

TENDER SPECIFICATION

BHEL:PSSR:SCT: 1195

FOR

Handling at Site Stores / Storage yard,
Transportation to Site of Work, Erection, Testing
and Commissioning of Electrical and Controls &
Instrumentation works for Unit 1 & 2 of 2 x 125
MW

at

JINDAL STAINLESS LIMITED

**Duburi
Jajpur District,
Orissa State.**

PART – II PRICE BID

BOOK NO :



BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)

Power Sector – Southern Region

690, Anna Salai, Nandanam, Chennai – 600 035.

BHARAT HEAVY ELECTRICALS LIMITED
(A Government of India Undertaking)
Power Sector, Southern Region
690, Anna Salai, Nandanam, Chennai – 35

TENDER SPECIFICATION NO:BHEL:PSSR:SCT:1195

NAME OF WORK

Handling at Site Stores / Storage yard,
Transportation to Site of Work, Erection, Testing
and Commissioning of Electrical and Controls &
Instrumentation works for Unit 1 & 2 of 2 x
125 MW at Jindal Stainless Ltd., Duburi Jajpur
District, Orissa State.

(PRICE BID)

PART II

Issued to
M/s.

LIMITED

For and on behalf of
BHARAT HEAVY ELECTRICALS

Senior Deputy General Manager/Contracts

(This tender document is not transferable)

Place: Chennai-600 035.
Date:

JINDAL STAINLESS LTD – DUBURI CPP (2x125 MW)

SECTION – VII
APPENDIX - V

RATE SCHEDULE FOR ELECTRICAL/ C&I PACKAGE

Before filling the Rates, the bidder shall go through the detailed specification of a the detailed Bill of Materials(BOM) as well as Scope of Work specified in

SL. NO.	BOM REF.	DESCRIPTION	QTY	QTY	QTY		
			Unit 1 & Common	Unit 2	Tc		
ERECTION/ COMMISSIONING OF LOCAL/ FIELD MOUNTED INSTRUMENTS							
1.	A.1.1	PD Type Flow Meter	1 set*	1 set*	2 set		
2.	A.1.2, A.2.1, A.3.1, A.4.1, B.2.1, C.1.1, D.3.3.1, E.2.1.1	Pressure Gauges	273 Nos.	267 Nos.	540		
3.	A.1.3, E.2.1.4	DP Gauges	5 Nos.	5 Nos.	10 Nos.		
4.	D.3.3.5, E.2.1.8	Thermocouples with thermowell	97 Nos.	97 Nos.	194		
5.	B.2.3, B.3.1, E.2.1.9, E.3.1	Fan bearing RTDs/ Mill RTDs etc.	43 Nos.	43 Nos.	86 Nos.		
6.	D.3.3.6, E.1.1.1, E.2.1.10	RTDs along with thermowell	53 Nos.	53 Nos.	106		
7.	B.2.6	Thermocouple Assembly for APH	4 sets*	4 sets*	8 sets		

* Lump sum rate to be quoted

SIGNATURE

SL. NO.	BOM REF.	DESCRIPTION	QTY	QTY	QTY		
			Unit 1 & Common	Unit 2	Tc		
8.	A.4.4.1, A.4.4.2	MTM Thermocouples of route length 10 to 12 Mtr (6 mm OD)	48 Nos.	48 Nos.	96 l		
9.	A.4.4.3, A.4.4.4	MTM Thermocouples of route length 14 to 16 Mtr (6 mm OD)	43 Nos.	43 Nos.	86 l		
10.	A.1.4, A.4.2, B.2.2, B.3.2, C.1.2, D.3.3.2, E.2.1.7	Temperature Gauges with thermowell	217 Nos.	217 Nos.	434		
11.	A.1.5, A.2.2, A.3.2, A.4.3, B.2.5, C.1.3, D.1.2.3, D.3.3.3, E.2.1.3	Pressure Switches	55 Nos.	55 Nos.	110		
12.	A.1.6, A.2.3, A.3.3, E.2.1.6	DP Switches	26 Nos.	26 Nos.	52 l		
13.	B.2.4	Temperature Switches	4 Nos.	4 Nos.	8 N		
14.	C.1.4, E.2.1.12	Level Switches (float type)	42 Nos.	42 Nos.	84 l		
15.	D.3.3.7	Level switches (capacitance type)	4 Nos.	--.	4 N		
16.	D.3.3.10, E.2.1.2	Pressure Transmitters	175 Nos.	168 Nos.	343		
17.	D.3.3.11, E.2.1.5, E.2.1.11	DP Transmitters	80 Nos.	80 Nos.	160		
18.	D.3.3.12	Displacement Type Level Transmitters	8 Nos.	8 Nos.	16 l		

* Lump sum rate to be quoted

SIGNATURE

SL. NO.	BOM REF.	DESCRIPTION	QTY	QTY	Q		
			Unit 1 & Common	Unit 2	Tc		
19.	A.3.6	Pneumatic Pressure Controllers including 1 No. Pneumatic Transmitter, 2 Nos. Air Filter Regulators etc.	1 set*	1 set*	2 s		
20.	A.1.10	Air Filter Regulators, Air Lock Valves & Speed Regulators	16 sets*	15 sets*	31 s		
21.	A.2.4, A.3.4, D.1.2.1, D.3.3.9	Air Filter Regulators	53 Nos.	53 Nos.	106		
22.	D.1.2.2, D.3.3.8, E.2.1.15	I/P Converters	41 Nos.	41 Nos.	82 l		
23.	E.2.1.13	Solenoid Valves	10 Nos.	10 Nos.	20 l		
24.	A.3.5	Purge Meter cum DP Regulators	10 Nos.	10 Nos.	20 l		
25.	A.1.7	Flame Scanner Head Assembly	16 sets*	16 sets*	32 s		
26.	A.1.9	FSSS Local Oil Gun Maintenance Switch Box	12 Nos.	12 Nos.	24 l		
27.	A.1.12	H.E.A. Excitor box assembly with accessories	12 sets*	12 sets*	24 s		
28.	A.2.8	Burner Tilt Shear Pin Failure Indication Box	4 Nos.	4 Nos.	8 N		
29.	A.2.9	Heavy Duty Limit Switch (for Burner Tilt)	8 Nos.	8 Nos.	16 l		

