

**FOR OFFICIAL USE ONLY
NOT FOR PUBLICATION**

**TENDERER'S COPY
ORIGINAL COPY**

TENDER SPECIFICATION

TENDER NO. BHEL/ NR/SCT/LALITPUR/C&I/PACKAGE-A&B/954

FOR

“Erection, testing, commissioning, PG test assistance trial operation and handing over of Control & instrumentation and station C&I of unit 1, 2 &3 of 3x660 MW OF LPGCL, Lalitpur STPP, Distt: Lalitpur (U.P.)”

PART II – PRICE BID- Package-B



**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**

TENDER NO. BHEL/ NR/SCT/LALITPUR/C&I/PACKAGE-A/954



**ISO 9001, ISO 14001,
OHSAS 18001 & SA 8000
certified company
SubContract and Purchase Deptt.**

**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)
Phone: 0091-0120- 2416513/ 2416278
Fax 091-0120-2416528
Email: prashant@bhelsnr.co.in/ bps@bhelsnr.co.in**

TENDER NO. BHEL/ NR/SCT/LALITPUR/C&I/PACKAGE-A&B/954

IMPORTANT NOTE

PURCHASER OF THIS TENDER DOCUMENT IS ADVISED TO CHECK AND ENSURE COMPLETION OF ALL PAGES OF TENDER DOCUMENT AND REPORT ANY DISCREPANCY TIMELY FOR CORRECTIVE ACTION, IF ANY, TO THE ISSUING AUTHORITY BEFORE THE BIDS ARE SUBMITTED. ORIGINAL COPY OF TENDER DOCUMENT COMPLETE IN ALL RESPECTS MUST BE SUBMITTED BACK AS PART OF THE BID WITHOUT WHICH THE SAME IS LIABLE TO BE REJECTED BY BHEL.

THIS TENDER SPECIFICATION ISSUED TO:

M/S-----

CHAPTER- XIII A

RATE SCHEDULE (FOR PACKAGE 'B')

ITEM NUM	DESCRIPTION OF WORK	TOTAL VALUE 'B' IN INR (IN FIGURES AND WORDS)
1.0	TOTAL LUMSUM PRICE FOR PACKAGE 'B' "FOR ERECTION, TESTING, COMMISSIONING & HANDING OVER OF ALL C&I EQUIPMENTS OF UNIT NO. 2 and 3 at 660 MW LALITPUR STPP, DISTT: LALITPUR (U.P.)"	

Notes:

1. The rates of individual item for the entire scope of work as define in BOQ Chapter XIII shall be arrived as per Calulation defined in Chapter XIII'B'
2. The derived item rate will remain firm through out the contract period.

Chapter XIII 'B'

FOR PACKAGE 'B' CALCULATION RATIO FOR DIFFERENT ITEMS BASED UPON TOTAL QUOTED VALUE AS PER RATE SCHEDULE OF CHAPTER XIII-A

SI No.	Description of Item	Unit	Quantity (Q)	Item Factor (F)	Item Rate/Unit(I)
					Item Rate/Unit(I)= (Item Factor(F)*Lumsum Price (B))/100000
1	suit of one panel	No.	24	33.780	
2	suit of two panels	No.	14	57.009	
3	suit of three panels	No.	6	75.670	
4	suit of Four panels	No.	8	189.916	
5	suit of five panels	No.	2	58.284	
6	DAVR panel	Set	2	130.657	
7	Grounding Brush Monitor	Set	2	9.565	
8	Generator Relay panel/STRP panel with Generator disturbance recorder panel	Set	2	115.504	
9	Generator Control Panel	No.	2	49.700	
10	Electrical Interface System Panel	No.	2	15.502	
11	Availability based Tariff System panel	No.	2	15.502	
12	Steam Leak Detection Panel	No.	2	55.164	
13	Gas Analyser cabinet	No.	4	15.208	
14	Acoustic Steam leak detection system panel(ASLD)	No.	2	15.502	
15	Vibration Monitoring System	Set	8	114.934	
16	Acoustic pyrometer remote cabinet including PC station	Set	2	24.211	
17	FTP LOCAL STARTER Box	No.	4	12.715	
18	Elevator control Panel	No.	2	13.441	
19	SCANNER AIR FAN STARTER	No.	2	29.088	
20	Sub emergency MCC (2500 A)	SET	2	292.368	

