

TENDER SPECIFICATION
NO: BHE/PW/PUR/BHUI-CLE/726

FOR

Handling at Storage Yard/ Stores, Transportation to Site, Calibration, Erection, Testing, Commissioning, Final Painting and Handing over of Electrical and Control & Instrumentation Works of Co-Generation Plant comprising of HRSG(1X62TPH), 1 X Frame 6 Gas Turbine 1X33.3 MW, Steam Unit and their Auxiliaries, Piping etc.

AT

GUJARAT NARMADA VALLEY FERTILIZERS COMPANY LIMITED
DISTT. BHARUCH
(GUJARAT)

PART II - PRICE BID



BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

POWER SECTOR - WESTERN REGION

345, KINGS WAY - NAGPUR 440 001

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EARNEST MONEY DEPOSIT: RS. : Rs.2, 00,000.00 (Rs. TWO LAKH ONLY)

THESE TENDER DOCUMENTS CONTAINING PART-I TECHNICAL BID AND PART-II PRICE BID, ARE ISSUED TO:

M/s.....
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(THESE TENDER DOCUMENTS ARE NOT TRANSFERABLE)

FOR BHARAT HEAVY ELECTRICALS LIMITED

SENIOR MANAGER (PURCHASE)

PLACE: NAGPUR

DATE :

BHEL PS WR

SIGN OF BIDDER WITH SEAL

TS No. BHE/PW/PUR/ BHUI-CLE/726

BHARAT HEAVY ELECTRICALS LIMITED : PSWR : Nagpur
T.S. No. BHE/PW/PUR/BHUI-CLE/726
PRICE BID- PART-II, RATE SCHEDULE (Page 1 of 17)

SEC	SI No	DESCRIPTION	TOTAL QTY	UOM	UNIT RATE (Rs.) IN FIG	UNIT RATE IN WORDS	TOTAL AMOUNT (Rs.)
A		A. POWER TRANSFORMERS					
	A.1	Transportation up to foundation, Assembly, Testing & Commissioning of Three phase 40/60 MVA, 11/ 138 KV ,ONAN/ ONAF, OFTC/OLTC Generator Transformer including all accessories, piping, cabling etc. (Approx Weight 68,000 Kg each T/F and Size 8800x10200x6100 mm.	1	No.			
	A.2	Transportation from stores/ storage yard to erection site, assembly, testing & commissioning of 6 MVA, 11/3.48 KV , ONAN OLTC/OFTC, Station Auxiliary Transformer , including 3.3 KV, 300 NGR (approx dim 1500x100x1500mm, wt 600 kg) and all accessories, piping, cabling etc (Approx weight 29580 Kg per Transformer and size 5250x4700x4400 mm	2	No.			
	A.3	Transportation from stores/ storage yard to erection site, assembly, testing & commissioning of 2 MVA, 33/0.433 KV , ONAN, LT Auxiliary Transformer , including all accessories, piping, cabling etc (Approx weight 7000 Kg per Transformer and size 3500x3000x3000 mm	2	No.			
B		33 & 6.6 kV INDOOR SWITCHGEAR. EACH BOARD CONSISTING OF VACUUM BREAKER TYPE VM 12, PT PANELS, AUXILIARY TRANSFORMER PANEL, BUS EXTENSION CHAMBERS & ACCESSORIES etc. EACH BREAKER IS HOUSED WITH CONTROL, METERING & PROTECTION DEVICES; GCB					
	B.1	Modification / Expansion in existing 11 KV Switch Board: Dimension of EACH PANEL is approx 1000 x 2550 x 3300 mm and Approx Weight 900 Kg. per Panel. Approx 6 panels per board.	1	Set			