* Lump sum rate to be quoted

SIGNATU

SL. NO.	BOM REF.	DESCRIPTION	QTY	QTY	QTY		
			Unit 1 & Common	Unit 2	Tc		
30.	A.4.7	Electronic Water Level Indicator along with Display Units, Ascetor Cabinet and other accessories	1 set*	1 set*	2 sets		
31.	A.4.8	Steam leak detection system along with Panel and other accessories	1 set*	1 set*	2 sets		
32.	A.4.6	ERV Controller with Pressure Switch	1 set*	1 set*	2 sets		
33.	B.2.7	Rotor Stoppage Alarm Box with accessories	2 sets*	2 sets*	4 sets		
34.	B.2.8	ON/OFF Switch Box including light assembly	2 sets*	2 sets*	4 sets		
35.	E.4.2	Rotor Earth Fault Relay	1 No.	1 No.	2 Nos		
36.	E.2.1.14	Speed Measuring Loop for BFPDT Governing System	6 sets*	6 sets*	12 sets		
37.	A.1.8	4 Nos. of flame scanner amplifier (19" Racks)	1 set*	1 set*	2 sets		
38.	A.2.10	Vibration Monitoring System (VMS) for Fans & Mills, along with 30 sets of Horizontal velocity type pick-ups, 11 Nos. Local wall mounted cabinets for transmitters and other accessories.	1 set*	1 set*	2 sets		

* Lump sum rate to be quoted

SIGNATURE

SL. NO.	BOM REF.	DESCRIPTION	QTY	QTY	QTY		
			Unit 1 & Common	Unit 2	Tc		
39.	E.1.1.3	Vibration Monitoring System for BFPs & CEPs along with 12 Nos. of probes, Vibration monitors and other accessories	1 set*	1 set*	2 sets		
40.	B.1.3.4	Opacity Monitoring System, for ESP along with 1 No. Local Control Unit, Air Blower and other accessories.	2 sets*	2 sets*	4 sets		
41.	D.3.5.1	SOX/NOX/CO Analyzer system along with Sample Handling System consisting of 1 No. local analyser panel and other accessories	1 set*	1 set*	2 sets		
42.	D.3.5.2	Low temperature O2 Analyser along with Electronic Unit and other accessories	4 sets*	4 sets*	8 sets		
43.	D.3.5.3	SPM Analyser along with Local Control /Display Unit, Remote Calibration Unit, Purge Air System, and accessories.	1 set*	1 set*	2 sets		
44.	D.3.6.1	Steam and water analysis system, consisting of: Primary Cooler Racks: 2 Nos., Chiller Unit : 1 No., Wet Panel: 1 No., Dry panel: 1 No., Sensors/ Analysers and other accessories	1 set*	1 set*	2 sets		

* Lump sum rate to be quoted

SIGNATURE

SL. NO.	BOM REF.	DESCRIPTION	QTY	QTY	QTY		
			Unit 1 & Common	Unit 2	Tc		
45.	E.2.1.16	Vibration Monitoring System for BFP Drive Turbine along with 29 Nos. of probes, 2 Nos. Monitor rack and other accessories	1 set*	1 set*	2 set		
46.	E.4.1	CO2 Main Control Panel for Generator Fire Protection along with accessories	1 set*	1 set*	2 set		
ERECTION/ COMMISSIONING OF UCB/ CONTROL ROOM MOUNTED INSTRUMENTS							
47.	D.3.4.1, D.3.4.2	Bar Graph Indicators/ Digital Indicators	16 Nos.	16 Nos.	32 Nos.		
REMOVAL, CALIBRATION, REFIXING AND COMMISSIONING OF INSTRUMENTS							
48.	E.1.2.3, E.1.3.5	Pressure Gauges	32 Nos.	32 Nos.	64 Nos.		
49.	E.1.2.4, E.1.3.6	DP Gauges	6 Nos.	6 Nos.	12 Nos.		
50.	B.3.3, E.1.2.1, E.1.3.7, E.3.2	Temperature Gauges	66 Nos.	66 Nos.	132		
51.	E.1.2.2, E.1.3.9	Pressure Transmitters	14 Nos.	14 Nos.	28 Nos.		
52.	E.1.2.5, E.1.3.10	DP Transmitters	6 Nos.	6 Nos.	12 Nos.		

