

TENDER DOCUMENT

TENDER SPECN No : BAP : ERN : RSP : SINTER : ESP : ELEC :C : 238

NAME OF WORK :

ELECTRICAL WORKS (ERECTION & COMMISSIONING) FOR REPLACEMENT OF PROCESS ELECTROSTATIC PRECIPITATOR (ESP), INVOLVING HANDLING AT SITE STORES / STORAGE YARD, TRANSPORTATION TO SITE OF WORK, ERECTION, TESTING AND COMMISSIONING OF ELECTRICAL COMPONENTS OF ESP, IN UNIT-1 & 2, SINTER PLANT – 1, ROURKELA STEEL PLANT, ROURKELA, ODISHA USING CONTRACTOR'S OWN TOOLS AND PLANTS, CRANES , CONSUMABLES, MANPOWER ETC.

PART - II (PRICE BID)



ERECTION SERVICES DEPARTMENT

BHARAT HEAVY ELECTRICAL LTD

BOILER AUXILIARIES PLANT

RANIPET - 632 406

SCHEDULE OF RATES & QUANTITIES

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INSTRUCTIONS TO BIDDERS

1. BIDDERS TO NOTE THAT EVALUATION OF BIDS WILL BE DONE ON TOTAL AMOUNT QUOTED FOR THE ENTIRE SCOPE OF WORK.
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2. ALL THE ITEMS OF WORK INDICATED IN THIS RATE SCHEDULE SHALL BE CARRIED OUT USING CONTRACTOR'S OWN TOOLS AND PLANTS, CRANES , TRAILORS, MACHINARIES, TESTING KIT / INSTRUMENTS, MAN POWER AND CONSUMABLES.
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3. THE ELECTRICAL INSTALLATION WORK INCLUDES HANDLING OF MATERIALS AT SITE STORES / STORAGE YARDS, TRANSPORTATION TO SITE OF ERECTION, HANDLING AT SITE OF ERECTION, ERECTION, TESTING & ASSISTANCE IN COMMISSIONING ETC.

4. THE WEIGHTS & SIZES INDICATED ARE ONLY APPROXIMATE AND NO REVISION IN RATE WILL BE CONSIDERED ON ACCOUNT OF ANY VARIATION DURING ERECTION.

5. FOR DETAILS OF SCOPE OF WORK REFER THE TENDER SPECIFICATION.

SIGNATURE WITH SEAL OF BIDDER

SCHEDULE OF RATES & QUANTITIES FOR ELECTRICAL ERECTION & COMMISSIONING WORK

TENDER SPECN No : BAP : ERN : RSP : SINTER : ESP : ELEC : C : 238

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S.No.	DESCRIPTION OF WORK	QUANTITY	UNIT	RATE / UNIT in Rs.	AMOUNT in Rs.
A	ERECTION & COMMISSIONING OF 415 V LT PANELS, CONTROL PANELS, SSPBs, JBs ETC.				
A-1	ESP SWITCH GEAR PANEL APPROX. SIZE : 10500L x 1200W x2450 H mm APPROX.. WEIGHT : 9000kg/ESP	2	No.		
A-2	ELECTRONIC CONTROL PANEL (ECP). WEIGHING 300 KGS SIZE APPROX. 700MM(L) X 650 MM (W) X 2000 MM (H)	8	No.		
A-3	INSTALLATION OF INTEGRATED OPERATING SYSTEM (IOS) FOR ESP. A SET CONSISTS OF 02 Nos.. OF PC WITH MONITORS, 01 No.PRINTER, UPS, ETC.	4	SET		
A-4	DISCONNECTING SWITCH VAR.05 WEIGHING 180 KGS SIZE APPROX. 1200MM(L) X 1100 MM (W) X 750 MM (H)	8	No.		
A-5	HEATING ELEMENTS FOR HOPPER HEATER, SUPPORT INSULATOR HEATER AND SHAFT INSULATOR HEATER.	232	No.		
A-6	THERMOSTAT FOR HOPPER AND SUPPORT INSULATOR HEATERS.	10	No.		
A-7	LOCAL START STOP PUSH BUTTON STATIONS (SSPB) FOR RAPPING MOTORS ETC. WEIGHING APPROX. 5 KGS SIZE APPROX. 180MM(L) X 100 MM (W) X 250 MM (H)	23	No.		

