Item	Unit	Measuring Point	Recording		B.E.T.	ANN High	ANN Low
Test Number			E-11	E-13			
Date			8/11	8/11			
Time			09:30	11:30			
A Lower Eco outlet draft	mmAq	DL E10F10	-93.2	-107.3	-94		
B Lower Eco outlet draft	mmAq	DL E10F20	-93.5	-105.2	-96.5		
A AH gas side diff. press.	mmAq	DL A53D10	138.8	159.2	119.4		
B AH gas side diff. press.	mmAq	DL A57D10	133.4	141.5	114.3		
Primary air press.	mmAq	DL A40P10	1,585	1,561	1,496.2		
A IDF inlet draft	mmAq	DL A22F10	-321.8	-353.3	-297.2		
B IDF inlet draft	mmAq	DL A26F10	-319.5	-352.6	-294.6		
A AH inlet air temp.	°C	DL A52T10	34.7	37.2	35.1		
B AH inlet air temp.	°C	DL A56T10	34.8	37.5	33.9		
A AH outlet air temp.	°C	DL A52T20	330.6	339	338.3		
B AH outlet air temp.	°C	DL A56T20	322.5	332.6	337.4		
A AH inlet gas temp.	°C	DL A53T10	366.8	337.4	365.4		
B AH inlet gas temp.	°C	DL A57T10	357.6	370.4	367.9		
A AH outlet gas temp.	°C	DL A53T20	139.8	144.3	147.4		
B AH outlet gas temp.	°C	DL A57T20	144.4	150	150.3		
A Precip outlet gas temp.	°C	DL C10T10	136.3	140.2	143.6		
B Precip outlet gas temp.	°C	DL C10T20	136.6	140.8	144.4		
A IDF motor amp.	A	CR indicator	245	257.5	236		
B IDF motor amp.	A	CR indicator	240	250	230		
A FDF motor amp.	A	CR indicator	82.5	85	85		
B FDF motor amp.	A	CR indicator	82.5	85	86		
A Pri. air fan motor amp.	A	CR indicator	230	230	183		
B Pri. air fan motor amp.	A	CR indicator	230	230	196		
A IDF inlet vane open	%	CR controller	70	75	70		
B IDF inlet vane open	%	CR controller	75	77.5	73		
A FDF inlet vane open	%	CR controller	67.5	70	74		
B FDF inlet vane open	%	CR controller	65	67.5	70		
SH pass damper open	%	CR controller	70	75	74		
RH pass damper open	%	CR controller	47.5	40	75		
Pri. air capacity damper open	%	CR controller	95	95			
O_2 analysis by Orsat (A)	%						
O_2 analysis by Orsat (B)	%						

B.E.T.: Boiler Efficiency Test

Item	Unit	Measuring Point	Recording		B.E.T.	ANN High	ANN Low
Test Number			E-11	E-13			
Date			8/11	8/11			
Time			09:30	11:30			
A Mill coal fineness	%						
A Mill coal feeder flow	T/H	DL B11F10	46.80	47.98	36.7		
A Mill inlet air temp.	°C	DL B13T10	260	278	196.2		
A Mill air coal outlet temp.	°C	DL B13T20	75	75	77.9		
A Mill diff. draft	mmAq	CR indicator	560	570	527.8		
A Mill primary air flow	T/H	DL B13F10	100	102.2	86.0		31.3
A Mill hot air damper open	%	local	28	26			
A Mill cold air damper open	%	local	18	17			
A Mill capacity damper open	%	local	60	67			
A Mill motor amp.	A	CR indicator	80	85	86		
A Mill classifier open	%				60		
B Mill coal fineness	%						
B Mill coal feeder flow	T/H	DL B21F10	48.59	49.27	36.0		
B Mill inlet air temp.	°C	DL B23T10	275	286	174.6		
B Mill air coal outlet temp.	°C	DL B23T20	75	75	78.9		
B Mill differential draft	mmAq	CR indicator	600	620	500.0		
B Mill primary air flow	T/H	DL B23F10	103.1	104.9	86.7		31.3
B Mill hot air damper open	%	local	36	38			
B Mill cold air damper open	%	local	10	10	40		
B Mill capacity damper open	%	local	76	76			
B Mill motor amp.	A	CR indicator	85	85	90		
B Mill classifier open	%				60		

B.E.T.: Boiler Efficiency Test

Item	Unit	Measuring Point	Recording		B.E.T.	ANN High	ANN Low
Test Number			E-11	E-13			
Date			8/11	8/11			
Time			09:30	11:30			
C Mill coal fineness	%						
C Mill coal feeder flow	T/H	DL B31F10	46.93	45.71	37.1		
C Mill inlet air temp.	°C	DL B33T10	267	268	174.2		
C Mill air coal outlet temp.	°C	DL B33T20	74	75	80.0		
C Mill differential draft	mmAq	CR indicator	580	580	507.4		
C Mill primary air flow	T/H	DL B33F10	99	98.6	82.5		31.3
C Mill hot air damper open	%	local	46	40			
C Mill cold air damper open	%	local	12	15	62		
C Mill capacity damper open	%	local	50	48			
C Mill motor amp.	A	CR indicator	85	85	92		
C Mill classifier open	%				60		
D Mill coal fineness	%						
D Mill coal feeder flow	T/H	DL B41F10			-		
D Mill inlet air temp.	°C	DL B43T10			-		
D Mill air coal outlet temp.	°C	DL B43T20			-		
D Mill differential draft	mmAq	CR indicator			-		
D Mill primary air flow	T/H	DL B43F10			-		31.3
D Mill hot air damper open	%	local			-		
D Mill cold air damper open	%	local			-		
D Mill capacity damper open	%	local			-		
D Mill motor amp.	A	CR indicator			-		
D Mill classifier open	%				-		

B.E.T.: Boiler Efficiency Test

Item	Unit	Measuring Point	Recording		B.E.T.	ANN High	ANN Low
Test Number			E-11	E-13			
Date			8/11	8/11			
Time			09:30	11:30			
A Mill hot air damper open	%	local	28	26			
A Mill cold air damper open	%	local	18	17			
A Mill capacity damper open	%	local	60	67			
A Mill classifier vane open	%	local					
B Mill hot air damper open	%	local	36	38			
B Mill cold air damper open	%	local	10	10			
B Mill capacity damper open	%	local	76	76			
B Mill classifier vane open	%	local					
C Mill hot air damper open	%	local	46	40			
C Mill cold air damper open	%	local	12	15			
C Mill capacity damper open	%	local	50	48			
C Mill classifier vane open	%	local					
D Mill hot air damper open	%	local					
D Mill cold air damper open	%	local					
D Mill capacity damper open	%	local					
D Mill classifier vane open	%	local					

