

		<u>Bill of material</u> <u>[for Main Supply + Mandatory Spares]</u>		Annexure -[A] of PY 56216	
		<u>PLCs [BOP PLC + UB BMS PLC + HRSG BMS PLC]</u>		Rev 00	
		Project: STEAM AND POWER GENERATION PACKAGE, RFCL			
S. No	Item Description	Quantity [1]	UNITs	REMARKS	
[A]	<u>HRSG BMS PLC</u> - Supply, Design, Engg, Testing & Training - BOM for Material Code - PY9756216050 [MAIN SUPPLY]				
1	HRSG BMS PLC - TUV certified SIL3 with TMR or QMR configuration	1	Set		
2	21" TFT-LCD Engg work station [EWS] [dedicated for BMS PLC] with all sets of licensed Softwares	1	No's		
3	21" TFT-LCD SOE station [dedicated for BMS PLC]	1	No's		
4	Laserjet Printer suitable for A3 size papers [dedicated for BMS PLC]	1	No's		
[B]	<u>UB BMS PLC</u> - Supply, Design, Engg, Testing & Training - BOM for Material Code - PY9756216026 [MAIN SUPPLY]				
1	UB BMS PLC - TUV certified SIL3 with TMR or QMR configuration	1	Set		
2	21" TFT-LCD Engg work station [EWS] [dedicated for BMS PLC] with all sets of licensed Softwares	1	No's		
3	21" TFT-LCD SOE station [dedicated for BMS PLC]	1	No's		
4	Laserjet Printer suitable for A3 size papers [dedicated for BMS PLC]	1	No's		
[C]	<u>BOP PLC</u> - Supply, Design, Engg, Testing & Training - BOM for Material Code - PY9756216000 [MAIN SUPPLY]				
1	BOP PLC - TUV certified SIL3 with TMR or QMR configuration	1	Set		
2	21" TFT-LCD Engg work station [EWS] [dedicated for BOP PLC] with all sets of licensed Softwares	1	No's		
3	21" TFT-LCD SOE station [dedicated for BOP PLC]	1	No's		
4	Laserjet Printer suitable for A3 size papers [dedicated for BOP PLC]				
5	21" TFT-LCD Operator work station [OWS] with all sets of licensed Softwares (Common for all PLCs)	2	No's		
6	Laserjet Printer (C&M) suitable for A4 size papers (Common for all PLCs)	1	No's		
7	Furniture Like Tables + Chairs as required for all work stations & printers above (common for all PLCs) - [Dimensions & aesthetics to be matched with DCS furniture which shall be intimated during order execution]	1	Set		
8	RS485 Communication cable with metallic conduits & cable laying accessories (For purchaser's use)	2000	meters		
9	Armoured Fibre Optic cable with 2" rodent proof HDPE conduits (for purchaser's use)	1000	meters		
10	FO/RS 485 + RS485/FO converters & its accessories (for purchaser's use)	5	Sets		
11	All cables (signal, control, power & other special cables like pre-fab cables, etc.) required between bidder supplied equipments (Common for all PLCs)	1	Set		
12	AC power distribution board [PDB] as required for power supply to items within bidder's scope. Panel shall be provided with necessary electrical protections, indications and Alarm on system (Common for all PLCs)	1	Set		