SIGNATURE AND SEAL OF BIDDER

S.No.	DESCRIPTION OF WORK	QUANTITY	UNIT	RATE / UNIT in Rs.	AMOUNT in Rs.
A-8	ASH LEVEL INDICATOR (ALI) AND ITS ACCESSORIES CONSISTING OF PROBE, ELECTRONIC UNIT, INTERCONNECTING CABLES/ WIRES / FLEXIBLE CONDUITS ETC. APPROX. WT. 8 KGS EACH.	16	SET		
A-9	JUNCTION BOXES (JB) - POWER AND CONTROL JBs FOR HEATERS, SSPB STATIONS, ALI, ACTUATORS ETC. APPROX. WT. 15 / 12 KGS EACH.	30	No		
A-10	INTERLOCKING SYSTEM FOR ESP WITH ACCESSORIES WEIGHT APPROX. 300 KG PER SET	2	SET		
A-11	OPACITY MONITOR (OPM) WITH ACCESSORIES APPROX WT. 25 KG PER SET	2	No		
A-12	PRESSURE TRANSMITTER WITH ACCESSORIES	4	Nos.		
A-13	TEMPERATURE TRANSMITTER WITH ACCESSORIES	4	Nos.		
A-14	CO GAS ANALYZER INCLUDES ACCESSORIES CONSISTING OF SENSING UNIT, WALL/ FLOOR MOUNTED PANEL, INTERCONNECTING CABLES/ TUBES, CALIBRATION CYLINDERS ETC.	2	SET		
B	TESTING AND COMMISSIONING OF THE FOLLOWING EQUIPMENTS/ COMPONENTS ERECTED BY OTHER BHEL VENDORS. THESE ITEMS OF WORK WILL BE SUBJECT TO REQUIREMENT OF BHEL . ALTERNATIVELY BHEL MAY EXECUTE WITH THEIR OWN RESOURCES.				
B-1	LT MOTORS IN THE COMPLETE SYSTEM - RAPPING MOTORS, BLOWER ETC.	18	Nos.		
B-2	ELECTRICAL HOISTS INCLUDING INSTALLATION OF TRAILING CABLING ETC . FOR DETAILS REFER SPECN.	2	Nos.		

SIGNATURE AND SEAL OF BIDDER

S.No.	DESCRIPTION OF WORK	QUANTITY	UNIT	RATE / UNIT in Rs.	AMOUNT in Rs.
B-3	HIGH VOLTAGE RECTIFIER TRANSFORMER (HVR) OF ESP INCLUDING OIL FILTRATION TO MEET THE SPECIFIED BREAK DOWN VALUE.	8	Nos.		
C	LAYING OF FOLLOWING LT POWER & CONTROL CABLES IN CABLE TRAYS/ TRENCHES / CONDUITS AND DRESSING / CLAMPING AS PER SPECIFICATION. CABLES ONLY SHALL BE SUPPLIED BY BHEL ON FREE ISSUE BASIS AT SITE STORE. SUPPLY OF CABLE CLAMPS / TIES ETC. FOR PROPER DRESSING OF CABLES SHALL BE IN THE SCOPE OF SUPPLY OF THE CONTRACTOR. SUPPLY AND FIXING OF FIRE SEALING ARRANGEMENT IN THE CABLE EXITS OF CONTROL ROOMS IS ALSO IN THE SCOPE OF CONTRACTOR. THERE WOULD BE TWO CONTROL ROOMS PER BOILER / UNIT AND TWO EXITS PER CONTROL ROOM.				
C-1	3 1/2 C X 300 SQ.MM. AL. PVC INSULATED ARMoured CABLE	1600.00	MTR		
C-2	3 1/2 C X 95 SQ.MM. AL. PVC INSULATED ARMoured CABLE	15.00	MTR		
C-3	2C X 120 SQ.MM. AL. PVC INSULATED ARMoured CABLE	10000.00	MTR		
C-4	3C X 10 SQ.MM. AL. PVC INSULATED ARMoured CABLE	2000.00	MTR		
C-5	3C X 16 SQ.MM. AL. PVC INSULATED ARMoured CABLE	1000.00	MTR		
C-6	4C X 10 SQ.MM. AL. PVC INSULATED ARMoured CABLE	1200.00	MTR		
C-7	3C X 6 SQ.MM. CU. PVC INSULATED ARMoured CABLE	1000.00	MTR		
C-8	3C X 2.5 SQ.MM. CU. PVC INSULATED ARMoured CABLE	10000.00	MTR		

