

PROYEKSI NET PRESENT VALUE (NPV) PENGGUNAAN TURBIN GAS

i = 10%

Uraian (USD)	Tahun ke-																						
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total	
Biaya Investasi Awal	3.187.960																						
Annual cash flow		(91.384)	(75.524)	(66.668)	(62.417)	(56.742)	(51.584)	(46.895)	(42.639)	(38.760)	(35.233)	(32.030)	(29.118)	(26.471)	(24.064)	(21.877)	(19.888)	(18.080)	(16.436)	(14.942)	(13.584)	(778.006)	
Biaya O & M		(194.793)	(160.986)	(146.351)	(133.046)	(120.951)	(109.956)	(99.960)	(90.872)	(82.617)	(75.101)	(68.274)	(62.067)	(56.425)	(51.295)	(46.632)	(42.393)	(38.539)	(35.035)	(31.850)	(28.955)	(1.658.382)	
Tambahan Biaya Listrik																							
Tambahan Biaya Termal																							
Potensi Penghematan (Revenue)																							
- Biaya Listrik	534.242	485.674	441.522	401.384	364.894	331.722	301.565	274.150	249.228	226.571	205.973	187.248	170.226	154.751	140.683	127.893	116.267	105.697	96.088	87.353	79.412	4.548.300	
- Biaya Termal	164.045	149.132	135.574	123.249	112.045	101.859	92.599	84.181	76.508	69.571	63.246	57.497	52.270	47.518	43.198	39.271	35.701	32.455	29.505	26.823	24.384	1.396.006	
- Biaya Beban Listrik	111.789	101.627	92.386	83.989	76.354	69.412	63.102	57.366	52.151	47.410	43.100	39.182	35.620	32.381	29.438	26.762	24.329	22.117	20.106	18.278	16.617	951.727	
- Kelebihan Listrik	92.283	83.894	76.267	69.334	63.031	57.301	52.091	47.356	43.051	39.137	35.579	32.345	29.404	26.731	24.301	22.092	20.084	18.258	16.596	15.089	13.717	785.659	
- Emisi GHG	31.123	28.294	25.722	23.383	21.257	19.325	17.568	15.971	14.519	13.199	11.999	10.908	9.917	9.015	8.196	7.451	6.773	6.158	5.598	5.089	4.626	264.968	
Operating cash flow	647.305	588.459	534.963	486.330	442.118	401.925	365.387	332.170	301.973	274.520	249.564	226.876	206.251	187.501	170.456	154.960	140.872	128.066	116.423	105.840	96.218	5.510.872	
Biaya Depresiasi	(159.398)	(144.907)	(131.734)	(119.758)	(108.871)	(98.974)	(89.976)	(81.796)	(74.360)	(67.600)	(61.455)	(55.868)	(50.789)	(46.172)	(41.974)	(38.159)	(34.690)	(31.536)	(28.669)	(26.063)	(23.693)	(1.357.045)	
Net Cash Flow	487.907	443.552	403.229	366.572	333.247	302.952	275.411	250.373	227.612	206.920	188.109	171.008	155.462	141.329	128.481	116.801	106.183	96.530	87.754	79.777	72.524	4.153.827	