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S. No	Item Description	Quantity [I]	UNITs	REMARKS	
13	Termination accessories like cable glands, lugs, etc for all incoming / outgoing cables of bidder supplied panels / Systems / items (Common for all PLCs)	1	Set		
14	Earthing material as per specification (Common for all PLCs)	1	Set		
15	Tools & test equipments required for testing, erection and commissioning of the complete system (Common for all PLCs)	1	Set		
16	Erection / Commissioning material (including cable glands, lugs, ferrules, tag plates, etc.) required for completeness of above system (common for all PLCs)	1	Lot	Note-(1)	
17	Any Special tools & tackles (as required) (common for all PLCs)	1	Set		
18	Consumables for 12 months of continuous operation from date of successful commissioning. As a minimum it shall include the following: a) Printer Paper :: For 12 month operation (minimum 10 boxes of each type) b) Printer Head :: For 12 month operation (minimum 2 nos. / printer) (common for all PLCs)	1	Set	Note-(7)	
19	FAT (BHEL+EIL+RFCL) (common for all PLCs)	1	Set		
20	Documentation (Engg + As-ship+Erection & commission docs + As-Built+O&M manuals+test certificates+Catalogues+etc) (Common for all PLCs)	1	Set		
21	System Operation & Maintenance training at site shall be for 50 Man days (i.e. Five persons for Five days in Two batches).	1	Set		
22	SIL study at EIL Delhi for all PLCs	1	Set	Note-(8)	
[D]	Supervision of Erection & Commissioning for all PLCs - BOM for Material Code - PY9856216036 [Vendor Services] including SAT (Site Acceptance Test)				
1	Supervision of Erection & Commissioning Services charges at site including lodging, boarding, local travel, insurance, etc. [Unit Rate = Per man day charges]	180	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]	20	Visits		
[E]	MANDATORY SPAREs for PLCs (common for all PLCs) - BOM for Material Code -PY9856214044 [Notes - 1 to 6]				
1	Each type of Module used in PLC like I/O Cards, all type of power supply cards, communication cards, Interface cards, controller cards etc. as required for the System	10% of total installed quantity or minimum 1 no of each type		Notes - 1 to 6	
2	IS isolating Barriers, Isolators/Signal Multipliers	5% of total installed quantity of each type		Notes - 1 to 6	
3	IS mV/I Converters, IS RTD/I Converters, Alarm cards (receiver switches),convertors	5% of total installed quantity of each type		Notes - 1 to 6	
4	Prefabricated cables	3 Sets with connecting plugs for each type of peripherals and I/O hardware		Notes - 1 to 6	

बीएचईएम 		<u>Bill of material</u> <u>[for Main Supply + Mandatory Spares]</u>		Annexure -[A] of PY 56216	
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S. No	Item Description	Quantity [1]	UNITs	REMARKS	
5	Relays	5% of total installed quantity of each type		Notes - 1 to 6	
6	Push Buttons, Lamps, Selector switches, Switches	5% of total installed quantity of each type		Notes - 1 to 6	
7	MCBs	5% of total installed quantity of each type		Notes - 1 to 6	
8	System Cabinet Air Filter	100%		Notes - 1 to 6	
9	Fuses	50% of each type		Notes - 1 to 6	
10	Lamps	Minimum 10 nos. of each type		Notes - 1 to 6	
11	Keyboard, hard disk & LCD monitors	5% of total installed quantity of each type		Notes - 1 to 6	
[F]	Post Warranty Annual Maintenance Contract [PWAMC] for all PLCs [BOP PLC + HRSG BMS + UB BMS PLC]				
1	1st Year AMC as per PY56216	1	Set		
2	2nd Year AMC as per PY56216	1	Set		
3	3rd Year AMC as per PY56216	1	Set		
4	4th Year AMC as per PY56216	1	Set		
5	5th Year AMC as per PY56216	1	Set		
[G]	RECOMMENDED SPARES FOR TWO YEARS OPERATION & MAINTENANCE : [Optional Offer]				
1	Spares recommended for two years operation & maintenance for all PLCs shall be separately quoted by bidder.	1	Set		

NOTES ::

- List and Quantities shall be reviewed during detail engineering.
- The spares indicated in sub-clause nos are mandatory spares as loose supply only. System spares, installed spares & spare space are separate & shall be considered as per Annexure-[B] of PY56216.
- The word 'TYPE' (used for mandatory spares) means the Make, Model no., Type, Range, Size/ Length, Rating, Material as applicable.
- Wherever % age is identified, Vendor shall supply next rounded figure.
- The terminology used under 'Item Description' for mandatory spares is the commonly used name of the part and may vary from manufacturer to manufacturer.
- Mandatory spares shall be supplied as per quantities indicated in above list only. Same shall override any spare requirements as mentioned in standard specifications like 6-52-0040 & 6-52-0052
- Consumables used for commissioning shall be considered part of commissioning spares as per vendor recommendations and shall be supplied by package vendor.
- Bidder shall separately provide the breakup prices for SIL studies. Bidder shall be responsible for Implementation of recommendations arising out during SIL studies for the complete package without any cost & time implication.**