* Lump sum rate to be quoted

SIGNATURE

SL. NO.	BOM REF.	DESCRIPTION	QTY	QTY	QTY		
			Unit 1 & Common	Unit 2	Tc		
53.	E.1.3.8	Pressure Switches	2 Nos.	2 Nos.	4 Nos.		
54.	E.1.2.6	Level Switches	2 Nos.	2 Nos.	4 Nos.		
ERECTION/ COMMISSIONING OF PNEUMATIC POWER CYLINDERS (REGULATING T							
55.	A.2.12.1, A.2.12.6	FD Fan Inlet/ PA Fan Control Damper	4 Nos.	4 Nos.	8 Nos.		
56.	A.2.12.2	AH Air Bypass Damper	2 Nos.	2 Nos.	4 Nos.		
57.	A.2.12.3	SADC Power Cylinders	48 Nos.	48 Nos.	96 Nos.		
58.	A.2.12.4	Burner Tilt Power Cylinder	4 Nos.	4 Nos.	8 Nos.		
59.	A.2.12.5	ID Fan Inlet Control Damper	2 Nos.	2 Nos.	4 Nos.		
60.	A.2.12.7	Hot PA Regulating Damper	5 Nos.	5 Nos.	10 Nos.		
61.	A.2.12.8, A.2.12.9	Cold PA Control Damper / Dynavane Filter Bleed Air Damper	6 Nos.	6 Nos.	12 Nos.		

* Lump sum rate to be quoted

SIGNATURE

SL. NO.	BOM REF.	DESCRIPTION	QTY	QTY	QTY		
			Unit 1 & Common	Unit 2	Tc		
	ERECTION/ COMMISSIONING OF PNEUMATIC POWER CYLINDERS (ON/OFF TYPE)						
62.	A.2.11.1	Scanner Air Fan Emergency Damper	1 No.	1 No.	2 No.		
	ERECTION/ COMMISSIONING OF MASTER SLAVE CLOCK SYSTEM						
63.	D.3.7.1	Master clock control panel	1 No.	--	1 No.		
64.	D.3.7.2	Slave clocks	4 Nos.	--	4 No.		
65.	D.3.7.3	GPS Antenna along with interconnecting cable	1 set*	--	1 set		
66.	D.3.7.4	RS232 Data Cable	1050 Mtrs	--	1050		
67.	D.3.7.5	RG58 Coaxial Cable for Pulse/ IRIGB	500 Mtrs	--	500		
68.	D.3.7.6	Power Supply Cable, 3 Core x 2.5 sq. mm	150 Mtrs	--	150		
	ERECTION/ COMMISSIONING OF UPS WITH ACDB AND BATTERY						
69.	D.3.8.1	70 KVA, 240V AC, Parallel Redundant UPS with ACDB	1 set*	1 set*	2 sets		

* Lump sum rate to be quoted

SIGNATURE

SL. NO.	BOM REF.	DESCRIPTION	QTY	QTY	QTY		
			Unit 1 & Common	Unit 2	Unit 3		
70.	D.3.8.2	UPS Battery	2 sets*	2 sets*	4 sets		
ERECTION/ COMMISSIONING OF LT SWITCHGEAR/ CONTROL PANELS/ CONTROL B							
71.	A.5.1	Soot Blower MCC	1 set*	1 set*	2 sets		
72.	B.1.1.1	ESP MCC	1 set*	1 set*	2 sets		
73.	D.2.1.1	Digital AVR	1 set*	1 set*	2 sets		
74.	B.1.1.2	Auxiliary Control Panel	2 Nos.	2 Nos.	4 Nos.		
75.	A.5.2	Starter Box for Scanner Air Fan Motor	1 No.	1 No.	2 Nos.		
76.	A.5.3	Starter Box for Furnace Temperature Probe	1 No.	1 No.	2 Nos.		
77.	B.1.1.3	Electronic Control Panel with Bapcon controllers	14 Sets*	14 Sets*	28 Sets		
78.	B.1.1.4	Rapper Control Panel along with Rapcon controllers	1 No.	1 No.	2 Nos.		
79.	B.1.1.5	Ash level indicators	28 Sets*	28 Sets*	56 Sets		
80.	A.3.7	Gravimetric Feeder Panel	5 sets*	5 sets*	10 sets		

* Lump sum rate to be quoted

SIGNATURE

SL. NO.	BOM REF.	DESCRIPTION	QTY	QTY	QTY		
			Unit 1 & Common	Unit 2	Tc		
81.	B.1.1.6	Data Logger PC with accessories	1 set*	1 set*	2 set		
82.	B.1.1.7	IOS PC with accessories	1 set*	1 set*	2 set		
ERECTION/COMMISSIONING OF MMIPIS (DCS System)							
83.	D.1.1.1, D.2.2.1, D.3.1.1	Single Cubicle Panels	5 Nos.	5 Nos.	10 Nos		
84.	D.1.1.2, D.2.2.2, D.3.1.2	Suite of Two Cubicles	15 Nos.	15 Nos.	30 Nos		
85.	D.1.1.3, D.2.2.3, D.3.1.3	Suite of three Cubicles	8 Nos.	8 Nos.	16 Nos		
86.	D.1.1.4, D.2.2.4	Suite of Four Cubicles	3 Nos.	3 Nos.	6 Nos		
87.	D.3.2.1	Unit Electrical Control Panel	1 No.	1 No.	2 Nos		
88.	D.3.2.2	Station Electrical Control Panel	1 No.	--	1 Nos		
89.	D.3.2.3	Unit Electrical Panel	1 No.	1 No.	2 Nos		
90.	D.3.2.4	Station Electrical Panel	1 No.	--	1 Nos		
91.	D.3.2.5	Unit Control Panel	1 No.	1 No.	2 Nos		

