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# TENDER SPECIFICATIONS

TENDER NO. BHEL/NR/SCT/FARAKKA/CNI/679

FOR

ERECTION, TESTING, COMMISSIONING AND TRIAL OPERATION OF C&I EQUIPMENTS OF 1X500 MW UNIT-6 OF NTPC FSTPP . FARAKKA , WEST BENGAL”

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 ,  
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**IMPORTANT NOTE**

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THIS TENDER SPECIFICATION ISSUED TO:

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**BOQ CUM RATE SCHEDULE FOR C AND I WORKS AT 1 x 500 MW FARAKKA UNIT NO.-6****TENDER NO. BHEL/NR/SCT/FARAKKA/CNI/679**

Sl. No	ITEM DESCRIPTION	UNIT	QTY	UNIT RATE ( IN Rs. )	TOTAL AMOUNT (Rs IN FIGURES AND WORDS)
<b>PANELS / CONSOLES / RACKS</b>					
1	CONTROL CABINETS FOR S.G. (750L X 2355H X 750W)	No.	53		
2	CONTROL CABINETS FOR T.G. (750L X 2355H X 750W)	No.	41		
3	CONTROL CABINETS FOR MMI (750L X 2355H X 750W)	No.	4		
4	24V/800 A DC BATTERY CHARGER CUM DCDB - SG ( 3100 X 850 X 2100 MM )	No.	2		
5	24V BATTERY BOX- SG ( 700 X 375 X 1250 MM )	No.	4		
6	24 V NI CD BATTERY - SG (515 AH , 20 CELLS ) ( 2000 X 600 X 1500 MM )	No.	4		
7	24V/800 A DC BATTERY CHARGER CUM DCDB - TG ( 3100 X 850 X 2100 MM )	No.	2		
8	24V BATTERY BOX- TG ( 700 X 375 X 1250 MM )	No.	4		
9	24 V NI CD BATTERY - TG (640 AH , 20 CELLS ) ( 2000 X 600 X 1550 MM )	No.	4		
10	24V DC BATTERY CHARGER +DCDB - FOPH (2400 X 850 X 2100 MM )	No.	1		
11	24 V BATTERY - FOPH (50AH , 20 CELLS ) ( 770 X 525 X 600 MM )	No.	2		
12	24V BATTERY BOX- FOPH ( 425 X200 X 500 MM )	No.	2		
13	SOOT BLOWER MCC (15200 L X2250 H X1000 W )	No.	1		
14	DC SCANNER FAN STARTER BOX (900L X 1120H X 375W)	No.	1		
15	EWLI ASSERTOR PANEL (INCLUDING MOUNTING OF LOOSE SUPPLIED ELECTRODES , REMOTE & LOCAL DISPLAY UNITS) ( 600X600X350MM ) , ( 99X234X78.6 MM )	No.	4		
16	GRAVEMETRIC FEEDER PANEL. ( 1400 L X2365 H X610 W)	No.	9		
17	GRAVEMETRIC FEEDER INTEGRAL CABINET (1000 L X 600 H X210 W )	No.	9		
18	Local starter box for Furnace temperature probe ( 650 LX1000 H X300 W )	No.	2		
19	FURNACE FLAME VIEWING SYSTEM PANEL ( 700 L X2100 H X700 W )	No.	1		
20	FURNACE FLAME VIEWING SYSTEM -LOCAL PANEL ( ) ( 1220 L X1470 H X610 W )	No.	4		