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SEC	SI No	DESCRIPTION	TOTAL QTY	UOM	UNIT RATE (Rs.) IN FIG	UNIT RATE IN WORDS	TOTAL AMOUNT (Rs.)
	B.2	3.3 KV Switch Board : consists of 12 Panels . Dimension of EACH PANEL is approx 16040 x 2000 x 2500 mm and Approx Weight 15000 Kg. per Panel.	1	Set			
C	TRANSPORTATION FROM STORES/ STORAGE YARD TO ERECTION SITE, ASSEMBLY, ERECTION, TESTING & COMMISSIONING OF 415 V LT SWITCH GEAR BOARDS / MC, DOUBLE FRONT / SINGLE FRONT, COMPRISES OF AIR CIRCUIT BREAKERS, PT PANELS, AUX. TRANSFORMER PANEL, TRUNKING CUBICLE						
	C.1	415 Volt LT STATION PMCC-1, Double Front, Approx Overall dimensions 20640 x 1754 x 2500 mm, Approx weight 15200Kg. / PMCC, Panel shall be supplied in loose shipping section.	1	Set			
	C.2	415 Volt EMERGENCY MCC, Double Front, Approx Overall dimensions 12000 x 1250 x 2430 mm, Approx weight 11250 Kg. / PMCC.	1	Set			
	C.3	415 Volt BOP MCC , Single / Double Front, Approx Over all dimensions 26800x1250x2430 mm, Approx weight 24750 Kg. / MCC, Panels shall be supplied in loose shipping section.	1	Set			
	C.4	415 Volt GT MCC 1, Single / Double Front, Approx Over all dimensions 15200 x 1250 x 2450 mm, Approx weight 14250 Kg./ MCC, Panels shall be supplied in loose shipping section.	1	Set			
	C.5	220 Volt DCDB , Single / Double Front, Approx Over all dimensions 7700 X 1000 X 2430 mm , Approx Weight 6750 Kg. / MCC, Panels shall be supplied in loose shipping section.	1	Set			

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SEC	SI No	DESCRIPTION	TOTAL QTY	UOM	UNIT RATE (Rs.) IN FIG	UNIT RATE IN WORDS	TOTAL AMOUNT (Rs.)
	C.6	125 Volt GT DCDB , Single / Double Front, Approx Over all dimensions 3800 X 950 X 2430 mm , Approx Weight 3750 Kg. / MCC, Panels shall be supplied in loose shipping section.	1	Set			
	C.7	110 Volt UPS DB , Single / Double Front, Approx Over all dimensions 10400 X 644 X 2500 mm , Approx Weight 5000 Kg. / MCC, Panels shall be supplied in loose shipping section.	1	Set			
	C.8	230 Volt UPS DB , Single / Double Front, Approx Over all dimensions 5000 X 1000 X 2000 mm , Approx Weight 5000 Kg. / MCC, Panels shall be supplied in loose shipping section.	1	Set			
	C.9	Aux. Control Panels, Approx dimension 6000x1000x2300 in mm & Approx wt. 4000 kg.	1	Set			
	C.10	Genarator transformer RTCC. Approx dim 800x915x2324 mm & wt. 500kg.	1	Nos.			
	C.11	Generator transformer marshalling box . Approx dim 1200x275x1540 mm & wt. 500kg	1	Nos.			
D	PB STATIONS AND JBs						
	D.1	Start/ Stop PB station (stop PB with pad locking), Unit wt. 2.5 kg., Dimension 108x285x125 mm	50	Nos.			
	D.2	Start/ Stop PB station with Ammeter (stop PB with pad locking), Unit wt. 5 kg., Dimension 108 x 295 x 125 mm.	30	Nos.			
	D.3	Emergency Stop PB (mushroom type), Unit Wt. 2 kg., Dimension 145 x 245 x 116 mm.	10	Nos.			
	D.4	Diverter Damper local JB, Approx dimension 2000x1000x1000 in mm& Approx wt 500 kg each	2	Nos.			

