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# TENDER SPECIFICATIONS

**TENDER NO. BHEL:NR(SCT): CHHABRA:CI:501**

**FOR**

**TENDER FOR THE WORK OF "ERECTION, TESTING, COMMISSIONING AND TRIAL OPERATION OF C&I EQUIPMENTS AT 2X250 MW CHHABRA TPP, RAJASTHAN**

**PART II – PRICE BID**



**Bharat Heavy Electricals Limited**  
(A Govt. Of India Undertaking)  
**Power Sector – Northern Region,**  
Plot No. 25 , Sector - 16A ,  
Distt. Gautam Budh Nagar, NOIDA – 201 301 (INDIA)



ISO 9001-2000, ISO  
14001 and OHSAS  
18001 certified  
company  
SubContract and  
Purchase Deptt.

**Bharat Heavy Electricals Limited**  
(A Govt. Of India Undertaking)  
**Power Sector – Northern Region,**  
Plot No. 25 , Sector - 16A ,  
Distt. Gautam Budh Nagar, NOIDA – 201 301(INDIA)  
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**IMPORTANT NOTE**

PURCHASER OF THIS TENDER DOCUMENT IS ADVISED TO CHECK AND ENSURE COMPLETION OF ALL PAGES OF TENDER DOCUMENT AND REPORT ANY DISCREPANCY TIMELY FOR CORRECTIVE ACTION, IF ANY, TO THE ISSUING AUTHORITY BEFORE THE BIDS ARE SUBMITTED. ORIGINAL COPY OF TENDER DOCUMENT COMPLETE IN ALL RESPECTS MUST BE SUBMITTED BACK AS PART OF THE BID WITHOUT WHICH THE SAME IS LIABLE TO BE REJECTED BY BHEL.

THIS TENDER SPECIFICATION ISSUED TO:

M/S-----  
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**Bharat Heavy Electricals Limited**  
(A Govt. Of India Undertaking)  
**Power Sector – Northern Region,**  
**Plot No. 25 , Sector - 16A ,**  
**Distt. Gautam Budh Nagar, NOIDA – 201 301(INDIA)**

**PROCEDURE FOR SUBMISSION OF SEALED TENDERS:**

The tenderers must submit their tenders as required in **two parts** in separate sealed covers **prominently superscribed as Part-I Technical bid and Part-II ,Price bid** also indicating on each of the cover tender specification no., date and time as mentioned in tender notice. **Price bids for Part-A and Part-B of Works must be in separate sealed covers indicating clearly the respective “Part of Work “ and tender specification no. etc. on their covers.**

**TECHNICAL BID (COVER-I)**

Except **Price bid Part-II**, complete set of tender document consisting of General conditions of Contract, “Technical specification & Special terms and condition” ( Part-I) issued by BHEL shall be enclosed in **Part I Technical Bid only**. All schedules, data sheets and details called for in the specification shall also be submitted along with technical bid. All details / Data / Schedules including offer letter duly signed and stamped are to be **submitted in duplicate**.

**PRICE BID (COVER-II)**

Tenderers may please note that price bid is **to be submitted only in original copy** of Tender i.e. Price bid (Part-II) issued by BHEL and no duplicate copy of same is required. **Price bids for Part-A and Part-B of Works must be in separate sealed covers indicating clearly the respective “PART OF Work” and tender specification no. etc. on their covers.** As such, if Tender quote for both Part-A as well as for Part- B , the Cover-II ( Price Bid Cover ) will contain two sealed covers of price bids indicating clearly the respective “ Part of Work “ and tender specification no. etc. on these covers.

These Two separate covers i.e. cover I & II shall together be enclosed in a **third envelope (Cover-III)** and this sealed cover shall be superscribed with tender specification No., due date, time and submitted to officer inviting tender as indicated in tender notice on or before due date as indicated.