* Lump sum rate to be quoted

SIGNATURE

SL. NO.	BOM REF.	DESCRIPTION	QTY	QTY	QTY		
			Unit 1 & Common	Unit 2	Tc		
92.	D.4.5	Unit Control Desk	1 set*	1 set*	2 set		
93.	D.4.1	Computer Stations 'maxEngineer' Stations, 'maxOperator' Stations, 'maxStorian' Station, 'maxLink' Station etc.	11 sets*	11 sets*	22 sets		
		Note: Rates quoted for PCs should be inclusive of associated furniture including PC tables, operator chairs, printer tables/consoles etc.					
94.	D.4.2	67" Large Video Screen along with other loose supplied items	1 set*	1 set*	2 sets		
95.	D.4.3	Network Panels	3 Nos.	3 Nos.	6 Nos.		
96.	D.4.4.1	Ethernet Cable	4,500 Mtrs	4,500 Mtrs	9,000		
97.	D.4.4.2	Power Cables: 4 C x 1 sq. mm cables	500 Mtrs	500 Mtrs	1,000		
ERECTION/ TESTING OF LOCAL INSTRUMENT ENCLOSURES/ RACKS (LIE/LIR)							
98.	D.3.13.1	LIE of size: 700 x 800 x 1500 mm; Approx. wt.: 250 kg each	1 No.	1 No.	2 Nos.		
99.	D.3.13.2	LIE of size: 1450 x 800 x 2300 mm; Approx. wt: 375 kg each	5 Nos.	5 Nos.	10 Nos.		

* Lump sum rate to be quoted

SIGNATURE

SL. NO.	BOM REF.	DESCRIPTION	QTY	QTY	QTY		
			Unit 1 & Common	Unit 2	Unit 3		
100.	D.3.13.3	LIE of size: 1100 x 800 x 2300 mm; Approx. wt.: 300 kg each	16 Nos.	16 Nos.	32 Nos.		
101.	E.1.3.4	LIR of Size 2000 x 650 x 2150 mm; Approx. wt:400 kg	1 No.	1 No.	2 Nos.		
102.	E.1.3.3	LIR of Size 2000 x 650 x 2150 mm; Approx. wt:250 kg.	1 No.	1 No.	2 Nos.		
103.	D.3.13.4	LIR of size 1800 x 600 x 2150 mm; Approx. wt: 325 kg each	7 Nos.	7 Nos.	14 Nos.		
104.	D.3.13.5	LIR of size 1300 x 600 x 2150 mm; Approx. wt: 250 kg each	9 Nos.	9 Nos.	18 Nos.		
105.	D.3.13.6	LIR of size 500 x 650 x 1600 mm; Approx. wt: 500 kg each	1 No.	1 No.	2 Nos.		
106.	E.1.3.1	LGB of approx. Size 1900 x 550 x 1600 mm; Wt: 400 kg	3 Nos.	3 Nos.	6 Nos.		
107.	E.1.3.2	LGB of approx. Size 1900 x 550 x 1600 mm; Wt: 300 kg	2 Nos.	2 Nos.	4 Nos.		

Signature of the Tenderer

SL. NO.	BOM REF.	DESCRIPTION	QTY	QTY	Q		
			Unit 1 & Common	Unit 2	Tc		
	ASSEMBLY & ERECTION OF JB MOUNTING FRAMES						
108.	D.2.6.1 to D.2.6.5	Assembly and installation of Mounting Frames with loose supplied prefabricated materials like slotted angles, channels, etc.	10 Nos.	10 Nos.	201		
	LAYING, TERMINATION & TESTING OF CABLES						
		LT POWER CABLES (ARMOURED CABLES)					
109.	A.6.1.1	3 C x 6 sq. mm, Cu cable	1000 Mtrs	1000 Mtrs	2000		
110.	A.6.1.2	3 C x 2.5 sq. mm, Cu cable	21000 Mtrs	21000 Mtrs	42000		
111.	B.1.5.1	2 C X 120 sq.mm, Al cables	12500Mtr	12500Mtrs	25000		
112.	B.1.5.2	3 C X 10 sq. mm, Al cable	5800Mtrs	5800Mtrs	11600		
113.	B.1.5.3	3 C X 35 sq. mm, Al cable	720 Mtrs	720 Mtrs	1440		
114.	B.1.5.4	1 C X 630 sq. mm, Al cable	2000 Mtrs	2000 Mtrs	4000		
115.	D.3.9.18	2C x 10 sq. mm/ 2 C x 6 sq. mm cable	3500 Mtrs	3500 Mtrs	7000		

Comment: UT. WT: 490 KG

Signature of the Tenderer

SL. NO.	BOM REF.	DESCRIPTION	QTY	QTY	Q		
			Unit 1 & Common	Unit 2	Tc		
116.	D.3.9.19	2 C x 50/70 sq. mm Cu cable	500 Mtrs	500 Mtrs	1000		
117.	D.3.9.20	2 C x 16/25/35 sq. mm Cu cable	500 Mtrs	500 Mtrs	1000		
		<i>LT CONTROL CABLES (FRLS, PVC INSULATED, ARMOURED CABLES)</i>					
118.	B.1.6.1	10C X 2.5 sq. mm cable	11800 Mtrs	11800 Mtrs	23600		
119.	B.1.6.2	3 C X 2.5 sq. mm cable	15000 Mtrs	15000 Mtrs	30000		
120.	A.6.1.3, B.1.6.3	2 C X 2.5 sq. mm cable	7600 Mtrs	7600 Mtrs	15200		
121.	A.6.1.4	2C X 1.5 sq.mm cable	750 Mtrs	750 Mtrs	1500		
122.	A.6.1.5	4C X 1.5 sq.mm, cable	6400 Mtrs	6400 Mtrs	12800		
123.	A.6.1.6	7C X 1.5 sq.mm cable	9000 Mtrs	9000 Mtrs	18000		
124.	A.6.1.7	10C X 1.5 sq.mm, cable	7000 Mtrs	7000 Mtrs	14000		
125.	A.6.1.8	19 C x 1.5 sq. mm, cable	2000 Mtrs	2000 Mtrs	4000		
		<i>INSTRUMENTATION CABLES</i>					
126.	A.6.1.9	Flame Scanner Shielded Cable, 2 P x 0.5 sq. mm	2600 Mtrs	2600 Mtrs	5200		

