



TENDER SPECIFICATION

No. BHE/PW/PUR/DBBDT-CNI/984

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 WORKS FOR BOILER AND ITS AUXILIARIES, TURBOGENERATOR AND ITS AUXILIARIES, STATION C&I FOR **2X600 MW DBPL RAIGARH PROJECT.**

AT

BARADARHA IN JANJGIR - CHAMPA DISTRICT IN CHHATTISGARH STATE

VOLUME-II-PRICE BID/REV-01 dated 08.06.2012

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

ADDL. GENERAL MANAGER (PURCHASE)

PLACE: NAGPUR

DATE :

TS NO BHE/PW/PUR/DBBDT-CNI/984

Volume-II-price bid/Rev-01 dated 08.06.2012 OF DB POWER 2X600MW FOR C&I PACKAGE

SL. NO.	DESCRIPTION	UO M	QTY	Unit Rate in Figures(in Rs)	Unit Rate in Words(in Rs)	Total Amount (in Rs)
I1.0	Cable tray and Accessories					
I1.0.1	Perforated cable tray and accessories (with or without cover) 50mm	Met er	7975			
I1.0.2	Perforated cable tray and accessories (with or without cover) 100mm	Met er	15750			
I1.0.3	Perforated cable tray and accessories (with or without cover) 150mm	Met er	4615			
I1.0.4	Perforated cable tray and accessories (with or without cover) 300mm	Met er	190			
I2.0	Cable laying including earthing wires					
I2.0.1	Screened Copper Cable 2P x 0.5 sqmm armoured / unarmoured	Met er	123560			
I2.0.2	Screened Copper Cable 4P x 0.5 sqmm armoured / unarmoured	Met er	456960			
I2.0.3	Screened Copper Cable 6P x 0.5 sqmm armoured / unarmoured	Met er	50			
I2.0.4	Screened Copper Cable 8P x 0.5 sqmm armoured / unarmoured	Met er	175080			
I2.0.5	Screened Copper Cable 10P / 12P x 0.5 sqmm armoured / unarmoured	Met er	75300			
I2.0.6	Screened Copper Cable 16P x 0.5 sqmm armoured / unarmoured	Met er	4000			
I2.0.7	Screened Copper Cable 20P x 0.5 sqmm armoured / unarmoured	Met er	26000			
I2.0.8	Screened Copper Cable 24P x 0.5 sqmm armoured / unarmoured	Met er	50			
I2.0.9	Screened Copper Cable 1C x 0.5 sqmm armoured / unarmoured	Met er	2000			

I2.0.10	Screened Copper Cable 2P x 1.3 sqmm armoured / unarmoured	Met er	14000			
I2.0.11	Screened Copper Cable 1P/2C or 3C x 1.5 sqmm armoured / unarmoured	Met er	7200			
I2.0.12	Screened Copper Cable 2P/4C x 1.5 sqmm armoured / unarmoured	Met er	17800			
I2.0.13	Screened Copper Cable 5C/7C x 1.5 sqmm armoured / unarmoured	Met er	10200			
I2.0.14	Screened Copper Cable 10C/12C x 1.5 sqmm armoured / unarmoured	Met er	8200			
I2.0.15	Screened Copper Cable 19C x 1.5 sqmm armoured / unarmoured	Met er	9000			
I2.0.16	Screened Copper Cable 2C x 2.5 sqmm armoured / unarmoured	Met er	9000			
I2.0.17	Screened Copper Cable 3C x 2.5 sqmm armoured / unarmoured	Met er	4600			
I2.0.18	Screened Copper Cable 5C x 2.5 sqmm armoured / unarmoured	Met er	26000			
I2.0.19	Screened Copper Cable 19C x 2.5 sqmm armoured / unarmoured	Met er	5000			
I2.0.20	Screened Copper Cable 3C x 6 sqmm armoured / unarmoured	Met er	4600			
I2.0.21	Copper Cable 2 or 3 triad, 0.5/1.5 sqmm armoured/unarmoured	Met er	200			
I2.0.22	Copper Cable 6 triad, 0.5/1.5 sqmm armoured/unarmoured	Met er	200			
I2.0.23	Compensating cable 1P/2P x 0.5 sq mm type Tx/Sx/Kx unarmoured/armoured	Met er	14000			
I2.0.24	Compensating cable 1P/2P x 1.3 sqmm type Tx/Sx/Kx unarmoured/armoured	Met er	15200			
I2.0.25	Compensating cable 4P x 1.3 sqmm type Tx/Sx/Kx unarmoured/armoured	Met er	28000			

