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TENDER SPECIFICATIONS

TENDER NO. BHEL:NR(SCT): DARIBA:BLR-TG-CNI & MM:595

FOR

Erection, testing, commissioning and trial operation of P.F. fired Boiler with Auxiliaries, ESP with Auxiliaries, De-aerating Heater with approach platform, Tanks, Vessels, Re-generative System Piping, Power Cycle Piping, HP & LP Bypass System, Application of Thermal Insulation & Cladding, Painting and total Material Handling work of 2x80 MW CPP at DARIBA MINES, HINDUSTAN ZINC LIMITED, DIST-RAJASAMAND, RAJASTHAN.

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)



Figure 1
ISO 9001-2000, ISO 14001
and OHSAS 18001 certified
company
SubContract and Purchase
Deptt.

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
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IMPORTANT NOTE

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THIS TENDER SPECIFICATION ISSUED TO:

M/S-----

RATE SCHEDULE

TENDER NO. BHEL:NR(SCT): DARIBA:BLR -TG-CNI & MM:595					
HINDUSTAN ZINC 2X80MW DARIBA PROJECT					
RATE SCHEDULE CUM BOQ					
SI. No.	DESCRIPTION OF WORK	QTY	UOM	UNIT RATE (Rs.)	AMOUNT (Rs.)
A	RECEIPT, UNLOADING, VERIFICATION, STACKING OF MATERIALS AS PER SCOPE SPECIFIED IN TENDER SPECIFICATION WITH ASSOCIATED AMENDMENTS, CLARIFICATIONS ETC. VARIOUS ITEMS OF WORK ARE AS FOLLOWS.				
A.1	Materials received at site in trucks, trailers/ carriers for consignments consigned to project, unloading at BHEL storage yard/sheds, erection site, verification and stacking the same in assigned location including box verification for incoming materials.	9600	MT		
A.2	Contacting road transporters/courier services go-down in and around Udaipur, based on LWB/GC notes handed over to the contractor and arranging collection, transportation of goods to BHEL storage yard, storage shed, erection site, unloading, verification and stacking the same in assigned location including box verification for incoming materials.	40	MT		

A.3	Shifting of materials already stored or stacked at BHEL stores/sheds/ erection site to customer's premises or premises of other agencies in HZL complex or vice versa by loading, transporting, unloading and stacking. Approx. Lead distance 3km.for incoming materials	300	MT		
A.4	Loading of materials into trucks/carriers at site stores/erection site for onward transportation to other destinations by other agencies (out going materials)	100	MT		
A.5	Collection of smalls from BHEL stores/ erection site, transporting to railway station/transport company's go-downs and booking for onward transportation by railways/road carriers to other destinations.	20	MT		
A.6	Preservation of components by surface cleaning, application of one coat of ROZC (IS:2074) primer and inscription of identification number/code etc.	100	MT		
B	ERECTION, TESTING & COMMISSIONING				
BI	Erection, Testing, Assistance for Commissioning, Final Painting and Handing Over of P.F. fired Boiler with Auxiliaries, ESP with Auxiliaries, De-aerating Heater with approach platform, Tanks, Vessels, Regenerative System Piping, Power Cycle Piping, HP & LP Bypass System, Application of Thermal Insulation & Cladding AS PER SCOPE SPECIFIED IN TENDER SPECIFICATION SECTION 4 PART I WITH ASSOCIATED AMENDMENTS, CLARIFICATIONS ETC. SCOPE AS PER APPENDIX I	8934	MT		

BII	CONDENSER, STEAM TURBINE WITH AUXILIARIES, LUBE OIL SYSTEM, TURBO-GENERATOR (INCLUDING LIFTING ARRANGEMENT FOR GENERATOR STATOR AND PLACEMENT ON FORMDATION), CONDENSER EXTRACTION PUMPS, BFP, LP&HP HEATERS, SJAE, DRAIN COOLER AND AUXILIARIES INCLUDING INTEGRAL PIPING WITH VALVES, M.S. PIPING BETWEEN ESV TO STEAM TURBINE, FITTINGS AND SUPPORTS ETC. AS PER ITEMS APPENDIX-II AND TENDER SPECIFICATION SECTION 4 PART II WITH ASSOCIATED AMENDMENTS, CLARIFICATIONS ETC. LUMPSUM RATE FOR 2 UNITS			N A	
BIII	ELECTRICAL AND CONTROL & INSTRUMENTATION AS PER ITEMS APPENDIX-III AND TENDER SPECIFICATION SECTION 4 PART-I WITH ASSOCIATED AMENDMENTS, CLARIFICATIONS ETC. FOR 2 UNITS TOTAL RATE. FOR ITEMS AS DETAILS IN BIV			UNIT RATES AS PER DETAILS IN BIV	
	GRAND TOTAL AMOUNT IN FIGURES (Rs.)				

