

# TENDER DOCUMENT

**REF No : BAP : ERN :NSPCL : ESP : MECH :C:233**

**NAME OF WORK :**

RETROFITTING OF ELECTROSTATIC PRECIPITATOR (ESP) INVOLVING MATERIAL HANDLING AT SITE STORES/ STORAGE YARD, TRANSPORTATION TO SITE OF WORK, DISMANTLING OF EXISTING ESP & ID FAN DUCTS TO THE EXTENT REQUIRED, ERECTION, TESTING AND COMMISSIONING OF NEW COMPONENTS OF ESP IN UNIT-1 & 2, CPP-II ( 2 x 60MW ), NSPCL, 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

TENDER SPECN No : BAP : ERN : NSPCL : ESP : MECH : C: 233

**NAME OF WORK :**

**RETROFITTING OF ELECTROSTATIC PRECIPITATOR (ESP) INVOLVING MATERIAL HANDLING AT SITE STORES/ STORAGE YARD, TRANSPORTATION TO SITE OF WORK, DISMANTLING OF EXISTING ESP & ID FAN DUCTS TO THE EXTENT REQUIRED, ERECTION, TESTING AND COMMISSIONING OF NEW COMPONENTS OF ESP IN UNIT-1 & 2, CPP-II (2x60MW), NSPCL, ROURKELA STEEL PLANT, ROURKELA, ODISHA.**

Note : 1. ALL THE ITEMS OF WORK INDICATED BELOW SHALL BE CARRIED OUT USING CONTRACTOR'S OWN TOOLS AND PLANTS, CRANES , TRAILORS, MACHINARIES, MAN POWER AND CONSUMABLES.

2. THE ITEM OF WORKS INDICATED SHALL INCLUDE WORK INCLUDES HANDLING OF STRUCTURALS / COMPONENTS AT SITE STORES / STORAGE YARDS, TRANSPORTATION TO SITE OF ERECTION, HANDLING AT SITE OF ERECTION, ASSEMBLY, ERECTION, ALIGNING, WELDING, TESTING, ASSISTANCE IN COMMISSIONING ETC.

3. THE DISTANCE OF BHEL / CUSTOMER STORES / STORAGE YARD WITHIN THE PLANT TO SITE OF ERECTION IS IN A RADIUS OF ABOUT 1.0 KM. ALL THE ABOVE ESP MATERIALS & COMPONENTS WILL BE SUPPLIED BY BHEL ON FREE ISSUE BASIS.

4. FOR DETAILED SCOPE OF WORK PLEASE REFER THE TENDER SPECIFICATION.

**PAGE 01 OF 04**

SL. NO.	DESCRIPTION OF ITEM	QUANTITY	UNIT	RATE / UNIT RS. PS.	TOTAL AMOUNT RS. PS.
01	<b>RECEIPT / TAKING DELIVERY / UNLOADING , VERIFICATION AND STACKING</b> OF ALL MATERIALS FOR ESP, LIKE STRUCTURALS ,DUCT COMPONENTS / STRUCTURES, DAMPERS, INTERNALS, INCLUDING ELECTRICAL ITEMS, PANELS, CABLES AND INSULATION MATERIALS ETC. AT BHEL / CUSTOMER'S STORES / STORAGE YARDS WITHIN THE CUSTOMER PLANT AS PER SPECIFICATIONS FROM LORRIES / TRAILORS / TRUCKS ETC.	<b>2105.00</b>	<b>M.T.</b>		
02	<b>LOADING OF COMPONENTS / MATERIALS</b> , INCLUDING BHEL T & P, INTO TRUCKS / CARRIERS AT ERECTION SITE / STORAGE YARD FOR ONWARD TRANSPORTATION TO DESTINATIONS OTHER THAN SINTER PLANT SITE.	<b>40.00</b>	<b>MT</b>		
03	<b>ERECTION NEW PIPE RACK STRUCTURE</b> CONSISTING OF PIPE TRESTLE, SUPPORT COLUMNS FOR PIPE TRESTLE ETC.	<b>29.00</b>	<b>M.T.</b>		