I2.0.26	Compensating cable 6P x 1.3 sqmm type Tx/Sx/Kx unarmoured/armoured	Met er	20000			
I2.0.27	Laying, etc of Optical fibre cables on cable trays, conduits etc (termination supervision by other agency) with minor civil works	Met er	4800			
I2.0.28	Network UTP Cables (special termination using UTP connectors involved)	Met er	6132			
I2.0.29	GI earthing wire	Met er	3000			
I2.0.30	Cable duct 60 x 60 x 1000	Met er	400			
I2.0.31	Cable duct 180 x 100 x 1000	Met er	200			
I2.0.32	Cable duct 250 x 100 x 1000	Met er	200			
I2.0.33	Hoses-1/4", 1/2" , 1", SS/Teflon, Braided/unbraided, upto 5M length	Met er	212			
I2.0.34	Flexible pipe 1"	Met er	100			
I2.0.35	Flexible pipe 2"	Met er	20			
I4.0	Junction box/Push Button station					
I4.0.1	Junction boxes upto 48 way	No	584			
I4.0.2	Junction boxes above 48 way	No	158			
I4.0.3	CJCB Junction boxes upto 48 way	No	20			
I4.0.4	CJCB Junction boxes above 48 way	No	10			
I4.0.5	2PB or 3PB Pushbutton box	No	10			
I4.0.6	Fire protection switch in IP65 box	No	8			

14.0.7	FSSS Local Oil Gun Maintenance Switch Box	No	40			
15.0	Conduits/Impulse pipe/tubes					
15.0.1	Impulse pipe CS ½" SCH 80 (D21.3 x 3.73 mm)	Met er	800			
15.0.2	Impulse pipe CS 1" SCH 80 (D33.4 x 4.55 mm)	Met er	1500			
15.0.3	Impulse pipe CS GR C 1/2" NB SCH 80	Met er	7300			
15.0.4	Impulse pipe CS GR C 1/2" NB SCH 160	Met er	2200			
15.0.5	Impulse pipe CS GR C 3/4" NB SCH 80	Met er	7200			
15.0.6	Impulse pipe CS GR B 26.7 x 3.91 mm	Met er	600			
15.0.7	Impulse pipe ASTM CS GR C 1" NB SCH 80	Met er	100			
15.0.8	CS pipe 2" SCH 40	Met er	50			
15.0.9	CS pipe 60.3 x 3.91 mm	Met er	120			
15.0.10	Impulse pipe AS ½" SCH 40 (D21.3 x 2.76 mm)	Met er	1600			
15.0.11	Impulse pipe AS ½" SCH 80 (D21.3 x 3.73 mm)	Met er	400			
15.0.12	Impulse pipe AS ½" SCH 160 (D21.3 x 4.78 mm)	Met er	1300			
15.0.13	Impulse pipe AS P22 1/2" NB SCH XXS	Met er	1500			
15.0.14	Impulse pipe AS P22 26.7 x 3.91 mm	Met er	460			
15.0.15	Impulse pipe SS ½" SCH 40 (D21.3 x 2.6 mm)	Met er	2050			
15.0.16	Impulse pipe SS 16 mm OD (for primary water system)	Met er	1400			

15.0.17	Pipe SS 6 x 1.5 mm	Met er	60			
15.0.18	Impulse pipe for pre instruments CS (D16 x 2.6mm)	Met er	3800			
15.0.19	GI Pipe (1/2", 1") Heavy grade	Met er	4320			
15.0.20	GI Pipe (1.5 ", 2") Heavy grade	Met er	20			
15.0.21	Seamless CS tube 13.5 x 2.6 mm	Met er	1106			
15.0.22	Seamless CS tube 21.3 x 2.3 mm	Met er	940			
15.0.23	CS tube 33.7 x 3.38 mm	Met er	4			
15.0.24	CS tube DN 80	Met er	80			
15.0.25	Seamless AS tube 13.5 x 2.6 mm	Met er	24			
15.0.26	Seamless AS tube 21.3 x 2.3 mm	Met er	850			
15.0.27	SS tube 12.7 x 2.1 mm	Met er	1250			
15.0.28	Seamless SS tube 13.5 x 2.6 mm	Met er	60			
15.0.29	Seamless SS tube 21.3 x 2.3 / 2.6 mm	Met er	644			
15.0.30	SS tube D6 x 1.0/1.5mm	Met er	120			
15.0.31	Copper tube 6mm/8mm / 1/4" (Sheathed / bare)	Met er	5200			
15.0.32	Copper tube 3/8" (Sheathed / bare)	Met er	100			
15.0.33	Copper tube 1/2" to 1" (Sheathed / bare)	Met er	50			