B.E.T.: Boiler Efficiency Test

BOILER METAL TEMPERATURE

(III-1)

Item		Unit	Measuring Point	Recording		B.E.T.	ANN High	ANN Low
Test Number				E-11	E-13			
Date				8/11	8/11			
Time				09:30	11:30			
Div. wall out tube metal temp.	1	°C	DL E51T10	451.5	469.5		538	
Div. wall out tube metal temp.	2	°C	DL E51T11	477.1	497.7		538	
Div. wall out tube metal temp.	3	°C	DL E51T12	530.2	532.0		538	
Div. wall out tube metal temp.	4	°C	DL E51T13	458.8	482.2		538	
Div. wall out tube metal temp.	5	°C	DL E51T14	448.2	473.5		538	
Div. wall out tube metal temp.	6	°C	DL E51T15	458.0	482.4		538	
Div. wall out tube metal temp.	7	°C	DL E51T16	444.4	471.1		538	
Div. wall out tube metal temp.	8	°C	DL E51T17	460.4	490.6		538	
Div. wall out tube metal temp.	9	°C	DL E51T18	450.3	473.0		538	
Div. wall out tube metal temp.	10	°C	DL E51T19	478.7	500.7		538	
Final SH tube metal temp.	1	°C	DL E61T10	542.0	546.2		602	
Final SH tube metal temp.	2	°C	DL E61T11	521.9	523.6		602	
Final SH tube metal temp.	3	°C	DL E61T12	558.9	563.5		602	
Final SH tube metal temp.	4	°C	DL E61T13	541.1	541.5		602	
Final SH tube metal temp.	5	°C	DL E61T14	540.6	541.0		602	
Final SH tube metal temp.	6	°C	DL E61T15	456.5	483.1		602	
Final SH tube metal temp.	7	°C	DL E61T16	521.1	529.0		602	
Final SH tube metal temp.	8	°C	DL E61T17	510.0	516.4		602	
Final SH tube metal temp.	9	°C	DL E61T18	513.1	518.3		602	
Final SH tube metal temp.	10	°C	DL E61T19	509.1	515.9		602	
Final SH tube metal temp.	11	°C	DL E61T20	535.4	535.8		602	
Final SH tube metal temp.	12	°C	DL E61T21	513.9	512.0		602	
Final SH tube metal temp.	13	°C	DL E61T22	561.7	564.8		602	
Final SH tube metal temp.	14	°C	DL E61T23	536.4	535.5		602	
Final SH tube metal temp.	15	°C	DL E61T24	548.6	550.2		602	
Final SH tube metal temp.	16	°C	DL E61T25	527.5	526.1		602	

B.E.T.: Boiler Efficiency Test

Item		Unit	Measuring Point	Recording		B.E.T.	ANN High	ANN Low
Test Number				E-11	E-13			
Date				8/11	8/11			
Time				09:30	11:30			
RH out tube metal temp.	1	°C	DL E71T10	501.0	501.5		599	
RH out tube metal temp.	2	°C	DL E71T11	483.2	484.1		599	
RH out tube metal temp.	3	°C	DL E71T12	598.6	597.9		599	
RH out tube metal temp.	4	°C	DL E71T13	579.1	580.1		599	
RH out tube metal temp.	5	°C	DL E71T14	554.9	550.5		599	
RH out tube metal temp.	6	°C	DL E71T15	554.5	549.1		599	
RH out tube metal temp.	7	°C	DL E71T16	513.9	513.4		599	
RH out tube metal temp.	8	°C	DL E71T17	492.4	497.0		599	
RH out tube metal temp.	9	°C	DL E71T18	468.5	487.6		599	
RH out tube metal temp.	10	°C	DL E71T19	454.1	468.6		599	
RH out tube metal temp.	11	°C	DL E71T20	475.3	490.4		599	
RH out tube metal temp.	12	°C	DL E71T21	457.2	473.3		599	
RH out tube metal temp.	13	°C	DL E71T22	489.8	499.1		599	
RH out tube metal temp.	14	°C	DL E71T23	472.0	481.5		599	
RH out tube metal temp.	15	°C	DL E71T24	510.7	518.4		599	
RH out tube metal temp.	16	°C	DL E71T25	534.4	541.3		599	
RH out tube metal temp.	17	°C	DL E71T26	592.6	598.2		599	
RH out tube metal temp.	18	°C	DL E71T27	583.4	588.5		599	
RH out tube metal temp.	19	°C	DL E71T28	554.1	560.8		599	
RH out tube metal temp.	20	°C	DL E71T29	519.4	526.8		599	

B.E.T.: Boiler Efficiency Test

FURNACE TEMPERATURE

(IV-1)

Item	Unit	Measuring Point	Recording		B.E.T.	ANN High	ANN Low
Test Number			E-11	E-13			
Date			8/11	8/11			
Time			09:30	11:30			
7F Mezz. Front Right 2nd Port	°C	local	1,200	1,210			
7F Mezz. Front Center Port	°C	local	1,250	1,240			
7F Mezz. Front Left 2nd Port	°C	local	1,300	1,275			
8F Left near S/B 6-L	°C	local	1,120	1,140			
8F Right near S/B 6-R	°C	local	1,125	1,120			
8F Rear Left 2nd Port	°C	local	990	1,015			
9F Left near S/B 4-L	°C	local	1,000	1,000			
9F Right near S/B 4-R	°C	local	1,010	990			
9F Front Left 2nd Port	°C	local	1,010	1,020			
9F Front Center Port	°C	local	1,005	1,015			
9F Front Right 2nd Port	°C	local	1,010	1,010			

B.E.T.: Boiler Efficiency Test

Item	Unit	Measuring Point	Recording		B.E.T.	ANN High	ANN Low
Test Number			E-11	E-13			
Date			8/11	8/11			
Time			09:30	11:30			
A-1 Air resistor open		local	5.0	5.0			
A-2 Air resistor open		local	5.2	4.8			
A-3 Air resistor open		local	4.0	4.0			
A-4 Air resistor open		local	3.9	3.9			
B-1 Air resistor open		local	5.0	5.0			
B-2 Air resistor open		local	4.3	4.5			
B-3 Air resistor open		local	4.5	4.3			
B-4 Air resistor open		local	5.0	5.0			
C-1 Air resistor open		local	5.1	4.9			
C-2 Air resistor open		local	5.1	4.9			
C-3 Air resistor open		local	5.2	5.1			
C-4 Air resistor open		local	4.0	4.0			
D-1 Air resistor open		local	2.5	2.5			
D-2 Air resistor open		local	0.5	0.5			
D-3 Air resistor open		local	0.5	0.5			
D-4 Air resistor open		local	1.0	1.0			
Airport damper open (Right)		local	25	25			
Airport damper open (Left)		local	25	25			

