

TENDER SPECIFICATION

No. BHE/PW/PUR/SKT-CNI/1053

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 2X250 MW SIKKA THERMAL POWER PLANT EXTN. UNIT#3&4.

AT

VILLAGE MUNGAI, SIKKA, GARVA AND NANIKHAVRI

GUJARAT

VOLUME :II – PRICE BID

BOOK NO.

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

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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/SKT-CNI/1053 (RATE SCHEDULE)
VOLUME-II- PRICE BID-1053

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 WORKS FOR BOILER AND ITS AUXILIARIES, TURBOGENERATOR AND ITS AUXILIARIES, STATION C&I FOR 2X250 MW SIKKA THERMAL POWER PLANT EXTN. UNIT#3&4

SL. NO.	DESCRIPTION	UOM	QTY	RATE IN RS. (IN FIGURES)	RATE IN WORDS	AMOUNT	APPLICABLE TERM OF PAYMENT
11.0	Cable tray and Accessories						11.0
11.0.1	Perforated cable tray and accessories (with or without cover) 50mm	Meter	11240				
11.0.2	Perforated cable tray and accessories (with or without cover) 100mm	Meter	21000				
11.0.3	Perforated cable tray and accessories (with or without cover) 150mm	Meter	2695				
11.0.4	Perforated cable tray and accessories (with or without cover) 300mm	Meter	1140				
12.0	Cable laying including earthing wires						13.0
12.0.1	Screened Copper Cable 2P x 0.5 sqmm armoured / unarmoured	Meter	251960				
12.0.2	Screened Copper Cable 4P x 0.5 sqmm armoured / unarmoured	Meter	293360				
12.0.3	Screened Copper Cable 8P x 0.5 sqmm armoured / unarmoured	Meter	147680				
12.0.4	Screened Copper Cable 10P / 12P x 0.5 sqmm armoured / unarmoured	Meter	116800				
12.0.5	Screened Copper Cable 16P x 0.5 sqmm armoured / unarmoured	Meter	1000				
12.0.6	Screened Copper Cable 20P x 0.5 sqmm armoured / unarmoured	Meter	10000				
12.0.7	Screened Copper Cable 2P/4C x 1.3 sqmm armoured / unarmoured	Meter	6400				

DATE
PLACE

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VOLUME-II- PRICE BID-1053

SL. NO.	DESCRIPTION	UOM	QTY	RATE IN RS. (IN FIGURES)	RATE IN WORDS	AMOUNT	APPLICABLE TERM OF PAYMENT
I2.0.8	Screened Copper Cable 1P/2C or 3C x 1.5 sqmm armoured / unarmoured	Meter	2000				
I2.0.9	Screened Copper Cable 2P/4C x 1.5 sqmm armoured / unarmoured	Meter	79000				
I2.0.10	Screened Copper Cable 5C/7C x 1.5 sqmm armoured / unarmoured	Meter	38000				
I2.0.11	Screened Copper Cable 10C/12C x 1.5 sqmm armoured / unarmoured	Meter	12000				
I2.0.12	Screened Copper Cable 8P x 1.5 sqmm armoured / unarmoured	Meter	4000				
I2.0.13	Screened Copper Cable 2C x 2.5 sqmm armoured / unarmoured	Meter	8000				
I2.0.14	Screened Copper Cable 19C x 2.5 sqmm armoured / unarmoured	Meter	54000				
I2.0.15	Compensating cable 1P/2P x 0.5 sq mm type Tx/Sx/Kx unarmoured/armoured	Meter	12000				
I2.0.16	Compensating cable 1P/2P x 1.3 sqmm type Tx/Sx/Kx unarmoured/armoured	Meter	18400				
I2.0.17	Compensating cable 6P x 1.3 sqmm type Tx/Sx/Kx unarmoured/armoured	Meter	20000				
I2.0.18	Laying of Optical fibre cables on cable trays, conduits etc (termination supervision by other agency) with minor civil works	Meter	10000				
I2.0.19	Network UTP Cables (special termination using UTP connectors involved)	Meter	5000				
I2.0.20	GI earthing wire	Meter	50				
I2.0.21	Cable duct 60 x 60 x 1000	Meter	360				
I2.0.22	Cable duct 180 x 100 x 1000	Meter	120				
I2.0.23	Cable duct 250 x 100 x 1000	Meter	100				

