

TENDER SPECIFICATION

NO: BHE/PW/PUR/ROI-CLE/765

FOR

HANDLING AT SITE STORES/STORAGE YARD, TRANSPORTATION TO SITE OF WORK, COMPLETE ERECTION, CHECKING OF CALIBRATION, TESTING, COMMISSIONING AND HANDING OVER OF CONTROL & INSTRUMENTATION AND ELECTRICAL WORKS FOR TUBO BLOWERS AND ITS AUXILIARIES, FOR 3X18 MW TURBO BLOWER SET

AT

STEEL AUTHORITY OF INDIA LTD (SAIL)

ROURKELA STEEL PLANT

ROURKELA

DIST. SUNDERGARH

(ORISSA)

VOLUME- 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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THESE TENDER DOCUMENTS CONTAINING VOLUME-II PRICE BID IS ISSUED TO:

M/s.....

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(THESE TENDER DOCUMENTS ARE NOT TRANSFERABLE)

FOR BHARAT HEAVY ELECTRICALS LIMITED

AGM (PURCHASE)

PLACE: NAGPUR

DATE :

BHARAT HEAVY ELECTRICALS LIMITED : PSWR : Nagpur
T.S. No. BHE/PW/PUR/ROI-CLE/765
VOLUME-II-PRICE BID

SN	DESCRIPTION	TOTAL QTY	UOM	Rate in Rs.	Total Price in Rs.	Applicable TOP
	ELECTRICAL					
E1.0	CABLE TRAY AND ACCESSORIES					I 1
E1.0.1	600mm width ladder type straight run cable tray along with accessories including coupler plates	750	Meter			
E1.0.2	300mm width ladder type straight run cable tray along with accessories including coupler plates	300	Meter			
E1.0.3	600mm width perforated type straight run cable tray along with accessories including coupler plates	30	Meter			
E1.0.4	300mm width perforated type straight run cable tray along with accessories including coupler plates	300	Meter			
E1.0.5	100mm width perforated type straight run cable tray along with accessories including coupler plates	750	Meter			
E1.0.6	50mm width perforated type straight run cable tray along with accessories including coupler plates	750	Meter			
	HORIZONTAL TEE/BEND FOR LADDER TYPE CABLE TRAYS					
E1.0.3	Horizontal Tee of 600mm bending Radius along with coupler plates for 300mm width ladder type cable tray	5	No			

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E1.0.4	Horizontal Tee of 900mm bending radius along with coupler plates for 600mm width ladder type cable tray	5	No			
E1.0.5	Horizontal bend of 600mm bending radius along with coupler plates for 300mm width ladder type cable tray	5	No			
E1.0.6	Horizontal bend of 900mm bending radius along with coupler plates for 600mm width ladder type cable tray	5	No			
	VERTICAL TEE/BEND FOR LADDER TYPE CABLE TRAYS					
E1.0.7	Vertical Bend(up) of 600mm bending radius along with accessories including coupler plates for 300mm width ladder type cable tray	5	No			
E1.0.8	Vertical bend(down) of 600mm bending radius along with accessories including coupler plates for 300mm width ladder type cable tray	5	No			I.3.0
E1.0.9	Vertical bendn(up) of 900mm bending radius along with accessories including coupler plates for 600mm width ladder type cable tray	5	No			
E1.0.10	Vertical bendn (down) of 900mm bending radius along with accessories including coupler plates for 600mm width ladder type cable tray	5	No			
	HORIZONTAL TEE/BEND FOR PERFORATED TYPE CABLE TRAYS					
E1.0.15	Horizontal Tee of 600mm bending radius along with accessories including coupler plates for 300mm perforated type cable tray	10	No			

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SN	DESCRIPTION	TOTAL QTY	UOM	Rate in Rs.	Total Price in Rs.	Applicable TOP
E1.0.16	Horizontal Tee of 900mm bending radius along with accessories including coupler plates for 600mm width perforated type cable tray	10	No			
E1.0.17	Horizontal bend of 600mm bending radius along with coupler plates for 300mm width perforated type cable tray	10	No			
E1.0.18	Horizontal bend of 900mm bending radius along with coupler plates for 600mm width perforated type cable tray	10	No			
	VERTICAL TEE/BEND FOR PERFORATED TYPE CABLE TRAYS					
E1.0.19	Vertical up of 600mm bend radius along with coupler plates for 300mm width perforated type cable tray	10	No			
E1.0.20	Vertical down of 600mm bend radius along with coupler plates for 300mm width perforated type cable tray	10	No			
E1.0.21	Vertical up of 900mm bending radius along with coupler plates for 600mm width perforated type cable tray	10	No			
E1.0.22	Vertical down of 900mm bending radius along with coupler plates for 600mm width perforated type cable tray	10	No			
E2.0	CABLE LAYING INCLUDING EARTHING WIRES					12.0

