



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

(भारत सरकार का उपक्रम)

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

TCN - 01

Ref: PSER:SCT:BKM-C1014:TCN-01

Date: 16-05-2009

Sub	Tender change notice (TCN- 01).	
Job	CONSTRUCTION OF (A) 275 METRE HIGH RCC SINGLE FLUE STEEL LINED CHIMNEY AT 1X 500 MW BOKARO A PROJECT, JHARKHAND (B) 275 METRE HIGH RCC SINGLE FLUE STEEL LINED CHIMNEY AT 1X500 MW KORBA CSPGCL PROJECT, CHATTISGARH (C) 275 METRE HIGH RCC TWIN FLUE STEEL LINED CHIMNEY AT 2X500 MW MARWA CSPGCL PROJECT, CHATTISGARH	
Ref	1.0	Tender no PSER:SCT:BKM-C1014:09.
	2.0	BHEL's NIT, vide reference no PSER:SCT:BKM-C1014:09, dated 11-05-09 .
	3.0	Other references (if any).

With reference to above, following points, relevant to tender, may please be noted and complied with while submitting the offer.

- 1.0 Revised 'No deviation certificate' is attached. Bidder to submit 'No deviation certificate' as per attached format only.
- 2.0 **BOQ cum price schedule format VOL-III A- Price Schedule, rev-0 has been revised as VOL-III A- Price Schedule, REV-01 which is enclosed herewith. As such you are requested to consider the revised BOQ/price schedule format VOL-III A, Price Schedule, REV-01 only and quote your price accordingly.** Offer from bidders in superseded price schedule shall not be considered. Bidders are also requested to submit a declaration in techno-commercial offer that they have submitted their price bid in sealed envelope as per **REVISED price schedule format (VOL-III A- Price Schedule , Rev-1)**
- 3.0 All other terms & conditions shall remain unchanged.

Thanking you,

Yours faithfully,
for BHARAT HEAVY ELECTRICALS LTD

DGM (SCT)

Encl:

- 1.0 Revised format of 'No deviation certificate'.
- 2.0 Revised BOQ cum price schedule format (VOL-III A, Price Schedule, REV-01)

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION, DJ-9/1, SALT LAKE CITY, KOLKATA - 700 091

फैक्स/Fax : (033) 23211960 फोन/Phone : बोर्ड/EPABX : 23211798/ 1691

FORMAT FOR NO DEVIATION CERTIFICATE
(To be submitted in the bidder's letter head)

BHARAT HEAVY ELECTRICALS LIMITED,
Power Sector - Eastern Region,
Plot no 9/1, DJ Block, Sector – II, Salt Lake City,
Kolkata – 700 091

Sub	No Deviation Certificate.	
Job	CONSTRUCTION OF (A) 275 METRE HIGH RCC SINGLE FLUE STEEL LINED CHIMNEY AT 1X 500 MW BOKARO A PROJECT, JHARKHAND (B) 275 METRE HIGH RCC SINGLE FLUE STEEL LINED CHIMNEY AT 1X500 MW KORBA CSPGCL PROJECT, CHATTISGARH (C) 275 METRE HIGH RCC TWIN FLUE STEEL LINED CHIMNEY AT 2X500 MW MARWA CSPGCL PROJECT, CHATTISGARH	
Ref	1.0	Tender no PSER:SCT:BKM-C1014:09.
	2.0	BHEL's NIT, vide reference no PSER:SCT:BKM-C1014:09, dated 11-05-09.
	3.0	BHEL's TCN-01 issued vide reference no. PSER:SCT:BKM-C1014:TCN-01 dated 16-05-2009
	4.0	Other references (if any).

Dear Sirs,

With reference to above, this is to confirm that as per tender conditions, we have visited site before submission of our offer and noted the job content & site conditions etc. We also confirm that we have not changed/ modified the tender documents as appeared in the website/ issued by you and in case of such observance at any stage, it shall be treated as null and void.

We hereby confirm that we have not taken any deviation from tender clauses together with other references as enumerated in the above referred NIT. We hereby confirm our unqualified acceptance to all terms & conditions, unqualified compliance to technical specification and acceptance to **reverse auctioning process**.

In the event of observance of any deviation in any part of our offer at a later date whether implicit or explicit, the deviations shall stand null & void.

We confirm to have submitted offer in accordance with tender instructions and as per aforesaid references.

Thanking you,

Yours faithfully,

(Signature, date & seal of authorized representative of the bidder)

VOLUME-III PRICE SCHEDULE, REV-01	
Construction of 275 meter high RCC twin flue steel lined chimney including supply & installation of stack elevator & electrical items for 2x500 MW unit # 1 & 2 at Marwa TPP(CSEB), 1X500 MW Korba West TPP(CSEB) and 1X500 MW Bokaro 'A' TPP (Jharkhand).	
TENDER NO - PSER:SCT:BKM-C1014:09	
PREAMBLE	
1.0	This preamble forms part of tender document and schedule of items. The tenderer should read this preamble carefully in rates for various items. Clauses under this preamble shall be read in conjunction with other volumes of tender as applicable.
2.0	The work shall be carried out strictly as per specifications, description of the items in these schedule and / or engineer's instructions.
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, 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 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, if any but excluding any price variation remains within thirty percent ($\pm 30\%$) of the contract price.
6.0	The rates quoted shall be inclusive of cleaning of site of any vegetation, dressing 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.
7.0	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 Eng
8.0	All works item wise shall be measured upon completion and paid for at the rates quoted and accepted.
9.0	The tender shall be deemed to have studied the specifications, details of work to be done within the time schedule attached and to have acquainted himself of the conditions prevailing at site.
10.0	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.

**VOLUME-III
PRICE SCHEDULE, REV-01**

Construction of 275 meter high RCC twin flue steel lined chimney including supply & installation of stack elevator & electrical items for 2x500 MW unit # 1 & 2 at Marwa TPP(CSEB), 1X500 MW Korba West TPP(CSEB) and 1X500 MW Bokaro 'A' TPP (Jharkhand).

TENDER NO - PSER:SCT:BKM-C1014:09

MAIN PRICE

SL NO	DESCRIPTION OF ITEM	RATE SCHEDULE REFERENCE	AMOUNT (Rs)
1.0	Total lumpsum firm price for supply & service parts together (taxes, duties as per tender provision) for Construction of 275 meter high RCC twin flue steel lined chimney including supply & installation of stack elevator & electrical items for 2x500 MW unit # 1 & 2 at Marwa TPP, CSEB	SCH-2 -BRKUP- MARWA	
2.0	Total lumpsum firm price for supply & service parts together (taxes, duties as per tender provision) for Construction of 275 meter high RCC single flue steel lined chimney including supply & installation of stack elevator & electrical items for 1x500 MW unit # 1 Korba (West) TPP, CSEB	SCH-3 - BRKUP- KORBA(W)	
3.0	Total lumpsum firm price for supply & service parts together (taxes, duties as per tender provision) for Construction of 275 meter high RCC single flue steel lined chimney including supply & installation of stack elevator & electrical items for 1x500 MW unit # 1 Bokaro 'A' TPP/ Jharkhand	SCH-4 - BRKUP- BOKARO 'A'	
4.0	Total price for evaluation (1.0 + 2.0 + 3.0).		

Note

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|----|--|
| 01 | Bidder to note that total price for at sl no 4.0 above will be taken into account for evaluation.
Awarding will be done PROJECT WISE seperately for supply and services part on corresponding quoted price and as such, shall be complete in all respect for the full scope defined and in accordance with all terms and conditions of tender. |
| 02 | 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. |
| 03 | Bidder shall furnish price allocations for each project in the respective parts of price schedule based on which separate order for supply part & service part for each project will be placed. |
| 04 | In case, price indicated above under sl 1.0, 2.0 & 3.0 does not match with further break-up given for respective projects in relevant part of this price schedule, the highest price so calculated shall be considered for evaluation but in case of order, the same shall be placed at the lowest price. |

VOLUME-III (BREAK-UP - MARWA) PRICE SCHEDULE, REV-01		
Construction of 275 meter high RCC twin flue steel lined chimney including supply & installation of stack elevator & electrical items for 2x500 MW unit # 1 & 2 at Marwa TPP, (CSEB).		
TENDER NO - PSER:SCT:BKM-C1014:09		
SL NO	DESCRIPTION	AMOUNT (Rs)
1.0	TOTAL PRICE FOR PART-1 - MRW- SERVICE (TOTAL - SCH-5)	
1.1	TOTAL PRICE FOR PART-2 - MRW - SUPPLY (TOTAL - SCH-6)	
TOTAL		
NOTE		
1.0	Bidder to note that the TOTAL price as above should match with Sl.No.1 of SCH-1	

**VOLUME-III A
(BREAK-UP - KORBA WEST)
PRICE SCHEDULE, REV-01**

Construction of 275 meter high RCC single flue steel lined chimney including supply & installation of stack elevator & electrical items for 1x500 MW unit # 1 Korba (W) TPP, (CSEB).

TENDER NO - PSER:SCT:BKM-C1014:09

SL NO	DESCRIPTION	AMOUNT (Rs)
1.0	TOTAL PRICE FOR PART-1 - KRB- SERVICE (TOTAL - SCH-7)	
1.1	TOTAL PRICE FOR PART-2. - KRB - SUPPLY (TOTAL - SCH-8)	
TOTAL		
NOTE		
1.0	Bidder to note that the TOTAL price as above should match with SI.No.2 of SCH-1	

VOLUME-III A (BREAK-UP - BOKARO 'A') PRICE SCHEDULE, REV-01		
Construction of 275 meter high RCC single flue steel lined chimney including supply & installation of stack elevator & electrical items for 1x500 MW unit # 1 Bokaro 'A' TPP, (JHARKHAND).		
TENDER NO - PSER:SCT:BKM-C1014:09		
SL NO	DESCRIPTION	AMOUNT (Rs)
1.0	TOTAL PRICE FOR PART-1 - BOK- SERVICE (TOTAL - SCH-9)	
1.1	TOTAL PRICE FOR PART-2 - BOK - SUPPLY (TOTAL - SCH-10)	
TOTAL		
NOTE		
1.0	Bidder to note that the TOTAL price as above should match with Sl.No.3 of SCH-1	

VOLUME IIIA , REV 01 (PRICE SCHEDULE)

SCH-5 {PART-1-MARWA}

Construction of 275 meter high RCC twin flue steel lined chimney including supply & installation of stack elevator & electrical items for 2x500 MW unit # 1 & 2 at Marwa TPP, (CSEB).

