

<b>VOLUME-III</b> <b>PRICE SCHEDULE, REV-00</b>	
Job : Job : ERECTION, TESTING, COMMISSIONING, START-UP ,TRIAL OPERATION AND HANDING OVER OF TOTAL FLUE GAS DESULPHURIZATION (FGD) SYSTEM OF 3 X 660 MW NORTH KARANPURA STPP, JHARKHAND.	
TENDER NO - PSER:SCT:NKP-M2081:20	
PREAMBLE	
1.0	This preamble forms part of tender document and schedule of items. The tenderer should read this preamble carefully before filling in rates for various items. Clauses under this preamble shall be read in conjunction with various volumes of tender and other tender sections as applicable and shall have precedence over any contrary statement mentioned anywhere in this document.
2.0	The work shall be carried out strictly as per specifications, description of the items in these schedule and / or engineer's instructions. Drawings enclosed with the tender are only preliminary and for tender purposes and giving some idea of the work involved. The work is to be executed as per drawings & documents, which shall be furnished during execution.
3.0	Items of work provided in this schedule but not covered in this specification shall be executed strictly as per instruction of the engineer.
4.0	Unless specifically mentioned otherwise in the tender document, the tenderer shall quote for the finished items and shall provide for the complete cost towards power, fuel, tools, tackles, equipment, constructional plants, temporary works, labour, dismantling of all temporary piping, structures, valves, pumps, tanks & other misc. equipment, strengthening of roads/ culverts/ bridges etc. including arranging all clearances etc. required for carrying out different activities & tests, materials, levies, taxes (except service tax), transport, layout, repairs, rectification, maintenance till handing over, supervisions, colonies, shops, establishments, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary to complete the work according to the complete tender document and this schedule.
5.0	The quantities of the various items mentioned in this schedule of items are approximate based on very preliminary information and may vary to any extent or be deleted altogether. The quoted rates of each item will remain firm throughout the period of execution including extension for reasons whatsoever, as long as variation in the total value of work executed under any part of this contract including extra items excluding any price variation remains, within fifteen percent ( $\pm 15\%$ ) of the awarded price as per LOI.
6.0	Prior written approval of BHEL shall be sought by the contractor in case quantity variation of any item crosses +50% (plusify percent) limit during execution and approval to be obtained before execution of further quantity for this item.
7.0	In case Sealed / Paper Price Bids are opened for finalisation of the tender for any item/Rate/BOQ based contract, possibility of variation of quantity/ addition/ deletion of items can not be ruled out. Under such circumstances after execution of work, if it is observed that standings as L-1 is changed based on actual quantity executed, the bidder shall give suitable rebates to maintain your standings as L-1. Since this aspect can be assessed at the end of execution, necessary adjustment will be effected at the end of execution in final bill. This condition is applicable where the tender is finalised through Reverse Auction.
8.0	BHEL reserves the right to rationalize the rates quoted by L-1 bidder against unit rate items and / or other optional items with respect to item wise lowest rates (amongst the participating bidders), before placement of order.
9.0	The rates quoted shall be inclusive of cleaning of site of any vegetation, dressing, clearing of old structures and leveling etc. including fixing of grid pillars, benchmark etc. required for commencement of site activities. No separate payment will be made towards the same. However, if separate rate for such item is available in the rate schedule, the same shall be considered.