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SEC	SI No	DESCRIPTION	TOTAL QTY	UOM	UNIT RATE (Rs.) IN FIG	UNIT RATE IN WORDS	TOTAL AMOUNT (Rs.)
	D.5	Guillotine Damper local JB, Approx dimension 2000x1000x1000 in mm& Approx wt 500 kg each	2	Nos.			
	D.6	Junction boxes upto 48 way	20	Nos.			
	D.7	Junction boxes above 48 way	20	Nos.			
E	DC BATTERY SYSTEM (Transportation of material from Stores/ storage yard to erection site, Erection, Assembly, Testing & Commissioning of 220 VOLT BATTERY / BATTERY CHARGER, 24 VOLT BATTERY / BATTERY CHARGER FOR SG , TG &STATION C&I. FOPH, CWPH ETC.						
	E.1	220V,750 AH. 110 Cells Lead acid tubular Station Battery -. Dimesion-- 4370x804x1400mm Weight--3750 kg with 220V Station Battery Charger FCBC- Approx Overall Dimesion-- 3000x800x2000mm, Weight-- 2800Kg. Battery Shall be mounted on teak wood still age & loose	1	Sets			
	E.2	125 VDC Station battery- Dim 5000x900x1400mm and Wt. 3750 Kg. with 135 A Dual FCBC Station battery charger dim-2250x800x1700mm and Wt. 1000 Kg	1	Sets			
	E.3	125 V DC GT Battery- approx dim.5000x416x1400mm & wt 1835kg with Dual FCBC GT battery charger, approx dim. 2500x1200x2000 mm & wt. 500kg.	1	Sets			
	E.4	24 V DC system consist of 2 panels, wt of each panel 1000 kg	1	Sets			
F		NON SEGREGATED LV 415 VOLT BUSDUCTS / NEUTRAL GROUNDING TRANSFORMER / NEUTRAL GROUNDING RESISTANCE Transportation of material from Stores/ storage yard to erection site, Erection, Assembly, Testing &					

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SEC	SI No	DESCRIPTION	TOTAL QTY	UOM	UNIT RATE (Rs.) IN FIG	UNIT RATE IN WORDS	TOTAL AMOUNT (Rs.)
		Commissioning of NSP BUS DUCTS for interconnection between service transformer and LT MCC.					
	F1	3200 A, 415 Volt LT Interconnecting Al. BUS DUCT between LT Power Oil Filled Transformer of (2 MVA , 6.6 KV/ 0.433 KV) rating . Loose Items Like Silica Gel Breather and Its pipe, GI channel supports and associated accessories. (12500 x 1000 x 500) Approx Weight 6250 kg / Bus Duct)	2	Sets			
G	CABLING, EARTHING,LIGHTENING PROTECTION SYSTEM, : Transportation of material from Stores/ storage yard to erection site, Erection, Assembly, Testing & Commissioning						
G1	HT POWER CABLE XLPE INSULATED , PVC / FRLS OUTER SHEATHED						
	G1.1	3.3 KV (E) 1C X 630 SQ MM Al conductor	3000	Mtrs.			
	G1.2	11 KV (UE), 1C X 630 SQ MM, Al conductor	26400	Mtrs.			
	G1.3	3.3 KV (UE), 3C X 240 SQ MM, Al conductor	700	Mtrs.			
G2	1.1 KV LT XLPE POWER CABLES (ALUMINIUM CONDUCTOR, ARMOURED, FRLS OUTER SHEATHED)						
	G2.1	4C X16 SQ MM	3700	Mtrs.			
	G2.2	4C X 6 SQ MM	8900	Mtrs.			
	G2.3	4C X 4 SQ MM	16000	Mtrs.			
	G2.4	3.5C X 185 SQ MM	1000	Mtrs.			

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SEC	SI No	DESCRIPTION	TOTAL QTY	UOM	UNIT RATE (Rs.) IN FIG	UNIT RATE IN WORDS	TOTAL AMOUNT (Rs.)
	G2.5	3.5C X 95 SQ MM	2500	Mtrs.			
	G2.6	3.5C X 50 SQ MM	500	Mtrs.			
	G2.7	3.5C X 35 SQ MM	2100	Mtrs.			
	G2.8	3C X 50 SQ MM	4400	Mtrs.			
	G2.9	3C X 35 SQ MM	500	Mtrs.			
	G2.10	1C X 16 SQ MM	2000	Mtrs.			
	G2.11	1C X 35 SQ MM	2000	Mtrs.			
	G2.12	1C X 630 SQ MM	6000	Mtrs.			
G3	1.1 KV LT XLPE POWER CABLES (COPPER CONDUCTOR, UN-ARMOURED, FRLS OUTER SHEATHED)						
	G3.1	1C X 150 SQ MM	2000	Mtrs.			
	G3.2	1C X 35 SQ MM	2500	Mtrs.			
	G3.3	1C X 6 SQ MM	2500	Mtrs.			
	G3.4	1C X 120 SQ MM	800	Mtrs.			
	G3.5	1.1 KV, 3C X 2.5 SQ MM	5000	Mtrs.			
G4	LT PVC CONTROL & SIGNAL CABLES (COPPER CONDUCTOR, ARMOURED, FRLS OUTER SHEATHED)						
	G4.1	12C X 2.5 SQ MM	7000	Mtrs.			
	G4.2	3C X 2.5 SQ MM	25250	Mtrs.			
	G4.3	5C X 2.5 SQ MM	4500	Mtrs.			