Chapter XIII 'B'

FOR PACKAGE 'B' CALCULATION RATIO FOR DIFFERENT ITEMS BASED UPON TOTAL QUOTED VALUE AS PER RATE SCHEDULE OF CHAPTER XIII-A

SI No.	Description of Item	Unit	Quantity (Q)	Item Factor (F)	Item Rate/Unit(I)
					Item Rate/Unit(I)= (Item Factor(F)*Lumsum Price (B))/100000
21	Boiler PMCC	SET	2	359.344	
22	Boiler Valve & Damper MCC	SET	2	314.426	
23	Boiler ACDB	SET	2	78.208	
24	Turbine PMCC	SET	2	289.722	
25	Turbine Valve and Damper MCC	SET	2	286.354	
26	Unit Service MCC	SET	2	294.776	
27	Data Concentrator Panel	SET	12	40.427	
28	HART Management System for SMART Transmitter Panel dimension	SET	2	47.870	
29	AH Main Control Panel	No.	2	18.405	
30	AH LCS Sector Plate 1&2 Drive Panel	No.	12	10.175	
31	HWL-1&2 and MEF Control valve Panel	No.	2	10.175	
32	SOOT BLOWER MCC	Set	2	244.439	
33	Furnace Flame Viewing System –Remote Panel	No.	2	31.588	
34	Furnace Flame Viewing System –Local Panel	No.	4	16.954	
35	GRAVIMETRIC FEEDER REMOTE PANEL	No.	16	35.514	
36	Gravimetric Feeder Integral Panel	No.	16	9.689	
37	NETWORK PANEL With accessories	No.	10	17.032	
38	Power Distribution Panel	No.	2	20.219	
39	Starter cabinet for Emergency Lube Oil Motor, DC seal oil Motor	No.	4	16.227	

Chapter XIII 'B'

FOR PACKAGE 'B' CALCULATION RATIO FOR DIFFERENT ITEMS BASED UPON TOTAL QUOTED VALUE AS PER RATE SCHEDULE OF CHAPTER XIII-A

SI No.	Description of Item	Unit	Quantity (Q)	Item Factor (F)	Item Rate/Unit(I)
					Item Rate/Unit(I)= (Item Factor(F)*Lumsum Price (B))/100000
40	Max engineer/max Storian/max operator/max link stations/station supervisor/shift in charge terminal/MIS PC/PCAL PC/LVS PC/TFT monitor along with installation of workstation with all connectivity	No.	70	5.537	
41	Printers(A4 & A3 Colour Laser Jet, Inkjet, Dot Matrix) With Printer Table and	No.	14	2.147	
42	LARGE VIDEO SCREEN(80"/40")	No.	10	25.283	
43	Ethernet switches-16 ports	Set	2	4.022	
44	Control Desk	Set	2	80.267	
45	Computer Furniture(for all servers ,pc, printer) including simulator package	Set	4	39.144	
	LIE/LIR/LGB				
46	Local Instrument racks (LIR) Type A 1650x2150x800	No.	56	9.719	
47	Local Instrument racks (LIR) Type B 1300x800x2150 mm	No.	64	10.400	
48	Local Instrument racks (LIR) Type C 800x850x1650 mm	No.	22	10.075	
49	Local Instrument enclosures (LIE) Type A 1450x2200x950	No.	28	13.948	
50	Local Instrument enclosures(LIE) Type B 1100x800x2300 mm	No.	24	13.588	
51	Local Instrument enclosures(LIE) Type C 700x600x2100 mm	No.	4	13.452	
52	Local Gauge Boards(LGB)	No.	16	9.823	
	PRESSURE INSTRUMENTS RACKS (IR1 to IR7)				
53	Rack of size 2150x700x2150 mm	No.	18	11.987	
54	Rack of size 1250x700x2150 mm	No.	18	12.231	
	24 V DC BATTERY & CHARGER SYSTEM				

