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TENDER NO. BHEL/ NR/SCT/BARA/C&I/PACKAGE-B/921

FOR

**“ERECTION, TESTING, COMMISSIONING & HANDING
OVER OF ALL C&I EQUIPMENTS OF UNIT NO. 2 & 3
(PACKAGE-B) OF 660 MW BARA STPP, DISTT:
ALLAHABAD (U.P.)”**

PART- II – PRICE BID



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



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

Bharat Heavy Electricals Limited
(A Govt. Of India Undertaking)
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THIS TENDER SPECIFICATION ISSUED TO:

M/S-----



RATE SCHEDULE

JOB: "ERECTION, TESTING, COMMISSIONING & HANDING OVER OF ALL C&I EQUIPMENTS OF UNIT NO. 2&3 (PACKAGE-B) OF 660 MW BARA STPP, DISTT: ALLAHABAD (U.P.)"

SR. NO.	ITEM DESCRIPTION	UNIT	Qty.	UNIT RATE	TOTAL AMOUNT (in Rs.)
	PANELS/RACKS/CONSOLES				
1	Control Panel (approx. weight 400kg, 900(L) X 900(B) X 2500(H) mm suit of one panel	No.	10		
2	Control Panel (approx. weight 800kg, 1800(L) X 1000(B) X 2500(H) mm suit of two panels	No.	20		
3	Control Panel (approx. weight 1200kg, 2700(L) X 1000(B) X 2500(H) mm suit of three panels	No.	14		
4	Control Panel (approx. weight 2000kg, 4500(L) X 1000(B) X 2500(H) mm suit of five panels	No.	2		
5	DAVR panel	SET	2		
6	Grounding Brush Monitor	No.	2		
7	Electrical Control Panel 750x800x2415 mm	No.	2		
8	Electrical Interface System Panel(CAR-11) 750x800x2415 mm	No.	2		
9	Gas Analyser cabinet 1200x800x2110 mm	No.	4		
10	Acoustic Steam leak detection system panel(ASLD) 800x800x2415 Mm	No.	2		
11	Vibration Monitoring System 800X800X2415 mm	Set	4		

SR. NO.	ITEM DESCRIPTION	UNIT	Qty.	UNIT RATE	TOTAL AMOUNT (in Rs.)
12	Acoustic pyrometer remote cabinet including PC station (approx. 1400 x 2365 x800 mm)	Set	2		
13	FTP LOCAL STARTER Box 650x1000x300 mm	No.	4		
14	Elevator control Panel	No.	2		
15	SCANNER AIR FAN STARTER 900x1120x375 mm	No.	2		
16	HART Management System for SMART Transmitter Panel dimension 1200X800X2415 mm	Set	2		
17	AH Main Control Panel 1830x2186x611 mm	No.	2		
18	AH LCS Sector Plate 1&2 Drive Panel 645x673x203 mm	No.	12		
19	HWL-1&2 and MEF Control valve Panel 600x600x210 mm	No.	2		
20	SOOT BLOWER MCC (23250 L X2250 H X1000 W)	No.	2		
21	Furnace Flame Viewing System – Remote Panel 700x700x2100 mm	No	2		
22	Furnace Flame Viewing System – Local Panel 1220x1470x610 mm	No	4		
23	GRAVIMETRIC FEEDER REMOTE PANEL 1200 x 2315X600 mm	No.	14		
24	Gravimetric Feeder Integral Panel 600x750x350 mm	No.	14		

SR. NO.	ITEM DESCRIPTION	UNIT	Qty.	UNIT RATE	TOTAL AMOUNT (in Rs.)
25	NETWORK PANEL 800x800x2415 mm	No.	6		
26	Power Distribution Panel 2800x800x2415 mm	No.	2		
27	Starter cabinet for Emergency Lube Oil Motor, DC seal oil Motor 1000X800X2200 mm	No.	4		
28	Max engineer/max storian/max operator/max link stations/station supervisor/shift in charge terminal/MIS PC/PCAL PC/LVS PC/24" TFT monitor	Nos.	68		
29	PRINTERS(A4 & A3 COLOUR LASER JET, INKJET, DOT MATRIX) WITH PRINTER TABLE and accessories	No.	12		
30	LARGE VIDEO SCREEN(80") ,resolution 1400x1050 pixels	No.	12		
31	Ethernet switches-16 ports	Set	2		
32	Control Desk	Set	2		
33	Computer Furniture(for all servers ,pc, printer)	Set	2		
	LIE/LIR/LGB				
34	Local Instrument racks (LIR) Type A 1650x2150x800	No.	76		
35	Local Instrument racks (LIR) Type B 1300x800x2150 mm	No.	58		
36	Local Instrument racks (LIR) Type C 800x850x1650 mm	No.	22		
37	Local Instrument enclosures (LIE) 1450x2200x950	No.	18		
38	Local Instrument enclosures Type B	No.	24		

