

# **TENDER SPECIFICATION**

**No. BHE/PW/PUR/BSI1-CLE/1093**

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 TURBO BLOWERS AND ITS AUXILIARIES, FOR 3x25MW SAIL BHILAI STEEL PLANT

**AT  
STEEL AUTHORITY OF INDIA LTD (SAIL)  
BHILAI STEEL PLANT, BHILAI  
DIST. DURG, (CHHATISGARH)**

**VOLUME :II – PRICE BID**

BOOK NO.

**BHARAT HEAVY ELECTRICALS LIMITED**  
*(A GOVERNMENT OF INDIA UNDERTAKING)*  
POWER SECTOR - WESTERN REGION  
SHREEMOHINI COMPLEX  
345, KINGS WAY - NAGPUR 440 001

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(A GOVERNMENT OF INDIA UNDERTAKING)  
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BHILAI STEEL PLANT, BHILAI  
DIST. DURG, (CHHATISGARH)**

**EARNEST MONEY DEPOSIT:** Please see Notice Inviting Tender.

**LAST DATE FOR:** Please see Notice Inviting Tender.

**TENDER SUBMISSION:**

**THESE TENDER SPECIFICATION DOCUMENTS CONTAINING VOLUME-I , VOLUME- II AND VOLUME-IBCD ARE ISSUED TO:**

**M/s. ....**

**PLEASE NOTE:**

**THESE TENDER SPECS DOCUMENTS ARE NOT TRANSFERABLE.**

**For Bharat Heavy Electricals Limited**

**AGM (Purchase)**

**Place: Nagpur**

**Date:**

**BHEL : PS WR**  
**TS : BHE/PW/PUR/BSI1-CLE/1093 (RATE SCHEDULE)**  
**VOLUME-II- PRICE BID-1093**

**BHEL:PSWR:NAGPUR**

**RATE SCHEDULE, SECTION - A**

**NAME OF WORK:** 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 TURBO BLOWERS AND ITS AUXILIARIES, FOR 3x25MW SAIL BHILAI STEEL PLANT

Sl. No.	Description of items	UOM	Quantity	Unit Rates in Figures (In Rs)	Unit Rates in Words (In Rs)	Total Amounts (In Rs)	APPLICABLE for Terms of Payment
<b>ELECTRICAL</b>							
E1.0	<b>Cable tray and Accessories</b>						
E1.0.1	<b>CABLE TRAY</b>						<b>11.0</b>
E1.0.2	600mm width ladder type	Meter	625				
E1.0.3	300mm width ladder type	Meter	250				
E1.0.4	600mm width perforated type	Meter	1250				
E1.0.5	300mm width perforated type	Meter	500				
E1.0.6	100mm width perforated type	Meter	625				
E1.0.7	50mm width perforated type	Meter	625				
E2.0	<b>Cable trays including earthing wires</b>						<b>12.0</b>
E2A.0	<b>LT Power Cable</b>						
E2A.0.1	Al. Conductor 1Cx400 sq. mm	Meter	750				
E2A.0.2	Al. Conductor 3.5Cx240 sq. mm	Meter	4500				
E2A.0.3	Al. Conductor 3.5Cx120 sq. mm	Meter	3500				
E2A.0.4	Al. Conductor 3.5Cx70 sq. mm	Meter	3000				
E2A.0.5	Al. Conductor 3.5Cx35 sq. mm	Meter	1500				
E2A.0.6	Al. Conductor 4Cx16 sq. mm	Meter	3000				
E2A.0.7	Cu. Conductor 4Cx4 sq. mm	Meter	20000				
E2A.0.8	Cu. Conductor 1Cx70 sq. mm	Meter	500				
E2A.0.9	Cu. Conductor 1Cx25 sq. mm	Meter	500				
E2B.0	<b>LT Control Cable</b>						<b>12.0</b>
E2B.0.1	3C X2.5 sqmm Armoured Cu conductor FRLS/FRLS	Meter	11000				
E2B.0.2	1.1kV PVC Insulated FRLS/FRLS 3Cx2.5 sq. mm Control and Signal cable	Meter	15000				
E2B.0.3	1.1kV PVC Insulated FRLS/FRLS 12Cx2.5 sq. mm Control and Signal cable	Meter					

