

| VOLUME-III PRICE SCHEDULE, REV-00 | |
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| JOB: CONSTRUCTION OF 4 NOS 150 M TALL SINGLE FLUE RCC CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN (EXCLUDING PILE) AT 4X250 MW BRBCL NABINAGAR TPP FGD, BIHAR. | |
| TENDER NO. PSER:SCT:NBN-C2080:20 | |
| PREAMBLE | |
| SL NO | DESCRIPTION |
| 1 | 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 any where in this document. The tenderer shall sign & stamp all the pages of the tender document as a token of their acceptance. Submission of unfilled formats with sign & stamp shall be construed as acceptance of the contents of the same. |
| 2 | 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 guidance/tender purposes giving some idea of the work involved. The work is to be executed as per terms & conditions of the tender and actual drawings/documents, which shall be furnished during execution. |
| 3 | Items of work provided in this schedule but not covered in this specification shall be executed strictly as per instruction of the engineer. |
| 4 | 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, 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 | 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, if any but excluding any price variation remains, within plus minus fifteen percent ($\pm 15\%$) of the awarded price as per LOI. |
| 6 | Prior written approval of BHEL shall be sought by the contractor in case quantity variation of any item crosses +50% (plus fifty percent) limit during execution and approval to be obtained before execution of further quantity for this item. |
| 7 | In case Sealed /Paper Price Bids are opened for finalisation of the tender, for any Item Rate/BOQ based service 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 standing as L-1 is changed based on actual quantity executed, the bidder shall give suitable rebate to maintain your standing 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 shall not be applicable where the tender is finalised through Reverse Auction. |
| 8 | BHEL reserve 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. The rates of unit rate/optional items shall remain valid till execution of the order, if the job/work is awarded to the bidder. |
| 9 | 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, benchmarks 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 | 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 | 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 | The tender 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 before submission of his bid/offer. No claim whatsoever due to lack of knowledge of site conditions shall be entertained after award of the work. |
| 13 | No splitting of the job is envisaged unless the same is specifically indicated in the TCC/Vol-1F. Decision of BHEL in this regard shall be final and binding to the bidders. |
| 14 | 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 | 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 items 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. The same modality shall be applicable for other item rate service contracts where item with same description is repeated in different schedules. |

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| 16 | 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 | 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 | 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. PVC/escalation is not payable for these Non-scheduled items. |
| 19 | No interest, whatsoever, shall be payable by BHEL on the security deposit, any bank guarantee submitted or any amount due to successful bidder/contractor. No idling charge whatsoever (either for labour or any other resources) is payable by BHEL for any reason whatsoever. |
| 20 | Size and weights of various items are mentioned in the attached BOQ cum rate/price schedule for reference purpose only & these shall not be taken into consideration for quoting/calculating amount in the rate schedule. 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 | Bidder's Total price shall be considered for evaluation unless stated otherwise. |
| 22 | In case of BOP packages, if Bidder does not quote/indicate the price for freight chages against indicated rate schedule, the same shall be considered as 2% of basic price and adjusted with the total quoated price against each item keeping the total quoted price unaltered. |

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| TENDER NO. PSER:SCT:NBH-C2080-:20 | | | |
| SCHEDULE - 1 : TOTAL PRICE | | | |
| SL NO | DESCRIPTION | PRICE SCHEDULE REF | TOTAL PRICE (IN INR) |
| 1.0 | TOTAL PRICE FOR CONSTRUCTION OF 4 NOS 150 M TALL SINGLE FLUE RCC CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN AT 4X250 MW BRBCL NABINAGAR STPP FGD, BIHAR (EXCLUDING PILE) | SCH 2 - PRICE BREAK UP | <u>IN FIGURES:-</u> <u>IN WORDS:-</u> |
| NOTE | | | |
| 1.0 | Bidder shall quote total price for SCH-2- 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. | | |
| 2.0 | 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. | | |
| 3.0 | Bidder's quoted total price of SCH-2 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. | | |
| 4.0 | 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. | | |
| 5.0 | 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. | | |
| 6.0 | 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. | | |
| 7.0 | Price format shall not be changed by bidder in any case and it may lead to cancellation of their offer. | | |
| 8.0 | The quoted price shall be excluding GST including freight on FOR site basis. | | |
| 9.0 | 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 | | | | | |
| SL No. | Description | Unit | Quantity (1 Chimney) | Quantity (4 Chimneys) | Weightage |
| Part-1A CIVIL WORKS | | | | | |
| 1 | Earth work in excavation in all types of soil including ash which can be excavated by any means including setting out, levelling, dewatering (but excluding special type of dewatering viz. well point method), shoring & strutting wherever required (but excluding Steel sheet piling), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead up to 1 km, spreading/levelling of disposed materials etc all complete for following depths below ground level. [Measurement of excavation shall be paid as per actual quantity at site as per direction of Engineer in charge] | | | | |
| a | Depth from ground level but not exceeding 2 m | CUM | 2550 | 10200 | 0.00185384 |
| b | Depth exceeding 2 m but not exceeding 4 m | CUM | 2150 | 8600 | 0.00195732 |
