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TENDER SPECIFICATION

TENDER NO. BHEL/ NR/SCT/ MSIL MANESAR/ELE AND C&I/834

FOR

**“ERECTION, TESTING, COMMISSIONING, TRIAL OPERATION AND
HANDING OVER OF ALL ELECTRICAL AND C&I EQUIPMENTS OF
UNIT NO. 2,3 & 5 AT MSIL MANESAR,GURGAON.”**

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, 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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IMPORTANT NOTE

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THIS TENDER SPECIFICATION ISSUED TO:

M/S-----

RATE SCHEDULE

SL NO	ITEM DESCRIPTION	UNIT	QTY.	RATE	AMOUNT
	TRANSFORMERS:				
1	11/0.433kV,2.5MVA,ONAN,UNIT AUX.TRANSFORMER Total Weight 6.5 MT 3800x3300x 3500mm Oil Qty. 1400 ltr.	NO.	1		
2	11/0.433kV,2MVA,ONAN,STATION AUX./SERVICE TRANSFORMER Total Weight 6 MT 3600X3000X3200 Oil Qty. 1400 ltr.	NO.	2		
3	11/0.433kV,1 MVA,ONAN,UNIT AUX.TRANSFORMER Total Weight 4 MT 3200x2800x 2500mm Oil Qty. 1400 ltr.	NO.	1		
4	11/6.6kV,750 KVA, TRANSFORMER	NO.	2		
5	Neutral Grounding Resistor(11kV) for Gen. transformer Earthing 1500X1000X1500	SET	3		
	HT SWITCHGEAR				
6	11kV Switch board consists of 2000 A incomer-01 No., 630 A outgoing feeder-2 No. & 2000 A outgoing feeder-1 No Approx. dimensions of each panel 820X2660X2500 mm	SET	2		
7	11kV Switch board consists of 3000 A incomer-01 No., 630 A outgoing feeder-3 No. & 3000 A outgoing feeder-1 No Approx. dimensions of each panel 820X2660X2500 mm	SET	1		
8	11 KV UAT Isolation Breaker 820X2660X2500	NO.	2		
9	6.6 KV GT Starting Motor Isolation Breaker 820X2660X2500	NO.	2		

	LT BUS DUCT				
10	CR Enclosure,3200A,415V,NPSB 25000X1000X500 mm	SET	2		
11	1600A,415V,NPSB 8000x1000x500 mm	SET	1		
	LT SWITCHGEAR				
12	415 V, GT PMCC (26000x1754x2530) mm	No.	2		
13	415 V, PMCC 13000x1800x2500 mm	No.	2		
14	415 V STG MCC (8000x1350x2430)	No.	1		
15	415 V HRSG MCC (7000x1300x2500 mm	No.	3		
16	125V DCDB 5000x1000x2500 mm	No.	2		
17	110V, UPS DB (2500x1000x2500 mm	No.	4		
18	110V, STATION DCDB (3200x900x2430)	No.	2		
19	Start/Stop PB stations 180X285X125	No.	200		
20	Emergency Stop PB 145X245X116	No.	7		
	<u>BATTERY SYSTEM</u>				
21	125 V STATION BATTERY Chargers 4500x1000x2500 mm 2 MT	Set	2		
22	125 V STATION Battery System (Ni-Cd) 10000x1000x2500 mm 5 MT	Set	2		
23	110 V STATION BATTERY Chargers (2500x830x2000)	Set	2		
24	110 V STATION Battery System (Ni-Cd) 4000x5000x2500 mm	Set	2		
25	110 V AC UPS system consists of 2 x100 % Inverter Panel 3000x1000x2000 mm	Set	4		
	VFD SYSTEM				

26	VFD Transformer 1500x1750x3000 mm	No.	9		
27	Converter panel 1500x1000x2500 mm	No.	9		
28	Circuit breaker 1600x1000x2500 mm	No.	9		
29	Braking resistor 1000x1000x1500 mm	No.	9		
	HT POWER CABLES LAYING,DRESSING,CLAMPING				
	11kV ,Armoured, Al Conductor ,XLPE insulated FRLS outer-sheathed				
30	3C X 300 SQ MM	Mtr.	1100		
	HT TERMINATION KIT(heat shrinkable)				
31	11kV,XLPE,3Cx300 SQ. MM	No.	26		
	LT POWER CABLES LAYING,DRESSING,CLAMPING & TERMINATION				
	1.1kV ,Armoured, Al/Cu Conductor ,PVC insulated FRLS outer-sheathed				
32	1CX630 SQ MM	Mtr	4500		
33	1CX150 SQ MM Cu.	Mtr	1700		
34	1CX120 SQ MM	Mtr	8000		
35	1CX35 SQ MM Cu.	Mtr	1500		
36	1CX6 SQ MM Cu.	Mtr	1250		
37	4CX10 SQ MM Cu.	Mtr	7500		
38	4CX16 SQ MM Cu.	Mtr	4500		
39	4CX4 SQ MM Cu.	Mtr	11000		
40	3.5C X 300 SQ MM	Mtr	4500		
41	3.5C X 185 SQ MM	Mtr	4300		
42	3.5C X 95 SQ MM	Mtr	3700		
43	3C X 70 SQ MM	Mtr	4500		
44	3C X 50 SQ MM	Mtr	2300		
45	3C X 35 SQ MM	Mtr	3700		
46	3C X 25 SQ MM	Mtr	5000		
47	3CX6 SQ MM	Mtr	8000		
48	3CX2.5 SQ MM Cu.	Mtr	50000		
	CONTROL/SIGNAL/SCREENED CABLES LAYING,DRESSING, CLAMPING & TERMINATION				