NOTE

1. THE RATE BSHALL BE ENTERED IN FIGURES AS WELL AS IN WORDS. IN CASE OF DIFFERENCE IN RATES BETWEEN FIGURES AND WORDS, THE LESSER OF THE TWO WILL BE TREATED AS VALID RATE.
2. Only 'Unit Rate' shall be considered for evaluation and award.
3. The quantities indicated against each item above are tentative and these are liable to vary depending upon the site requirement. The contractor has to handle / erect / commission all items indicated by BHEL Engineer for achieving unit wise milestone and completion of workrate.
4. In case of omission in quoting any rate, the evaluation will be done considering the highest quoted rate obtained against that item. But the work, if awarded, will be on the lowest quoted rate obtained against that item.
5. The tenderer must submit their tenders as required in two parts in separate sealed covers prominently superscribed as Part-I Technical bid and Part-II ,Price bid also indicating on each of the cover tender specification no., date and time as mentioned in tender notice.

(Seal and Signature of Tenderer)

B IV-DETAILS OF TOTAL PRICE OF ITEM BIII OF RATE SCHEDULE

SN	DESCRIPTION	QTY	UOM	UNIT RATE (Rs)	TOTAL RATE (Rs)
SECTION A - CONTROL PANELS, LOCAL PANELS, COMPOSITE SYSTEMS AND FIELD DEVICES					
A.1	max DNA based Electronic Control Panel for FSSS, Soot Blowers , SADC, EHTC,TP, TSE, GSPC,APRDS and ATRS Functions.(approx dimension L750 X B800 X H2415), Weight 400 Kg per panel.	34	Nos		
A.2	max MMI (Details are as follows)				
A.2.1	max Engineering Station, Link Station, Operator Station, Storian System and accessories	14	Nos		
A.2.2	max Network Panel (approx. dimension 600x800x2355mm)	2	Nos		
A.2.3	Printers for Max system, colour inkjet, laser jet, dot matrix along with print server	14	Nos		
A.3	Flame Scanner Amplifier Panel (CJF07) (Approx 750x800x2415)	2	No		
A.4	DC motor starter box for scanner fan (Approx 800x400x1200)	2	No		
A.5	Pulveriser Lube oil skid	10	Sets		
A.6	Fan Lube oil skid	12	Sets		
A.7	Feeder Control Cabinet (600x400x1200)	10	Nos		
A.8	ERV Controller (350x290x180) approximate weight 5 kg	2	No		
A.9	Electronic Water Level Indicator (EWLI) with two numbers of remote display unit at UCD, Two display unit at operating floor and two numbers ascetor panels.	4	Sets		
A.10	Air Heater Rotor Stoppage Alarm Box	4	Set		

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A.11	Soot Blower MCC 5400x1000x2400) Double front non-drawout type	2	No		
A.12	ESP MCC (11000x1700x2400) double front non-drawout type.	2	Nos		
A.13	Electronic Controller for ESP, (approx L700 X B650 X H2000), weight 300kg/controller	16	Nos		
A.14	Rapcon control panel	2	Nos		
A.15	HEA Exciter system comprising of retract mechanism, transformer,spark rod and tip, flexible cable, hose, plug and accessories	24	Sets		
A.16	Flame Scanner Head Assembly with cable, JB and accessories	32	Sets		
A.17	AVR Control Panel 3050 (L)x750 (W)x2295 (H), Approximate total weight is 1000 Kg.	2	Nos		
A.18	Generator Relay and Control Panel along with Generator Control Desk and synchronising gear.	2	Nos		
A.19	CO ₂ Panels,Cylinders and Piping for firefighting system for STG.	2	Set		
A.20	Turbosupervisory Equipment like, vibration sensor, Axial Shift, Expansion Probes along with proximeter, 3500 system rack, PC, cables and accessories.	2	Set		
A.21	Opacity Monitor System with accessories for ESP	2	Set		
A.22	Integrated Operating System (IOS) PC	2	Nos		
A.23	Local Instrument Racks	30	Nos		
A.24	INTEGRATED TESTING/ COMMISSIONING OF CONTROLS AND PROTECTIONS RELAY PANEL OF GENERATOR & ASSOCIATED EQUIPMENTS. (Scope of work as detailed in tender specification vide clause No. 4.15.13)	2	Sets		
A25	Generator Space Heater Panel	2	No		
A26	110V Control Supply Panel	2	No		