Chapter XIII 'B'

FOR PACKAGE 'B' CALCULATION RATIO FOR DIFFERENT ITEMS BASED UPON TOTAL QUOTED VALUE AS PER RATE SCHEDULE OF CHAPTER XIII-A

SI No.	Description of Item	Unit	Quantity (Q)	Item Factor (F)	Item Rate/Unit(I)
					Item Rate/Unit(I)= (Item Factor(F)*Lumsum Price (B))/100000
55	24 V DC Battery for SG and TG	Set	2	117.070	
56	24 V DC Battery Charger for SG ,TG alongwith DCDB	Set	2	130.763	
57	UPS system comprising of the following: UPS Panel, Voltage stabilizer cubicle, Input Iso. Transformer cubicle, Static invertors etc. including ACDB and bateeries	Set	2	319.792	
	<i>INSTALLATION,CALIBRATION& COMMISSIOINGOFLOCAL/FIELD INSTRUMENTATION/EQUIPMENT</i>				
58	Flow meters/Flow transmitters	No.	372	3.587	
59	Temperature gauges/Pressure gauges/ Diff. Pressure gauge	No.	870	0.793	
60	Temp. Transmitter /Pressure Transmitters / Differential pressure/Position	No.	470	1.635	
61	Level Transmitter/Level gauge	No.	74	3.692	
62	Temp. switches/Pressure switches /DP switches	No.	494	1.164	
63	Level switch/Level switch(Conductivity type)/ Level switch(Float type) / Level Instruments	No.	82	2.227	
64	Pneumatic Pressure controller with accessories	Set	2	2.852	
65	Electronic/Guided Wave Radar /Ultrasonic type level Transmitters	No.	766	3.105	
66	Limit switches	No.	112	0.643	
67	Conductivity cell	No.	12	3.151	
68	ERV Controller	No.	8	3.142	
69	ASLD sensor assy	No.	48	3.404	
70	Sonic tube & sensor asy	No.	48	28.399	
71	Field amplifier Box	Set	48	3.109	

Chapter XIII 'B'

FOR PACKAGE 'B' CALCULATION RATIO FOR DIFFERENT ITEMS BASED UPON TOTAL QUOTED VALUE AS PER RATE SCHEDULE OF CHAPTER XIII-A

Sl No.	Description of Item	Unit	Quantity (Q)	Item Factor (F)	Item Rate/Unit(I)
					Item Rate/Unit(I)= (Item Factor(F)*Lumsum Price (B))/100000
72	Rotor Stoppage Alarm Box-including sensors for Air pre heaters	No.	4	3.853	
73	Reverse Rotation Monitoring system	No.	6	5.411	
74	Flame scanner head assy. Along with fibre optic cable length 130 ",lens barrel	No.	64	4.545	
75	Microprocessor based Flame scanner amplifier	No.	16	5.727	
76	Hand Held HART communicator	Set	2	3.846	
77	Gas Analyser(wt- 400 kg)	Set	4	8.550	
78	Moisture sensor	Set	2	3.896	
79	Flue gas analysers comprising of SOX/NOX/CO/Co2 analyzer, along with Sensor head, in situ probe,Pressure, temp. transmitter, Display, control & Air drier unit other accessories.	Set	2	96.296	
80	Steam and water analysis system, SWAS consisting of: Conductivity analyser-13 No.,pH analyser-10 No.,Dissolved oxygen analyser-5 No.,Silica analyser-1 No.,Sodium analyser-1 No.,Conductivity analyser with drawable type-2 no.,SWAS primay rack- 2 set,Wet panel-1 set,Dry panel- 1 set,Chiller-1 set,Swas Sample Handling System-01 set,	Set	2	260.334	
81	Oxygen Analyser –Low temperature along with Electronic Unit and other accessories.	Set	20	14.943	
82	Thermocouples(K/R type)	No.	888	2.316	
83	RTDs with thermo well	No.	760	1.001	
84	Cr- Al Thermocouple assy	No.	1546	1.085	
85	MTM Thermo Couple up to 32 M (duplex)	No.	718	3.165	

Chapter XIII 'B'