10.0	Rates shall be quoted in figures and in words in clear legible writing. No overwriting is allowed. All scoring and cancellations should be countersigned and in case of illegibility the interpretation of engineer shall be final. All entries shall be in English language.
11.0	All works item wise shall be measured upon completion and paid for at the rates quoted and accepted as per BHEL approved payment schedule/billing break-up.
12.0	The tenderer shall be deemed to have visited site and made himself aware of all the site conditions, studied the specifications and details of work to be done within the time schedule attached and to have acquainted himself of the conditions prevailing at site.
13.0	No splitting of the job is envisaged. Decision of BHEL in this regard shall be final and binding to the bidders.
14.0	Bidders are not allowed to alter the Price Schedule format including item description, quantity etc. and the offer is liable for rejection if the bidders submit their prices in Price Schedules modified by them. BHEL reserves the right to reject the offers of bidders who submit offers in Price Formats which are modified/ altered by them. Also putting any comments instead of rates/price in the designated column of the rate schedule shall make the offer liable for rejection.
15.0	Bidders to note that for Civil & structural packages, against a particular item against a ST No. appearing in more than one schedule of the BOQ, same rate must be quoted in all schedules for that particular item with same descriptions. If by error different rates are quoted in different schedules for same ST No. (i.e. item with same description), then the higher of the rates shall be considered for evaluation but awarding shall be done with the lower rate, if the bidder becomes L-1."
16.0	For Lumpsum Service Contract: The items/components indicated in the tender is indicative and may vary to any extent. No compensation shall be payable in case of any variation in the items/components listed in the bill of quantities if the executed weight remains within the variation limit. However, in case of deletion of any item or addition of new items over and above the items listed or variation of existing quantity beyond variation limit specified, adjustment (i.e. Payment or recovery as the case may be) shall be done on pro-rata basis based on the Rate per MT worked out from the quoted lump sum Price and the total weight of components listed / indicated in price schedule plus 15% weight variation limit.
17.0	Engineer's decision shall be final and binding on the contractor regarding clarification of items in the schedule with respect to the other sections/volumes of the contract.
18.0	In case of tender for Civil and/or Structural works, if the Non-schedule items are not quoted by the bidder, it will be treated at par with rate of corresponding item of CPWD/PWD/DSR schedule as prescribed in the tender/BOQ cum Rate Schedule.
19.0	No interest whatsoever shall be payable by BHEL on the security deposit, any bank guarantee submitted or any amount due to successful bidder/contractor.
20.0	Size and weights of various items are mentioned in the attached BOQ cum rate schedule for reference purpose only & these shall not be taken into consideration for quoting/calculating amount in the rateschedule. These shall be utilised as per relevant sections of tender. Bidders shall quote for each item in the rate column, taking unit as mentioned in the quantity column. Rates shall be filled in both figures and words. Amount shall be calculated based upon these rates multiplied by the mentioned quantity for the respective items.
21.0	Bidder's Total price will be shall be considered for evaluation unless stated otherwise.
22.0	In case of BOP packages, if Bidder does not quote/ indicate the price for freight charges against indicated rateschedule, the same shall be considered as 2% of basic price and adjusted with the total quoted price against each item keeping the total quoted price unaltered.

