

TENDER SPECIFICATION

NO: BHE/PW/PUR/BSJ-ELE/483

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 PACKAGES VIZ., POWER TRANSFORMERS, ISOLATED PHASE BUS DUCT FOR GENERATOR TRANSFORMER, SEGREGATED PHASE BUS DUCT FOR STATION TRANSFORMER / UNIT AUX. TRANSFORMER, ELECTROSTATIC PRECIPITATOR, GENERATOR CONTROL & PROTECTION PANELS, STATION TRANSFORMER CONTROL & RELAY PANELS, 6.6kV / 0.415 kV SWITCHGEAR BOARDS MCC, LV 0.415 KV BUSDUCTS, SOOT BLOWER SYSTEM, DIGITAL STATIC EXCITATION SYSTEM, 220 VOLT BATTERY SYSTEM, ELECTRICAL HOIST AND ASSOCIATED ITEMS FOR UNIT #1&2 of 250 MW

AT

NTPC-SAIL POWER COMPANY PRIVATE LTD
BHILAI, DISTT: DURG,

CHHATTISGARH

PART –II (PRICE BID SPECIFICATION)



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

BHARAT HEAVY ELECTRICALS LIMITED

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

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EARNEST MONEY DEPOSIT: Please see Section-15 of Special Conditions of Contract.

LAST DATE AND TIME FOR

SUBMISSION OF OFFERS: PLEASE REFER WEB PAGE (www.bhel.com) FOR LATEST UPDATES.

THESE TENDER DOCUMENTS CONTAINING PART-I AND PART-II, ARE ISSUED TO:

M/s.....
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(THESE TENDER SPECIFICATION DOCUMENTS ARE NOT TRANSFERABLE)

FOR BHARAT HEAVY ELECTRICALS LIMITED

Dy. GENERAL MANAGER (PURCHASE)

PLACE: NAGPUR

DATE:

BHARAT HEAVY ELECTRICALS LIMITED: PSWR: NAGPUR
TENDER SPECIFICATION NO. VHE/PW/PUR/BSJI-ELE/483 (PART-II: PRICE BID SPECIFICATION)
Schedule of Rates and Quantity (page1 of 15)

SI No	DESCRIPTION	QTY	UOM	UNIT RATE (Rs.)	TOTAL AMOUNT (Rs.)
A.	POWER TRANSFORMERS				
A.1	Transportation up to foundation, Assembly, Testing & Assistance for Commissioning of Three phase 315 MVA 16.5/420 kV Generator Transformer including all accessories, piping, cabling etc. as described in Tender Specification.	2	No.		
A.2	Transportation from stores/ storage yard to erection site, assembly, testing & Assistance for Commissioning of 50/25/25 MVA, 3 phase 16.5/6.9/6.9 kV Unit Auxiliary Transformer including all accessories, piping, cabling etc as described in tender specification, including neutral grounding transformers 4 nos.	2	No.		
A.3	Transportation from stores/ storage yard to erection site , assembly, testing & Assistance for Commissioning of 50/25/25 MVA , 3 phase 230/6.9/6.9 kV Station Transformer(Standby) including all accessories, piping, cabling etc as described in tender specification, including neutral grounding transformers 2 nos.	2	No.		
A.4	Transportation from stores/ storage yard to erection site , assembly, testing & Assistance for Commissioning of 10 MVA , 3 phase 36 kv /6.6 kV Raw water Transformer including all accessories, piping, cabling etc as described in tender specification, including neutral grounding transformers 2 nos.	2	No.		
A.5	Transportation from stores/ storage yard to erection site , assembly, testing & Assistance for Commissioning of 2000 KVA , 3 phase 6.6 kV/ 0.433 KV Dry Type Transformer including all accessories, cabling etc as described in tender specification,	8	No.		
A.6	Transportation from stores/ storage yard to erection site , assembly, testing & Assistance for Commissioning of 1.6 MVA , 3 phase 6.6 kV/ 0.433 KV, LV SERVICE TRANSFORMER including all accessories, piping, cabling etc as described in tender specification, including neutral grounding transformers 1 no for Each Transformer.	8	No.		
A.7	Transportation from stores/ storage yard to erection site , assembly, testing & Assistance for Commissioning of 2.0 MVA , 3 phase 6.6 kV/ 0.433 KV, LV SERVICE TRANSFORMER including all accessories, piping, cabling etc as described in tender specification, including neutral grounding transformers 1 no for Each Transformer.	10	No.		