49	24CX2.5 SQ MM	Mtr	1600		
50	19CX2.5 SQ MM	Mtr	3600		
51	16CX2.5 SQ MM	Mtr	3000		
52	12CX2.5 SQ MM	Mtr	10000		
53	10CX2.5 SQ MM	Mtr	30000		
54	7CX2.5 SQ MM	Mtr	12500		
55	5CX2.5 SQ MM	Mtr	1500		
56	3CX2.5 SQ MM	Mtr	18000		
57	1PX1.5 SQ MM	Mtr	62400		
58	6PX1.5 SQ MM	Mtr	1000		
59	6PX0.5 SQ MM	Mtr	71100		
60	12PX0.5 SQ MM	Mtr	62000		
61	12PX1.5 SQ MM	Mtr	1200		
62	1TX1.5 SQ MM	Mtr	7000		
63	6TX1.5 SQ MM	Mtr	1000		
64	8TX1.5 SQ MM	Mtr	13000		
65	1PX16 AWG	Mtr	5500		
66	6PX16 AWG	Mtr	4000		
67	12PX16/20 AWG	Mtr	14000		
68	1PX1.3 SQ MM	Mtr	600		
69	6PX1.3 SQ MM	Mtr	1500		
70	12PX1.3 SQ MM	Mtr	2000		
71	UTP cables	Mtr	4500		
72	Scanner cables	Mtr	1000		
73	Compensating cable	Mtr.	1000		
	CABLE TRAYS ERECTION INCLUDING SUPPORT & COVERS FABRICATION				
74	Ladder/ Perforated type Cable tray, W=600mm	Mtr	14500		
75	Ladder/ Perforated type Cable tray, W=300mm	Mtr	4000		
76	Perforated type cable tray, W=150mm	Mtr	5000		
77	Perforated type cable tray , W=50mm	Mtr	3750		
	CABLE TRAY ACCESSORIES				

	Ladder/ Perforated type Horizontal 90 deg bend- 900/600 mm radius, Vertical Up/Down-900/600 mm radius, Tees -900/600 mm radius,				
78	900 MM Wide	No.	870		
79	600 MM Wide	No.	280		
	INSTALLATION & FABRICATION OF STRUCTURE STEEL				
80	Channel , Angles, Flats etc.	MT	160		
	EQUIPMENT EARTHING / LIGHTNING PROTECTION SYSTEM				
81	GI STRIP FLAT 75 X 10 mm	Mtr	7000		
82	GI STRIP FLAT 50 X 6 mm	Mtr	6000		
83	GI STRIP FLAT 35 X 6 mm	Mtr	5000		
84	GI STRIP FLAT 25 X 6 mm	Mtr	2000		
85	8 SWG GI WIRE SOLID	Mtr	10000		
86	16 SWG GI WIRE SOLID	Mtr	2000		
87	3/8" GI FINE WIRE	Mtr	4000		
88	5/8" GI FINE WIRE	Mtr	3000		
89	65 Mm dia electrodes,3 M long copper	No.	72		
90	Vertical air termination rod for lighting protection	No.	8		
	PLANT ILLUMINATION SYSTEM				
91	Bulk head luminaire suitable for 110V DC, 10W CFL lamps	Nos	90		
92	Well glass luminaire along with non integral control gear box suitable for use with 2x26 W CFL,240 V Supply	Nos	525		
93	10 W CFL lamp	Nos	120		
94	26 W CFL Lamps	Nos	1200		
95	2 meter pole along with all accessories	Nos	300		
96	Industrial metal clad type 5/15A socket with switch	Nos	30		
97	4 way JB's 150 x100x100 mm along with suitable cable glands	Nos.	450		
98	63A TPN welding receptacles (Safe area)	Nos	15		
99	6/12/18 AC Outdoor Lighting Panels	Nos	15		
100	4CX16 SQ MM, Cu.,ar.	Mtr	1500		
101	3CX2.5 SQ MM,Cu.,ar.	Mtr	12000		