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S.No.	DESCRIPTION OF WORK	QUANTITY	UNIT	RATE / UNIT in Rs.	AMOUNT in Rs.
C-9	2C X 2.5 SQ.MM. CU. PVC INSULATED UNARMoured CABLE	3200.00	MTR		
C-10	10C X 2.5 SQ.MM CU . PVC INSULATED ARMoured CABLE	6000.00	MTR		
C-11	4C X 1.5 SQ.MM. CU SCREENED CABLE , PVC INSULATED ARMoured	2000.00	MTR		
D	TERMINATION OF FOLLOWING LT POWER & CONTROL CABLES AS PER STANDARD SPECIFICATIONS. CABLE GLANDS AND LUGS SHALL BE SUPPLIED BY BHEL ON FREE ISSUE BASIS AT SITE STORE. SUPPLY OF FERRULES, CABLE TIES ETC. IS IN THE SCOPE OF THE CONTRACTOR. TERMINATION HERE MEANS THAT OF A CABLE AND NOT A CORE OF THE CABLE. TERMINATION INVOLVES CUTTING OF CABLE TO REQUIRED LENGTH, FIXING OF CABLE GLAND, FIXING FERRULES AND CRIMPING LUGS FOR ALL THE REQUIRED CORES, DRESSING OF THE CABLE AND ALL THE CORES INSIDE THE PANEL ETC., AND CONNECTING ALL / REQUIRED CORES INSIDE THE PANELS / JBs, SSPBs, ETC. AS PER DRAWING.				
D-1	3C X 16 SQ.MM. AL. PVC INSULATED ARMoured CABLE	12	No.		
D-2	2C X 120 SQ.MM. AL. PVC INSULATED ARMoured CABLE	136	No.		
D-3	3C X 10 SQ.MM. AL. PVC INSULATED ARMoured CABLE	20	No.		
D-4	3 1/2 C X 300 SQ.MM. AL. PVC INSULATED ARMoured CABLE	20	No.		
D-5	4C X 10 SQ.MM. AL. PVC INSULATED ARMoured CABLE	24	No.		
D-6	3 1/2 C X95 SQ.MM. AL. PVC INSULATED Moured CABLE	4	No.		
D-7	4C X 1.5 SQ.MM. CU. SCREENED CABLE, (ARMoured)	52	No.		

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S.No.	DESCRIPTION OF WORK	QUANTITY	UNIT	RATE / UNIT in Rs.	AMOUNT in Rs.
D-8	3C X 2.5 SQ.MM. CU. PVC INSULATED ARMOURED CABLE	272	No.		
D-9	2C X 2.5 SQ.MM. CU. PVC INSULATED UNARMOURED CABLE	592	No.		
D-10	10C X 2.5 SQ.MM CU . PVC INSULATED ARMOURED CABLE	64	No.		
D-11	3C X 6 SQ.MM. CU. PVC INSULATED ARMOURED CABLE	36	No.		
E	LAYING OF FOLLOWING EARTHING MATERIALS AS PER I.E. RULES. EARTHING MATERIALS WILL BE SUPPLIED BY BHEL ON FREE ISSUE BASIS.				
E-1	G.I. FLAT 70 X 10 MM	1,750.00	MTR		
E-2	G.I. FLAT 30 X 5 MM	5,400.00	MTR		
E-3	3.15 MM DIA G.I. WIRE (INCLUDING FOR ILLUMINATION SYSTEM)	4,200.00	MTR		
F	LAYING OF FOLLOWING SIZE OF CABLE TRAYS, COUPLERS INCLUDING FASTENING ETC. COMPLETE. CABLE TRAYS, COUPLERS & FASTENERS WILL BE SUPPLIED BY BHEL ON FREE ISSUE BASIS.				
F-1	600 MM LADDER TYPE CABLE TRAY (EACH OF 2.5 MTR LENGTH)	80	No		
F-2	450 MM LADDER TYPE CABLE TRAY (EACH OF 2.5 MTR LENGTH)	110	No.		
F-3	150 MM LADDER TYPE CABLE TRAY (EACH OF 2.5 MTR LENGTH)	380	No.		