NPV = 965.867
IRR = 14,4%

PROYEKSI NET PRESENT VALUE (NPV) PENGGUNAAN RECIPROCATING MACHINE

i = 10%

Uraian (USD)	Tahun ke-																						
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total	
Biaya Investasi Awal	3.182.040																						
Annual cash flow		(116.052)	(105.502)	(95.911)	(87.192)	(79.265)	(72.059)	(65.509)	(59.353)	(54.139)	(49.218)	(44.743)	(40.616)	(36.978)	(33.616)	(30.560)	(27.782)	(25.256)	(22.960)	(20.873)	(18.976)	(17.250)	(988.020)
Biaya O & M	(197.900)	(179.909)	(163.554)	(148.665)	(135.168)	(122.880)	(111.709)	(101.354)	(92.322)	(83.929)	(76.299)	(69.363)	(63.057)	(57.325)	(52.113)	(47.376)	(43.069)	(39.153)	(35.594)	(32.358)	(29.417)	(26.876)	(1.684.834)
Tambahan Biaya Listrik																							
Tambahan Biaya Termal																							
Potensi Penghematan (Revenue)																							
-Biaya Listrik	534.242	485.674	441.522	401.384	364.894	331.722	301.565	274.150	249.228	226.571	205.973	187.248	170.226	154.751	140.683	127.893	116.267	105.697	96.088	87.353	79.412	72.150	4.548.300
-Biaya Termal	164.045	149.132	135.574	123.249	112.045	101.859	92.599	84.181	76.528	69.571	63.246	57.497	52.270	47.516	43.198	39.271	35.701	32.455	29.505	26.823	24.384	22.150	1.396.606
-Biaya Beban Listrik	111.789	101.627	92.388	83.989	76.354	69.412	63.102	57.366	52.151	47.410	43.100	39.182	35.620	32.381	29.438	26.762	24.329	22.117	20.106	18.278	16.617	15.099	951.727
-Kelebihan Listrik	99.572	90.520	82.291	74.810	68.009	61.826	56.206	51.096	46.451	42.228	38.389	34.899	31.727	28.842	26.220	23.837	21.670	19.700	17.909	16.281	14.801	13.450	847.708
-Emisi GHG	37.860	34.420	31.291	28.446	25.860	23.509	21.372	19.429	17.663	16.057	14.597	13.270	12.064	10.967	9.970	9.064	8.240	7.491	6.810	6.191	5.628	5.112	322.338
Operating cash flow	633.557	575.961	523.601	476.000	432.728	393.389	357.626	325.115	295.559	268.690	244.264	222.058	201.871	183.519	166.835	151.668	137.880	125.346	113.951	103.592	94.174	85.725	5.393.825
Biaya Depresiasi	(159.102)	(144.638)	(131.489)	(119.536)	(108.669)	(98.790)	(89.809)	(81.640)	(74.222)	(67.475)	(61.341)	(55.764)	(50.695)	(46.086)	(41.897)	(38.088)	(34.625)	(31.477)	(28.616)	(26.014)	(23.649)	(21.417)	(1.354.525)
Net Cash Flow	474.455	431.322	392.111	356.465	324.059	294.599	267.817	243.470	221.337	201.215	182.923	166.293	151.176	137.433	124.939	113.581	103.255	93.868	85.335	77.577	70.525	64.308	4.039.300

NPV = 657.260
IRR = 13,9%

G3516C

GAS ENGINE TECHNICAL DATA



ENGINE SPEED:	1500	FUEL :	NAT GAS
COMPRESSION RATIO:	11.3:1	FUEL SYSTEM:	CAT LOW PRESSURE
AFTERCOOLER - STAGE 1 MAX. INLET (°C):	97		WITH AIR FUEL RATIO CONTROL
AFTERCOOLER - STAGE 2 MAX. INLET (°C):	91	FUEL PRESS. RANGE (kPa):	1.5 - 34.5
JACKET WATER - MAX. OUTLET (°C):	99	MIN. MCTIANE NUMBER:	80
COOLING SYSTEM:	WATER+1AC 2AC	RATED ALTITUDE (m):	500
IGNITION SYSTEM:	ADPMA	AIR TO TURBO. TEMP (°C):	78
EXHAUST MANIFOLD:	DRY	NOX EMISSION LEVEL:	500 mg/Nm ³
COMBUSTION:	LOW EMISSION	FUEL LHV (MJ/Nm ³):	25.8
EFFECTIVE PWRIN NUMBER:	GZ260134-Up	APPLICATION:	GENSET

