

		PROJECT TECHNICAL DATA		Nomor :
BIRO ENGINEERING		KETENAGA LISTRIKAN		Halaman :
				Tanggal :

NAMA PROYEK	:	LOMBOK GECC POWER PLANT (PEAKER) 130-150 MW
PEMILIK	:	PT. PLN Unit Induk Pembangkitan Nusa Tenggara
JENIS PROYEK	:	EPC
LOKASI	:	LOMBOK - NTB
PERIODE PELAKSANAAN	:	2017 - 2020

NO	DESCRIPTION			
1	DESIGN SPESIFICATION	VALUE	UNIT	KETERANGAN
	LUAS LAHAN	4,44	Ha	
	OUTPUT CAPACITIES NETT SIMPLE CYCLE	120	MW	GUARANTEE PERF.
	OUTPUT CAPACITIES NETT HRSG	13	MW	GUARANTEE PERF.
	OUTPUT CAPACITIES COMBINED CYCLE	134	MW	
	AUXILIARY POWER COMSUMPTION	0,47	MW	
	OUTPUT GROSS CAPACITIES COMBINED CYCLE	134,47	MW	
	TURBINE MAXIMUM INLET STEAM	64,46	Ton/Hour	
	ENGINE GENERATOR	126,88	MW	SIDE PLTG @= 9.76 TOTAL 13 UNIT
	GENERATOR	11,6	MW	SIDE PLTU
	TOTAL GENERATOR	138,48		
	GENERATOR TRANSFORMER TOTAL	162	MW	6 UNIT
	AUXILIARY TRANSFORMER	3,5	MVA	3 UNIT
	KAPASITAS WATER TREATMENT PLAN	8	M3/Hour	
	KAPASITAS WASTE TREATMENT PLAN	5	M3/Hour	
	KAPASITAS BATUBARA	N/A	Ton/Hari	
	KAPASITAS COAL UNLOADING JETTY	N/A	DWT	
	RATE OF CONVEYOR	N/A	Ton/hour	
	STEAM FLOW RATED TURBINE	4,248	Ton/hour	1 unit = 4.7 , jumlah 13 unit
	HRSG (Heat Recovery Steam Generator)	61,1	Ton/Hour	
	BIAYA KONSTRUKSI	Rp 1.999.289.026.719		

2	ENGINE CONFIGURATION			
	MANUFACTURER	:	Wartsila	
	MODEL	:	Gas & Fuel oil consumption with pilot	
	ENGINE TYPE	:	W20V34DF	
	FUEL TYPE	:	Gas / Oil	
	UNIT NUMBER	:	20	
	COOLING SYSTEM	:	Sea Cooling Water	
	NOMINAL SPEED (RPM)	:	750	rpm
	NOMINAL POWER (KW)	:	9760	
	FLUE FLOW (KG/H)	:	4668/4248 (oil/gas)	kg/h
	EFFICIENCY	:	80 / 90	%

3	ENGINE GENERATOR			
	MANUFACTURER	:	Wartsila	
	MODEL	:	Gas & Fuel oil consumption with pilot	
	TYPE	:	W20V34DF	
	COLING SYSTEM	:	Cooling Water	
	CLASS OF RATING	:	IP23	
	CAPACITY	:		
	RATED TERMINAL VOLTAGE (V)	:	15000	Volt
	RATED CURRENT(A)	:	470	Ampere
	RATED OUTPUT(KVA)	:	12200	kVA
	RATED POWER (KW)	:	9760	kW
	RATED VOLTAGE	:	15000	Volt
	EFFICIENCY	:	95%	

4	STEAM TURBINE			
	MANUFACTURER	:	Shin Nippon Machinery CO.,LTD.	
	MODEL	:	Steam Turbine	
	TYPE	:	Horizontal, Impulse, multi-stage, multi-valve, axial flow, condensing, non-extraction & geared (Axial exhaust type)	
	TURBINE HEAT RATED	:	14 Bar (g)	bar(g)
	RATED OUTPUT (AT GENERATOR TERMINAL) KW	:	12,820 kW at CASE4.	kW
	SPEED (TURBINE/GENERATOR)	:	6984/1500 rpm	rpm

