

TENDER SPECIFICATION

NO: BHE/PW/PUR/KKT-CNI/636

FOR

**HANDLING AT SITE STORES/STORAGE YARD, TRANSPORTATION TO SITE OF
WORK, COMPLETE ERECTION, CHECKING OF CALIBRATION, TESTING,
COMMISSIONING AND HANDING OVER OF C&I WORKS FOR 1x 500 MW,
KHAPERKHEDA TPP,**

AT

MAHARASHTRA STATE POWER GENERATION CO. LTD.

KHAPERKHEDA, MAHARASHTRA

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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KHAPERKHEDA TPP,

AT

MAHARASHTRA STATE POWER GENERATION CO. LTD.

KHAPERKHEDA, MAHARASHTRA

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

LAST DATE AND TIME FOR:

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

Dy. GENERAL MANAGER (PURCHASE)

PLACE: NAGPUR

DATE :

BHARAT HEAVY ELECTRICALS LIMITED: PSWR: Nagpur
T.S. No. BHE/PW/PUR/KKT-CNI/636

NAME OF THE WORK: HANDLING AT SITE STORES/STORAGE YARD, TRANSPORTATION TO SITE OF WORK, COMPLETE ERECTION, CHECKING OF CALIBRATION, TESTING, COMMISSIONING AND HANDING OVER OF C & I WORKS FOR 1x 500 MW, KHAPERKHEDA TPP, **AT MAHARASHTRA STATE POWER GENERATION CO. LTD. KHAPERKHEDA, MAHARASHTRA**

Description of Work	TOTAL LUMP SUM AMOUNT	
	In Figures (in Rupees)	In Words (in Rupees)
HANDLING AT SITE STORES/STORAGE YARD, TRANSPORTATION TO SITE OF WORK, COMPLETE ERECTION, CHECKING OF CALIBRATION, TESTING, COMMISSIONING AND HANDING OVER OF C & I WORKS FOR 1x 500 MW, KHAPERKHEDA TPP, AT MAHARASHTRA STATE POWER GENERATION CO. LTD. KHAPERKHEDA, MAHARASHTRA BOQ attached as part of Price Bid		

Note:

1. Amount quoted shall be considered as the total lumpsum amount for the complete BOQ as given in Part-II: Price Bid.
2. Individual item rates shall be in proportion to the weightages specified in the BOQ.
3. Refer Clause 11.6.0 of tender specification for variation in quantity.

Date

Signature & Official Seal of Bidder

BHARAT HEAVY ELECTRICALS LIMITED
PS-WR NAGPUR
T.S. No. BHE/PW/PUR/KKT-CNI/636
BILL OF QUANTITIES

SL. NO.	DESCRIPTION	TOTAL QTY	UOM	PERCENTAGE WEIGHTAGE
A1	Control Panel (approx L1000 X B1000 X H2500, 400Kg) - one panel	20	Nos	0.63%
A2	Control Panel (approx L1001 to 1500 X B1000 X H2500, 800 Kg) - suit of two panels	35	Nos	1.47%
A3	Control Panel (approx L1501 to 2250 X B1000 X H2500, 1200 Kg) - suit of three panels	8	Nos	0.46%
A4	Control Panel (approx L2251 to 3000 X B1000 X H2500, 1600 Kg) - suit of four panels	1	Nos	0.08%
A5	Unit Control panel	1	Set	0.18%
A6	Electrical control panel 1900x1000x2355	1	Set	0.11%
A7	Transducer Panel	1	Set	0.07%
A8	Master and Slave Clock system	1	Set	0.11%
A9	Generator Instrumentation cabinet including annunciator (1230 x 1060 x 2550, 600 Kgs)	1	No	0.06%
A10	Feeder Remote Power Cabinet, OD= 1200X2315X600 MM, approx Wt. 636 kg/ panel	8	No	0.25%
A11	120 KVA UPS with inverter, bypass line equipment, ACDB and 750 AH Battery system	1	Set	0.26%
A12	DCDB for 24 V DC Charger for SG &TG pkg.	1	Set	0.11%
A13	DCDB for 24 V DC Charger for BOP pkg.	1	Set	0.11%
A14	Vibration monitoring system for Fans and Pulverisers	1	Set	0.20%
A15	Vibration monitoring system for main turbine / generator	1	Set	0.24%
A16	Vibration monitoring system for BFP/CEP/CWP/ACWP/ECWP	1	Set	0.16%
A17	Vibration monitoring system for TDBFP	1	Sets	0.16%
A18	DC motor starter box for scanner fan	1	No	0.03%
A19	Control panels for Centrifuges	3	Nos	0.09%
A20	Positioner cabinets (380x380x210) for LPBP CV1, LPBP CV2, Spray water CV	3	Nos	0.02%
A21	Control Panel for HP dosing system (1000x800x2000, 3.0 MT)	1	Set	0.07%
A22	Burner Tilt Shear Pin Failure Indication Box	4	Nos	0.05%
A23	Air Heater Rotor Stoppage Alarm Box	4	Sets	0.05%
A24	FSSS Local Oil Gun Maintenance Switch Box	20	Nos	0.06%
A25	Local Instrument racks (LIR)	82	Nos	1.51%