RATING AND EFFICIENCY		NOTES	LOAD	100%	75%	50%
ENGINE POWER	(WITHOUT FAN)	(1)	KW	1658	1242	828
GENERATOR POWER	(WITHOUT FAN)	(2)	EKW	1605	1188	792
ENGINE EFFICIENCY	(ISO 3046/1)	(3)	%	41.4	40.6	38.8
ENGINE EFFICIENCY	(NOMINAL)	(3)	%	40.4	39.6	37.8
THERMAL EFFICIENCY	(NOMINAL)	(4)	%	44.5	44.9	46.2
TOTAL EFFICIENCY	(NOMINAL)	(5)	%	84.9	84.5	84.0

ENGINE DATA		NOTES	LOAD	100%	75%	50%
FUEL CONSUMPTION	(ISO 3046/1)	(6)	M ³ /hr	8.7	8.97	9.28
FUEL CONSUMPTION	(NOMINAL)	(6)	M ³ /hr	8.92	9.08	9.51
AIR FLOW @ 101.3 kPa		(7)	M ³ /hr	4.21	4.26	4.38
AIR FLOW		(7)	kg/hr	5.44	5.51	5.88
COMPRESSOR OUT PRESSURE			kPa (abs)	341	258	178
COMPRESSOR OUT TEMPERATURE			°C	145	143	94
AFTERCOOLER AIR OUT TEMPERATURE			°C	56	54	54
INLET MAN. PRESSURE		(8)	kPa	307	233	160
INLET MAN. TEMPERATURE	(SPECIFIED IN FLUID)	(9)	°C	55	54	54
TIMING		(10)	°BTDC	28	28	28
EXHAUST STACK TEMPERATURE		(11)	°C	477	496	520
EXHAUST GAS FLOW @ 101.3 kPa		(12)	M ³ /hr	4.47	4.52	4.65
EXHAUST MASS FLOW		(12)	kg/hr	5.63	5.7	5.86

EMISSIONS DATA		NOTES	LOAD	100%	75%	50%
NOx (as NO2) (corr. 5% O2)		(13)	mg/Nm ³ (dry)	500	500	500
CO (corr. 5% O2)		(14)	mg/Nm ³ (dry)	872	848	838
THC (corr. 5% O2, molecular weight of 15.84)		(14)	mg/Nm ³ (dry)	2533	2669	3430
NMHC (corr. 5% O2, molecular weight of 15.84)		(14)	mg/Nm ³ (dry)	380	431	515
CO2 (corr. 5% O2)		(14)	mg/Nm ³ (dry)	230200	218985	222184
EXHAUST O2		(15)	% DRY	10.3	10.1	10.1
LAMBDA		(15)		1.78	1.78	1.73

HEAT BALANCE DATA		NOTES	LOAD	100%	75%	50%
LHV INPUT		(16)	KW	4101	3134	2167
HEAT REJECTION TO JACKET		(17)	KW	452	387	320
HEAT REJECTION TO ATMOSPHERE		(18)	KW	117	97	78
HEAT REJECTION TO LUBE OIL		(19)	KW	104	83	78
HEAT REJECTION TO EXHAUST (LHV to 25°C)		(20)	KW	1412	1129	826
HEAT REJECTION TO EXHAUST (LHV to 120°C)		(20)	KW	1058	831	609
HEAT REJECTION TO A/C - STAGE 1		(21)	KW	231	96	3
HEAT REJECTION TO A/C - STAGE 2		(22)	KW	129	90	55

CONDITIONS AND DEFINITIONS

ENGINE RATING OBTAINED AND PRESENTED IN ACCORDANCE WITH ISO 3046/1. DATA REPRESENTS CONDITIONS OF 25°C, 100 KPA BAROMETRIC PRESSURE, 30% RELATIVE HUMIDITY, 2.5 KPA AIR FILTER RESTRICTION, AND 5 KPA EXHAUST STACK PRESSURE. ENGINE EFFICIENCY AND FUEL CONSUMPTION SPECIFICALLY NOTED AS ISO 3046/1 ARE REPRESENTED WITH 1.25 KPA AIR FILTER RESTRICTION AND 0 KPA EXHAUST STACK PRESSURE. CONSULT ALTITUDE CURVES FOR APPLICATIONS ABOVE MAXIMUM RATED ALTITUDE AND/OR TEMPERATURE. NO OVERLOAD PERMITTED AT RATING SHOWN.