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TENDER SPECIFICATION NO. VHE/PW/PUR/BSJI-ELE/483 (PART-II: PRICE BID SPECIFICATION)
Schedule of Rates and Quantity (page2 of 15)

SI No	DESCRIPTION	QTY	UOM	UNIT RATE (Rs.)	TOTAL AMOUNT (Rs.)
A.8	Transportation from stores/ storage yard to erection site , assembly, testing & Assistance for Commissioning of 630 KVA , 3 phase 6.6 kV/ 0.433 KV, LV SERVICE TRANSFORMER including all accessories, piping, cabling etc as described in tender specification, including neutral grounding transformers 1 no for Each Transformer.	4	No.		
B.	ISOLATED PHASE BUS DUCT FOR GENERATOR TRANSFORMER				
B.1	Transportation from stores / storage yard to erection site, assembly, erection, welding, testing & Assistance for Commissioning of Isolated Phase Bus Duct (16.5 kV) for interconnection of Generator, Generator Circuit Breaker, isolator & Generator Transformer along with all accessories & auxiliaries as described in the Tender Specification.	1	Set		
C.	SEGREGATED PHASE BUS DUCT 6.6 kV :- Lump sum rate for transportation from store /storage yard to erection site, erection, assembly, testing & Assistance for Commissioning of Segregated Phase Bus Duct including support structure , equipments & all accessories of the following area as per tender specification.				
C.1	BD-1 A FROM UAT TO 1CA-10 APP LENGTH 60.00 METERS	1	Set		
C.2	BD-2 A FROM UAT TO 2CA-16 APP LENGTH 60.00 METERS	1	Set		
C.3	BD-1B FROM UAT TO 1CB-12 APP LENGTH 66.00 METERS	1	Set		
C.4	BD-2 B FROM UAT TO 2CB-06 APP LENGTH 66.00 METERS	1	Set		
C.5	BD-1C FROM STN T/F TO OCA-09 APP LENGTH 130.00 METERS	1	Set		
C.6	BD-2C FROM STN T/F TO OCC-03 APP LENGTH 140.00 METERS	1	Set		
C.7	BD-1D FROM STN T/F TO OCB-07 APP LENGTH 135.00 METERS	1	Set		
C.8	BD-2D FROM STN T/F TO OCD-13 APP LENGTH 145.00 METERS	1	Set		

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Schedule of Rates and Quantity (page3 of 15)

SI No	DESCRIPTION	QTY	UOM	UNIT RATE (Rs.)	TOTAL AMOUNT (Rs.)
C.9	BD-1E FROM 1CA-01 TO OCA-15 APP LENGTH 10.00 METERS	1	Set		
C.10	BD-2E FROM 2CA-01 TO OCC-15 APP LENGTH 08.00 METERS	1	Set		
C.11	BD-1F FROM 1CB-17 TO OCB-01 APP LENGTH 10.00 METERS	1	Set		
C.12	BD-2F FROM 2CB-18 TO OCD-01 APP LENGTH 08.00 METERS	1	Set		
C.13	BD-1G FROM OCA05 TO OCC-09 APP LENGTH 95.00 METERS	1	Set		
C.14	BD-1H FROM OCB-11 TO OCD-08 APP LENGTH 96.00 METERS	1	Set		
D.	6.6 kV INDOOR SWITCHGEAR. EACH BOARD CONSISTING OF VACUUM BREAKER TYPE VM 12, PT PANELS, AUXILIARY TRANSFORMER PANEL, BUS EXTENSION CHAMBERS & ACCESSORIES etc. EACH BREAKER IS HOUSED WITH CONTROL, METERING & PROTECTION DEVICES; GC				
D.1	Unit Switchgear Board 1CA : consists of 19 panels, in 10 shipping sections . Overall dimension 15580 x 2651 x 2692. Each shipping section 3.0 MT approx	1	Set		
D.2	Unit Switchgear Board 1CB : consists of 18 panels, in 09 shipping sections. Overall dimension 14760 x 2651 x 2692. Each shipping section 3.0 MT approx	1	Set		
D.3	Unit Switchgear Board 2CA : consists of 19 panels, in 10 shipping sections. Overall dimension 15580 x 2651 x 2692. Each shipping section 3.0 MT approx	1	Set		
D.4	Unit Switchgear Board 2CB : consists of 18 panels, in 09 shipping sections. Overall dimension 14760 x 2651 x 2692. Each shipping section 3.0 MT approx	1	Set		