B.E.T.: Boiler Efficiency Test

Item	Unit	Measuring Point	Recording		B.E.T.	ANN High	ANN Low
Test Number			E-11	E-13			
Date			8/11	8/11			
Time			09:30	11:30			
Burner Barrel A-1	°C	DL B60T10	296.0	305.0		400	
Burner Barrel A-1	°C	DL B60T11	205.0	211.4		400	
Burner Barrel A-1	°C	DL B60T12	288.2	296.8		400	
Burner Barrel A-1	°C	DL B60T13	277.3	285.2		400	
Burner Barrel A-2	°C	DL B60T20	299.5	308.3		400	
Burner Barrel A-2	°C	DL B60T21	232.0	240.1		400	
Burner Barrel A-2	°C	DL B60T22	255.7	263.4		400	
Burner Barrel A-2	°C	DL B60T23	277.1	285.4		400	
Burner Barrel A-3	°C	DL B60T30	262.2	271.8		400	
Burner Barrel A-3	°C	DL B60T31	227.5	236.6		400	
Burner Barrel A-3	°C	DL B60T32	284.3	293.4		400	
Burner Barrel A-3	°C	DL B60T33	290.5	300.2		400	
Burner Barrel A-4	°C	DL B60T40	294.6	303.7		400	
Burner Barrel A-4	°C	DL B60T41	174.1	179.8		400	
Burner Barrel A-4	°C	DL B60T42	286.2	295.8		400	
Burner Barrel A-4	°C	DL B60T43	299.3	309.0		400	
Burner Barrel B-1	°C	DL B61T10	248.1	258.5		400	
Burner Barrel B-1	°C	DL B61T11	262.6	272.0		400	
Burner Barrel B-1	°C	DL B61T12	296.0	305.8		400	
Burner Barrel B-1	°C	DL B61T13	273.0	282.4		400	
Burner Barrel B-2	°C	DL B61T20	269.8	280.4		400	
Burner Barrel B-2	°C	DL B61T21	232.0	240.0		400	
Burner Barrel B-2	°C	DL B61T22	294.7	305.5		400	
Burner Barrel B-2	°C	DL B61T23	271.5	282.1		400	
Burner Barrel B-3	°C	DL B61T30	267.3	279.0		400	
Burner Barrel B-3	°C	DL B61T31	214.6	223.7		400	
Burner Barrel B-3	°C	DL B61T32	286.2	297.4		400	
Burner Barrel B-3	°C	DL B61T33	271.0	282.7		400	
Burner Barrel B-4	°C	DL B61T40	260.1	271.3		400	
Burner Barrel B-4	°C	DL B61T41	254.0	264.3		400	
Burner Barrel B-4	°C	DL B61T42	276.6	288.3		400	
Burner Barrel B-4	°C	DL B61T43	277.0	287.8		400	

B.E.T.: Boiler Efficiency Test

Item	Unit	Measuring Point	Recording		B.E.T.	ANN High	ANN Low
Test Number			E-11	E-13			
Date			8/11	8/11			
Time			09:30	11:30			
Burner Barrel C-1	°C	DL B62T10	272.9	282.1		400	
Burner Barrel C-1	°C	DL B62T11	265.9	275.3		400	
Burner Barrel C-1	°C	DL B62T12	276.5	285.9		400	
Burner Barrel C-1	°C	DL B62T13	267.5	276.9		400	
Burner Barrel C-2	°C	DL B62T20	296.0	305.7		400	
Burner Barrel C-2	°C	DL B62T21	239.6	248.8		400	
Burner Barrel C-2	°C	DL B62T22	282.8	293.2		400	
Burner Barrel C-2	°C	DL B62T23	314.3	323.2		400	
Burner Barrel C-3	°C	DL B62T30	56.9	57.2		400	
Burner Barrel C-3	°C	DL B62T31	67.1	67.6		400	
Burner Barrel C-3	°C	DL B62T32	305.6	316.0		400	
Burner Barrel C-3	°C	DL B62T33	256.3	266.1		400	
Burner Barrel C-4	°C	DL B62T40	273.2	282.9		400	
Burner Barrel C-4	°C	DL B62T41	268.2	279.1		400	
Burner Barrel C-4	°C	DL B62T42	278.2	288.3		400	
Burner Barrel C-4	°C	DL B62T43	291.7	302.0		400	
Burner Barrel D-1	°C	DL B63T10	348.1	355.6		400	
Burner Barrel D-1	°C	DL B63T11	313.4	322.4		400	
Burner Barrel D-1	°C	DL B63T12	353.8	361.7		400	
Burner Barrel D-1	°C	DL B63T13	359.3	366.3		400	
Burner Barrel D-2	°C	DL B63T20	360.0	366.5		400	
Burner Barrel D-2	°C	DL B63T21	305.3	314.1		400	
Burner Barrel D-2	°C	DL B63T22	379.4	385.0		400	
Burner Barrel D-2	°C	DL B63T23	358.9	364.4		400	
Burner Barrel D-3	°C	DL B63T30	-	-		400	
Burner Barrel D-3	°C	DL B63T31	299.9	308.8		400	
Burner Barrel D-3	°C	DL B63T32	331.0	340.3		400	
Burner Barrel D-3	°C	DL B63T33	364.1	369.8		400	
Burner Barrel D-4	°C	DL B63T40	347.2	355.1		400	
Burner Barrel D-4	°C	DL B63T41	302.9	311.6		400	
Burner Barrel D-4	°C	DL B63T42	358.0	366.1		400	
Burner Barrel D-4	°C	DL B63T43	349.9	357.5		400	

B.E.T.: Boiler Efficiency Test

Combustion Test of Calaca Unit I Boiler

(I-1)