EMISSION LEVELS ARE BASED ON THE ENGINE OPERATING AT STEADY STATE CONDITIONS AND ADJUSTED TO THE SPECIFIED NOx LEV1 AT 100% LOAD. EMISSION TO FRANCES SPECIFIED ARE DEPENDENT UPON FUEL QUALITY. METHANE NUMBER CANNOT VARY MORE THAN ±3. PUBLISHED PART LOAD DATA IS WITH LAMBDA CONTROL.

ENGINE RATING IS WITHOUT ENGINE DRIVEN WATER PUMPS

FOR NOTES INFORMATION CONSULT PAGE THREE.

FUEL USAGE GUIDE												
CAT METHANE NUMBER	35	35	40	45	50	55	60	66	70	75	80	85 to 100
MINIMUM TEMPERATURE	-	-	-	-	-	15	15	15	15	20	25	25
DERIVATION FACTOR	0	0	0	0	0	0.75	0.80	0.85	0.89	0.92	1.00	1.00

ALTITUDE DERIVATION FACTORS													
AIR TO TURBO (°C)	30	35	40	45	50	55	60	66	70	75	80	85 to 100	
	30	0.96	0.95	0.92	0.89	0.87	0.84	0.81	0.78	0.76	0.74	0.72	0.69
45	1.00	0.97	0.94	0.91	0.88	0.85	0.83	0.80	0.78	0.75	0.73	0.70	0.68
60	1.03	1.00	0.97	0.94	0.91	0.88	0.85	0.83	0.80	0.76	0.75	0.73	0.70
75	1.00	1.00	0.98	0.95	0.92	0.89	0.87	0.84	0.81	0.78	0.76	0.74	0.72
90	1.03	1.00	0.97	0.94	0.91	0.88	0.85	0.83	0.80	0.76	0.75	0.73	0.70
105	1.00	1.00	1.00	1.00	0.97	0.94	0.91	0.88	0.84	0.82	0.79	0.76	0.74
120	1.00	1.00	1.00	1.00	0.97	0.94	0.91	0.88	0.84	0.82	0.79	0.76	0.74
135	1.00	1.00	1.00	1.00	0.97	0.94	0.91	0.88	0.84	0.82	0.79	0.76	0.74
150	1.00	1.00	1.00	1.00	0.97	0.94	0.91	0.88	0.84	0.82	0.79	0.76	0.74
165	1.00	1.00	1.00	1.00	0.97	0.94	0.91	0.88	0.84	0.82	0.79	0.76	0.74
180	1.00	1.00	1.00	1.00	0.97	0.94	0.91	0.88	0.84	0.82	0.79	0.76	0.74
195	1.00	1.00	1.00	1.00	0.97	0.94	0.91	0.88	0.84	0.82	0.79	0.76	0.74
210	1.00	1.00	1.00	1.00	0.97	0.94	0.91	0.88	0.84	0.82	0.79	0.76	0.74
225	1.00	1.00	1.00	1.00	0.97	0.94	0.91	0.88	0.84	0.82	0.79	0.76	0.74
240	1.00	1.00	1.00	1.00	0.97	0.94	0.91	0.88	0.84	0.82	0.79	0.76	0.74
255	1.00	1.00	1.00	1.00	0.97	0.94	0.91	0.88	0.84	0.82	0.79	0.76	0.74
270	1.00	1.00	1.00	1.00	0.97	0.94	0.91	0.88	0.84	0.82	0.79	0.76	0.74
285	1.00	1.00	1.00	1.00	0.97	0.94	0.91	0.88	0.84	0.82	0.79	0.76	0.74
300	1.00	1.00	1.00	1.00	0.97	0.94	0.91	0.88	0.84	0.82	0.79	0.76	0.74
ALTITUDE (METERS ABOVE SEA LEVEL)													