TENDER NO - PSER:SCT:BKM-C1014:09

CONSTRUCTION OF CHIMNEY (SERVICE)

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
PART-1A (CIVIL & STRUCTURAL WORK ETC)				
1	EARTH WORK IN EXCAVATION, BACKFILLING AND DISPOSAL AS PER SPECIFICATION AND DRAWINGS			
(i)	Excavation at all depths including providing cofferdams, shoring, strutting, sheeting, bracing, dewatering of subsoil, surface water or catchment waters, clearing all grass, vegetation etc. including trimming of excavation bottom, staking, levelling, grading etc. of excavated materials all complete as per specifications, drawings and instructions of the engineer, including a lead up to 100 meters and a lift up to 2.0 meters.			
a)	In all types of soils including ash, morrum, laterite	CUM	7500	
b)	In soft rock and weathered rock which can be excavated by means of crow bar, pick axe etc. but does not require chiselling, chemical grouting and blasting.	CUM	2500	
c)	In hard rock , by means of controlled blasting including provision of sensor to assess the impact of blast on the adjacent structures.	CUM	4500	
d)	In hard rock (blasting Prohibited) by means of chiselling, wedging etc.	CUM	500	
2	Extra over item 1 above, for all types of soil/rock, for additional lifts beyond the initial lift of 2 meters (included in item 1 above) all complete as per specifications, drawings and instructions of the engineer for the following lifts:			
i)	In all types of soils			
a	beyond 2 m and upto 4 m	CUM	2200	
b	beyond 4 m and upto 8 m	CUM	300	
c	beyond 8 m and upto 10 m	CUM	NIL	
ii)	In all types of rocks			
a	beyond 2 m and upto 4 m	CUM	2500	
b	beyond 4 m and upto 8 m	CUM	5000	
c	beyond 8 m and upto 10 m	CUM	250	
3	DELETED			
4	Extra over item 1 above for carriage of all types of excavated materails beyond the initial lead of 100 m (included in item 1 above) all complete as per specifications, drawings and instructions of the engineer for the following leads			
i)	Carriage beyond initial lead of 100 m but not exceeding 500 m	CUM	2250	

SL NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
ii)	Carriage beyond initial lead of 500 m but not exceeding 2 Km	CUM	4500		
iii)	Carriage beyond initial lead of 2 Km but not exceeding 5 Km	CUM	1350		
iv)	Carriage beyond initial lead of 5 Km but not exceeding 10 Km.	CUM	900		
5	i) Filling using selected excavated materials in trenches, plinths, sides of foundations and other underground structures, pipes etc., in layers not exceeding 200 mm loose thickness for all leads and lifts and including loading from stock pile, carting, unloading, filling, watering and compacting /ramming each layer, all complete as per Specifications, drawings and as directed by the Engineer to achieve 95% standard proctor density.	CU.M	6000		
	ii) Levelling and compacting the surplus excavated earth obtained from Item No.1 including all lifts & as per specifications and as directed by the Engineer with the cost of all labour, material and equipment complete.	CU.M	1500		
6	Supplying and laying (inside chimney in the space below the grade level slab) crushed rock and sand fill in layers no more than 150 mm thick each and thoroughly compacted by compacting equipment and by water flooding to achieve maximum density for all leads and lifts including all labour, materials, equipment etc. complete as per drawings, specifications and directions of the Engineer.	CU.M	2500		
7	Providing and laying Nominal Mix plain cement concrete (1:3:6) 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, equip-ment, handling, transporting, batching, curing, testing etc. all complete as per specifications, drawings and instructions of the Engineer. Cement will be supplied by BHel free of cost as per SCC.	CU.M	400		
8	Providing and 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: Cement will be supplied by BHel free of cost as per SCC.				
	i) For works below bottom of shell				
	a) Grade M-25 (foundations, etc)	CU.M	7500		
	ii) For works above foundation raft/pile cap				
	a) Grade M-25 (grade level slab)	CU.M	100		
	b) Grade M-30 for chimney shell, corbels and external platforms and other shell attachments.	CU.M	13000		
	c) Grade M-25 for all other components of the super structure, roof slab, minishells, beams, columns wall etc.	CU.M	60		

SL NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
9	Providing and placing reinforcement, 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. ment, handling, transporting, testing, etc. preparation of bar bending schedules, all complete as per specifications, drawings and instructions of the Engineer.				
	i) For works below bottom of shell				
	a) High strength deformed bars (BHEL will supply reinforcement steel free of cost as per SCC).	MT	780		
	ii) For works above foundation raft/pile cap				
	a) Mild steel reinforcement bars (Reinforcement steel to be supplied by the contractor from SAIL/TATA/RINL or equivalent as approved by CSPGCL/BHEL).	MT	25		
	b) High strength deformed bars (BHEL will supply reinforcement steel free of cost).	MT	1000		
10	Providing and fixing formwork of approved quality for cast-in-situ, plain or reinforced concrete works of any type and section (including curved surfaces and chimney shell) for all elevations, 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.				
	i) For works below bottom of shell	SQ.M	1800		
	ii) For works above foundation raft/pile cap				
	a) Inner and outer faces of wind shield with slip form shuttering	SQ.M	40,000		
	b) All other components of the superstructure including slabs, beams, columns, walls, enclosures, mini shells, external platforms, corbels, other shell forms, corbels, other shell attachments, chases/recesses in shell etc.	SQ.M	1,200		
11	Providing and fixing formwork in shell openings (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.	SQ.M	500		
12	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.	SQ.M	50		
13	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.	SQ.M	75		
14	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	200		

SL NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
15	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. All materials to be supplied by the contractor.	MT	7		
16	Preparing detailed fabrication drawings after approval by the Engineer, providing, fabricating and erecting structural steel work for the stair case from grade level to roof level including brackets, kick plates all fittings and fixtures etc., including the cost of all labour, material and equipment, transporting, lifting to all heights, setting in place, welding to cast in fixing place, cutting, grinding, drilling, bolts and bolting, anchor fasteners, welding, preheating and post heating for welding , testing, primer and finish painting,etc., complete as per drawing and specifications. BHEL will supply plates, ISMB, channels, angles free of cost as per SCC.	MT	70		
17	Preparing detailed fabrication drawings, and after approval by the Engineer, providing, fabricating and erecting at all levels, internal platform and walkway gallery structures complete including all structural members, beam support bearings on the shell, wstiffeners, wseats, brackets, all other fittings and fixutre, blockouts, etc. including the cost of all labour, material and equipment, transporting, lifting to all eights, setting in place, high strength grout and grouting, anchor bolts, welding to cast-in fixing plates, cutting, grinding, drilling, bolts and bolting, welding, preheating and post-heating for welding, testing, grinding smooth or machining the support bearing plates, primer and finish painting, etc. complete as per drawings and specifications. BHEL will supply plates, ISMB, channels, angles free of cost as per SCC.	MT	375		
18	Preparing detailed fabrication drawings, and after approval by the Engineer, providing, fabricating and erecting at all levels, chequered plate panels for floors of internal and external platforms and treads and landings of the staircase complete with stiffeners, brackets, ready to bolt fixtures, etc. including the cost of all labour, material and equipment, transporting, lifting to all heights, setting in place, cutting, grinding, finishing, drilling, bolts and bolting, welding, testing, primer and finish painting, etc. complete as per drawings and specifications. BHEL will supply plates, ISMB, channels, angles free of cost as per SCC.	MT	150		
19	Preparing detailed fabrication drawings and after approval by the Engineer, providing, fabricating and erecting, at all levels, structural steel flues (liners) complete with all bends, flanges, stiffeners, all other flue attachments, support system, collars, access manholes and gas sampling ports alongwith gaskets and other accessories, staying system, including the cost of all labour, material and equipment, attachments, support system, collars, access manholes and gas sampling ports alongwith gaskets and other accessories, staying system, including the cost of all labour, material and equipment, transporting, lifting to all heights, setting in place, cutting, grinding, drillings, bending, bolts and bolting, welding, preheating and post-heating for welding, testing, etc. complete as per drawings and specifications. BHEL will supply plates, ISMB, channels, angles free of cost as per SCC.	MT	1200		

SL NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
20	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 316 Land 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. All materials to be supplied by the contractor				
	(a) Stainless steel components	MT	1.4		
	(b) Lead Sheets	Kg	150		
21	Preparing detailed fabrication drawings and after approval by the Engineer, providing, fabricating and installing expansion compensator joints including bolster in the flue liner including all labour, material and equipment transporting, hoisting, fixing in position, drilling, cutting, bolts and bolting, etc. along with the user handbooks (giving details of installation, dismantling and maintenance procedures for the expansion joints), testing, etc complete as per drawings and specifications. All materials to be supplied by the contractor.	SQ.M.	105		
22	Supplying "Fabricated Ready to Install" spare expansion compensators alongwith bolster including the cost of all labour, material and equipment, accessories, transporting, proper packaging (for several years of storage), and delivery to site store complete in all respects as per drawings and specification. All materials to be supplied by the contractor.	SQ.M	21		
23	Supplying and laying in position shaped acid resisting bricks conforming to class - I of IS:4860) for liner construction (with sloped A/R mortar toppings over brick work) complete including the cost,of all labour, material and equipment, raking joints, flush pointing, cleaning, curing, etc. complete as per drawings and specifications.	CuM	3		
24	DELETED				
25	DELETED				
26	Providing, laying and packing, at all levels, asbestos ropes at expansion joints including the cost of all labour material, etc. complete as per drawing and specifications.				
	(a) 25 mm (diameter) at expansion joints between brick linig segments	RM	100		
	(b) 12 mm (diameter) at expansion joints between brick linig segments	RM	350		
27	DELETED				
28	DELETED				