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SL. NO.	DESCRIPTION	TOTAL QTY	UOM	PERCENTAGE WEIGHTAGE
A26	Local Instrument enclosures (LIE)	60	Nos	1.74%
A27	NETWORK PANELS (800x800x2100)	4	Nos	0.13%
A28	WALL MOUNTED NETWORK ENCLOSURES (500x600x600)	3	Sets	0.04%
A29	HART MANAGEMENT SYSTEM	1	Set	0.05%
A30	Electronic Water Level Indicator (EWLI)	3	Sets	0.16%
A31	Steam tube leak detection sysetm	1	Set	0.11%
A32	Direct Water Level Gauge	2	Sets	0.03%
A33	Hydrogen Purity analyser	1	No	0.04%
A34	Fire Protection switch	4	No	0.01%
				0.00%
B1	Solenoid valves (3 way, AC/DC, 1/4", 1/2", 1", NPT/BSP, single/dual coil)	90	Nos	0.14%
B2	HEA Exciter system	20	Sets	0.18%
B3	Flame Scanner Head Assembly	44	Nos	0.35%
B4	Air filter regulators / Lubricators (1/2", 1", 0-6KG, 0-10 KG)	100	Nos	0.16%
B5	Speed Regulators / Air lock valves in oil gun corner rack	20	Nos	0.06%
B6	Heavy Duty Limit Switch	20	Nos	0.08%
B7	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	20	Sets	0.32%
B8	Printers (80/132 col Dot Matrix, A3 Inkjet, A3 Laserjet, etc)	10	Sets	0.08%
B9	LVS (Large Video Screen) made up of 5X1 matrix. Each LVS of DLP/LCD type, Rear projection type, 67 inches diagonal size, with 1024x768 resolution non interlaced	3	Sets	0.16%
B10	Laboratory Setup for Customer	1	Set	0.21%
B11	Vertical indicators (moving coil / bar graph)	20	Nos	0.07%
B12	Flow integrators	2	Nos	0.01%
B13	Digital / bargraph indicators	49	Nos	0.18%
B14	Recorder 24 / 30 Channel	2	Nos	0.02%
B15	Recorder 3 channel	2	Nos	0.01%