NO	DESCRIPTION				
1	DESIGN SPESIFICATION		VALUE	UNIT	KETERANGAN
	INLET STEAM PRESSURE	:	15 barA	bar(g)	
	INLET STEAM TEMPERATURE	:	339 °C	°C	
	EXHAUST STEAM PRESSURE	:	0.079 Bar.A	bar(g)	
	EXHAUST STEAM TEMPERATUR	:	41.27 °C	°C	
	MAX. INLET FLOW	:	64.46 Ton/hr		
	MAX. EXHAUST STEAM FLOW	:	64.46 Ton/hr, at 0.088 Bar.A	T/°C	
	MIN EXHAUST STEAM FLOW	:	9,9 Ton/hr	T/°C	
	MAX OPERATING EXHAUST PRESSURE	:	0.3 Bar.A		
	RATED OUTPUT (KG/H)	:	12,820 kW at CASE4.		
	ROTATING DIRECTION	:	From Generator to Turbine/Axial Exhaust Steam		
	MAIN STEAM CONSUMPTION AT RATED OUTPUT(KG/H)	:	4248kg/h		
	FINAL FEED WATER TEMPRATURE To HRSG	:	105	°C	
	EFFICIENCY		70%		
5	HRSG				
	MANUFACTURE	:	Alfa Laval Aalborg Oy		
	MODEL	:	AV-6N		
	TYPE	:	Natural Circulation		
	GAS FLOW DIRECTION	:	Inlet : 368 °C (LFO), 372 °C (Gas)		
	TYPE OF EVAPORATOR CIRCULATION	:	Natural Circulation		
	TYPE OF CONDENSATE DEARATION	:	Natural Circulation		
	DESIGN TEMPERATURE(C)	:	400	°C	
	DESIGN PRESSURE(MMH2O)	:	22	bar	
	DUCT MATERIAL	:	Cor-Ten B		
	TYPE OF INSULATION	:	Blnd rivet		
	INSULATION MATERIAL & THICKNESS	:	Alumunium (1.0mm)		
	MAX MEAN GAS VELOCITY (M/S)	:			
	EFFICIENCY	:			
6	STEAM TURBINE GENERATOR				
	MANUFACTURER	:	ABB		
	MODEL	:	L006133-A		
	TYPE	:	AMS 900L4L BS		
	UNIT	:	1	EA	
	CAPACITY	:	11600	kW	
	BOILER TYPE	:	Natural Circulation		
	RATED TERMINAL VOLTAGE(V	:	15000±5%	Volt	
	RATED CURRENT(A)	:	558	A	
	RATED OUTPUT(KVA)	:	12889	kVA	
	RATED POWER (KW)	:			
	EFFICIENCY				
7	SUBSTATION				
	MANUFACTURER	:			
	MODEL	:			
	TYPE :	:			
	a. OPEN SWITCHYARD	:			
	b. GIS	:			
	NO OF LINE	:			
	RATED VOLTAGE	:			
	RATED CURRENT	:			
	NOMINAL VOLTAGE	:			
	MAXIMUM VOLTAGE	:	15750	Volt	
	OPERATING VOLTAGE	:	15000	Volt	
	RATED SHORT TIME WITHSTAND CURRENT	:	40	kA/sec	
	CB TYPE	:	VACUUM		
8	150 kV GAS INSULATED SWITCHGEAR WITH THE FOLLOWING RATING				
8.1	150 kV TRANSFORMER FEEDER E01, E02 & E03 (INCOMER CIRCUIT)				
	DISCONNECTOR SWITCH				
	Manufacturer	:	ABB Switzerland Ltd		
	Type	:	ELK – TK14		
	Year	:	2018		
	Rated voltage	:	300	kV	
	Rated current	:	2000	A	
	RATED SHORT TIME WITHSTAND CURRENT	:	40	kA	