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SEC	SI No	DESCRIPTION	TOTAL QTY	UOM	UNIT RATE (Rs.) IN FIG	UNIT RATE IN WORDS	TOTAL AMOUNT (Rs.)
	G4.4	7C X 2.5 SQ MM	26000	Mtrs.			
	G4.5	10C X 2.5 SQ MM	7000	Mtrs.			
	G4.6	12C X 2.5 SQ MM	9600	Mtrs.			
	G4.7	16C X 2.5 SQ MM	14500	Mtrs.			
	G4.8	19C X 2.5 SQ MM	4500	Mtrs.			
	G4.9	24C X 2.5 SQ MM	1000	Mtrs.			
	G4.10	6P X 1.5 SQ.MM	25500	Mtrs.			
	G4.11	6P X 0.5 SQ.MM	3600	Mtrs.			
	G4.12	12P X 1.5 SQ.MM	44000	Mtrs.			
	G4.13	12P X 0.5 SQ.MM	2000	Mtrs.			
	G4.14	1P X 1.5 SQ MM	19500	Mtrs.			
	G4.15	2P X 1.5 SQ.M	5000	Mtrs.			
	G4.16	3C X 4 SQ MM	10500	Mtrs.			
	G4.17	3C X 6 SQ MM	1000	Mtrs.			
	G4.18	3C X 10 SQ MM	500	Mtrs.			
	G4.19	3C X 16 SQ MM	250	Mtrs.			
	G4.20	8T X 1.5 SQ.MM	10000	Mtrs.			
	G4.21	2T X 1.5 SQ.MM	6000	Mtrs.			
	G4.22	12P X 16 AWG Cr-AI EXTENSION CABLE	21700	Mtrs.			
	G4.23	6P X 16 AWG Cr-AI EXTENSION CABLE	21500	Mtrs.			
	G4.24	1P/2P 1.5sqmm SCREENED CABLE	2500	Mtrs.			

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SEC	SI No	DESCRIPTION	TOTAL QTY	UOM	UNIT RATE (Rs.) IN FIG	UNIT RATE IN WORDS	TOTAL AMOUNT (Rs.)
	G4.25	Thermocouple Extension cable, - 1 pair x 16 AWG, 10 to 12 twist/meter.	500	Mtrs.			
	G4.26	UTP cable	1500	Mtrs.			
G5	LT PVC CONTROL & SIGNAL CABLES (<u>Al.</u> CONDUCTOR, ARMoured, FRLS OUTER SHEATHED)						
	G5.1	3C X 10 SQ MM	1000	Mtrs.			
	G5.2	3C X 25 SQ MM	3000	Mtrs.			
	G5.3	3C X 35 SQ MM	800	Mtrs.			
	G5.4	3.5C X 35 SQ MM	800	Mtrs.			
	G5.5	3C X 95 SQ MM	3000	Mtrs.			
	G5.6	1C X 120 SQ MM	1500	Mtrs.			
H1	PRE FABRIACTED CABLE TRAYS WITH COVERS						
	H1.1	LADDER TYPE GALVANISED, CABLE TRAY COMPLETE WITH COVER, COUPLER PLATES & FIXING HARDWARES					
	H1.1.1	600 MM WIDE	4500	Mtrs.			
	H1.1.2	300 MM WIDE	650	Mtrs.			
	H1.1.3	100 MM WIDE	100	Mtrs.			
	H1.2	PERFORATED TYPE GALVANISED, CABLE TRAY COMPLETE WITH COVER, COUPLER PLATES & FIXING HARDWARES					

