
	PROJECT TECHNICAL DATA	Nomor :
		Halaman :
	KETENAGA LISTRIKAN	Tanggal :


NAMA PROYEK	: PLTU MALINAU (2X3 MW)
PEMILIK	: PT.PLN (Persero) Unit Induk Pembangkitan Kalimantan Bagian Timur
JENIS PROYEK	: EPC
LOKASI	: Kabupaten Malinau, Kalimantan Utara
PERIODE PELAKSANAAN	: Sampai Dengan EOT - 6 yaitu 113 Bulan (15 Desember 2010 s.d April 2020)

NO	DESCRIPTION			
1	DESIGN SPESIFICATION	VALUE	UNIT	KETERANGAN
	BIAYA KONSTRUKSI	Rp 151.578.435.800,00	Rp	
	OUTPUT CAPACITIES NETT	3	MW	
	OUTPUT CAPACITIES GROSS	3,5	MW	
	LUAS LAHAN (EFEKTIF)	5	Ha	
	BOILER MAXIMUMCONTINOUS RATING (BMCR)	16,4	Ton/Hour	
	TURBINE MAXIMUM CONTINOUS RATING (TMCR)	16,01	Ton/Hour	
	GENERATOR	4,11	MVA	
	TRANSFORMER	4	MVA	
	KAPASITAS WATER TREATMENT PLAN	4	M3/Hour	
	KAPASITAS WASTE TREATMENT PLAN	1,5	M3/Hour	
	COAL COMSUMPTION	45	Ton/Hari	
	KAPASITAS COAL UNLOADING JETTY	3000	DWT	
	RATE OF CONVEYOR		Ton/hour	
	LUAS STOCK YARD	3270	M2	
	LUAS AS DISPOSAL	9200	M2	
		:		
2	ENGINE CONFIGURATION	:		
	MANUFACTURER	: Caterpillar	1	
	MODEL	: DE275E0		
	ENGINE TYPE	: Diesel		
	FUEL TYPE	: Solar		
	UNIT NUMBER	: 1		
	COOLING SYSTEM	: Air Cooling		
	NOMINAL SPEED (RPM)	: 1500	RPM	
	NOMINAL POWER (KW)	: 200	KW	
	FLUE FLOW (KG/H)	:		
	EFFICIENCY	:		
		:		
3	ENGINEE GENERATOR	:		
	MANUFACTURER	: Citic Heavy Industries.co	2	
	MODEL	: QFK-K3.5-2		
	TYPE	: DIISI		
	COLING SYSTEM	: Air Cooling		
	CLASS OF RATING	: F		
	CAPACITY	: 4.118 MVA		
	RATED TERMINAL VOLTAGE(V)	:		
	RATED CURRENT(A)	: 377 A		
	RATED OUTPUT(KVA)	:		
	RATED POWER (KW)	: 3,5 KW		
	RATED VOLTAGE	: 6.3 kV		
	EFFICIENCY	:		
		:		
4	TURBINE	:		
	MANUFACTURER	: LOUYANG GENERATION EQUIPMENT.CO.,LTD	2	
	MODEL	: GFK-K3.5-2		
	TYPE	: N3.5-9,9/470		
	TURBINE HEAT RATED	: 31°C - 33°C		
	RATED OUTPUT (AT GENERATOR TERMINAL) KW	: 3500 KW		
	SPEED (TURBINE/GENERATOR)	: 5600 r/m		
	INLET STEAM PRESSURE	: 4.9 bar		