SL NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
29	Providing and installing, at all levels, resin bonded glass wool insulation slabs of density not less than 64 kg/m ³ or resin bonded rock wool insulation slabs of density not less than 100 kg/cu.m with an installed thickness of not less than 100 mm, on the outside surface of steel flue liners, inside surface of concrete minishells, under the cast iron caps and wherever as directed by the Engineer, in two layers (each 50 mm thick) including the cost of all labour, material and equipment, transporting, lifting to all heights, etc., inclusive of plated or galvanised accessories such as pins/studs/anchors/wire netting, speed washers, tying wires, etc. welding of pins/studs to steel surfaces or embedding of pins/studs/anchors in concrete surfaces, fixing, cutting, cutting, lapping, binding, testing, etc. complete as per drawings and specifications. All materials to be supplied by the contractor.	Sq.M	12000		
30	Providing and packing, at all levels, loose glass wool insulation to a density not less than 64 kg/m ³ or loose rock wool insulation to a density not less than 100 kg/cu.m between the insulated minishells and brick liners at expanjoints between the lining segments and wherever as directed by the Engineer including the cost of all labour, material and equipment, filling, ramming, testing, etc. complete as per drawings and specifications. All materials to be supplied by the contractor.	Cu. M	25		
31	Providing and painting, at all levels, inside surface of chimney shell, inside and outside surfaces of minishells, underside of roof slab and other concrete components/surfaces of the chimney as indicated in the drawings and wherever as directed by the Engineer, with acid and heat resisting black bituminous paint (conforming to type I(i) of IS:158) in as many number of coats (not less than four coats in any case) as required to give a paint DFT of not less than 150 microns including the cost of all labour, materials, equipment, surface preparation, primer and finish painting, protecting, cleaning etc. complete as per drawings and specifications.	SQ.M	17000		
32	Providing and painting, at all levels, the external surfaces of chimney shell and wherever as directed by the Engineer, with cement based 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	SQ.M	15500		
33	Proving and laying over the chimney roof, a comosite 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 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. Cement will be supplied by BHel free of cost as per SCC.	SQ.M	150		
34	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 or galvanising, grouting etc. complete as per drawings and specifications:				

SL NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
	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. All materials to be supplied by the contractor.	MT	2		
	b) 32 mm nominal bore tubular hand railing for stair case and internal and external platforms. All materials to be supplied by the contractor.	MT	20		
35	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 equipment, transporting, lifting, setting in place, painting, etc. complete as per drawing and specifications. All materials to be supplied by the contractor.	NOS.	8		
36	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: (All materials to be supplied by the contractor)				
	a) 150 mm nominal bore cast iron pipes.	RM	55		
	b) 150 mm nominal bore medium class galvanised mild steel pipes.	RM	275		
37	Providing and laying 50 mm thick cement concrete flooring (comprising of 12 mm thick mettalic concrete hardener topping over a38 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. Cement will be supplied by BHel free of cost as per SCC.	SQM	550		
38	Providing and installing an electrically operated grill type steel roll-up door (with the bottom 0.5 metres of the curtain in solid type) at chimney base, in opening of size 4 m by 5 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. All materials to be supplied by the contractor. All materials to be supplied by the contractor	LS	1		
39	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. All materials to be supplied by the contractor.	nos.	7		

SL NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
40	Preparing detailed fabrication drawings after approval by the Engineer, providing, fabricating and erecting, at all levels, mild steel strakes complete with all stiffeners, attachments, fasteners, pipe sleeves, etc. including the cost of all labour, material and equipment, transporting, lifting to all heights, setting in place, embedding components in concrete, fixing to castin embedments, cutting, grinding, drilling, bolts and bolting welding preheating and post heating for welding , testing, grouting, galvenising components to be embeded in concrete, primer and finish painting of exposed components, etc. complete as per drawing and specifications. All materials to be supplied by the contractor	MT	25		
41	Preparing detailed fabrication drawings after approval by the Engineer, providing, fabricating and erecting, at all levels SS Mini Shell at roof shell of grade A316L , etc. complete as per drawing and specifications. BHEL will supply stainless steel plate free of cost.	MT	25		
42	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	SQ.M	3000		
42A	DELETED				
SUB-TOTAL (PART-1A)					
PART-1B (ELECTRICAL/ ELEVATOR WORKS ETC. BIDDER TO QUOTE RATES FOR ERECTION, COMMISSIONING ONLY).					
44.0	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 incomers with auto changeover facility using contacts and 6 nos 100A SFU (TPN) outgoing complete in all respects	1	SET		
45.0	Normal AC lighting panel outdoor type with degree of protection IP 55 with one no 100A SFU (TPN) Incomer, 18 outgoing (16A SP MCBs) complete in all respects.	3	SETS		
46.0	Emergency lighting panel outdoor type with degree of protection IP 55 with one no of 100A TPN/SFU incomer and 12 outgoing (16A, SP MCBs) complete in all respects.	3	SETS		
47.0	Aviation lighting panel outdoor type with degree of protection IP 55 with one no 100A SFU (TPN) incomer, 8 outgoing (20A SP MCBs) complete in all respects.	1	SET		
48.0	Aviation obstruction lights.				
48.1	GEC Cat. No ZA750(L) NEON	12	NO		
48.2	High Intensity Flashing White Light having intensity>2000 candles & flashing frequency 40-60/min	12	NO		
49.0	Flood light with 250W HPSV lamps with all controlgears & accessories etc complete in all respects.	6	NO		
49.1	Well glass type luminaries with 70W/HPSV lamp with all controlgears & accessories etc complete in all respects	100	NO		

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
49.2	Well glass type luminaries with 150W/HPSV lamp with all controlgears & accessories etc complete in all respects.	70 NO		
50.0	63 A welding switch socket with plug & other Mounting accessories etc complete in all respects.	9 NO		
51.0	3 pin, 1 ph, 240V, 15 A power socketscomplete with plug switches etc.	10 NO		
52.0	Al conductor, PVC insulated, armoured, PVC outer sheath, FRLS type 1100V grade conforming to IS-1554 Part I.			
52.1	3½ C x 95mm ² Al for connection between ACDB/ELDB/ welding sockets.	1400 RM		
52.2	3½ Cx35mm ² Al for lighting panel incoming supply.	1000 RM		
52.3	3½ C/ 4 Cx16mm ² Al for lighting panel incoming supply.	1600 RM		
53.0	PVC insulated 650/1100V grade stranded Cu conductor lighting wires conforming to IS-694.			
53.1	2.5 mm ² .	3000 RM		
53.2	4.0 mm ² .	9000 RM		
54.0	GI conduit 25mm dia with junction boxes, pull boxes & accessories etc complete in all respects.	7000 RM		
54.1	Lightning protection air terminal.	25 RM		
55.0	Earthing materials etc, complete as per drawings & specifications.			
55.1	Above ground earthing system.	1500 RM		
55.2	Laying of earthing mats/rods including transportation from yard stores, loading, unloading, cutting to length, welding etc. complete as per specification and as directed by Engineer-in-charge. (BHEL shall supply earth mat rod free of cost as per SCC)	3 MT		
56.0	Telephone socket with junction box etc., complete as per drawings and specifications.	10 NO		
57.0	Telephone hand sets etc, complete as per drawings and specifications.	10 NO		
58.0	Telephone cables etc, complete as per drawings and specifications.			
59.0	24 pairs.	150 RM		
60.1	4 pairs.	300 RM		
60.2	GS cable trays including cover, cabling material, accessories etc, complete as per drawings & specifications.			
61.0	600mm wide.	150 RM		
61.1	300mm wide.	150 RM		
61.2	150mm wide.	100 RM		
61.3	Aviation light distribution board complete in all respects.	3 NO		
62.0	Lumpsum price for E&C of stack elevator - climb 275 m internal with all accessories & associated steel work complete as per specification.	1 SET		
SUB-TOTAL (PART-1B)				
TOTAL PART 1 OF SCH 5- MRW-SERVICE (PART-1A+PART-1B)				

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
63.0	For items not covered above, quote % above or below the CPWD schedule (DSR-2007) applicable for all schedules. i.e, entire work under this tender			
63.1	Rate of complete item.			
63.2	Rate of supply of materials at site only.			
63.3	Rate for execution complete excluding supply of materials.			

**VOLUME IIIA , REV 01 (PRICE SCHEDULE)
SCH-6 {PART-2-MARWA}**

Construction of 275 meter high RCC twin flue steel lined chimney including supply & installation of stack elevator & electrical items for 2x500 MW unit # 1 & 2 at Marwa TPP, (CSEB).

TENDER NO - PSER:SCT:BKM-C1014:09

CONSTRUCTION OF CHIMNEY (SUPPLY)

SL NO	DESCRIPTION	QTY	UNIT RATE (Rs)					AMOUNT(Rs)					
			BASIC	ST (as per tender provision, if any)	VAT	FREIGHT	TOTAL	BASIC	ST (as per tender provision, if any)	VAT	FREIGHT	TOTAL	
1.0	415V, 200A, 50 KA for 0.25 sec, 4 wire AC Distribution Board with 1No. incomer (SFU) & 9 nos. of 100A (TPN) outgoing complete in all respects	1 SET											
2.0	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 incomers with auto changeover facility using contacts and 6 nos 100A SFU (TPN) outgoings complete in all respects	1 SET											
3.0	Normal AC lighting panel outdoor type with degree of protection IP 55 with one no 100A SFU (TPN) Incomer, 18 outgoing (16A SP MCBs) complete in all respects.	3 SETS											
4.0	Emergency lighting panel outdoor type with degree of protection IP 55 with one no of 100A TPN/SFU incomer and 12 outgoings (16A, SP MCBs) complete in all respects.	3 SETS											

SL NO	DESCRIPTION	QTY	UNIT RATE (Rs)					AMOUNT(Rs)					
			BASIC	ST (as per tender provision, if any)	VAT	FREIGHT	TOTAL	BASIC	ST (as per tender provision, if any)	VAT	FREIGHT	TOTAL	
5.0	Aviation lighting panel outdoor type with degree of protection IP 55 with one no 100A SFU (TPN) incomer, 8 outgoing (20A SP MCBs) complete in all respects.	1 SET											
6.0	Aviation obstruction lights.												
6.1	GEC Cat. No ZA750(L) NEON	12 NO											
6.2	High Intensity Flashing White Light having intensity>2000 candles & flashing frequency 40-60/min	12 NO											
7.0	Flood light with 250W HPSV lamps with all controlgears & accessories etc complete in all respects.	6 NO											
8.1	Well glass type luminaries with 70W/HPSV lamp with all controlgears & accessories etc complete in all respects	100 NO											
8.2	Well glass type luminaries with 150W/HPSV lamp with all controlgears & accessories etc complete in all respects.	70 NO											
9.0	63 A welding switch socket with plug & other Mounting accessories etc complete in all respects.	9 NO											
10.0	3 pin, 1 ph, 240V, 15 A power sockets complete with plug switches etc.	10 NO											
11.0	Al conductor, PVC insulated, armoured, PVC outer sheath, FRLS type 1100V grade conforming to IS-1554 Part I.												