NO	DESCRIPTION				
1	DESIGN SPESIFICATION		VALUE	UNIT	KETERANGAN
	CIRCUIT BREAKER				
	Manufacturer	:	ABB Switzerland Ltd		
	Type	:	ELK – SP14		
	Rated normal current	:	2000	A	
	RATED SHORT TIME WITHSTAND CURRENT	:	40	kA	
	CB Type	:	SF6		
	Reference standard	:	IEC 62271-100		
	CURRENT TRANSFORMER				
	Merk	:	ABB Switzerland Ltd		
	Type	:	ELK CN14 – 840		
	Standard	:	IEC 61869-1/-2		
	Rated Insulation Level	:	300/460/1050	kV	
	RATED SHORT TIME WITHSTAND CURRENT	:	40 kA 3 sec		
	Year	:	2018		
	Freq	:	50	Hz	
	Ratio	:	2000/1	A	
	EARTHING SWITCH				
	Manufacturer	:	ABB Switzerland Ltd		
	Type	:	ELK – TK14		
	Year	:	2018		
	Rated voltage	:	300	kV	
	Rated current	:	2000	A	
	freq	:	50	Hz	
	VOLTAGE TRANSFORMER				
	Manufacturer	:	PFIFFNER		
	Type	:	EGK 300 IID		
	Standard	:	IEC 61869-3 / 2011		
	Rated insulation level	:	300/460/1050/850 kV		
	Ratio	:	150: √3 / 100: √3		
	Class	:	50 VA, Class 3P-0.2		
	Freq	:	50	Hz	
	LIGHTNING ARRESTER 150 kV E01, E02 & E03				
	Manufacturer	:	ABB Switzerland Ltd		
	Type	:	AZ14G-115		
	Standard	:	IEC 60099-4 / IEEE C62.11		
	Continious operating voltage	:	115	kV	
	Rated voltage	:	144	kV	
	Rated frequency	:	50	Hz	
	Nominal discharge current	:	20	kA	
8.2	150 kV BUS COUPLER E04				
	DISCONNECTOR SWITCH				
	Merk	:	ABB Switzerland Ltd		
	Type	:	ELK – TK14		
	Year	:	2018		
	Rated Voltage	:	300	kV	
	Rated Current	:	2000	A	
	RATED SHORT TIME WITHSTAND CURRENT	:	40	kA/sec	
	Up	:	1050	kV	
	freq	:	50	Hz	
	CURRENT TRANSFORMER				
	Merk	:	ABB Switzerland Ltd		
	Type	:	ELK CN14-840		
	Standard	:	IEC 61869-1/-2		
	Rated Insulation Level	:	300/460/1050 kV		
	RATED SHORT TIME WITHSTAND CURRENT	:	40	kA/3sec	
	Year	:	2018		
	Freq	:	50	Hz	
	CIRCUIT BREAKER				

NO	DESCRIPTION				
1	DESIGN SPESIFICATION		VALUE	UNIT	KETERANGAN
	Merk	:	ABB Switzerland Ltd		
	Type	:	ELK – SP14		
	Serial No.	:	11HC300137006 – 04		
	Year of manufacturing	:	2018		
	Rated voltage	:	300		
	Standard	:	IEC 62271-100		
	Normal current	:	2000	A	
	Short time withstand current	:	40	kA	
	CB Type	:	SF6		
	VOLTAGE TRANSFORMER				
	Manufacturer	:	PFIFFNER		
	Type	:	EGK 300 IID		
	Standard	:	IEC 61869-3 / 2011		
	Rated insulation level	:	300/460/1050/850 kV		
	Ratio	:	150: v3 / 100 : v3	kV/V	
	Class	:	50 VA, Class 3P-0.2		
	Freq	:	50	Hz	
8.3	150 kV LINE FEEDER E05, E06, E07 & E08				
	DISCONNECTOR SWITCH				
	Manufacturer	:	ABB Switzerland Ltd		
	Type	:	ELK – TK14		
	Year	:	2018		
	Rated voltage	:	300	kV	
	Rated current	:	2000	A	
	RATED SHORT TIME WITHSTAND CURRENT	:	40	kA	
	CIRCUIT BREAKER				
	Manufacturer	:	ABB Switzerland Ltd		
	Type	:	ELK – SP14		
	Rated normal current	:	2000	A	
	RATED SHORT TIME WITHSTAND CURRENT	:	40	kA	
	CB Type	:	SF6		
	Reference standard	:	IEC 62271-100		
	CURRENT TRANSFORMER				
	Merk	:	ABB Switzerland Ltd		
	Type	:	ELK CN14 – 840		
	Standard	:	IEC 61869-1/-2		
	Rated Insulation Level	:	300/460/1050 kV		
	RATED SHORT TIME WITHSTAND CURRENT	:	40 kA 3 sec		
	Year	:	2018		
	Freq	:	50	Hz	
	Ratio	:	2000/1	A	
	EARTHING SWITCH				
	Manufacturer	:	ABB Switzerland Ltd		
	Type	:	ELK – TK14		
	Year	:	2018		
	Rated voltage	:	300	kV	
	Rated current	:	2000	A	
	freq	:	50	Hz	
	VOLTAGE TRANSFORMER				
	Manufacturer	:	PFIFFNER		
	Type	:	EGK 300 IID		
	Standard	:	IEC 61869-3 / 2011		
	Rated insulation level	:	300/460/1050/850 kV		
	Ratio	:	150: √3 / 100: √3		
	Class	:	50 VA, Class 3P-0.2		
	Freq	:	50	Hz	
	LIGHTNING ARRESTER				
	Manufacturer	:	ABB Switzerland Ltd		
	Type	:	AZ14G-115		