**SIGNATURE OF BIDDER**

SL. NO.	DESCRIPTION OF ITEM	QUANTITY	UNIT	RATE / UNIT		TOTAL AMOUNT	
				RS.	PS.	RS.	PS.
04	<p><b>ERECTION OF NEW PIPES (FOR REROUTING ETC.).</b> THE TENTATIVE LIST OF PIPES REQUIRED TO BE ERECTED IS AS PER LIST GIVEN IN THE TENDER SPECIFICATION. THE WORK INCLUDES WELDING, CLEANING, TESTING (IBR PROCEDURES TO BE FOLLOWED FOR STEAM LINES) AND COMMISSIONING.</p> <p>ERECTION OF REROUTED FIRE FIGHTING LINES AND OTHER PIPES AT NEW CONTROL ROOM LOCATION, BETWEEN ID FAN &amp; CHEIMNEY ETC., WHERE REQUIRED, IS INCLUDED IN THIS SCOPE OF WORK.</p> <p>THE NEW PIPES SHALL BE CONNECTED TO THE EXISTING PIPES WITH IN A SHORT SHUTDOWN PERIOD OF 06 HRS. ADEQUATE SAFETY PRECAUTIONS HAVE TO BE TAKEN TO AVOID ANY FIRE HAZARD AS SOME OF THESE PIPES CARRY HSD OIL. WELDING PROCEDURE SHALL BE STRICTLY FOLLOWED.</p>	46.00	MT				
05	<p><b>DISMANTING OF EXISTING PIPE &amp; PIPE RACK STRUCTURES,</b> PIPE TRESTLES, SUPPORTING STRUCTURES, PIPE INSULATION, VALVES ETC. TO THE EXTENT REQUIRED. THE PIPE PIPE TRESTLES, SUPPORTING COLUMNS ETC. BELOW THE EXISTING OUTLET FUNNELS HAVE TO BE DISMANTLED TO ENABLE CONSTRUCTION CIVIL FOUNDATION FOR EXTENDED FIELDS AND RETROFITTING OF ESP. THE DISMANTLING WORK INCLUDES WEIGHMENT,SHIFTING/TRANSPORTING THE DISMANTLED MATLS TO CUSTOMERS SCRAP/STORAGE YARD INSIDE THE PLANT PREMISES.</p> <p><b>DISMANTLING OF FIRE FIGHTING LINES AND OTHER PIPES AT NEW CONTROL ROOM LOCATION, BETWEEN ID FAN &amp; CHEIMNEY ETC., WHERE REQUIRED, IS INCLUDED IN THIS SCOPE OF WORK.</b></p>	20.00	MT				
06.	<b>MODIFICATION OF ID FAN HANDLING STRUCTURES &amp; OUTLET DUCT.</b> THE MODIFICATION SHALL BE AS EXPLAINED IN THE SPECIFICATION. THE WORK INCLUDES DISMANTLING OF THE EXISTING STRUCTURES, SUPPORT COLUMNS ETC.TO THE EXTENT REQUIRED, FABRICATION OF TEMPORARY SUPPORTS FOR EXISTING ESP OUTLET DUCTS, ERECTION OF NEW STRUCTURES, MODIFICATION OF OUTLET DUCT AND STRUCTURES TO ENABLE HANDLING OF ID FAN MOTOR & IMPELLER WHEN THE CIVIL FOUNDATION WORK FOR EXTENDED FIELDS OF ESP ARE TAKEN UP.						
06A	DISMANTLING OF COLUMNS, STRUCTURES ETC. CONNECTED TO FAN HANDLING ARRANGEMENT.	18.00	MT				
06B	FABRICATION AND ERECTION OF NEW SUPPORTS, STRUCTURES, COLUMNS ETC. INCLUDING RELOCATION OF SUPPORTS, COLUMNS ETC. THIS ERECTION WORK ALSO INVOLVES MODIFICATION OF ID FAN OUTLET DUCT SO AS TO PROVIDE THREE FLANGED DUCTS AT OUTLET.	20.00	MT				
07	<b>DISMANTING OF EXISTING ESP &amp; DUCT,</b> SUPPORTING STRUCTURES, OUTLET DUCTS, GUILLOTINE GATES, FUNNELS ETC. TO THE EXTENT REQUIRED TO ENABLE ESP RETROFITTING WORK, INCLUDING WEIGHMENT,SHIFTING/TRANSPORTING THE DISMANTLED MATLS TO CUSTOMERS SCRAP/STORAGE YARD INSIDE THE PLANT PREMISES.	950.00	MT				