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SEC	SI No	DESCRIPTION	TOTAL QTY	UOM	UNIT RATE (Rs.) IN FIG	UNIT RATE IN WORDS	TOTAL AMOUNT (Rs.)
	H1.2.1	300 MM WIDE	100	Mtrs.			
	H1.2.2	50 MM WIDE	750	Mtrs.			
	H1.2.3	100 MM WIDE	50	Mtrs.			
	H1.2.4	150 MM WIDE	1000	Mtrs.			
	H1.3	SOLID BOTTOM TYPE GALVANISED, CABLE TRAY COMPLETE WITH COVER, COUPLER PLATES,& FIXING HARDWARES					
	H1,3,1	50 MM WIDE, (Wt.10 kg)	750	Mtrs.			
	H1,3,2	300 MM WIDE ,(WT.25 KG)	250	Mtrs.			
	H1,3,3	600 MM WIDE ,(WT.30 KG)	1750	Mtrs.			
H2	PRE FABRICATED CABLE TRAYS ACCESSORIES						
	H2.1	HORIZONTAL TEE/BEND WITH COUPLER PLATES <u>FOR LADDER TYPE</u> CABLE TRAYS					
	H2.1.1	300 MM WIDE, 600 MM BENDING RADIUS (UNIT WT. 30 KG.)	10	Nos			
	H2.1.2	600 MM WIDE, 900 MM BENDING RADIUS (UNIT WT. 35 KG.) FOR LDR TYPE (CHANNEL) CABLE TRAY	30	Nos			
	H2.2	HORIZONTAL TEE/BEND WITH COUPLER PLATES <u>FOR SOLID BOTTOM TYPE</u> CABLE TRAYS					

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SEC	SI No	DESCRIPTION	TOTAL QTY	UOM	UNIT RATE (Rs.) IN FIG	UNIT RATE IN WORDS	TOTAL AMOUNT (Rs.)
	H2.2.1	600 MM WIDE, 900 MM BENDING RADIUS (UNIT WT. 35 KG.)	35	Nos			
	H2.3	VERTICAL/HORIZONTAL ELBOW -UP/DOWN WITH COUPLER PLATES <u>FOR LADDER TYPE</u> CABLE TRAYS					
	H2.3.1	300MM WIDE, UP OF 600 MM BENDING RADIUS (UNIT WT. 25KG.) - VERTICAL ELBOW	20	Nos			
	H2.3.2	300 MM WIDE, DOWN OF 600 MM BENDING RADIUS (UNIT WT. 25 KG.)	20	Nos			
	H2.3.3	600MM WIDE, UP OF 900 MM BENDING RADIUS (UNIT WT. 20KG.)	50	Nos			
	H2.3.4	300MM WIDE, 600 MM BENDING RADIUS (UNIT WT. 20KG.) - HORIZONTAL ELBOW	10	Nos			
	H2.3.5	600MM WIDE, 900 MM BENDING RADIUS (UNIT WT. 20KG.) - HORIZONTAL ELBOW	50	Nos			
	H2.4	VERTICAL/HORIZONTAL ELBOW -UP/DOWN WITH COUPLER PLATES <u>FOR SOLID BOTTOM TYPE</u> CABLE TRAYS					
	H2.4.1	600MM WIDE, 900 MM BENDING RADIUS (UNIT WT. 30KG.) - HORIZONTAL ELBOW	35	Nos			
	H2.4.2	600MM WIDE, UP OF 900 MM BENDING RADIUS (UNIT WT. 25KG.)	35	Nos			
	H2.4.3	600MM WIDE, DOWN OF 900 MM BENDING RADIUS (UNIT WT. 25KG.)	35	Nos			
	H2.4.4	300MM WIDE, 600 MM BENDING RADIUS (UNIT WT. 30KG.) - HORIZONTAL ELBOW	10	Nos			