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NO	DESCRIPTION				
1	DESIGN SPESIFICATION		VALUE	UNIT	KETERANGAN
	INLET STEAM TEMPERATURE	:	470°C		
	EXHAUST STEAM PRESSURE	:	0.01 Mpa		
	EXHAUST STEAM TEMPERATUR	:	275,97 °C		
	MAX. INLET FLOW	:	1.294 t/h		
	MAX. EXHAUST STEAM FLOW	:	0.330 t/h		
	MIN EXHAUST STEAM FLOW	:	0.948 t/h		
	MAX OPERATING EXHAUST PRESSURE	:	400 hours		
	RATED OUTPUT (KG/H)	:	16358 kg/h		
	ROTATING DIRECTION	:			
	MAIN STEAM CONSUMTION AT RATED OUTPUT(KG/H)	:	4.591KG/Kw.h		
	FINAL FEED WATER TEMPRATURE To HRSG	:			
	EFFICIENCY	:	0.953		
		:			
		:			
5	BOILER				
	MANUFACTURER	:	PT. ZUG Industry Indonesia	2	
	MODEL	:	Z-20/5,3/485/M		
	TYPE	:	Spreader Stoker		
	OUTPUT CAPACITY	:	20 ton/hr		
	VOLUME	:	20198,9 dm ³ (L)		
	FLUID	:	Saturated & Superheat		
	MAWP/DESIGN PRESSURE	:	6,15 Mpa		
	WORKING PRESSURE	:	5,30 Mpa		
	OPERATING PRESSURE	:	5,30 Mpa		
	HIDROSTATIC	:	9,22 Mpa		
	TEMPERATURE DESIGN	:	510°C		
	TEMPERATURE SUPERHEATED (OUTLET)	:	485°C		
	TEMPERATURE SATURATED (MAX)	:	268°C		
	RADIOGRAPHY	:	FULL		
	CORROSION ALLOWANCE (DRUM, HEADER, PIPE & TUBE, NOZZLE)	:	0,5 mm		
	TOTAL RADIATION-HEATED FOR FURNACE	:	95,7 m ²		
		:			
6	HRSG	:			
	MANUFACTURE	:	N/A		
	MODEL	:	N/A		
	TYPE	:	N/A		
	GAS FLOW DIRECTION	:	N/A		
	TYPE OF EVAPORATOR CIRCULATION	:	N/A		
	TYPE OF CONDENSATE DEARATION	:	N/A		
	DESIGN TEMPERATURE(C)	:	N/A		
	DESIGN PRESSURE(MMH2O)	:	N/A		
	DUCT MATERIAL	:	N/A		
	TYPE OF INSULATION	:	N/A		
	INSULATION MATERIAL & THICKNESS	:	N/A		
	MAX MEAN GAS VELOCITY (M/S)	:	N/A		
	EFFICIENCY	:	N/A		
		:	N/A		
7	HRSG GENERATOR	:			
	MANUFACTURER	:	N/A	N/A	
	MODEL	:	N/A		
	TYPE	:	N/A		
	UNIT	:	N/A		
	CAPACITY	:	N/A		
	BOILER TYPE	:	N/A		
	RATED TERMINAL VOLTAGE(V	:	N/A		
	RATED CURRENT(A)	:	N/A		
	RATED OUTPUT(KVA)	:	N/A		
	MAXIMUM VOLTAGE	:	N/A		
	OPERATING VOLTAGE	:	N/A		
	RATED SHORT TIME WITHSTAND CURRENT	:	N/A		

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NO	DESCRIPTION			
1	DESIGN SPESIFICATION	VALUE	UNIT	KETERANGAN
	CB TYPE	: N/A		
		: N/A		
8	POWER TRANSFORMER (GENERATOR TRANSFORMER ; UNIT AUXILIARY TRANSFORMER ; STATION SERVIS)			
	MANUFACTURE	: Bambang Djaya	2	
	MODEL			
	TYPE			
	RATED CAPACITY	4 MVA / 5 MVA		
	CLASS AND TYPE OF CORE			
	PHASE	3		
	TRANSFORMER RATING AT FULL LOAD (OFAF)			
	NOMINAL SYSTEM VOLTAGE (LINE TO LINE) (KV)			
	TRANSFORMER CONNECTION(WYE OR DELTA)	YNd11		
	COOLING TYPE	ONAN/ONAF		
9	HEATING SYSTEM			
	HP HEATER			
	MANUFAKTUR	WU HAN GAOYUAN	2	
	NUMBER OF HP HEATERS	TS2242159-2016		
	MODEL	: GYHF-1306-04		
	TYPE	RJG25		
	CAPACITY	: 25 M ²		
	TEMPERATURE	200° - 300°		
	EFFICIENCY			
	LP HEATER			
	MANUFAKTUR	WU HAN GAOYUAN	2	
	NUMBER OF LP HEATERS	TS2242159-2016		
	MODEL	GYHF-1306-01		
	TYPE	RJF20		
	CAPACITY	: 20 M ²		
	TEMPERATURE	100° - 200°		
	EFFICIENCY			
	DEAERATOR			
	MANUFAKTUR	PT.TANDON CITRA MURTI	2	
	MODEL	ASME VIII DCIV 1		
	TYPE	010.A/TCM/2015		
	CAPACITY	3600 KG		
	TEMPERATURE	: 120°		
	EFFICIENCY	0,85		
10	PUMP			
	INTAKE PUMP			
	MANUFAKTUR	: KSB INDONESIA	2	
	MODEL			
	TYPE	: ETN 065-050-315 GC		
	FLOW	45,2 m3/h		
	PRESSURE	3,35 bar		
	CAPACITY	: 45m3		
	EFFICIENCY	60.1%		
	CONDENSATE PUMP			
	MANUFAKTUR	LOUYANG GENERATION	2	
	MODEL	N - 320		
	TYPE	: 100 NB45		
	FLOW	: 18.868 Kg/h		
	PRESSURE	3.5 bar		
	CAPACITY			
	EFFICIENCY			
	BOILER FEED PUMP			
	MANUFAKTUR	: KSB	6	
	MODEL	: HDA 50/14		