FOR PACKAGE 'B' CALCULATION RATIO FOR DIFFERENT ITEMS BASED UPON TOTAL QUOTED VALUE AS PER RATE SCHEDULE OF CHAPTER XIII-A

Sl No.	Description of Item	Unit	Quantity (Q)	Item Factor (F)	Item Rate/Unit(I)
					Item Rate/Unit(I)= (Item Factor(F)*Lumsum Price (B))/100000
86	Thermo well	No.	80	0.856	
87	Thermometer(Bimettalic)/Gas filled/MIS	No.	54	0.885	
88	Co –AXL dial thermometer	No.	14	0.885	
89	Bearing Elerment	No.	32	2.067	
90	Burner Tilt shear pin failure indication box	No.	8	3.202	
91	Heavy Duty Limit switch(Burner tilt)	No.	40	1.838	
92	Furnace temp. Probe	No.	4	5.324	
93	HEA exciter box assembly	Set	40	7.503	
94	Air Filter Regulators	No.	130	0.875	
95	I/P Converters	No.	52	0.942	
96	Vibration Transducers/Monitor/ Detectors/Element	No.	216	1.591	
97	Shaft Axial Detector	No.	4	2.539	
98	Proximitors	No.	12	1.121	
99	Rota meters	No.	4	0.345	
100	Solenoid Valves	No.	296	0.646	
101	Speed Regulators / Air lock valves in oil gun corner rack	No.	80	0.750	
102	Speed measuring loop	Set	12	2.387	
103	Coal bunker level Monitoring system consists of Ultrasonic level sensor-14 no.	Set	2	79.734	
104	Coal Flow Monitor	No.	16	10.757	
105	Recorder 3/6/24 channel	No.	2	2.802	

Chapter XIII 'B'

FOR PACKAGE 'B' CALCULATION RATIO FOR DIFFERENT ITEMS BASED UPON TOTAL QUOTED VALUE AS PER RATE SCHEDULE OF CHAPTER XIII-A

SI No.	Description of Item	Unit	Quantity (Q)	Item Factor (F)	Item Rate/Unit(I)
					Item Rate/Unit(I)= (Item Factor(F)*Lumsum Price (B))/100000
106	Opacity Monitor	No.	2	77.404	
107	Electronic /Digital Indicators(Bar Graph Indicators, Temperature Indicatorsetc.)	No.	80	1.058	
108	Pressure/ Temperature Indicators (MovingCoil Type)	No.	10	1.058	
109	Speed switch / Speed detector	No.	8	0.945	
110	Pneumatic Temperature controller with accessories	No.	4	1.411	
	CONTROL/SIGNAL/SCREENED/POWER CABLES LAYING,DRESSING,CLAMPING & TERMINATION				
	<u>LT Sheilded /Screened Cable//FRLS/Power cable</u>				
111	2P X 0.5 SQ MM	Mtr	130230	0.016	
112	2 Triad X 0.5 SQ MM	Mtr	10400	0.019	
113	4P X 0.5 SQ MM	Mtr	242600	0.023	
114	8P X 0.5 SQ MM	Mtr	159900	0.027	
115	12P X 0.5 SQ MM	Mtr	35000	0.029	
116	2P X 1.5 SQ MM	Mtr	23200	0.016	
117	4P X 1.5 SQ MM	Mtr	10000	0.019	
118	2C X 2.5 SQ MM	Mtr	61200	0.016	
119	3C X 2.5 SQ MM	Mtr	170400	0.016	
120	7C X 2.5 SQ MM	Mtr	46400	0.018	
121	10C X 2.5 SQ MM	Mtr	52000	0.018	
122	16C X 2.5 SQ MM	Mtr	1000	0.027	

Chapter XIII 'B'

FOR PACKAGE 'B' CALCULATION RATIO FOR DIFFERENT ITEMS BASED UPON TOTAL QUOTED VALUE AS PER RATE SCHEDULE OF CHAPTER XIII-A