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Schedule of Rates and Quantity (page4 of 15)

Sl No	DESCRIPTION	QTY	UOM	UNIT RATE (Rs.)	TOTAL AMOUNT (Rs.)
D.5	Station Switchgear Board OCA : consists of 15 panels, in 8 shipping sections. Overall dimension 12300 x 2651 x 2692. Each shipping section 3.0 MT approx	1	Set		
D.6	Station Switchgear Board OCB : consists of 13 panels, in 7 shipping sections. Overall dimension 10660 x 2651 x 2692. Each shipping section 3.0 MT approx	1	Set		
D.7	Station Switchgear Board OCC : consists of 15 panels, in 8 shipping sections. Overall dimension 12300 x 2651 x 2692. Each shipping section 3.0 MT approx	1	Set		
D.8	Station Switchgear Board OCD : consists of 13 panels, in 7 shipping sections. Overall dimension 10660 x 2651 x 2692. Each shipping section 3.0 MT approx	1	Set		
D.9	CW Switchgear Board 1CC : consists of 11 panels, in 6 shipping sections. Overall dimension 9020 x 2651 x 2692. Each shipping section 3.0 MT approx	1	Set		
D.10	CW Switchgear Board 2CC : consists of 11 panels, in 6 shipping sections. Overall dimension 9020 x 2651 x 2692. Each shipping section 3.0 MT approx	1	Set		
E	TRANSPORTATION FROM STORES/ STORAGE YARD TO ERECTION SITE, ASSEMBLY, ERECTION, TESTING & ASSISTANCE FOR COMMISSIONING OF 415 V LT SWITCH GEAR BOARDS / MC, DOUBLE FRONT / SINGLE FRONT, COMPRISES OF AIR CIRCUIT BREAKERS, PT PANELS, AUX. TRANSFORMER PANEL, TRUNKING CUBICLE etc.				
E.1	415 Volt LT TURBINE MCC, Double Front, 1KA & 2KA, Overall dimensions 9700 x 1200 x 2400 mm, Total weight 9.6 MT / MCC, Panel shall be supplied in loose shipping section. One board in each unit.	2	Nos		
E.2	415 Volt LT TURBINE VALVE MCC, Single / Double Front, 1KB & 2KB. Overall dimension 8220 X 0560 X 2300 mm, Total weight 8.0 MT(Approx), Panel shall be supplied in loose shipping sections. One board in each unit.	2	Nos.		

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Schedule of Rates and Quantity (page5 of 15)