NO	DESCRIPTION				
1	DESIGN SPESIFICATION		VALUE	UNIT	KETERANGAN
	Standard	:	IEC 60099-4 / IEEE C62.11		
	Continious operating voltage	:	115	kV	
	Rated voltage	:	144	kV	
	Rated frequency	:	50	Hz	
	Nominal discharge current	:	20	kA	
8.4	150 kV TRANSFORMER FEEDER 4 (E09)				
	DISCONNECTOR SWITCH				
	Manufacturer	:	ABB Switzerland Ltd		
	Type	:	ELK – TK14		
	Year	:	2018		
	Rated voltage	:	300	kV	
	Rated current	:	2000	A	
	RATED SHORT TIME WITHSTAND CURRENT	:	40	kA	
	CIRCUIT BREAKER				
	Manufacturer	:	ABB Switzerland Ltd		
	Type	:	ELK – SP14		
	Rated normal current	:	2000	A	
	RATED SHORT TIME WITHSTAND CURRENT	:	40	kA	
	CB Type	:	SF6		
	Reference standard	:	IEC 62271-100		
	CURRENT TRANSFORMER				
	Merk	:	ABB Switzerland Ltd		
	Type	:	ELK CN14 – 840		
	Standard	:	IEC 61869-1/-2		
	Rated Insulation Level	:	300/460/1050 kV		
	RATED SHORT TIME WITHSTAND CURRENT	:	40 kA 3 sec		
	Year	:	2018		
	Freq	:	50	Hz	
	Ratio	:	2000/1	A	
	EARTHING SWITCH				
	Manufacturer	:	ABB Switzerland Ltd		
	Type	:	ELK – TK14		
	Year	:	2018		
	Rated voltage	:	300	kV	
	Rated current	:	2000	A	
	freq	:	50	Hz	
	VOLTAGE TRANSFORMER				
	Manufacturer	:	PIFFNER		
	Type	:	EGK 300 IID		
	Standard	:	IEC 61869-3 / 2011		
	Rated insulation level	:	300/460/1050/850 kV		
	Ratio	:	150: √3 / 100: √3		
	Class	:	50 VA, Class 3P-0.2		
	Freq	:	50	Hz	
	LIGHTNING ARRESTER				
	Manufacturer	:	ABB Switzerland Ltd		
	Type	:	AZ14G-115		
	Standard	:	IEC 60099-4 / IEEE C62.11		
	Continious operating voltage	:	115	kV	
	Rated voltage	:	144	kV	
	Rated frequency	:	50	Hz	
	Nominal discharge current	:	20	kA	
9	15 kV SWITCHGEAR IS DIMENSIONED WITH THE FOLLOWING RATING				
	Rated Voltage	:	17.5	kV	
	Rated Service	:	15	kV	
	Rated Current for bus bar	:	1250	A	
	Rated short circuit withstand current Ith/1 sec	:	40	kA/sec	
	Enclosure protection class according to IEC 60529	:	IP21		
	Switchgear Standards	:	IEC 62271		
	Circuit Breaker Standards	:	IEC 60056		