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NO	DESCRIPTION				
1	DESIGN SPESIFICATION		VALUE	UNIT	KETERANGAN
	TYPE	:	HDA		
	RATED FLOW	:	15 m ³ /h		
	EFFECTIVE SPEED	:	2970 rpm		
	DIFF. PRESSURE	:	71.6 kg/cm ²		
	OPERATING TEMPERATURE	:	105°C		
	NOMINAL EFFECIENCY	:	50,9% (HOT)		
11	WATER TREATMENT SYSTEM	:			
	A. ONCE THROUGH SYSTEM (AIR LAUT)				
	B. CLOSE COOLING SYSTEM (AIR TAWAR)				
	WTP				
	SYSTEM	:	System Air Tawar	1	
	MANUFAKTUR	:	PT PAL WASKITA		
	MODEL	:	Anion Cation Proses		
	TYPE	:	CLARIFIER		
	CAPACITY	:	4 m3/h produk demin		
	WWTP				
	SYSTEM	:	corrugated plate sparator pros	1	
	MANUFAKTUR	:	PT PAL WASKITA		
	MODEL	:			
	TYPE	:			
	CAPACITY	:	5m3/h		
	DESALINATION WATER PRODUCTION	:			
	DEMINERALIZED WATER PRODUCTION	:			
12	FUEL SYSTEM	:			
	GAS SYSTEM				
	CAPACITY	:	N/A	N/A	
	FLOW	:	N/A		
	PRESSURE	:	N/A		
	CONSUMTION	:	N/A		
	OIL SYSTEM				
	CAPACITY	:	N/A	N/A	
	FLOW	:	N/A		
	PRESSURE	:	N/A		
	CONSUMTION	:	N/A		
	COAL SYSTEM				
	CAPACITY	:	90 t/d	2	
	COAL	:	3500 - 4200 HHVAR		
	FLY ASH CAPACITY	:	0.14 t/h		
	BOTTOM ASH CAPACITY	:	0.26 t/h		
	ASH DISPOSAL AREA	:	200 m2		
	LIME STONE HANDLING AREA	:			
13	CIVIL WORK	:			
	POWER PLANT				
	LARGE AREA	:	60000	M2	Bila lebih dari 1 model/type, rinci masing-masing type dan parameternya, Bila ada Parameter lain agar ditambahkan
	POWER PLANT FOUNDATION WORKS				
	TYPE OF FOUNDATION	:			
	DIMENSION OF FOUNDATION	:	2500 x 1500	MM	
	NUMBER OF FOUNDATION	:	2	NOS/PILE	
	DEPTH OF FOUNDATION	:	1000	MM	
	CONCRETE GRADE	:	FC 25	MPA	
	REBAR GRADE	:	400	MPA	
	JETTY CONSTRUCTION				
	(Jika di lapangan menggunakan struktur jetty)				
	DIMENSION OF JETTY	:	30 x 15	M	
	TYPE OF FOUNDATION	:			
	NUMBER OF FOUNDATION	:	1	NOS/PILE	
	DEPTH OF FOUNDATION	:	1200	MM	
	CONCRETE GRADE	:	FC 25	MPA	
	REBAR GRADE	:	400	MPA	
	FOUNDATION ENGINE				
	DIMENSION	:		MM2	
	THICKNESS	:		MM	
	CONCRETE GRADE	:	FC 25	MPA	
	REBAR GRADE	:	4000	MPA	
	LEAN CONCRETE	:	50	MM	
	ANCHOR BOLT TYPE	:	ASTM A 307 Grade A		