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E2B.0.4	19C X2.5 sqmm PVC insulated Cu FRLS/FRLS	Meter	9000			
E2B.0.5	10C X2.5 sqmm PVC insulated Cu FRLS/FRLS	Meter	9000			
E2B.0.6	16C X2.5 sqmm PVC insulated Cu FRLS/FRLS	Meter	4000			
E2B.0.7	5C X2.5 sqmm PVC insulated Cu FRLS/FRLS	Meter	14000			
<b>E3.0</b>	<b>Junction box/Push Button station</b>					<b>15.0</b>
E3.0.1	Open Closed PB L/R SS Open,Close trip Indication lamp,Trip PB,Approx. Dimension (LxDxH)-250x185x575mm.	No	85			
E3.0.2	Start/stop PB, L/R ON/OFF Indication lamp. Approx.Dimension(180x285x125)mm	No	15			
E3.0.3	Start/stop PB, L/R ON/OFF Indication lamp with Ammeter.Approx. Dimension (180x295x125 mm)	No	30			
<b>E4.0</b>	<b>Misc. Structural steel including cable tray supports, canopies etc, Conduits, pipes etc</b>					<b>14.0</b>
E4.0.1	Structural steel for fabrication	Kg	37828			
<b>E5.0</b>	<b>SWITCHGEARS / MCC /PCC</b>					<b>112.0</b>
E5.0.1	415 V ACDB Approx dimension(LxDxH)mm:- 4200x1210x2430.Weight approx 5MT.	No	1			
E5.0.2	220 V DCDB-1 Approx.Dimension (LxDxH) mm:- 900x600x2430 ,Approx. weight 2MT	No	1			
E5.0.3	220 V DCDB-2 Approx.Dimension (LxDxH) mm:- 2500x600x2430 mm,weight approx 3MT	No	1			
E5.0.4	415 V Auxillary MCC-1 Approx. Dimension(LxDxH):- 2000x1210x2430 mm,Approx. Weight 2MT.	No	1			
E5.0.5	Turbo Blower intelligent MCC-1 ,2&3 Approx. Dimension(LxDxH):- 9000x1210x2430mm. Weight approx 10MT/Panel.	No	3			
E5.0.6	Wall mounted DB Type-I,II&III,Approx. Dimension 9000/600x300x800 mm,Approx. Weight 150Kg /Panel	No	3			
E5.0.7	Data connector for LT Switch gear. Approx Diamension(1000x1000x2430).Weight 500 kg.	No	1			
E5.0.8	work station for LT Switch gear	No	1			
<b>E6.0</b>	<b>EARTHING PROTECTION STRIPS</b>					<b>16.0</b>
E6.0.1	75X10 mm GI Strips	Meter	1500			
E6.0.2	50x6 mm GI Strips	Meter	500			
E6.0.3	25x3 mm GI Strips	Meter	1500			
E6.0.4	6 sq. mm GI Wire	Meter	1500			

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E6.0.5	10 SWG GI wire	Meter	5000			
E6.0.6	Welding Receptacle 415V,3ph,5 pin 100A	No	15			
	<b>C &amp; I</b>					
<b>13.0</b>	<b>Cable laying including earthing wires</b>					<b>13.0</b>
I3.0.1	Screened Copper Cable 2P x 0.5 sqmm armoured / unarmoured	Meter	9000			
I3.0.2	Screened Copper Cable 4P x 0.5 sqmm(Non-intrinsic safe) armoured / unarmoured	Meter	24000			
I3.0.3	Screened Copper Cable 4P x 0.5 sqmm(intrinsic safe) armoured / unarmoured	Meter	5400			
I3.0.4	Screened Copper Cable 8P x 0.5 sqmm armoured / unarmoured	Meter	12000			
I3.0.5	Screened Copper Cable 1P/2C or 3C x 1.5 sqmm armoured / unarmoured	Meter	7000			
I3.0.6	Copper Cable 1triad, 0.5/1.5 sqmm(Intrinsic safe) armoured/unarmoured	Meter	1000			
I3.0.7	Copper Cable 8 triad, 0.5/1.5 sqmm(Intrinsic safe) armoured/unarmoured	Meter	1500			
I3.0.8	1Px(0.5Sqmm/16AWG) Cr-Al Extension Cable	Meter	500			
I3.0.9	Thermocouple Extension cable 2Px20AWG	Meter	7500			
I3.0.10	Network UTP Cables (special termination using UTP connectors involved)	Meter	9150			
I3.0.11	Laying, etc of Optical fibre cables on cable trays, conduits etc (termination supervision by other agency) with minor civil works	Meter	2000			
<b>14.0</b>	<b>Junction box/Push Button station</b>					<b>14.0</b>
I4.0.1	JBs upto 48 way	No	120			
<b>15.0</b>	<b>Conduits/Impulse pipe/tubes</b>					<b>15.0</b>
I5.0.4	Impulse pipe AS ½" (D21.3 x 3.73 mm)	Meter	1500			
I5.0.5	Impulse Pipe SS 12.7 x 2.1 mm	Meter	3500			
I5.0.6	Impulse pipe SS 21.3 x 3.7 mm	Meter	3500			
I5.0.7	Impuse pipe CS 60.3x3.91 mm	Meter	3000			
I5.0.8	Impules Pipe SS 60.3 x 3.91 mm	Meter	200			
<b>17.0</b>	<b>Panels/Cubicles/Racks/Enclosures/Monitors/Computer/C computer peripheral/PLCs/UPS/Batteries</b>					<b>17.0</b>