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SEC	SI No	DESCRIPTION	TOTAL QTY	UOM	UNIT RATE (Rs.) IN FIG	UNIT RATE IN WORDS	TOTAL AMOUNT (Rs.)
	H2.4.5	300MM WIDE, UP OF 600 MM BENDING RADIUS (UNIT WT. 20KG.)	10	Nos			
	H2.4.6	300MM WIDE, DOWN OF 600 MM BENDING RADIUS (UNIT WT. 20KG.)	10	Nos			
	H2.5	HORIZONTAL CROSS WITH COUPLER PLATES FOR LADDER TYPE CABLE TRAYS					
	H2.5.1	300 MM WIDE, 600 MM BENDING RADIUS (UNIT WT. 35 KG.)	10	Nos			
	H2.5.2	600 MM WIDE, 900 MM BENDING RADIUS (UNIT WT. 40KG.)	50	Nos			
	H2.6	HORIZONTAL CROSS WITH COUPLER PLATES FOR SOLID BOTTOM TYPE CABLE TRAYS	0	Nos			
	H2.6.1	300 MM WIDE, 600 MM BENDING RADIUS (UNIT WT.35 KG.)	10	Nos			
	H2.6.2	600 MM WIDE, 900 MM BENDING RADIUS (UNIT WT. 45 KG.)	25	Nos			
I	STRUCTURAL STEEL FOR FABRICATION		100	MT			
J	HT CABLE TERMINATION KITS FOR , XLPE INSULATED, HEAT SHRINKABLE COPPER / ALUMINIUM CABLE						
	J.1	3.3 KV, 1C X 630 SQ MM ,Al. Cable (Unit Wt. 2 Kg.)	50	Nos.			
	J.2	11 KV,1C X 630 SQ MM, Al. Cable (Unit Wt. 2Kg)	90	Nos.			
	J.3	3.3 KV, 3C X 185 SQ MM , Al. Cable (Unit Wt. 2 Kg.)	20	Nos.			
K	EARTHING & LIGHTNING PROTECTION SYSTEM						
	K.1	65 mm dia Pipe Electrodes, 3M long GI	35	Nos.			

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SEC	SI No	DESCRIPTION	TOTAL QTY	UOM	UNIT RATE (Rs.) IN FIG	UNIT RATE IN WORDS	TOTAL AMOUNT (Rs.)
	K.2	75 x 10 mm GI Strips, For Underground & Above ground earthing	3500	Mtrs			
	K.3	50 x 6 mm GI Strips, For Above ground equipment earthing	3400	Mtrs			
	K.4	35 x 6 mm GI Strips, For Above ground equipment earthing	3000	Mtrs			
	K.5	25 x 6 mm GI Strips, For Above ground equipment earthing	3200				
	K.6	8SWG GI wire , solid, For Above ground equipment earthing	2000	Mtrs			
	K.7	16SWG GI wire , solid, For Above ground equipment earthing	1000	Mtrs			
	K.8	3/8" Dia GI fine wire rope	1500	Mtrs			
	K.9	5/8" Dia GI fine wire rope	1500	Mtrs			
	K.10	40 mm dia MS rod	5000	Mtrs			
	K.11	MS rod electrode	55	Nos			
	K.12	VERTICAL AIR TERMINATION ROD	5	Nos			
L1	FIRE PROOF SEALING MATERIALS						
	L1.1	Fire Break Coating for HT/LT Power Cables (Sprayable type liquid)	300	mtrs			
	L1.2	Fire Proofing materials for sealing of wall / floor openings and panel bottom (Suitable for sealing both vertical & horizontal cable penetration)	500	mtrs			
L2	FIRE SEALING SYSTEM						
	L2.1	FIRE PROOF SEALING MATERIALS i) Powder kind of things in bags of 50 kg - To be applied below the Panels/Floor Cut outs. - 500 Sq.Mtrs ii) Spray paints in tin drums in 25 lts -- To be applied/sprayed on on power cables 3 mtrs	5000	Sq. Ft.			
M1	Items for the Substation.						