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SL. NO.	DESCRIPTION	TOTAL QTY	UOM	PERCENTAGE WEIGHTAGE
B16	Speed switch / Speed detector	4	Nos	0.02%
B17	Moisture Sensor probe and dew point monitor	2	Set	0.02%
B18	Rotor Earth fault Detector	1	Nos	0.01%
B19	Coal Bunker Level Monitoring Strain gauge (8 per set)	10	Sets	0.32%
B20	CO Analyzer (in situ type)	3	Sets	0.11%
B21	O2 (OXYGEN) Analyzer	6	Set	0.16%
B22	Dust emission monitor (Installation at around 88 M in chimney)	1	Sets	0.03%
B23	SWAS Sample handling system with racks & Sample conditioning panel with chiller	1	Sets	0.34%
B24	Analyzer Panel including various analyser	1	Set	0.21%
B25	Flue Gas Analyzer-SOX/NOX/COwith Panel	1	Sets	0.13%
B26	Alkalysr Unit	1	Nos	0.03%
				0.00%
C1	Pressure Switch / DP Switch / DP indicating switch	135	Nos	0.43%
C2	Temperature Switch / Thermostat	20	Nos	0.06%
C3	Float type Level Switch	32	Nos	0.19%
C4	Electronic Level Switch (with amplifier, etc), Capacitance or conductivity type	22	Nos	0.19%
C5	Electronic Level Transmitter (with amplifier, etc), Capacitance or conductivity type	26	Nos	0.25%
C6	Flow switch (Mechanical / Electronic)	2	Nos	0.01%
C7	Pressure Gauge / DP gauge/DP Indicator	400	Nos	1.05%
C8	Temperature Gauge (all types)	120	Nos	0.32%
C9	Level Indicator / Level Gauge	20	Nos	0.19%
C10	Flow indicator / Flow Gauge / Flow meter/Acoustic flow meter (coal)	10	Nos	0.08%
C11	Pressure / DP / Flow (DP type) / Level -Transmitter	200	Nos	0.74%
C12	Electronic Pressure / DP Transmitter	260	Nos	2.05%
C13	Level Transmitter (displacer type)	20	Nos	0.21%
C14	By Pass Rotameter	3	Nos	0.02%
C15	Flow Transmitter (Pulse / mass flow / target type) including flanges	2	Nos	0.03%
C16	Thermocouple / RTDs with thermowell (all types) along with converters wherever applicable	1390	Nos	3.66%
C17	MTM Thermocouple upto 17 M length	58	Nos	0.37%
C18	MTM Thermocouple over 17 M upto 22 M length	156	Nos	1.03%

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SL. NO.	DESCRIPTION	TOTAL QTY	UOM	PERCENTAGE WEIGHTAGE
C19	MTM Thermocouple over 22 M upto 28 M length	32	Nos	0.22%
C20	MTM Thermocouple over 28 M upto 35 M length	6	Nos	0.04%
C21	Thermocouple assy with 6 / 9 Cr-Al MI T/C along with integral JB	10	Nos	0.08%
C22	I/P converters	90	Nos	0.24%
C23	Pneumatic Pressure controller with accessories	4	Nos	0.04%
C24	Position Transmitters	68	Nos	0.18%
C25	Conductivity cells and switch	2	Nos	0.01%
C26	Conductivity Sensor and Transmitter	6	Nos	0.04%
C27	Vacuum switch	3	Nos	0.01%
C28	SADC Cylinders	88	Nos	1.16%
				0.00%
D1	Pulveriser Lube oil skid	10	Sets	0.26%
D2	Fan & Mill Lube oil skid	6	Sets	0.22%
D3	Furnace Temperature probe including local panel/box and all accessories	2	Nos	0.02%
D4	Coal Feeder local panel/ instruments commissioning	10	Nos	0.16%
D5	Electrical regulating drives: (Valve, damper, scoop)	6	Nos	0.05%
D6	Pneumatic regulating drives: (Valve, damper) incl SADC, Burner tilt	140	Nos	0.74%
D7	Commissioning of Hydraulic actuators	40	Nos	0.38%
D8	Condenser vacuum pump system	1	Set	0.04%
D9	Corner valve/ Trip valves commissioning	20	Nos	0.07%
D10	Open/Close type pneumatic gates / dampers / valves	100	Nos	0.53%
D11	Mill Discharge Valve power cylinders (set of four)	10	Sets	0.09%
D12	Only healthiness checking of embedded RTD / T/C	450	Nos	0.47%
D13	Limit Switches (checking and adjusting only).	75	Nos	0.06%
D14	ERV Controller	2	Nos	0.06%
D15	LP Dosing system	1	Set	0.08%
D16	CWP Butterfly valves	3	Sets	0.10%
				0.00%
E1	GI earthing wire	3500	Meters	0.17%
E2	Flexible pipe 1 1/2"	250	Meters	0.04%