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E2.0.1	1.1KV Armoured Al. Conductor FRLS/FRLS 1Cx400 sq. mm LT Power cable	500	Meter			
E2.0.2	1.1KV Armoured Al. Conductor FRLS/FRLS 3.5Cx240 sq. mm LT Power cable	3500	Meter			
E2.0.3	1.1KV Armoured Al. Conductor FRLS/FRLS 1Cx120 sq. mm LT Power cable	500	Meter			
E2.0.4	1.1KV Armoured Al. Conductor FRLS/FRLS 3.5Cx120 sq. mm LT Power cable	500	Meter			
E2.0.5	1.1KV Armoured Al. Conductor FRLS/FRLS 3.5Cx70 sq. mm LT Power cable	2500	Meter			
E2.0.6	1.1KV Armoured Al. Conductor FRLS/FRLS 3.5Cx35 sq. mm LT Power cable	750	Meter			
E2.0.7	1.1KV Armoured Al. Conductor FRLS/FRLS 4Cx16 sq. mm LT Power cable	1500	Meter			
E2.0.8	1.1KV Armoured Cu. Conductor FRLS/FRLS 4Cx4 sq. mm LT Power cable	8000	Meter			
E2.0.9	1.1KV Un-Armoured Cu. Conductor 1Cx70 sq. mm LT Power cable	500	Meter			

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SN	DESCRIPTION	TOTAL QTY	UOM	Rate in Rs.	Total Price in Rs.	Applicable TOP
E2.0.10	1.1KV Un-Armoured Cu. Conductor 1Cx25 sq. mm LT Power cable	500	Meter			
E2.0.11	1.1kV PVC Insulated FRLS/FRLS 3Cx2.5 sq. mm Control and Signal cable	6000	Meter			
E2.0.12	1.1kV PVC Insulated FRLS/FRLS 12Cx2.5 sq. mm Control and Signal cable	3000	Meter			
E3.0	JUNCTION BOX/PUSH BUTTON STATION					I 3.0
E3.0.1	Start/stop PB, L/R ON/OFF Indication lamp (Approx. weight 3kg) (180x285x125mm)	36	No			
E3.0.2	Start/stop PB, L/R ON/OFF Indication lamp with Ammeter (Approx. weight 5kg) (180x295x125 mm)	21	No			
E4.0	MISC. STRUCTURAL STEEL INCLUDING CABLE TRAY SUPPORTS, CANOPIES ETC, CONDUITS, PIPES ETC					I 4.0
E4.0.1	Structural steel for fabrication	36200	Kg			
E5.0	DG Sets/Switch Gear/MCC/PCC/Distribution Boards/Marshalling Box/Starter Units/Dry Transformer/Electrical Hoists/Panels/Cubicles/Desks/UPS Batteries/Charger/VFD/LA assy/NGT/SP/Miscellaneous Equipments/ ect					I 5.0

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SN	DESCRIPTION	TOTAL QTY	UOM	Rate in Rs.	Total Price in Rs.	Applicable TOP
E5.0.1	LT Switchgear 415V TB MCC-1 (approx. weight 5500 kg) (7650x944x2430mm)	1	No			
E5.0.2	LT Switchgear 415V TB MCC-2 (approx. weight 5500 kg) (7650x944x2430 mm)	1	No			
E5.0.3	LT Switchgear 415V TB MCC-3 (approx. weight 5500 kg) (7650x944x2430 mm)	1	No			
E5.0.4	LT Switchgear 415V ACDB (approx. weight 4200 kg) (5730x644x2430 mm)	1	No			
E5.0.5	LT Switchgear 240V UPSDB-1 (approx weight 1000 kg) (930x644x2430 mm)	1	No			
E5.0.6	LT Switchgear 240V UPSDB-2 (approx. weight 1000 kg) (930x644x2430 mm)	1	No			
E5.0.7	LT Switchgear 220V DCDB-1 (approx. weight 3000 kg) (4130x644x2430 mm)	1	No			
E5.0.8	LT Switchgear 220V DCDB-2 (approx. weight 1800 kg) (2530x644x2430 mm)	1	No			
E6.0	EARTHING/LIGHTING PROTECTION STRIPS, EARTHING PITS					16.0

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SN	DESCRIPTION	TOTAL QTY	UOM	Rate in Rs.	Total Price in Rs.	Applicable TOP
E6.0.1	75X10 mm GI Strips	1000	Meter			
E6.0.2	50x6 mm GI Strips	500	Meter			
E6.0.3	25x3 mm GI Strips	100	Meter			
E6.0.4	16SWG GI wire, solid	250	Meter			
E6.0.5	6 sq. mm GI Wire	250	Meter			
E6.0.6	Welding Receptacle 415V,3ph,5 pin 100A	12	No			
	C & I					
I3.0	CABLE LAYING (CONTROL AND SIGNAL CABLE)					I 3.0
I3.0.1	Thermocouple extension cable 2x2x0.5 mm	6000	No			
I3.0.2	FEP extruded/PTFE taped sintered sheat colour gray cable 0.5mm sqr 7/0.3 2x2x0.5mm 600V cable-1	6000	No			
I3.0.3	FEP extruded/PTFE taped sintered sheat colour gray cable 0.5mm sqr 7/0.3 4x2x0.5mm 600V cable-2	4500	No			