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	M1.1	6 mm thick chequered plate for covering cutouts in Switch Gear room.	100	sq.mtr			
	M1.2	1 Mtr. Long Earthing Discharge Rods.	1	Mtrs			
	M1.3	GI Conduits of 100/150 mm dia., medium duty, Class-B type, Galvanizing thickness min. 75 microns.	100	Mtrs			
	M1.4	200 NB G.I. HUME PIPES, shall comply to IS:458.	200	Mtrs			
	M1.5	200 MM DIA PVC CONDUITS	200	Mtrs			
M2		Burried Cable	300	Mtrs			
N1	GT CONTROLS & INSTRUMENTATION						
	N1.1	maxDNA System cabinets, Approx Dimension 2355 x 800x800 mm & Approx Unit Wt. 450 kg each .	39	Nos			
	N1.2	Relay Cubicles, Approx Dimension 2355x800x800 mm & Approx Unit Wt. 450 kg each.	4	Nos			
	N1.3	Barrier panel. Approx dim. 2355x800x800 mm & approx unit wt. 450kg	4	Nos			
	N1.4	Mark -VI TMR GT Control Panel, Approx Dimension 2400x900x2260 in mm & Approx Unit Wt. 1200 kg each.	1	Nos			
	N1.5	MARK-VI HMI, Unit Wt.100kg, each HMI consist of 1 no. of i) CPU, Dimension 450x456x168 in mm ii) Monitor Dimension 400x205x422 in mm iii) Keyboard, Dimension 35.6x180x464.8 in mm iv) Optical mouse v) DMP 132 column	3	Sets			
	N1.6	Network Switches, Approx Dimension 44x223x440 in mm, Approx Unit Wt. 15 kg each	6	Nos			

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PRICE BID- PART-II, RATE SCHEDULE (Page 14 of 17)

SEC	SI No	DESCRIPTION	TOTAL QTY	UOM	UNIT RATE (Rs.) IN FIG	UNIT RATE IN WORDS	TOTAL AMOUNT (Rs.)
	N1.7	DVAR, Approx dimension 2324x1200x1200 in mm & Approx Unit Wt. 1000 kg. Each	1	Nos			
	N1.8	Operating Interface Stations (OIS & EWS other stations for DCS), Approx Dimension 500x100x700 in mm & Approx Unit Wt. 100 kg each	8	Nos			
	N1.9	Control Desk / Computer Desk , Approx Dimension 8000X1000 (LxD) & Approx Unit Wt. 6000kg	1	Set			
	N1.10	Console Desk, Approx Dimension 8000X1300 (LxD) & Approx Unit Wt. 6000kg	1	Set			
	N1.11	Printer tables, Approx Dimension 600X600 (LxD) & ApproxUnit Wt. 100kg	1	Set			
	N1.12	Printers, Approx Unit Wt. 20 kg.	7	Nos			
	N1.13	SCADA Marshalling panels. Approx Dimension 1000x1000x2350 in mm & Approx Wt. 500 kg of each panel.	1	Nos			
	N1.14	GT Auxillary panel, Approx Dimension 1000x800x2400 in mm & Approx WT. 250 kg	1	Nos			
	N1.15	Microprocessor based CO2 Fire fighting panel, Approx Dimension 800x600x2000 in mm & Approx wt 150 kg each.	1	Nos			
	N1.16	Inlet air filter panel, Approx dimension 660x255x1015 in mm & Approx wt 500 kg	1	Nos			
	N1.17	Haz. Gas Monitoring system, Approx Dimension 161x361x178 in mm & Approx wt 3.5 kg.	1	Nos			
	N1.18	SYSTEM-1-BNC-Machinery monitoring system server, Approx dimension 470x530x170 in mm & Approx wt 40 kg	1	Nos			