| c | Depth exceeding 4 m but not exceeding 6 m | CUM | 500 | 2000 | 0.00056981 |
| 3 | Breaking of pile head to cut off level and exposing pile reinforcement for embedment in pile cap including cutting, bending, placing, welding, disposal of debris within the plant premises etc. all complete as per specification, drawing and as directed by the engineer-in-charge. (Installation & Testing of Pile under Pile Vendor scope) | | | | |
| a | Pile with 760 mm diameter | EACH | 155 | 620 | 0.00192996 |
| 7 | Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 300 mm compacted thickness using/with selected materials directly from excavation and compacted as specified including watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following including necessary men/women, materials, equipment, loading, transportation, unloading etc as per specification, drawing and as directed by engineer-in-charge. [Measurement of Backfilling shall be paid as per excavation quantity after deduction for concrete & other buried items etc.] | | | | |
| b | Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII) | CUM | 2900 | 11600 | 0.00159546 |
| 8 | Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 300 mm compacted thickness using/with approved borrowed soil (borrowed soil to be arranged by the bidder) and compacted as specified including supplying borrowed soil, royalty (if any), watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following including necessary men/women, materials, equipment, loading, transportation, unloading etc as per specification, drawing and as directed by engineer-in-charge. [Measurement of Backfilling shall be paid as per excavation quantity after deduction for concrete & other buried items etc.] | | | | |
| b | Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII) | CUM | 200 | 800 | 0.00003275 |
| 9 | Extra over item No. 1 and 7 for carriage of excavated earth/selected materials for every 500 m or part thereof beyond an initial lead of 1 km. | CUM | 2200 | 8800 | 0.00010086 |
| 11 | Supplying and filling sand upto any depth below grade slab, around foundations, etc. in layers not exceeding 300 mm compacted thickness and compacted so as to achieve at least 80% relative density as per IS-2720 (Part-XIV) including spreading, watering, ramming/compaction by manual / mechanical means, dressing, royalty (if any) etc. all complete including necessary men/women, materials, equipment, loading, transportation, unloading etc as per specification, drawing and as directed by engineer-in-charge. | CUM | 550 | 2200 | 0.00809082 |
| 12 | Supplying and laying (inside chimney in the space below the grade level slab) crushed rock range 63 mm to 45 mm in layers not exceeding 200 mm in thickness including breaking of stone boulders to required sizes, filling the interstices with selected sand and compacting to 85 % of original volume of stone stack for all lifts etc. all complete. Payment shall be made for the measurement of the volume of the compacted fill. | CUM | 200 | 800 | 0.00322994 |
| 13 | Transportation from batching plant & laying Nominal Mix plain cement concrete (M 7.5) with graded aggregate (with maximum size of coarse aggregate not exceeding 40 mm) at all levels for all kinds of work like mass concrete, lean concrete, mudmat, filling etc. including labour, materials including cement slurry, equipment, handling, transporting, batching, curing, testing etc. all complete as per specifications, drawings and instructions of the Engineer. [Ready mix concrete will be provided by BHEL free of cost at batching plant] | CUM | 110 | 440 | 0.00075071 |
| 14 | Transportation from batching plant & laying design mix cement concrete with graded aggregate (maximum size of coarse aggregate not exceeding 20 mm) for reinforced concrete work at all levels for all kinds of work, including labour, materials including cement slurry, equipment, handling, transporting, batching, mixing, placing, levelling, compacting, curing, testing etc. and rendering or cleaning and finishing the exposed surface with cement mortar (1:3) to give smooth and even surface, all complete as per specifications, drawings and instructions of the Engineer, but excluding all formwork and reinforcing steel. [Ready mix concrete will be provided by BHEL free of cost at batching plant] | | | | |
| i | For all works below ground level (except chimney shell) | | | | |
| b | Grade M-30 (foundations, etc) | CUM | 2325 | 9300 | 0.01586718 |
| ii | For all other works | | | | |
| a | Grade M-25 grade level slab, pit, trenches, drain etc. | CUM | 40 | 160 | 0.00027298 |
| c | Grade M-35 for chimney shell, corbels and external platforms and other shell attachments. | CUM | 25 | 100 | 0.00034558 |
| d | Grade M-25 for all other components of the super structure, roof slab, mini -shells, beams, columns wall etc. | CUM | 10 | 40 | 0.00013417 |
| A14 | Providing & laying design mix cement concrete with graded aggregate (maximum size of coarse aggregate not exceeding 20 mm) for reinforced concrete work at all levels for all kinds of work, including labour, materials, equipment, handling, transporting, batching, mixing, placing, levelling, compacting, curing, testing etc. and rendering or cleaning and finishing the exposed surface with cement mortar (1:3) to give smooth and even surface, all complete as per specifications, drawings and instructions of the Engineer, but excluding all formwork and reinforcing steel. | | | | |
| i | For all works below ground level (except chimney shell) | | | | |
| b | Grade M-30 (foundations, etc) | CUM | 25 | 100 | 0.00110064 |
| ii | For all other works | | | | |
| a | Grade M-25 grade level slab, pit, trenches, drain etc. | CUM | 10 | 40 | 0.00043275 |
| c | Grade M-35 for chimney shell, corbels and external platforms and other shell attachments. | CUM | 3975 | 15900 | 0.21272450 |
| d | Grade M-25 for all other components of the super structure, roof slab, mini -shells, beams, columns wall etc. | CUM | 10 | 40 | 0.00046402 |

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| SCHEDULE- 2 | | | | | |
| SL No. | Description | Unit | Quantity (1 Chimney) | Quantity (4 Chimneys) | Weightage |
| Part-1A CIVIL WORKS | | | | | |
| B14 | Extra over Sl. No. A14 for controlling of temperature of fresh concrete to less than 23 degree centigrade using ice, including all related arrangements for providing, storing and mixing of ice with water, cooling of aggregates etc. All complete as per specification, drawing and instruction of engineer in charge. | CUM | 1750 | 7000 | 0.00389822 |