NO	DESCRIPTION				
1	DESIGN SPESIFICATION		VALUE	UNIT	KETERANGAN
	Circuit Breaker Type	:	Vacuum		
	Installation	:	Indoor		
10	6.3 kV SWITCHGEAR IS DIMENSIONED WITH THE FOLLOWING RATING				
	Rated Voltage	:	12	kV	
	Rated Service	:	6.3	kV	
	Rated Current for bus bar	:	800	A	
	Rated short circuit withstand current lth/1 sec	:	25	kA/sec	
	Enclosure protection class according to IEC 60529	:	IP21		
	Switchgear Standards	:	IEC 62271		
	Circuit Breaker Standards	:	IEC 60056		
	Circuit Breaker Type	:	Vacuum		
	Installation	:	Indoor		
11	400V SWITCHGEAR IS DIMENSIONED WITH THE FOLLOWING RATING				
	Rated Voltage	:	690	VAC	
	Rated Service	:	400	VAC	
	Rated Current for bus bar	:	5000	A	
	Rated short circuit withstand current lth/1 sec	:	100	kA/sec	
	Enclosure protection class according to IEC 60529	:	IP21		
	Switchgear Standards	:	IEC 62271		
	Circuit Breaker Standards	:	IEC 60056		
	Circuit Breaker Type	:	Air		
	Installation	:	Indoor		
12	POWER TRANSFORMER (150 kV GENERATOR STEP UP TRANSFORMER)				
12.1	MANUFACTURE	:	B&D		
	TYPE	:	Cover		
	RATED CAPACITY	:	76/95	MVA	
	CLASS AND TYPE OF CORE	:	Disc Type		
	PHASE	:	3	Phase	
	TRANSFORMER RATING AT FULL LOAD (OFAF) (MVA)	:	95	MVA	
	NOMINAL SYSTEM VOLTAGE (LINE TO LINE) (KV)	:	150/15	kV	
	TRANSFORMER CONNECTION(WYE OR DELTA)	:	YNd1		
	COOLING TYPE	:	ONAN/ONAF		
	ON LOAD TAP CHANGER	:	17		
	TAP CHANGER MANUFACTURE	:	MR		
	HV TERMINAL	:	1N - 1U - 1V - 1W		
	LV TERMINAL	:	2u - 2v - 2w		
12.2	MANUFACTURE	:	B&D		
	TYPE	:	Cover		
	RATED CAPACITY	:	65/80	MVA	
	CLASS AND TYPE OF CORE	:	Disc Type		
	PHASE	:	3	Phase	
	TRANSFORMER RATING AT FULL LOAD (OFAF) (MVA)	:	80	MVA	
	NOMINAL SYSTEM VOLTAGE (LINE TO LINE) (KV)	:	150/15	kV	
	TRANSFORMER CONNECTION(WYE OR DELTA)	:	YNd1		
	COOLING TYPE	:	ONAN/ONAF		
	ON LOAD TAP CHANGER	:	17		
	TAP CHANGER MANUFACTURE	:	MR		
	HV TERMINAL	:	1N - 1U - 1V - 1W		
	LV TERMINAL	:	2u - 2v - 2w		
12.3	MANUFACTURE	:	B&D		
	TYPE	:	Cover		
	RATED CAPACITY	:	14/17	MVA	
	CLASS AND TYPE OF CORE	:	Disc Type		
	PHASE	:	3	Phase	
	TRANSFORMER RATING AT FULL LOAD (OFAF) (MVA)	:	17	MVA	
	NOMINAL SYSTEM VOLTAGE (LINE TO LINE) (KV)	:	150/15	kV	