Sl No	DESCRIPTION	QTY	UOM	UNIT RATE (Rs.)	TOTAL AMOUNT (Rs.)
E.3	415 Volt UNIT ACDB ,Single / Double Front, Over all dimensions 10760 X 0560 X 2300 mm, Total weight 10.4 MT (Approx), Panels shall be supplied in loose shipping section. One board in each unit.	2	Nos.		
E.4	Unit PCC -1 & UNIT PCC-2, Over all dimension 11720X 1360X2300 mm, Total weight 12 MT(Approx), Boards shall be supplied in loose shipping sections. One board in each unit. Two number NSP bus duct pieces per board (length one meters approximately) shall be supplied loose for interconnection to Unit Service Transformer (Dry Type).	2	Nos.		
E.5	415 Volt STATION PCC, Single / Double- front,Overall dimension 10140X 1360 X 2300 mm, Total weight 9.5 MT(Approx) , shall be supplied in loose shipping section. Two number NSP bus duct pieces per board (length one meters approximately) shall be supplied loose for interconnection to Station Service Transformer (Dry Type).	1	Nos.		
E.6	415 Volt COMMON SERVICE PCC, Single / Double- front,STN PCC, Overall dimension 8770 X 1360 X 2300 mm, Total weight 8.5 MT(Approx) , shall be supplied in loose shipping section. Two number NSP bus duct pieces per board (length one meters approximately) shall be supplied loose for connection to Service Transformer (Dry Type).	1	Nos.		
E.7	NORMAL / EMERGENCY MCC,Overall Dimensions 6300 X 1200 X2400MM,Total weight 6.0 MT(Approx), One Board in each Unit, shall be supplied in loose shipping section	2	Nos.		
E.8	AC EMERGENCY SWGR MCC , Overall Dimensions 6490 X 1120 X 2300 mm,Approx weight 6.8MT, shall be supplied in loose shipping section	1	Nos.		
E.9	220 Volt DC DISTRIBUTION BOARD # 1FA & 2FA, Overall dimension 9000x 0560 x2300 mm,Total Weight 9.0MT(Approx), shall be supplied in loose shipping sections. One Board in each Unit.	2	Nos.		
E.10	220 Volt DC DISTRIBUTION BOARD (DP STN), Overall dimension 4500 x 0560 x2300 mm,Total weight 4.5 MT(Approx), shall be supplied in loose shipping sections. Common for both the units.	1	Nos.		

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SI No	DESCRIPTION	QTY	UOM	UNIT RATE (Rs.)	TOTAL AMOUNT (Rs.)
E.11	415 Volt LT Boiler MCC, Double front, # 1HA & 2HA Overall dimension 11700X1200X2400 MM , Total WT 11.5 MT (Approx), shall be supplied in loose shipping section. One Board in each unit.	2	Nos.		
E.12	415 Volt LT Boiler Valve and Damper MCC, Double Front, # 1HB & 2HB Over all dimension 3520X0560X2300 mm, Total WT 3.5 MT(Approx), Panel shall be supplied in shipping section. One board in each unit.	2	Nos.		
E.13	415 Volt Fire Water Switchgear Board , over all dimensions 6100 x 1200 x 2400 mm, Total WT 6.5 MT (Approx). Shall be supplied in loose shipping section. Common for both the unit. (Fire water pump house building)	1	No.		
E.14	415 Volt Fuel Oil Pump House Double front, MCC , Over all dimensions 6300 x 0800 x 2400 mm. Total weight 6.5 MT (Approx), shall be supplied in loose shipping sections. Common for both the unit. (Oil Pump House Building)	1	No.		
E.15	415 volt DM & WTP MCC, Double Front, MCC, Over all dimensions 11700 X 1200 X 2400 mm, Total weight 10.5 MT (Approx), Shall be supplied in loose shipping section. Common for both the unit.	1	No.		
E.16	415 Volt Main Plant Air Conditioner Double front MCC # OTA , Overall dimension 7900 x 1200 x 2400 mm , Total Weight 7.7 MT (Approx), shall be supplied in loose shipping section, Common for both the Units.	1	No.		
E.17	415 Volt Service Building Air Conditioner , Double front MCC # OTB Overall dimension 6300 X 1200 X 2400 mm, Total weight 6.5 MT (Approx) , shall be supplied in loose shipping section. Common for both Units	1	No.		
E.18	415 Volt Ventilation MCC Double front MCC # 1TA & 2TA Overall dimension 6300 x 1200x 2400 mm , Total Weight 6.5 MT (Approx) shall be supplied in loose shipping section. One MCC in Each Unit.	2	No.		
E.19	415 Volt Ash Water Recovery PCC Double front , Overall dimension 6100 x 1200x 2600 mm , Total Weight 6.5 MT (Approx) shall be supplied in loose shipping section. One common PCC for both Units.	1	No.		

