

LAMPIRAN



Lampiran 1. *Gas Refinery Plant* Kangean Energy Indonesia Ltd Pulau Pangerungan



Lampiran 2. *3512 Caterpillar Gas Engine Generator*



Lampiran 3. *Saturn 20 Caterpilaar Gas Turbine Generator*



**TURBINE GENERATOR
DAILY LOGSHEET**

Date : 28-Apr-18



Kangean Energy Indonesia

DESCRIPTION	TAG ID	TIME RECORDED								OPERATING VALUE
		N - 6100 A				N - 6100 B				
TURBINE		07:00	07:00	12:00	19:00	01:00	07:00	13:00	19:00	
Lube Oil Temperature						132	140		130	80-140 deg F
Lube Oil Pressure						46	49		49	45-65 PSI
Engine Compressor Disch. Press.						60	66		66	75 PSI
Gas Fuel Pressure						177	172		172	160-180 PSI
Lube Oil Diff. Pressure						-	-		-	Normal<25 PSID
Starting Gas Supply Pressure*						-	-		-	160-180 PSI
Enclosure Pressure						0.7	0.7		0.7	0.50-15 PSID
Fuel Flow						244.79	236		252.4	SCFM
T1 Inlet Temperature						87.2	85.8		85.2	90 DEG F
T5 Average						111.4	107.9		107.2	120 DEG F
Power Trans PT-6100 Oil Temp						38.7	38		40	40-75 DEG C
Oil Level										% GREEN
*Indicated while starting										
G RATOR										
Running Hours						2248	2316		2275	HRS
Number of Start						346	346		346	EACH
True Power						616	581		656	850 KWATTS
Reactive Power						289	207		292	<900 KVAR
Power Factor						-0.91	0.90		-0.91	0.8-0.9
Frequency						60.53	60.51		60.55	HZ
Voltage 1 - 2						4205	4203		4202	VOLTS
Voltage 2 - 3						4209	4215		4209	VOLTS
Voltage 3 - 1						4207	4202		4194	VOLTS
Ampere 1						92	83		97	AMPERES
Ampere 2						91	85		96	AMPERES
Ampere 3						96	91		107	AMPERES
Exciter Field Current						0.7	0.7		0.7	BASE ON LOAD
Exciter Field Voltage						46	46		46	BASE ON LOAD
BC-125-6100-A/B						10105	10105		10103	DCV/DCA
BC-24-6100-A/B						26160	26110		26130	DCV/DCA
VIBRATION SUMMARY										
E @ Vel						0.06	0.06		0.06	0.65 In/s
Gearbox Acc						1.5	1.5		1.5	40 g
Generator Driven X Axis						1.0	1.0		1.0	5 mill/ps
Generator Driven Y Axis						1.2	1.2		1.2	5 mill/ps
Exciter Driven Y Axis						1.1	1.1		1.1	5 mill/ps
Exciter Driven X Axis						1.0	1.0		1.0	5 mill/ps
VILLAGE POWER										
Ampere 1						21.17	21.8		24.06	AMPERES
Ampere 2						20.43	21.02		23.09	AMPERES
Ampere 3						21.25	22.07		25.27	AMPERES
Voltage 1 - 2						4191	4199		4191	VOLTS
Voltage 2 - 3						4202	4211		4204	VOLTS
Voltage 3 - 1						4167	4167		4166	VOLTS
Power						151.6	157.5		173.6	KW
POWER						151.9	156.8		174.0	KVA
Frequency						60.60	60.65		60.65	HZ
Power Consumption						2604	2780		2671	KWH
OPERATORS ON DUTY						REMARKS				
Day Shift : Hermowo Night Shift : Rival <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> Dedi Nurbani/ Eko. S Review by Board Operator </div> <div style="text-align: center;"> IGBO Sasongto Review by Sr. Operator </div> </div>										
						Utility-Rev2018 + HD				