16.0	Miscellaneous Structural steel including frames for Panels/Racks/Instruments, supports for cable tray/pipes/tubes, Canopies etc					
16.0.1	Structural steel for fabrication	Tons	50			
16.0.2	Aluminium strip (300 x 25 x 2 mm)	No	1800			
16.0.3	Assembly of JB mounting frames (approx. dim.1100 x 500 x 765 mm)	No	4			
16.0.4	Assembly of JB mounting frames (approx. dim. 1600 x 718/858 x 1700 mm)	No	8			
16.0.5	Assembly of JB mounting frames (approx. 1700 x 500 x 1600 mm)	No	4			
16.0.6	Assembly of JB mounting frames (approx. 2600 x 620 x 1700 mm)	No	10			
16.0.7	Assembly of JB mounting frames (approx. dim.1100 x 500 x 1700 mm)	No	10			
16.0.8	Assembly of JB mounting frames (approx. 1100 x 425 x 700 mm)	No	6			
17.0	Panels/Cubicles/Racks/Enclosures/Monitors/Computer/Computer peripheral/PLCs/UPS/Batteries					
17.0.1	Assembly of local gauge board (1400 x 450 x 1900 mm)	No	18			
17.0.2	Control Panel (approx. weight 400kg, 1000(L) X 1000(B) X 2500(H) mm) - one panel	No	22			
17.0.3	Control Panel (approx. weight 800kg, 1500(L) X 1000(B) X 2500(H) mm) - suit of two panels	No	54			
17.0.4	Control Panel (approx. weight 1200kg, 2250(L) X 1000(B) X 2500(H) mm) - suit of three panels	No	30			
17.0.5	Control Panel (approx. weight 1600kg, 3000(L) X 1000(B) X 2500(H) mm) - suit of four panels	No	4			
17.0.6	Gravimetric Coal feeder control panel (Approx Dim. 1200 x 600 x 2315)	No	16			

17.0.7	Control panels for Centrifuges	No	4			
17.0.8	Electrical control board (approx. 1900(L) x 1000(B) x 2355(H) mm)	Set	2			
17.0.9	Unit Control Panel	Set	2			
17.0.10	Transducer and AVT panel	No	2			
17.0.11	HP dosing system	No	2			
17.0.12	LP Dosing sysetm	Set	2			
17.0.13	NETWORK PANELS (approx. 800 x 800 x 2100 mm)	No	7			
17.0.14	Vibration monitoring system for Fans and Pulverisers	Set	2			
17.0.15	Vibration monitoring system for main turbine / generator	Set	2			
17.0.16	Vibration monitoring system for TDBFP	Set	2			
17.0.17	Vibration monitoring system for Generator End Winding	Set	2			
17.0.18	DC motor starter box for scanner fan	No	2			
17.0.19	Burner Tilt Shear Pin Failure Indication Box	No	8			
17.0.20	Air Heater Rotor Stoppage Alarm Box	Set	8			
17.0.21	Steam leak detection (STLD) system panel (approx. 800(L) x 2315(B) x 800(H) mm)	Set	2			
17.0.22	Electronic Water Level Indicator (EWLI)	Set	4			
17.0.23	Condenser vacuum pump system	Set	2			

17.0.24	Generator Instrumentation cabinet including annunciator (approx. weight 450 Kg, 2200 x 1000 x 800 mm)	No	2			
17.0.25	Positioner cabinets (approx. 380 x 380 x 210 mm) for LPBP CV1, LPBP CV2, Spray water CV	No	4			
17.0.26	Local Instrument racks (LIR)	No	165			
17.0.27	Local Instrument enclosures (LIE)	No	74			
17.0.28	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	Set	40			
17.0.29	Printers (80/132 col Dot Matrix, A3 Inkjet, A3 Laserjet, etc)	Set	14			
17.0.30	LVS (Large Video Screen) made up of 5X1 matrix. Each LVS of DLP/LCD type, Rear projection type, 67 or 70 inches diagonal size, with 1400x1050 resolution non interlaced	Set	8			
17.0.31	Computer furniture for all Servers, PCs, Printers	Set	2			
17.0.32	Plant Control Desk / CRT desk	Set	2			
17.0.33	Laboratory set up	Set	1			
17.0.34	230/240 V UPS System and battery with ACDB	Set	2			
17.0.35	Condenser online tube cleaning system	Set	2			
18.0	Instruments/Devices including sensors/Cells/Probes etc					
18.0.1	Latching relay 24V, 5A	No	8			
18.0.2	Moisture Sensor probe and dew point monitor	Set	2			

