

TENDER SPECIFICATION

NO: BHE/PW/PUR/RGIT-ELE/1164

FOR HANDLING AT SITE STORES/STORAGE YARD, TRANSPORTATION TO SITE OF WORK, COMPLETE ERECTION, CHECKING OF CALIBRATION, TESTING, COMMISSIONING AND HANDING OVER OF DAVR, ELECTROSTATIC PRECIPITATOR, SOOT BLOWER SYSTEM, VARIABLE FREQUENCY DRIVES FOR ID FANS, CABLING PACKAGE, AND ASSOCIATED EQUIPMENTS FOR ELECTRICAL PACKAGE FOR 4X600 MW JPL RAIGARH PROJECT Unit #1 and #4.

AT

Village: Tamnar, Tehsil: Gharghoda, Dist: Raigarh, State : Chhatisgarh

VOLUME -II – PRICE BID-1164



BHARAT HEAVY ELECTRICALS LIMITED

(A GOVERNMENT OF INDIA UNDERTAKING)

POWER SECTOR - WESTERN REGION

SHREEMOHINI COMPLEX

345, KINGSWAY - NAGPUR 440 001

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Village: Tamnar, Tehsil: Gharghoda, Dist: Raigarh, State : Chhatisgarh

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-Tech Bid**, **VOLUME- II-Price Bid** AND **VOLIME-IBCD Rev-01** ARE ISSUED TO:

M/s.

PLEASE NOTE:

THESE TENDER SPECS DOCUMENTS ARE NOT TRANSFERABLE.

For Bharat Heavy Electricals Limited

AGM (Purchase)

Place: Nagpur

Date:

Handling at Storage Yard/ Stores, Transportation to Site, Calibration, Erection, Testing, Commissioning, Final Painting and Handing over of Electrical Works of 4X600 MW JPL Power Project and their Auxiliaries etc. for Unit #1&#4.							
Sl.no	Discription of items	UOM	Quantity	Unit Rate in Fig (In Rs)	Unit Rate in words (In Rs)	Total amount (In Rs)	APPLICABLE for Terms of Payment
SECTION-E1A: CABLE TRAYS AND ACCESSORIES							I.1
E1A.1	Ladder type 600(W) x 120 (H) mm	Mtr	9250				
E1A.2	Ladder type 450(W) x 120 (H) mm	Mtr	6250				
E1A.3	Ladder type 300(W) x 120 (H) mm	Mtr	3500				
E1A.4	Ladder type 150(W) x 120 (H) mm	Mtr	14750				
E1A.5	Perforated tray 50(W)x120(H) mm	Mtr	1000				
SECTION-E1B: FLEXIBLE CABLE TRAY SUPPORT AND ACCESSORIES							I.1
E1B.1	Base plate for single support channel	No	250				
E1B.2	Single support channel	Mtrs.	1750				
E1B.3	Canti lever arm (C/A) – for 600 mm wide cable trays	No	750				
E1B.4	Canti lever arm (C/A) – for 450 mm wide cable trays	No	3500				
E1B.5	Canti lever arm (C/A) – for 300 mm wide cable trays	No	750				
E1B.6	Canti lever arm (C/A) – for 150 mm wide cable trays	No	500				
E1B.7	90 Degree Angle fitting	No	500				

Date
Place

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Sl.no	Discription of items	UOM	Quantity	Unit Rate in Fig (In Rs)	Unit Rate in words (In Rs)	Total amount (In Rs)	APPLICABLE for Terms of Payment
E1B.8	Clamp for single channel (CC1)	No	2500				
E1B.9	Beam clamp	No	250				
E1B.10	Tray clamp for ladder type cable tray	No	3500				
E1B.11	Flat plate straight fitting PF2	No	250				
E1B.12	Flat plate tee fitting PF1	No	250				
SECTION-E2A : LT POWER CABLES (Generally Unarmoured/Armoured)							I.2
E2A.1	3.5C X 120sqmm Aluminium	Mtrs.	11800				
E2A.2	3C X 50sqmm Aluminium	Mtrs.	6000				
E2A.3	3C X 50sqmm Copper	Mtrs.	800				
E2A.4	3C X 10 sqmm Aluminium	Mtrs.	3000				
E2A.5	3C X 6 sqmm Aluminium	Mtrs.	43000				
E2A.6	3C X 2.5sqmm Copper	Mtrs.	227800				