SI No.	Description of Item	Unit	Quantity (Q)	Item Factor (F)	Item Rate/Unit(I)
					Item Rate/Unit(I)= (Item Factor(F)*Lumsum Price (B))/100000
123	19C X 2.5 SQ MM	Mtr	23200	0.029	
124	3C X 6 SQ MM	Mtr	4400	0.019	
125	2Px16 AWG T/C ext. cable	Mtr	28870	0.023	
126	4Px16 AWG T/C extention cable	Mtr	4000	0.023	
127	6Px16 AWG T/C extension cable	Mtr	100000	0.023	
128	Flame scanner cables	Mtr	17000	0.021	
129	UTP E-CAT cable	Mtr	10000	0.029	
130	Fibre optic cable	Mtr	7000	0.076	
131	Compensating cable	Mtr	11600	0.021	
132	Extension Cable	Mtr	1920	0.023	
	<u>LT XLPE Power Cables</u>				
133	1C - 10- AL ARMoured LT XLPE CABLE	Mtr	9334	0.014	
134	1C - 25- AL ARMoured LT XLPE CABLE	Mtr	2000	0.022	
135	1C - 50- AL ARMoured LT XLPE CABLE	Mtr	1000	0.003	
136	1C - 95- AL ARMoured LT XLPE CABLE	Mtr	6666	0.089	
137	1C - 185- AL ARMoured LT XLPE CABLE	Mtr	3334	0.034	
138	1C - 400- AL ARMoured LT XLPE CABLE	Mtr	6000	0.043	
139	1C - 630- AL ARMoured LT XLPE CABLE	Mtr	2666	0.128	
140	2C - 10- AL ARMoured LT XLPE CABLE	Mtr	1666	0.021	
141	2C - 25- AL ARMoured LT XLPE CABLE	Mtr	9000	0.025	

Chapter XIII 'B'

FOR PACKAGE 'B' CALCULATION RATIO FOR DIFFERENT ITEMS BASED UPON TOTAL QUOTED VALUE AS PER RATE SCHEDULE OF CHAPTER XIII-A

SI No.	Description of Item	Unit	Quantity (Q)	Item Factor (F)	Item Rate/Unit(I)
					Item Rate/Unit(I)= (Item Factor(F)*Lumsum Price (B))/100000
142	3C - 10- AL ARMoured LT XLPE CABLE	Mtr	17000	0.026	
143	3C - 25- AL ARMoured LT XLPE CABLE	Mtr	54666	0.029	
144	3C - 50- AL ARMoured LT XLPE CABLE	Mtr	15666	0.032	
145	3C - 95- AL ARMoured LT XLPE CABLE	Mtr	8334	0.037	
146	3C - 150- AL ARMoured LT XLPE CABLE	Mtr	666	0.052	
147	3C - 240- AL ARMoured LT XLPE CABLE	Mtr	9334	0.063	
148	3.5C - 25- AL ARMoured LT XLPE CABLE	Mtr	18000	0.052	
149	3.5C - 50- AL ARMoured LT XLPE CABLE	Mtr	7334	0.032	
150	3.5C - 95- AL ARMoured LT XLPE CABLE	Mtr	10334	0.037	
151	3.5C - 300- AL ARMoured LT XLPE CABLE	Mtr	2334	0.063	
152	4C - 10- AL ARMoured LT XLPE CABLE	Mtr	14666	0.025	
153	1C - 2.5- CU ARMoured LT XLPE CABLE	Mtr	15334	0.014	
154	2C - 2.5- CU ARMoured LT XLPE CABLE	Mtr	30666	0.016	
155	3C - 2.5- CU ARMoured LT XLPE CABLE	Mtr	136666	0.016	
156	4C - 2.5- CU ARMoured LT XLPE CABLE	Mtr	2334	0.016	
	<u>LT PVC CONTROL CABLES</u>				
157	1.1 kV LT PVC-2C-1.5-ARMoured LT PVC Cable	Mtr	48666	0.018	
158	1.1 kV LT PVC-7C-1.5-ARMoured LT PVC Cable	Mtr	6666	0.026	
159	1.1 kV LT PVC-12C-1.5-ARMoured LT PVC Cable	Mtr	666	0.022	
160	1.1 kV LT PVC-5C-2.5-ARMoured LT PVC Cable	Mtr	2000	0.016	