SL NO	DESCRIPTION	QTY		UNIT RATE (Rs)					AMOUNT(Rs)					
				BASIC	ST (as per tender provision, if any)	VAT	FREIGHT	TOTAL	BASIC	ST (as per tender provision, if any)	VAT	FREIGHT	TOTAL	
11.1	3½ C x 95mm ² Al for connection between ACDB/ELDB/ welding sockets.	1400	RM											
11.2	3½ Cx35mm ² Al for lighting panel incoming supply.	1000	RM											
11.3	3½ C/ 4 Cx16mm ² Al for lighting panel incoming supply.	1600	RM											
12.0	PVC insulated 650/1100V grade stranded Cu conductor lighting wires conforming to IS-694.													
12.1	2.5 mm ² .	3000	RM											
12.2	4.0 mm ² .	9000	RM											
13.0	GI conduit 25mm dia with junction boxes, pull boxes & accessories etc complete in all respects.	7000	RM											
14.0	Lightning protection air terminal.	25	RM											
15.0	Earthing materials etc, complete as per drawings & specifications.													
15.1	Above ground earthing system.	1500	RM											
16.0	Telephone socket with junction box etc., complete as per drawings and specifications.	10	NO											
17.0	Telephone hand sets etc, complete as per drawings and specifications.	10	NO											
18.0	Telephone cables etc, complete as per drawings and specifications.													
18.1	24 pairs.	150	RM											

SL NO	DESCRIPTION	QTY		UNIT RATE (Rs)					AMOUNT(Rs)					
				BASIC	ST (as per tender provision, if any)	VAT	FREIGHT	TOTAL	BASIC	ST (as per tender provision, if any)	VAT	FREIGHT	TOTAL	
18.2	4 pairs.	300	RM											
19.0	GS cable trays including cover, cabling material, accessories etc, complete as per drawings & specifications.													
19.1	600mm wide.	150	RM											
19.2	300mm wide.	150	RM											
19.3	150mm wide.	100	RM											
20.0	Aviation light distribution board complete in all respects.	3	NO											
21.0	Lumpsum price for design, engineering, manufacturing & supply (inclusive of all taxes and duties - FOR site delivery basis) of one number stack elevator - climb 275 m internal with all accessories & associated steel work complete as per specification.	1	SET											
TOTAL(PART 2) OF SCH-6- MRW-SUPPLY														

NOTE:

1.0 Bidder to note that the TOTAL (PART 2) OF SCH-6- MRW-SUPPLY price as above should match with Sl.No.2 of SCH-2

**VOLUME IIIA , REV 01 (PRICE SCHEDULE)
SCH-7 {PART-1-KORBA (WEST)}**

Construction of 275 meter high RCC single flue steel lined chimney including supply & installation of stack elevator & electrical items for 1x500 MW unit # 1 Korba (W) TPP, (CSEB).

TENDER NO - PSER:SCT:BKM-C1014:09

CONSTRUCTION OF CHIMNEY (SERVICE)

SL NO	DESCRIPTION	QUANTITY	RATE(Rs)	AMOUNT (Rs)
PART-1A (CIVIL & STRUCTURAL WORK ETC)				
1	EARTH WORK IN EXCAVATION, BACKFILLING AND DISPOSAL AS PER SPECIFICATION AND DRAWINGS			
(i)	Excavation at all depths including providing cofferdams, shoring, strutting, sheeting, bracing, dewatering of sub soil, surface water or catchment water, clearing all grass, vegetation etc. including trimming of excavation bottom, staking, levelling, grading etc. of excavated materials all complete as per specifications, drawings and instructions of the engineer, including a lead up to 100 meters and a lift up to 2.0 meters.			
a)	In all types of soils including ash, morrum, laterite	CUM	6000	
b)	DELETED			
c)	DELETED			
d)	DELETED			
2	Extra over item 1 above, for all types of soil/rock, for additional lifts beyond the initial lift of 2 meters (included in item 1 above) all complete as per specifications, drawings and instructions of the engineer for the following lifts:			
i)	In all types of soils			
a	beyond 2 m and upto 4 m	CUM	2100	
b	beyond 4 m and upto 8 m	CUM	1550	
c	DELETED			
ii)	DELETED			
a	DELETED			
b	DELETED			
c	DELETED			
3	DELETED			
4	Extra over item 1 above for carriage of all types of excavated materails beyond the initial lead of 100 m (included in item 1 above) all complete as per specifications, drawings and instructions of the engineer for the following leads			
i)	Carriage beyond initial lead of 100 m but not exceeding 500 m	CUM	1800	
ii)	Carriage beyond initial lead of 500 m but not exceeding 2 Km	CUM	3000	
iii)	Carriage beyond initial lead of 2 Km but not exceeding 5 Km	CUM	800	
iv)	Carriage beyond initial lead of 5 Km but not exceeding 10 Km.	CUM	500	

SL NO	DESCRIPTION	QUANTITY	RATE(Rs)	AMOUNT (Rs)
5	i) Filling using selected excavated materials in trenches, plinths, sides of foundations and other underground structures, pipes etc., in layers not exceeding 200 mm loose thickness for all leads and lifts and including loading from stock pile, carting, unloading, filling, watering and compacting/ramming each layer, all complete as per Specifications, drawings and as directed by the Engineer to achieve 95% standard proctor density.	CU.M	2500	
	ii) Levelling and compacting the surplus excavated earth obtained from Item No. 1 including all lifts & as per specifications and as directed by the Engineer with the cost of all labour, material and equipment complete.	CU.M	3600	
6	Supplying and laying (inside chimney in the space below the grade level slab) crushed rock and sand fill in layers no more than 150 mm thick each and thoroughly compacted by compacting equipment and by water flooding to achieve maximum density for all leads and lifts including all labour, materials, equipment etc. complete as per drawings, specifications and directions of the Engineer.	CU.M	1225	
7	Providing and laying Nominal Mix plain cement concrete (1:3:6) 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, equipment, handling, transporting, batching, curing, testing etc. all complete as per specifications, drawings and instructions of the Engineer. Cement will be supplied by BHEL free of cost as per SCC.	CU.M	200	
8	Providing and 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, Cement will be supplied by BHEL free of cost as per SCC.			
	i) For works below bottom of shell			
	a) Grade M-25 (foundations, etc)	CU.M	3000	
	ii) For works above foundation raft/pile cap			
	a) Grade M-25 (grade level slab)	CU.M	100	
	b) Grade M-30 for chimney shell, corbels and external platforms and other shell attachments.	CU.M	9500	
	d) Grade M-25 for all other components of the super structure, roof slab, minishells, beams, columns wall etc.	CU.M	50	
9	Providing and placing reinforcement, 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, transporting, testing, etc. preparation of bar bending schedules, all complete as per specifications, drawings and instructions of the Engineer.			
	i) For works below bottom of shell and below ground works			
	a) High strength deformed or TMT bars (BHEL will supply reinforcement steel free of cost as per SCC).	MT	200	
	ii) For works above foundation raft/pile cap			

SL NO	DESCRIPTION	QUANTITY	RATE(Rs)	AMOUNT (Rs)
	a) Mild steel reinforcement bars (Reinforcement steel to be supplied by the contractor from SAIL/TATA/RINL or equivalent as approved by CSPGCL/BHEL).	MT	25	
	b) High strength deformed or TMT bars (BHEL will supply reinforcement steel free of cost).	MT	375	
10	Providing and fixing formwork of approved quality for cast-in-situ, plain or reinforced concrete works of any type and section (including curved surfaces and chimney shell) for all elevations, including labour, aterials, 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 specifi-cations, drawings and instructions of the Engineer.			
	i) For works below bottom of shell	SQ.M	750	
	ii) For works above foundation raft/pile cap			
	a) Inner and outer faces of wind shield with slip form shuttering	SQ.M	29,000	
	b) All other components of the superstructure including slabs, beams, columns, walls, enclosures, mini shells, external plat-forms, corbels, other shell attachments, chases/recesses in shell etc.	SQ.M	1,200	
11	Providing and fixing formwork in shell openings (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 in-structions of the Engineer.	SQ.M	350	
12	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.	SQ.M	50	
13	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	SQ.M	65	
14	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, applplication of primer, cost of all labour, material and equipments etc., complete as per drawings, specifications and instructions of the Engineer.	Kg	175	
15	Preparing detailed fabrication drawings and after approval by the Engineer, supplying, fabricating, erecting and installing miscellane-ous 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, cut-ting, etc. complete as per drawings and specification All materials to be supplied by the contractor.	MT	6	
16	Preparing detailed fabrication drawings after approval by the Engineer, providing, fabricating and erecting structural steel work for the stair case from grade level to roof level including brackets, kick plates all fittings and fixtures etc., including the cost of all labour, material and equipment, transporting, lifting to all heights, setting in place, welding to cast in fixing place, cutting, grinding, drilling, bolts and bolting, anchor fasteners, welding, preheating and post heating for welding , testing, primer and finish painting,etc., complete as per drawing and specifications. BHEL will supply plates, ISMB, channels, angles free of cost as per SCC.	MT	70	