NO	DESCRIPTION				
1	DESIGN SPESIFICATION		VALUE	UNIT	KETERANGAN
	TRANSFORMER CONNECTION(WYE OR DELTA)	:	YNd1		
	COOLING TYPE	:	ONAN/ONAF		
	ON LOAD TAP CHANGER	:	17		
	TAP CHANGER MANUFACTURE	:	MR		
	HV TERMINAL	:	1N - 1U - 1V - 1W		
	LV TERMINAL	:	2u - 2v - 2w		
13	POWER TRANSFORMER (15 kV AUXILIARY FEEDER TRANSFORMER, 2 UNIT)				
	MANUFACTURE	:	TRAFOINDO PRIMA PERKASA		
	TYPE	:	COVER		
	RATED CAPACITY	:	5500/6500	kVA	
	CLASS AND TYPE OF CORE	:	DISC TYPE		
	PHASE	:	3	Phase	
	TRANSFORMER RATING AT FULL LOAD (OFAF) (MVA)	:	6.5	MVA	
	NOMINAL SYSTEM VOLTAGE (LINE TO LINE) (KV)	:	15	kV	
	TRANSFORMER CONNECTION(WYE OR DELTA)	:	Dyn11		
	COOLING TYPE	:	ONAN/ONAF		
	OFF LOAD TAP CHANGER	:	7		
	TAP CHANGER MANUFACTURE	:	TRAFOINDO PRIMA PERKASA		
	HV TERMINAL	:	1U - 1V - 1W		
	LV TERMINAL	:	2n - 2u - 2v - 2w		
14.	POWER TRANSFORMER (6.3 kV AUXILIARY FEEDER TRANSFORMER, 3 UNIT)				
	MANUFACTURE	:	TRAFOINDO PRIMA PERKASA		
	TYPE	:	COVER		
	RATED CAPACITY	:	2500/3500	kVA	
	CLASS AND TYPE OF CORE	:	DISC TYPE		
	PHASE	:	3		
	TRANSFORMER RATING AT FULL LOAD (OFAF) (MVA)	:	3.5	MVA	
	NOMINAL SYSTEM VOLTAGE (LINE TO LINE) (KV)	:	6.3	kV	
	TRANSFORMER CONNECTION(WYE OR DELTA)	:	Dyn11		
	COOLING TYPE	:	ONAN / ONAF		
15	BLACK START DIESEL GENERATOR IS DIMENSIONED WITH THE FOLLOWING RATING				
	GENERATOR				
	Manufacturer	:	AGCO POWER		
	Model	:	Perkins 4006-23TAG3A		
	Serial No.	:	0002066393		
	Rated Output (kVA)	:	800	kVA	
	Rated Voltage (Volt)	:	400	Volt	
	Nominal Current	:	1155	A	
	Power Factor	:	0.8		
	Frequency	:	50	Hz	
	Engine	:			
	Manufacturer	:	AGCO POWER		
	Model	:	BLM901		
	Serial No.	:	DGDF8993		
	Rating (kW)	:	679	kW	
	Speed (min ⁻¹)	:	1500	min ⁻¹	
	Control Panel	:			
	Manufacturer	:	AGCO POWER		
	Nominal Current	:	1250	A	
	Cable Entry	:	Bottom		
16	HEATING SYSTEM				
	HP HEATER				
	MANUFAKTUR	:	NA		
	NUMBER OF HP HEATERS	:	NA		
	MODEL	:	NA		

NO	DESCRIPTION				
1	DESIGN SPESIFICATION		VALUE	UNIT	KETERANGAN
	TYPE	:	NA		
	CAPACITY	:	NA		
	TEMPERATURE	:	NA		
	EFFICIENCY	:	NA		
	LP HEATER	:			
	MANUFAKTUR	:	NA		
	NUMBER OF LP HEATERS	:	NA		
	MODEL	:	NA		
	TYPE	:	NA		
	CAPACITY	:	NA		
	TEMPERATURE	:	NA		
	EFFICIENCY	:	NA		
	AUXILIARY BOILER				
	MANUFAKTUR	:	Alfa Laval Aalborg Oy		
	MODEL	:	BH-750L		
	TYPE	:	Oil fired boiler		
	HEAT SECTIONS	:	2-pass boiler		
	WATER VOLUME: OPERATION / MAX	:	1,4 / 1,6	m³	
	MAIN VOLTAGE	:	400 VAC / 50Hz		
	CONTROL VOLTAGE	:	230 VAC		
	TEMPERATURE IN FEED WATER TANK	:	105...135	°C	
	CAPACITY	:	750	kg /h	
	OPERATING PRESSURE / TEMPERATURE	:	7 bar (g) / 170°C		
	DESIGN PRESSURE / TEMPERATURE	:	10 bar (g) / 184°C		
	PRESSURE TEST VALUE	:	15,7	bar (g)	
	SAFETY VALVE OPEN / RESET	:	10	bar (g)	
	SAFETY VALVE BLOW OUT CAPACITY	:	2 x 1165	kg/h	
	DEAERATOR				
	MANUFAKTUR	:	Alfa Laval Aalborg Oy		
	MODEL	:	PSVS-30		
	TYPE	:			
	CAPACITY	:	30	m³	
	TEMPERATURE	:	200	°C	
	EFFICIENCY	:	67%		
17	PUMP				
	INTAKE PUMP		Engine	Condenser	
	MANUFAKTUR	:	SPP Pumps Limited		
	MODEL	:	2 Stage	1 Stage	
	TYPE	:	Centrifugal Vertical		
	FLOW	:	95,67 / 96,20	99,69 / 101,00	%
	PRESSURE	:	3,47	2,05	kg/cm2
	CAPACITY	:	5077	2701	m3/h
	EFFICIENCY	:	85	81	%
	CONDENSATE PUMP				
	MANUFAKTUR	:	Torishima Pump MPG, CO., LTD		
	MODEL	:	MMK-E125/4		
	TYPE	:	Centrifugal Horizontal		
	FLOW	:	92		m3/h
	PRESSURE	:	0,775		Mpa
	CAPACITY	:	1,541		m3/h
	EFFICIENCY	:	77		%
	BOILER FEED PUMP				
	MANUFAKTUR		Lowara		
	MODEL		Vertical Pump		
	TYPE	:	Centr. Mstage		
	FLOW	:	36,1		m3/hr
	PRESSURE	:	20,8		bar
	EFFICIENCY	:	75,21		%
18	WATER TREATMENT SYSTEM				
	A. ONCE THROUGH SYSTEM (AIR LAUT)				