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Schedule of Rates and Quantity (page 7 of 15)

Sl No	DESCRIPTION	QTY	UOM	UNIT RATE (Rs.)	TOTAL AMOUNT (Rs.)
E.20	415 Volt COOLING TOWER PCC Double front , Overall dimension 7780 X 1360 X 2300 mm , Total Weight 7.7 MT (Approx) shall be supplied in loose shipping section. One PCC for each Unit.	2	No.		
E.21	415 Volt Ash Handling PCC Double front , Overall dimension 10400 x 1200 x 2600 mm , Total Weight 11.7 MT (Approx) shall be supplied in loose shipping section. One PCC for each Unit.	2	No.		
E.22	415 Volt ADM BLDG PCC Double front , Overall dimension 6300 x 1200x 2600 mm , Total Weight 7.5 MT (Approx) shall be supplied in loose shipping section. One common PCC for both Units.	1	No.		
E.23	415 Volt WTP PCC Double front , Overall dimension 8000 x 1200x 2600 mm , Total Weight 8.5 MT (Approx) shall be supplied in loose shipping section. One common PCC for both Units.	1	No.		
E.24	F. 415 Volt Cooling Water MCC, Single / Double front , Overall dimension 3600 x 0800x 2400 mm , Total Weight 3.5 MT (Approx) shall be supplied in loose shipping section. One common MCC for both Units.	1	No.		
E.25	415 Volt H2 GENERATION MCC, Single / Double front , Overall dimension 3600 x 0800x 2400 mm , Total Weight 3.5 MT (Approx) shall be supplied in loose shipping section. One common MCC for both Units.	1	No.		
E.26	415 Volt Canteen MCC, Single/Double front , Overall dimension 1800 x 0800x 2400 mm , Total Weight 1.7 MT (Approx) shall be supplied in loose shipping section. One common MCC for both Units.	1	No.		
E.27	415 Volt WORKSHOP DB, Single/ Double front , Overall dimension 17600 x 0560x 2300 mm , Total Weight 17.7 MT (Approx) shall be supplied in loose shipping section. One common DB for both Units.	1	No.		
E.28	415 Volt RECEPTACLE DB, Single/ Double front , Overall dimension 17600 x 0560x 2300 mm , Total Weight 17.7 MT (Approx) shall be supplied in loose shipping section. One common DB for both Units.	1	No.		

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Schedule of Rates and Quantity (page8 of 15)

SI No	DESCRIPTION	QTY	UOM	UNIT RATE (Rs.)	TOTAL AMOUNT (Rs.)
F.	NON SEGREGATED LV 415 VOLT BUSDUCTS Transportation of material from Stores/ storage yard to erection site, Erection, Assembly, Testing & Assistance for Commissioning of NSP BUS DUCTS for interconnection between service transformer and LT MCC.				
F.1	415 Volt LT Interconnecting BUS DUCT between LT Power Oil Filled Transformer of (2000 KVA / 1600 KVA /1000 KVA, 11 & 6.6 KV rating . Total length of all 22 bus duct is 125 mtrs (approx) Typical cross section 500 x 1000, Weight 150 kg/mtr (approx) loose items like silicagel breather pipe, GI channel supports and associated accessories. length of one busductAverage (125/22= 6 mtrs approx)	Set	22		
G.	DIGITAL STATIC EXCITATION SYSTEM TRANSPORTATION FROM STORES / STORAGE YARD TO ERECTION SITE, ASSEMBLY, ERECTION, TESTING, & ASSISTANCE FOR COMMISSIONING OF STATIC EXCITATION SYSTEM				
G.1	Transportation from store / storage yard to erection site , Erection, Assembly, Testing & Assistance for Commissioning of Digital Excitation Equipments / System , System consist of Excitaton Transformer, Regulation / Thyristor / field suppression panels & accessories as per tender specification.	2	Set		
H.	GENERATOR, GT, ST & UAT PROTECTION & METERING PANELS,: TRANSPORTATION FROM STORES / STORAGE YARD TO ERECTION SITE, ASSEMBLY, ERECTION, TESTING, & ASSISTANCE FOR COMMISSIONING OF GRP / SRP ETC				
H.1	Transportation from stores / storage yard to erection site, erection, integrated electrical testing & Assistance for 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 1000x1000x2295 mm, approx weight 500 Kg each Panel. Four panels / Unit.	8	Nos		
H.2	Transportation from stores / storage yard to erection site, erection, integrated electrical testing & Assistance for Commissioning (which comprises of relay testing, functional checks of control / protection circuit etc)of STATION TRANSFORMER , "Control / Protection & Metering Panels", Over all dimension of each panels 1000x1000x2295 mm, approx weight 500 Kg each Panel.One Panel per Unit.	2	Nos.		
H.3	AC Control supply panel (ACCSP) consisting of transformers, changeover system, modules, etc. approx weight 3 MT	2	No		