SL NO	DESCRIPTION	QUANTITY		RATE(Rs)	AMOUNT (Rs)
17	Preparing detailed fabrication drawings, and after approval by the Engineer, providing, fabricating and erecting at all levels, internal platform and walkway gallery structures complete including all structural members, beam support bearings on the shell, wstiffeners, wseats, brackets, all other fittings and fixuttre, blockouts, etc. including the cost of all labour, material and equipment, transporting, lifting to all eights, setting in place, high strength grout and grouting, anchor bolts, welding to cast-in fixing plates, cutting, grinding, drilling, bolts and bolting, welding, preheating and post-heating for welding, testing, grinding smooth or machining the support bearing plates, primer and finish painting, etc. complete as per drawings and specifications. BHEL will supply plates, ISMB, channels, angles free of cost as per SCC.	MT	275		
18	Preparing detailed fabrication drawings, and after approval by the Engineer, providing, fabricating and erecting at all levels, chequered plate panels for floors of internal and external platforms and treads and landings of the staircase complete with stiffeners, brackets, ready to bolt fixtures, etc. including the cost of all labour, material and equipment, transporting, lifting to all heights, setting in place, cutting, grinding, finishing, drilling, bolts and bolting, welding, testing, primer and finish painting, etc. complete as per drawings and specifications. BHEL will supply plates, ISMB, channels, angles free of cost as per SCC.	MT	110		
19	Preparing detailed fabrication drawings and after approval by the Engineer, providing, fabricating and erecting, at all levels, structural steel flues (liners) complete with all bends, flanges, stiffeners, all other flueattachments, support system, collars, access manholes and gas sampling ports alongwith gaskets and other accessories, staying system, including the cost of all labourt, material and equipment, transporting, lifting to all heights, setting in place, cutting, grinding, drillings, bending, bolts and bolting, welding, preheating and post-heating for welding, testing, etc. complete as per drawings and specifications. BHEL will supply plates, ISMB, channels, angles free of cost as per SCC.	MT	600		
20	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 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. All materials to be supplied by the contractor.				
	(a) Stainless steel components	MT	1.2		
	(b) Lead Sheets	Kg	120		

SL NO	DESCRIPTION	QUANTITY		RATE(Rs)	AMOUNT (Rs)
21	Preparing detailed fabrication drawings and after approval by the Engineer, providing, fabricating and installing expansion compensator joints including bolster in the flue liner including all labour, material and equipment transporting, hoisting, fixing in position, drilling, cutting, bolts and bolting, etc. along with the user handbooks (giving details of installation, dismantling and maintainance procedures for the expansion joints), testing, etc complete as per drawings and specifications. All materials to be supplied by the contractor.	SQ.M.	60		
22	Supplying "Fabricated Ready to Install" spare expansion compensators alongwith bolster including the cost of all labour, material and equipment, accessories, transporting, proper packaging (for several years of storage), and delivery to site store complete in all respects as per drawings and specification. All materials to be supplied by the contractor.	SQ.M.	11		
23	Supplying and laying in position shaped acid resisting bricks conforming to class - I of IS:4860) for liner construction (with sloped A/R mortar toppings over brick work) complete including the cost,of all labour, material and equipment, raking joints, flush pointing, cleaning, curing, etc. complete as per drawings and specifications.	CuM	3		
24	DELETED				
25	DELETED				
26	Providing, laying and packing, at all levels, asbestos ropes at expansion joints including the cost of all labour material, etc. complete as per drawing and specifications.				
	(a) 25 mm (diameter) at expansion joints between brick linig segments	RM	60		
	(b) 12 mm (diameter) at expansion joints between brick linig segments	RM	175		
27					
(a)	DELETED				
(b)	DELETED				
28	DELETED				
29	Providing and installing, at all levels, resin bonded glass wool insulation slabs of density not less than 64 kg/m ³ or resin bonded rock wool insulation slabs of density not less than 100 kg/cu.m with an installed thickness of not less than 100 mm, on the outside surface of steel flue liners, inside surface of concrete minishells, under the cast iron caps and wherever as directed by the Engineer, in two layers (each 50 mm thick) including the cost of all labour, material and equipment, transporting, lifting to all heights, etc., inclusive of plated or galvanised accessories such as pins/studs/anchors/wire netting, speed washers, tying wires, etc. welding of pins/studs to steel surfaces or embedding of pins/studs/anchors in concrete surfaces, fixing, cutting, cutting, lapping, binding, testing, etc. complete as per drawings and specifications. All materials to be supplied by the contractor.	Sq.M	7000		

SL NO	DESCRIPTION	QUANTITY	RATE(Rs)	AMOUNT (Rs)
30	Providing and packing, at all levels, loose glass wool insulation to a density not less than 64 kg/m ³ or loose rock wool insulation to a density not less than 100 kg/cu.m between the insulated minishells and brick liners at expansion joints between the lining segments and wherever as directed by the Engineer including the cost of all labour, material and equipment, filling, ramming, testing, etc. complete as per drawings and specifications. All materials to be supplied by the contractor.	Cu. M	15	
31	Providing and painting, at all levels, the part inside surface of chimney shell, inside and outside surfaces of minishells, underside of roof slab and other concrete components/surfaces of the chimney as indicated in the drawings and wherever as directed by the Engineer, with acid and heat resisting black bituminous paint (conforming to type I(i) of IS:158) in as many number of coats (not less than four coats in any case) as required to give a paint DFT of not less than 150 microns including the cost of all labour, materials, equipment, surface preparation, primer and finish painting, protecting, cleaning etc. complete as per drawings and specifications.	SQ.M	14500	
32	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	SQ.M	2200	
33	Providing and painting, at all levels, the external surfaces of chimney shell and wherever as directed by the Engineer, with cement based 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.	SQ.M	11500	
34	Providing 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 bitumen mastic in layers, laying acid resisting(A/R) mortar bed and laying 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. Cement will be supplied by BHEL free of cost as per SCC.	SQ.M	110	
35	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, priming, painting or galvanising, 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. All materials to be supplied by the contractor.	MT	2	
	b) 32 mm nominal bore tubular hand railing for stair case and internal and external platforms All materials to be supplied by the contractor.	MT	20	

SL NO	DESCRIPTION	QUANTITY	RATE(Rs)	AMOUNT (Rs)
36	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 equipment, transporting, lifting, setting in place, painting, etc. complete as per drawing and specifications. All materials to be supplied by the contractor.	NO	8	
37	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 (All materials to be supplied by the contractor)			
	a) 150 mm nominal bore cast iron pipes.	RM	55	
	b) 150 mm nominal bore medium class galvanised mild steel pipes.	RM	275	
38	Providing and laying 50 mm thick cement concrete flooring (comprising of 12 mm thick mettalic concrete hardener topping over a38 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. Cement will be supplied by BHel free of cost as per SCC.	SQM	450	
39	Providing and installing an electrically operated grill type steel roll-up door (with the bottom 0.5 metres of the curtain in solid type) at chimney base, in opening of size 4 m by 5 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. All materials to be supplied by the contractor.	LS	1	
40	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. All materials to be supplied by the contractor.	NO	7	
41	Preparing detailed fabrication drawings after approval by the Engineer, providing, fabricating and erecting, at all levels, mild steel strakes complete with all stiffeners, attachments, fasteners, pipe sleeves, etc. including the cost of all labour, material and equipment, transporting, lifting to all heights, setting in place, embedding components in concrete, fixing to castin embedments, cutting, grinding, drilling, bolts and bolting welding preheating and post heating for welding , testing, grouting, galvenising components to be embeded in concrete, primer and finish painting of exposed components, etc. complete as per drawing and specifications. All materials to be supplied by the contractor.	MT	22	

SL NO	DESCRIPTION	QUANTITY		RATE(Rs)	AMOUNT (Rs)
42	Preparing detailed fabrication drawings after approval by the Engineer, providing, fabricating and erecting, at all levels SS Mini Shell at roof shell of grade A316L , etc. complete as per drawing and specifications. BHEL will supply stainless steel plate free of cost.	MT	14		
43	DELETED				
44	PILING WORK				
44.1	Installation of bored RCC cast in situ vertical pile as per IS 2911 (Part 1, Section 2) with diameter and length as specified below (length to be measured from cut-off level to the bottom of pile) using cement concrete M25 grade conforming to IS 456 with 20 mm nominal size stone aggregates with a minimum cement content of 400 Kg per cum of concrete including cost of boring including empty boring in all types of strata including socketing of pile inside rock,materials (but excluding reinforcement), flushing of pile bore, providing bentonite slurry and/or casing for stabilization of bore, providing, plasticizer wherever required, breaking pile head to cut off level and exposing pile reinforcement for embedment in pile cap etc all complete as per specification, drawings and as directed by the engineer-in-charge. Reinforcement work will be paid as per item no -9 i a. (BHEL will supply cement and reinforcement steel /HSD or TMT bar free of cost as per SCC).				
a	750 mm dia and 21 m deep (from cut off level) pile - 220 metric tonne safe capacity	Each	320		
44.2	Extra over following item for pile length more than the specified length of 21 m.				
a	item no. 44.1 a	m	50		
44.3	Rebate on the following item for pile length less than the specified length of 21 m.				
a	item no. 44.1 a	m	100		
44.4	Conducting initial load test upto two and half times the safe load capacity on a single pile in accordance with IS 2911 part-4 including construction of test pile caps if required, necessary excavation, all arrangements of loading, unloading, jacks etc, recording of results, materials, labour, dismantling the pile cap after test etc all complete as per specification but excluding the cost of installation of test pile. Cost of installation of test pile shall be paid seperately as per item no44.1.				
a	for lateral load:				
	750 mm dia piles-8.4 MT safe load capacity	Each	2		
b	for vertical (compression) load: (Cyclic load test)				
	750 mm dia piles-220 MT safe load capacity	Each	2		
c	for uplift:				
	750 mm dia piles-40 MT safe load capacity	Each	2		
44.5	Conducting routine load test on single job pile to a load in accordance with IS 2911 part-4 including necessary excavation, all arrangement of loading, unloading, jacks etc, recording of results, all materials, labour etc. complete as per specification but excuding cost of installation of job pile. Cost of installation of test pile shall be paid seperately as per item no.44.1.				
a	for lateral load:				

