

ORIMULSION TEST SUMMARY MATRIX

NO	TEST TYPE	FUEL	TIME (HR)	TEST DAY	TESTS RUN	LOAD (%)	EXCESS O2 (%)
<b>Tests With Existing Burner Guns</b>							
A1	BL	HFO	2	1	BLR (Dirty)	25	2.0
A2	BL	HFO	2	1	BLR (Dirty)	CL	1.0
A3	BL	HFO	2	1	BLR (Dirty)	100	0.5
A4	BL	HFO	2	2	BLR (Dirty)	25	2.0
A5	BL	HFO	2	2	BLR (Dirty)	CL	1.0
A6	BL	HFO	2	2	BLR (Dirty)	100	0.5
A7	BL	HFO	2	3	BLR (Clean)	25	2.0
A8	BL	HFO	2	3	BLR (Clean)	CL	1.0
A9	BL	HFO	2	3	BLR (Clean)	100	0.5
A10	BL	HFO	2	4	BLR (Clean)	25	2.0
A11	BL	HFO	2	4	BLR (Clean)	CL	1.0
A12	BL	HFO	2	4	BLR (Clean)	100	0.5
<b>Install New Burner Guns And Start-Up</b>							
B1	BL	HFO	2	5	BLR (Clean)	25	2.0
B2	BL	HFO	2	5	BLR (Clean)	CL	1.0
B3	BL	HFO	2	5	BLR (Clean), PM	100	0.5
B4	BL	HFO	2	6	BLR (Clean)	25	2.0
B5	BL	HFO	2	6	BLR (Clean)	CL	1.0
B6	BL	HFO	2	6	BLR (Clean)	100	0.5
<b>Start-Up, Orimulsion, Related Equipment</b>							
1	IC	ORI	12	7	BLR	100	0.6
2	IC	ORI	12	8	BLR	100	1.0
3	IC	ORI	12	9	BLR,PMS,SO2,NOX,VE,CO,CO2	100	0.4
4	IC	ORI	12	10	BLR	100	0.2
5	IC	ORI	12	11	BLR	100	0.8
6	IC	ORI	12	12	BLR,PMA,PR,PS,FS,ADP	100	0.4
7	IC	ORI	12	13	BLR,PMA,PR,PS,FS,ADP	100	1.0
8	IC	ORI	12	14	BLR,PMA,PR,PS,FS,ADP	100	0.6
9	IC	ORI	12	15	BLR,PMA,PR,PS,FS,ADP	100	0.8
10	IC	ORI	12	16	BLR,PMA,PR,PS,FS,ADP	100	0.2
11	IC	ORI	12	17	BLR	CL	from model
12	IC	ORI	12	18	BLR	CL	from model
13	IC	ORI	12	19	BLR	25	from model
14	IC	ORI	12	20	BLR	25	from model
15	BP/IC	ORI	12	21	BLR,PMS,SO2,NOX,VOC,VE,CO,CO2	100	optimum
16	BP/IC	ORI	12	22	BLR,PMS,SO2,NOX,VOC,VE,CO,CO2	25	optimum
17	BP	ORI	12	23	BLR,PMS,SO2,NOX,VOC,VE,CO,CO2	100	optimum
18	BP	ORI	12	24	BLR,PMS(SB),SO2,NOX,VOC,VE,CO,CO2	100	optimum
19	BP	ORI	12	25	BLR,PMS,SO2,NOX,VOC,VE,CO,CO2	25	optimum
20	BP	ORI	12	26	BLR,PMS,SO2,NOX,VOC,VE,CO,CO2	CL	optimum
21	BP	ORI	12	27	BLR,TE,MET,PS	100	optimum
22	BP	ORI	12	28	BLR,PMS,SO2,NOX,VOC,VE,CO,CO2	50	optimum
23	BP	ORI	12	29	BLR,PMA/S,PS,PR,FS,SO2,NOX,VOC; VE,CO,CO2	100	optimum
24	BP	ORI	12	30	BLR,PMS(SB),PMA,FS,SO2,NOX,VOC; VE,CO,CO2	100	optimum
25	BP	ORI	12	31	BLR,PMA/S,PS,PR,FS,SO2,NOX,VOC; VE,CO,CO2	100	optimum
26	BP	ORI	12	32	BLR	CL	optimum
<b>Waterwash And Allow Unit To Become Dirty From Oil Firing</b>							
B7	BL	HFO	2	33	BLR (Dirty)	25	2.0
B8	BL	HFO	2	33	BLR (Dirty)	CL	1.0
B9	BL	HFO	2	33	BLR (Dirty)	100	0.5
B10	BL	HFO	2	34	BLR (Dirty)	25	2.0
B11	BL	HFO	2	34	BLR (Dirty)	CL	1.0
B12	BL	HFO	2	34	BLR (Dirty)	100	0.5