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NO	DESCRIPTION						
1	DESIGN SPESIFICATION			VALUE		UNIT	KETERANGAN
		ANCHOR BOLT SIZE	:	M19			
	FOUNDATION POWER HOUSE (TRANSFORMER, AUXILARY TRANSFORMER)	DIMENSION	:	2500	x	3000	MM2
		THICKNESS	:	600		MM	
		CONCRETE GRADE	:	fc 25		MPA	
		REBAR GRADE	:	400		MPA	
		LEAN CONCRETE	:	5		MM	
		ANCHOR BOLT TYPE	:	ASTM A 307 Grade A			
		ANCHOR BOLT SIZE	:	M19			
	FOUNDATION TURBINE	DIMENSION	:	4520	x	3650	MM2
		THICKNESS	:	2000		MM	
		CONCRETE GRADE	:	fc 30		MPA	
		REBAR GRADE	:	400		MPA	
		LEAN CONCRETE	:	50		MM	
		ANCHOR BOLT TYPE	:	ASTM A 307 Grade A			
		ANCHOR BOLT SIZE	:	M19			
	FOUNDATION BOILER	DIMENSION	:	13565	x	8605	MM2
		THICKNESS	:	1000		MM	
		CONCRETE GRADE	:	fc 30		MPA	
		REBAR GRADE	:	400		MPA	
		LEAN CONCRETE	:	50		MM	
		ANCHOR BOLT TYPE	:	ASTM A 307 Grade A			
		ANCHOR BOLT SIZE	:	M19			
	FOUNDATION PUMP HOUSE	DIMENSION	:	2500	x	1500	MM2
		THICKNESS	:	300		MM	
		CONCRETE GRADE	:	fc25		MPA	
		REBAR GRADE	:	400		MPA	
		LEAN CONCRETE	:	50		MM	
		ANCHOR BOLT TYPE	:	ASTM A 307 Grade A			
		ANCHOR BOLT SIZE	:	M19			
	FOUNDATION WAREHOUSE/ WORKSHOP	DIMENSION	:	1500	x	1500	MM2
		THICKNESS	:	400		MM	
		CONCRETE GRADE	:	fc 25		MPA	
		REBAR GRADE	:	400		MPA	
		LEAN CONCRETE	:	50		MM	
		ANCHOR BOLT TYPE	:	ASTM A 307 Grade A			
		ANCHOR BOLT SIZE	:	M19			
	FOUNDATION WTP / WWTP	DIMENSION	:	1200	x	1200	MM2
		THICKNESS	:	400		MM	
		CONCRETE GRADE	:	fc 25		MPA	
		REBAR GRADE	:	400		MPA	
		LEAN CONCRETE	:	50		MM	
		ANCHOR BOLT TYPE	:	ASTM A 307 Grade A			
		ANCHOR BOLT SIZE	:	M19			
	Peralatan/ mesin yang memerlukan pondasi bisa ditambahkan sesuai kebutuhan di site (lapangan)						
	STACK	HEIGHT OF STACK	:	40		M	
		TYPE OF STACK	:	Plate ASTM A36 thicknes 10mm			
		NO OF INNER LINE	:	3			
	POND						
	a. MAIN POND						
	b. REGULATING POND						
	ROAD PAVEMENT (RIGID PAVEMENT)	FOUNDATION TYPE	:				
		FOUNDATION DIMENSION	:	6000	x	150	MM
		FOUNDATION DEPTH	:	150		M	
		PAVEMENT THICKNESS	:	25		CM	
		LEAN CONCRETE THICKNESS	:	50		CM	
		REBAR STEEL GRADE	:	Dowel		MPA	

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NO	DESCRIPTION				
1	DESIGN SPESIFICATION			VALUE	UNIT KETERANGAN
		CONCRETE GRADE	:	fs 45	MPA
		CONCRETE SLUMP	:	8-10	CM
			:		
	STEEL STRUCTURE	AREA	:		
		COLUMN STEEL DIMENSION	:	IWF 400X200X8X13	MM
		BEAM STEEL DIMENSION	:	IWF 400X200X10X16	MM
		STEEL GRADE (fu)	:	ASTM SS 400	
		ANCHOR BOLT GRADE	:	ASTM A 307 Grade A	
		WELD THICKNESS	:	6	MM
			:		
			:		