SL NO	DESCRIPTION	QUANTITY	RATE(Rs)	AMOUNT (Rs)
	750 mm dia piles-8.4 MT safe load capacity	Each	3	
b	for vertical (compression) load:			
	750 mm dia piles-220 MT safe load capacity	Each	3	
44.6	Carrying out pile integrity test on single job pile of 750mm diameter including all arrangements for test, equipments, materials, labour, submission of test report etc but excluding the cost of installation of job pile complete as per specification and as directed by the engineer-in-charge.	Each	320	
44.7	providing & fixing one no. 40mm ID PVC pipe with minimum wall thk. of 4mm (schedule 80) inside bore pile to facilitate conducting of Cross hole Ultrasonic testing of piles through pipe as per drawing, specifications and as directed by BHEL Engineer including cost of labour, installation, materials etc. complete.	RM	7680	
44.8	Deployment of required sets of piling rigs (preferred as per technical specification, sub section-D21, cl-4.04.00) to achieve construction of 18-20 nos pile per day including ancillary equipments/pipes as per drawing and specifications. (Payments : a) 50% to be released on deployment of required rigs and achieved installation & construction of 10 nos pile per day, b) balance 50% to be released after completion of balance deployment of rigs to achieve total 18-20 nos pile per day).	LS	1	
SUB-TOTAL (PART-1A)				
PART-1B (ELECTRICAL/ ELEVATOR WORKS ETC. BIDDER TO QUOTE RATES FOR ERECTION, COMMISSIONING ONLY).				
45.0	415V, 200A, 50 KA for 0.25 sec, 4 wire AC Distribution Board with 1No. incomer (SFU) & 9 nos. of 100A (TPN) outgoing complete in all respects	1	SET	
46.0	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 incomers with auto changeover facility using contacts and 6 nos 100A SFU (TPN) outgoing complete in all respects	1	SET	
47.0	Normal AC lighting panel outdoor type with degree of protection IP 55 with one no 100A SFU (TPN) Incomer, 18 outgoing (16A SP MCBs) complete in all respects.	3	SETS	
48.0	Emergency lighting panel outdoor type with degree of protection IP 55 with one no of 100A TPN/SFU incomer and 12 outgoing (16A, SP MCBs) complete in all respects.	3	SETS	
49.0	Aviation lighting panel outdoor type with degree of protection IP 55 with one no 100A SFU (TPN) incomer, 8 outgoing (20A SP MCBs) complete in all respects.	1	SET	
50.0	Aviation obstruction lights.			
50.1	GEC Cat. No ZA750(L) NEON	12	NO	
50.2	High Intensity Flashing White Light having intensity>2000 candles & flashing frequency 40-60/min	12	NO	
51.0	Flood light with 250W HPSV lamps with all controlgears & accessories etc complete in all respects.	6	NO	
51.1	Well glass type luminaries with 70W/HPSV lamp with all controlgears & accessories etc complete in all respects	100	NO	
52.2	Well glass type luminaries with 150W/HPSV lamp with all controlgears & accessories etc complete in all respects.	70	NO	
53.0	63 A welding switch socket with plug & other Mounting accessories etc complete in all respects.	9	NO	
54.0	3 pin, 1 ph, 240V, 15 A power socketscomplete with plug switches etc.	10	NO	

SL NO	DESCRIPTION	QUANTITY	RATE(Rs)	AMOUNT (Rs)
55.0	Al conductor, PVC insulated, armoured, PVC outer sheath, FRLS type 1100V grade conforming to IS-1554 Part I.			
55.1	3½ C x 95mm ² Al for connection between ACDB/ELDB/ welding sockets.	1400	RM	
55.2	3½ Cx35mm ² Al for lighting panel incoming supply.	1000	RM	
55.3	3½ C/ 4 Cx16mm ² Al for lighting panel incoming supply.	1600	RM	
56.0	PVC insulated 650/1100V grade stranded Cu conductor lighting wires conforming to IS-694.			
56.1	2.5 mm ² .	3000	RM	
56.2	4.0 mm ² .	9000	RM	
57.0	GI conduit 25mm dia with junction boxes, pull boxes & accessories etc complete in all respects.	7000	RM	
57.1	Lightning protection air terminal.	25	RM	
58.0	Earthing materials etc, complete as per drawings & specifications.			
58.1	Above ground earthing system.	1500	RM	
58.2	Laying of earthing mats/rods including transportation from yard stores, loading, unloading, cutting to length, welding etc. complete as per specification and as directed by Engineer-in-charge. (BHEL shall supply earth mat rod free of cost as per SCC)	3	MT	
59.0	Telephone socket with junction box etc., complete as per drawings and specifications.	10	NO	
60.0	Telephone hand sets etc, complete as per drawings and specifications.	10	NO	
61.0	Telephone cables etc, complete as per drawings and specifications.			
62.0	24 pairs.	150	RM	
63.1	4 pairs.	300	RM	
63.2	GS cable trays including cover, cabling material, accessories etc, complete as per drawings & specifications.			
64.0	600mm wide.	150	RM	
61.1	300mm wide.	150	RM	
64.2	150mm wide.	100	RM	
64.3	Aviation light distribution board complete in all respects.	3	NO	
65.0	Lumpsum price for E&C of stack elevator - climb 275 m internal with all accessories & associated steel work complete as per specification.	1	SET	
SUB-TOTAL (PART-1B)				

SL NO	DESCRIPTION	QUANTITY	RATE(Rs)	AMOUNT (Rs)
TOTAL PART 1 OF SCH 7-KRB-SERVICE (PART-1A+PART-1B)				
66.0	For items not covered above, quote % above or below the CPWD schedule (DSR-2002).			
66.1	Rate of complete item.			
66.2	Rate of supply of materials at site only.			
66.3	Rate for execution complete excluding supply of materials.			
NOTE:				
1.0	Bidder to note that the TOTAL PART 1 OF SCH 7-KRB SERVICE price as above should match with SI.No.1 of SCH-3			

**VOLUME IIIA , REV 01 (PRICE SCHEDULE)
SCH-8 {PART-2-KORBA (WEST)}**

**Construction of 275 meter high RCC single flue steel lined chimney including supply & installation of stack elevator & electrical items for 1x500 MW unit #
1 Korba (W) TPP, (CSEB).**

TENDER NO - PSER:SCT:BKM-C1014:09

CONSTRUCTION OF CHIMNEY (SUPPLY)

SL NO	DESCRIPTION	QUANTIT Y		UNIT RATE (Rs)					AMOUNT(Rs)					
				BASIC	ST (as per tender provision, if any)	VAT	FREIGHT	TOTAL	BASIC	ST (as per tender provision, if any)	VAT	FREIGHT	TOTAL	
1.0	415V, 200A, 50 KA for 0.25 sec, 4 wire AC Distribution Board with 1No. incomer (SFU) & 9 nos. of 100A (TPN) outgoing complete in all respects	1	SET											
2.0	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 incomers with auto changeover facility using contacts and 6 nos 100A SFU (TPN) outgoings complete in all respects	1	SET											
3.0	Normal AC lighting panel outdoor type with degree of protection IP 55 with one no 100A SFU (TPN) Incomer, 18 outgoing (16A SP MCBs) complete in all respects.	3	SETS											
4.0	Emergency lighting panel outdoor type with degree of protection IP 55 with one no of 100A TPN/SFU incomer and 12 outgoings (16A, SP MCBs) complete in all respects.	3	SETS											

SL NO	DESCRIPTION	QUANTIT Y		UNIT RATE (Rs)					AMOUNT(Rs)					
				BASIC	ST (as per tender provision, if any)	VAT	FREIGHT	TOTAL	BASIC	ST (as per tender provision, if any)	VAT	FREIGHT	TOTAL	
5.0	Aviation lighting panel outdoor type with degree of protection IP 55 with one no 100A SFU (TPN) incomer, 8 outgoing (20A SP MCBs) complete in all respects.	1	SET											
6.0	Aviation obstruction lights.													
6.1	GEC Cat. No ZA750(L) NEON	12	NO											
6.2	High Intensity Flashing White Light having intensity>2000 candles & flashing frequency 40-60/min	12	NO											
7.0	Flood light with 250W HPSV lamps with all controlgears & accessories etc complete in all respects.	6	NO											
8.1	Well glass type luminaries with 70W/HPSV lamp with all controlgears & accessories etc complete in all respects	100	NO											
8.2	Well glass type luminaries with 150W/HPSV lamp with all controlgears & accessories etc complete in all respects.	70	NO											
9.0	63 A welding switch socket with plug & other Mounting accessories etc complete in all respects.	9	NO											
10.0	3 pin, 1 ph, 240V, 15 A power sockets complete with plug switches etc.	10	NO											
11.0	Al conductor, PVC insulated, armoured, PVC outer sheath, FRLS type 1100V grade conforming to IS-1554 Part I.													

SL NO	DESCRIPTION	QUANTIT Y		UNIT RATE (Rs)					AMOUNT(Rs)					
				BASIC	ST (as per tender provision, if any)	VAT	FREIGHT	TOTAL	BASIC	ST (as per tender provision, if any)	VAT	FREIGHT	TOTAL	
11.1	3½ C x 95mm ² Al for connection between ACDB/ELDB/ welding sockets.	1400	RM											
11.2	3½ Cx35mm ² Al for lighting panel incoming supply.	1000	RM											
11.3	3½ C/ 4 Cx16mm ² Al for lighting panel incoming supply.	1600	RM											
12.0	PVC insulated 650/1100V grade stranded Cu conductor lighting wires conforming to IS-694.													
12.1	2.5 mm ² .	3000	RM											
12.2	4.0 mm ² .	9000	RM											
13.0	GI conduit 25mm dia with junction boxes, pull boxes & accessories etc complete in all respects.	7000	RM											
14.0	Lightning protection air terminal.	25	RM											
15.0	Earthing materials etc, complete as per drawings & specifications.													
15.1	Above ground earthing system.	1500	RM											
16.0	Telephone socket with junction box etc., complete as per drawings and specifications.	10	NO											
17.0	Telephone hand sets etc, complete as per drawings and specifications.	10	NO											
18.0	Telephone cables etc, complete as per drawings and specifications.													