Item		Unit	Measuring Point	Recording		B.E.T.	ANN High	ANN Low
Test Number				D-6	D-8			
Date				8/15	8/15			
Time				09:30	11:30			
Coal blend ratio	(S/A)							
Generator load		MW	DL Q20W10	218.9	218.0	300		
Main steam flow		T/H	DL G21H10	684	682	913.3		
Feed water flow		T/H	DL E15F10	629	617	881.5		
SH spray flow		T/H	DL E55F10	58.4	64.1	56.4		
Drum level		mm	DL E20L10	-1.9	-1.1	-11.7	127	-203
Drum pressure		kg/cm²	DL E20P10	174.7	173.6	187.2	200	
Turbine inlet steam press.		kg/cm²	DL G21P10	167.6	166.8		171	
Final SH outlet temperature		°C	DL E60T10	538.0	541.1	542.5		
RH outlet temperature		°C	DL E74T10	535.3	541.9	541.6		
Eco. inlet feedwater temp.		°C	DL E10T10A	255.5	256.1			
A Hot primary air flow		T/H	DL A42F10	172	159			
B Hot primary air flow		T/H	DL A46F10	150	157			
A Tempering air flow		T/H	DL A42F20	19	0			
B Tempering air flow		T/H	DL A46F20	22	25			
A Secondary air flow		T/H	DL A52F10	244	266			
B Secondary air flow		T/H	DL A52F10	268	287			
Total air flow		T/H	DL A60G10	876	895			
Boiler exit gas O_2	(A)	%	DL A80C10	3.09	3.59	-	5.88	2.94
Boiler exit gas O_2	(B)	%	DL A80C20	-	-	3.22	5.88	2.94
Total fuel flow		T/H	DL B10G10A	122.96	123.05	110.4		
A FDF discharge draft		mmAq	DL A12F10	34.6	51.2	233.7		
B FDF discharge draft		mmAq	DL A16F10	34.4	49.0	231.1		
Wind box draft		mmAq	DL A70F10	-4.7	7.6	114.3		
Furnace draft		mmAq	DL A80F10	-13.1	-9.6	-20.3		

B.E.T.: Boiler Efficiency Test

Item	Unit	Measuring Point	Recording		B.E.T.	ANN High	ANN Low
Test Number			D-6	D-8			
Date			8/15	8/15			
Time			09:30	11:30			
A Lower Eco outlet draft	mmAq	DL E10F10	-71.1	-67.9	-94		
B Lower Eco outlet draft	mmAq	DL E10F20	-69.7	-68.3	-96.5		
A AH gas side diff. press.	mmAq	DL A53D10	83.1	95.6	119.4		
B AH gas side diff. press.	mmAq	DL A57D10	82.0	93.2	114.3		
Primary air press.	mmAq	DL A40P10	1,468	1,486	1,496.2		
A IDF inlet draft	mmAq	DL A22F10	-210.6	-229.9	-297.2		
B IDF inlet draft	mmAq	DL A26F10	-208.7	-227.4	-294.6		
A AH inlet air temp.	°C	DL A52T10	36.9	36.9	35.1		
B AH inlet air temp.	°C	DL A56T10	38.1	37.3	33.9		
A AH outlet air temp.	°C	DL A52T20	305.3	311.6	338.3		
B AH outlet air temp.	°C	DL A56T20	301.0	308.3	337.4		
A AH inlet gas temp.	°C	DL A53T10	333.2	342.4	365.4		
B AH inlet gas temp.	°C	DL A57T10	326.7	337.7	367.9		
A AH outlet gas temp.	°C	DL A53T20	131.2	132.1	147.4		
B AH outlet gas temp.	°C	DL A57T20	137.8	138.9	150.3		
A Precip outlet gas temp.	°C	DL C10T10	127.5	128.3	143.6		
B Precip outlet gas temp.	°C	DL C10T20	132.4	132.5	144.4		
A IDF motor amp.	A	CR indicator	220	220	236		
B IDF motor amp.	A	CR indicator	218	218	230		
A FDF motor amp.	A	CR indicator	72	72	85		
B FDF motor amp.	A	CR indicator	70	72	86		
A Pri. air fan motor amp.	A	CR indicator	238	238	183		
B Pri. air fan motor amp.	A	CR indicator	238	238	196		
A IDF inlet vane open	%	CR controller	60	61	70		
B IDF inlet vane open	%	CR controller	66	68	73		
A FDF inlet vane open	%	CR controller	47	47	74		
B FDF inlet vane open	%	CR controller	44	49	70		
SH pass damper open	%	CR controller	57	68	74		
RH pass damper open	%	CR controller	71	50	75		
Pri. air capacity damper open	%	CR controller	96.93	96.94			
O_2 analysis by Orsat (A)	%						
O_2 analysis by Orsat (B)	%						

B.E.T.: Boiler Efficiency Test

Item	Unit	Measuring Point			Recording	B.E.T.	ANN High	ANN Low
Test Number			D-6	D-8				
Date			8/15	8/15				
Time			09:30	11:30				
A Mill coal fineness	%							
A Mill coal feeder flow	T/H	DL B11F10	33.65	33.82		36.7		
A Mill inlet air temp.	°C	DL B13T10	284	293		196.2		
A Mill air coal outlet temp.	°C	DL B13T20	77	79		77.9		
A Mill diff. draft	mmAq	CR indicator	480	480		527.8		
A Mill primary air flow	T/H	DL B13F10	92.3	93.9		86.0		31.3
A Mill hot air damper open	%	local	62	55				
A Mill cold air damper open	%	local	5	8				
A Mill capacity damper open	%	local	43	43				
A Mill motor amp.	A	CR indicator	70	70		86		
A Mill classifier open	%					60		
B Mill coal fineness	%							
B Mill coal feeder flow	T/H	DL B21F10	43.44	43.63		36.0		
B Mill inlet air temp.	°C	DL B23T10	277	284		174.6		
B Mill air coal outlet temp.	°C	DL B23T20	68	69		78.9		
B Mill differential draft	mmAq	CR indicator	580	600		500.0		
B Mill primary air flow	T/H	DL B23F10	92.8	98.8		86.7		31.3
B Mill hot air damper open	%	local	96	96				
B Mill cold air damper open	%	local	2	2		40		
B Mill capacity damper open	%	local	58	58				
B Mill motor amp.	A	CR indicator	65	75		90		
B Mill classifier open	%					60		