| 15 | Providing and applying three coats of bitumen grade 85/25 as per IS 702 (@ 1.7kg/sqm) with 1% antistripping compound conforming to IS 6241 in foundation, shell, pedestal etc on concrete surfaces exposed to soil / ash including surface preparation etc. all complete. | SQM | 900 | 3600 | 0.00189463 |
| 15A | Dismantling concrete work for all types of structures at all levels including stacking of servicable material to a lead of 1 KM and disposal of unservicable material upto a lead of 2km, cutting of reinforcement, labour, equipment, safety precautions etc all complete as per drawings, specification and instructions of engineer in charge. | | | | |
| a | Plain cement concrete of all grades | CUM | 1 | 4 | 0.00000545 |
| b | Reinforced cement concrete of all grades | CUM | 1 | 4 | 0.00000792 |
| 16 | Providing and placing steel reinforcements of TMT steel of grade Fe-500 /Fe 500D conforming to IS:1786 and having minimum elongation 14.5% , for reinforced concrete work, at all levels, for all kinds of work, including transportation, cleaning, derusting, straightening, cutting, bending, binding in position with annealed wire and/or welding, providing concrete cover blocks, pins, separators, chairs, supports for reinforcement, etc. with all materials, labour, equipment, handling, testing, transportation to & from stores etc., preparation of bar bending schedules, all complete as per specifications, drawings and instructions of the Engineer. | | | | |
| i | For all works below ground level (except chimney shell) | | | | |
| a | High strength deformed bars [Reinforcement bars will be issued by BHEL Free of cost] | MT | 259 | 1036 | 0.01515518 |
| ii | For all other works | | | | |
| a | Mild steel reinforcement bars [Mild steel reinforcement procurement in vendors scope] | MT | 10 | 40 | 0.00424288 |
| b | High strength deformed bars [Reinforcement bars will be issued by BHEL Free of cost] | MT | 440 | 1760 | 0.03364900 |
| A17 | Providing and fixing formwork of approved quality for cast-in-situ, plain or reinforced concrete works of any type and section for all works below ground level (except chimney shell) for all depths, including labour, materials, equipment, waste of forms, shoring, strutting, scaffolding, staging, tying, nailing, caulking, bolting etc. and removal of form work and staging etc. all complete as per specifications, drawings and instructions of the Engineer. | SQM | 800 | 3200 | 0.00310908 |
| B17 | Inner and outer faces of wind shield with slip form shuttering: Providing and fixing formwork using slipform (inner and outer faces) for concreting in chimney for cast in situ, reinforced concrete works of any type and section for all elevations, including labour, materials, equipment, waste of forms, scaffolding, staging, tying, nailing, caulking, bolting, maintenance, dismantling etc. all complete as per specifications, drawings and instructions of Engineer in charge. (Area of inner face and outer face shall be measured seperately.) Mode of Measurement:- Total formwork quantity in chimney shell applicable to Slipform work as per specifications & drawings shall be jointly measured and certified. Certified quantity(SQM) to be paid in line to the unit rate of B17a) i), B17a) ii) & B17a) iii). (The slipform arrangement material shall be the property of contractor) | | | | |
| a | Design, Engineering, Approval of Drawings, Supply & Installation of Slipform system as per approved drawings duly reviewed & vetted by approved Third Party/Engineering for chimney or silo or any other shell/structure work at site including all safety requirements/arrangements, installation of all supporting items like structural members, winch arrangement, wooden platforms, jacks(including testing by Third Party) & jack-rods, lighting arrangements, panels, passenger cage, nuts/bolts, manpower, all other arrangements necessary for concreting & material shifting, providing spares for smooth operation, dismantling, etc all complete. Quantity measured for B17a) i), B17a) ii) & B17a) iii) shall be same and shall be restricted to the quantity measured in B17 a iii) | | | | |
| i) | For Mobilisation & Installation(Payment of the total certified quantity of the shell shall be made for mobilisation of slipform only after start of successful slipping as certified by Engineer in charge.) | SQM | 15000 | 60000 | 0.04834523 |
| ii) | For Dismantling of the Slipform System(Payment of the total certified quantity of the shell shall be made only after complete dismantling of slipform as certified by Engineer in charge.) | SQM | 15000 | 60000 | 0.01208631 |
| iii) | Slipping/Providing formwork at inner and outer faces of wind shield with slip form shuttering with slipform arrangement. (Cost for design, mobilisation, installation & dismantling of slipform shall be paid seperately in Item No B17 i) & B17 ii) and cost for slipping/providing & maintenance of slipform work to be paid in this item) Measurement for payment to be done progressively as per actual slipping executed at site. | SQM | 15000 | 60000 | 0.06043154 |
| C17 | Providing and fixing formwork of approved quality for cast-in-situ, plain or reinforced concrete works of any type and section for all other components of the superstructure like slabs, beams, columns, walls, enclosures, mini shells, external platforms, corbels, other shell attachments, chases/recesses in shell etc. including labour, materials, equipment, waste of forms, all complete as per specifications, drawings and instructions of the Engineer. | SQM | 400 | 1600 | 0.00353944 |
| 18 | Providing and fixing formwork in shell openings and pockets (above 0.1 sq.m surface area) including cutting, formation of shapes and all other operations required for making the required shape and size, removal of formwork, all complete as per specifications, drawings and instructions of the Engineer. | SQM | 110 | 440 | 0.00097334 |
| 19 | Providing and placing in position at all levels, building paper (kraft paper), as per IS:1397, between concrete surfaces including the cost of labour, material, etc. complete as per drawings and instruction of the Engineer. | SQM | 55 | 220 | 0.00001933 |
| 20 | Providing and installing, at all levels, bitumen impregnated fibre boards, 12 mm thick, conforming to IS:1838, as joint filler at joints in concrete, including nailing, coating of both faces with coal tar pitch/bitumen, including the cost of all labour, material and equipments etc., complete as per drawings, specifications and instructions of the Engineer. | SQM | 25 | 100 | 0.00009227 |