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SL. NO.	DESCRIPTION	TOTAL QTY	UOM	PERCENTAGE WEIGHTAGE
E3	Aluminium strip (300 x 25 x 2)	900	Nos	0.33%
E4	GI Strip (300 x 25 x 2)	1700	Nos	0.72%
E5	MS Flat 50 x 6 mm	1884	Meters	0.50%
E6	Hoses-1/4", 1/2", 1", SS/Teflon, Braided/unbraided, upto 5M length	76	Nos	0.03%
E7	Perforated cable tray and accessories (with or without cover) 50mm	3500	Meters	1.29%
E8	Perforated cable tray and accessories (with or without cover) 100mm	6000	Meters	2.53%
E9	Perforated cable tray and accessories (with or without cover) 150mm	1450	Meters	0.69%
E10	Perforated cable tray and accessories (with or without cover) 300mm	100	Meters	0.05%
E11	Cantilever arm for 100 mm tray	830	Nos	0.13%
E12	Cantilever arm for 150 mm tray	1110	Nos	0.23%
E13	Single channel (accessory for traywork)	1940	Meters	0.66%
E14	Base plate (for Single channel: accessory for traywork)	1940	Nos	0.51%
E15	Cable duct 60 x 60 x 1000	200	Meters	0.08%
E16	Cable duct 100 x 100 x 1000	50	Meters	0.02%
E17	Cable duct 180 x 100 x 1000	100	Meters	0.06%
E18	Cable duct 250 x 100 x 1000	100	Meters	0.07%
				0.00%
F1	Screened Copper Cable 2P x 0.5 sqmm armoured / unarmoured	53300	Meters	3.09%
F2	Screened Copper Cable 4P x 0.5 sqmm armoured / unarmoured	243000	Meters	15.35%
F3	Screened Copper Cable 8P x 0.5 sqmm armoured / unarmoured	123400	Meters	9.10%
F4	Screened Copper Cable 10P / 12P x 0.5 sqmm armoured / unarmoured	28900	Meters	2.28%
F5	Screened Copper Cable 16P x 0.5 sqmm armoured / unarmoured	2000	Meters	0.17%
F6	Screened Copper Cable 20P x 0.5 sqmm armoured / unarmoured	11000	Meters	1.04%
F7	Screened Copper cable 5C/7C x 1.5 sq. mm armoured/ unarmoured	16500	Meters	1.48%
F8	Screened Copper cable 5C x 2.5 sq. mm armoured/ unarmoured	11600	Meters	1.10%
F9	2C x 2.5 sq. mm, Control cable	200	Meters	0.01%

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SL. NO.	DESCRIPTION	TOTAL QTY	UOM	PERCENTAGE WEIGHTAGE
F10	4C x 1.5 sq. mm, Control cable	1800	Meters	0.11%
F11	10C x 2.5 sq. mm, Control cable	8500	Meters	0.72%
F12	10C x 1.5 sq. mm, Control cable	16000	Meters	1.18%
F13	Compensating cable 2P x 0.5 sqmm type Tx/Sx/Kx unarmoured/armoured	3000	Meters	0.19%
F14	Compensating cable 2P x 1.5 sqmm type Tx/Sx/Kx unarmoured/armoured	6400	Meters	0.44%
F15	Compensating cable 4P x 1.5 sqmm type Tx/Sx/Kx unarmoured/armoured	6000	Meters	0.44%
F16	Compensating cable 6P x 1.5 sqmm type Tx/Sx/Kx unarmoured/armoured	10000	Meters	0.84%
F17	Copper Cable 2 or 3 triad, 0.5/1.5 sqmm armoured/unarmoured	6500	Meters	0.51%
F18	THERMOCOUPLE EXT CABLE, 2PX0.5SQMM NICR/CUCU-NI	12000	Meters	0.76%
F19	1Cx95 sqmm Cu cable	13000	Meters	1.23%
F20	1Cx16 sqmm Cu cable	5000	Meters	0.26%
F21	2Cx6 sqmm Cu cable	18000	Meters	1.14%
F22	Laying, etc of Optical fibre cables on cable trays, conduits etc (termination supervision by other agency) with minor civil works	1500	Meters	0.14%
F23	Network UTP Cables (special termination using UTP connectors involved)	3000	Meters	0.24%
				0.00%
G1	Junction boxes upto 48 way	85	Nos	0.29%
G2	Junction boxes above 48 way	175	Nos	0.65%
G3	CJCB Junction boxes upto 48 way	128	Nos	0.51%
G4	CJCB Junction boxes above 48 way	5	Nos	0.02%
G5	2PB or 3PB Pushbutton box	18	Nos	0.06%
G6	Impulse Pipe A106 Gr C 3/4" NB Sch 80	2600	Meters	1.99%
G7	Impulse Pipe A106 Gr B 1" NB Sch 80	200	Meters	0.18%
G8	Impulse Pipe A106 Gr C 1/2" NB Sch 160	1400	Meters	0.96%
G9	Impulse Pipe A106 Gr C 1/2" NB Sch 80	4500	Meters	2.84%
G10	Impulse Pipe A213 TP316H Gr C 1/2" NB Sch 40	600	Meters	0.39%
G11	Impulse Pipe A213 TP316H Gr C 1/2" NB Sch 160	750	Meters	0.55%

