

TENDER SPECIFICATION

NO: BHE/PW/PUR/KLT-ELE/460

FOR

HANDLING AT SITE STORES/STORAGE YARD, TRANSPORTATION TO SITE OF WORK, COMPLETE ERECTION, CHECKING OF CALIBRATION, TESTING, ASSISTANCE FOR COMMISSIONING AND HANDING OVER OF ELECTRICAL PACKAGE VIZ. ISOLATED PHASE BUS DUCT, SEGREGATED PHASE BUS DUCT, GENERATOR TRANSFORMER, UNIT AUXILIARY TRANSFORMER, ELECTROSTATIC PRECIPITATOR, GENERATOR CONTROL & PROTECTION PANELS, 6.6 KV HT SWITCHGEAR , 415 V LT SWITCHGEAR BOARDS MCC, SOOT BLOWER SYSTEM, EXCITATION SYSTEM, ELECTRICAL HOIST AND ASSOCIATED ITEMS FOR 1X 75 MW UNIT #4

AT

**KUTCH LIGNITE THERMAL POWER PLANT
VILL-PANANDHRO
TALUKA-LAKHPAT
GUJARAT**

PART –II (Price Bid)

(REVISION 01 dated 27.10.2006)



BHARAT HEAVY ELECTRICALS LIMITED

**(A Govt. of India Undertaking)
POWER SECTOR - WESTERN REGION
345-KINGS WAY, NAGPUR-440 001**

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AT

**KUTCH LIGNITE THERMAL POWER PLANT
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EARNEST MONEY DEPOSIT: Please see Special Conditions of Contract (Section-15)

LAST DATE FOR TENDER SUBMISSION Please obtain updated information from web page
"http://www.bhel.com" → Tender Notifications → View
Corrigendums.

THESE TENDER SPECIFICATION DOCUMENTS CONTAINING PART-I AND PART- II (PRICE BID), ARE ISSUED TO:

M/s.

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PLEASE NOTE:
THESE TENDER SPECS DOCUMENTS ARE NOT TRANSFERABLE.
BIDDER SHALL NOTE THAT THEIR OFFER WILL BE CONSIDERED SUBJECT TO THE APPROVAL OF BHEL'S CUSTOMER.

For Bharat Heavy Electricals Limited

Dy. General Manager (Purchase)

Place: Nagpur

Date:

Bharat Heavy Electricals Limited: PSWR: Nagpur

Tender Specification No. BHE/PW/PUR/KLT-ELE/460 (Part-II: Price Bid Rev-01 dated 27.10.2006)

HANDLING AT SITE STORES/STORAGE YARD, TRANSPORTATION TO SITE OF WORK, COMPLETE ERECTION, CHECKING OF CALIBRATION, TESTING, ASSISTANCE FOR COMMISSIONING AND HANDING OVER OF ELECTRICAL WORKS AS PER ABOVE REFERED TECHNICAL SPECIFICATION.

Schedule of Rates and Quantities (Page1 of 9)

SN	DESCRIPTION	QTY	UOM	UNIT RATE (Rs.)	TOTAL AMOUNT (Rs.)
A. ISOLATED PHASE BUS DUCT FOR GENERATOR TRANSFORMER					
A.1	Transportation from stores / storage yard to erection site, assembly, erection, welding, testing & commissioning of Isolated Phase Bus Duct (11kV) for interconnection of Generator, Generator Transformer along with all accessories & auxiliaries Approx weight 80 MT as described in the Tender Specification.	1	Set		
B SEGREGATED PHASE BUS DUCT					
B.1	Transportation from stores / storage yard to erection site, assembly, erection, testing & commissioning of Segregated Phase Bus Duct (6.6 kV) for interconnection of Unit Aux Transformer and 6.6 KV switchgear along with all accessories & auxiliaries as described in the Tender Specification Approx weight 47 MT	1	set		
C POWER TRANSFORMERS					
C.1	Transportation from stores / storage yard to erection site, assembly, erection, testing & commissioning of 100 MVA Generator Transformer 11KV / 220 KV along with all accessories & auxiliaries as described in the Tender Specification Approx weight 120 MT	1	No		
C.2	Transportation from stores / storage yard to erection site, assembly, erection, testing & commissioning of 20 MVA Unit auxiliary Transformer 11KV / 6.6 KV along with all accessories & auxiliaries as described in the Tender Specification Approx weight 30 MT	1	No		

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Signature & Official Seal of Bidder

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ASSISTANCE FOR COMMISSIONING AND HANDING OVER OF ELECTRICAL WORKS AS PER ABOVE REFERED TECHNICAL SPECIFICATION.