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Sl.no	Discription of items	UOM	Quantity	Unit Rate in Fig (In Rs)	Unit Rate in words (In Rs)	Total amount (In Rs)	APPLICABLE for Terms of Payment
E2A.7	2C X 120sqmm Aluminium	Mtrs.	100000				
E2A.8	2C X 2.5sqmm Copper	Mtrs.	39000				
E2A.9	2C X 6 sqmm Copper, 1.1kV Armoured	Mtrs.	40000				
E2A.10	3Cx25sqmm aluminium	Mtrs.	12000				
E2A.11	1C X 120 sqmm Aluminium, 1.1kV Armoured	Mtrs.	3000				
E2A.12	1C X 70 sqmm Copper multistranded	Mtrs.	200				
E2A.13	1C X 35 sqmm Aluminium, 1.1kV Armoured	Mtrs.	14000				
SECTION-E2B : HT POWER CABLES (Generally Unarmoured/Armoured)							I.2
E2B.1	1CX630 sqmm aluminium	Mtrs.	13500				
SECTION-E2C : LT CONTROL CABLES (Generally Unarmoured/Armoured, Screened/Unscreened)							I.2
E2C.1	19C ,1.5 sqmm Copper	Mtrs.	19800				
E2C.2	14C ,2.5 sqmm Copper	Mtrs.	16000				
E2C.3	12C ,2.5 sqmm Copper,	Mtrs.	74500				

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E2C.4	10C ,1.5 sqmm Copper	Mtrs.	45000				
E2C.5	7C, 1.5 sqmm Copper	Mtrs.	65000				
E2C.6	5C ,2.5 sqmm Copper, 1.1kV Armoured PVC insulated	Mtrs.	23500				
E2C.7	4C ,1.5 sqmm Copper(Screened)	Mtrs.	110000				
E2C.8	3C 2.5 sqmm Copper	Mtrs.	63000				
E2C.9	3C 1.5 sqmm Copper	Mtrs.	6800				
E2C.10	2C 2.5 sqmm Copper	Mtrs.	12800				
E2C.11	1C,95 Sqmm copper	Mtrs.	4000				
E2C.12	1C,16mm Aluminium	Mtrs.	4000				
SECTION-E3 : JUCTION BOXES AND PUSH BUTTON							I.3
E3.1	Junction Boxes 600x278x515mm approx.	Nos.	176				
E3.2	Junction Boxes 450x150x300mm approx.	Nos	32				
E3.3	Junction Boxes 250x150x400mm approx.	Nos	88				

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E3.4	Start Stop Push Button Station 180X100X250 mm approx.	Nos.	336				
SECTION-E4 : STRUCTURAL STEEL							I.4
E.4.1	Structural Steel fabrication & installation (MS angle, Channel, Plate etc)	MT	140				
SECTION-E5 A:SWITCHGEARS / MCC /PCC							I.5
E5A.1	Soot Blower Motor control Center, double front, Approx overall dimension 18000(L)x2400(H)x1000(W),approx WT 11.4 T approx., shall be supplied in eight to ten loose shipping sections	Nos	2				
E5A.2	LT main Switch Board, double front, Approx overall dimension 9400(W)x1700/1000(D)x2450(H),approx weight 9MT per panel, shall be supplied in eight to ten loose shipping sections	Nos	8				
E5A.3	Auxiliary Control Panel, Approx Overall Dimension 11800X1700X2450 mm approx, Weight of each panel 11.0 MTApprox. and supplied in loose shipping sections	Nos	8				
SECTION-E5 B : STARTER PANEL/BOXES/POWER DISTRIBUTION BOX/MARSHALLING BOXES							I.5
E5B.1	Electronic Control Panel, Overall dimensions approx.600X550X2000mm, approx.Weight of each panel 0.3MT. BAPCON CONTROLLER approx .dimension 280x210x210 mm, 400kg approx., rotary switches, etc along with cables and connectors, shall be supplied loose for mounting in the panel at site	Nos	160				
E5B.2	RAPPER CONTROL PANEL Overall dimension approx.1000X650X2000 mm, approx.Weight of each panel 0.30 MT. 2 Nos. RAPCON Electronic modules for each panel (along with cables connectors) size 280 x 210 x 210 mm shall be supplied loose for mounting in the panel at site	Nos	8				
E5B.3	IOS PANEL overall dimension approx.1000x500x2050 mm,approx. Weight of panel 0.2 MT along with loose accessories such as IOS PC, Computer Furniture, Data Logger PC, Printer -1 No. PC termination box, peripheral cables etc.	set	2				