Chapter XIII 'B'

FOR PACKAGE 'B' CALCULATION RATIO FOR DIFFERENT ITEMS BASED UPON TOTAL QUOTED VALUE AS PER RATE SCHEDULE OF CHAPTER XIII-A

SI No.	Description of Item	Unit	Quantity (Q)	Item Factor (F)	Item Rate/Unit(I)
					Item Rate/Unit(I)= (Item Factor(F)*Lumsum Price (B))/100000
161	1.1 kV LT PVC-19C-2.5-ARMOURED LT PVC Cable	Mtr	4000	0.048	
	EARTHING MATERIAL				
162	65 x 10 mm GI earthing flat	Mtr	4680	0.103	
163	50 x 6 mm GI earthing flat	Mtr	5640	0.095	
164	25x3 mm GI earthing flat	Mtr	4520	0.073	
165	8SWG Galvanised steel wire	Mtr	9320	0.018	
166	Electronic Earthing Pit	No.	2	30.695	
	CABLE TRAYS COMPLETE WITH COUPLER PLATES, FASTENERS, CLAMPS AND FIXING HARDWARES ETC ERECTION INCLUDING SUPPORT & COVERS				
167	Ladder/ Perforated type Cable tray, W=50mm	Mtr	9950	0.126	
168	Ladder/ Perforated type Cable tray, W=100mm	Mtr	13150	0.141	
	INSTALLATION & FABRICATION OF STRUCTURAL STEEL				
169	ANGLE , ISMC, PLATES etc	MT	90	32.976	
	IMPULSE PIPES/ TUBES ALONG WITH FITTINGS				
170	Copper Tube-6mm/8mm/1/4"	Mtr	9040	0.122	
171	1' CS Pipe SCH 80	Mtr	2050	0.309	
172	CS Pipe 21.3 x 3.73	Mtr	800	0.332	

Chapter XIII 'B'

FOR PACKAGE 'B' CALCULATION RATIO FOR DIFFERENT ITEMS BASED UPON TOTAL QUOTED VALUE AS PER RATE SCHEDULE OF CHAPTER XIII-A

SI No.	Description of Item	Unit	Quantity (Q)	Item Factor (F)	Item Rate/Unit(I)
					Item Rate/Unit(I)= (Item Factor(F)*Lumsum Price (B))/100000
173	CS Pipe 60.3x3.91	Mtr	120	0.397	
174	1/2" CS Pipe SCH 80	Mtr	12000	0.272	
175	1/2" CS Pipe XXS	Mtr	1000	0.283	
176	1/2" CS Pipe SCH 160	Mtr	3200	0.246	
177	3/4" CS Pipe SCH 80	Mtr	7200	0.302	
178	1' AS Pipe	Mtr	2000	0.264	
179	1/2" AS Pipe SCH 160	Mtr	1400	0.258	
180	1/2" AS Pipe SCH 80	Mtr	1300	0.315	
181	1/2" AS Pipe XXS	Mtr	1800	0.277	
182	1/2" SS PipeSCH 40	Mtr	3000	0.231	
183	1/2" SS PipeSCH 80	Mtr	900	0.261	
184	1/2" SS PipeSCH 160	Mtr	600	0.214	
185	Cr-Al pipe 21.3x3.73	Mtr	660	0.288	
186	Seam less CS tube 13.5x2.6	Mtr	846	0.194	
187	Carbon steel tube 88.9x4	Mtr	80	0.251	
188	Carbon steel tube 33.7x3.38	Mtr	4	0.277	
189	Seam less CS tube 21.3x2.3	Mtr	280	0.220	
190	Seam less AS tube 21.3x2.77	Mtr	1420	0.199	
191	Seam less AS tube 13.5	Mtr	412	0.452	
192	SS Tube 12.7x2.1	Mtr	1400	0.202	

Chapter XIII 'B'

FOR PACKAGE 'B' CALCULATION RATIO FOR DIFFERENT ITEMS BASED UPON TOTAL QUOTED VALUE AS PER RATE SCHEDULE OF CHAPTER XIII-A

