

		<u>Bill of material</u> <u>[for Main Supply + Mandatory Spares]</u>		Annexure -[A] of PY 56396	
		<u>FPS PLC System</u>		Rev 00	
		Project: 1 X 660 MW Panki TPS			
S. No	Item Description	Quantity [I]	UNITs	REMARKS	
[A]	FPS PLC - Supply, Design, Engg, Testing & Training - BOM for Material Code - PY9756396008 [MAIN SUPPLY]				
1	PLC Pkg for Fire Protection System-Panels	1	Set		
2	1 No 24" TFT-LCD Operator work station [OWS] with all sets of licensed Softwares + 1 No Laser Printer (Colour) suitable for A4 size papers + Furniture & chairs as required for above OWS & printer	1	Set		
3	1 No 24" TFT-LCD Operator CUM Engg work station [OEWS] with all sets of licensed Softwares + 1 No DMP suitable for A3 size papers + Furniture & chairs as required for above OWS & printer	1	Set		
4	Remote IO Panel along with ONE (1) no (GIU) graphical interface Unit and all redundant cables (including cables between PLC and remote IO panels along with 2" rodent proof HDPE conduits) & its accessories required for interfacing with PLC panel.	1	Set		
5	Armoured Fibre Optic cable with 2" rodent proof HDPE conduits (for - connecting cable between FPS PLC and FDA panel)	3000	Meters		
6	2 x 100% Float cum Boost Chargers with 2x100% DCDB and Batteries	2	Sets		
7	UPS with Battery (1KVA, 220V AC, 30min Backup)	2	Sets		
8	Erection / Commissioning material required for completeness of above system	1	Lot		
9	Any Special tools & tackles (as required)	1	Set	Note-(1)	
10	System Hardware & Software Maintenance, Plant Operation training at site	As required			
[B]	PLC Pkg for Fire Protection System - BOM for Vendor Services				
1	Supervision of Erection & Commissioning Services charges at site including lodging, boarding, local travel, insurance, etc. [Unit Rate = Per man day charges] Material code: PY9856396026	50	Days		
2	Supervision of Erection & Commissioning visit charges [i.e. travel expenses like travel to & fro from vendors work to site, clearance charges like visa fee, etc.] [Unit rate = per visit travel expenses] Material code: PY9856396034	5	Visits		
[C]	PLC Pkg for Fire Protection System - BOM for Material Code - PY9756396016 [Mandatory Spares]				
a	I/O cards				

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1	Analog Input module	20% of qty Installed of each category/type/model or at least 2 No. of			
2	Analog output module	20% of qty Installed of each category/type/model or at least 2 No. of each type/model (Whichever is more)			
3	RTD/TC cards/modules	20% of qty Installed of each category/type/model or at least 2 No. of			
4	Digital input module	20% of qty Installed of each category/type/model or at least 2 No. of			
5	Digital output module	20% of qty Installed of each category/type/model or at least 2 No. of			
6	All types of electronic modules, controllers, function modules, communication/Interface	20% of qty Installed of each category/model/type or at least 2 No. of			
7	MCB,MCCB, of each current rating required for the project.	20% spare for each type/Model			
8	Electronic/Power supply/ Processor cards of each type used for each type of Servers supplied with	Twenty (20) percent or 2 no. (Whichever is more)			
9	Plug-in type keyboard & Mouse	Ten (10) percent or 10 nos. of each type/model			
10	OWS with licensed software loaded along with monitor & LVS work station	Ten (10) percent or Two numbers (Whichever is more) of each type/model			
11	Utility/Engineering OWS with licensed software loaded along with monitor	Ten (10) percent or Two No. (Whichever is more) of each type/model with complete			
12	Intelligent UPS for workstation/server/LVS WS	1 no. of each type and rating.			
13	Bulk storage drive unit	Twenty (20) percent or Two nos. (Whichever is more) of each type/model.			
14	DVD/CD	10 boxes of each type & rating.			
15	Data highway cable with adequate connectors of each type	200 mts. Each set			
	Cables and Connectors				
16	Prefab interconnecting cables with connectors	2 nos. of each type and length			
17	System bus cable with connectors	2 nos. of each type and length			
18	I/O bus cable with connectors for remote I/O units	2 nos. of each type and length			
19	Hard disc drive unit	Five nos of each type			
20	Batteries used for battery backup of RAMs (if applicable)	10% of each type and model or minimum 2 nos. which ever is more.			
21	Cooling fans for Power supply and cabinets	10% of each type and model or minimum 1 no. which ever is more.			
22	Prefab interface cable with connectors of each type and model of peripherals and	25 % or 5 nos (whichever is more) of each type of Installed			
23	Cubicle power supply packs and power supply modules	Twenty (20) percent or 5 nos (whichever is more) of			
24	Interposing/coupling relays & relay Board.	Twenty (20) percent Installed of each type and rating			
25	Ethernet Switches, Routers, modems, Firewalls & other network hardware etc.	10% of qty Installed of each type/model or a minimum of			
26	GIU	Ten (10) percent of qty installed or 2 no. of each			

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S. No	Item Description	Quantity (I)	UNITs	REMARKS	
b	Printers and their parts				
27	Printer toners for all type of printers	Ten (10) percent of qty installed or 3 no. of each type printer toners (whichever is more)			
28	RJ 45 connector with box of each type	Twenty (20) percent or 2 no. (Whichever is more) of each type.			
29	Hooters, Buzzers, Cooling fans of each type.	Ten (10) percent or 2 no. (Whichever is more) of each type.			
30	Interface cables	Ten (10) percent or 2 sets (Whichever is more) of each type/model.			
31	Power supply modules (AC to DC convertors)	10% or Five no. (Whichever is more) of each type/model			
c)	Un-interrupted Power Supply System and DC Control Power Supply System				
	As per Manufacturer's Recommendation for Three Years Continuous Operation or minimum quantities				
32	Fuses/Semiconductor Fuses	300% of installed of each type, current rating with each panel /board			
33	Miscellaneous parts for the power supplies such as SCRS, transistors, resistors, diodes, light bulbs, static	Minimum of 15% or atleast four (whichever is more) of each type model and rating of SCR			
34	Electronic cards for Battery health Monitoring System for UPS and DC control power supply system	10% or at least two nos. (whichever is more) of each type			
35	Electronic Modules like Rectifier control card, inverter control card, Driver card, IGBT Module, DC-DC converter	1 Set of each type & rating			
36	Miniature Circuit breakers for AC and DC supply.	20 % of installed or 10 Nos of each type (which ever is more) for ACDB and DCDB.			
37	Digital/analog panel meters/indicators	5% or 2 no. of each type (whichever is more)			
38	CT's, CVT's VT's chokes, AC/DC isolators, contactors, timers, relays.	10% or 2 nos. of each type and rating, (whichever is more)			
39	Cooling Fans in UPS & 24 V DC charger panels	20% or 2 nos. of each type and rating, (whichever is more)			
40	following accessory equipment for the battery shall be furnished :	Two sets of each type.			
41	Electronic modules of each type & rating for UPS and DC control power supply system.	10% or One set (whichever is more) of each type, model & rating with each set			
42	MCCB for UPS & 24 V DC charger panels and ACDB, DCDB.	20 % of installed or 5 Nos of each type (which ever is more)			

NOTES ::

- 1 List and Quantities shall be reviewed during detail engineering.