SR. NO.	ITEM DESCRIPTION	UNIT	Qty.	UNIT RATE	TOTAL AMOUNT (in Rs.)
	1100x800x2300 mm				
39	Local Instrument enclosures Type C 700x600x2100 mm	No.	4		
40	Local Gauge Boards(LGB) Approx. Size 1400x550x1900 mm	No.	20		
	PRESSURE INSTRUMENTS RACKS (IR1 to IR7) Assembly/welding and installation of Instrument Racks with loose supplied prefabricated materials of suitable size, like equal/unequal angles, canopy mounting plates, LHS/RHS stands etc., necessary welding, fixing with fasteners and grouting				
41	Rack of size 2150x700x2150 mm	No.	18		
42	Rack of size 1250x700x2150 mm	No.	18		
	24 V DC BATTERY & CHARGER SYSTEM				
43	24 V DC Battery for SG and TG	Set	2		
44	24 V DC Battery Charger for SG ,TG along with DCDB	Set	2		
45	UPS system comprising of the following: UPS Panel, ACDB, UPS batteries	Set	2		
	INSTALLATION, CALIBRATION & COMMISSIONING OF LOCAL/ FIELD INSTRUMENTATION / EQUIPMENT				
46	Flow meters/Flow transmitters	No.	372		
47	Temperature gauges/Pressure gauges/ Diff. Pressure gauge	No.	870		
48	Temp. Transmitter /Pressure Transmitters / Differential pressure/	No.	470		

SR. NO.	ITEM DESCRIPTION	UNIT	Qty.	UNIT RATE	TOTAL AMOUNT (in Rs.)
	Position transmitters				
49	Level Transmitter/Level gauge	No.	74		
50	Temp. switches/Pressure switches /DP switches	No.	494		
51	Level switch/ Level switch (Conductivity type) / Level switch(Float type) / Level Instruments	No.	82		
52	Pneumatic Pressure controller with accessories	Set	4		
53	Electronic/Guided Wave Radar /Ultrasonic type level Transmitters	No.	766		
54	Limit switches	No.	112		
55	Conductivity cell	No.	12		
56	ERV Controller	No.	8		
57	ASLD sensor assy	No.	48		
58	Sonic tube & sensor assy	No.	48		
59	Field amplifier Box	Set	48		
60	Rotor Stoppage Alarm Box-including sensors for Air pre heaters	No.	4		
61	Reverse Rotation Monitoring system	No.	6		
62	Flame scanner head assy. Along with fibre optic cable length 130 “,lens barrel assembly	No.	64		
63	Microprocessor based Flame scanner amplifier	No.	16		
64	Hand Held HART communicator	Set	2		
65	Gas Analyser	No.	04		
66	Moisture sensor	No.	02		

SR. NO.	ITEM DESCRIPTION	UNIT	Qty.	UNIT RATE	TOTAL AMOUNT (in Rs.)
67	Flue gas analysers comprising of SOX/NOX/CO/Co2 analyzer.	Set	02		
68	Steam and water analysis system(SWAS)	Set	02		
69	Oxygen Analyser –Low temperature along with Electronic Unit and other accessories.	Set	20		
70	Thermocouples(K/R type)	No.	888		
71	RTDs with thermo well	No.	760		
72	Cr- Al Thermocouple assy	No.	1546		
73	MTM Thermo Couple up to 32 M (duplex)	No.	718		
74	Thermo well	No.	80		
75	Thermometer(Bimettalic)/Gas filled/MIS	No.	54		
76	Co –AXL dial thermometer	No.	14		
77	Bearing Element	No.	32		
78	Burner Tilt shear pin failure indication box	No.	8		
79	Heavy Duty Limit switch(Burner tilt)		40		
80	Furnace temp. Probe	No.	4		
81	HEA exciter box assembly	Set	40		
82	Air Filter Regulators	No.	130		
83	I/P Converters	No.	52		
84	Vibration Transducers/Monitor/ Detectors/Element	No.	216		
85	Shaft Axial Detector	No.	4		
86	Proximitys	No.	12		
87	Solenoid Valves	No.	270		
88	Speed Regulators / Air lock valves in oil gun corner rack	No.	80		