AFTERCOOLER HEAT REJECTION FACTORS												
AIR TO TURBO (°C)	60	65	70	75	80	85	90	95	100	105	110	115
	60	1.27	1.31	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35
75	1.21	1.25	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29
90	1.15	1.19	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
105	1.10	1.13	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17
120	1.04	1.07	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11
135	1.00	1.01	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
150	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
165	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
180	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
195	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
210	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
225	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
240	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
255	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
270	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
285	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
300	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ALTITUDE (METERS ABOVE SEA LEVEL)												

FREE FIELD MECHANICAL & EXHAUST NOISE													
Free Field Mechanical	DISTANCE FROM THE ENGINE (METERS)	dB(A)											
		1	7	16	32	64	128	256	512	1024	2048	4096	
Free Field Exhaust	DISTANCE FROM THE EXHAUST PIPING (METERS)	1.5	125.7	121.5	118.2	115.5	113.2	111.5	110.2	109.5	109.2	109.1	109.1
		7	102.3	98.1	94.8	92.1	89.8	87.5	86.2	85.5	85.2	85.1	85.1
	15	85.7	81.5	78.2	75.5	73.2	71.5	70.2	69.5	69.2	69.1	69.1	
		Overall SPL	62 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz			

FUEL USAGE GUIDE
 This table shows the deration factor required for given fuel. Make the deration correct as the engine is operating. Minimum deration factor is 0.67. The methane number of a fuel is determined by using the Caterpillar Methane Number Calculation program.

ALTITUDE DERIVATION FACTORS
 This table shows the deration required for various air inlet temperatures and altitudes. Use this information along with the fuel usage guide chart to help determine actual engine power for your site.

INLET AND EXHAUST RESTRICTION CORRECTION FOR ALTITUDE ADJUSTMENT
 To determine the appropriate altitude deration factor to be applied to this engine for inlet or exhaust restriction, refer to the standard conditions listed on page 1. A correction to the site altitude can be made to adjust for this difference. Add 43 meters to the site altitude for each additional kPa of exhaust stack pressure greater than specified conditions. Add 30 meters to the site altitude for each additional kPa of inlet restriction greater than specified conditions. If inlet restriction or exhaust stack pressure are less than specified conditions, the same factor apply to lower the site altitude.

ACTUAL ENGINE RATING
 It is important to note that the Altitude/Temperature deration and the Fuel Usage Guide deration are not cumulative. They are not to be added together. The same is true for the Low Energy Fuel deration (utilizing the Caterpillar Methane Number Program) and the Fuel Usage Guide deration. However, the Altitude/Temperature deration and Low Energy Fuel deration are cumulative, and they must be added together in the method shown below. To determine the actual power available, take the lowest rating between 1) and 2).

- 1) (Altitude/Temperature Deration) + (Low Energy Fuel Deration)
- 2) Fuel Usage Guide Deration

Note: For NA's always add the Low Energy Fuel deration to the Altitude/Temperature deration. For 7A engines only add the Low Energy Fuel deration to the Altitude/Temperature deration when the Altitude/Temperature deration is less than 5.0 (100%). This will give the actual rating for the engine at the conditions specified.

AFTERCOOLER HEAT REJECTION FACTORS
 Aftercooler heat rejection is given for standard conditions of 25°C and 101.3 kPa altitude. The altitude correction is for standard temperature, in the air to inlet temperature goes up, so does the heat rejection. As altitude increases, the intake charge will tend to expand to overcome the lower atmospheric pressure. This increases the amount of heat that must be removed from the intake air by the aftercooler. Use the aftercooler heat rejection factor to adjust for ambient air altitude conditions. Always use factor by the standard aftercooler heat rejection. Failure to properly account for these factors could result in deration and cause the engine to stall. For 2 Stage Aftercoolers with separate circuits, the 1st stage will reject 90% of the additional heat.

SOUND DATA
 Data determined by methods similar to ISO Standard 6853:2005 #1. Accuracy Grade 2. SPL = Sound Pressure Level.