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E5B.4	DC motor starter panels, etc (DC JOP, DC EOP, Seal oil panel,TDBFP), including resistance boxes. Approx weight 0.5 MT and approx. dimension 1000x800x2200 mm each.	Nos	12				
SECTION-E5C: PANELS							
E5C.1	Generator ,Generator Transformer ,UAT Transformer- Control ,protection & Metering panels .Approx dimension of each panel 1000x1000x2300(H),approx weight 600kg each panel	Nos.	8				
SECTION-E5D : DIGITAL AUTOMATIC VOLTAGE REGULATOR FOR BRUSHLESS EXCITAION SYSTEM							1.5
E.5D.1	Transportation from store / storage yard to erection site , Erection, Assembly, Testing & Commissioning of Digital Excitation Equipments / System , System consist of DAVR panels & accessories as per tender specification.	Set	2				
SECTION-E5E : VARIABLE FREQUENCY DRIVE SYSTEM FOR ID FANS							1.5
E5E.1	Transportation from stores / storage yards to erection site , erection , assembly , testing & commissioning of VARIABLE FREQUENCY DRIVE of ID FANS consist of Load Converter Inverter Panels,Adapter Panels,Control Panels. Reactors ,Transformers, Vacuum Breakers, flexible coupling and associated accessories, as per tender specification.	Set	4				
SECTION- E 5F: MISCELLANEOUS EQUIPMENTS							1.5
E5F.1	Ash Level Indicator comprising of level probe with extension lagging pipe, Electronic Unit, Interconnecting Cabling, Conduit, etc.	Set.	320				
E5F.2	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, interconnec-ted cables etc. for mounting on ESP outlet duct.	Set.	8				
SECTION-E 6 : EARTHING PROTECTION STRIPS							1.6
E6.1	65 x 12/10 mm GI earthing flat	Mtrs.	5000				
E6.2	25 x 6 mm GI earthing flat	Mtrs.	8000				
E6.3	50 x 6 mm GI earthing flat	Mtrs.	18500				
E6.4	30 X 5 mm GI earthing flat	Mtrs.	16200				

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E6.5	GI wire diameter 3.15 mm	Mtrs.	40400				
E6.6	GI earthing wire 8 SWG	Mtrs.	7000				
SECTION -E7 :HT BUS DUCTS							1.7
E7.1	Isolated Phase Bus Duct (22 KV) for interconnection of Generator, Generator Transformers, UAT 1 and UAT 2 along with all accessories & auxiliaries as described in the Tender Specification.	set	2				
SECTION- E8 :OIL FILLED TRANSFORMERS(GT,ST,UAT)							1.8
E8.1	1-phase 250 MVA, 420/ $\sqrt{3}$ /21 KV, ONAN/ONAF/OFAP Cooled Generator Transformer including all accessories, piping, cabling etc. as described in Tender Specification.	No	6				
E8.2	90/45-45 MVA, 400/11.5-11.5 kV, 3-phase Station Transformer (ST) , OLTC , ONAN/ONAF/OFAF including all accessories, piping, cabling etc as described in tender specification. Also including two nos Neutral Grounding Transformer (NGR) for each ST.	No	2				
E8.3	12.5/16 MVA, 3-phase 11/3.3 kV Unit Auxiliary Transformer (UAT) including all accessories, piping, cabling etc as described in tender specification. Also including one Neutral Grounding Transformer (NGR) for each UAT.	No	4				
E8.4	31.5 MVA, 3-phase 21/3.3 kV Unit Transformer (UT) including all accessories, piping, cabling etc as described in tender specification. Also including one Neutral Grounding Transformer (NGR) for each UAT.	No	2				
SECTION-E 9 : ONLY TESTING & COMMISSIONING							1.9
E9.1	Heating elements for Hopper Heater of ESP	No	3840				
E9.2	Heating elements for Support Insulator Heater, Shaft Insulator Heaters of ESP	No	800				
E9.3	High Voltage Rectifier Transformers (95 KV peak, 1000 mA) including oil filtration.	No	160				
E9.4	Testing & Commissioning of Collecting, Emitting, GD Screen Motor	No	336				
E9.5	Testing and commissioning of 6.6 & 11KV HT motors including dryout.	No	46				
E9.6	Testing and commissioning of 415 V LT motors including dry out.	No	150				

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E9.7	Generator system testing	Set	2				
E9.8	Testing and Commissioning of soot blower control panel, including mounting of mimic ,	No	2				
E9.9	Testing & Commissioning of Wall, Long Retractable, Air Heater Soot Blower	No	524				
E9.10	Furnace temp.probe including solonoide,thermo couple etc.	No	2				
E9.11	Thermostats including calibration.	No	200				
E9.12	Electrically (LT) Operated Valves, Dampers and Gates with Actuators, Limit Switches etc. (Regulating & ON/OFF Type).	No	1100				
SECTION-E 10 : Other Items							I.10
E10.1	HT termination	No	200				
TOTAL AMOUNT IN FIGURES: Rs.							
TOTAL AMOUNT IN WORDS: Rs.....							