SR. NO.	ITEM DESCRIPTION	UNIT	Qty.	UNIT RATE	TOTAL AMOUNT (in Rs.)
89	Speed measuring loop	Set	12		
90	Coal bunker level Monitoring system consists of Ultrasonic level sensor-14 no. and transmitter-14 no., Extension cable 320 mtr, Junction box-8 no. and Local panel -02 nos	Set	2		
91	Recorder 3/6/24 channel	No.	2		
92	Electronic /Digital Indicators (Bar Graph Indicators, Temperature Indicators etc.)	No.	40		
93	Pressure/ Temperature Indicators (Moving Coil Type)	No.	10		
94	Speed switch / Speed detector	No.	8		
	CONTROL/SIGNAL/SCREENED /POWER CABLES LAYING,DRESSING,CLAMPING & TERMINATION				
95	2P X 0.5 SQ MM	Mtr	68230		
96	4P X 0.5 SQ MM	Mtr	163200		
97	8P X 0.5 SQ MM	Mtr	100500		
98	12P X 0.5 SQ MM	Mtr	18600		
99	2P X 1.5 SQ MM	Mtr	23000		
100	4P X 1.5 SQ MM	Mtr	10000		
101	2C X 2.5 SQ MM	Mtr	6600		
102	3C X 2.5 SQ MM	Mtr	141400		
103	4C X 2.5 SQ MM	Mtr	8200		
104	7C X 2.5 SQ MM	Mtr	46000		
105	10C X 2.5 SQ MM	Mtr	49000		
106	14C X 2.5 SQ MM	Mtr	6400		
107	16C X 2.5 SQ MM	Mtr	7000		

SR. NO.	ITEM DESCRIPTION	UNIT	Qty.	UNIT RATE	TOTAL AMOUNT (in Rs.)
108	19C X 2.5 SQ MM	Mtr	15100		
109	3C X 16 SQ MM	Mtr	3400		
110	2/3Tx 0.5/1.5 SQ MM	Mtr	10400		
111	2Px16 AWG T/C ext. cable	Mtr	32870		
112	4Px16 AWG T/C ext. cable	Mtr	4000		
113	6Px16 AWG T/C ext. cable	Mtr	100000		
114	Flame scanner cables	Mtr	12000		
115	UTP E-CAT cable	Mtr	10000		
116	Fibre optic cable	Mtr	7000		
117	Compensating cable	Mtr	7200		
118	Extension cable	Mtr.	1920		
	EARTHING MATERIAL				
119	65 x 10 mm GI earthing flat	Mtr	1176		
120	50 x 6 mm GI earthing flat	Mtr	1413		
121	25x3 mm GI earthing flat	Mtr	1130		
122	8SWG Galvanised steel wire	Mtr.	2333		
123	Earthing Pit	No.	2		
	CABLE TRAYS COMPLETE WITH COUPLER PLATES, FASTENERS, CLAMPS AND FIXING HARDWARES ETC ERECTION INCLUDING SUPPORT & COVERS FABRICATION				
124	Ladder/ Perforated type Cable tray, W=50mm	Mtr	9950		
125	Ladder/ Perforated type Cable tray, W=100mm	Mtr	13150		
126	Ladder/ Perforated type Cable tray, W=150mm	Mtr	1500		

