	-0.4			Panel Manometer
Gas Supply Press	PSIG	25	25	26.0	26.5	27	27	27.4	27.4	28	28			Burner Gauge
Regulated Gas Pressure	PSIG	21	22	22.8	24	24	24	24.2	24.5	24.5	24.5			Panel Gauge
Inner Spud Pess.	PSIG	17	15.0	12.5	10.0	7.8	5.5	4	2.5	1.2	0.2			Burner Gauge
Outer Spud Press.	PSIG	5.2	4.1	3.2	2.5	1.8	1.2	0.8	0.5	0.2	0.1			Burner Gauge
Core Gas Press	PSIG	17	15.0	12.5	10.0	7.8	5.5	4	2.5	1.2	0.2			Burner Gauge
Air Control Out	%	100	82	74	65	55	48	38	28	19.0	0			Siemens 353
Fuel Control Out	%	99	82	80.0	71	59	49	38	27	18.0	0			Siemens 353
Gas Valve Out	%	99	82	80	72	59	50	38	27	18	0			Siemens 353
O2 In Situ Cntlr **(WET)**	%	2.5	2.5	2.6	2.6	2.5	3.0	3.5	4.2	4.9	5.5			Siemens 353
O2 RSP **(WET)**	%	2.5	2.5	2.5	2.5	2.5	3.0	3.5	4.25	5.0	5.5			Siemens 353
O2 Controller Mode	M/A	M	M	M	M	M	M	M	M	M	M			Siemens 353
O2 Out	%	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0			50.0 = 1.000 AF Multiplier
O2 Portable **(DRY)**	%	3.2	3.3	3.4	3.3	3.2	3.8	4.1	5.0	6.2	6.4			TESTO Portable Gas Analyzer
CO Portable	PPM	0	0	0	0	0	0	0	0	0	0			TESTO Portable Gas Analyzer
NOX Portable	PPM	67	74	74	72	77	65	64	57	48	49			TESTO Portable Gas Analyzer
Comb. Efficiency	%	82.7	82.7	83	83.2	83.5	83.7	83.9	83.9	83.9	84			TESTO Portable Gas Analyzer
NOx, @ 3% O_2	PPM	67.8	75.3	75.7	73.2	77.9	68.0	68.2	64.2	58.4	60.5			Calculated
NOX Emission Rate	#/MBTUH	0.081	0.090	0.091	0.088	0.093	0.081	0.082	0.077	0.070	0.072			Calculated
Drum Level	INWC	0	-0.1	0.0	0	0.1	0.1	0.0	0.0	0.0	0.0			Siemens 353
FW Valve Out	%	81	79	70	67	62	56	49	39	27	18			Siemens 353
FW Valve Bypassed	Yes/No	No	No	No	No	No	No	No	No	No	No			
FW Flow	KPPH	42.4	40.3	33.7	32	28.1	22.4	18.6	13.5	8.7	3.5			Meter Head
FW Header Pressure	PSIG	232	232	232	232	232	234	234	234	234	236			Panel Gauge
Stack Temp.	DEGF	524	514	493	481	462	444	424	405	376	360			Panel Indicator

REMARKS: Port handle up = Gas Position.

Air Flow Oscillates with actuator in manual @ 20%

CUSTOMER	UMD	S.O.	13-0380	DATE	3/20/2014
ADDRESS	Duluth, MN.	SERVICE ENGINEER		M.N.	
		Coen File	20D-12531-1		
BOILER MFG	Nebraska	TYPE	NS-C-53	BURNER MFG	Coen
RATING	40000 PPH			FUEL:	OIL #2 GAS COAL
CONTROL SYSTEM		POSITIONING	METERING	Parallel	BLR # 2

40282 cap, Standard nozzle body,30 hole, #6 sleeved mixer (no whirlplate), 3/16" oil restrictor.

