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# **T E N D E R   S P E C I F I C A T I O N S**

**TENDER NO. BHEL:NR(SCT): HARDUAGANJ:CNI:661**

**FOR**

**Tender for the work of “Erection, testing, commissioning, post commissioning, trial operations and handing over of all C&I Equipments at 2x250 MW Harduaganj Unit 8 & 9, UP”**

## **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.

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## **TENDER NO. BHEL:NR(SCT): HARDUAGANJ:CNI:661**

### **IMPORTANT NOTE**

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THIS TENDER SPECIFICATION ISSUED TO:

M/S-----

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**BOQ CUM RATE SCHEDULE FOR C+I AT 2 x 250 MW HARDUAGANJ TPS UNITS 8+9**

Sl. No	ITEM DESCRIPTION	UNIT	QTY	Rate (Rs.)	Total (Rs.)
<b>PANELS / CONSOLES / RACKS</b>					
1	CONTROL CABINETS FOR S.G. (750L X 2355H X 750W)	No.	42		
2	CONTROL CABINETS FOR T.G. (750L X 2355H X 750W)	No.	50		
3	CONTROL CABINETS FOR MMI (750L X 2355H X 750W)	No.	4		-
4	CONTROL CABINETS FOR STN C+I (750L X 2355H X 750W)	No.	149		
5	HMI CONTROL DESK FOR STN C+I (952L X825H X 1200D)	No.	14		
6	SOOT BLOWER MCC (9000L X2525H X 1000W)	No.	2		
7	DC SCANNER FAN STARTER BOX (900L X 1120H X 375W)	No	2		-
8	EWLI ASSERTOR PANEL (INCLUDING MOUNTING OF LOOSE SUPPLIED ELECTRODES , REMOTE & LOCAL DISPLAY UNITS) ( 600X600X350MM )	No	4		-
9	VIBRATION MONITORS CABINET (400L X 300H X 300W)	No.	6		-
10	GRAVEMETRIC FEEDER PANEL. (1200L X 2315H X 600W)	No.	12		
11	GRAVEMETRIC FEEDER INTEGRAL CABINET (800L X 300H X 600W)	No.	12		-
12	DIGITAL AVR PANELS 3050L X 2300H X 750W)	No.	2		-
13	SEAL OIL STARTER PANELS 1000L X 2200H X 800W)	No.	2		-
14	DC SEAL OIL PUMP SERIES RESISTANCE BOX - 600L X 500H X 600W)	No.	2		-
15	GAS ANALYSER PANELS 1000L X 2200H X 800W)	No.	2		-
16	DC EOP/JOP CONTROL PANELS 1000L X 2200H X 800W)	No.	4		-
17	DC EOP / JOP SERIES RESISTANCE BOX - 1300L X 750H X 950W)	No.	4		-
18	GENERATOR ANN / INST PANELS 1000L X 2200H X 800W)	No.	4		-
19	Local starter box for Furnace temperature probe ( 600 W x 300 H x 300 D)	No.	4		-
20	Open Type Instrument Rack ( LIR )	No.	91		
21	Closed Type Instrument Rack ( LIE )	No.	80		
22	150 kVA UPS (6800 L X 2300 H X 1000 W)	No.	2		
23	UPS ACDB - 1 (1700 L X 2110 H X 900 W)	No.	2		-

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Sl. No	ITEM DESCRIPTION	UNIT	QTY	Rate Rs.)	Total (Rs.)
24	UPS ACDB - 2 (1700 L X 2110 H X 900 W)	No.	2		-
25	695 AH Ni- Cd BATTERY BANK (appx 291 NOS PER BANK ) (3 X 5900 L X 1000 H X 1000 W)	No.	4		
26	MASTER CLOCK PANEL (900 L X 2415 H X 600 W)	No.	1		-
27	HMS PANEL (1200 L X 2415 H X 800 W)	No.	2		-
28	VMS PANEL (800 L X 2400 H X 800 W)	No.	5		-
29	SWAS WET PANEL (4500 L X 2300 H X 1000 W)	No.	2		
30	SWAS DRY PANEL (4000 L X 2300 H X 800 W)	No.	2		
31	SWAS CHILLER PANEL (3100 L X 2000 H X 1800 W)	No.	2		
32	UCP PANEL (3275 L X 2400 H X 10000 W)	No.	2		-
33	ECP PANEL (2700 L X 2400 H X 1000 W)	No.	2		-
34	Large Vedio Screen Unit	No.	6		
<b><u>Cable tray erection including supports fabrication / erection</u></b>					
35	Ladder / perforated cable trays 300 mm wide including 250 mm wide cable duct with cover	Mtr.	200		-
36	Ladder / perforated cable trays 150 mm wide including 180 mm wide cable duct with cover	Mtr.	2225		
37	Ladder / perforated cable trays 100 mm wide	Mtr.	3720		
38	Ladder / perforated cable trays 50 mm wide including 60 mm wide cable duct with cover	Mtr.	950		-
<b><u>Junction boxes / Indication boxes / Local control stations.</u></b>					
39	Junction boxes upto 12 ways / Local gun maintenace switch / local push buttons / shear pin failure indication box	No.	160		-
40	Junction boxes upto 24 ways	No.	206		
41	Junction boxes 25 - 128 ways	No.	126		
42	Junction boxes with cold junction compensation ( SUV -13)	No.	52		-
<b><u>Power / Control / Signal cables laying, dressing, clamping &amp; termination.</u></b>					
43	2 Core / 1 Pair Cable ( armoured / un-armoured) Core size upto 2.5 Sq. mm	Mtr	2000		-