NO	DESCRIPTION				
1	DESIGN SPESIFICATION		VALUE	UNIT	KETERANGAN
	B. CLOSE COOLING SYSTEM (AIR TAWAR)				
	WTP				
	SYSTEM	:	Reverse Osmosis (RO)		
	MANUFAKTUR	:	Watman Engineering Ltd Oy		
	MODEL	:	RO- HIGH PRESSURE PUMP		
	TYPE	:	Membrane Polymer		
	CAPACITY	:	3,8	m3/h	
		:			
	WWTP				
	SYSTEM	:			
	MANUFAKTUR	:	PT. Trimitra Wisesa Abadi		
	MODEL	:			
	TYPE	:			
	CAPACITY	:	20	m3	
		:			
	DESALINATION WATER PRODUCTION		2x4	m3/h	
		:			
	DEMINERALIZED WATER PRODUCTION	:	2x4	m3/h	
		:			
19	FUEL SYSTEM				
	GAS SYSTEM	CAPACITY	:		
		FLOW	:	7670	(kJ/kWh)
		PRESSURE	:	1029,0	hpa
		CONSUMTION	:	1549	kg/h
	OIL SYSTEM	CAPACITY	:		
		FLOW	:	191,1	g/kWh
		PRESSURE	:	1028,7	hpa
		CONSUMTION	:	1909,5	kg/h
	COAL SYSTEM	CAPACITY	:	NA	
		COAL	:	NA	
		FLY ASH CAPACITY	:	NA	
		BOTTOM ASH CAPACITY	:	NA	
		ASH DISPOSAL AREA	:	NA	
		LIME STONE HANDLING AREA	:	NA	
20	CIVIL WORK				
	POWER PLANT	LARGE AREA	:	2004	m2
	POWER PLANT FOUNDATION WORKS	TYPE OF FOUNDATION	:	PILE	m
		DIMENSION OF FOUNDATION	:	12.3x4.1x0.6	m
		NUMBER OF FOUNDATION	:	13	NOS/PILE
		DEPTH OF FOUNDATION	:	27	m/PILE
		CONCRETE GRADE	:	30	mPA
		REBAR GRADE	:	400	mPA
	JETTY CONSTRUCTION	DIMENSION OF JETTY	:	N/A	-
	(Jika di lapangan menggunakan struktur jetty)	TYPE OF FOUNDATION	:	N/A	-
		NUMBER OF FOUNDATION	:	N/A	-
		DEPTH OF FOUNDATION	:	N/A	-
		CONCRETE GRADE	:	N/A	-
		REBAR GRADE	:	N/A	-
	FOUNDATION ENGINE	DIMENSION	:	50.43	m2
		THICKNESS	:	600	mm
		CONCRETE GRADE	:	30	mPA
		REBAR GRADE	:	400	mPA
		LEAN CONCRETE	:	50	mm
		ANCHOR BOLT TYPE	:	Spring	-
		ANCHOR BOLT SIZE	:	-	-
	FOUNDATION POWER HOUSE	DIMENSION	:	6.9x4.7	m2
	(TRANSFORMER, AUXILARY TRANSFORMER)	THICKNESS	:	0,7	m
		CONCRETE GRADE	:	30	mPA
		REBAR GRADE	:	400	mPA
		LEAN CONCRETE	:	50	mm
		ANCHOR BOLT TYPE	:	J Bolt	-