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S.No.	DESCRIPTION OF WORK	QUANTITY	UNIT	RATE / UNIT in Rs.	AMOUNT in Rs.
G	FABRICATION AND ERECTION (INCLUDING PAINTING) OF SUPPORTS FOR PANELS, CABLE TRAYS, JUNCTION BOXES, PUSH BUTTON STATIONS, INSTRUMENT PANELS ETC. FROM RAW MATERIALS LIKE CHANNELS, ANGLES ETC. SUPPLIED BY BHEL ON FREE ISSUE BASIS .	13.00	MT		
H	INSTALLATION OF ILLUMUNATION SYSTEM IN ESP AREA / ESP CONTROL ROOM. COLLECTION OF MATERIALS FROM BHEL / CUSTOMER STORES/ STORAGE YARD, LOADING, TRANSPORTING TO SITE OF ERECTION, UNLOADING, ERECTION AND COMMISSIONING OF THE FOLLOWING ILLUMINATION / A.C / VENTILATION EQUIPMENT ETC. COMPLETE AS PER SPECIFICATION & DRG.. ALL THE ELECTRICAL EQUIPMENT AND OTHER FIXING ITEMS WILL BE SUPPLIED BY BHEL ON FREE ISSUE BASIS AT SITE.				
H-1	SUB LIGHTING DISTRIBUTION BOARD	3	No.		
H-2	FLOURESENT LAMP FITTING / FIXTURES (TWIN LAMP TYPE - TCS 350 OR EQUIVALENT) WALL MOUNTED OR WITH PENDANT, BALL & SOCKE, CEILING ROSES ETC.	16	SET		
H-3	HPMV LAMP 250 W (BJISW 250 MV/NI OR EQUIVALENT) FITTING / FIXTURE FOR WALL, PLATFORM, COLUMN MOUNTING USING GI PIPES.	40	SET		
H-4	OUTDOOR TYPE LIGHTING JUNCTION BOX. (APPROX. 4"x4") WITH CABLE GLANDS FOR 1 I/C AND 2 O/G CABLE OF SIZE 2C x 2.5 SQMM.	40	No.		
H-5	INDUSTRIAL TYPE 63 Amp AC 3 PIN METAL CLAD WELDING RECEPTACLE WITH SINGLE POLE MCB.	3	No.		
H-6	INDUSTRIAL TYPE 20 Amp AC 3 PIN METAL CLAD SOCKET WITH SINGLE POLE ACB.	2	No.		
H-7	INDUSTRIAL TYPE 5 Amp AC 3 PIN METAL CLAD SOCKET WITH SINGLE POLE MCB.	10	No.		
H-8	FIXING OF 2.7 M GI 50 MM DIA 2 MM THICK TUBE GI TUBE ON STEEL RAILINGS /PLATFORMS ETC. PROPER CLAMPING / WELDING FOR LAMP FITTINGS.	80	No.		

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S.No.	DESCRIPTION OF WORK	QUANTITY	UNIT	RATE / UNIT in Rs.	AMOUNT in Rs.
H-9	FIXING OF 800 MM LONG, 32 MM DIA BEND GI TUBE FOR LIGHTING FIXTURES.	40	No.		
H-10	FIXING OF 19 MM DIA 2MM THICK MS RIGID CONDUIT (BLACK PAINTED) INCLUDING RIGID ELBOW & TEE BENDS , CONDUIT UNIONS, 2 / 3 / 4 WAY METALLIC JUNCTION BOXES ETC. USING PROPER CLAMPS FROM CABLE TRAYS / SWITCH BOARDS TO LAMP FITTING CONTROLS AND TO INDIVIDUAL FITTINGS.	1500.00	MTR		
H-11	LAYING & TERMINATION OF FOLLOWING WIRE / CABLES IN RIGID CONDUITS, FLEXIBLE CONDUITS, WALL ETC WITH NECESSARY DRESSING / CLAMPING AS PER SPECIFICATION. WIRES / CABLES AND CABLE LUGS SHALL BE SUPPLIED BY BHEL ON FREE ISSUE BASIS.				
a.	1 C X 2.5 SQMM , PVC INSULATED, MUTISTRANDED, UNARMOURED COPPER FRLS, COPPER WIRE .	300.00	MTR		
I	CONSULTANCY CHARGES TOWARDS PREPARATION OF DRAWINGS, OBTAINING DRAWING APPROVAL AND SAFETY CLEARANCE FROM CIEG ETC. COMPLETE FOR THE TOTAL SCOPE OF WORK (02 ESPs).	1.00	LUMPSUM		
TOTAL					
SERVICE TAX APPLICABLE			RATE _____%		
TOTAL AMOUNT OF INCLUDING SERVICE TAX					

TOTAL AMOUNT IN WORDS :

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