NOTES

- 1 ENGINE RATING IS WITHOUT ENGINE DRIVEN WATER PUMPS. TOLERANCE IS $\pm 3\%$ OF FULL LOAD.
- 2 GENERATOR POWER DETERMINED WITH AN ASSUMED GENERATOR EFFICIENCY OF 96.9% AND POWER FACTOR OF 0.8 [GENERATOR POWER = ENGINE POWER \times GENERATOR EFFICIENCY].
- 3 ISO 3046/1 ENGINE EFFICIENCY TOLERANCE IS (+)0, (-)5% OF FULL LOAD % EFFICIENCY VALUE. NOMINAL ENGINE EFFICIENCY TOLERANCE IS $\pm 2.5\%$ OF FULL LOAD % EFFICIENCY VALUE.
- 4 THERMAL EFFICIENCY: JACKET HEAT + LUBE OIL HEAT + STAGE 1 A/C HEAT + EXH. HEAT TO 120°C.
- 5 TOTAL EFFICIENCY = ENGINE EFF. + THERMAL EFF. TOLERANCE IS $\pm 10\%$ OF FULL LOAD DATA.
- 6 ISO 3046/1 FUEL CONSUMPTION TOLERANCE IS (+)5, (-)0% OF FULL LOAD DATA. NOMINAL FUEL CONSUMPTION TOLERANCE IS $\pm 2.5\%$ OF FULL LOAD DATA.
- 7 UNDRIED AIR. FLOW TOLERANCE IS $\pm 5\%$
- 8 INLET MANIFOLD PRESSURE TOLERANCE IS $\pm 5\%$
- 9 INLET MANIFOLD TEMPERATURE TOLERANCE IS $\pm 5^\circ\text{C}$.
- 10 TIMING INDICATED IS FOR USE WITH THE MINIMUM FUEL METHANE NUMBER SPECIFIED. CONSULT THE APPROPRIATE FUEL USAGE GUIDE FOR TIMING AT OTHER METHANE NUMBERS.
- 11 EXHAUST STACK TEMPERATURE TOLERANCE IS (+)35°C, (-)30°C.
- 12 WET EXHAUST. FLOW TOLERANCE IS $\pm 6\%$
- 13 NOX TOLERANCES ARE $\pm 18\%$ OF SPECIFIED VALUE.
- 14 CO, CO2, THC, and NMHC VALUES ARE "NOT TO EXCEED".
- 15 O2% TOLERANCE IS ± 0.5 ; LAMBDA TOLERANCE IS ± 0.05 . LAMBDA AND O2 LEVEL ARE THE RESULT OF ADJUSTING THE ENGINE TO OPERATE AT THE SPECIFIED NOX LEVEL.
- 16 LHV RATE TOLERANCE IS $\pm 2.5\%$.
- 17 TOTAL JW HEAT (based on treated water) = JACKET HEAT + LUBE OIL HEAT + STAGE 1 A/C HEAT + 0.90 \times (STAGE 1 + STAGE 2) \times (ACHRF-1). TOLERANCE IS $\pm 10\%$ OF FULL LOAD DATA.
- 18 RADIATION HEAT RATE BASED ON TREATED WATER. TOLERANCE IS $\pm 50\%$ OF FULL LOAD DATA.
- 19 LUBE OIL HEAT RATE BASED ON TREATED WATER. TOLERANCE IS $\pm 20\%$ OF FULL LOAD DATA.
- 20 EXHAUST HEAT RATE BASED ON TREATED WATER. TOLERANCE IS $\pm 10\%$ OF FULL LOAD DATA.
- 21 STAGE 1 A/C HEAT (based on treated water) = STAGE 1 A/C HEAT + 0.90 \times (STAGE 1 + STAGE 2) \times (ACHRF-1). TOLERANCE IS $\pm 5\%$ OF FULL LOAD DATA.
- 22 STAGE 2 A/C HEAT (based on treated water) = STAGE 2 A/C HEAT + (STAGE 1 + STAGE 2) \times 0.10 \times (ACHRF - 1). TOLERANCE IS $\pm 5\%$ OF FULL LOAD DATA.