Signature of the Tenderer

SL. NO.	BOM REF.	DESCRIPTION	QTY	QTY	Q		
			Unit 1 & Common	Unit 2	Tc		
		<i>PVC/FRLS, shielded, Armoured, Cu Cables</i>					
127.	F.1.1	1 P x 0.5 sq. mm cable	2,000 Mtrs	2,000 Mtrs	4,000		
128.	A.6.1.10, D.3.9.8, D.3.9.11, F.1.2, F.1.8	2 P x 0.5 sq. mm / 4 C x 0.5 sq. mm cable	22,950 Mtrs	22,950 Mtrs	45, M		
129.	A.6.1.11, D.2.3.4, D.3.9.9, D.3.9.12, E.1.6.1, F.1.3, F.1.9	4 P x 0.5 sq. mm / 8 C x 0.5 sq. mm cable	53,275 Mtrs	53,275 Mtrs	106 M		
130.	A.6.1.12, D.3.9.10, D.3.9.13, F.1.4, F.1.10	8 P x 0.5 sq. mm / 16 C x 0.5 sq. mm cable	68,350 Mtrs	68,350 Mtrs	136 M		
131.	D.2.3.3, F.1.5	12 P x 0.5 sq. mm cable	4000 Mtrs	4000 Mtrs	8000		
132.	A.6.1.13, F.1.6	16 P x 0.5 sq. mm, Armoured cable	2000 Mtrs	2000 Mtrs	4000		
133.	A.6.1.14	10 P x 0.6 sq. mm, Armoured cable	60 Mtrs	60 Mtrs	120		
134.	A.6.1.15, B.1.7.1, D.3.9.14, F.1.7	2 P x 1.5 sq.mm/ 4C x 1.5 sq. mm cable	12,950 Mtrs	12,950 Mtrs	25, M		

Signature of the Tenderer

SL. NO.	BOM REF.	DESCRIPTION	QTY	QTY	Q		
			Unit 1 & Common	Unit 2	Tc		
		<i>PVC/FRLS, shielded, Unarmoured, Cu Cables</i>					
135.	D.3.9.1, D.3.9.5	2 pair x 0.5 sq. mm cable	9000 Mtrs	9000 Mtrs	18000		
136.	D.3.9.2, D.3.9.6	4 pair x 0.5 sq. mm cable	20000 Mtrs	20000 Mtrs	40000		
137.	D.3.9.3, D.3.9.7	8 pair x 0.5 sq. mm cable	11500 Mtrs	11500 Mtrs	23000		
138.	D.3.9.4	12 pair x 0.5 sq. mm cable	1000 Mtrs	1000 Mtrs	2000		
139.	A.6.1.16	4 P x 0.5 sq. mm, pigtail cable (Unarmoured)	360 Mtrs	360 Mtrs	720		
		<i>PTFE Insulated Cables</i>					
140.	D.2.3.1	2 pair x 0.5 sq. mm PTFE cable	2000 Mtrs	2000 Mtrs	4000		
141.	D.2.3.2	4 pair x 0.5 sq. mm PTFE cable	1500 Mtrs	1500 Mtrs	3000		
142.	D.2.3.5	5 Core x 1.5 sq. mm PTFE cable	1500 Mtrs	1500 Mtrs	3000		

Signature of the Tenderer

SL. NO.	BOM REF.	DESCRIPTION	QTY	QTY	Q		
			Unit 1 & Common	Unit 2	Tc		
		<i>Compensating Cables</i>					
143.	A.6.1.17, D.2.3.6, D.3.9.15	2 P X 16 AWG, T/C Extension Cable/ 2 Pair x 0.5 sq. mm	10450 Mtrs	10450 Mtrs	20900		
144.	D.3.9.16	4 P X 20 AWG, T/C Extension Cable	3500 Mtrs	3500 Mtrs	7000		
145.	D.3.9.17	6 P X 20 AWG, T/C Extension Cable	3000 Mtrs	3000 Mtrs	6000		
ERECTION OF CABLE TRAYS AND DUCTS							
146.	A.6.2.4, D.3.10.1, E.1.6.2	Perforated Cable Tray, 50 mm wide	2170 mtrs	2170 mtrs	4340		
147.	A.6.2.1, D.3.10.2	Perforated Cable Tray, 100 mm wide	4380 Mtrs	4380 Mtrs	8760		
148.	A.6.2.2, E.1.6.3	Perforated Cable Tray, 150 mm wide	1260 Mtrs	1260 Mtrs	2520		
149.	A.6.2.3	Perforated Cable Tray, 300 mm wide	75 Mtrs	75 Mtrs	150		
150.	B.1.4.1	Ladder type 600 mm wide	125 Mtrs	125 Mtrs	250		
151.	B.1.4.2	Ladder type 450 mm wide	1500 Mtrs	1500 Mtrs	3000		
152.	B.1.4.3	Ladder type 150 mm wide	250 Mtrs	250 Mtrs	500		