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SI No	DESCRIPTION	QTY	UOM	UNIT RATE (Rs.)	TOTAL AMOUNT (Rs.)
H.4	DC Control supply panel (DCCSP) consisting of changeover system, modules, etc. approx weight 0.5 MT	2	No		
H.5	DC motor starter panels, etc (DC JOP, DC EOP, Seal oil panel), including resistance boxes. Approx weight 0.5 MT each.	6	Nos		
J.	SOOT BLOWER SYSTEM ::TRANSPORTATION FROM STORES / STORAGE YARD TO ERECTION SITE, ASSEMBLY, ERECTION, TESTING, & ASSISTANCE FOR COMMISSIONING OF 415 VOLT ELECTRICAL SYSTEMS OF SOOT BLOWERS COMPRISING OF SOOT BLOWER LOCAL STARTER BOXES, LOCAL POWER DISTRIBUTION BOXES WITH ACCESSORIES ALONG WITH ASSISTANCE FOR COMMISSIONING OF THE SOOT BLOWERS (ERECTION OF THE SOOT BLOWERS EXCLUDED FROM THIS CONTRACT				
J.1	Erection ,Testing & Assistance for Commissioning of Local Starter Boxes for Wall Blowers , Size 600 x 600 x 300 mm (Local Mounting)	112	Nos.		
J.2	Erection,Testing & Assistance for Commissioning of Local Starter Boxes for LR Blowers, Size 600 x 600 x 300 mm (Local Mounting)	36	Nos.		
J.3	Erection, Testing & Assistance for Commissioning of Local Starter Boxes for AH Blowers, Size 600 x 600 x 300 mm (Local Mounting)	8	Nos.		
J.4	Erection, Testing & Assistance for Commissioning of Power Distribution Boxes (WB-Front) Blowers, Size 750 x 1000 x 350 mm (Local Mounting)	14	Nos.		
J.5	Erection, Testing & Commisioning of Marshalling Boxes for soot Blower system, Size 750 x 1000x 350 mm mm (Local Mounting)	12	Nos.		
J.6	Testing and Assistance for Commissioning of soot blower control panel, including mounting of mimic ,	1	Nos.		
J.7	Testing & Assistance for Commissioning of Wall, Long Retractable, Air Heater Soot Blower	156	Nos.		

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SI No	DESCRIPTION	QTY	UOM	UNIT RATE (Rs.)	TOTAL AMOUNT (Rs.)
J.8	Testing & Assistance for Commissioning of Furnace temperature probe (including solenoids, thermocouple, etc)	2	Nos.		
K.	ELECTROSTATIC PRECIPITATOR SYSTEM, Transportation of material from Stores/ storage yard to erection site, Erection, Assembly, Testing & Assistance for Commissioning of ELECTROSTIC PRECIPITATOR SYSTEM.				
K.1	ESP PCC-1 &2 (LT Main Switch Boards), Overall dimensions 11100 X 1450 X 2430 mm, Weight of each board 6.1 MT, and supplied in loose shipping sections. Two boards per unit.	4	Nos		
K.2	Auxiliary Control Panel, Overall Dimension 9750 x 1000 x 2450 mm, Weight of each panel 6.5 MT and supplied in loose shipping sections. TWO boards per unit.	4	Nos		
K.3	Electronic Control Panel, Overall dimensions 700X650X2080mm, Weight of each panel 0.3MT. BAPCON & OTHER Electronic modules / rotary switches, etc along with cables and connectors, shall be supplied loose for mounting in the panel at site	72	Nos		
K.4	RAPPER CONTROL PANEL Overall dimension 1000X650X2000 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	4	Nos		
K.5	IOS PC, Computer Furniture, Data Logger PC, Printer-2 Nos. PC termination box, peripheral cables etc. APPROX WEIGHT 100 KG.	1	Set		
K.6	Junction Boxes (Power) 500x200x360 mm approx.	100	Nos		
K.7	Junction Boxes (Control) 480 x200 x300 mm approx	50	Nos		
K.8	Ash Level Indicator comprising of level probe with extension lagging pipe, Electronic Unit, Interconnecting Cabling, Conduit, etc.	144	Set.		
K.9	Opacity Monitor Consisting of Transmitter & Receiver, Electronic Unit, Air Blower unit, Weather Proof housings, Junction boxes, flexible hoses, mounting flanges with pipe for Transmitter, Receiver & Air blower, interconnected cables etc. for mounting on ESP outlet duct.	4	Set.		