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SL. NO.	DESCRIPTION	TOTAL QTY	UOM	PERCENTAGE WEIGHTAGE
G12	Impulse Pipe A335 P22 1/2" NB XXS	700	Meters	0.61%
G13	Impulse pipe AS 3/4" SCH 80 (D25 x4 mm)	700	Meters	0.52%
G14	Impulse pipe FCS 3/4" SCH 80 (D25 x 4 mm)	2400	Meters	1.83%
G15	Tube OD (21.30 x 3.73) SA106 Gr B	900	Meters	0.71%
G16	Tube OD (33.40 x 4.55) SA106 Gr B	1750	Meters	1.52%
G17	Impulse pipe CS 1" SCH 160 (D33.4 x 6.35 mm)	50	Meters	0.04%
G18	Impulse pipe CS 3/2" SCH 40 (D48.3 x 3.68 mm)	50	Meters	0.04%
G19	Impulse pipe CS 3/2" SCH 160 (D48.3 x 7.13 mm)	50	Meters	0.05%
G20	Impulse pipe CS 1/4" (D13.5 x 2.6 mm)	337	Meters	0.16%
G21	Impulse pipe CS (D17.2 x 1.8 mm)	100	Meters	0.06%
G22	Impulse pipe SS 1/2" SCH 160	100	Meters	0.08%
G23	Impulse pipe SS 1/2" (D21.3 x 2.6 mm) Sch 40	1130	Meters	1.01%
G24	SS tube D6 x 1.0/1.5mm	60	Meters	0.02%
G25	CS tube D16 x 2.6	500	Meters	0.34%
G26	CS tube DN 80	20	Meters	0.02%
G27	2" CS pipe Sch 40	200	Meters	0.15%
G28	Impulse pipe AS 1/4" (D13.5 x 2.6 mm)	64	Meters	0.03%
G29	GI Pipe (1/2", 1") Heavy grade	3000	Meters	1.26%
G30	GI Pipe (1.5 ", 2") Heavy grade	510	Meters	0.38%
G31	Copper tube 6mm/8mm / 1/4" (Sheathed / bare)	2900	Meters	0.76%
G32	Copper tube 3/8" (Sheathed / bare)	100	Meters	0.04%
G33	Structural steel for fabrication	30	Tons	2.21%
G34	MS Sheet 3 to 4 mm thick	10	Sq. M.	0.07%
G35	Assembly of JB mounting frames (approx 1100 x 424 x 700)	14	Nos	0.13%
G36	Assembly of JB mounting frames (approx 1100 x 718 x 1700)	21	Nos	0.23%
G37	Assembly of JB mounting frames (approx 2100 x 718 x 1700)	4	Nos	0.05%
G38	Assembly of JB mounting frames (approx 1600 x 718 x 1700)	11	Nos	0.13%
G39	Assembly of JB mounting frames (approx 1600 x 585 x 1700)	5	Nos	0.06%

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SL. NO.	DESCRIPTION	TOTAL QTY	UOM	PERCENTAGE WEIGHTAGE
G40	Assembly of JB mounting frames (approx 2100 x 470 x 1700)	5	Nos	0.06%
G41	Assembly of local gauge board 1400 x 450 x1900 mm	14	Nos	0.20%
G42	Plant Control Desk / CRT desk	1	Sets	0.21%
G43	Computer furniture for all Servers, PCs, Printers	1	Sets	0.18%
	TOTAL PERCENTAGE			100.00%

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