

TENDER NO. BHEL/ NR/SCT/ ANPARA D/ C&I / 875

FOR

**“ERECTION, TESTING, COMMISSIONING, TRIAL OPERATION AND
HANDING OVER OF ALL CONTROL & INSTRUMENTATION (C&I) EQUIPMENTS
OF UNIT NO. 6 & 7 AT 2X500 MW ANPARA-D TPS, DISTT. SONEBHADRA, 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.

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(A Govt. Of India Undertaking)
Power Sector – Northern Region,
Plot No. 25 , Sector - 16A ,
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THIS TENDER SPECIFICATION ISSUED TO:

M/S-----

RATE SCHEDULE

JOB: "ERECTION, TESTING, COMMISSIONING, TRIAL OPERATION AND HANDING OVER OF ALL CONTROL & INSTRUMENTATION (C&I) EQUIPMENTS OF UNIT NO. 6 & 7 AT 2X500 MW ANPARA-D TPS, DISTT. SONEBHADRA, U.P."

SL NO	ITEM DESCRIPTION	UNIT	QTY	UNIT RATE	TOTAL AMOUNT (Rs IN FIGURES AND WORDS)
	PANELS/RACKS/CONSOLES				
1	Control Panel- suit of one panel 750x750x2415 mm, Approx. weight 400KG	No.	06		
2	Control Panel (mm) -suit of two panels 1500x800x2415 mm, approx. weight 800kg,	No.	20		
3	Control Panel- suit of three panels 2250x800x2415 mm, approx. weight 1200kg,	No.	64		
4	Control Panel- suit of four panels 3000x800x2415 mm, approx. weight 1600 kg.	No.	20		
5	Control Panel-suit of five panels 3750x800x2415 mm, approx. weight 2000kg	No.	02		
6	IP Relay Panel 750x800x2415 mm	No.	03		
7	Transducer &AVT Panel 750x800x2415 mm	No.	02		
8	Unit control Panel 750x800x2415 mm	No.	02		

9	Electrical Control Panel 750x800x2415 mm	No.	02		
10	Generator instrumentation Cabinet 1000X800X2200 mm	No.	02		
11	Gen. End Winding Vibration Monitoring Panel 1000L X 2200H X 800W	No.	02		
12	Gas Analyser cabinet 1200x800x2110 mm	No.	02		
13	Steam leak detection panel(STLD) 800x800x2415 Mm	Set	04		
14	Vibration Monitoring Panel 800X800X2415 mm	No.	06		
15	Acoustic pyrometer remote cabinet including PC station (approx. 1400 x 2365 x800 mm)	Set	02		
16	EWLI Local Asseror Panel (including mounting of Loose supplied electrodes ,along with PTFE cables for interconnecting asseror box & Panel) 600x600x350 mm	No.	04		
17	FTP LOCAL STARTER Box 650x1000x300 mm	No.	04		
18	DC SCANNER AIR FAN STARTER 900x1120x375 mm	No.	02		
19	HART PANEL 1200X800X2415 mm	No.	06		
20	Fire Alarm Control Panel 900x400x1800 mm	No.	01		

21	EWLI REMOTE DISPLAY UNIT 99x194x81 mm	No.	04		
22	SOOT BLOWER MCC (15200 L X2250 H X1000 W)	No.	02		
23	Furnace Flame Viewing System –Remote Panel 700x700x2100 mm	No	02		
24	Furnace Flame Viewing System –Local Panel 1220x1470x610 mm	No	08		
25	GRAVIMETRIC FEEDER PANEL -Gravimetric Feeder Remote Power Cabinet including keyboard and display Size: 1100 x 510 x 2365 mm; weight: 400 kg each	No.	20		
26	NETWORK PANEL 800x800x2415 mm	No.	8		
27	Starter cabinet for DC Jacking Oil Motor, Emergency Lube Oil Motor, DC seal oil Motor 1000X800X2200 mm	No.	06		
28	Max engineer/max storian/max operator/max link stations/station supervisor/shift in charge terminal/PADO work station/LVS PC/TSC PC/22” TFT monitor	Nos.	68		
29	PRINTERS(A4 & A3 COLOUR LASER JET, INKJET, DOT MATRIX) WITH PRINTER TABLE and accessories	No.	29		
30	LARGE VIDEO SCREEN(67”) ,1360x800x2220 mm	No.	10		
31	Ethernet switches	Set	02		
32	Control Desk	No.	03		