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**SCH-1- TOTAL PRICE**

<b>SL. NO.</b>	<b>DESCRIPTION OF WORK</b>	<b>PRICE SCHEDULE REF</b>	<b>TOTAL PRICE (INR)</b>
1.0	Total price for complete work of handling including receipt of materials from BHEL/Client's stores/storage yard, arranging their issue, site transportation, temporary storage prior to erection, if required, cleaning, transportation to site preservative painting, pre-assembly erection, alignment, welding, leveling, adjustment, chipping & leveling of foundation, all pre-commissioning tests, commissioning, start-up and trial operation and handing over of total Flue Gas Desulphurisation System of 3x660 MW, North Karanpura STPP, Jharkhand.	SCH 2 - BREAK UP OF TOTAL PRICE	

**NOTE**

1	Bidder shall quote total price for SCH-1 Part only at SI No. 1 above. All other amounts / rates of each item of works in respective schedules / parts will be derived based on allocated percentages. As such, any uncalled figure/ amount noted at any other place / schedule of Volume-III will not be reckoned & will stand null & void.
2	Bidder to note that total price at SI No. 1 above shall be considered for evaluation & awarding. As such grand total price should be complete in all respect for the full scope defined and considering all terms and conditions.
3	Bidder's quoted total price of SCH-1 at SI. No 1 above, shall be apportioned into amount of various items of works based on allocated percentages against respective item, in respective schedules / parts. As such, bidder shall not indicate / quote any amount / rate in these schedules / parts and any amount / rate quoted against any item shall not be taken into cognizance / account and offer may be liable for rejection.
4	Based on the itemwise percentage allocations, the amount for the individual items of the Bill of Quantity shall be arrived at. The rates of individual items shall be derived from the amount against each items and its quantity after rounding off to upto 2 decimal places. However, RA bill payment shall be done after rounding off the gross amount to two decimal points. Any adjustment, if required, due to such methodology, will be effected / adjusted in final bill.
5	Bidders to note that this is an item rate contract. Payment shall be made for the actual quantities of work executed at the unit rate arrived at as per SI No.4 above.
6	Any item as per scope of work, if not included in the price quoted above and shown separately will not be taken cognizance of and the offer shall be liable for rejection.
7	Price format shall not be changed by bidder in any case and it may lead to cancellation of their offer.
8	The quoted price shall be excluding GST including freight on FOR site basis.
9	The quantity of items may vary during execution mainly due to actual requirement etc. The unit rates work out from the overall amount quoted & accepted by BHEL shall be considered and no separate unit rates shall be allowed. Unit rates shall be valid throughout the contract period.

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**SCHEDULE - 2 : BREAK UP OF TOTAL PRICE**

<b>SL. NO.</b>	<b>DESCRIPTION</b>	<b>PRICE SCHEDULE REFERENCE</b>	<b>WEIGHTAGE</b>
<b>1.0</b>	EQUIPMENT & PIPING ERECTION INCLUDING PG TEST	SCH-3-EQUIPMENT & PIPING ERECTION INCLUDING PG TEST	<b>0.77013452</b>
<b>2.0</b>	STRUCTURAL ERECTION	SCH-4 STRL ERECTION	<b>0.22986548</b>
<b>3.0</b>	<b>TOTAL</b>		<b>1.00000000</b>

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**SCH-3-EQUIPMENT & PIPING ERECTION INCLUDING PG TEST**

<b>ST NO.</b>	<b>ITEM DESCRIPTION</b>	<b>UNIT</b>	<b>QUANTITY</b>	<b>WEIGHTAGE</b>
1.1	Structure, Duct and dampers etc as per tender specifications (as per Annexure-III, IV)	MT	23109.00	0.57461968
1.2	Tanks under FGD system etc as per tender specifications (as per Annexure-III, IV)	MT	2346.00	0.08065559
1.3	Rotating Machines etc as per tender specifications (as per Annexure-III, IV, V, VII)	MT	5247.00	0.08341043
1.4	Insulation and sheeting, etc. for FGD system as per specifications.(as per Annexure-III)	MT	114.00	0.00253508
1.5	Piping systems(including valves, flanges ,fittings, H&S etc.) as per tender specifications (as per Annexure –III, VI, VIII, IX)			
1.5.1	SS Piping (as per Annexure VI)	MT	9.00	0.00072883
1.5.2	Carbon steel piping including fire protection piping (as per Annexure –III, IV, V, VI, VIII)	MT	670.00	0.02675757
1.5.3	Carbon steel Buried piping (wrapping and coating) (as per Annexure-VIII)	MT	9.00	0.00032887
1.6	Misc. Equpt./Str steel/ etc.(as per annexure-V, VIII)	MT	19.00	0.00043076
1.7	Providing PG test assistance	LS	3.00	0.00066771
<b>TOTAL</b>			31523.00	0.77013452

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**SCH-4-STRUCTURAL ERECTION**

ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
1500	<b>ROOFING / SIDE CLADDING:</b> Roofing / side cladding work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, scaffolding, laps, hooks, washers, corner pieces etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following:			
A1501	Designing, providing and fixing permanently color coated galvanised MS troughed metal sheet decking plate of approved colour over roof purlins for cast-in-situ roof slab as per relevant IS code and Grade as per specification. Bare metal thickness(BMT) of deck plate shall be minimum 0.8mm with minimum trough depth of 44 mm having minimum yield strength of 250 MPa (Grade G250 as per AS 1397)and shall serve as permanent shuttering to the roof slab minimum 150mm thick measured over crest of metal decking & shall have adequate strength to support weight of green concrete and imposed loads of min 550 kg/sqm (for two span condition) during construction between beams as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to beams, side lapping, end lapping etc. all complete for below mentioned spans. The sheet shall be permanently coated(total coating thickness of atleast 40 microns) with silicon modified polyester(SMP with silicon content 30%-50%) paint or super polyester paint of minimum 20 micron(nominal) DFT on exposed surface (facing operating floor) over epoxy primer coat of minimum 5 microns(nominal) and minimum 10 microns SMP or super polyester paint on other face over epoxy primer of 5 micron applied over coating (deginate class Z275), including fixing of sheet to top flange of beam with drawn arc welding of headed shear anchor studs @ 260mm c/c in the trough and stich screws between two adjacent sheets and sealing with epoxy sealant.The shear anchor studs shall confirm to type B studs specified in AWS D1.1/D1.1M or equivalent as shear connector upto 19 mm dia & 100 mm length manufactured from cold drawn round steel bars confirming to ASTM A 29 of grade designation 1010 through 1020 of standard quality with either semi killed or killed welded by drawn arc stud welding through metal deck sheet. The SMP and polyester paint shall confirm to product type 4 as per AS/NZS 2728.Measurement of profile sheeting shall be of the plan area of roof covered by MS trough metal decking.(Supply and Fixing of shear connectors shall be paid separately as per BOQ item no. A1503/B1503) (Payment: Supply = 70 % and erection = 30 % )			
a	Span Upto 1800mm	SQM	7700	0.01634949
B1501	Designing, providing and fixing permanently color coated galvanised MS troughed metal sheet decking plate of approved colour over floor beams for cast-in-situ roof slab as per relevant IS code and Grade as per specification. Bare metal thickness(BMT) of deck plate shall be minimum 0.8mm with minimum trough depth of 51 mm having minimum yield strength of 250 MPa and shall serve as permanent shuttering to the roof/floor slab 150mm thick measured over crest of metal decking & shall have adequate strength to support weight of green concrete and imposed loads of min 550 kg/sqm (for two span condition) during construction between beams as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to beams, side lapping, end lapping etc. all complete for below mentioned spans. The sheet shall be permanently coated(coating thickness of atleast 40 microns) with silicon modified polyester(SMP with silicon content 30%-50%) paint or super polyester paint of minimum 20 micron(nominal) DFT on exposed surface (facing operating floor) over epoxy primer coat of minimum 5 microns(nominal) and minimum 10 microns SMP or super polyester paint on other face over epoxy primer of 5 micron applied over coating (deginate class Z275), including fixing of sheet to top flange of beam with drawn arc welding of headed shear anchor studs @ 260mm c/c in the trough and stich screws between two adjacent sheets and sealing with epoxy sealant.The shear anchor studs shall confirm to type B studs specified in AWS D1.1/D1.1M or equivalent as shear connector of 19 mm dia & 100 mm length manufactured from cold drawn round steel bars confirming to ASTM A 29 of grade designation 1010 through 1020 of standard quality with either semi killed or killed welded by drawn arc stud welding through metal deck sheet. Measurement of profile sheeting shall be of the plan area of roof covered by MS trough metal decking. The SMP and polyester paint shall confirm to product type 4 as per AS/NZS 2728.(Supply and Fixing of shear connectors shall be paid separately as per BOQ item no. A1503/B1503) (Payment Terms: Supply = 70 % and erection = 30 % )			
a	Span Upto 1800mm	SQM	2330	0.00504626