Signature of the Tenderer

SL. NO.	BOM REF.	DESCRIPTION	QTY	QTY	QTY		
			Unit 1 & Common	Unit 2	Tc		
		<i>Cable Ducts With Covers</i>					
153.	D.2.5.1	60 x 60 x 1000 mm	180 Nos.	180 Nos.	360		
154.	D.2.5.2	180 x 100 x 1000 mm	60 Nos.	60 Nos.	120		
155.	D.2.5.3	250 x 100 x 1000 mm	50 Nos.	50 Nos.	100		
ERECTION OF JUNCTION BOXES/ PB BOXES							
156.	B.1.3.2	Power Junction Boxes for hopper heaters/ support insulator heaters/ shaft insulator heaters	36 Nos.	36 Nos.	72		
157.	B.1.3.3	Control Junction Boxes for hopper thermostat, start stop PBs, ALI, Opacity Monitor	8 Nos.	8 Nos.	16		
158.	B.1.3.1	Local Start Stop Push Buttons (for Rapping Motors)	30 Nos.	30 Nos.	60		
159.	D.3.11.1	12 way Junction Boxes	5 Nos.	5 Nos.	10		
160.	A.6.3.1, D.3.11.2, E.1.4.1	24 way Junction Boxes	107 Nos.	107 Nos.	214		
161.	A.6.3.3, D.3.11.3	36 way Junction Boxes	24 Nos.	24 Nos.	48		

Signature of the Tenderer

SL. NO.	BOM REF.	DESCRIPTION	QTY	QTY	QTY		
			Unit 1 & Common	Unit 2	Unit 3		
162.	A.6.3.2, D.3.11.4	48 way FRP Junction Boxes	26 Nos.	26 Nos.	52 Nos.		
163.	D.2.4.1, D.3.11.5	64 way Junction Boxes	59 Nos.	59 Nos.	118		
164.	D.3.11.6	72 way Junction Boxes	1 No.	1 No.	2 Nos.		
165.	A.6.3.4, D.2.2.5	2 PB/ 3PB Push Button Boxes/ Fire Protection Switch Box	5 Nos.	5 Nos.	10 Nos.		
166.	D.2.4.2	Junction Box for K-type Thermocouples	17 Nos.	17 Nos.	34 Nos.		
167.	A.4.5	Junction Boxes for MTM Thermocouples	21 Nos.	21 Nos.	42 Nos.		
TESTING OF HEATING ELEMENTS							
168.	B.1.2.1	Testing and Termination and dressing of Heating Elements for Hopper (Panel type)	336 Nos.	336 Nos.	672		
169.	B.1.2.2	Testing Heating elements for support insulator heater	112 Nos.	112 Nos.	224		
170.	B.1.2.3	Testing Heating elements for shaft insulator heater	14 Nos.	14 Nos.	28 Nos.		
171.	B.1.2.4	Testing Thermostats for hopper heaters.	14 Nos.	14 Nos.	28 Nos.		

Signature of the Tenderer

SL. NO.	BOM REF.	DESCRIPTION	QTY	QTY	Q		
			Unit 1 & Common	Unit 2	Tc		
172.	B.1.2.5	Testing Thermostat for support insulators	2 Nos.	2 Nos.	4 N		
ERECTION/ TESTING OF IMPULSE PIPES							
173.	E.1.5.1	CS Pipe Gr. B, Dia 16 x 2.6	560 Mtrs	560 Mtrs	1120		
174.	A.6.4.1, C.2.1, D.3.12.2, E.2.4.1	CS Pipe, ½” SCH 80	2680 Mtrs	2680 Mtrs	5360		
175.	D.3.12.4	CS Pipe ½” SCH 160, GR C	500 Mtrs	500 Mtrs	1000		
176.	D.3.12.3	CS Pipe ¾” SCH 80, GR C	1,350 Mtrs	1,350 Mtrs	2,700		
177.	E.2.4.2	AS Pipe 21.3 x 3.73, ½” SCH 80	560 Mtrs	560 Mtrs	1120		
178.	D.3.12.5	AS Pipe, P22, ½” SCH XXS	300 Mtrs	300 Mtrs	600		
179.	E.2.4.3	SS Tube 12.7 x 2.1	760 Mtrs	760 Mtrs	1520		
180.	D.3.12.1, E.2.4.6	SS Pipe, ½” SCH 40	820 Mtrs	820 Mtrs	1640		
181.	E.2.4.5	SS Pipe, 1” SCH 40	110 Mtrs	110 Mtrs	220		
182.	D.3.12.6	SS 316 PIPE, SCH 160	500 Mtrs	500 Mtrs	1000		

Signature of the Tenderer

SL. NO.	BOM REF.	DESCRIPTION	QTY	QTY	Q		
			Unit 1 & Common	Unit 2	Tc		
183.	E.2.4.4	SS Pipe 60.3 x 2.8	35 Mtrs	35 Mtrs	70 l		
	ERECTION OF EARTHING MATERIALS, HOSES, TUBES, CLAMPING MATERIALS etc.						
184.	A.6.5.1	Soft Galvanised wire, 1.219	2000 Mtrs	2000 Mtrs	4000		
185.	B.1.8.3	GI wire 8 SWG	4000 Mtrs	4000 Mtrs	8000		
186.	A.6.5.3, B.1.8.1	GI Flat 50 x 6 mm	860 Mtrs	860 Mtrs	1720		
187.	B.1.8.2	GI Flat 30 x 5 mm	800 Mtrs	800 Mtrs	1600		
188.	A.1.11	OD 8 mm Copper Tube	65 Mtrs	65 Mtrs	130		
189.	A.2.7, D.1.2.4, D.3.14.3, F.2.1	¼" OD, PVC Sheathed Cu Tube	2905 Mtrs	2905 Mtrs	5810		
190.	A.2.5	¼" size Teflon Hose, 2 M each	48 Nos.	48 Nos.	96 l		
191.	A.2.6	1" size Teflon Hose, 3 M each	4 Nos.	4 Nos.	8 N		