33	Local Instrument racks (LIR)	No.	122		
34	Local Instrument enclosures (LIE)	No.	86		
35	Local Gauge Boards(LGB) Approx. Size 1400x550x1900 mm	No.	20		
36	TURBINE SUPERVISORY SYSTEM FOR MAIN TURBINE Control Cabinet (fully wired), along with 21" monitor, server, printer, Ethernet to FO convertor, interconnecting cables, etc. Approx. Size and Weight of the Panel 800 x 800 x 2415 mm; 600 kg..	Set	02		
37	24 V Ni Cd battery(515 Ah,20 cells) for SG ,TG & BOP Approx. size 2050x600x1600 mm	Set	12		
38	300 A FCBC Battery charger with DCDB for SG,TG & BOP DCDB; 1300x1200x2200 mm (approx.) Charger:2550x1200x2200 mm(approx.) Isolation Box:350 x150x500mm(approx.)	Set	12		
39	24 V Ni Cd battery(50 Ah,20 cells) for remote I/o-AHP,FOPH,AHP,CWPH,CT Room, Aux. Boiler Approx. size 650x534x629 mm	Set	14		
40	FCBC Battery charger with DCDB for FOPH, AHP, CWPH, Aux. boiler, CT room Charger Panel:800x800x1600 mm(approx.) Isolation box:350x150x500 mm(approx.)	Set	14		

41	130 KVA UPS system comprising of the following: UP Panel, Voltage Stabilizer cubicle, Static invertors, BHMS e UPS Panel: 1640x900x2000mm	Set	02		
42	ACDB Approximate Size and weight: 900x800x2100 mm; 600 kg.	Set	02		
43	UPS batteries-Ni cd battery, 291 cells,615 Ah Each Battery set consists of 08 Racks Dimensions of 2050 (L) x 848(W) x 1550(H) mm A dimension of Rack 2 to 8 is 1850(L) x 848(W) x 1550(H).	Set	02		
44	UPS System with inverter & Batteries for FOPH,CW, Plant water	Set	03		
45	ACBD for FOPH,CW, Plant water	Set	03		
46	Mini UPS	No.	38		
	INSTALLATION,CALIBRATION & COMMISSIONING OF LOCAL/FIELD INSTRUMENTATION/EQUIPMENT				
47	Flow meters/Flow transmitters	No.	50		
48	Temperature gauges/Pressure gauges/ Diff. Pressure gauge	No.	1500		
49	Temp. Transmitter /Pressure Transmitters / Differential pressure/Position transmitters	No.	1200		
50	Level Transmitter/Level gauge	No.	22		
51	Temp. switches/Pressure switches /DP switches	No.	144		
52	Level switch/Level switch(Conductivity type)/ Level switch(Float type) / Level Instruments	No.	90		

53	Pneumatic Pressure controller with accessories	No.	12		
54	Electronic/Guided Wave Radar /Ultrasonic type level Transmitters	No.	44		
55	Limit switches	No.	50		
56	ERV Controller	No.	08		
57	Reverse Rotation Monitoring system	No.	02		
58	Flame scanner head assy.	No.	88		
59	Flue gas Analyser	Set	02		
60	ANALYSER(conductivity/pH/Sodium/phosphate/silica/hydrazine /silica/ Chloride)	Nos.	16		
61	SOX/NOX/CO/Co2 analyzer, along with Sample Handling System consisting of 1 No. local analyser cabinet and other accessories. The analyser to be installed at 88 ML of chimney	Set	02		
62	Steam and water analysis system, SWAS consisting of: Primary Cooler Rack: 1No., Chiller Unit:1 No., Wet Panel: 1 No., Dry panel: 1 No., Conductivity Racks: 2 Nos., sensors/ analysers and other accessories	Set	02		
63	Oxygen Analyser along with Electronic Unit and other accessories.	Set	02		
64	Thermocouples/RTD's	No.	900		
65	Cr- Al Thermocouple assy	No.	04		
66	MTM Thermo Couple (Simplex/duplex)	No.	950		
67	Thermo well	No.	80		

68	Hydrogen Purity analyser	No.	4		
69	Burner Tilt shear pin failure indication box	No.	08		
70	Heavy Duty Limit switch(Burner tilt)	No.	50		
71	Furnace temp. Probe	No.	04		
72	HEA exciter box assembly	Set	24		
73	Air Filter Regulators	No.	100		
74	I/P Converters	No.	130		
75	Vibration Transducers/Monitor/ Detectors	No.	78		
76	Solenoid Valves	No.	150		
77	Speed Regulators / Air lock valves	Nos	24		
78	Speed measuring loop	Set	02		
79	Coal bunker level Monitoring strain gauge	Sets	02		
80	Recorder 3/6/24 channel	No.	6		
81	Electronic /Digital Indicators (Bar Graph Indicators, Temperature Indicators etc.)	No.	40		
82	Pressure/ Temperature Indicators (Moving Coil Type)	No.	8		
83	Speed switch / Speed detector	No.	6		
84	Pneumatic Temperature controller with accessories	No	10		
85	CCTV system consisting of 3 Nos. Panels, cameras, Control rack, monitor, associated loop cabling etc.	Set	02		
86	GPS based Master & Slave clock system	Set	01		
87	PADO Servers along with 24" monitors and other loose supplied items like keyboard, mouse, printers, 1 kVA UPS, interconnecting power and	Set	02		