A27	Local Gauge Borad for Turbine, CEP and BFPs	10	Nos		
	SECTION B - FIELD INSTRUMENTS, CONTROLLERS (Details are as follows)	0			
B.1	Pressure Switch	100	Nos		
B.2	Differential Pressure Indicator/ Differential Pressure Switch.	70	Nos		
B.3	Pressure Gauge/Draft Gauge	250	Nos		
B.4	Electronic Pressure Transmitters	50	Nos		
B.5	Electronic Differential Pressure Transmitter for measurement of flow, level etc.	10	Nos		
B.6	Temperature Switch(Stem / Capillary type), Thermostat	10	Nos		
B.7	Temperature Gauge with thermowell (both stem type and capillary type)	200	Nos		
B.8	Thermocouple with thermowell (all types except MTM for Boiler)	70	Nos		
B.9	MTM Thermocouple with clamp and clit.	80	Nos		
B.10	RTD (simplex / duplex) with thermowell	40	Nos		
B.11	Level Switch	90	Nos		
B.12	Level Indicator / Level Gauge	30	Nos		
B.13	Ash level indicator along with sensing probe, cable and accessories.	16	sets		
B.14	Flow switch (Mechanical / Electronic)	2	Nos		
B.15	Flow indicator / Flow Gauge / Flow meter	2	Nos		
B.16	Flow Transmitter (Pulse / mass flow / PD type) including flanges and pulse amplifier	2	Nos		
B.17	Vibration measurement system for Fans (Make: Shenk Avery)	24	Nos		
B.18	Speed Pick up and measurement system	12	Nos		

B.19	I/P converters	70	Nos		
B.20	Air filter regulator	60	Nos		
B.21	Limit Switch	180	Nos		
B.22	Speed Regulator	24	Nos		
B.23	Air Lock Relay	24	Nos		
B.24	Solenoid Valves	110	Nos		
B.25	Thermostats for ESP	16	Nos		
B.26	Support insulator thermostat	2	Nos		
B.27	Disconnecting switch	8	Nos		
B.28	Air flow rotameter	4	Nos		
B.29	4x4" power cylinders for SADC system	80	Nos		
B.30	power cylinders for Fan Inlet Vanes	12	Nos		
SECTION C- DEVICES ERECTED BY OTHER AGENCIES (Details are as follows)		0			
C.1	Only healthiness checking of embedded RTD / T/C in Pump/Fan motor bearings	80	Nos		
C.2	Limit Switches (checking and adjusting only).	60	Nos		
C.3	Commissioning of Pneumatic regulating drives: (Control Valve,)	80	Nos		
C.4	Commissioning of Open/Close type pneumatic gates / dampers / valves	120	Nos		
C.5	Commissioning of Mill Discharge Valve	10	Sets		
C.6	Commissioning of Electrical actuators	120	Nos		
C.7	Commissioning of Burner Tilt Powr Cylinders	8	Nos		
C.8	Oil filtration, Testing and commissioning of ESP Transformers	16	Nos		
C.9	Testing and commissioning of Heating elements in ESP (Hopper heater, support heater and shaft heaters)	300	Nos		