| 21 | Providing and filling, at all levels, bitumen sealing compound (hot applied type) conforming to IS:1834, for sealing gaps and joints in concrete, including cleaning, mixing, heating, pouring or injecting, application of primer, cost of all labour, material and equipments etc., complete as per drawings, specifications and instructions of the Engineer. | KG | 400 | 1600 | 0.00043101 |

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| Part-1A CIVIL WORKS | | | | | |
| 22 | Preparing detailed fabrication drawings and after approval by the Engineer, supplying, fabricating, erecting and installing miscellaneous steel parts to be embedded/cast in concrete (like staircase embedments, corbel face plates, etc) at all positions and levels including the cost of all labour, materials and equipments for setting materials in concrete, grouting, welding, bolts & bolting, expansion anchors, drilling, cutting, etc. complete as per drawings and specification. (Material supply including structural steel parts is in contractor's scope). | MT | 3 | 12 | 0.00189790 |
| B23 | Supply, fabrication and erection of high strength structural steel (E350) in built up section at shop conforming to IS:2062, in columns, beams, struts, monorails, stays, safety chains, ladders, gantry girders, roof trusses, portals, laced purlins, space frames, hangers, wall beams, sheeting runners, brackets, stiffeners, stub columns, bracings, cleats, base plates, splice plates, gussets, end plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, decking and seal plates, galleries etc including blast cleaning, providing & applying primer, providing and applying intermediate, final and final finish coat of paint (blast cleaning, primer and paint shall be paid separately as per item no C23, D23 & E23), connection design & preparation of fabrication drgs, 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), assembly, edge preparation, preheating (min preheat and interpass temperature of 20 Deg C for welding over 20 mm and upto 40 mm & 66 Deg C for welding over 40 mm and upto 63 mm & 110 Deg 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, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures, setting column bases, surface preparation by means of manual or mechanical power tools as per IS:1477 part 1, touch-up painting, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), etc all complete. (Payment Breakup - a) Supply of Fabricated Material - 70%, b) Erection-15% and c) Alignment including welding/bolting - 15%) | MT | 210 | 840 | 0.12654575 |
| C23 | Extra over ST NO. B23 for blast cleaning of steel structures to near white metal surface conforming to Sa 2 ½ finish of ISO 8501-1 with surface profile 40-60 Micron and providing and applying two component moisture curing zinc (ethyl) silicate primer coat (having minimum 80% of metallic Zinc content in dry film, solid by volume minimum 60% ±2%) of minimum 70 micron DFT including the cost of all labour, material, equipments, protection of surface and cleaning, scaffolding, touch-up painting etc., complete as per drawings, specifications and instructions of the Engineer. Zinc dust composition and properties shall be Type-II as per ASTM D520-00. Primer coat shall be applied in Shop immediately after blast cleaning by airless spray technique. | MT(of steel) | 210 | 840 | 0.00711244 |
| D23 | Extra over ST NO. B23 for providing and applying (by 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 after an interval of minimum 24 hours (from the application of primer coat) and of approved make including the cost of all labour, material, equipments, protection and cleaning, scaffolding, touch-up painting etc. all complete as per drawing and specifications. | MT(of steel) | 210 | 840 | 0.00613561 |
| E23 | Extra over ST NO. B23 for 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 over steel sections already having intermediate coats, including the cost of all labour, material, equipments, protection and cleaning, scaffolding etc. all complete as per drawing and specifications. This coat shall be applied after an interval of minimum 24 hours (from the application of sealer coat) and within six (6) months (from the completion of Intermediate coat). Colour and shade of the coat shall be as approved by the Employer. | MT(of steel) | 210 | 840 | 0.00613561 |
| A24 | Supplying, fabrication, erection and alignment of factory made chequered plate with mild steel conforming to IS:2062 in platforms, staircases with edge binding strips and anti-skid nosing in treads etc. including 2 coats of redoxide zinc-chromate primer (one coat at shop and one coat after erection), fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete. (Payment Breakup - a) Supply of Material - 70%, b) Erection, Alignment, all complete-30%) | MT | 35 | 140 | 0.01657969 |
| 25 | Providing and fixing in positing 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 1500 mm long for structural steel work etc all complete. | Quintal | 60 | 240 | 0.00921613 |
| 26 | Transportation from store/plant gate, fabricating and erecting at all levels, structural steel flues of grade E250 conforming to IS:2062 complete with all bends, flanges, stiffeners, all other flue attachments, support system, staying system, collars, access manholes and gas sampling ports alongwith gaskets, material and equipment, transporting from store, lifting to all heights, setting in place, cutting, grinding, drillings, bending, bolts and bolting, welding, preheating and post-heating for welding, testing, etc. and other required accessories, including connection design & preparation of fabrication drgs and appointment of a separate agency for review and approval of fabrication drgs in consultation with BHEL, all complete as per specifications and drawings. [Structural steel shall be issued by BHEL free of cost] | MT | 255 | 1020 | 0.06356260 |
| 26 (i) | Supply & application including blast cleaning of outer surface of steel flue to near white metal surface conforming to Sa 2 ½ finish of ISO 8501-1 with surface profile 40-60 Micron and providing and applying two component moisture curing zinc (ethyl) silicate primer coat (having minimum 80% of metallic Zinc content in dry film, solid by volume minimum 60% ±2%) of minimum 70 micron DFT including the cost of all labour, material, equipments, protection of surface and cleaning, scaffolding, touch-up painting etc., complete as per drawings, specifications and instructions of the Engineer. Zinc dust composition and properties shall be Type-II as per ASTM D520-00. Primer coat shall be applied immediately after blast cleaning by airless spray technique. | SQM | 1950 | 7800 | 0.00275086 |