Signature of the Tenderer

SL. NO.	BOM REF.	DESCRIPTION	QTY	QTY	Q		
			Unit 1 & Common	Unit 2	Tc		
	FABRICATION/ ERECTION OF STRUCTURAL STEEL						
192.	A.6.5.2, B.1.9.1, D.3.14.1, E.1.7.1, E.2.3	Structural Steel for fabrication of supports / Local Racks	13.1 MT	13.1 MT	26.2		
	ERECTION/TESTING OF GI PIPE (HEAVY DUTY)						
193.	C.3.1	GI pipe, Nb50 x 4.5 mm	400 Mtrs	400 Mtrs	800		
194.	C.3.2	GI pipe, Nb25 x 4.05 mm	200 Mtrs	200 Mtrs	400		
195.	C.3.3, D.3.14.2	GI pipe, Nb15 x 3.25 mm / ½” pipes	3000 Mtrs	3000 Mtrs	6000		
	CHECKING AND COMMISSIONING OF FOLLOWING ERECTED BY OTHER AGENCY						
196.	E.4.3.1	125 MW Generator	1 No. ^{\$}	1 No. ^{\$}	2 N		
197.	B.1.10.1	ESP Transformers	14 Nos. ^{\$}	14 Nos. ^{\$}	28 N		
198.	A.7.1, E.1.8.1	HT Motors (6.6 kV)	15 Nos. ^{\$}	15 Nos. ^{\$}	30 N		
199.	B.3.4.1	Lub Oil Skids for FD/ PA Fans	4 sets* ^{\$}	4 sets* ^{\$}	8 se		

* Lump sum rate to be quoted

\$ Rate to be quoted ONLY for commissioning

Signature of the Tenderer

SL. NO.	BOM REF.	DESCRIPTION	QTY	QTY	QTY		
			Unit 1 & Common	Unit 2	Unit 3		
200.	B.3.4.2	Hydraulic Coupling for ID Fan	2 sets* ^{\$}	2 sets* ^{\$}	4 sets		
201.	B.2.9.2	Air Preheater Skids	4 sets*	4 sets* ^{\$}	8 sets		
202.	C.4.5	HP dosing (Phosphate dosing) skid	1 set* ^{\$}	1 set* ^{\$}	2 sets		
203.	F.3.1	LP Dosing (Hydrazine/ Ammonia) Skids	2 sets ^{\$}	2 sets ^{\$}	4 sets		
204.	A.3.8.1	Feeder Mounted C&I Equipment along with Feeder Integral Cabinet	5 sets* ^{\$}	5 sets* ^{\$}	10 sets		
205.	A.4.9.1	Direct Water Level Gauges	2 Nos. ^{\$}	2 Nos. ^{\$}	4 Nos.		
206.	A.2.13.1 to A.2.13.5, E.3.4.1, E.3.4.2	Pneumatic Dampers (On/Off Type)	35 Nos. ^{\$}	35 Nos. ^{\$}	70 Nos.		
207.	C.4.4, E.2.2.2	Flow switch / Flow Gauges	37 No. ^{\$}	37 No. ^{\$}	74 Nos.		
208.	D.3.3.4	Flow Meter	1 No. ^{\$}	1 No. ^{\$}	2 Nos.		
209.	A.1.13.3, A.3.8.2, A.3.8.3, E.2.2.4	Checking of Limit Switches	81 No. ^{\$}	81 No. ^{\$}	162 Nos.		
210.	A.4.9.2, B.2.9.1, E.1.8.3, E.2.2.3	Solenoid valves	38Nos. ^{\$}	38Nos. ^{\$}	76Nos.		
211.	E.2.2.5	Checking of Position transmitters	6 Nos. ^{\$}	6 Nos. ^{\$}	12 Nos.		

* Lump sum rate to be quoted

\$ Rate to be quoted ONLY for commissioning

Signature of the Tenderer

SL. NO.	BOM REF.	DESCRIPTION	QTY	QTY	QTY		
			Unit 1 & Common	Unit 2	Unit 3		
212.	E.2.2.6	Level Switches	4 Nos. \$	4 Nos. \$	8 Nos.		
213.	B.3.4.3, E.1.1.2, E.1.2.7, E.3.3, E.4.3.2	Checking the healthiness of Temperature Elements (RTDs)	262 Nos. \$	262 Nos. \$	524 Nos.		
214.	E.2.2.7	Servo Valves	6 Nos. \$	6 Nos. \$	12 Nos.		
215.	A.7.4	Motor Operated Valves : Regulating Type	3 Nos. \$	3 Nos. \$	6 Nos.		
216.	A.7.5, C.4.2	Motor Operated Valves: ON/ OFF Type	21 Nos. \$	21 Nos. \$	42 Nos.		
217.	A.1.13.1	Trip Valves	38 Nos. \$	38 Nos. \$	76 Nos.		
218.	A.1.13.2, A.4.9.3, C.4.1, E.2.2.1, F.3.2	Control Valves	34 Nos. \$	34 Nos. \$	68 Nos.		
219.	A.7.2, B.1.10.3, C.4.3, E.1.8.2	LT Motors (Ui-directional)	141 Nos. \$	141 Nos. \$	282 Nos.		
220.	A.7.3	LT Motors (Bidirectional)	60 Nos. \$	60 Nos. \$	120 Nos.		
221.	B.1.10.2	Hoist	1 No. \$	1 No. \$	2 Nos.		