**BOQ CUM RATE SCHEDULE FOR C+I WORKS AT 2 x 250 MW CHHABRA TPS****Tender No. BHEL:NR(SCT): CHHABRA:CI:501**

Sl. No	ITEM DESCRIPTION	UNIT	QTY	UNIT RATE ( IN Rs. )	TOTAL AMOUNT (In Rs)
<b><u>PANELS / CONSOLES / RACKS</u></b>					
1	CONTROL CABINETS FOR S.G. (750L X 2355H X 750W)	No.	50		
2	CONTROL CABINETS FOR T.G. (750L X 2355H X 750W)	No.	52		
3	CONTROL CABINETS FOR MMI (600L X 2100H X 600W)	No.	4		
4	SOOT BLOWER MCC (10800L X 2400H X 900W)	No.	2		
5	DC SCANNER FAN STARTER BOX (900L X 1120H X 375W)	No.	2		
6	EWLI ASSERTOR PANEL (INCLUDING MOUNTING OF LOOSE SUPPLIED ELECTRODES) ( 600X600X350MM )	No	4		
7	LOCAL PDB For MILL VMS CABINET (400L X 400H X 300W)	No	2		
8	VIBRATION MONITORS CABINET (400L X 400H X 300W)	No.	10		
9	TUBE MILL GREASING SYSTEM BOX (1400L X 1500H X 800W)	No.	6		
10	TUBE MILL DELTA P PANELPANEL (1600LX2000HX600W)	No	6		
11	MILL FIRE PROTECTION PANEL (755L X 1345H X 340W)	No.	6		
12	GRAVEMETRIC FEEDER PANEL. (1200L X 2315H X 600W)	No.	12		
13	DIGITAL AVR PANELS 3050L X 2300H X 750W)	No.	2		
14	SEAL OIL SYSTEM CONTROL PANELS 1000L X 2200H X 800W)	No.	2		
15	DC SEAL OIL PUMP SERIES RESISTANCE BOX - 900L X 500H X 480W)	No.	2		
16	GAS ANALYSER PANELS 1000L X 2200H X 800W)	No.	2		
17	DC EOP/JOP CONTROL PANELS 1000L X 2200H X 800W)	No.	4		
18	DC EOP / JOP SERIES RESISTANCE BOX - 1350L X 750H X 840W)	No.	4		
19	GENERATOR ANN / INST PANELS 1000L X 2200H X 800W)	No.	4		
20	Local starter box for Furnace temperature probe ( 600 W x 300 H x 300 D)	No.	2		
21	Open Type Instrument Rack	No.	48		
22	Closed Type Instrument Rack	No.	26		
23	Large Vedio Screen Unit	No.	4		
<b><u>Cable tray erection including supports fabrication / erection</u></b>					

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Sl. No	ITEM DESCRIPTION	UNIT	QTY	UNIT RATE ( IN Rs. )	TOTAL AMOUNT (In Rs)
24	Ladder / perforated cable trays 300 mm wide including 250 mm wide cable duct with cover	Mtr.	200		
25	Ladder / perforated cable trays 150 mm wide including 180 mm wide cable duct with cover	Mtr.	2545		
26	Ladder / perforated cable trays 100 mm wide	Mtr.	4850		
27	Ladder / perforated cable trays 50 mm wide including 60 mm wide cable duct with cover	Mtr.	240		
<b><u>Junction boxes / Indication boxes / Local control stations.</u></b>					
28	Junction boxes upto 12 ways / Local gun maintenace switch / local push buttons / shear pin failure indication box	No.	150		
29	Junction boxes upto 24 ways	No.	311		
30	Junction boxes 25 - 64 ways	No.	78		
31	Junction boxes with cold junction compensation ( SUV -13)	No.	29		
<b><u>Power / Control / Signal cables laying, dressing, clamping &amp; termination.</u></b>					
32	2 Core / 1 Pair Cable ( armoured / un-armoured) Core size upto 2.5 Sq. mm	Mtr	9600		
33	3 Core / 1 Triad Cable ( armoured / un-armoured) Core size upto 2.5 Sq. mm	Mtr	78900		
34	4 Core / 2 Pair Cable ( armoured / un-armoured) Core size upto 2.5 Sq. mm	Mtr	72600		
35	5 Core Cable ( armoured / un-armoured) Core size upto 2.5 Sq. mm	Mtr	7300		
36	7 / 8 Core / 4 Pair / 2 Triad Cable ( armoured / un-armoured) Core size upto 2.5 Sq. mm	Mtr	107350		
37	10 - 16 Core / 8 Pair Cable ( armoured / un-armoured) Core size upto 2.5 Sq. mm	Mtr	101000		
38	17 - 24 Core / 12 Pair Cable ( armoured / un-armoured) Core size upto 2.5 Sq. mm	Mtr	13200		
39	25 - 48 Core / 16-24 Pair Cable ( armoured / un-armoured) Core size upto 2.5 Sq. mm	Mtr	1200		
40	3C x 6-16 Sq.mm Cable ( armoured / un-armoured)	Mtr	2400		
41	Pre-fabricated cable ( upto 50 M length)	No.	50		
42	4P UTP E-CAT CABLE	Mtr	21500		
<b><u>Impulse pipe / tubing</u></b>					
43	6mm / 8 mm Copper Tube	Mtr	1750		
44	6mm SS Tube	Mtr	2000		