| 26 (ii) | Providing and applying (by airless spray technique) on outer surface of steel flue liner, an 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 after an interval of minimum 24 hours (from the application of primer coat) and of approved make including the cost of all labour, material, equipments, protection and cleaning, scaffolding, touch-up painting etc. all complete as per drawing and specifications. | SQM | 1950 | 7800 | 0.00237398 |

| VOLUME-III PRICE SCHEDULE, REV-00 | | | | | |
|--|--|------|-------------------------|--------------------------|------------|
| JOB: CONSTRUCTION OF 4 NOS 150 M TALL SINGLE FLUE RCC CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN (EXCLUDING PILE) AT 4X250 MW BRBCL NABINAGAR TPP FGD, BIHAR. | | | | | |
| TENDER NO. PSER:SCT:NBN-C2080:20 | | | | | |
| SCHEDULE- 2 | | | | | |
| SL No. | Description | Unit | Quantity (1 Chimney) | Quantity (4 Chimneys) | Weightage |
| Part-1A CIVIL WORKS | | | | | |
| 26 (iii) | Providing and applying on outer surface of steel flue liner, 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 over steel sections already having intermediate coats, including the cost of all labour, material, equipments, protection and cleaning, scaffolding etc. all complete as per drawing and specifications. This coat shall be applied after an interval of minimum 24 hours (from the application of sealer coat) and within six (6) months (from the completion of Intermediate coat). Colour and shade of the coat shall be as approved by the Employer. | SQM | 1950 | 7800 | 0.00237398 |
| A26 | Transportation from store & installation of closed cell borosilicate glass block lining system at all elevations, on ground or in erected position, with minimum 38 mm thick borosilicate glass block, adhesive membrane having a minimum thickness of 3 mm including preparation, blast cleaning of internal surface of steel flue liner to near white metal surface finish conforming to Sa 2 ½ finish as per ISO 8501-1 and application of suitable primer, in supervision and as directed by and satisfaction of borosilicate glass block manufacturer, testing etc all complete as per specification, drawings and as directed by the glass block manufacturer & Engineer-in-charge including cost of skilled labour, material, tools & tackles, equipments, working platform etc all complete. Installation of borosilicate lining shall be done under controlled temperature and humidity conditions, as mentioned in specification, including providing all equipments required to create controlled temperature & humidity conditions inside chimney during installation, hot air blow cleaning of internal surface before application etc. all complete. [borosilicate glass blocks, adhesive membrane with mixing machine, primer paint will be issued free of cost by BHEL] | SQM | 1950 | 7800 | 0.07289669 |
| 26F | Providing, fabricating and erecting C276 strips, plates, gutters/vanes/pipes, bends, fittings and any other appurtenances as required at all elevation in chimney for collection and withdrawal of condensate from inside of flue liner to outside based on the approved design in line with gas-flow-model study report, sealing, testing including surface preparation, TIG or any other type of specialised welding for C276 Strips etc all complete as per specification, drawing and as directed by the Engineer-in-charge. (Measurement for payment shall be done for net weight of C276 strip only(weld thickness not to be considered). (Payment Breakup - a) Supply of Material - 80%, b) Erection, Alignment, all complete-20%) | KG | 1400 | 5600 | 0.02460348 |
| 27 | Providing, fabricating and installing at various locations and elevations of the chimney system the following miscellaneous mild steel items complete with the cost of all labour, material and equipment, transporting, lifting, setting in place, cutting, grinding, drilling, welding, bolts and bolting, anchor fasteners and anchoring, priming, painting, grouting etc. complete as per drawings and specifications: | | | | |
| a | Mild steel ladders with cage, hood access hatch, louvers, bird screens, hood drain basin covers and other miscellaneous mild steel items not specifically mentioned. | MT | 9 | 36 | 0.00646604 |
| b | 32/40 mm nominal bore medium class tubular hand railing for stair case and internal and external platforms. | MT | 13 | 52 | 0.00975497 |
| c | Providing minimum 275 gsm Hot dipped galvanisation on mild steel parts as per specification. | MT | 5 | 20 | 0.00144823 |
| d | Providing minimum 610 gsm Hot dipped galvanisation on mild steel parts as per specification. | MT | 17 | 68 | 0.00837080 |
| 29A | Supplying, fabricating and installing gas sampling and gas opacity measurement ports made of C276 pipe in chimney liners, including bolts, non metallic gaskets, cover plates and any other accessories as required, painting etc, all complete as per specification, drawing and as directed by the engineer-in-charge. | KG | 100 | 400 | 0.00150129 |
| 30AA | Supplying, fabricating and erecting titanium sheet (Grade 2 as per ASME B265) wrapped over insulation of chimney liner above roof level, including nuts, bolts, washers, screws and any other accessories as required for proper fixing, surface finishing, testing, preparation of detailed fabrication drawings etc all complete per specification, drawing and as directed by the Engineer-in-charge. (Payment Breakup - a) Supply of Material - 80%, b) Erection, Alignment, all complete-20%) | KG | 1200 | 4800 | 0.01379720 |
| 31 | Preparing detailed fabrication drawings and after approval by the Engineer, providing, fabricating and installing at all levels, stainless plates (including stainless steel screws and fasteners) of grade AISI 316Land lead sheets beams and over the mild steel in the platform beam bearing, flue supports bearings, flue restraints brackets/ buffers etc. including the cost of all labour material & equipment, transporting, lifting to all heights, setting in place, cutting, grinding, drilling, welding of stainless steel using compatible & approved stainless steel electrodes, testing & machining flat and polishing the contact surfaces of stainless steel, coating the polished surfaces with silicone grease, etc., complete as per drawings and specifications. | | | | |
| a | Stainless steel components. | KG | 120 | 480 | 0.00048189 |