SR. NO.	ITEM DESCRIPTION	UNIT	Qty.	UNIT RATE	TOTAL AMOUNT (in Rs.)
	INSTALLATION & FABRICATION OF STRUCTURAL STEEL				
127	ANGLE , ISMC, PLATES etc	MT	88		
	IMPULSE PIPES/ TUBES ALONG WITH FITTINGS				
128	Copper Tube-6mm/8mm/1/4"	Mtr	9040		
129	1' CS Pipe SCH 80	Mtr	2050		
130	CS Pipe 21.3 x3.73	Mtr	800		
131	CS Pipe 60.3x3.91	Mtr	120		
132	1/2" CS Pipe SCH 80	Mtr	12000		
133	1/2" CS Pipe XXS	Mtr	1000		
134	1/2" CS Pipe SCH 160	Mtr	3200		
135	3/4" CS Pipe SCH 80	Mtr.	7200		
136	1' AS Pipe	Mtr	2000		
137	1/2" AS Pipe SCH 160	Mtr	1400		
138	1/2" AS Pipe SCH 80	Mtr	1300		
139	1/2" AS Pipe XXS	Mtr	1800		
140	1/2" SS Pipe SCH 40	Mtr	3000		
141	1/2" SS Pipe SCH 80	Mtr	900		
142	1/2" SS Pipe SCH 160	Mtr	600		
143	Cr-Al pipe 21.3x3.73	Mtr	660		
144	Seam less CS tube 13.5x2.6	Mtr	846		
145	Carbon steel tube 88.9x4	Mtr.	80		
146	Carbon steel tube 33.7x3.38	Mtr	4		
147	Seam less CS tube 21.3x2.3	Mtr	280		
148	Seam less AS tube 21.3x2.77	Mtr	1420		
149	Seam less AS tube 13.5	Mtr	412		

SR. NO.	ITEM DESCRIPTION	UNIT	Qty.	UNIT RATE	TOTAL AMOUNT (in Rs.)
150	SS Tube 12.7x2.1	Mtr	1400		
151	SS Tube 6x1.5	Mtr	60		
152	GI pilica conduit with fittings(up to 1" size)	Mtr	3000		
153	GI pilica conduit with fittings(above 1" size)	Mtr	3000		
154	GI Rigid conduit up to 1"	Mtr	3000		
155	GI pipe ½" NB	Mtr	7200		
156	GI pipe 1" NB	Mtr	300		
157	Flexible conduiting /Rubber hoses/pipes	Mtr	2000		
	JUNCTION BOXES/INDICATION BOXES/LOCAL CONTROL STATIONS				
158	JB 12 way	No.	74		
159	JB 24 way	No.	290		
160	JB 36 way	No.	66		
161	JB 48 way	No.	236		
162	JB 64 way	No.	10		
163	JB 72 way	No.	106		
164	JB 96 way	No.	4		
165	6 way miniature Junction box	No.	64		
166	Local oil gun maintenance switch	No.	32		
167	Local start stop Push button	No.	22		
	COMMISSIONING/CALIBRATION /TESTING of control valves, on/off valves, electrical/pneumatic valves, actuators, power cylinders etc.				
168	Commissioning of Pneumatic actuators(Power cylinder) -On/Off	No.	136		

SR. NO.	ITEM DESCRIPTION	UNIT	Qty.	UNIT RATE	TOTAL AMOUNT (in Rs.)
	type				
169	Commissioning of Pneumatic actuators(Power cylinder) - Regulating type	No.	246		
170	SADC drives	No.	176		
171	Over fire air tilt drives	No.	8		
172	Pulversier Lub oil skid	Set	14		
173	ID/PA/FD fan lub oil skid	Set	12		
174	Gravimetric feeder mounted C&I Equipment like motion ,monitor sensor, micro switches, etc.	Set	14		
175	Commissioning of Electric actuators/dampers/valves Open/Close type	No.	110		
176	Commissioning of Control Valves	No.	102		
177	Commissioning of motorised actuators Open/close type	No.	112		
178	Commissioning of Pneumatic Valves/Safety relief valves/NRV	No.	100		
TOTAL AMOUNT (IN RUPEES)					

NOTES:

1. The quantities indicated above are tentative and are liable to vary depending upon the site requirement. The contractor has to handle / erect / commission all the items indicated by BHEL for achieving the milestones and completion of work.
2. C&I work of 3x660 MW BARA STPP is divided into two packages unit wise i.e. Package- A (BTG C&I of Unit No. 1 and Station C&I for all three units) and Package-B (BTG C&I of Unit No. 2 and 3). Each Package is floated separately. The party awarded Package-A work shall not be considered for this tender i.e. Package-B work.
3. Evaluation of bids shall be done on total price against this Rate Schedule / BOQ.
4. In case of any mismatch in Rate and amount on Price discrepancy, the same will be dealt as per clause No. 1.4 of GCC.

(Signature, date & seal of authorized representative of the bidder)