B.E.T.: Boiler Efficiency Test

Item	Unit	Measuring Point			Recording	B.E.T.	ANN High	ANN Low
Test Number			D-6	D-8				
Date			8/15	8/15				
Time			09:30	11:30				
C Mill coal fineness	%							
C Mill coal feeder flow	T/H	DL	B31F10	45.56	45.58	37.1		
C Mill inlet air temp.	°C	DL	B33T10	264	270	174.2		
C Mill air coal outlet temp.	°C	DL	B33T20	66	67	80.0		
C Mill differential draft	mmAq	CR	indicator	600	600	507.4		
C Mill primary air flow	T/H	DL	B33F10	111.8	111.7	82.5		31.3
C Mill hot air damper open	%		local	100	98			
C Mill cold air damper open	%		local	2	5	62		
C Mill capacity damper open	%		local	63	45			
C Mill motor amp.	A	CR	indicator	65	75	92		
C Mill classifier open	%					60		
D Mill coal fineness	%							
D Mill coal feeder flow	T/H	DL	B41F10			-		
D Mill inlet air temp.	°C	DL	B43T10			-		
D Mill air coal outlet temp.	°C	DL	B43T20			-		
D Mill differential draft	mmAq	CR	indicator			-		
D Mill primary air flow	T/H	DL	B43F10			-		31.3
D Mill hot air damper open	%		local			-		
D Mill cold air damper open	%		local			-		
D Mill capacity damper open	%		local			-		
D Mill motor amp.	A	CR	indicator			-		
D Mill classifier open	%					-		

B.E.T.: Boiler Efficiency Test

Item	Unit	Measuring Point	Recording		B.E.T.	ANN High	ANN Low
Test Number			D-6	D-8			
Date			8/15	8/15			
Time			09:30	11:30			
A Mill hot air damper open	%	local	62	55			
A Mill cold air damper open	%	local	5	8			
A Mill capacity damper open	%	local	43	43			
A Mill classifier vane open	%	local					
B Mill hot air damper open	%	local	96	96			
B Mill cold air damper open	%	local	2	2			
B Mill capacity damper open	%	local	58	58			
B Mill classifier vane open	%	local					
C Mill hot air damper open	%	local	100	98			
C Mill cold air damper open	%	local	2	5			
C Mill capacity damper open	%	local	63	45			
C Mill classifier vane open	%	local					
D Mill hot air damper open	%	local					
D Mill cold air damper open	%	local					
D Mill capacity damper open	%	local					
D Mill classifier vane open	%	local					

B.E.T.: Boiler Efficiency Test

BOILER METAL TEMPERATURE

(III-1)

Item		Unit	Measuring Point	Recording		B.E.T.	ANN High	ANN Low
Test Number				D-6	D-8			
Date				8/15	8/15			
Time				09:30	11:30			
Div. wall out tube metal temp.	1	°C	DL E51T10	438.9	457.8		538	
Div. wall out tube metal temp.	2	°C	DL E51T11	464.8	481.3		538	
Div. wall out tube metal temp.	3	°C	DL E51T12	516.9	532.5		538	
Div. wall out tube metal temp.	4	°C	DL E51T13	450.8	467.2		538	
Div. wall out tube metal temp.	5	°C	DL E51T14	449.5	467.9		538	
Div. wall out tube metal temp.	6	°C	DL E51T15	466.0	482.3		538	
Div. wall out tube metal temp.	7	°C	DL E51T16	459.4	477.6		538	
Div. wall out tube metal temp.	8	°C	DL E51T17	473.0	487.9		538	
Div. wall out tube metal temp.	9	°C	DL E51T18	463.4	479.9		538	
Div. wall out tube metal temp.	10	°C	DL E51T19	486.6	499.4		538	
Final SH tube metal temp.	1	°C	DL E61T10	534.3	549.8		602	
Final SH tube metal temp.	2	°C	DL E61T11	513.4	527.8		602	
Final SH tube metal temp.	3	°C	DL E61T12	551.4	567.9		602	
Final SH tube metal temp.	4	°C	DL E61T13	530.3	543.7		602	
Final SH tube metal temp.	5	°C	DL E61T14	525.6	543.0		602	
Final SH tube metal temp.	6	°C	DL E61T15	438.7	458.3		602	
Final SH tube metal temp.	7	°C	DL E61T16	523.9	536.4		602	
Final SH tube metal temp.	8	°C	DL E61T17	509.2	523.1		602	
Final SH tube metal temp.	9	°C	DL E61T18	529.3	523.1		602	
Final SH tube metal temp.	10	°C	DL E61T19	516.7	513.7		602	
Final SH tube metal temp.	11	°C	DL E61T20	535.4	530.6		602	
Final SH tube metal temp.	12	°C	DL E61T21	514.6	509.7		602	
Final SH tube metal temp.	13	°C	DL E61T22	556.1	556.8		602	
Final SH tube metal temp.	14	°C	DL E61T23	530.3	528.7		602	
Final SH tube metal temp.	15	°C	DL E61T24	547.4	546.5		602	
Final SH tube metal temp.	16	°C	DL E61T25	524.4	521.9		602	

B.E.T.: Boiler Efficiency Test

Item		Unit	Measuring Point	Recording		B.E.T.	ANN High	ANN Low
Test Number				D-6	D-8			
Date				8/15	8/15			
Time				09:30	11:30			
RH out tube metal temp.	1	°C	DL E71T10	457.2	505.0		599	
RH out tube metal temp.	2	°C	DL E71T11	480.5	487.4		599	
RH out tube metal temp.	3	°C	DL E71T12	576.0	585.7		599	
RH out tube metal temp.	4	°C	DL E71T13	556.8	566.9		599	
RH out tube metal temp.	5	°C	DL E71T14	526.7	536.4		599	
RH out tube metal temp.	6	°C	DL E71T15	522.5	534.3		599	
RH out tube metal temp.	7	°C	DL E71T16	486.4	490.0		599	
RH out tube metal temp.	8	°C	DL E71T17	463.4	469.3		599	
RH out tube metal temp.	9	°C	DL E71T18	497.0	503.1		599	
RH out tube metal temp.	10	°C	DL E71T19	474.2	481.1		599	
RH out tube metal temp.	11	°C	DL E71T20	526.1	527.5		599	
RH out tube metal temp.	12	°C	DL E71T21	514.3	517.2		599	
RH out tube metal temp.	13	°C	DL E71T22	524.3	516.7		599	
RH out tube metal temp.	14	°C	DL E71T23	507.3	500.6		599	
RH out tube metal temp.	15	°C	DL E71T24	523.5	530.8		599	
RH out tube metal temp.	16	°C	DL E71T25	545.8	555.2		599	
RH out tube metal temp.	17	°C	DL E71T26	603.3	610.7		599	
RH out tube metal temp.	18	°C	DL E71T27	591.6	600.6		599	
RH out tube metal temp.	19	°C	DL E71T28	566.2	574.0		599	
RH out tube metal temp.	20	°C	DL E71T29	532.4	540.7		599	