| b | Lead Sheets. | KG | 40 | 160 | 0.00024727 |
| A32 | Design, supply, fabrication and installation of expansion compensator joints, comprising of non-metallic material (elastomeric) suitable for wet stack operations and acid resistant to withstand acidic flue gas condensates arising out of flue gas parameters & operating conditions as per specification and shall also prevent dust accumulation, including nuts, bolts, washers, screws and any other accessories as required, preparation of detailed fabrication drawings etc all complete as per specification, drawing and as directed by the Engineer-in-charge. Design of expansion joint shall comply EPRI guideline to avoid contact of condensate with expansion joint material and to ensure drainage of condensate and the same shall be approved by BHEL/NTPC. | SQM | 20 | 80 | 0.00421454 |
| 33 | Supply of fabricated ready to install expansion compensator in line with item no A32 as spare including nuts, bolts, washers, screws and any other accessories as required for successful installation. | SQM | 10 | 40 | 0.00153151 |
| 37 | Supplying, and placing in position (at the beam supports bearings) Neoperne pads between concrete surface and mild steel including the cost of all labour materials, cutting to shape, grinding, drilling etc., complete as per drawings and specifications. | CUM | 0.5 | 2.0 | 0.00242516 |
| 43 | Providing, and fixing asbestos ropes at expansion joints at all elevation for packing/sealing etc all complete as per specification, drawing and as directed by the Engineer-in-charge for the following. | | | | |
| b | 12 mm diameter | RM | 205 | 820 | 0.00023045 |

| VOLUME-III PRICE SCHEDULE, REV-00 | | | | | |
|--|---|------|-------------------------|--------------------------|------------|
| JOB: CONSTRUCTION OF 4 NOS 150 M TALL SINGLE FLUE RCC CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN (EXCLUDING PILE) AT 4X250 MW BRBCL NABINAGAR TPP FGD, BIHAR. | | | | | |
| TENDER NO. PSER:SCT:NBN-C2080:20 | | | | | |
| SCHEDULE- 2 | | | | | |
| SL No. | Description | Unit | Quantity (1 Chimney) | Quantity (4 Chimneys) | Weightage |
| Part-1A CIVIL WORKS | | | | | |
| 47 | Supply and installation of resin bonded rock wool insulation having a density of not less than 100 kg/cu.m with an installed thickness of not less than 100 mm in two layers of each 50 mm thick including plated or galvanised accessories such as pins/studs/anchors/wire netting, speed washers, tying wires, etc, on the outer surface of steel flue liners/on the inside surface of concrete windshield/ inside surface of concrete minishells/ under the cast iron caps and wherever as required at all elevation, testing etc all complete as per specification, drawing and as directed by the Engineer-in-charge. | SQM | 200 | 800 | 0.00201455 |
| 49 | Supply and packing/sealing of rock wool insulation with loose rock wool having a density not less than 100 kg/cu.m between the insulated minishells at expansion joints/ between the lining segments and wherever as required at all levels including filling, ramming, testing, etc. all complete as per specification, drawing and as directed by the Engineer-in-charge. | CUM | 5 | 20 | 0.00038497 |
| 50 | Providing and painting with acid and heat resisting black bituminous paint conforming to type I(i) of IS:158 in not less than 4 coats having a DFT of not less than 150 microns over inside surface of chimney shell/inside and outside surfaces of minishells/underside of roof slab/ other concrete components/surfaces of the existing chimney and wherever as required etc at all elevation including surface preparation, primer etc so as to give a good finish all complete as per specification, drawing and as directed by the Engineer-in-charge. | SQM | 100 | 400 | 0.00017354 |
| 56 | Providing and painting, at all levels, the external surfaces of chimney shell and wherever as directed by the Engineer, with acid and heat resistant polyurethane paint in alternate bands of colours 'signal red' and 'pure/bright white including the cost of all labours, material and & equipment surface preparation, primer and finish painting, protecting, cleaning etc. complete as per drawings and specification. | SQM | 100 | 400 | 0.00031093 |
| 57 | Providing and painting, with epoxy phenolic coating system in three coats having 220 microns DFT over the external surfaces of chimney shell and wherever as required at all elevation in alternate bands of 'signal red' and 'bright white' colours including surface preparation, primer etc so as to give a good finish all complete as per drawing and specification. The coating system shall be as follows. All concrete surfaces shall be provided with two component transparent polyamide cured epoxy sealer coating (having solid by volume minimum 40% ±2%) of minimum 50 micron DFT to be applied over cleaned surface in multiple coats. Surface to be coated shall be absolutely dry, clean and dust free. Sealer coat shall be followed with the application of Intermediate coat of epoxy phenolic coating (solid by volume minimum 63%) 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. Intermediate coat shall be followed with the application of 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. This coat shall be applied after an interval of minimum 10 hours and within six (6) months (from the completion of Intermediate coat), Colour and shade of the coat shall be as approved by the Engineer-in charge. | SQM | 7500 | 30000 | 0.01816164 |
| 58 | Providing and painting, with epoxy phenolic coating system in three coats having 220 microns DFT over the inside surface of chimney shell above roof/ horizontal surface of shell at top/underside of concrete roof slab and wherever as required at all elevation including surface preparation, primer etc so as to give a good finish all complete as per drawing and specification. The coating system shall be as follows. All concrete surfaces shall be provided with two component transparent polyamide cured epoxy sealer coating (having solid by volume minimum 40% ±2%) of minimum 50 micron DFT to be applied over cleaned surface in multiple coats. Surface to be coated shall be absolutely dry, clean and dust free. Sealer coat shall be followed with the application of Intermediate coat of epoxy phenolic coating (solid by volume minimum 63%) 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. Intermediate coat shall be followed with the application of 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. This coat shall be applied after an interval of minimum 10 hours and within six (6) months (from the completion of Intermediate coat), Colour and shade of the coat shall be as approved by the Engineer-in charge. | SQM | 250 | 1000 | 0.00043386 |