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SEC	SI No	DESCRIPTION	TOTAL QTY	UOM	UNIT RATE (Rs.) IN FIG	UNIT RATE IN WORDS	TOTAL AMOUNT (Rs.)
	N1.19	VMS cabinet for BFP/CWP (800X800X2100), (Includes installation of BNC rack and related monitoring computer also) including OCAMMS (Online Computer Aided system for Machinery vibration Monitoring and analysis system)	1	Nos			
	N1.20	SWAS analyser	1	Set			
	N1.21	Fire detection sysem. Approx wt of each panel 500 kg & all accessories	1	Set			
	N1.22	P A system - 20 field control station, hand seta, loudspeaker, cabling etc.	1	Set			
	N1.23	Telephone system & Plant communication system- 25 nos. Telephone set, EPBAX, JB's and cable	1	Set			
	N1.24	Master clock system	1	Set			
	N1.25	90 KVA, 110 Volts UPS Panel with 2 Battery Banks.	1	Set			
	N1.26	UPS DB . Approx. Wt. of each panel 1000kg	1	Set			
	N1.27	C&I lab equipments	1	Set			
	N1.28	LIR/LIE	19	Nos			
N2	FIELD INSTRUMENTS/DEVICES						
	N2.1	Pressure / DP / Flow (DP type) / Level -Transmitter	170	Nos			
	N2.2	Pressure Gauges	70	Nos			
	N2.3	Pressure Switches	10	Nos			
	N2.4	Temperature Gauge Stem Type/Capillary type	40	Nos			
	N2.5	Temperature element with thermowell RTD/ Thermocouple	65	Nos			
	N2.6	Temperature Transmitter	97	Nos			
	N2.7	Level switches	10	Nos			

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PRICE BID- PART-II, RATE SCHEDULE (Page 16 of 17)

SEC	SI No	DESCRIPTION	TOTAL QTY	UOM	UNIT RATE (Rs.) IN FIG	UNIT RATE IN WORDS	TOTAL AMOUNT (Rs.)
	N2.8	Level Gauge	10	Nos			
	N2.9	MTM thermocouple	36	Mtrs			
	N2.10	O2 Analyser	1	Nos			
	N2.11	CO Analyser	1	Nos			
	N2.12	CO2 Analyser	1	Nos			
	N2.13	SOX & NOX Analyser	1	Nos			
	N2.14	Flame Scanner, UV TYPE	4	Nos			
	N2.15	EWLI	2	Nos			
N3	Impulse pipes, tubes, GI pipes & fittings (SS/CS/AS/Copper/GI) (Including siphons and condensing pots wherever required)						
	N3.1	SS tube 12.7 x 2.1 mm	1000	Mtrs			
	N3.2	SS pipe 21.3 x 3.7 mm	1000	Mtrs			
	N3.3	SS pipe 33.4 x 3.4 mm	600	Mtrs			
	N3.4	SS304 pipe 1" for instrument air	2000	Mtrs			
	N3.5	SS304 tube 6mm	1000	Mtrs			
	N3.6	CS pipe 21.3 x 4.74 mm	1200	Mtrs			
	N3.7	1" OD SS pipe	50	Mtrs			
	N3.8	1/2" OD SS pipe	300	Mtrs			
	N3.9	2" GI pipe	1500	Mtrs			
O	COMMISSIONING SERVICES						
	O.1	Uni-Directional Electric Drives	10	Nos			
	O.2	Electric Actuators	20	Nos			

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SEC	SI No	DESCRIPTION	TOTAL QTY	UOM	UNIT RATE (Rs.) IN FIG	UNIT RATE IN WORDS	TOTAL AMOUNT (Rs.)
	O.3	Pneumatic Control Valves/Temperature Actuated Control Valve, Regulating Dampers.	20	Nos			
	O.4	Pneumatic ON/OFF Valves,ON/OFF Solenoid Valves etc.	20	Nos			
	O.5	Limit Switches	20	Nos			
	O.6	ERV controller	1	Nos			
	O.7	Integrated Testing of Controls. Protection and relay testing.	1	Set			
	O.8	Control valve with SMART positioner	30	Nos			
	O.9	ON/OFF Control Valve	5	Nos			
	O.10	Mass Flow meter	5	nos			
	O.11	Generator system testing as per clause no.4.8 A of technical bid	1	Set			
		GRAND TOTAL RS.					
		GRAND TOTAL IN WORDS (RS)					

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