	communication cables, furniture etc. and other accessories like Ethernet Switches, ISDN Modem, ISDN NT, Light interface unit etc.				
	CONTROL/SIGNAL/SCREENED/POWER CABLES LAYING,DRESSING,CLAMPING & TERMINATION				
88	2P X 0.5 SQ MM	Mtr	38200		
89	2P/4C X 1.5 SQ MM	Mtr	15600		
90	4P X 0.5 SQ MM	Mtr	318000		
91	8P X 0.5 SQ MM	Mtr	121400		
92	10P X 0.6 SQ MM	Mtr	1200		
93	12P X 0.5 SQ MM	Mtr	36000		
94	16P X 0.5 SQ MM	Mtr	1200		
95	2C X 2.5 SQ MM	Mtr	28800		
96	3C X 2.5 SQ MM	Mtr	121400		
97	3C X 16 SQ MM	Mtr	4000		
98	5C X 2.5 SQ MM	Mtr	8000		
99	7C X 2.5 SQ MM	Mtr	6000		
100	10C X 2.5 SQ MM	Mtr	600		
101	16C X 2.5 SQ MM	Mtr	20000		
102	17-24C X 1.5/2.5 SQ MM	Mtr	12800		
103	2/3Tx 0.5/1.5 SQ MM	Mtr	10000		
104	6T x 0.5/1.5 SQ MM	Mtr	100		
105	T/C ext. cable	Mtr	16000		
106	Flame scanner cables	Mtr	16000		
107	UTP E-CAT cable	Mtr	12000		
108	Fibre optic cable	Mtr	8000		

109	Compensating cable	Mtr	20000		
110	Ethernet cable	Mtr	500		
	EARTHING MATERIAL				
111	50 x 6 mm GI earthing flat	Mtr	2000		
112	35 X 6 mm GI earthing flat	Mtr	2500		
113	3.15 mm GI earthing wire	Mtr	1000		
114	Earthing Pit	No.	04		
	CABLE TRAY & Accessories (including supports fabrication/erection)				
115	Ladder/ Perforated type Cable tray, W=50mm	MTRS	2500		
116	Ladder/ Perforated type Cable tray, W=100mm	MTRS	10400		
117	Ladder/ Perforated type Cable tray, W=150mm	MTRS	5500		
118	Ladder/ Perforated type Cable tray, W=300mm	MTRS	200		
	INSTALLATION & FABRICATION OF STRUCTURAL STEEL				
119	ANGLE ,ISMC,PLATES etc	MTRS	25		
	IMPULSE PIPES/ TUBES ALONG WITH FITTINGS				
120	Copper Tube-6mm/8mm	MTRS	2000		
121	6mm SS Tube	MTRS	500		
122	1' CS impulse pipe	MTRS	900		
123	1/2",3/4" CS impulse pipe	MTRS	20000		
124	1/2",3/4" AS impulse pipe	MTRS	2200		
125	1/2",3/4" SS impulse pipe	MTRS	2800		
126	GI pilica conduit with fittings (up to 1" size)	MTRS	500		

127	GI pilica conduit with fittings(above 1" size)	MTRS	500		
128	GI Rigid conduit up to 1"	MTRS	500		
129	GI pipe 15 NB	MTRS	500		
130	Flexible conduiting /Rubber hoses/pipes	MTRS	500		
	JUNCTION BOXES/INDICATION BOXES/LOCAL CONTROL STATIONS				
131	JB up to 12 ways	No.	168		
132	JB 24 way 340x280x145	No.	618		
133	JB 25-64 way 480x280x145	No.	60		
134	FSSS oil gun maintenance switch box	No.	24		
135	Cold junction compensation JBs	No.	20		
136	Power Dist. Board-PADO	No.	20		
137	Erection & commissioning of C&I Lab specifications as as per C I 2.8.P.	Set	01		
	COMMISSIONING/CALIBRATION/TESTING of control valves, on/off valves, electrical/pneumatic valves, actuators, solenoid valves, power cylinders etc.				
138	Commissioning of Pneumatic valves/actuators/dampers	No.	220		
139	Commissioning of Control Valves	No.	65		
140	Commissioning of motorised actuators	No.	300		
141	Commissioning of Power	No.	110		

	cylinders (on/off type)				
142	Commissioning of Power cylinders (regulating type)	No.	210		
	TOTAL PRICE				

NOTES:

1. The quantities indicated against each item are tentative and may vary as per the actual engineering/site requirement. The contractor has to erect/commission all items to complete the package for C & I work as per instruction of BHEL Engineer
2. Evaluation of bids shall be done on total price against this Rate Schedule / BOQ.
3. 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)