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SI No	DESCRIPTION	QTY	UOM	UNIT RATE (Rs.)	TOTAL AMOUNT (Rs.)
K.10	Start Stop Push Button Station Dimensions 180X200X210 mm weight 5 Kg	152	Nos.		
K.11	Thermostats including Calibration.	80	Nos.		
L.	ELECTRICAL HOIST DSL CABLE TRAILING SYSTEM Transportation of material from Stores/ storage yard to erection site, Erection, Assembly, Testing & Assistance for Commissioning of misc. Electrically Operated Hoist for ID, FD, PA Fans, Coal Mills, ESP etc.				
L.1	Trailer Cable 4 core upto 25 Sq. mm copper	m	1500		
L.2	Dog Chain	m	1000		
L.3	Cable Guide Trolley with cable clamping arrangement	Nos.	300		
L.4	Switch Fuse Units (ICTPN)	Nos.	20		
L.5	Real Insulator/ Cable guide trolley	Nos.	200		
L.6	Limit Switches	Nos.	30		
L.7	Testing & Assistance for Commissioning of Hoists	Nos.	22		
M.	DC BATTERY SYSTEM (220 V DC AND 24 VOLT DC SYSTEM Transportation of material from Stores/ storage yard to erection site, Erection, Assembly, Testing & Assistance for Commissioning of 220 VOLT BATTERY / BATTERY CHARGER, 24 VOLT BATTERY / BATTERY CHARGER FOR SG , TG&STATION C&I.FOPH,CWPH ETC.				
M.1	220 Volt DC Battery System, Each set comprises of Battery system. (170 nos, 1.2 volts.) , Battery Float Cum Boost charger, Battery cell be mounted on teak wood still age & loose accessories such as inter cell / stack connectors etc shall be supplied loose. (UNIT BATTERY SYSTEM). As per dtails given in tender elsewhere.	4	Sets		

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BHARAT HEAVY ELECTRICALS LIMITED: PSWR: NAGPUR
TENDER SPECIFICATION NO. VHE/PW/PUR/BSJI-ELE/483 (PART-II: PRICE BID SPECIFICATION)
Schedule of Rates and Quantity (page 12 of 15)

SI No	DESCRIPTION	QTY	UOM	UNIT RATE (Rs.)	TOTAL AMOUNT (Rs.)
M.2	220 Volt DC Battery System, Each set comprises of Battery system. (170 nos, 1.2 volts.) , Battery Float Cum Boost charger, Battery cell be mounted on teak wood still age & loose accessories such as inter cell / stack connectors etc shall be supplied loose. (STATION BATTERY SYSTEM). As per dtails given in tender elsewhere.	4	Sets		
M.3	SG /TG & STATION C&I Parallel Redundant 24V DC supply and battery system consists of battery charger, distribution panel, battery 20 Nos, batte ry racks (to be assembled), supplied in 4 nos (or two nos suite of 2) panels, . App dimension 850x750x2100 for each section.	2	Set		
M.4	FOPH AREA Parallel Redundant 24V DC supply and battery system consists of battery charger, distribution panel, battery 20 Nos, battery racks (to be assembled), supplied in 4 nos (or two nos suite of 2) panels.	2	Set		
M.5	CW PH AREAParallel Redundant 24V DC supply and battery system consists of battery charger, distribution panel, battery 20 Nos, battery racks (to be assembled), supplied in 4 nos (or two nos suite of 2) panels.	2	Set		
N.	MISC. ITEMS :				
N.1	Junction Boxes (12WAY, 24WAY, 48WAY, 64WAY ETC.)	50	No.		
N.2	220 Volt DC Fuse Board of assorted size	4	No.		
N.3	24 Volt DC Fuse Board of assorted size	4	No.		
N.4	AC Fuse Distribution Boards of assorted size	20	No.		
N.5	ELECTRICAL LAB EQUIPMENT to be installed and electrical connection to be provided. Commsiioning assistance to be given, Details as described elsewhere in tender.	1	set		