## ORIMULSION TEST RESPONSIBILITIES

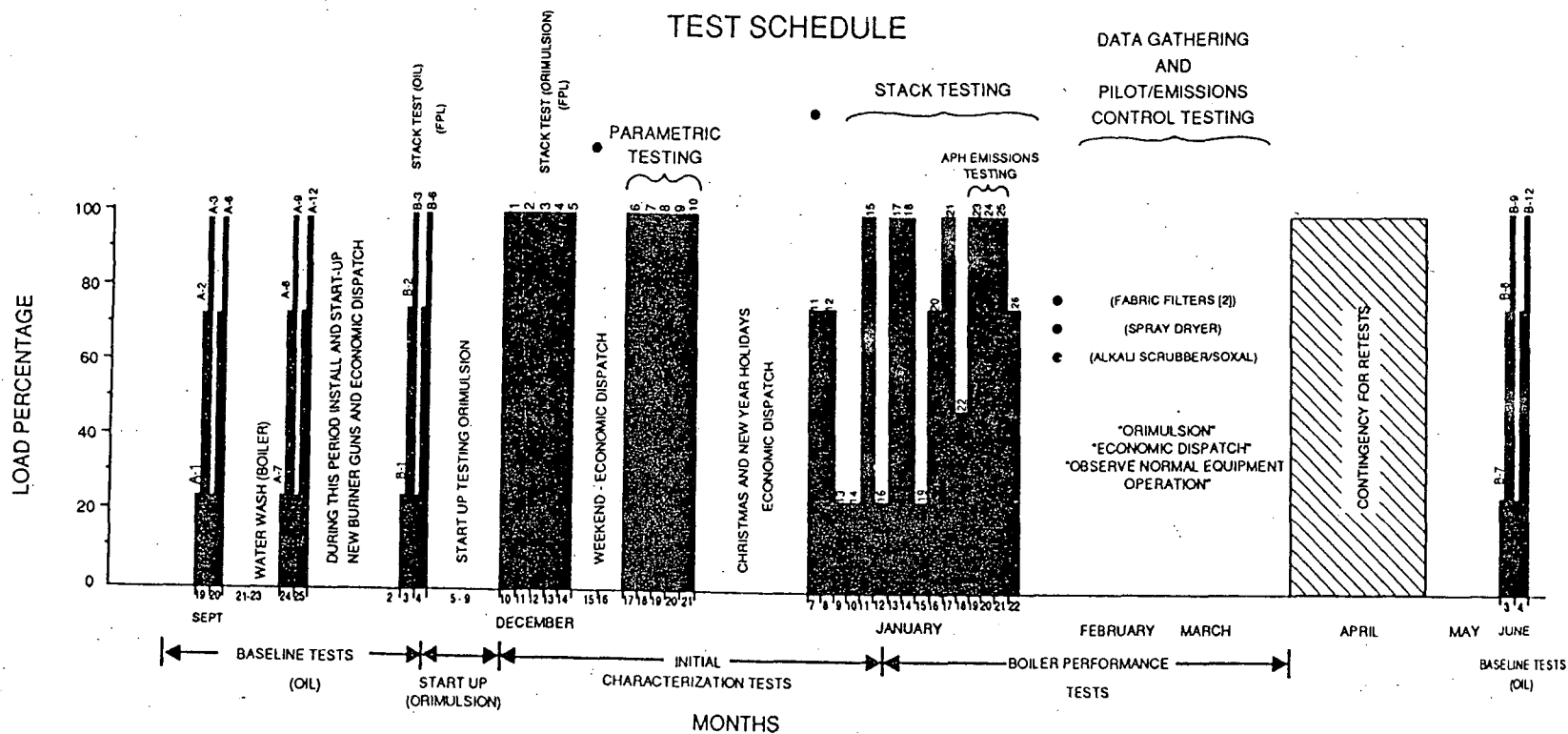
TEST		RESPONSIBLE GROUP	TEST DURATION	DATA FREQUENCY	REMARKS
ADP	ACID DEW POINT	R&D			
BLR	BOILER	JPE	VARIED	1/2 HR	
CO	CARBON MONOXIDE	PRS	CEM	CONTINUOUS	
CO2	CARBON DIOXIDE	PRS			
FS	FUEL AND FILTER CAKE SAMPLE	PRS	N/A		
MET	METALS	PRS			
NOX	NITROGEN OXIDES	PRS		CONTINUOUS	
PMA	PARTICULATE MATTER (AIR HEATER)	R&D	5 HOURS	3X1HR	
PMS	PARTICULATE MATTER (STACK)	PRS		3X1HR	
PR	PARTICULATE RESISTIVITY	R&D			
PS	PARTICULATE SIZE DISTRIBUTION	R&D			
SO2	SULFUR DIOXIDE	PRS	CEM	CONTINUOUS	
TE	TRACE ELEMENTS	PRS		ONCE	
VE	VISIBLE EMISSIONS	PRS			
VOC	VOLATILE ORGANIC COMPOUNDS	PRS			

NOTE: BL = Baseline Tests  
 IC = Initial Characterization Tests  
 BP = Boiler Performance Tests

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Kcid 7/20/90

## ORIMULSION TEST BURN SANFORD UNIT #4 TEST SCHEDULE



Rec'd 7/20/90