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Sl. No	ITEM DESCRIPTION	UNIT	QTY	UNIT RATE ( IN Rs. )	TOTAL AMOUNT (Rs IN FIGURES AND WORDS)
21	STEAM LEAK DETECTION SYSTEM PANEL ( 800 L X2315 H X800 W)	No.	2		
22	ACOUSTIC PYROMETER REMOTE CABINET ( 1400 L X2365 H X800 W )	No.	1		
23	DIGITAL AVR PANELS ( 3050L X 2300H X 750W)	No.	1		
24	VFD - Air Core DC Reactor, (2350X 2250 X 1975 MM)	No.	4		
25	VFD -Vacuum Circuit Breaker Panel with adaptor, (1640 L X 2355 H X 2300 W MM)	No.	4		
26	VFD -Load Cummutated Inverter (LCI) Channel ( 3700 X 1450 X 2400 mm)	No.	4		
27	VFD -Adapter Panel ( 600 X 1450 X 2400 mm)	No.	4		
28	VFD - Control Panel ( 800 X 1450 X 2400 mm)	No.	2		
29	VFD - Operator & Monitoring Station For ID Fan A&B ( 600 X 600 X 1050 mm)	No.	1		
30	VFD - Cable Length Compensation (CLC) Panel ( 1000 X 1000 X 1450 mm)	No.	4		
31	VFD Transformers 3250 KVA, 11KV / 2.3KV,ONAN, Dyn1 (3700mm X 3000mm X 2725mm), Approx.9000kg	No.	2		
32	VFD Transformers 3250 KVA, 11KV / 2.3KV,ONAN, Dd0 (3750mm X 3000mm X 2775mm), Approx.10000kg	No.	2		
33	SEAL OIL STARTER PANELS ( 1000L X 2200H X 800W)	No.	1		
34	DC SEAL OIL PUMP SERIES RESISTANCE BOX - 600L X 500H X 600W)	No.	1		
35	GAS ANALYSER PANELS ( 1000L X 2200H X 800W)	No.	2		
36	DC EOP/JOP CONTROL PANELS ( 1000L X 2200H X 800W)	No.	2		
37	DC EOP / JOP SERIES RESISTANCE BOX - 1300L X 750H X 950W)	No.	2		
38	GENERATOR ANN / INST PANELS ( 1000L X 2200H X 800W)	No.	1		
39	GENERATOR END WINDING VIB PANELS ( 1000L X 2200H X 800W)	No.	1		
40	LOCAL INSTRUMENT ENCLOSURE ( LIE )	No.	46		

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Sl. No	ITEM DESCRIPTION	UNIT	QTY	UNIT RATE ( IN Rs. )	TOTAL AMOUNT (Rs IN FIGURES AND WORDS)
41	LOCAL INSTRUMENT RACK ( LIR )	No.	29		
<b><u>Cable tray erection including supports fabrication / erection</u></b>					
42	Ladder / perforated cable trays 300 mm wide including 250 mm wide cable duct with cover	Mtr.	100		
43	Ladder / perforated cable trays 150 mm wide including 180 mm wide cable duct with cover	Mtr.	5125		
44	Ladder / perforated cable trays 100 mm wide	Mtr.	5750		
45	Ladder / perforated cable trays 50 mm wide including 60 mm wide cable duct with cover	Mtr.	2300		
<b><u>Junction boxes / Indication boxes / Local control stations.</u></b>					
46	Junction boxes upto 12 ways / Local gun maintenance switch / local push buttons / shear pin failure indication box	No.	60		
47	Junction boxes upto 24 ways	No.	206		
48	Junction boxes 25 - 64 ways	No.	151		
49	Junction boxes with cold junction compensation ( SUV -13)	No.	30		
<b><u>Power / Control / Signal cables laying, dressing, clamping &amp; termination.</u></b>					
50	2 Core / 1 Pair Cable ( armoured / un-armoured) Core size upto 2.5 Sq. mm	Mtr	9700		
51	3 Core / 1 Triad Cable ( armoured / un-armoured) Core size upto 2.5 Sq. mm	Mtr	76800		
52	4 Core / 2 Pair Cable ( armoured / un-armoured) Core size upto 2.5 Sq. mm	Mtr	151050		
53	5 Core Cable ( armoured / un-armoured) Core size upto 2.5 Sq. mm	Mtr	23350		
54	7 / 8 Core / 4 Pair / 2 Triad Cable ( armoured / un-armoured) Core size upto 2.5 Sq. mm	Mtr	194550		
55	10 - 16 Core / 8 Pair Cable / 4 Triad ( armoured / un-armoured) Core size upto 2.5 Sq. mm	Mtr	108050		
56	17 - 24 Core / 12 Pair Cable ( armoured / un-armoured) Core size upto 2.5 Sq. mm	Mtr	21000		

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Sl. No	ITEM DESCRIPTION	UNIT	QTY	UNIT RATE ( IN Rs. )	TOTAL AMOUNT (Rs IN FIGURES AND WORDS)
57	25 - 48 Core / 16-24 Pair Cable ( armoured / un-armoured) Core size upto 2.5 Sq. mm	Mtr	600		
58	Pre-fabricated cable ( upto 50 M length)	No.	50		
59	4P UTP E-CAT CABLE	Mtr	6000		
60	FIBRE OPTIC CABLE	Mtr	2000		
61	1C x 630 Sq.mm LT Cable ( armoured / un-armoured)	Mtr	600		
62	1C x 120 Sq.mm LT Cable ( armoured / un-armoured)	Mtr	14000		
63	1C x 35 Sq.mm LT Cable ( armoured / un-armoured)	Mtr	26000		
64	2C x 6-16 Sq.mm Cable ( armoured / un-armoured)	Mtr	7800		
<b><u>Impulse pipe / tubing</u></b>					
65	6mm / 8 mm Copper Tube	Mtr	3200		
66	6mm SS Tube	Mtr	75		
67	1/2 , 3/4 " CS impulse Pipe	Mtr	3450		
68	1/2 , 3/4 " AS impulse Pipe	Mtr	1150		
69	1/2 , 3/4 " SS impulse Pipe	Mtr	650		
70	GI Pilica conduit with fittings ( upto 1" size)	Mtr	300		
71	GI Pilica conduit with fittings ( above 1" size)	Mtr	300		
72	GI rigid conduit upto 1"	Mtr	300		
73	GI Pipe 15 NB	Mtr	300		
<b><u>Local / Field mounted Instruments / Equipment</u></b>					
74	Flame Scanner head assembly, including cable upto local JB	No.	40		
75	Electromagnetic relief valve controller box and Control Station and Remote Indicaror (350 L X290 H)	No.	9		