DATE
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SL. NO.	DESCRIPTION	UOM	QTY	RATE IN RS. (IN FIGURES)	RATE IN WORDS	AMOUNT	APPLICABLE TERM OF PAYMENT
12.0.24	Hoses-1/4", 1/2" , 1", SS/Teflon, Braided/unbraided, upto 5M length	Meter	120				
14.0	Junction box/Push Button station						14.0
14.0.1	Junction boxes upto 48 way	No	440				
14.0.2	Junction boxes above 48 way	No	10				
14.0.3	CJCB Junction boxes upto 48 way	No	40				
14.0.4	2PB or 3PB Pushbutton box	No	6				
14.0.5	Fire protection switch in IP65 box	No	4				
14.0.6	FSSS Local Oil Gun Maintenance Switch Box	No	12				
15.0	Conduits/Impulse pipe/tubes						15.0
15.0.1	Impulse pipe CS GR B 1/2" NB SCH 80	Meter	9000				
15.0.2	Impulse pipe CS GR C 3/4" NB SCH 80	Meter	4000				
15.0.3	Impulse pipe CS GR C 1/2" NB SCH 160	Meter	800				
15.0.4	Impulse pipe CS GR B 1" NB SCH 80	Meter	200				
15.0.5	Impulse pipe ASTM CS GR C 1" NB SCH 80	Meter	200				
15.0.6	Impulse pipe SS TP316 1/2" NB SCH 160	Meter	1200				
15.0.7	Impulse pipe SS SS316 Pipe1/2" SCH 160	Meter	1000				
15.0.8	Impulse pipe SS TP316 1/2" SCH 80	Meter	1000				
15.0.9	Impulse pipe SS TP316L 1/2" NB SCH 80	Meter	3000				
15.0.10	Impulse pipe AS P22 1/2" NB SCH XXS	Meter	1300				
15.0.11	GI Pipe (1/2", 1") Heavy grade	Meter	7500				

DATE
PLACE

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SL. NO.	DESCRIPTION	UOM	QTY	RATE IN RS. (IN FIGURES)	RATE IN WORDS	AMOUNT	APPLICABLE TERM OF PAYMENT
15.0.12	Seamless CS tube 13.5 x 2.6 / 2.9 mm	Meter	1544				
15.0.13	CS tube 33.7 x 3.38 mm	Meter	2				
15.0.14	CS tube D16 x 2.6	Meter	4560				
15.0.15	CS tube DN 80	Meter	40				
15.0.16	Copper tube 3/8" (Sheathed / bare)	Meter	200				
15.0.17	Copper tube 6mm/8mm / 1/4" (Sheathed / bare)	Meter	4400				
15.0.18	Copper tube 1/2" to 1" (Sheathed / bare)	Meter	150				
16.0	Miscellaneous Structural steel including frames for Panels/Racks/Instruments, supports for cable tray/pipes/tubes, Canopies etc						16.0
16.0.1	Structural steel for fabrication	Ton	23.512				
16.0.2	Aluminium strip (300 x 25 x 2 mm)	No	120				
16.0.3	Aluminium strip (25 x 3 mm)	Meter	760				
16.0.4	Assembly of JB mounting frames (approx. 1100 x 500 x 800 mm)	No	4				
16.0.5	Assembly of JB mounting frames (approx. 1500 x 800 x 1800 mm)	No	4				
16.0.6	Assembly of JB mounting frames (approx. 2000 x 900 x 1800 mm)	No	4				
16.0.7	Assembly of JB mounting frames (approx. 2600 x 500 x 1800 mm)	No	4				

DATE
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SL. NO.	DESCRIPTION	UOM	QTY	RATE IN RS. (IN FIGURES)	RATE IN WORDS	AMOUNT	APPLICABLE TERM OF PAYMENT
17.0	Panels/Cubicles/Racks/Enclosures/Monitors/Computer/Computer peripheral/PLCs/UPS/Batteries						17.0
17.0.1	Assembly of local gauge board (approx. weight 400kg, 2200(L) x 300(B) x 1800(H) mm)	No	16				
17.0.2	Control Panel (approx. weight 400kg, 900(L) X 900(B) X 2500(H) mm) - one panel	No	48				
17.0.3	Control Panel (approx. weight 800kg, 1800(L) X 1000(B) X 2500(H) mm) - suit of two panels	No	64				
17.0.4	Control Panel (approx. weight 1200kg, 2700(L) X 1000(B) X 2500(H) mm) - suit of three panels	No	10				
17.0.5	Control Panel (approx. weight 1600kg, 3600(L) X 1000(B) X 2500(H) mm) - suit of four panels	No	2				
17.0.6	Control Panel (approx. weight 2000kg, 4500(L) X 1000(B) X 2500(H) mm) - suit of five panels	No	4				
17.0.7	Gravetric Coal feeder control panel(Approx Dim. 1200 x 600 x 2315)	No	12				
17.0.8	HP Dosing System	Set	2				
17.0.9	Control panels for Centrifuges	No	2				
17.0.10	Unit Control panel	Set	2				
17.0.11	Electrical control panel (approx. 1900(L) x 1000(B) x 2355(H) mm)	Set	2				
17.0.12	NETWORK PANELS (approx. weight 300kg/panel, 800 x 800 x 2415 mm)	No	8				
17.0.13	T & AVT panel (approx. 750 x 2355 x 750 mm)	No	2				
17.0.14	Vibration monitoring system for Fans and Pulverisers	Set	2				
17.0.15	Vibration monitoring system for main turbine / generator	Set	2				