Schedule of Rates and Quantities (Page2 of 9)

SN	DESCRIPTION	QTY	UOM	UNIT RATE (Rs.)	TOTAL AMOUNT (Rs.)
D. 6.6 KV SWITCHGEAR					
D.1	6.6 KV Switchgear 3A consisting of 13 Panels(VM-12) of size 820 X 2692 X 1831 MM of each Panel , Approx weight 16.5 MT	1	Set		
D.2	6.6 KV Switchgear 3B consisting of 13 Panels(VM-12) of size 820 X 2692 X 1831 MM of each Panel , Approx weight 16.5 MT	1	Set		
D.3	6.6 KV Switchgear 4A consisting of 16 Panels(VM-12) of size 820 X 2692 X 1831 MM of each Panel , Approx weight 20 MT	1	Set		
D.4	6.6 KV Switchgear 4B consisting of 16 Panels(VM-12) of size 820 X 2692 X 1831 MM of each Panel , Approx weight 20 MT	1	Set		
D.5	BUS Transfer System panels Consisting of 2 panels of size 2355 x 800 x 800 MM of each Panel , Approx weight 0.4 MT	1	Set		
D.6	NG Transformer (1 nos) and NGR (1 nos) for 6.6 KVswitchgear	01	Set		
E. STATIC EXCITATION SYSTEM					
E.1	Transportation from store / storage yard to erection site , Erection, Assembly, Testing & Commissioning of Digital Excitation Equipments / System , System consist of Regulation / Thyristor / field Flashing / Field Breaker Cubicle panels, Excitation Transformer & accessories as per tender specification.	1	Set		

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Schedule of Rates and Quantities (Page3 of 9)

SN	DESCRIPTION	QTY	UOM	UNIT RATE (Rs.)	TOTAL AMOUNT (Rs.)
F. GENERATOR, GT & UAT PROTECTION & METERING PANELS, ETC					
F.1	Transportation from stores / storage yard to erection site, erection, integrated electrical testing & commissioning (which comprises of relay testing, functional checks of control / protection circuit etc)of Generator, Generator Transformer, Unit Auxiliary Transformers, "Control / Protection & Metering Panels", Over all dimension of each panels 1000x800x2280 mm, approx weight 500 Kg each	2	Nos		
F.2	INTEGRATED TESTING / COMMISSIONING OF CONTROLS AND PROTECTION RELAY PANEL OF GENERATOR & ASSOCIATED EQUIPMENTS. Scope of work as detailed specification vide clause No. 4.15.13	1	Lump sum		
G. PANELS AND MISC SYSTEM					
G.1	DC motor starter panels, etc (DC JOP, DC EOP,), including resistance boxes. Approx weight 0.5 MT each .	2	Nos		
G.2	CO2 Panels, (12+12 cylinders) , SOLENOIDS and piping for fire fighting system for generator	1	Set		
G.3	Testing & Commissioning of Furnace temperature probe (including solenoids, thermocouple, etc)	1	No		
G.4	DC motor starter panels, etc (SCANNER AIR FAN), including resistance boxes. Approx weight 0.5 MT each.	1	No		

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Schedule of Rates and Quantities (Page4 of 9)

SN	DESCRIPTION	QTY	UOM	UNIT RATE (Rs.)	TOTAL AMOUNT (Rs.)
H. SOOT BLOWER SYSTEM ::TRANSPORTATION FROM STORES / STORAGE YARD TO ERECTION SITE, ASSEMBLY, ERECTION, TESTING, & COMMISSIONING OF 415 VOLT ELECTRICAL SYSTEMSOF SOOT BLOWERS COMPRISING OF SOOT BLOWER LT MCC WITH ACCESSORIES ALONG WITH COMMISSIONING OF THE SOOT BLOWERS (ERECTION OF THE SOOT BLOWERS EXCLUDED FROM THIS CONTRACT)					
H.1	Soot Blower Motor Control Center, double front, overall dimension 4800(W) x2375 (H) x1000 (D), WT 2.4MT, shall be supplied in eight to ten loose shipping sections	1	Set		
H.2	Testing & Commissioning of Half Retractable, Long Retractable, Air Heater Soot Blower	32	No		
I. ELECTROSTATIC PRECIPITATOR (ESP): TRANSPORTATION FROM STORES UPTO WORK SITE, PRE-ASSEMBLY, ERECTION, TESTING, COMMISSIONING, ETC. OF ELECTRICAL SYSTEMS AND EQUIPMENTS AS UNDER					
I.1	LT Main Switch Board(Double Front Draw-out Type), Overall dimensions 10800X1700X2450 mm, Approx Weight of board 7.5 MT, and supplied in loose shipping sections	1	Nos.		
I.2	Auxiliary Control Panel(Double front Draw Out Type) , Overall Dimension 5000X1000X2450 mm, Approx Weight of each panel 4.5 MT and supplied in loose shipping sections	2	Nos.		
I.3	Electronic Control Panel, Overall dimensions 700X650X2000mm, Weight of each panel 0.3MT. Electronic modules(BAPCON) / cards / rotary switches, etc along with cables and connectors, shall be supplied loose for mounting in the panel at site	14	Nos		
I.4	RAPPER CONTROL PANEL Overall dimension 1000X500X2050 mm, Weight of each panel 0.3 MT. 4 Nos. RAPCON Electronic modules for each panel (along with cables connectors) size 250 x200x200 mm shall be supplied loose for mounting in the panel at site	1	Set		

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Schedule of Rates and Quantities (Page5 of 9)