READING	UNITS													DATA SOURCE
Steam Pressure, Drum	PSIG	145	142	140	148	142	142	142	142	142	142			Boiler Gauge
Steam Pressure Header	PSIG	130.1	128.7	128.6	136.6	131.5	132.2	133.8	133.4	133	132.8			Panel Indicator
Submaster Output	0-100%	98	90	80	70	60	50	40	30	20	15			Siemens 353
Steam Flow Rcdr.	KPPH	39.7	35.6	32.6	27.7	24.6	19.6	14.5	10.8	7.2	5.5			RAI Recorder
Oil Flow Controller PV	%	82	80	74	70	58	48	38	27	14	0			Siemens 353
Oil Flow EU	GPM	6.0	5.5	4.9	4.3	3.7	3.1	2.5	1.9	1.2	1			Siemens 353 Oil Valve Cntlr
Air Flow Controller PV	%	97.0	90.0	80.0	70.0	60.0	50.0	40.0	30.0	20.0	14.0			Siemens 353
Air Flow Rcdr.	0-100%	97	90	80	70	60	50	40	30	19	15			RAI Recorder
W.B. Press Manometer	INWC	7.5	6.5	5.0	3.5	2.5	1.5	0.7	0.3	0.0	0.0			Panel Manometer
Furnace Press.	INWC	2.6	2.2	1.5	1.0	0.6	0.3	0.0	-0.1	-0.2	-0.2			Panel Manometer
Outlet Press.	INWC	-0.1	-0.1	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3			Panel Manometer
Oil Supply Press. (Reg. Out	PSIG	116	118	120	120	120	122	122	124	124	124			Burner Gauge
Burner Oil Pressure	PSIG	82	82	74	70	60	55	49	45	40	36			Burner Gauge
Burner Steam Pressure	PSIG	80	82	76	74	70	65	60	58	54	50			Burner Gauge
Fuel PV	%	98.0	90.0	80.0	70.0	60.0	50.0	39.0	30.0	19.0	15.0			Siemens 353
Air Control Out	%	100.0	84.0	73.0	62.0	53.0	42.0	33.0	25.0	16.0	10.0			Siemens 353
Fuel Control Out	%	82.0	81.0	74.0	70.0	57.0	47.0	39.0	27.0	14.0	0.0			Siemens 353
Oil Valve Out	%	82.0	81.0	74.0	69.0	58.0	47.0	39.0	27.0	14.0	0.0			Siemens 353
O2 In Situ, Cntlr **(WET)**	%	3.5	3.6	3.5	3.4	3.5	4.0	4.5	5.1	6.0	6.8			Siemens 353
O2 RSP **(WET)**	%	3.5	3.5	3.5	3.5	3.5	4.0	4.5	5.0	6.0	6.5			Siemens 353
O2 Controller Mode	M/A	M	M	M	M	M	M	M	M	M	M	M	M	Siemens 353
O2 Out	%	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0 = 1.000 AF Multiplier
O2 Portable **(DRY)**	%	4.7	5.0	4.8	4.4	4.6	5.0	5.5	6.2	5.1	8.8			Testo Portable Gas Analyzer
CO Portable	PPM	1	0	0	0	0	0	0	0	0	1			Testo Portable Gas Analyzer
NOX Portable	PPM	88	92	100	108	113	111	106	88	74	26			Testo Portable Gas Analyzer
NOX. @ 3% O2	PPM	97.2	103.6	111.2	117.2	124.1	125.0	123.2	107.2	83.8	38.5			Calculated
NOX Emission Rate	#/MBTUH	0.126	0.135	0.144	0.152	0.161	0.162	0.160	0.139	0.109	0.050			Calculated
Efficiency % Testo	%	82.0	81.9	82.3	83.0	83.0	83.3	83.6	83.5	84.6	85.6			Testo Portable Gas Analyzer
Drum Level	INWC	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0			Siemens 353
FW Valve Out	%	80	73	69	67	60	53	44	34	24	21			Siemens 353
FW Valve Bypassed	Yes/No	No	No	No	No	No	No	No	No	No	No	No	No	
FW Header Pressure	PSIG	232	234	234	232	234	234	234	234	232	234			Panel Gauge
FW Flow	KGPH	39.4	35.2	33.8	30.8	26.2	20.6	16.6	12.1	8	6.1			Emco Flow Meter
Stack Temp.	DEGF	533	524	504	484	462	439	415	396	377	363			Panel Indicator

REMARKS:

Port handle down = oil position.
Draft gauges were re-zeroed.
Air flow transmitter zero was set. A.F. xmtr. to Air Controller IN1 (air PV) was calibrated.

Submaster output to Air & Fuel controllers (air & fuel RSP) was calibrated.
O2 analyzer was calibrated. O2 controller output to Air Controller IN3 (AF multiplier) was calibrated.
Fuel controller output to Oil Valve controller was calibrated.
Air controller output 4-20 madc was calibrated.
WB inlet damper actuator was calibrated.
Oil valve controller output was calibrated
Oil valve I/P was calibrated