| 59 | Proving and laying over the chimney roof, a composite acid and heat protection treatment including providing of slopes for roof drainage including the cost of all labour, material and equipment, etc., complete as required for preparing the roof concrete, laying under bed of plain cement concrete screed to slopes, preparation of screed surface for painting, painting the screed surface with black bituminous paint, applying bitumenmastic in layers, laying acid resisting(A/R) mortar bed and laying 75 mm thick acid resisting(A/R) bricks with A/R mortar, curing, pointing(with phenolic based A/R cement), protection and cleaning, finishing, etc., complete as per drawing and specifications. | SQM | 140 | 560 | 0.00361311 |
| 60 | Providing, fitting & fixing, outlet and overflow, cast iron roof drain heads (with gratings) in chimney roof including sockets, adapters, brackets, hangers, supports, etc., casting-in and jointing to 150 mm nominal bore rainwater pipes, grouting, etc. including the cost of all labour material and equipement, transporting, lifting, setting in place, painting, etc. complete as per drawing and specifications. | EACH | 8 | 32 | 0.00065447 |
| 61 | Providing, fitting and fixing rainwater pipes at all levels internally from the chimney roof to ground level upto the hood drain basin including shoes, bends, junctions, flanges,hoppers, sockets, adaptors, brackets, hangers, supports, anchor fasteners, spacers, pipe sleeve through shell, silicon or vulcanised butyl seaant, foam backing material, jointing, socketing, grouting, caulking, primer and finish painting etc. complete including the cost of all labour, material and equipment, complete as per drawing and specifications: | | | | |
| a | 150 mm nominal bore cast iron pipes. | RM | 32 | 128 | 0.00054505 |
| b | 150 mm nominal bore medium class galvanised mild steel pipes. | RM | 300 | 1200 | 0.00561443 |
| 62 | Providing and laying 50 mm thick cement concrete flooring (comprising of 12 mm thick mettalic concrete hardener topping over 38 mm thick under bed of concrete) over the grade level slab inside the chimney, including the cost of all labour, material and equipment, etc. complete as required for preparation of base, laying underbed and topping, finishing, rounding of edges, corners and junctions, curing, testing, etc. complete as per drawing and specifications. | SQM | 380 | 1520 | 0.00146611 |

| VOLUME-III PRICE SCHEDULE, REV-00 | | | | | |
|--|---|---------|-------------------------|--------------------------|------------|
| JOB: CONSTRUCTION OF 4 NOS 150 M TALL SINGLE FLUE RCC CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN (EXCLUDING PILE) AT 4X250 MW BRBCL NABINAGAR TPP FGD, BIHAR. | | | | | |
| TENDER NO. PSER:SCT:NBN-C2080:20 | | | | | |
| SCHEDULE- 2 | | | | | |
| SL No. | Description | Unit | Quantity (1 Chimney) | Quantity (4 Chimneys) | Weightage |
| Part-1A CIVIL WORKS | | | | | |
| 63 | Providing and installing an electrically operated semi grill type steel roll-up door (with the bottom one third of the curtain in solid type) at chimney base, in opening of approx size of 85 square m, with all hardware and mechanisms, fittings and fixtures, locking arrangements, frames, fasteners, gear handle arrangement for standby manual operation, all electrical accessories such as motors, control systems, cables, etc. including the cost of all labour, material and equipment, fixing in position, grouting primer and finish painting, testing, etc., complete as per drawing and specifications. | EACH | 1 | 4 | 0.00341048 |
| 64 | Providing and installing at any level and location, mild steel, double plate, personnel access doors, in shell openings of size 1.1m by 2.15m, complete with all fittings and fixtures, locking arrangements, frames, fasteners including the cost all labour, material and equipment, lifting to all heights, setting in place, grouting primer and finish painting, etc., complete as per drawing and specifications. | EACH | 1 | 4 | 0.00014984 |
| 67 | Supplying, fabricating and installing mild steel hatches at various locations in the chimney system complete with locking arrangements, frames, insulation, fittings and fixtures and all mechanisms and accessories reqd. for proper operation including all labour, painting etc. complete as per drawings and specifications. | | | | |
| a | Hood Access Hatch | EACH | 1 | 4 | 0.00023292 |
| 68 | Conducting load testing on girders for 1.25 times the full load, on ground, including provision of test bed and jacks, dial gauges and other supplies complete as per specification and drawings and approval of engineer in-charge. | Pair | 1 | 4 | 0.00160638 |
| 70 | Providing & grouting of pocket holes, pipe sleeves and under base plates of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with Conbextra GP-1 or equivalent. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor). | CUM | 0.5 | 2.0 | 0.00018173 |
| 71 | Providing & grouting of pocket holes, pipe sleeves and under base plate of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with mix 1:1:2 (1 cement : 1 coarse sand : 2 aggregate of 6 mm down graded stonechips) using non shrink admixture. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor). | CUM | 0.5 | 2.0 | 0.00006703 |
| 72 | Supplying and erecting after approval by Engineer a rack and pinion type Elevator of min 400 kg load carrying capacity for erection as per item no. 72 of SCHEDULE-3, from ground upto top of chimney with landing at various platform level, including all fixtures and accessories complete as per spec. and drawings. (Payment Breakup - a) Supply of Elevator-70%, b) Erection & commissioning-20% and c) Supply of Mandatory Spare-10%) | Lumpsum | 1 | 4 | 0.04460429 |
| 73 | Supplying, fabricating and erecting FRP Pipes with all bends, flanges, stiffeners, all other flue attachments, including support system, collars, connection with C276 pipes and any other accessories as required outside chimney flue liner at all elevation based on the approved design in line with gas-flow-model study report, including surface finishing, sealing, lamination, moulding, testing, guarantee/warranty etc. complete as per drawings, specification, manufacturer's recommendations and relevant codes. | KG | 450 | 1800 | 0.00129580 |