Sl No.	Description of Item	Unit	Quantity (Q)	Item Factor (F)	Item Rate/Unit(I)
					Item Rate/Unit(I)= (Item Factor(F)*Lumsum Price (B))/100000
193	SS Tube 6x1.5	Mtr	60	0.173	
194	GI pilica conduit with fittings(up to 1" size)	Mtr	3000	0.202	
195	GI pilica conduit with fittings(above 1" size)	Mtr	3000	0.181	
196	GI Rigid conduit up to 1"	Mtr	3000	0.141	
197	GI pipe ½" NB	Mtr	7200	0.106	
198	GI pipe 1" NB	Mtr	300	0.113	
199	Flexible conduiting /Rubber hoses/pipes	Mtr	2000	0.201	
	JUNCTION BOXES/INDICATION BOXES/LOCAL CONTROL STATIONS				
200	JB 12 way	No.	74	1.078	
201	JB 24 way	No.	286	1.103	
202	JB 36 way	No.	66	1.207	
203	JB 48 way	No.	228	1.400	
204	JB 64 way	No.	10	1.449	
205	JB 72 way	No.	58	1.482	
206	JB 96 way	No.	4	1.532	
207	6 way miniature Junction box	No.	64	0.955	
208	Shear Pin failure Indication box	No.	8	1.720	
209	Local oil gun maintenance switch	No.	32	1.133	
210	Local start stop Push button	No.	22	1.262	

Chapter XIII 'B'

FOR PACKAGE 'B' CALCULATION RATIO FOR DIFFERENT ITEMS BASED UPON TOTAL QUOTED VALUE AS PER RATE SCHEDULE OF CHAPTER XIII-A

SI No.	Description of Item	Unit	Quantity (Q)	Item Factor (F)	Item Rate/Unit(I)
					Item Rate/Unit(I)= (Item Factor(F)*Lumsum Price (B))/100000
	COMMISSIONING/CALIBRATION/TESTING of control valves, on/off valves, /pneumatic valves, actuators, power cylinders etc.				
211	Commissioning of Pneumatic actuators(Power cylinder) -On/Off type	No.	136	2.486	
212	Commissioning of Pneumatic actuators(Power cylinder) -Regulating type	No.	246	2.486	
213	SADC drives	No.	176	9.178	
214	Over fire air tilt drives	No.	8	3.026	
215	Pulversier Lube oil skid The scope of work includes removal of instruments calibration, refixing, checking cable connection from JB to instruments etc.approx..instrument per set RTD-04 no., Temp. Gauge-02 no. ,Pressure switch-03 no., Pressure gauge-02 no., level switch-02 no., Level gauge-01 no., Flow switch-02 no.	Set	14	10.051	
216	Lub oil skids for FD/ ID/ PA Fans The scope of work includes removal of instruments calibration, refixing, checking cable connection from JB to instruments etc. The approximate total quantity of instruments for all the 06 Nos skids put together is given below: DP Gauges - 06 Nos., Pressure Gauges – 18 Nos , Temperature Gauges – 12 Nos, Diff. Pressure Transmitters- 06 Nos, Pressure Transmitters-12 Nos, Pressure Switches – 06 Nos, Level transmitters-06 Nos, Flow indicator with flow switch - 06 Nos	Set	12	28.001	

Chapter XIII 'B'

FOR PACKAGE 'B' CALCULATION RATIO FOR DIFFERENT ITEMS BASED UPON TOTAL QUOTED VALUE AS PER RATE SCHEDULE OF CHAPTER XIII-A

Sl No.	Description of Item	Unit	Quantity (Q)	Item Factor (F)	Item Rate/Unit(I)
					Item Rate/Unit(I)= (Item Factor(F)*Lumsum Price (B))/100000
217	Gravimetric feeder mounted C&I Equipment like motion ,monitor sensor, micro switches_ etc	Set	14	5.550	
218	Commissioning of Electric actuators/dampers/valves Open/Close type	No.	110	3.148	
219	Commissioning of Control Valves	No.	102	2.268	
220	Commissioning of motorised actuators Open/close type	No.	112	3.941	
221	Commissioning of Pneumatic Valves/Safety relief valves/NRV	No.	100	1.940	