**BOQ CUM RATE SCHEDULE FOR C+I AT 2 x 250 MW HARDUAGANJ TPS UNITS 8+9**

Sl. No	ITEM DESCRIPTION	UNIT	QTY	Rate (Rs.)	Total (Rs.)
44	3 Core / 1 Triad Cable ( armoured / un-armoured) Core size upto 2.5 Sq. mm	Mtr	1000		
45	4 Core / 2 Pair Cable ( armoured / un-armoured) Core size upto 2.5 Sq. mm	Mtr	95000		
46	5 Core Cable ( armoured / un-armoured) Core size upto 2.5 Sq. mm	Mtr	2000		-
47	7 / 8 Core / 4 Pair / 2 Triad Cable ( armoured / un-armoured) Core size upto 2.5 Sq. mm	Mtr	94900		
48	10 - 16 Core / 8 Pair Cable ( armoured / un-armoured) Core size upto 2.5 Sq. mm	Mtr	83600		
49	17 - 24 Core / 12 Pair Cable ( armoured / un-armoured) Core size upto 2.5 Sq. mm	Mtr	18200		
50	25 - 48 Core / 16-24 Pair Cable ( armoured / un-armoured) Core size upto 2.5 Sq. mm	Mtr	1200		-
51	3C x 6-16 Sq.mm Cable ( armoured / un-armoured)	Mtr	1000		
52	Pre-fabricated cable ( upto 50 M length)	No.	50		-
53	Fibre Optic Cable	Mtr	2000		
54	4P UTP E-CAT CABLE	Mtr	14440		
<b><u>Impulse pipe / tubing</u></b>					
55	6mm / 8 mm Copper Tube	Mtr	2750		
56	6mm SS Tube	Mtr	3000		
57	1/2 , 3/4 " CS impulse Pipe	Mtr	15100		
58	1/2 , 3/4 " AS impulse Pipe	Mtr	5660		
59	1/2 , 3/4 " SS impulse Pipe	Mtr	500		
60	GI Pilica conduit with fittings ( upto 1" size)	Mtr	50		-
61	GI Pilica conduit with fittings ( above 1" size)	Mtr	50		-
62	GI rigid conduit upto 1"	Mtr	1050		
63	GI Pipe 15 NB	Mtr	1600		
<b><u>Local / Field mounted Instruments / Equipment</u></b>					
64	Flame Scanner head assembly, including cable upto local JB	No.	40		-
65	Electromagnetic relief valve controller box and Control Station and Remote Indicaror (400L X 350 X 270W)	No.	8		-

**BOQ CUM RATE SCHEDULE FOR C+I AT 2 x 250 MW HARDUAGANJ TPS UNITS 8+9**

Sl. No	ITEM DESCRIPTION	UNIT	QTY	Rate (Rs.)	Total (Rs.)
66	Hardwired Consoles with push buttons and indicating lamps for SG / EAST / GEN.systems ( 200 X 200 )	No	20		-
67	UCB mounted instrument / indicator / recorder / control station	No.	43		-
68	Temperature controller	No.	8		-
69	Pneumatic indicating controller	No.	10		-
70	Limit Switches	No.	128		-
71	Heavy duty Limit Switches (for BTPS)	No.	12		-
72	Air Filter Regulators	No.	113		-
73	I / P Convertor	No.	128		-
73	Flexible hose 1 / 4 " ( 2 meter long)	No.	112		-
74	Flexible hose 1" ( 3 meter long)	No.	8		-
75	Erection, commissioning of Pneumatic Power cylinders				
a	On/Off type with sol. & limit switches	No.	86		
b	Regulating type with positioner, PFT etc (Bore x Stroke - 6"x8"/ 8"x8" / 8"x6" )	No.	144		
c	Regulating type with positioner, PFT etc (Bore x Stroke - 12x6"/ 14"x16" )	No.	8		
76	Callibration / commissioning of Power cylinder (erected by other agency or equipment mounted)	No.	86		
77	Temp. elements ie.RTDs & Thermocouples (Simplex / Duplex / Triplex, with thermowell)	No.	1040		
78	Metal Temperature Measuring Thermocouples (Simplex / Duplex)	No.	240		
79	Pressure / diff. Pressure / temperature/ level gauge	No.	747		
80	Pressure / diff. Pressure / temperature / level switch (level switch can be flange type or welded type / with or without electronic unit)	No.	522		
81	Pressure / diff. Pressure / level / position transmitter	No.	1342		
82	SWAS Analysers	No.	54		-

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Sl. No	ITEM DESCRIPTION	UNIT	QTY	Rate (Rs.)	Total (Rs.)
83	SOX / NOX Analysers	No.	4		-
84	OPACITY MONITOR	No.	2		-
85	OXYGEN Analysers	No.	4		-
86	Bunker Level Measurement	set	12		-
87	SENSORS / PICKUPS WITH CABLES				
a	Relative / Absolute Vibration	No	288		
b	Relative Expansion	No	2		-
c	Axial Shift	No	6		-
d	Speed pick up	No	12		
88	Printers	No	26		
89	PC set with monitor / keyboard / power supply unit	No	50		
90	Computer /Printer Table+Chair	No	16		-
91	Reverse rotation monitor including respective probes / interconnecting leads	No	6		-
92	Callibration of SOV operated pneumatic trip Valves	No	242		
93	Callibration / commissioning of regulating Control Valves with positioners / LS / PFT	No	50		
94	Commissioning of motorised actuators	No	86		
95	Fabrication / Erection of structural steel	MT	10		

**TOTAL**

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**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.
- 5) Evaluation of the bids shall be done based on total price against this BOQ.
- 6) 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.