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1500	<b>ROOFING / SIDE CLADDING:</b> Roofing / side cladding work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, scaffolding, laps, hooks, washers, corner pieces etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following:  b) Span Exceeding 1800mm and upto 2500 mm	SQM	1710	0.00370348
A1503	Providing and fixing shear connectors of mild steel studs having 16mm dia and minimum 65 mm projected length above purlin passing through metal decking as per relevant IS codes/AWS D1.1/D1.1M/ASTM A29 and specification.	QUINTAL	6	0.00019466
B1503	Providing and fixing shear connectors of mild steel studs having 19mm dia and minimum 100 mm projected length above purlin passing through metal decking as per relevant IS/AWS D1.1/D1.1M/ASTM A29 codes and specification.	QUINTAL	12	0.00038932
A1504	Designing, providing and fixing External sheet of Permanent colour coated metal cladding of approved shade and color, with troughed M.S. sheets of minimum 0.6mm bare metal thickness of grade G250 as per AS1397/grade SS255 as per ASTM A653/ grade S250GD as per EN 10326 with zinc coating to class Z275/ aluminium zinc alloy coating to class AZ150 on both sides including fixing to supports / rails by concealed fixing system, corrosion resistant self tapping / self drilling type fasteners with suitable cap, flashing etc. all complete. The exposed face of the sheet shall be permanently coated with silicon modified polyester(SMP silicon content 30%-50%) paint or super polyester paint of minimum 20 micron DFT on exposed surface over primer coat of minimum 5 micron(nominal) and minimum 10 micron (nominal) SMP or super polyester paint over primer coat of minimum 5 micron (nominal) on other face. The permanent colour coated sheet shall meet the general requirements of IS : 14246 and shall conform to class 3 for the durability. SMP and polyester paint system shall be of industrial finish of product type 4 of AS/NZ2728. (Payment Terms:Supply = 70 % and erection = 30 % )	SQM	34252	0.04909755
1511	Providing and fixing insulation of resin bonded mineral wool of 50 mm nominal thickness conforming to IS 8183 having a density of 32 kg/cum glass wool or 48 kg/cum for rock wool, for cladding/under deck insulation including application of glue and tying with lacing wire, for glass/rock wool as per manufacturer's recommendations.	SQM	300	0.00023055
b)	For underdeck insulation below RCC slabs	SQM	486	0.00045776
A1514	Providing and installing under deck insulation with resin bonded mineral wool of 50 mm nominal thickness conforming to IS 8183 having a density of 32 kg/cum glass wool or 48 kg/cum for rock wool using minimum 0.05 mm thick aluminium foil on exposed surface followed by 24G X 25 mm mesh GI wire netting, fixed at various elevations with rawl plugs including clips but excluding cost of insulation.	SQM		

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**SCH-4-STRUCTURAL ERECTION**

ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
1500	<b>ROOFING / SIDE CLADDING:</b> Roofing / side cladding work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, scaffolding, laps, hooks, washers, corner pieces etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following:			
A1519	Design, supply & erection of permanent colour coated Pre-Fabricated sandwiched insulated metal cladding of approved shade and color comprising of top sheet as troughed permanently colour coated sheet & bottom sheet as plain permanently colour coated with 50mm thick insulation sandwiched between the two sheets etc all complete as per specification. Each sheet shall be of steel with minimum 0.6mm bare metal thickness (i.e. excluding the thickness of galvanizing/aluminium-zinc coating and painting) of grade G250 as per AS1397 / grade SS255 as per ASTM A653M / grade S250GD as per EN 10326 with zinc coating to class Z275 / aluminium-zinc alloy coating to class AZ150. Metal sheets shall be colour coated with total coating thickness of at least 40 microns (nominal) dry film thickness (DFT) comprising of Silicon Modified Polyester (SMP with silicon content of 30% to 50%) paint or Polyester paint, of minimum 20 microns (nominal) SMP or polyester paint on one side (exposed face), over minimum 5 micron (nominal) primer coat and minimum 10 micron (nominal) SMP or Polyester paint over minimum 5 micron (nominal) primer coat on other side. SMP and Super Polyester paint shall conform to product type 4 of AS/NZS 2728. The sheets shall be of approved profile and shall have such section modulus and moment of inertia per metre width that deflection of sheets is limited to span/250 under design wind pressure for two span conditions. No increase in allowable stresses under wind load condition is allowed. Special coated fastener conforming to corrosion resistant Class 3 of AS3566 and tested for 1000 hours salt spray test shall be used for fixing Pre-Fabricated Insulated Metal Sandwich Panels with the structural members below as per specification. Item rate is inclusive of insulation material. For insulation of cladding , mineral wool conforming to IS: 8183 shall be used. The density shall be 32 or 48 kg. /cu.m for glass or rock wool respectively. The nominal thickness of insulation shall be 50mm. (Payment Terms: Supply = 70 % and erection = 30 % )	SQM	1350	0.00439372
A1520	Design, supply & erection 2mm thick Polycarbonate sheet as per the detailed specification mentioned in tender document with profile matching with metal sheeting of building. The Polycarbonate sheets shall be fire and u/v resistant, and suitable for continuous use up to a temperature of 100 DEG C including cost of Suitable aluminium beading including required no. of Fasteners .Open ends of the sheet shall be sealed as per manufacturer's recommendations.	SQM	500	0.00119869
2300	<b>STRUCTURAL WORKS:</b> Structural steel works including all labour, material (unless otherwise specified in BOQ/contract specification), equipments unless otherwise specified, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following:			
2301 a	Transportation from storage yard to erection site, erection and alignment of structural steel (shop fabricated in customer approved shop as per specification) with mild steel (E250) rolled section / built up section / combination of both or with high strength steel (E350 ) built up section (shop connections/factory fabricated will be welded type and field connections will generally be bolted type unless otherwise specified) conforming to IS:2062 and technical specification, pipes conforming to IS:1161/ IS:1239, chequered plate conforming to IS: 3052, mild steel rounds, monorails, stays, safety chains, ladders, MS grating etc. in columns, beams, gantry girders, bunkers, silos, hoppers, roof trusses, portals, laced purlins, space frames, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, hand rails etc., including alignment, bolting/welding, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, touch-up painting, electrodes and other required consumables, erection bolts & nuts,(Weight of erection bolts, nuts and welds not payable. However, permanent bolts are payable separately), inspection and testing, preparation erection scheme/method statement, stability of structures, installation of temporary structures, setting column bases, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), return of surplus / waste steel materials to store etc all complete. (Payment Terms: Erection = 65 % and Alignment = 35 % )	MT	6740	0.10187627