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VOLUME-II-PRICE BID

SN	DESCRIPTION	TOTAL QTY	UOM	Rate in Rs.	Total Price in Rs.	Applicable TOP
13.0.4	Screened Copper Cable 4P x 0.5 sqmm armoured / unarmoured, 650V	25000	Meter			
13.0.5	Screened Copper Cable 8P x 0.5 sqmm armoured / unarmoured, 650V	10000	Meter			
13.0.6	5Cx2.5 – armoured 650V group cable	20000	Meter			
13.0.7	Network UTP Cables (special termination using UTP connectors involved)	2000	Meter			
14.0	JUNCTION BOX/PUSH BUTTON STATION					14.0
14.0.1	JBs upto 48 way	100	No			
14.0.2	JBs above 48 way	50	No			
15.0	CONDUITS/IMPULSE PIPE/TUBES					15.0
15.0.1	CS PIPE 21.3X3.73 mm	1800	Meter			
15.0.2	SS TUBE 12.7X2.1mm	900	Meter			
15.0.3	SS TUBE 6X1mm	100	Meter			

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SN	DESCRIPTION	TOTAL QTY	UOM	Rate in Rs.	Total Price in Rs.	Applicable TOP
17.0	Panesl/Cubicles/Racks/Enclosures/Monitors/Computer/Computer peripheral/PLCs/UPS/Batteries					17.0
17.0.1	Local gauge board 1200(W)x1300(H) mm (Approx. weight 200 kg)	3	No			
17.0.2	Governing console board 1400(W)x1600(H)x350(D)mm (Approx. weight 250 kg)	3	No			
17.0.3	Control Panel (approx L1000 X B1000 X H2500, 400Kg) - one panel	30	Set			
17.0.4	max Engineering / operator / storian / LAN / WAN / Shift in charge / stn in charge / gateway / interface PC / HART etc., PC/Server Station with ASCII Keyboard, Mouse & 21" Colour Monitor, individual UPS	13	No			
17.0.5	Workstation without monitor(449Hx150Wx457D)mm	2	No			
17.0.6	PRINTERS: 2 A4 Multipurpose colour printers(473Hx400Wx490D)mm 4 Laser Jet Printers B/W (473Hx400Wx490D)mm 1 B/W Laser Printer (471 Hx640Wx623D)mm 2 Dot Matrix Printers (142Hx605Wx360D)mm	9	No			
17.0.7	Ethernet Switch: 24 Ports 10/100 Mbps for maxSTATIONS & Printers	12	No			
17.0.8	65" LCD PANEL (1572Wx126Dx923H)mm	2	No			

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18.0	Instruments/Devices including sensors/Cells/Probes etc					18.0
18.0.1	Speed Probes	18	No			
18.0.2	Vibration Probes	36	No			
18.0.3	Axial Displacement Probe	15	No			
18.0.4	LVDT Casing Expansion Probe	3	No			
18.0.5	Differential Expansion Probe	6	No			
18.0.6	Velocity Probes(Velomitor)	6	No			
18.0.7	Probe Housing Assembly	15	No			
18.0.8	Solenoid valves	12	No			
18.0.9	Electro-pneumatic converters	9	No			
18.0.10	Pressure switches	30	No			
18.0.11	Fire Protection Switch in IP 65 Box	6	No			
18.0.12	Pressure gauges	120	No			
18.0.13	Differential Pressure gauges	12	No			

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18.0.14	Temperature Gauges (Bimetallic)	18	No			
18.0.15	Temperature Gauges (MIS)	18	No			
18.0.16	Level gauges	9	No			
18.0.17	Electronic pressure transmitters/Temperature transmitters	330	No			
18.0.18	Electronic differential Pressure transmitters	18	No			
18.0.19	Level transmitters	6	No			
18.0.20	Thermocouple / RTDs with thermowell (all types) along with converters wherever applicable	60	No			
18.0.21	Vibration monitoring system for Tubo Blowers, (Mounted on EDN panel) Bently Nevada 3500 series	3	Set			
18.0.22	Turbo log Antisurge control system(Mounted on EDN panel)& surge detector	6	No			
18.0.23	Back up control Desk	3	Set			
18.0.24	MASTER AND SLAVE CLOCK SYSTEM	1	Set			
18.0.25	HART Management System	2	Set			

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18.0.26	Computer furniture for all Servers, PCs, Printers	1	Set			
18.0.27	Plant Control Desk / CRT desk	1	Set			18.0
18.0.28	Latching Relay Coil Volt: 24VDC Current Rating: 5A Mounting: 35mm din rail	3	No			
19.0	Commissioning and Testing Activities for equipment erected by other agencies, like control valves, on/off valves, electric/pneumatic valves, actuators, solenoid valves, valves, limit switches, ERV controller, power cylinders, Pressure & Temperature Gauges/Transmitter, etc.					19.0
19.0.1	Pneumatic regulating drives: (Valve, damper)	27	No			
19.0.2	Electrically (LT) Operated Valves, Dampers and Gates with Actuators, Limit Switches etc. (Regulating & ON/OFF Type).	540	No			
GRAND TOTAL IN FIGURES IN RUPEES						
GRAND TOTAL IN WORDS IN RUPEES						

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