SL NO	DESCRIPTION	QUANTIT Y		UNIT RATE (Rs)					AMOUNT(Rs)					
				BASIC	ST (as per tender provision, if any)	VAT	FREIGHT	TOTAL	BASIC	ST (as per tender provision, if any)	VAT	FREIGHT	TOTAL	
18.1	24 pairs.	150	RM											
18.2	4 pairs.	300	RM											
19.0	GS cable trays including cover, cabling material, accessories etc, complete as per drawings & specifications.													
19.1	600mm wide.	150	RM											
19.2	300mm wide.	150	RM											
19.3	150mm wide.	100	RM											
20.0	Aviation light distribution board complete in all respects.	3	NO											
21.0	Lumpsum price for design, engineering, manufacturing & supply (inclusive of all taxes and duties - FOR site delivery basis) of one number stack elevator - climb 275 m internal with all accessories & associated steel work complete as per specification.	1	SET											
TOTAL(PART 2) OF SCH-8- KRB-SUPPLY														

NOTE:
1.0 Bidder to note that the TOTAL (PART 2) OF SCH-8- KRB-SUPPLY price as above should match with SI.No.2 of SCH-3

**VOLUME IIIA , REV 01 (PRICE SCHEDULE)
SCH-9 {PART-1-BOKARO 'A' }**

**Construction of 275 meter high RCC single flue steel lined chimney including supply & installation of stack elevator & electrical items for 1x500 MW unit # 1
Bokaro 'A' TPP, (JHARKHAND).**

TENDER NO - PSER:SCT:BKM-C1014:-09

CONSTRUCTION OF CHIMNEY (SERVICE)

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
PART-1A (CIVIL & STRUCTURAL WORK ETC)				
1	EARTH WORK IN EXCAVATION, BACKFILLING AND DISPOSAL AS PER SPECIFICATION AND DRAWINGS			
(i)	Excavation at all depths including providing cofferdams, shoring, strutting, sheeting, bracing, dewatering of subsoil, surface water or catchment waters, clearing all grass, vegetation etc. including trimming of excavation bottom, staking, levelling, grading etc. of excavated materials all complete as per specifications, drawings and instructions of the engineer, including a lead up to 100 meters and a lift up to 2.0 meters.			
a)	In all types of soils including ash, morrum, laterite	CUM	1500	
b)	In soft rock and weathered rock which can be excavated by means of crow bar, pick axe etc. but does not require chiselling, chemical grouting and blasting.	CUM	2000	
c)	In hard rock , by means of controlled blasting including provision of sensor to assess the impact of blast on the adjacent structures.	CUM	8000	
d)	In hard rock (blasting Prohibited) by means of chiselling, wedging etc.	CUM	3000	
2	Extra over item 1 above, for all types of soil/rock, for additional lifts beyond the initial lift of 2 meters (included in item 1 above) all complete as per specifications, drawings and instructions of the engineer for the following lifts:			
i)	In all types of soils			
a	beyond 2 m and upto 4 m	CUM	200	
b	beyond 4 m and upto 8 m	CUM	50	
c	beyond 8 m and upto 10 m	CUM	NIL	

SL NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
ii)	In all types of rocks				
a	beyond 2 m and upto 4 m	CUM	5000		
b	beyond 4 m and upto 8 m	CUM	3600		
c	beyond 8 m and upto 10 m	CUM	250		
3	DELETED				
4	Extra over item 1 above for carriage of all types of excavated materials beyond the initial lead of 100 m (included in item 1 above) all complete as per specifications, drawings and instructions of the engineer for the following leads				
i)	Carriage beyond initial lead of 100 m but not exceeding 500 m	CUM	3250		
ii)	Carriage beyond initial lead of 500 m but not exceeding 2 Km	CUM	6500		
iii)	Carriage beyond initial lead of 2 Km but not exceeding 5 Km	CUM	1950		
iv)	Carriage beyond initial lead of 5 Km but not exceeding 10 Km.	CUM	1300		
5	i) Filling using selected excavated materials in trenches, plinths, sides of foundations and other underground structures, pipes etc., in layers not exceeding 200 mm loose thickness for all leads and lifts and including loading from stock pile, carting, unloading, filling, watering and compacting / ramming each layer, all complete as per Specifications, drawings and as directed by the Engineer to achieve 95% standard proctor density.	CU.M	1500		
	ii) Levelling and compacting the sur-plus excavated earth obtained from Item No. 1 including all lifts & as per specifications and as directed by the Engineer with the cost of all labour, material and equipment complete.	CU.M	250		
	iii) Borrowed soil for filling	CU.M	5750		
6	Supplying and laying (inside chimney in the space below the grade level slab) crushed rock and sand fill in layers no more than 150 mm thick each and thoroughly compacted by compacting equipment and by water flooding to achieve maximum density for all leads and lifts including all labour, materials, equipment etc. complete as per drawings, specifications and directions of the Engineer.	CU.M	1000		

SL NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
7	Providing and laying Nominal Mix plain cement concrete (1:3:6) 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, equipment, handling, transporting, batching, curing, testing etc. all complete as per specifications, drawings and instructions of the Engineer. Cement will be supplied by BHEL free of cost as per SCC.	CU.M	500		
8	Providing and 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, leveling, 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: Cement will be supplied by BHEL free of cost as per SCC.				
	i) For works below bottom of shell				
	a) Grade M-25 (foundations, etc)	CU.M	6600		
	ii) For works above foundation raft/pile cap				
	a) Grade M-25 (grade level slab)	CU.M	100		
	b) Grade M-30 for chimney shell, corbels and external platforms and other shell attachments.	CU.M	10000		
	c) Grade M-25 for all other components of the super structure, roof slab, mini-shells, beams, columns wall etc.	CU.M	50		
9	Providing and placing reinforcement, 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, transporting, testing, etc. preparation of bar bending schedules, all complete as per specifications, drawings and instructions of the Engineer.				
	i) For works below bottom of shell				
	a) High strength deformed bars (BHEL will supply reinforcement steel free of cost as per SCC).	MT	400		

SL NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
	ii)For works above foundation raft/pile cap				
	a) Mild steel reinforcement bars	MT	25		
	(Reinforcement steel to be supplied by the contractor from SAIL/TATA/RINL or equivalent as approved by CSPGCL/BHEL).				
	b) High strength deformed bars (BHEL will supply reinforcement steel free of cost).	MT	400		
10	Providing and fixing formwork of approved quality for cast-in-situ, plain or reinforced concrete works of any type and section (including curved surfaces and chimney shall) for all elevations, 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.				
	i) For works below bottom of shell	SQ.M	1300		
	ii) For works above foundation raft/pile cap				
	a) Inner and outer faces of wind shield with slip form shuttering	SQ.M	30,000		
	b) All other components of the superstructure including slabs, beams, columns, walls, enclosures, mini shells, external plat-forms, corbels, other shell attachments, chases/recesses in shell etc.	SQ.M	1,200		
11	Providing and fixing formwork in shell openings (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 in-structions of the Engineer.	SQ.M	350		
12	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.	SQ.M	50		
13	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.	SQ.M	65		

SL NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
14	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	175		
15	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 All materials to be supplied by the contractor.	MT	6		
16	Preparing detailed fabrication drawings after approval by the Engineer, providing, fabricating and erecting structural steel work for the stair case from grade level to roof level including brackets, kick plates all fittings and fixtures etc., including the cost of all labour, material and equipment, transporting, lifting to all heights, setting in place, welding to cast in fixing place, cutting, grinding, drilling, bolts and bolting, anchor fasteners, welding, preheating and post heating for welding, testing, primer and finish painting, etc., complete as per drawing and specifications. BHEL will supply plates, ISMB, channels, angles free of cost as per SCC.	MT	70		
17	Preparing detailed fabrication drawings, and after approval by the Engineer, providing, fabricating and erecting at all levels, internal platform and walkway gallery structures complete including all structural members, beam support bearings on the shell, wstiffeners, wseats, brackets, all other fittings and fixutre, blockouts, etc. including the cost of all labour, material and equipment, transporting, lifting to all eights, setting in place, high strength grout and grouting, anchor bolts, welding to cast-in fixing plates, cutting, grinding, drilling, bolts and bolting, welding, preheating and post-heating for welding, testing, grinding smooth or machining the support bearing plates, primer and finish painting, etc. complete as per drawings and specifications. BHEL will supply plates, ISMB, channels, angles free of cost as per SCC.	MT	275		

SL NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
18	Preparing detailed fabrication drawings, and after approval by the Engineer, providing, fabricating and erecting at all levels, chequered plate panels for floors of internal and external platforms and treads and landings of the staircase complete with stiffeners, brackets, ready to bolt fixtures, etc. including the cost of all labour, material and equipment, transporting, lifting to all heights, setting in place, cutting, grinding, finishing, drilling, bolts and bolting, welding, testing, primer and finish painting, etc. complete as per drawings and specifications. BHEL will supply plates, ISMB, channels, angles free of cost as per SCC.	MT	125		
19	Preparing detailed fabrication drawings and after approval by the Engineer, providing, fabricating and erecting, at all levels, structural steel flues (liners) complete with all bends, flanges, stiffeners, all other flue attachments, support system, collars, access manholes and gas sampling ports alongwith gaskets and other accessories, staying system, including the cost of all labour, material and equipment, transporting, lifting to all heights, setting in place, cutting, grinding, drillings, bending, bolts and bolting, welding, preheating and post-heating for welding, testing, etc. complete as per drawings and specifications. BHEL will supply plates, ISMB, channels, angles free of cost as per SCC.	MT	600		
20	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 316L and lead sheets beams and over the mild steel in the platform beam bearing, flue supports bearings, flue restraints brackets/ buffers etc. Including 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. All materials to be supplied by the contractor.				
	(a) Stainless steel components	MT	1.2		
	(b) Lead Sheets	Kg	120		