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2301 b	Fabrication,erection and alignment of structural steel with mild steel (E250) rolled section / built up section / combination of both conforming to IS:2062 and technical specification, pipes conforming to IS:1161/ IS:1239, chequered plate conforming to IS: 3052, mild steel rounds, monorails, stays, safety chains, ladders, MS grating etc. in columns, beams, gantry girders, bunkers, silos, hoppers, roof trusses, portals, laced purlins, space frames, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, hand rails etc, connection design & preparation of fabrication drgs, collection of steel from stores, fabrication, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts, nuts and welds not payable. However, permanent bolts are payable separately), assembly, edge preparation, preheating (min preheat and interpass temperature of 200 C for welding over 20 mm and upto 40 mm & 660 C for welding over 40 mm and upto 63 mm & 1100 C for thickness over 63 mm & use of low hydrogen/ radiogenic electrodes), post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, preparation of erection scheme/method statement, protection against damage in transit, stability of structures, installation of temporary structures, setting column bases, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), return of surplus / waste steel materials to store etc all complete including preparation of detail fabrication drawing for review and approval by BHEL. (Rate shall be exclusive of surface preparation and primer) (STRUCTURAL STEEL SHALL BE SUPPLIED BY BHEL , FREE OF COST)	MT	100	0.00291179
2302a	Extra over ST NO..2301(b) for blast cleaning for making surface conforming to Sa 2 1/2 finish of ISO 8501-1 and providing with epoxy resin based zinc phosphate primer in coats of minimum 50 micron (DFT) at fabrication yard and 50 micron (DFT) after erection, including touch-up painting, mist coat, additional water sprinkling etc all complete.	MT	100	0.00057549
2304a	Providing and applying (with airless spray technique) Intermediate coat of two component polyamide cured epoxy with MIO Content (containing lamellar MIO minimum 30% on pigment, solid by volume minimum 80% ±2%) of minimum 100 micron DFT. This coat shall be applied after an interval of minimum 24 hours (from the application of primer coat) by airless spray technique including protection and cleaning, scaffolding etc. all complete as per specification for all structures .	MT	100	0.00059196
2304b	Providing and applying Finish Coat of two pack aliphatic Isocyanate cured acrylic finish paint (solid by volume minimum 55% ±2%) with Gloss retention (SSPC Paint Spec No 36, ASTM D 4587, D 2244, D 523) of Level 2 (after minimum 1000 hours exposure, Gloss loss less than 30 and colour change less than 2.0 ΔE) and minimum 70 micron DFT including protection and cleaning, scaffolding , touchup painting etc. all complete as per specification for all structures .Colour and shade of the coat shall be as approved by the Employer.	MT	100	0.00059196
2307	Supplying, Transportation, fabrication, erection and alignment of factory made electroforged galvanised grating units with mild steel having minimum galvanisation conforming to IS:2062 in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads etc. including fixing clamps, fittings, fixtures, grinding, drilling, welding, edge preparation, etc. all complete.			
a	Minimum galvanisation of 610 g/sqm	MT	95	0.01731023
2308	Supplying, Transportion, fabrication, erection and alignment of factory made galvanised welded grating units with mild steel conforming to IS:2062 in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads etc. including 1 coats of redoxide zinc-chromate primer after erection, fixing clamps, fittings, fixtures, grinding, drilling, welding, edge preparation, etc. all complete.	MT	12	0.00169876

**VOLUME-III  
PRICE SCHEDULE, REV-00**

**Job : ERECTION, TESTING, COMMISSIONING, START-UP ,TRIAL OPERATION AND HANDING OVER OF TOTAL FLUE GAS DESULPHURIZATION (FGD) SYSTEM OF 3 X 660 MW NORTH KARANPURA STPP, JHARKHAND.**

