

		<u>Bill of material</u> <u>[for Main Supply + Mandatory Spares]</u>		Annexure -[A] of PY56311	
		<u>FPS PLC System and Field instruments Package</u>		Rev 00	
		Project: 3x800MW NTPC Patratu TPS			
S. No	Item Description		Quantity	Units	Remarks
[A]	FPS PLC - Supply, Design, Engg, Testing & Training - [MAIN SUPPLY] BOM for Material Code - PY9756311002				
1	PLC Pkg for Fire Protection System		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 (as per annexure-[D]) & 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 + Furniture (as per annexure-[D]) & 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 purchaser's use - 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	Note-(1)
9	Any Special tools & tackles (as required)		1	Set	
10	FPS PLC - TRAINING: System Hardware & Software Maintenance, Plant Operation training at site		As required		
[B]	PLC Pkg for Fire Protection System - [Vendor Services]				
1	PY9856311101	Supervision of Erection & Commissioning Services charges at site including lodging, boarding, local travel, insurance, etc. [Unit Rate = Per man day charges]	20	Days	
2	PY9856311110	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]	5	Visits	

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S. No	Item Description			Quantity	Units	Remarks
[C]	PLC Pkg for Fire Protection System - [Mandatory Spares] BOM for Material Code - PY9756311010					
I)	Cables					
1	Pre fabricated cable of each type.			1 No. of each type, size and model.		
2	Pre fabricated cable connector			1 No. of each type and model.		
3	Other cables (including core cable, short term fire proof cable, fibre optic cables, etc.)			5% of each type, pair/ core and size of actual installed quantity.		S.No. 4 & 5 (both) of main supply shall be considered for spares calculation
II)	PLC CONTROL SYSTEM					
1	Power Supply Unit			1 No. of each type and model		
2	Electronic modules(I/O modules, communication modules and any other module used in the system)			10% or 1 No. of each type and model, whichever is more.		
3	Central Processor Unit			1 No. of each type and model		
4	Interconnecting Cables			10% of each type & size		
5	Cooling Fan in PLC system / cabinet			2 Nos.		
6	Indication lamps of all types			100%		
7	Graphical Interface Unit			1 No.		
III)	24V – DC POWER SUPPLY SYSTEM					
1	CTs, CVTs, VTs, chokes, AC/DC isolators, contactors, timers, relays			5% or 2 Nos. of each type and rating whichever is more.		
2	Fuses of each type and rating			200%		
3	Fuse free Circuit breakers			5% or 5 Nos. of each type and rating whichever is more.		
4	Electronic modules of all types			One No. of each type		
5	Indication lamps			100%		
6	Cooling Fans			1 No. of each type		
7	Indicators			1 No of each type and rating		
8	Relays of all types including overload relays			2 Nos. of each type and rating		
9	Batteries			5% or 2 nos. of each type & rating whichever is more		

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S. No	Item Description	Quantity	Units	Remarks	
[D]	Field Instruments & their Hookup materials - [MAIN SUPPLY] BOM for Material Code - PY9756311029				
1	Pressure Transmitter with 2-Vlv Manifold	30	Nos		
2	Pressure Gauge with 2-Vlv Manifold	55	Nos		
3	Diff Pressure Switch with 5-Vlv Manifold	1	Nos		
4	Diff. Pressure Gauge (Bourdon Tube) with 5-Vlv Manifold	1	Nos		
5	Level Transmitter (GUIDED WAVE RADAR), Range:0-15Meters	4	Nos		
6	Flow Switch	2	Nos		
7	Pressure Switch	478	Nos		
8	PIPE NIPPLE (150mm Long) SS 316 1/2" SCH80, PL x NPT(M)	140	Nos		
9	PIPE NIPPLE (150mm Long) SS 316 1/2" SCH80, NPT(M) x NPT(M)	1250	Nos		
10	ELBOW SS 316 1/2"NPT(F) X 1/2" NPT(F), CL3000	260	Nos		
11	EQUAL TEE SS 316 1/2"NPT(F) X 1/2" NPT(F), CL3000	220	Nos		
12	3-piece Union SS 316 1/2" NPT(F) x 1/2" NPT(F), CL3000	550	Nos		
13	FEMALE CONNECTOR SS 316 1/2"NPT(F) x 1/2" OD TUBE, CL3000	35	Nos		
14	TUBE (SMLS) SS 316L 1/2" OD X 2.1 mm	240	Meters		
15	MALE CONNECTOR SS 316 1/2"NPT(M) x 1/2" OD TUBE, CL3000	110	Nos		
[E]	Field Instruments & their Hookup materials - [Mandatory Spares] BOM for Material Code - PY9756311037				
1	Pressure Transmitter with 2-Vlv Manifold	3	Nos		
2	Pressure Gauge with 2-Vlv Manifold	2	Nos		
3	Diff Pressure Switch with 5-Vlv Manifold	2	Nos		
4	Diff. Pressure Gauge (Bourdon Tube) with 5-Vlv Manifold	2	Nos		
5	Level Transmitter (GUIDED WAVE RADAR), Range:0-15Meters	1	Nos		
6	Flow Switch	2	Nos		
7	Pressure Switch	2	Nos		
8	PIPE NIPPLE (150mm Long) SS 316 1/2" SCH80, PL x NPT(M)	7	Nos		
9	PIPE NIPPLE (150mm Long) SS 316 1/2" SCH80, NPT(M) x NPT(M)	65	Nos		

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S. No	Item Description	Quantity	Units	Remarks
10	ELBOW SS 316 1/2"NPT(F) X 1/2" NPT(F), CL3000	13	Nos	
11	EQUAL TEE SS 316 1/2"NPT(F) X 1/2" NPT(F), CL3000	11	Nos	
12	3-piece Union SS 316 1/2" NPT(F) x 1/2" NPT(F), CL3000	28	Nos	
13	FEMALE CONNECTOR SS 316 1/2"NPT(F) x 1/2" OD TUBE, CL3000	2	Nos	
14	MALE CONNECTOR SS 316 1/2"NPT(M) x 1/2" OD TUBE, CL3000	6	Nos	

NOTES ::

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