Lampiran 4. Logsheet Gas Turbine Generator



**GAS ENGINE GENERATOR
DAILY LOGSHEET**

DESCRIPTION	TAG ID	TIME RECORDED				OPERATING VALUE
		01:00	07:00	13:00	19:00	
GAS ENGINE						
Fuel Gas Pressure		3.5	3.7		3.5	PSI
Air Pressure		10.2			11.2	<15"WC
Engine Speed		1212	1212		1213	RPM
Running Hours		5903.1	5903.7		5904.3	HRS
Manifold Air Temperature		130	130		130	<155 OF
Lube Oil Pressure		7.5	7.5		7.5	>5.0 PSI
Jacket Water Temperature		180	180		180	175-210 OF
Lube Oil Temperature		170	180		180	<210 OF
Lube Oil Filter Diff. Pressure		0	0		0	<15 PSI
Lube Oil Level		OK	OK		OK	OK/NOT
Exhaust Temperature 1		1080	1080		1080	1000 DEG F
Exhaust Temperature 2		1080	1040		1080	1000 DEG F
Exhaust Temperature 3		1090	1080		1080	1000 DEG F
Exhaust Temperature 4		1080	1080		1080	1000 DEG F
Exhaust Temperature 5		1080	1040		1080	1000 DEG F
Exhaust Temperature 6		1080	1050		1080	1000 DEG F
Exhaust Temperature 7		1080	1080		1080	1000 DEG F
Exhaust Temperature 8		1070	1070		1080	1000 DEG F
Exhaust Temperature 9		1080	1060		1080	1000 DEG F
Exhaust Temperature 10		1080	1070		1080	1000 DEG F
Exhaust Temperature 11		1080	1070		1080	1000 DEG F
Exhaust Temperature 12		1080	1060		1080	1000 DEG F
Exhaust Temperature 13		620	610		620	500 DEG F
Exhaust Temperature 14		710	700		710	500 DEG F
GENERATOR						
Running Hours		328.25	328.51		328.77	HRS
Power Factor		0.83	0.87		0.84	K
Ampsere 1/2/3		340/340/340	301/312/310	1/1	340/340/340	AMPERES
Power		740	720		800	<500 KW
Frequency		60.4	60.4		60.4	Hz
Voltage 1-2/2-3/3-1		480/480/480	480/480/480	1/1	480/480/480	VOLT
GAS ENGINE						
Fuel Gas Pressure		3.5	3.7		3.5	PSI
Air Pressure		10.2			11.2	<15"WC
Engine Speed		1212	1213		1213	RPM
Running Hours		5172.5	5173.2		5173.9	HRS
Manifold Air Temperature		130	135		130	<155 OF
Lube Oil Pressure		5.0	5.8		5.8	>5.0 PSI
Jacket Water Temperature		180	175		180	175-210 OF
Lube Oil Temperature		175	185		185	<210 OF
Lube Oil Filter Diff. Pressure		0	0		0	<15 PSI
Lube Oil Level		OK	OK		OK	OK/NOT
Exhaust Temperature 1		1080	1070		1080	1000 DEG F
Exhaust Temperature 2		1100	1100		1100	1000 DEG F
Exhaust Temperature 3		1100	1100		1100	1000 DEG F
Exhaust Temperature 4		1100	1100		1100	1000 DEG F
Exhaust Temperature 5		1080	1080		1080	1000 DEG F
Exhaust Temperature 6		1100	1100		1100	1000 DEG F
Exhaust Temperature 7		1090	1090		1100	1000 DEG F
Exhaust Temperature 8		1100	1090		1080	1000 DEG F
Exhaust Temperature 9		1090	1080		1080	1000 DEG F
Exhaust Temperature 10		1080	1080		1080	1000 DEG F
Exhaust Temperature 11		1080	1070		1080	1000 DEG F
Exhaust Temperature 12		1100	1080		1120	1000 DEG F
Exhaust Temperature 13		750	750		750	500 DEG F
Exhaust Temperature 14		750	750		750	500 DEG F
GENERATOR						
Running Hours		47.75	47.85		47.94	HRS
Power Factor		0.86	0.85		0.85	K
Ampsere 1/2/3		360/360/360	300/300/300	1/1	300/300/300	AMPERES
Power		740	700		400	<500 KW
Frequency		60.4	60.4		60.4	Hz
Voltage 1-2/2-3/3-1		480/480/480	480/480/480	1/1	480/480/480	VOLT
Battery Charger		2.6	2.1		2.1	AMPERES
Water Meter to Radiator		2.6	2.1		2.1	VOLT
OPERATORS ON DUTY						
Day Shift : Hermowo		 			REMARKS	
Night Shift : Rival		Ded Nurbeni/ Eko. S Review by Board Operator			IGBO Sasongko Review by Sr. Operator	

Lampiran 5. Logsheet Gas Engine Generator