| Part-1B ELECTRICAL WORKS(Design, Engineering, Supply, Installation, testing & commissioning of following items as per specification) | | | | | |
| E1 | 415V, 200A, 50 KA for 1 sec, 4 wire AC Distribution Board with 1No. incomer (SFU) , 12 nos. of 100A SFU (TPN) outgoing alongwith 100KVA lighting transformer (415/433) V in Incomer, Dyn11, Z=4%, ±2x2.5% off ckt. Tap) complete in all respects | Nos | 1 | 4 | 0.00417268 |
| E2 | 415V, 200A, 4 wire AC Emergency Lighting distribution board alongwith 50KVA lighting transformer (415/433 V, Dyn11, Z=4%, ±2x2.5% off ckt. Tap) with 2 nos. of SFU (TPN) incomers with auto changeover facility using contactors and 8 nos. 100A SFU (TPN) outgoing complete in all respects. In case load requirement of chimney can not be met by 50 KVA lighting transformer after considering loading, 100 KVA lighting transformer shall be provided alongwith suitably rated components without any commercial implications to the purchaser. | Nos | 1 | 4 | 0.00528523 |
| E3 | Normal AC lighting panel outdoor type with degree of protection IP 55 with one no. 100A SFU (TPN) Incomer , 20 outgoing (16A SP MCBs) | Nos | 2 | 8 | 0.00151909 |
| E4 | Emergency lighting panel outdoor type with degree of protection IP 55 with One no. of 100A SFU(TPN) incomer and 12 outgoing (16A, SP MCBs) | Nos | 2 | 8 | 0.00131868 |
| E5 | Aviation lighting panel outdoor type with degree of protection IP 55 with one no. 100A SFU (TPN) Incomer , 8 outgoing 32A SFU (TPN), photodetector and timer circuit along with 100A contactor to control aviation lighting system. | Nos | 1 | 4 | 0.00093204 |
| E6 | Aviation obstruction lights (mounted on door panel openable from interior) : | | | | |
| a. | High intensity flashing light Type-A (LED type) as per ICAO standard having intensity of 20,0000 candles depending upon background illuminance & flashing frequency 20-60/min with all accessories, photocell, timer etc. | Nos | 12 | 48 | 0.02753379 |
| E7 | Aviation Distribution Board (ADB) with one 32A SFU (TPN) incomer and 8 nos. SP 20A MCB. Construction is same as Lighting Panel. | Nos | 1 | 4 | 0.00035220 |
| E8 | Flood light type 120W(approx) LED/HPSV luminaire with fitting (integrated /retrofitted LED/HPSV lamp) having an integral driver.The luminaire efficacy shall not be less than 80 Lm/W. | Nos | 6 | 24 | 0.00134070 |
| E9 | Well glass type 30W(approx) LED/HPSV luminaire with fitting (integrated /retrofitted LED/HPSV lamp) having an integral driver.The luminaire efficacy shall not be less than 80 Lm/W. | Nos | 64 | 256 | 0.00312775 |
| E10 | Well glass type 70W(approx) LED/HPSV luminaire with fitting (integrated /retrofitted LED/HPSV lamp) having an integral driver.The luminaire efficacy shall not be less than 80 Lm/W. | Nos | 35 | 140 | 0.00226647 |
| E11 | Well glass type 50W(approx) LED/HPSV luminaire with fitting (integrated /retrofitted LED/HPSV lamp) having an integral driver.The luminaire efficacy shall not be less than 80 Lm/W. | Nos | 20 | 80 | 0.00129144 |

| VOLUME-III PRICE SCHEDULE, REV-00 | | | | | |
|--|--|-------|-------------------------|--------------------------|-------------------|
| JOB: CONSTRUCTION OF 4 NOS 150 M TALL SINGLE FLUE RCC CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN (EXCLUDING PILE) AT 4X250 MW BRBCL NABINAGAR TPP FGD, BIHAR. | | | | | |
| TENDER NO. PSER:SCT:NBN-C2080:20 | | | | | |
| SCHEDULE- 2 | | | | | |
| SL No. | Description | Unit | Quantity (1 Chimney) | Quantity (4 Chimneys) | Weightage |
| Part-1A | CIVIL WORKS | | | | |
| E12 | 63Amp welding switch socket with plug & other Mounting accessories | Nos | 3 | 12 | 0.00031144 |
| E13 | 3 pin, 1 ph, 240V, 20Amp. Industrial Power sockets complete with plug Switches etc. | Nos | 3 | 12 | 0.00010340 |
| E14 | Al conductor, HR PVC insulated, Armoured, PVC inner sheath,PVC outer sheath, FRLS type 1100V grade conforming to IS-1554 Part I. | | | | |
| a | 3½ C x95mm2 Al for connection between ACDB/ELDB/ welding sockets | Mtrs. | 1500 | 6000 | 0.00861628 |
| b | 3½ Cx35mm2 Al for Lighting panel incoming supply | Mtrs. | 1000 | 4000 | 0.00294453 |
| c | 4C x16mm2 Al for connection between ALP/ADB/Aviation Lights | Mtrs. | 250 | 1000 | 0.00093640 |
| b | 4C x 2.5mm2 Cu Control cable for Aviation lighting system | Mtrs. | 500 | 2000 | 0.00056791 |
| E15 | Cu conductor, HR-PVC insulated, PVC inner sheath,PVC outer sheathed and FRLS type 1100V grade conforming to IS-1554 Part I. | | | | |
| a | 2.5 mm2 | Mtrs. | 2000 | 8000 | 0.00094929 |
| b | 4.0 mm2 | Mtrs. | 5000 | 20000 | 0.00305633 |
| E16 | GI pipe conduit with minimum 25 mm dia with GI junction boxes, GI pull boxes (Size 200x200x100mm of 16 SWG sheet steel for junction & pull boxes) & accessories etc. complete in all respects. | Mtrs. | 2000 | 8000 | 0.00578243 |
| E17 | PVC coated Flexible steel conduit 25mm dia with accessories | Mtrs. | 100 | 400 | 0.00005113 |
| E18 | Lightning protection Air terminal : Lead coated copper material of 20 mm dia & 3 metre long. | Nos | 6 | 24 | 0.00074976 |
| E19 | 50x6 Lead Coated GI Strip for coronal band on flue and top platform | Mtrs. | 150 | 600 | 0.00047764 |
| E20 | Electrical equipment earthing materials including down conductors 50x6 GI Strip | Mtrs. | 700 | 2800 | 0.00196673 |
| E21 | Electrical equipment earthing materials including down conductors 25x3 GI Strip | Mtrs. | 700 | 2800 | 0.00065515 |
| E22 | 8 SWG GI wire for equipment earthing | Mtrs. | 2000 | 8000 | 0.00045034 |
| E23 | Test links for 50x6 down conductors enclosed in 200mm X 200mm X 100mm GI box of 16SWG sheet steel. | Nos | 4 | 16 | 0.00024972 |
| E24 | 40mm dia MS rod for earthing of down conductor | Mtrs. | 200 | 800 | 0.00206756 |
| E25 | Earthpit with earthing electrode including brick chamber with cover, accessories etc. complete in all respect. | Nos | 6 | 24 | 0.00057281 |
| E26 | Telephone socket with junction box etc. complete | Nos | 6 | 24 | 0.00019216 |
| E27 | Telephone handsets complete | Nos | 6 | 24 | 0.00018552 |
| E28 | Telephone cable of minimum 0.6 mm dia annealed high conductivity electro copper conductor, PVC insulated, twisted, PVC tape wrapped, screened, tip corded, PVC sheathed, confirming to relevant ITD (Indian Telephones department) specification | | | | |
| a | 24 pairs | Mtrs. | 300 | 1200 | 0.00066502 |
| b | 2 pairs | Mtrs. | 100 | 400 | 0.00005313 |
| E29 | GS cable trays. Cable trays shall be of ladder type constructed of minimum 2 mm thick mild steel hot dip galvanise including cover, cabling material, accessories etc. | | | | |
| a | 150 mm wide | Mtrs. | 400 | 1600 | 0.00234593 |
| | TOTAL | | | | 1.00000000 |