C.10	Rotary switch in ESP	8	Nos		
C.11	Interlock Board in ESP	8	Nos		
C.12	Electrically Operated Hoist for ESP and Fans	8	Nos		
C.13	Central Lub Oil System	2	Set		
C14	Soot Blowers (LRSB and RSB)	12	Sets		
	SECTION D - CABLE, CABLE TRAY, JBS, IMPULSE PIPE, STRUCTURAL STEEL AND OTHER HARDWARE (Details are as follows)	0			
D.1	Junction boxes 12/24/ 36/48 way	240	Nos		
D.2	Local start stop push buttons	40	Nos		
D.3	Impulse Pipe/ Tubes				
D.3.1	S.S. Tube 12.7x2.1	300	M		
D.3.2	S.S. Tube 6.35X0.9	3000	M		
D.3.3	1/2 " Sch 40/80/160 CS Pipe	300	M		
D.3.4	1/2" Sch 40/80/160 SS / SA 106 Gr B Pipe	1100	M		
D.3.5	Copper tube 6mm/ 8mm / 1/4"/ 3/4" (Sheathed / bare)	400	M		
D3.6	1 Inch Schedule 80 CS Pipe	200	M		
D3.7	Flexible Hose 1" / 1/2"	20	Nos		
D3.8	Flexible Hose 1/4 "	64	Nos		
D.4	Perforated cable tray (with or without cover) 50mm in pieces of 2.5M	500	Nos		
D.5	Ladder / Perforated cable tray (with or without cover) 100mm in 2.5mts length	300	Nos		
D.6	Ladder / Perforated cable tray (with or without cover) 150mm in 2.5 mts length	850	Nos		
D.7	Cable Duct 250 x 100x1000mm with cover, tee, bends etc.	50	Nos		

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D.8	Cable Duct 60 x 60x1000mm with cover, tee, bends etc.	50	Nos		
D.9	Ladder/perforated type cable tray (with or without cover) 300mm	1500	M		
D.10	Ladder / perforated type cable tray (with or without cover) 450mm	300	M		
D.11	1/2" flexible conduit for cables	300	M		
D.12	GI Earthing flat 50mmX6mm	500	M		
D.13	GI Earthing flat 30mmX5mm	1000	M		
D.14	GI Wire	7000	M		
D.15	UTP (Unsheilded Twisted Pair) Cable for networking (in length of 300M)	2400	M		
D.16	Screened Copper Cable 1P / 2P x 0.5 sqmm armoured	7000	M		
D.17	Screened Copper Cable 4P x 0.5 sqmm armoured	17000	M		
D.18	Screened Copper Cable 8P x 0.5 sqmm armoured	8600	M		
D.19	Screened Copper Cable 10/12P x 0.5 sqmm armoured	500	M		
D.20	Screened Copper Cable 16P x 0.5 sqmm armoured	500	M		
D.21	1 sqmm PVC flexible cable	500	M		
D.22	Compensating cable 2P x 1.3 sqmm	200	M		
D.23	Copper Cable 2C x 1.5 sqmm armoured	800	M		
D.24	Copper Cable 3C x 1.5 sqmm armoured	2800	M		
D.25	Copper Cable 2P/4C x 1.5 sqmm armoured	15000	M		
D.26	Copper Cable 5C x 1.5 sqmm armoured	1600	M		
D.27	Copper Cable 4P / 7C x 1.5 sqmm armoured	5000	M		
D.28	Copper Cable 10C x 1.5 sqmm armoured	8500	M		

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D.29	10T x 1.5 sqmm cable	800	M		
D.30	Copper Cable 10P / 12 P x 1.5 sqmm armoured	3200	M		
D.31	4C / 2P shielded unarmoured cable for scanners	3000	M		
D.32	2C x 2.5 sqmm Cable	9000	M		
D.33	5C x 2.5 sqmm Cable	2000	M		
D.34	10C x 2.5 sqmm Cable	3000	M		
D.35	3C x4 sqmm Cable	2000	M		
D.36	2C x 6 sqmm Cable	500	M		
D.37	3C x 6 sqmm Cable	5000	M		
D.38	3C x 10 sqmm Cable	2000	M		
D.39	3C x 35 sqmm Cable	1000	M		
D.40	2C x 70 sqmm Cable	7000	M		
D.41	Structural steel for fabrication	8	MT		
	GRAND TOTAL (IN FIGURES) CARRIED FORWARD TO ITEM BIII OF RATE SCHEDULE		Rs.		