TOTAL CONTACT VALUE Rs.

Inwards Rs.

Signature of the Tenderer

* Lump sum rate to be quoted

\$ Rate to be quoted ONLY for commissioning

SL. NO.	DESCRIPTION	QTY	U R.
	PROVISIONAL RATE FOR THE FOLLOWING OPTIONAL ITEMS TO BE QUOTED		
222.	Fabrication and installation of canopy	(per sq. m)	
223.	Laying of Fibre Optic Cable, along with conduit (excluding termination)	(per Mtr)	
224.	Erection of 25 mm GI Conduit	(per metre)	
225.	Erection of 1/4" SS Tube	(per metre)	
226.	Erection of 1/2" SS Tube	(per metre)	
227.	Erection of Cable Trays, Perforated Type, 200 mm wide	(per metre)	
228.	Erection of Cable Trays, Perforated Type, 450 mm wide	(per metre)	
229.	Erection of Cable Trays, Ladder Type, 300 mm wide	(per metre)	
230.	Erection of GI Flat, 25 x 3 / 5 mm	(per metre)	
231.	Erection of GI Flat, 65 x 10 mm	(per metre)	
232.	Erection of GI Flat, 75 x 10 mm	(per metre)	

Signature of the Tenderer

Signature of the Tenderer

SL. NO.	DESCRIPTION	QTY	U R.
	PROVISIONAL RATE FOR THE FOLLOWING OPTIONAL ITEMS TO BE QUOTED		
233.	Erection of ½” Copper Tube	(per metre)	
234.	Erection of ½” Flexible conduit	(per metre)	
235.	Erection of ¾” Flexible conduit	(per metre)	
	Supply of Cable Glands: <i>Double Compression type, Nickel Plated, Weatherproof, Brass Cables glands, conforming to IS12943:1990. of following sizes</i>		
236.	Upto 12 sq mm	(Per No.)	
237.	12.1 – 16.5 sq mm	(Per No.)	
238.	16.6 – 18 sq mm	(Per No.)	
239.	18.1 – 20 sqmm	(Per No.)	
240.	20.1 – 23 sq mm	(Per No.)	
241.	23.1 – 26 sq mm	(Per No.)	
242.	26.1 – 30 sq mm	(Per No.)	

Signature of the Tenderer

SL. NO.	DESCRIPTION	QTY	U R.
	PROVISIONAL RATE FOR THE FOLLOWING OPTIONAL ITEMS TO BE QUOTED		
243.	30.1 – 33 sq mm	(Per No.)	
244.	33.1 – 37 sq mm	(Per No.)	
245.	37.1 – 41 sq mm	(Per No.)	
246.	41.1 – 46 sq mm	(Per No.)	
247.	46.1 – 52 sq mm	(Per No.)	
248.	52.1 – 60 sq mm	(Per No.)	
249.	60.1 – 67 sq mm	(Per No.)	
250.	67.1 – 72 sq mm	(Per No.)	
251.	72.1 – 78 sq mm	(Per No.)	
252.	78.1 – 84 sq mm	(Per No.)	
253.	84.1 – 94 sq mm	(Per No.)	
254.	94.1 – 105 sq mm	(Per No.)	

Signature of the Tenderer

SL. NO.	DESCRIPTION	QTY	U R.
	PROVISIONAL RATE FOR THE FOLLOWING OPTIONAL ITEMS TO BE QUOTED		
	Supply of Cable Lugs <i>Crimping & Ring Type Tinned Copper/ Aluminum Lugs for following sizes</i>		
255.	6 sq. mm, Al	(per No.)	
256.	10 sq. mm, Al	(per No.)	
257.	35 sq. mm, Al	(per No.)	
258.	630 sq. mm, Al	(per No.)	
259.	120 sq. mm, Al	(per No.)	
260.	6 sq. mm, Cu	(per No.)	
261.	16 sq. mm, Cu	(per No.)	
262.	25 sq. mm, Cu	(per No.)	
263.	35 sq. mm, Cu	(per No.)	
264.	50 sq. mm, Cu	(per No.)	
265.	70 sq. mm, Cu	(per No.)	

Signature of the Tenderer

NOTE TO RATE SCHEDULE

1. The quantities indicated in the Rate Schedule are only approximate and are liable for variation. Payment shall be made to the actual quantity erected at the unit rate quoted / accepted.
2. Dimension and weight indicated in the Rate Schedule are only approximate and given for guidance of the contractor.
3. Rates include complete installation, testing, commissioning and trial operation of equipments laying and dressing of cables, termination of cables etc.
4. Where the provisional rates /values are asked for, the successful contractor who has been awarded the work shall have to match their provisional rates for all categories of work, with the lowest provisional rates/value quoted by other qualified bidders. Only those rate/values will be paid for these works. However BHEL RESERVES ITS RIGHT TO TREAT THESE PROVISIONAL WORKS AS OPTIONAL AND GET IT DONE THROUGH OTHERS ALSO AS PER OUR DISCRETION. The above condition shall be binding on the contractor.
5. Tenderers are requested to quote their rates, only in the price bid (part II) provided by BHEL. Quoting of rates in any other form/formats will not be entertained.

Signature of the Tenderer