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Sl. No	ITEM DESCRIPTION	UNIT	QTY	UNIT RATE ( IN Rs. )	TOTAL AMOUNT (Rs IN FIGURES AND WORDS)
76	Hardwired Consoles with push buttons and indicating lamps for SG / EAST / GEN.systems	No	25		
77	UCB mounted instrument / indicator / recorder / control station	No.	25		
78	Temperature controller	No.	25		
79	Pneumatic indicating controller	No.	25		
80	Limit Switches	No.	25		
81	Heavy duty Limit Switches (for BTPS)	No.	25		
82	Air Filter Regulators	No.	25		
83	I / P Convertor	No.	25		
83	Flexible hose 1 / 4 " ( 2 meter long)	No.	25		
84	Flexible hose 1" ( 3 meter long)	No.	25		
85	Erection, commissioning of Pneumatic Power cylinders				
a	On/Off type with sol. & limit switches	No.	150		
b	Regulating type with positioner, PFT etc (Bore x Stroke - 6"x8" / 8"x8" / 8"x6" )	No.	106		
c	Regulating type with positioner, PFT etc (Bore x Stroke - 12x6"/ 14"x16" )	No.	4		
86	Callibration / commissioning of Power cylinder (erected by other agency or equipment mounted)	No.	100		
87	Temp. elements ie.RTDs & Thermocouples (Simplex / Duplex / Triplex, with thermowell)	No.	493		
88	Metal Temperature Measuring Thermocouples (Simplex / Duplex)	No.	491		
89	Pressure / diff. Pressure / temperature/ level gauge	No.	677		

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Sl. No	ITEM DESCRIPTION	UNIT	QTY	UNIT RATE ( IN Rs. )	TOTAL AMOUNT (Rs IN FIGURES AND WORDS)
90	Pressure / diff. Pressure / temperature / level switch (level switch can be flange type or welded type / with or without electronic unit)	No.	147		
91	Pressure / diff. Pressure / level / position transmitter	No.	357		
92	OPACITY MONITOR	No	4		
92	Analysers	No.	5		
93	TEMP TRANSMITTER MODULES	No.	285		
94	SENSORS / PICKUPS WITH CABLES				
a	Relative / Absolute Vibration	No	50		
b	Relative / Absolute Expansion	No	10		
c	Axial Shift	No	90		
d	Speed pick up	No	10		
95	Printers	No	5		
96	PC set with monitor / keyboard / power supply unit	No	13		
97	Computer /Printer Table+Chair	No	8		
98	Reverse rotation monitor including respective probes / interconnecting leads	No	1		
99	Callibration of SOV operated pneumatic trip Valves	No	200		
100	Callibration / commissioning of regulating Control Valves with positioners / LS / PFT	No	25		
101	Commissioning of motorised actuators	No	100		
102	Fabrication / Erection of structural steel	MT	17		

**TOTAL**

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**NOTES**

1) All dimensions are in mm unless otherwise specified.

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Sl. No	ITEM DESCRIPTION	UNIT	QTY	UNIT RATE ( IN Rs. )	TOTAL AMOUNT (Rs IN FIGURES AND WORDS)
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- 2) The contractor is required to quote unit-rate as well as total price against each item in the above schedule. 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 arithmatically checked and corrected and certified accordingly while signing below. Despite this if any calculation error is noticed after tender opening. BHEL reserves the right to deal with it as deemed fit at their end.
- 3) 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
- 4) The Rate shall be entered in figures as well as in words. In case of difference in rates between words and figures THE LESSER OF THE TWO will be treated as valid rate.
- 5) 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 as quoted by other bidders against this tender.
- 6) 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 two shall be considered for award.
- 7) Evaluation of bids and work shall be awarded based on total price obtained against above BOQ.

**(Signature, date & seal of authorized representative)**