**TENDER NO:PSER:SCT:NKP-M2081:20**

**SCH-4-STRUCTURAL ERECTION**

ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
1500	<b>ROOFING / SIDE CLADDING:</b> Roofing / side cladding work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, scaffolding, laps, hooks, washers, corner pieces etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following:			
A2309	Extra over above ST NO. A2301 for finishing the grating units/bolts/inserts with hot dipped galvanisation @ 610 gm/sqm over blast cleaned steel surfaces, all complete.	MT	5	0.00019946
2311	Providing, Transportation and fixing in position of permanent mild steel bolts (class 4.6 as per IS : 1367 and grade 'C' as per IS: 1363) and nuts, washers etc. up to and inclusive of 39 mm diameter and upto 300mm long for structural steel work etc all complete as per specification, drawings and instructions of the engineer incharge.	KG	1200	0.00017066
2312	Providing,Transportation from site store, fixing in positng of high strength structural bolts (of property class 8.8 and product grade 'C' as per IS: 1367) and conforming to IS: 3757 and high strength structural hardened and tempered nuts (of property class '8' as per IS:1367) conforming to IS:6623 with hardened and tempered washers as per IS:6649 etc. up to and inclusive of 39 mm diameter and upto 300 mm long for structural steel work etc all complete as per specification, drawings and instructions of the engineer incharge.	KG	60000	0.01414708
2313	Dismantling of steel structure, lowering of material and carriage of the dismantled material up to field fabrication shop / projects storage including temporary dismantling, cutting, re-welding, supporting, and restoring to correct position all temporarily dismantled members, re-alignment of all adjacent connected members to their correct positions ( weight of such adjacent members and temporarily dismantled members not payable), scaffolding, staging, tools & tackles, gas cutting, welding, consumables etc all complete.	MT	10	0.00006359
2314	Addition to, alterations in and/or modifiction of "Erection Marks" including cutting of parts, gauging of welds, cutting, grinding, fabrication, welding, drilling holes, straightening, removal of bends, raising to the required level, painting, transportation, return of unutilised steel pieces to the project store, temporarily dismantling, cutting, re-welding, supporting and restoring to correct position of all the temporarily dismantled members, realignment of adjacent connected members (weight of such temporarily dismantled and adjacent members not payable) etc all complete for the following:			
a	In erected position	MT	45	0.0008417
b	In fabrication yard	MT	45	0.00066845
2315	Re-erection of dismantled fabricated structural steel members including carriage of modified "Erection Marks" from the field fabrication shop to erection site, lifting to required position, aligning in position, tack welding, final welding and touch up painting including temporary dismantling and re-erection of temporarily dismantled members, cutting, rewelding, supporting and restoring to the correct position of all temporarily dismantled members, re-alignment of adjacent connected members(weight of such temporarily dismantled members and adjacent members not payable), scaffolding, staging, tools & tackles, gas cutting, welding, consumables etc all complete.	MT	30	0.00034724
2318	Supplying, Transportion and fixing in position PTFE type sliding bearings suitable for required vertical loads as per the construction drawings and for maximum displacement of $\pm 50$ mm including installation, drilling, bolting, erecting, aligning etc all complete for following vertical loads.			
a	20 Tons	EACH	6	0.00012101
b	25 Tons	EACH	6	0.00013964
c	40 Tons	EACH	6	0.00017455
d	50 Tons	EACH	6	0.00019549
e	60 Tons	EACH	5	0.00019588

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**VOLUME-III  
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**TENDER NO:PSER:SCT:NKP-M2081:20**

**SCH-4-STRUCTURAL ERECTION**

ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
1500	ROOFING / SIDE CLADDING: Roofing / side cladding work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, scaffolding, laps, hooks, washers, corner pieces etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following:			
f	100 Tons	EACH	5	0.00022303
g	130 Tons	EACH	4	0.00019705
h	200 Tons	EACH	4	0.00021566
2320	Supplying, Transportation from site store, fabrication and fixing of stainless steel pipe hand railing conforming to SS 409 of 32 mm / 40 mm dia all complete.	MT	3	0.0014235
A2322	Supply, Transportation, fabrication and fixing of galvanised MS pipe hand railing (minimum 1000 mm high) of 32 mm / 40 mm / 50 mm dia (Medium Grade) as per IS:1161, galvanised at the rate of 610 gms/sqm as per IS:4736, including painting etc. all complete.	MT	8	0.00110343
2323	Conducting radiography test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	26	0.00022624
2324	Conducting ultrasonic test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	26	0.00003328
2325	Conducting ultrasonic test on steel plates as per ASTM-A435 or equivalent wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	SQM	56	0.00003311
2326	Conducting magnetic particle test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	26	0.00001995
2327	Conducting dye penetration test on welds wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges etc. all complete (over and above the work already specified in the specifications.)	RM	406	0.00032821
A2335	Design, Supply, fabrication and fixing of Hopper gratings made of min 200mm X 28mm thick flats in Main direction and min 100 mm X 20 mm thick flats in secondary direction including application 2 coats of Red oxide primer all complete as per specification and approved drawing	MT	10	0.00141563
A2336	Supply & welding of 10mm Sq bar to the chequered plate walk way at all conveyor galleries in CHP including all consumables as per the directions of engineer in charge.	MT	3	0.00038185
A2337	Supply & Transportation and erection/Fixing, welding of MS Flat Toe guard of size 100mm x 6mm and shall be provided along the railing for all steel platforms/landings and RCC staircases as per drawings and specifications.	MT	3	0.00038185
	<b>TOTAL</b>			0.22986548