SN	DESCRIPTION	QTY	UOM	UNIT RATE (Rs.)	TOTAL AMOUNT (Rs.)
I.5	Junction Boxes (Power) 600x280x520 mm approx.	14	Nos.		
I.6	Junction Boxes (Control) 450 x150 x300 mm approx	12	Nos.		
I..7	Junction Boxes (Control) 250 x150 x400 mm approx	7	Nos.		
I.8	Ash Level Indicator comprising of level probe with extension lagging pipe, Electronic Unit, Interconnecting Cabling, Conduit, etc.	28	Set.		
I.9	Start Stop Push Button Station Dimensions 180X100X250 mm Approx weight 5 Kg each	30	Nos.		
I.10	Thermostats including Calibration.	16	Nos.		
I.11	Data Logger PC with colour Monitor	01	No		
I.12	IOS PC With colour Monitor	01	No		
I.13	PRINTER INKJET FOR IOS	01	Nos.		
I.14	PRINTER DOT MATRIX FOR IOS	01	Nos.		
J. MISC. ITEMS :					
J.1	Structural Steel fabrication & installation (MS angle, Channel, Plate etc)	15	MT		
K. ONLY TESTING & COMMISSIONING					

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Schedule of Rates and Quantities (Page6 of 9)

SN	DESCRIPTION	QTY	UOM	UNIT RATE (Rs.)	TOTAL AMOUNT (Rs.)
K.1	Hopper Heater, Support Insulator Heater, Shaft Insulator Heaters for ESP	462	Nos.		
K2	High Voltage Rectifier Transformers (70 KV peak, 1200 mA) including oil filtration.	14	Nos.		
K.3	Electrically (LT) Operated Valves, Dampers and Gates with Actuators, Limit Switches etc. (Regulating & ON/OFF Type).	55	Nos.		
K.4	Oil Centrifuge (includes erection of only Control panel / board and loop cabling)	1	No		
K.5	Testing / commissioning of Electrically Operated Hoist 3T (EOH)	1	Nos.		
K.6	Testing / commissioning of HT MOTORS 6.6 KV (Including Dryout)	6	Nos.		
K.7	Testing / commissioning of LT Motors 415 volts (above 37 KW) (Including dry out)	12	Nos.		
K.8	Testing / commissioning of LT Motors 415 Volts, (Below 37 KW) (Including Dry out)	50	Nos.		
L. LT POWER CABLES (XLPE ins .AL. Armoured, FRLS O/S Cable)					
L.1	2 X 120sqmm Aluminum	3000	meter		
L.2	3 X 35 sq mm Aluminum	500	meter		
L.3	3 X 185 sq mm Aluminum	200	meter		
L.4	3 X 10 sq mm Aluminum	1500	meter		

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Schedule of Rates and Quantities (Page7 of 9)

SN	DESCRIPTION	QTY	UOM	UNIT RATE (Rs.)	TOTAL AMOUNT (Rs.)
L.5	3 X 6 sq mm Aluminum	11500	meter		
M. LT CONTROL CABLES (Armoured / Unarmoured, screened or unscreened)					
M.1	4 C x 1.5 sq mm Copper	1800	meter		
M.2	7C X1.5 sq mm Copper	8000	meter		
M.3	2C X 2.5 sq mm copper	2500	meter		
M.4	3C X 2.5 sq mm copper	22000	meter		
M.5	5C X 2.5 sq mm copper	4000	meter		
M.6	7C X 2.5 sq mm copper	3500	meter		
M.7	10 C X 2.5 Sq mm copper	2500	Meter		
M.8	12 c x 2.5 sq mm copper	1000	Meter		
N. HT POWER CABLES (XLPE ins .AL. Ar. FRLS O/S Cable)					
N.1	1C X 630 sqmm Aluminum	1500	Meter		

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SN	DESCRIPTION	QTY	UOM	UNIT RATE (Rs.)	TOTAL AMOUNT (Rs.)
N.2	3C X 240 SQ MM AL	1000	Meter		
O. CABLE TRAY (LADDER TYPE) WITH ALL ACCESSORIES					
O.1	150 mm	800	Meter.		
O.2	300 mm	2200	Mtrs.		
O.3	450 mm	500	Mtrs.		
O.4	600 mm	2000	Mtrs.		
P. CABLE TRAY (PERFORATED TYPE) WITH ALL ACCESSORIES					
P.1	50 mm	50	Mtrs.		
P.2	100 mm	50	Mtrs.		
P.3	150 mm	500	Mtrs.		
P.4	300 mm	1000	Mtrs.		
P.5	450 mm	200	Mtrs.		

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Schedule of Rates and Quantities (Page9 of 9)

SN	DESCRIPTION	QTY	UOM	UNIT RATE (Rs.)	TOTAL AMOUNT (Rs.)
P.6	600 mm	1000	Mtrs.		
Q. EARTHING MATERIALS					
Q.1	50X 6 mm GI FLAT	700	Mtrs.		
Q.2	30X 5 MM GI FLAT	500	Mtrs		
Q.3	G I WIRE 8 SWG	1500	Mtrs		
TOTAL AMOUNT IN FIGURES:		Rs.			
TOTAL AMOUNT IN WORDS: Rupees					

Date

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