**BOQ CUM RATE SCHEDULE FOR C+I WORKS AT 2 x 250 MW CHHABRA TPS****Tender No. BHEL:NR(SCT): CHHABRA:CI:501**

Sl. No	ITEM DESCRIPTION	UNIT	QTY	UNIT RATE ( IN Rs. )	TOTAL AMOUNT (In Rs)
45	1/2 , 3/4 " CS impulse Pipe	Mtr	3100		
46	1/2 , 3/4 " AS impulse Pipe	Mtr	1660		
47	1/2 , 3/4 " SS impulse Pipe	Mtr	500		
48	GI Pilica conduit with fittings ( upto 1" size)	Mtr	50		
49	GI Pilica conduit with fittings ( above 1" size)	Mtr	50		
50	GI rigid conduit upto 1"	Mtr	50		
51	GI Pipe 15 NB	Mtr	1600		
<b>Local / Field mounted Instruments / Equipment</b>					
52	Flame Scanner head assembly, including cable upto local JB	No.	56		
53	Electromagnetic relief valve controller box	No.	4		
54	Hardwired Consoles with push buttons and indicating lamps for SG / EAST / GEN.systems	No	24		
55	UCB mounted instrument / indicator / recorder / control station	No.	100		
56	Temperature controller	No.	8		
57	Pneumatic indicating controller	No.	2		
58	Limit Switches	No.	11		
59	Heavy duty Limit Switches (for BTPS)	No.	12		
60	Air Filter Regulators	No.	100		
61	I / P Convertor	No.	133		
61	Flexible hose 1 / 4 " ( 2 meter long)	No.	112		
62	Flexible hose 1" ( 3 meter long)	No.	8		
63	Erection, commissioning of Pneumatic Power cylinders				
a	On/Off type with sol. & limit switches	No.	50		
b	Regulating type with positioner, PFT etc (Bore x Stroke - 6"x8"/ 8"x8" / 8"x6" )	No.	174		
c	Regulating type with positioner, PFT etc (Bore x Stroke - 12x6"/ 14"x16" )	No.	4		
64	Callibration / commissioning of Power cylinder (erected by other agency or equipment mounted)	No.	80		

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Sl. No	ITEM DESCRIPTION	UNIT	QTY	UNIT RATE ( IN Rs. )	TOTAL AMOUNT (In Rs)
65	Temp. elements ie.RTDs & Thermocouples (Simplex / Duplex / Triplex, with thermowell)	No.	435		
66	Metal Temperature Measuring Thermocouples (Simplex / Duplex)	No.	244		
67	Pressure / diff. Pressure / temperature/ level gauge	No.	780		
68	Pressure / diff. Pressure / temperature / level switch (level switch can be flange type or welded type / with or without electronic unit)	No.	442		
69	Pressure / diff. Pressure / level / position transmitter	No.	182		
70	<b>SENSORS / PICKUPS WITH CABLES</b>				
a	Relative / Absolute Vibration	No	220		
b	Relative Expansion	No	4		
c	Axial Shift	No	6		
d	Speed pick up	No	8		
71	Printers	No	14		
72	PC set with monitor / keyboard / power supply unit	No	26		
73	Computer /Printer Table+Chair	No	16		
74	Reverse rotation monitor including respective probes / interconnecting leads	No	6		
75	Callibration of SOV operated pneumatic trip Valves	No	332		
76	Callibration / commissioning of regulating Control Valves with positioners / LS / PFT	No	50		
77	Commissioning of motorised actuators	No	10		
78	Fabrication / Erection of structural steel	MT	10		

**TOTAL****NOTES**

1)	All dimensions are in mm unless otherwise specified.
2)	In case of omission in quoting any rate, the evaluation will be done considering the highest quoted rate obtained against that item but the work, if awarded, will be on the lowest quoted rate obtained against that item.
3)	In case of difference in rates between words and figures, the lesser of the two will be treated as valid rate.
4)	The bidders shall enter both 'Unit Rate' & 'Amount'. In case of any mismatch between 'Total Amount based on Unit Rate' & 'Total Amount as quoted', the higher of the two shall be considered for evaluation and the lower of the two shall be considered for award.

**BOQ CUM RATE SCHEDULE FOR C+I WORKS AT 2 x 250 MW CHHABRA TPS**

**Tender No. BHEL:NR(SCT): CHHABRA:CI:501**

<b>Sl. No</b>	<b>ITEM DESCRIPTION</b>	<b>UNIT</b>	<b>QTY</b>	<b>UNIT RATE ( IN Rs. )</b>	<b>TOTAL AMOUNT (In Rs)</b>
5)	Sub-total on each page shall be indicated and brought forward to next page and duly signed. The contractor shall ensure that grand total on this page is arithmetically checked and corrected and certified accordingly while signing below by the bidders. Despite this, if any calculation error is noticed in totalling after tender opening, the higher of the two ( i.e between total value worked out by BHEL and the total value indicated by bidder in their offer) shall be considered for evaluation and the lower of the two shall be considered for award.				
6)	Evaluation of the bids shall be done based on total price against this BOQ.				
7)	The quantities indicated against each item above are tentative and same are liable to vary depending upon the site requirement. The contractor has to erect / commission all items indicated by BHEL Engineer for achieving unit wise milestone.				