B.E.T.: Boiler Efficiency Test

FURNACE TEMPERATURE

(IV-1)

Item	Unit	Measuring Point	Recording		B.E.T.	ANN High	ANN Low
Test Number			D-6	D-8			
Date			8/15	8/15			
Time			09:30	11:30			
7F Mezz. Front Right 2nd Port	°C	local	1,180	1,210			
7F Mezz. Front Center Port	°C	local	1,190	1,200			
7F Mezz. Front Left 2nd Port	°C	local	1,170	1,170			
8F Left near S/B 6-L	°C	local	1,040	1,060			
8F Right near S/B 6-R	°C	local	1,060	1,060			
8F Rear Left 2nd Port	°C	local	915	935			
9F Left near S/B 4-L	°C	local	965	980			
9F Right near S/B 4-R	°C	local	970	985			
9F Front Left 2nd Port	°C	local	965	985			
9F Front Center Port	°C	local	970	980			
9F Front Right 2nd Port	°C	local	970	995			

B.E.T.: Boiler Efficiency Test

Item	Unit	Measuring Point	Recording		B.E.T.	ANN High	ANN Low
Test Number			D-6	D-8			
Date			8/15	8/15			
Time			09:30	11:30			
A-1 Air resistor open		local	4.8	4.8			
A-2 Air resistor open		local	4.6	4.6			
A-3 Air resistor open		local	4.0	4.0			
A-4 Air resistor open		local	3.7	3.7			
B-1 Air resistor open		local	2.3	2.3			
B-2 Air resistor open		local	4.4	4.4			
B-3 Air resistor open		local	4.8	4.8			
B-4 Air resistor open		local	3.4	3.4			
C-1 Air resistor open		local	4.9	4.9			
C-2 Air resistor open		local	4.9	4.9			
C-3 Air resistor open		local	5.2	5.2			
C-4 Air resistor open		local	4.0	4.0			
D-1 Air resistor open		local	2.2	2.2			
D-2 Air resistor open		local	0.2	0.2			
D-3 Air resistor open		local	0.3	0.3			
D-4 Air resistor open		local	1.0	1.0			
Airport damper open (Right)		local	2.0	2.1			
Airport damper open (Left)		local	2.1	2.1			

B.E.T.: Boiler Efficiency Test

Item	Unit	Measuring Point	Recording		B.E.T.	ANN High	ANN Low
Test Number			D-6	D-8			
Date			8/15	8/15			
Time			09:30	11:30			
Burner Barrel A-1	°C	DL B60T10	268.7	276.8		400	
Burner Barrel A-1	°C	DL B60T11	179.3	183.5		400	
Burner Barrel A-1	°C	DL B60T12	262.4	269.5		400	
Burner Barrel A-1	°C	DL B60T13	253.3	261.1		400	
Burner Barrel A-2	°C	DL B60T20	276.7	283.4		400	
Burner Barrel A-2	°C	DL B60T21	206.0	212.2		400	
Burner Barrel A-2	°C	DL B60T22	236.4	243.1		400	
Burner Barrel A-2	°C	DL B60T23	253.1	260.0		400	
Burner Barrel A-3	°C	DL B60T30	241.5	299.6		400	
Burner Barrel A-3	°C	DL B60T31	201.2	208.3		400	
Burner Barrel A-3	°C	DL B60T32	267.0	275.4		400	
Burner Barrel A-3	°C	DL B60T33	272.6	239.7		400	
Burner Barrel A-4	°C	DL B60T40	278.0	286.1		400	
Burner Barrel A-4	°C	DL B60T41	156.6	160.6		400	
Burner Barrel A-4	°C	DL B60T42	270.2	278.5		400	
Burner Barrel A-4	°C	DL B60T43	279.4	288.1		400	
Burner Barrel B-1	°C	DL B61T10	215.3	223.9		400	
Burner Barrel B-1	°C	DL B61T11	225.4	233.0		400	
Burner Barrel B-1	°C	DL B61T12	262.6	270.0		400	
Burner Barrel B-1	°C	DL B61T13	242.3	249.7		400	
Burner Barrel B-2	°C	DL B61T20	244.4	247.1		400	
Burner Barrel B-2	°C	DL B61T21	195.4	201.8		400	
Burner Barrel B-2	°C	DL B61T22	270.9	274.0		400	
Burner Barrel B-2	°C	DL B61T23	245.6	249.7		400	
Burner Barrel B-3	°C	DL B61T30	246.8	254.3		400	
Burner Barrel B-3	°C	DL B61T31	182.4	189.2		400	
Burner Barrel B-3	°C	DL B61T32	269.4	276.1		400	
Burner Barrel B-3	°C	DL B61T33	243.9	251.3		400	
Burner Barrel B-4	°C	DL B61T40	231.7	239.9		400	
Burner Barrel B-4	°C	DL B61T41	220.7	229.1		400	
Burner Barrel B-4	°C	DL B61T42	251.8	259.6		400	
Burner Barrel B-4	°C	DL B61T43	252.2	260.4		400	

B.E.T.: Boiler Efficiency Test

Item	Unit	Measuring Point	Recording		B.E.T.	ANN High	ANN Low
Test Number			D-6	D-8			
Date			8/15	8/15			
Time			09:30	11:30			
Burner Barrel C-1	°C	DL B62T10	235.6	243.6		400	
Burner Barrel C-1	°C	DL B62T11	228.2	235.5		400	
Burner Barrel C-1	°C	DL B62T12	237.2	245.7		400	
Burner Barrel C-1	°C	DL B62T13	228.6	236.8		400	
Burner Barrel C-2	°C	DL B62T20	263.1	270.0		400	
Burner Barrel C-2	°C	DL B62T21	205.1	211.9		400	
Burner Barrel C-2	°C	DL B62T22	245.0	253.3		400	
Burner Barrel C-2	°C	DL B62T23	290.5	269.6		400	
Burner Barrel C-3	°C	DL B62T30	274.6	282.3		400	
Burner Barrel C-3	°C	DL B62T31	209.7	218.6		400	
Burner Barrel C-3	°C	DL B62T32	278.9	285.7		400	
Burner Barrel C-3	°C	DL B62T33	227.3	232.4		400	
Burner Barrel C-4	°C	DL B62T40	237.7	246.2		400	
Burner Barrel C-4	°C	DL B62T41	234.7	243.5		400	
Burner Barrel C-4	°C	DL B62T42	245.7	255.0		400	
Burner Barrel C-4	°C	DL B62T43	260.3	269.3		400	
Burner Barrel D-1	°C	DL B63T10	320.9	323.7		400	
Burner Barrel D-1	°C	DL B63T11	284.0	289.1		400	
Burner Barrel D-1	°C	DL B63T12	339.0	334.3		400	
Burner Barrel D-1	°C	DL B63T13	336.8	339.8		400	
Burner Barrel D-2	°C	DL B63T20	334.3	336.8		400	
Burner Barrel D-2	°C	DL B63T21	270.3	277.1		400	
Burner Barrel D-2	°C	DL B63T22	360.2	357.9		400	
Burner Barrel D-2	°C	DL B63T23	332.1	334.5		400	
Burner Barrel D-3	°C	DL B63T30	336.0	339.2		400	
Burner Barrel D-3	°C	DL B63T31	266.5	275.1		400	
Burner Barrel D-3	°C	DL B63T32	354.7	356.8		400	
Burner Barrel D-3	°C	DL B63T33	345.7	340.5		400	
Burner Barrel D-4	°C	DL B63T40	328.8	333.9		400	
Burner Barrel D-4	°C	DL B63T41	276.3	287.9		400	
Burner Barrel D-4	°C	DL B63T42	340.4	345.0		400	
Burner Barrel D-4	°C	DL B63T43	327.0	331.3		400	