	CONTROL PANELS/RACKS/CONSOLES				
102	DAVR Panel 1200X1200X2324 mm	No.	3		
103	HAZ MONITOR 161x361x178 mm	SET	4		
104	Inlet air filter panel 660x255x1015 mm	No.	2		
105	Mark-VI panel along with HMI, printers etc. 2257x910x2400 mm	Set	2		
106	Co2 fire fighting panel 600x500x1800 mm	No.	2		
107	GT Aux. Panel 100x800x2345 mm	No.	2		
108	DCS Panel 750X750X2415	No.	70		
109	Gen. Control Panel 800 x 1000 x 2300 mm	No.	6		
110	Gen. Relay Panel 800 x 1000 x 2300	No.	4		
111	HMI panel 800X800X2415	No.	4		
112	LOCAL BURNER PANEL 1000X900X2430	No.	4		
113	Unit control desk & furniture including tables, chairs	Set	3		
114	Operator /Engineering/DNA storian/Shift in-charge station, along with 21" TFT Monitor	No.	15		
115	Printers(Colour laser, mono laser, Dot Matrix)with Printer Table & Accessories 482X451X325 mm	No.	9		
116	Network switches 750X750X2415	No.	12		
	INSTALLATION,CALIBRATIO N&COMMISSIOING OF LOCAL / FIELD INSTRUMENTATION / EQUIPMENT				
117	Flow Nozzles /Flow meters	Nos	48		
118	Temp. Transmitter/Pressure Transmitter /Differential Pressure Transmitter	Nos	220		
119	Level Gauge/ Level Switch /Radar Level instruments/ Level transmitters	Nos	46		
120	Solenoid Valves	Nos	180		
121	Pressure Gauges/ Temp.	Nos	362		

	Gauges/Diff. Pressure Gauges				
122	Pressure Switch/Temp. Switch	Nos	120		
123	Limit Switch	Nos	100		
124	Air Filter Regulators	Nos	75		
125	Electric Heater	Nos	8		
126	MTM THERMOCOUPLE	Nos	50		
127	Thermocouple/Temperature Element (RTD)	Nos	95		
128	Vibration/Axial Disp./Velocity probes	Nos	8		
129	Magnetic pickups	Nos	20		
130	HAZ detectors	Nos	8		
131	Fire detectors	Nos	24		
132	Vent fan pr. device	Nos	12		
133	Manual call points	Nos	12		
134	Hooters/strobes	Nos	8		
135	Speed measuring Loop	Nos	12		
136	Aviation lamp	Nos	12		
137	Lightning protection	Nos	4		
138	EWLI	Set	6		
139	SWAS system	SET	3		
140	ANALYSER(SMOKE DENSITY / Sox/ Nox/CO/HC/pH ANALYSER)	Nos	56		
141	Conductivity analyser	Set	6		
142	Opacity analyser	Set	2		
143	Thermometers(Bimettalic)	Nos	10		
144	UV Flame Scanner Assy.	SET	10		
145	Flame intensity meter	Nos	10		
146	THERMOWELLS	Nos	130		
147	Hand Held Communicator	Nos	2		
148	PA System	Set	2		
149	Master Clock System	Set	2		
150	GI pipe 1"	Mtrs	150		
151	GI pipe 1/2"	Mtrs	240		
	IMPULSE PIPES/ TUBES ALONG WITH FITTINGS				
152	SS TUBE 1/2"	MTRS	1230		
153	SS TUBE 1/4"	MTRS	800		
154	Cu TUBE 1/4"	MTRS	200		
155	SS PIPE 1/2"	MTRS	6000		
156	SS PIPE >1"	MTRS	1000		
157	SS PIPE 1/4"	MTRS	300		
158	SS PIPE > 3/4"	MTRS	500		
159	CS PIPE > 3/4"	MTRS	200		
160	AS PIPE > 3/4"	MTRS	200		
161	SS Pipes 1" for Instrument air	MTRS	50		
	JUNCTION				

	BOXES/INDICATION BOXES				
162	40WAYS	Nos.	130		
163	24 WAYS	Nos	48		
164	GT Exhaust Area JBs	Nos.	100		
165	Explosion /weather proof JBs		130		
	COMMISSIONING/CALIBRATION OF MOTORISED/PNEUMATIC ACTUATOR/GATE/CONTROL VALVES				
166	Commissioning of Electrical /Pneumatic/Motorised Actuators	No.	50		
167	Control Valves/ On-Off Control Valves	No.	73		
168	Safety Relief valves/ Temperature Safety Valve/ Pressure Safety Valve/ On-Off Control Valves	Nos	10		
GROSS TOTAL (IN Rs.)					

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 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)