SIGNATURE OF BIDDER

SL. NO.	DESCRIPTION OF ITEM	QUANTITY	UNIT	RATE / UNIT		TOTAL AMOUNT	
				RS.	PS.	RS.	PS.
08.	<b>ERECTION OF ESP, DUCTS AND OTHER ASSOCIATED MATERIALS.</b> WORK INCLUDES ALL MECHANICAL COMPONENTS AND STRUCTURES OF ESP INCLUDING HVR TRANSFORMER AND GEARED MOTORS, DUCTS IN BETWEEN VARIOUS EQUIPMENTS, EXPANSION JOINTS, ACCESS DOORS, GALLARIES, PLATFORMS, STAIRS, LADDERS,RAILINGS, ELECTRICAL HOISTS, ID FAN DUCTS, ID FAN HANDLING STRUCTURES, DAMPERS, GUILLOTINE GATES ETC. COMPLETE AND HOOK UP OF THE ENTIRE SYSTEM BY CONNECTING THE INLET/OUTLET DUCTS OF ESP AND ID FAN AT UP STREAM AND STACK AT DOWN STREAM SPECIFICATIONS AND DRAWINGS OF BHEL. STRENGTHENING OF EXISTING SUPPORT STRUCTURES OF ESP, IF ANY REQUIRED, ARE ALSO INCLUDED IN THIS SCOPE OF WORK.,	<b>1650.00</b>	<b>M.T.</b>				
09	<b>INSULATION WORKS FOR ESP :</b>						
09A.	<b>INSULATION WITH CLADDING</b> - TANSPORTATION OF INSULATION MATERIALS FROM STORAGE YARD / SITE STORES ,WELDING OF RETAINERS , STUDS ETC OVER <b>ESP, DUCTS ETC., LAYING OF 75 MM THICK LIGHTLY RESIN BONDED MINERAL WOOL, FIXING OF RETAINERS, CASING SUPPORTS BINDING, SEWING ETC. CLADDING WITH ALUMINIUM SHEET OF 0.91 MM OVER THE LAID WOOL MATRESSES WITH SELF TAPPING SCREWS AND FINISHING.</b> ALL INSULATION WOOL, RETAINERS, STUDS, BINDING WIRE, CLADDING SHEET AND SELF TAPPING SCREWS SHALL BE SUPPLIED BY BHEL FREE OF COST AT SITE STORES. THE PAYMENT SHALL BE MADE BASED ON THE SURFACE AREA CALCULATED AS PER DRAWINGS. ALL THE CONSUMABLES, MANPOWER, SCAFFOLDING ETC. INCLUDING SUPPLY & APPLICATION OF ANTI CORROSIVE PAINT AND BITUMINOUS SEALING COMPOUND ARE IN THE SCOPE OF CONTRACTOR.	<b>15000.00</b>	<b>SQ.M.</b>				
09B.	<b>INSULATION WITHOUT CLADDING</b> - TANSPORTATION OF INSULATION MATERIALS FROM STORAGE YARD / SITE STORES,WELDING OF RETAINERS, STUDS ETC OVER <b>ESP INNER ROOF,</b> LAYING OF 75 MM THICK LIGHTLY RESIN BONDED MINERAL WOOL, FIXING OF RETAINERS, BINDING, SEWING ETC. <b>NO CLADDING IS INVOLVED.</b> ALL INSULATION WOOL, RETAINERS, STUDS AND BINDING WIRE SHALL BE SUPPLIED BY BHEL FREE OF COST AT SITE STORES. THE PAYMENT SHALL BE MADE BASED ON THE SURFACE AREA CALCULATED AS PER DRAWINGS. ALL THE CONSUMABLES, MANPOWER, SCAFFOLDING ETC. ARE IN THE SCOPE OF CONTRACTOR.	<b>1,300.00</b>	<b>SQ.M.</b>				

SIGNATURE OF BIDDER

SL. NO.	DESCRIPTION OF ITEM	QUANTITY	UNIT	RATE / UNIT		TOTAL AMOUNT		
				RS.	PS.	RS.	PS.	
10	<b>PAINTING - SUPPLY AND APPLICATION</b> OF ONE COAT OF SUITABLE PRIMER OF RED OXIDE ZINC PHOSPHATE PRIMER PAINT CONFIRMING TO IS 12744 (MINIMUM DFT OF 25 MICRON) AND TWO COATS OF SYNTHETIC ENAMEL PAINT CONFIRMING TO IS2932 (MINIMUM DFT OF 50 MICRON) OF BHEL APPROVED SHADE AND MAKE ON EXPSOED STRUCTURES AND AREAS OF ESP AND FAN AFTER PROPER CLEANING USING WIRE BRUSH ETC. ALL THE CONSUMABLES , MANPOWER, SCAFFOLDING ETC. ARE IN THE SCOPE OF CONTRACTOR	<b>295.00</b>	<b>MT</b>					
11	<b>PROVIDING FOLLOWING MANPOWER SUPPLY ASSISTANCE. BHEL MAY NOT USE ANY OR ALL OF THE BELOW ITEMS AT THEIR DISCRETION.</b>							
11A.	ROUND THE CLOCK <b>WATCH &amp; WARD</b> FOR BHEL STORAGE YARD/ SITE OFFICE (20 months X 3 men)	<b>60.00</b>	MAN MONTH					
11B.	01 NO. CLERK WITH KNOWLEDGE OF COMPUTER OPERATION ALONG WITH SUPPLY AND OPERATION OF ONE NO.LATEST DESK TOP PERSONAL COMPUTER AND ONE LASERJET MULTIFUNCTION DEVICE WITH FAX CUM SCANNER CUM PRINTER FUNCTIONS FOR BHEL SITE OFFICE. ( INCLUDING LICENSED OS , SERVICES , MAINTENANCE OF THE COMPUTER SYSTEM AND SUPPLY AND REPLACEMENT OF SPARES & PRINTER CARTRIDGES AS REQUIRED). THE COMPUTER SYSTEM ETC. SHALL BE THE PROPERTY OF THE BIDDER AFTER COMPLETION WORK.	<b>20.00</b>	MAN MONTH					
11C.	01 NO. OFFICE BOY FOR BHEL SITE OFFICE.	<b>20.00</b>	MAN MONTH					
11D.	01. NO. QUALIFIED SAFETY ENGINEER RESPONSIBLE FOR SITE SAFETY OPERATIONS , MAINTAINING SAFETY CHECKS , RECORDS ETC.	<b>15.00</b>	MAN MONTH					
<b>TOTAL</b>							-	

TOTAL IN WORDS :

SIGNATURE OF BIDDER