B.E.T.: Boiler Efficiency Test

ANNEX – 7

Analytical Instruments for Fuel, Environment and Water

Analytical Instruments for the Fuel Laboratory

1. Existing Instrument

(1)	Redwood No. 1 Type Viscometer	RW-11E	Yoshida Kagaku
(2)	Flash Point Tester, Pensky Martens	PMF-EM	Yoshida Kagaku
	Cleveland Open Cup	COC-E	Yoshida Kagaku
(3)	Centrifugal Separator	H-210A	Kokusan Enshinki Co., Ltd.
(4)	Muttle Furnace	IMK-A	Ishizuka Denki
(5)	Saybolt Colorimeter	SC-SP	Yoshida Kagaku
(6)	Drying Oven	DS-62	Yamato Scientific Co., Ltd.
(7)	Scale	W-500B	Nutix
(8)	Electric Digital Hydrothermometer	AY-21	Yamato Scientific Co., Ltd.
(9)	Moisture Determination Balance	F-2A	Kett Electric Laboratory
(10)	Electric Furnace	IMKM	Ishizuka Denki
(11)	Electric Furnace	ICKV	Ishizuka Denki
(12)	Water Bath	BS-48	Yamato Scientific Co., Ltd
(13)	Calorimeter, Adiabstic Bomb Type	1013	Yoshida Seisakusho Co., Ltd.
(14)	Roll Jaw Crusher	1023-B	Yoshida Seisakusho Co., Ltd.
(15)	Coffee Mill Type Crusher	1023-A	Yoshida Seisakusho Co., Ltd.
(16)	Sieve Shaker		Tyler Combustion Eng'g. Inc.
(17)	Riffler		Fisher Scientific Co.
(18)	Top Loading Scale		Murayama Seisakusho
(19)	Top Loading Scale		
(20)	Analytical Balance 200 g		Yamato Scientific Co., Ltd.
	200 g		Sauter (Germany)

2. JICA Supply Instruments

(1)	Atomic Absorption Spectrophotometer	AA-670	Shimadzu
(2)	ASTM Colormeter		Yoshida Kagaku
(3)	Crucible Swelling Furnace		Yoshida Seisakusho
(4)	Computer/Printer		IBM

Analytical Instruments for the Environmental Laboratory

1. Existing Instrument

(1)	Atomic Absorption Spectrophotometer Not Operational		Instrumentation Labo. Brand
(2)	Water Quality Analyzer	TOS Brand	TOA Electronics, Ltd.
(3)	PH Meter		Scott Gerate Brand
(4)	Air Particulate Sampler High Volume		Staplex Brand
(5)	Sulfur Dioxide Monitoring System		Sierra Misca Brand
(6)	Noise Meter	452	Scott Instrumentation Labo. Brand
(7)	Drying Oven		Herew Brand
(8)	Conductivity Meter/Temperature Meter		Extech Brand
(9)	Laboratory Incubator		
(10)	PDL-24 Meteorological Monitoring System		

2. JICA Supply Instruments

(1)	Dissolved Oxygen Meter	DC-25	TOA Electronics, Ltd.
(2)	Spectrophotometer	UV-120-01	Shimadzu
(3)	Water Bath	LH-800	Toyo Scientific
(4)	Middlevolume Air Sampler	M-100	Shibata Scientific
(5)	Stack SO_2 Analyzer	ESDA-813	Horiba Seisakusho
(6)	Fume Hoods	LFA-120	Toyo Scientific
(7)	Gaseous Pollutant Sampler	HS-6N	Showa Sokki
(8)	Water Quality Checker	WQC-2A	TOA Electronics, Ltd.
(9)	Water Sampler VANDORN TYPE	5062A	Rigou

Analytical Instruments for the Water Laboratory

1. Existing Instrument

(1)	UV-VIS Spectrophotometer	HTC-100-10	Hitachi Ltd.
(2)	PH Meter	HM-5ES	TOA Electronics Ltd.
(3)	Conductivity Meter	32	TOA Electronics Ltd.
(4)	Drying Oven	DS-62	Yamato Scientific Co., Ltd.
(5)	Direct Reading Balance	7AG	Kensei Industrial Co., Ltd.
(6)	Shaker	SA-31	Yamato Scientific Co., Ltd.
(7)	Magnetic Stirrer	M-41	Yamato Scientific Co., Ltd.
(8)	Dissolved Oxygen Meter	DO-18	TOA Electronics Ltd.
(9)	Hot Plate	HK-21	Yamato Scientific Co., Ltd.
(10)	Lab. Demineralizer	MA-1	Japan Organo Co.
(11)	Microscope, Metallurgical	BHM-112	Olympus Optical Co., Ltd.
(12)	Du. Nony's Surface Tentiometer	3012	Yoshida Seisakusho Co.
(13)	Orsat Analyzer		
(14)	Fume Hood	VKD-150	Yamato Scientific Co.
(15)	Programmable Timer	151	Fisher
(16)	Electrothermal Heating Mantle		Electrothermal
(17)	Magnetic Stirrer with Heater	610T	Fisher
(18)	Water Bath	BS-48	Yamato Scientific
(19)	Centrifuge		Precision Universal
(20)	Multi-Pen Recorder	R-53	Rikadenki Kogyo