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17.0.1	Local gauge board .Approx dimension:-1200(W)x1300(H) mm (Approx. weight 200 kg)	No	3			
17.0.2	Governing console board. Approx dimension:- 1400(W)x1600(H)x350(D)mm (Approx. weight 250 kg)	No	3			
17.0.3	Control Panel (approx. weight 400kg, .Approx dimension:- 1000(L) X 1000(B) X 2500(H) mm) - one panel	No	9			
17.0.4	Control Panel (approx. weight 800kg, Approx dimension:- 1500(L) X 1000(B) X 2500(H) mm) - suit of two panels	No	4			
17.0.5	Control Panel (approx. weight 1600kg, Approx dimension:- 3000(L) X 1000(B) X 2500(H) mm) - suit of four panels	No	6			
17.0.6	NETWORK PANELS(approx. Dimension 750x800x2415 mm,Wt-400kgs per panel),power distribution panel cum links	No	2			
17.0.7	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	No	28			
17.0.8	Workstation without monitor(449Hx150Wx457D)mm	No				
17.0.9	Printers (80/132 col Dot Matrix, A3 Inkjet, A3 Laserjet, etc)	No	16			
17.0.10	Computer furniture for all Servers, PCs, Printers	Set	1			
17.0.11	Plant Control Desk / CRT desk	Set	1			
17.0.12	Laboratory set up	Set	1			
17.0.13	SWAS system for CEP	Set	3			
17.0.14	Vibration monitoring system for Pumps	Set	3			
17.0.15	Vibration monitoring system Turbo blowers	set	3			
17.0.16	LVS (Large Video Screen) , 67" or 70" inches diagonal size, with 1400x1050 resolution.	No	2			
17.0.17	UPS System with batteries	set	1			
17.0.18	WOODWARD GOVERNOR	set	3			
17.0.19	TURBO LOG ANTISURGE CONTROL & SURGE PROTECTION SYSTEM	set	6			
17.0.20	Turbo log master controller	set	1			

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<b>18.0</b>	<b>Instruments/Devices including sensors/Cells/Probes etc</b>						<b>18.0</b>
18.0.1	Speed Probes	No	24				
18.0.2	Pressure Switch / DP Switch / DP indicating switch	No	30				
18.0.3	Pressure Gauge / DP gauge/DP Indicator	No	374				
18.0.4	Temperature Gauges (All types)	No	153				
18.0.5	Level Indicator / Level Gauge	No	18				
18.0.6	Level Transmitter (displacer type/RADAR Type)	No	12				
18.0.7	Air filter regulators / Lubricators (1/4", 1/2", 1", 0-6KG, 0-10 KG)	No	30				
18.0.8	Electronic Level Switch (with amplifier, etc), Capacitance or conductivity type	No	20				
18.0.9	Pressure / DP / Flow (DP type) / Level/Temparure - Transmitter	No	204				
18.0.10	rotameters	No	6				
18.0.11	Thermocouple / RTDs with thermowell (all types) along with converters wherever applicable	No	84				
<b>19..0</b>	<b>Commissioning and Testing activities for Equipments erected by other agencies, like control valves, on/off valves, electrical/pneumatic valves, actuators, solenoid valves, valves, limit switches, ERV controllers, power cylinders, Pressure &amp; Temperature Guages/Transmitters,etc</b>						<b>19..0</b>
19.0.1	Electrically (LT) Operated Valves, Dampers and Gates with Actuators, Limit Switches etc. (Regulating & ON/OFF Type).	No	27				
<b>111.0</b>	<b>Miscellaneous items (items not covered under above heads)</b>						<b>111.0</b>
111.0.1	MASTER AND SLAVE CLOCK SYSTEM	Set	1				
111.0.2	HART Management System	Set	1				
<b>Grand Total in figures (In Rs)</b>							
<b>Grand Total in Words</b>							
Rs.....							

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