NO	DESCRIPTION				
1	DESIGN SPESIFICATION		VALUE	UNIT	KETERANGAN
	ANCHOR BOLT SIZE	:	M-36	-	
	FOUNDATION TURBINE				
	DIMENSION	:	71,5	m2	
	THICKNESS	:	2,29	m	
	CONCRETE GRADE	:	30	mPA	
	REBAR GRADE	:	400	mPA	
	LEAN CONCRETE	:	50	mm	
	ANCHOR BOLT TYPE	:	J Bolt	-	
	ANCHOR BOLT SIZE	:	M-36	-	
	FOUNDATION BOILER				
	DIMENSION	:	21,2	m2	
	THICKNESS	:	1000	m	
	CONCRETE GRADE	:	30	mPA	
	REBAR GRADE	:	400	mPA	
	LEAN CONCRETE	:	50	mm	
	ANCHOR BOLT TYPE	:	J Bolt	-	
	ANCHOR BOLT SIZE	:	M-36	-	
	FOUNDATION PUMP HOUSE				
	DIMENSION	:	41,85	m2	
	THICKNESS	:	150	m	
	CONCRETE GRADE	:	30	mPA	
	REBAR GRADE	:	400	mPA	
	LEAN CONCRETE	:	50	mm	
	ANCHOR BOLT TYPE	:	J Bolt	-	
	ANCHOR BOLT SIZE	:	M-30	-	
	FOUNDATION WAREHOUSE/ WORKSHOP				
	DIMENSION	:	600	m2	
	THICKNESS	:	200	m	
	CONCRETE GRADE	:	25	mPA	
	REBAR GRADE	:	400	mPA	
	LEAN CONCRETE	:	50	mm	
	ANCHOR BOLT TYPE	:	Plate Bolt	-	
	ANCHOR BOLT SIZE	:	M-24	-	
	FOUNDATION WTP / WWTP				
	DIMENSION	:	285	m2	
	THICKNESS	:	200	m	
	CONCRETE GRADE	:	25	mPA	
	REBAR GRADE	:	400	mPA	
	LEAN CONCRETE	:	50	mm	
	ANCHOR BOLT TYPE	:	Plate Bolt	-	
	ANCHOR BOLT SIZE	:	M-24	-	
	Peralatan/ mesin yang memerlukan pondasi bisa ditambahkan sesuai kebutuhan di site (lapangan)				
	STACK				
	HEIGHT OF STACK	:	30	m	
	TYPE OF STACK	:	Vertical pipe	-	
	NO OF INNER LINE	:	13	NOS	
	POND				
	a. MAIN POND	:	32x15	m	
	b. REGULATING POND	:	N/A	-	
	ROAD PAVEMENT (RIGID PAVEMENT)				
	FOUNDATION TYPE	:	Slab	-	
	FOUNDATION DIMENSION	:	30x6	m	
	FOUNDATION DEPTH	:	N/A	-	
	PAVEMENT THICKNESS	:	200	mm	
	LEAN CONCRETE THICKNESS	:	50	mm	
	REBAR STEEL GRADE	:	500	mPA	
	CONCRETE GRADE	:	25	mPA	
	CONCRETE SLUMP	:	80-120	mm	
	STEEL STRUCTURE				
	AREA	:	Steam Turbine		
	COLUMN STEEL DIMENSION	:	H-588x300x12x20	mm	
	BEAM STEEL DIMENSION	:	H-400x20x8x13	mm	
	STEEL GRADE (fu)	:	ASTM-A36	-	
	ANCHOR BOLT GRADE	:	ASTM-A325	-	

NO	DESCRIPTION				
1	DESIGN SPESIFICATION		VALUE	UNIT	KETERANGAN
	WELD THICKNESS	:	7,81	mm	
21	DCS/PLC				
	MANUFACTURER	:	ABB POWER GENERATION, FINLAND		
	PLC MODEL	:	SCHNEIDER ELECTRIC		
	HMI DISPLAY	:	WONDERWARE INTOUCH		
	VOLTAGE NOMINAL	:	24	VDC	
	ANALOG INPUT	:	4-20	mA	
	ANALOG OUTPUT	:	4-20	mA	
	DIGITAL INPUT	:	24	VDC	
	DIGITAL OUTPUT	:	24	VDC	
	SERVER	:	DELL R440		
22	CONTINOUS EMISSION MONITORING SYSTEM (CEMS)				
	MANUFACTURER	:	SICK AG		
	VOLTAGE NOMINAL	:	400	VAC	
	NORMAL POWER	:	99	kVA	
	FREQUENCY	:	50	Hz	
	CONTROL VOLTAGE	:	24	VDC	
	ITEM MEASURING	:	NO, NO2, S02, CO, O2, OPACITY AND DUST		