DATE
PLACE

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17.0.16	Vibration monitoring system for BFP/CEP/ACWP	Set	2				
17.0.17	Vibration monitoring system for 5 nos CW pumps	Set	2				
17.0.18	DC motor starter box for scanner fan (approx. weight 50kg, 375(L) x 900(B) x 1120(H) mm)	No	2				
17.0.19	Burner Tilt Shear Pin Failure Indication Box	No	8				
17.0.20	Electronic Water Level Indicator (EWLI)	Set	8				
17.0.21	LP Dosing sysetm	Set	2				
17.0.22	Condenser vacuum pump system	Set	2				
17.0.23	Generator Instrumentation cabinet including annunciator (approx. weight 450 Kg, 2200 x 1000 x 800 mm)	No	2				
17.0.24	Positioner cabinets (approx. 380 x 380 x 210 mm) for LPBP CV1, LPBP CV2, Spray water CV	No	6				
17.0.25	Local Instrument racks (LIR)	No	168				
17.0.26	Local Instrument enclosures (LIE)	No	80				
17.0.27	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	44				
17.0.28	Printers (80/132 col Dot Matrix, A3 Inkjet, A3 Laserjet, etc)	Set	11				
17.0.29	Computer furniture for all Servers, PCs, Printers	Set	2				

DATE
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SL. NO.	DESCRIPTION	UOM	QTY	RATE IN RS. (IN FIGURES)	RATE IN WORDS	AMOUNT	APPLICABLE TERM OF PAYMENT
17.0.30	Plant Control Desk / CRT desk	Set	2				
17.0.31	LVS (Large Video Screen) made up of 5X1 matrix with projector and stand. Each LVS of DLP/LCD type, Rear	Set	2				
17.0.32	Laboratory Setup for Customer	Set	1				
17.0.33	220/240 V UPS System and ACDB	Set	2				
17.0.34	24 V DC Batteries and Charger with DCDB for SG/TG.	Set	2				
17.0.35	24V DC Charger with integral DCDB for FOPH	Set	1				
17.0.36	24 VDC Batteries for Batt chgr FOPH	Set	4				
17.0.37	24 V DC Batteries and Charger with DCDB for BOP Package.	Set	2				
18.0	Instruments/Devices including sensors/Cells/Probes etc						18.0
18.0.1	Latching relay 24V, 5A	No	4				
18.0.2	Furnace Temperature probe including local panel/box and all accessories	No	2				
18.0.3	Moisture Sensor probe and dew point monitor	Set	2				
18.0.4	Conductivity Sensor and Transmitter	No	2				
18.0.6	Conductivity cells and switch	No	2				
18.0.8	Air filter regulators / Lubricators (1/2", 1", 0-6KG, 0-10 KG)	No	36				
18.0.9	Speed Regulators / Air lock valves in oil gun corner rack	No	12				