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Schedule of Rates and Quantity (page 13 of 15)

Sl No	DESCRIPTION	QTY	UOM	UNIT RATE (Rs.)	TOTAL AMOUNT (Rs.)
N.6	Structural Steel fabrication & installation (MS angle, Channel, Plate etc)	50	MT		
P.	ONLY TESTING &ASSISTANCE FOR COMMISSIONING				
P.1	Hopper Heater, Support Insulator Heater, Shaft Insulator Heaters for ESP	2088	Nos.		
P.2	High Voltage Rectifier Transformers (70 KV peak, 1200 mA) including oil filtration.	72	Nos.		
P.3	Electrically (LT) Operated Valves, Dampers and Gates with Actuators, Limit Switches etc. (Regulating & ON/OFF Type).	650	Nos.		
P.4	Oil Centrifuge (includes erection o f only Control panel / board and loop cabling)	2	No		
P.5	Testing and Assistance for Commissioning of 6.6 KV and 2.4 KV HT motors including dryout	30	Nos		
Q.	LT POWER CABLES (Generally Unarmoured)				
Q.1	3½ X 185 sqmm Aluminium XLPE	1700	Mtrs		
Q.2	2 X 120sqmm Aluminium	35300	Mtrs		
Q.3	3 X 35 sqmm Aluminium	1700	Mtrs		
Q.4	3 X 10sqmm Aluminium	12000	Mtrs		

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TENDER SPECIFICATION NO. VHE/PW/PUR/BSJI-ELE/483 (PART-II: PRICE BID SPECIFICATION)
Schedule of Rates and Quantity (page 14 of 15)

SI No	DESCRIPTION	QTY	UOM	UNIT RATE (Rs.)	TOTAL AMOUNT (Rs.)
R.	LT CONTROL CABLES (Generally Unarmoured, screened or unscreened)				
R.1	1C/2C 1.5/2.5 sqmm Copper	2250	Mtrs		
R.2	3C/4C/5C 1.5/2.5 sqmm Copper	31050	Mtrs		
R.3	6C/7C 1.5/2.5 sqmm Copper	6100	Mtrs		
R.4	8C/9C/10C 1.5/2.5 sqmm Copper	6000	Mtrs		
S.	CABLE TRAY (LADDER TYPE)				
S.1	600 mm	900	Mtrs.		
S.2	450mm	2000	Mtrs.		
S.3	300 mm	1750	Mtrs.		
S.4	150 mm	4400	Mtrs.		
T.	EARTHING				
T.1	50 X 6 MM GI FLAT	3800	Mtrs.		

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TENDER SPECIFICATION NO. VHE/PW/PUR/BSJI-ELE/483 (PART-II: PRICE BID SPECIFICATION)
Schedule of Rates and Quantity (page 15 of 15)

SI No	DESCRIPTION	QTY	UOM	UNIT RATE (Rs.)	TOTAL AMOUNT (Rs.)
T.2	30 X 5 MM GI FLAT	2600	Mtrs.		
T.3	3.15 MM DIA GI WIRE	11600	Mtrs.		
T.4	EARTH TEST PITS	200	NOS		
T.5	TEST LINKS	10	NOS		
T.6	TEST ELECTRODES	300	NOS		
T.7	COLUMN EARTH CONNECTIONS	500	Nos.		
U.	CABLE TRAY (PERFORATED TYPE)				
U.1	50 MM / 150MM/ 300MM / 450 mm	100	Mtrs.		
TOTAL AMOUNT IN FIGURES:		Rs.			
TOTAL AMOUNT IN WORDS:					

Date :

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