18.0.3	Conductivity Sensor and Transmitter	No	2			
18.0.4	Conductivity cells and switch	No	6			
18.0.5	Furnace Temperature probe including local panel/box and all accessories	No	4			
18.0.6	Air filter regulators / Lubricators (1/4", 1/2", 1", 0-6KG, 0-10 KG)	No	100			
18.0.7	Speed Regulators / Air lock valves in oil gun corner rack	No	8			
18.0.8	Solenoid valves (3 way, AC/DC, 1/4", 1/2", 1", NPT/BSP, single/dual coil)	No	188			
18.0.9	Pneumatic Pressure controller with accessories	No	4			
18.0.10	Heavy Duty Limit Switch	No	170			
18.0.11	Speed switch / Speed detector	No	8			
18.0.12	Pressure Switch / DP Switch / DP indicating switch	No	270			
18.0.13	Temperature Switch / Thermostat	No	14			
18.0.14	Float type Level Switch	No	74			
18.0.15	Electronic Level Switch (with amplifier, etc), Capacitance or conductivity type	No	58			
18.0.16	Vacuum switch	No	6			
18.0.17	Flow switch (Mechanical / Electronic)	No	12			
18.0.18	Pressure / DP / Flow (DP type) / Level -Transmitter	No	1144			
18.0.19	Level Transmitter (displacer type)	No	20			

18.0.20	Flow Transmitter (Pulse / mass flow / target type) including flanges	No	2			
18.0.21	Speed transmitter	No	12			
18.0.22	Position Transmitters	No	58			
18.0.23	Electronic Level Transmitter (with amplifier, etc), Capacitance or conductivity type / Guided Wave Radar(GWR) transmitter	No	48			
18.0.24	Pressure Gauge / DP gauge/DP Indicator	No	1113			
18.0.25	Temperature Gauge (all types)	No	934			
18.0.26	Level Indicator / Level Gauge	No	36			
18.0.27	Direct Water Level Gauge (DWLG)	Set	4			
18.0.28	Flow indicator / Flow Gauge / Flow meter/Acoustic flow meter (coal)	No	42			
18.0.29	Thermocouple / RTDs with thermowell (all types) along with converters wherever applicable	No	1594			
18.0.30	MTM Thermocouple upto 17 M length	No	32			
18.0.31	MTM Thermocouple over 17 M upto 22 M length	No	154			
18.0.32	MTM Thermocouple over 22 M upto 28 M length	No	194			
18.0.33	MTM Thermocouple over 28 M upto 35 M length	No	68			
18.0.34	SADC Cylinders	No	144			
18.0.35	HEA Exciter system	Set	32			
18.0.36	Flame Scanner Head Assembly	No	64			

18.0.37	Vertical indicators (moving coil / bar graph)	No	10			
18.0.38	Flow integrators	No	4			
18.0.39	Digital / bargraph indicators	No	40			
18.0.40	Recorder 24 / 30 Channel	No	14			
18.0.41	Recorder 3 channel	No	8			
18.0.42	Rotor Earth fault Detector	No	2			
18.0.43	Hydrogen Purity analyser	No	2			
18.0.44	CO Analyzer (Cross Duct Insitu type)	No	4			
18.0.45	O2 (OXYGEN) Analyzer	No	8			
18.0.46	SOx/NOx/CO Analyzer (Insitu type)	No	2			
18.0.47	Dust emission monitor (Installation at around 88 M in chimney)	Set	2			
18.0.48	SWAS Sample handling system with racks & Sample conditioning panel with chiller	Set	2			
18.0.49	SWAS Analyzer Panel including various analyzers	No	2			
18.0.50	I/P converters	No	126			
18.0.51	Rotameters	No	2			
18.0.52	Reverse Rotation indication switch	No	6			
18.0.53	Purge meter	No	32			

19.0	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 & Temperature Guages/Transmitters,etc					
19.0.1	Coal Feeder local panel/ instruments commissioning	No	16			
19.0.2	Electrical regulating drives: (Valve, damper, scoop)	No	16			
19.0.3	Pneumatic regulating drives: (Valve, damper) incl Burner tilt	No	316			
19.0.4	Commissioning of Hydraulic actuators	No	62			
19.0.5	Corner valve/ Trip valves commissioning	No	96			
19.0.6	Open/Close type pneumatic gates / dampers / valves	No	170			
19.0.7	ERV Controller (approx. weight 10kg, 400 x 350 x 190 mm)	No	4			
19.0.8	Pulveriser Lube oil skid	Set	16			
19.0.9	Fan Lube oil skid	Set	12			
19.0.10	Primary water skid	Set	2			
19.0.11	Only healthiness checking of embedded RTD / T/C	No	1000			
19.0.12	Limit Switches (checking and adjusting only).	No	200			
110.0	Power Cylinders					
110.0.1	Mill Discharge Valve power cylinders (set of four)	Set	16			

I11.0	Miscellaneous items (items not covered under above heads)					
I11.0.1	Master and Slave Clock system	Set	1			
TOTAL AMOUNTIN FIGURES(in Rs)						
TOTAL AMOUNTIN words in Rs)						