DATE
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SL. NO.	DESCRIPTION	UOM	QTY	RATE IN RS. (IN FIGURES)	RATE IN WORDS	AMOUNT	APPLICABLE TERM OF PAYMENT
18.0.10	Solenoid valves (3 way, AC/DC, 1/4", 1/2", 1", NPT/BSP, single/dual coil)	No	144				
18.0.13	CWP Butterfly valves	Set	6				
18.0.14	Pneumatic Pressure controller with accessories	No	2				
18.0.15	Pneumatic Temperature controller with accessories		2				
18.0.17	Heavy Duty Limit Switch	No	48				
18.0.18	Speed switch / Speed detector	No	12				
18.0.19	Pressure Switch / DP Switch / DP indicating switch	No	459				
18.0.20	Temperature Switch / Thermostat	No	56				
18.0.21	Float type Level Switch	No	68				
18.0.22	Electronic Level Switch (with amplifier, etc), Capacitance or conductivity type	No	58				
18.0.23	Vacuum switch	No	6				
18.0.24	Flow switch (Mechanical / Electronic)	No	13				
18.0.25	Ultrasonic Transmitters	No	1				
18.0.26	Pressure / DP / Flow (DP type) / Level -Transmitter	No	866				
18.0.27	Level Transmitter (displacer type)	No	28				
18.0.28	Flow Transmitter (Pulse / mass flow / target type) including flanges	No	6				

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18.0.30	Position Transmitters	No	12				
18.0.31	Electronic Level Transmitter (with amplifier, etc), Capacitance or conductivity type / Guided Wave	No	426				
18.0.34	Pressure Gauge / DP gauge/DP Indicator	No	1065				
18.0.35	Temperature Gauge (all types)	No	238				
18.0.36	Level Indicator / Level Gauge	No	32				
18.0.37	Direct Water Level Gauge (DWLG)	Set	4				
18.0.38	Flow indicator / Flow Gauge / Flow meter/Acoustic flow meter (coal)	No	10				
18.0.39	Coal Bunker Level Monitoring Strain gauge (8 per set)	Set	2				
18.0.40	Thermocouple / RTDs with thermowell (all types) along with converters wherever applicable	No	732				
18.0.41	MTM Thermocouple upto 17 M length	No	204				
18.0.42	MTM Thermocouple over 17 M upto 22 M length	No	34				
18.0.45	Thermocouple assy with 6 / 9 Cr-Al MI T/C along with integral JB	No	22				
18.0.46	T/C k type Tungston carbide thermowell	No	2				
18.0.48	Purge meter for mill	No	24				
18.0.49	SADC Cylinders	No	112				
18.0.50	HEA Exciter system	Set	24				

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18.0.51	Flame Scanner Head Assembly	No	40				
18.0.53	Hydrogen Purity analyser	No	2				
18.0.54	O2 (OXYGEN) Analyzer	No	8				
18.0.58	Flue gas analyser	No	2				
18.0.59	Sampling Panel for NOX Analyzer 1500X800X2000	Set	2				
18.0.60	Dust emission monitor (Installation at around 88 M in chimney)	Set	6				
18.0.61	SWAS Sample handling system with racks & Sample conditioning panel with chiller	Set	2				
18.0.62	SWAS Analyzer Panel including various analyzers	Nos	2				
18.0.79	I/P converters	No	40				
18.0.81	Reverse rotation indication switch	No	10				
18.0.82	Debris Filter	Set	2				
18.0.83	Condensor Onload Tube Cleaning system	Set	2				
19.0	Commissioning and Testing activities for Equipments						19.0
19.0.1	Rack mounted instruments commissioning	Set	6				
19.0.2	Coal Feeder local panel/ instruments commissioning	No	12				
19.0.3	Electrical regulating drives: (Valve, damper, scoop)	No	12				

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SL. NO.	DESCRIPTION	UOM	QTY	RATE IN RS. (IN FIGURES)	RATE IN WORDS	AMOUNT	APPLICABLE TERM OF PAYMENT
19.0.4	Pneumatic regulating drives: (Valve, damper) incl Burner tilt	No	206				
19.0.5	Commissioning of Hydraulic actuators	No	28				
19.0.6	Corner nozzle valve/ Trip valves commissioning	No	72				
19.0.7	Open/Close type pneumatic gates / dampers / valves	No	132				
19.0.8	ERV Controller (approx. weight 25kg, 350 x 290 mm)	No	4				
19.0.9	Limit Switches (checking and adjusting only).	No	90				
19.0.10	Only healthiness checking of embedded RTD / T/C	No	500				
19.0.11	Fan Lube oil skid	Set	18				
19.0.12	Pulveriser Lube oil skid	Set	12				
110.0	Power Cylinders						110.0
110.0.1	Mill Discharge Valve power cylinders (set of four)	Set	12				
111.0	Miscellaneous items (items not covered under above heads)						111.0
111.0.1	Master and Slave Clock system	Set	1				
111.0.2	HART MANAGEMENT SYSTEM including CABINET	Set	2				
Grand Total in figures (In Rs)							
Grand Total in Words							
Rs.....							

DATE
PLACE