2. JICA Supply Instruments

(1)	Spectrophotometer	UV-120-02	Shimadzu
(2)	Jar Tester	J-6	Toyo Keiryoki
(3)	Electronic Analytical Balance	AEL-200	Shimadzu
(4)	Flash Point Tester		Yoshida Seisakusho
	Pensky Martens Closed	821	
	Cleveland Open Cup	823	

ANNEX – 8

Items of Education and Training at Calaca Power Plant

ANNEX-8 Items of Education and Training at Calaca Power Plant

For the Freshman Training

4.10 SAFETY of personnel - application of Artificial Respiration and Mouth to Mouth/Heart Massage Resuscitation

4.11 SOP on equipment tagging

4.12 Fire Brigade and SOP on Fire Fighting System

For the Regular Training

4.2 Shift Refresher Course (ON THE JOB TRAINING)

Cource content as follows:

A. PHYSICS FUNDAMENTALS relevant to Plant Operation
- a.1 Heat
- a.2 Mechanics
- a.3 Sound
- a.4 Optics
- a.5 Electricity/Magnetism
- a.6 Modern Physics

B. TURBINE - GENERATOR (TOSHIBA) AUXILIARY EQUIPMENT OPERATION

1. System lay - out (Flow diagram where possible) for each of the following:
   - B.1.1 Bearing Cooling Water System
   - B.1.2 Instrument Air Compressor System
   - B.1.3 House Service Air Compressor System
   - B.1.4 Boiler Auxiliary Air Compressor System
   - B.1.5 Condensing System
   - B.1.6 Chlorination System
   - B.1.7 Screen House Equipment
   - B.1.8 Condensate System
   - B.1.9 Feedwater System

B.1.10	Cathodic Protection System
B.1.11	Ferrous Sulfate
B.1.12	Machine Gas System (Hydrogen and CO_2)
B.1.13	Seal Oil System
B.1.14	Stator Cooling Water System
B.1.15	Oil Conditioning System (Turbine - Gen and Turb BFPs)
B.1.15.1	Turbine - Gen Oil Conditioning
B.1.15.2	Boiler Feed Pumps (Turbine - driven)

C. TURBINE:

1. Design/Construction Features

C.1.1	Nozzle
C.1.2	Moving blades - Impulse/Reaction blades - differentiate
C.1.3	Cylinder/casing arrangement
C.1.4	Shaft and wheels
C.1.5	Thrust bearings
C.1.6	Journal bearings
C.1.7	Steam chest
C.1.8.1	Main Stop Valve or Hydraulic Stop Valve
C.1.8.2	Control Valves
C.1.8.3	Combined Reheat - Intercept Valves
C.1.8.4	High Press/Lo Press Bypass Valves
C.1.9.1	Turning Gear
C.1.9.2	Jacking Oil Pump
C.1.10	Lubrication/Hydraulic Oil System/Oil Coolers
C.1.11	Glands and Shaft Sealing System
C.1.12	Turbine Protection Devices
C.1.12.a	Speed Gov'r/Pre-emergency gov'r/Emergency gov'r
C.1.12.b	Relay Dump Valve/Extraction Non-Return Valves
C.1.12.c	Vac Trip Device
C.1.12.d	Blowdown Valve
C.1.12.e	Other Valves - (CV, MSV, CRV)

C.1.12.f Diaphragm Valves

C.1.12.g Aux Oil Pump/Emergency DC Oil Pump

C.1.12.h TOOP/Jacking Oil Pump

C.1.12.i Oil Trip Valve

C.1.12.j Emergency Trip Valve

C.1.12.k IPR (Initial Press Regulator)

C.1.12.l Reverse Power Relay

C.1.12.m Thrust bearing failure relay

C.1.13 Auxiliary Steam System (TURBINE)

C.1.14 E.H.C. (Electro Hydraulic Control)

C.1.15 Automatic Turbine Start-Up (ATS)

C.1.15.1 Extraction Drain Valve Master by ATS

C.1.15.2 Extraction Stop Valve Master by ATS

C.1.15.3 Condenser Vacuum Raise/Break Master by ATS

C.1.15.4 Turbine Drain Valve Master

C.1.15.5 ATS - Cold, Warm, Hot and Very Hot Conditions

C.1.15.5.1 ATS as laid out in ATS Control Panel

a. CV chest warming
b. Load set (INC/DEC)
c. Load Limit Set Knob
d. Auto Turbine Start
e. Coordinated Control
f. IPR (initial pressure regulator)
g. Speed Set RPM
h. Starting Rate
i. Line Speed Matching
j. FA/PA transfer

C.1.15.5.2 ATS as laid out in ATS Tests Panel

a. MSV
b. CRV
c. LP - BP "A"
d. LP - BP "B"
e. Emergency Oil Trip Test
f. Over Speed Trip
g. Back-up D/S Test
h. Power/Load (P/L) Unbalanced Test
i. Lamp Test

D. Generator/System (22 kV to 230 kV) and Station Service Lay-out

D.1 Excitation

D.2 EHC

D.3 CVCF

D.4 Emergency Diesel Generator

E. BOILER (Foster Wheeler) Auxiliary Equipment Operation

E.1 System Lay - out (show FLOW DIAGRAM where possible for each of the following:

E.1.1 Burner Management System (BMS)

E.1.1.a Light Oil System

E.1.1.b Heavy Oil System

E.1.1.c Coal System

c.1 Gravimetric Feeder

c.2 Pulverizer/Lube Oil System

c.3 Pyrite System

E.1.2 Interposing Logic System (ILS)

E.1.2.a Air Flow - Secondary/Primary

b Gas Flow

c Ductworks/Dampers/Positioners

d Furnace Draft/Furnace Aspirating Pipes

e Tri-sector Air Heater

f Electrostatic Precipitator

g Fans (IDF/FDF/PAF)

h Tertiary Air Fan/System

i Seal Air Fan/System

E.1.3 Sootblowers

E.1.3.a Retractables

E.1.3.b Wall Blowers

E.1.3.c Air Heaters

E.1.3.d Water Blowers

E.1.4 Combustion Control/Temperature Control IMCC

F. BOILER:

a. Design/Construction Features
b. Principles of Operation
c. Description/Purpose or Function of various parts/components
d. Whys and Hows of Putting IN/OUT of service the various auxiliary equipment
e. Sequence of Operation
f. Blr Hydrostatic Testing/Safety Valves/Electromatic Valve
g. Equipment troubles and remedial measures to apply

G. ASH HANDLING

H. COAL HANDLING