SL NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
21	Preparing detailed fabrication drawings and after approval by the Engineer, providing, fabricating and installing expansion compensator joints including bolster in the flue liner including all labour, material and equipment transporting, hoisting, fixing in position, drilling, cutting, bolts and bolting, etc. along with the user handbooks (giving details of installation, dismantling and maintainance procedures for the expansion joints), testing, etc complete as per drawings and specifications. All materials to be supplied by the contractor.	SQ.M.	60		
22	Supplying "Fabricated Ready to Install" spare expansion compensators alongwith bolster including the cost of all labour, material and equipment, accessories, transporting, proper packaging (for several years of storage), and delivery to site store complete in all respects as per drawings and specification.	SQ.M.	11		
23	Supplying and laying in position shaped acid resisting bricks conforming to class - I of IS:4860) for liner construction (with sloped A/R mortar toppings over brick work) complete including the cost,of all labour, material and equipment, raking joints, flush pointing, cleaning, curing, etc. complete as per drawings and specifications.	CuM	3		
24	DELETED				
25	DELETED				
26	Providing, laying and packing, at all levels, asbestos ropes at expansion joints including the cost of all labour material, etc. complete as per drawing and specifications.				
	(a) 25 mm (diameter) at expansion joints between brick linig segments	RM	60		
	(b) 12 mm (diameter) at expansion joints between brick linig segments	RM	175		
27	DELETED				
28	DELETED				

SL NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
29	Providing and installing, at all levels, resin bonded glass wool insulation slabs of density not less than 64 kg/m ³ or resin bonded rock wool insulation slabs of density not less than 100 kg/cu.m with an installed thickness of not less than 100 mm, on the outside surface of steel flue liners, inside surface of concrete minishells, under the cast iron caps and wherever as directed by the Engineer, in two layers (each 50 mm thick) including the cost of all labour, material and equipment, transporting, lifting to all heights, etc., inclusive of plated or galvanised accessories such as pins/studs/anchors/wire netting, speed washers, tying wires, etc. welding of pins/studs to steel surfaces or embedding of pins/studs/anchors in concrete surfaces, fixing, cutting, cutting, lapping, binding, testing, etc. complete as per drawings and specifications. All materials to be supplied by the contractor.	Sq.M	7000		
30	Providing and packing, at all levels, loose glass wool insulation to a density not less than 64 kg/m ³ or loose rock wool insulation to a density not less than 100kg/cu.m between the insulated minishells and brick liners at expan-joints between the lining segments and wherever as directed by the Engineer including the cost of all labour, material and equipment, filling, ramming, testing, etc. complete as per drawings and specifications. All materials to be supplied by the contractor.	Cu. M	15		
31	Providing and painting, at all levels, inside surface of chimney shell, inside and outside surfaces of minishells, underside of roof slab and other concrete components/surfaces of the chimney as indicated in the drawings and wherever as directed by the Engineer, with acid and heat resisting black bituminous paint (conforming to type I(i) of IS:158) in as many number of coats (not less than four coats in any case) as required to give a paint DFT of not less than 150 microns including the cost of all labour, materials, equipment, surface preparation, primer and finish painting, protecting, cleaning etc. complete as per drawings and specifications.	SQ.M	15000		
32	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	SQ.M	2200		

SL NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
33	Providing and painting, at all levels, the external surfaces of chimney shell and wherever as directed by the Engineer, with cement based 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 .		12000		
34	Proving and laying over the chimney roof, a comosite 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 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. Cement will be supplied by BHEL free of cost as per SCC.	SQ.M	110		
35	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 or galvanising, 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. All materials to be supplied by the contractor.	MT	2		
	b) 32 mm nominal bore tubular hand railing for stair case and internal and external platforms All materials to be supplied by the contractor.	MT	20		
36	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 equipment, transporting, lifting, setting in place, painting, etc. complete as per drawing and specifications. All materials to be supplied by the contractor.	No	8		

SL NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
37	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	55		
	b) 150 mm nominal bore medium class galvanised mild steel pipes.	RM	275		
38	Providing and laying 50 mm thick cement concrete flooring (comprising of 12 mm thick mettalic concrete hardener topping over a38 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. Cement will be supplied by BHEL free of cost as per SCC.	SQM	450		
39	Providing and installing an electrically operated grill type steel roll-up door (with the bottom 0.5 metres of the curtain in solid type) at chimney base, in opening of size 4 m by 5 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. All materials to be supplied by the contractor.	LS	1		
40	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. All materials to be supplied by the contractor.	No	7		

SL NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
41	Preparing detailed fabrication drawings after approval by the Engineer, providing, fabricating and erecting, at all levels, mild steel strakes complete with all stiffeners, attachments, fasteners, pipe sleeves, etc. including the cost of all labour, material and equipment, transporting, lifting to all heights, setting in place, embedding components in concrete, fixing to castin embedments, cutting, grinding, drilling, bolts and bolting welding preheating and post heating for welding , testing, grouting, galvenising components to be embeded in concrete, primer and finish painting of exposed components, etc. complete as per drawing and specifications. All materials to be supplied by the contractor.	MT	22		
42	Preparing detailed fabrication drawings after approval by the Engineer, providing, fabricating and erecting, at all levels SS Mini Shell at roof shell of grade A316L , etc. complete as per drawing and specifications. BHEL will supply stainless steel plate free of cost.	MT	14		
43	DELETED				
SUB-TOTAL (PART-1A)					
PART-1B (ELECTRICAL/ ELEVATOR WORKS ETC. BIDDER TO QUOTE RATES FOR ERECTION, COMMISSIONING ONLY).					
44.0	415V, 200A, 50 KA for 0.25 sec, 4 wire AC Distribution Board with 1No. incomer (SFU) & 9 nos. of 100A (TPN) outgoing complete in all respects	1	SET		
45.0	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 incomers with auto changeover facility using contacts and 6 nos 100A SFU (TPN) outgoings complete in all respects	1	SET		
46.0	Normal AC lighting panel outdoor type with degree of protection IP 55 with one no 100A SFU (TPN) Incomer, 18 outgoing (16A SP MCBs) complete in all respects.	3	SETS		
47.0	Emergency lighting panel outdoor type with degree of protection IP 55 with one no of 100A TPN/SFU incomer and 12 outgoing (16A, SP MCBs) complete in all respects.	3	SETS		
48.0	Aviation lighting panel outdoor type with degree of protection IP 55 with one no 100A SFU (TPN) incomer, 8 outgoing (20A SP MCBs) complete in all respects.	1	SET		
49.0	Aviation obstruction lights.				
49.1	GEC Cat. No ZA750(L) NEON	12	NO		
49.2	High Intensity Flashing White Light having intensity>2000 candles & flashing frequency 40-60/min	12	NO		
50.0	Flood light with 250W HPSV lamps with all controlgears & accessories etc complete in all respects.	6	NO		
50.1	Well glass type luminaries with 70W/HPSV lamp with all controlgears & accessories etc complete in all respects	100	NO		

SL NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
50.2	Well glass type luminaries with 150W/HPSV lamp with all controlgears & accessories etc complete in all respects.	70	NO		
51.0	63 A welding switch socket with plug & other Mounting accessories etc complete in all respects.	9	NO		
52.0	3 pin, 1 ph, 240V, 15 A power socketscomplete with plug switches etc.	10	NO		
53.0	Al conductor, PVC insulated, armoured, PVC outer sheath, FRLS type 1100V grade conforming to IS-1554 Part I.				
53.1	3½ C x 95mm2 Al for connection between ACDB/ELDB/ welding sockets.	1400	RM		
53.2	3½ Cx35mm2 Al for lighting panel incoming supply.	1000	RM		
53.3	3½ C/ 4 Cx16mm2 Al for lighting panel incoming supply.	1600	RM		
54.0	PVC insulated 650/1100V grade stranded Cu conductor lighting wires conforming to IS-694.				
54.1	2.5 mm2.	3000	RM		
54.2	4.0 mm2.	9000	RM		
55.0	GI conduit 25mm dia with junction boxes, pull boxes & accessories etc complete in all respects.	7000	RM		
55.1	Lightning protection air terminal.	25	RM		
56.0	Earthing materials etc, complete as per drawings & specifications.				
56.1	Above ground earthing system.	1500	RM		
56.2	Laying of earthing mats/rods including transportation from yard stores, loading, unloading, cutting to length, welding etc. complete as per specification and as directed by Engineer-in-charge. (BHEL shall supply earth mat rod free of cost as per SCC)	3	MT		
57.0	Telephone socket with junction box etc., complete as per drawings and specifications.	10	NO		
58.0	Telephone hand sets etc, complete as per drawings and specifications.	10	NO		
59.0	Telephone cables etc, complete as per drawings and specifications.				
60.0	24 pairs.	150	RM		
60.1	4 pairs.	300	RM		

SL NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
60.2	GS cable trays including cover, cabling material, accessories etc, complete as per drawings & specifications.				
61.0	600mm wide.	150	RM		
61.1	300mm wide.	150	RM		
61.2	150mm wide.	100	RM		
61.3	Aviation light distribution board complete in all respects.	3	NO		
62.0	Lumpsum price for E&C of stack elevator - climb 275 m internal with all accessories & associated steel work complete as per specification.	1	SET		
SUB-TOTAL (PART-1B)					
TOTAL PART 1 OF SCH 9-BOK-SERVICE (PART-1A+PART-1B)					
63.0	For items not covered above, quote % above or below the CPWD schedule (DSR-2002).				
63.1	Rate of complete item.				
63.2	Rate of supply of materials at site only.				
63.3	Rate for execution complete excluding supply of materials.				

**VOLUME IIIA , REV 01 (PRICE SCHEDULE)
SCH-10 {PART-2-BOKARO 'A' }**

Construction of 275 meter high RCC single flue steel lined chimney including supply & installation of stack elevator & electrical items for 1x500 MW unit # 1 Bokaro 'A' TPP, (JHARKHAND).

TENDER NO - PSER:SCT:BKM-C1014:09

CONSTRUCTION OF CHIMNEY (SUPPLY)

SL NO	DESCRIPTION	QUANTITY	UNIT RATE (Rs)					AMOUNT(Rs)					
			BASIC	ST (as per tender provision, if any)	VAT	FREIGHT	TOTAL	BASIC	ST (as per tender provision, if any)	VAT	FREIGHT	TOTAL	
1.0	415V, 200A, 50 KA for 0.25 sec, 4 wire AC Distribution Board with 1No. incomer (SFU) & 9 nos. of 100A (TPN) outgoing complete in all respects	1 SET											
2.0	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 incomers with auto changeover facility using contacts and 6 nos 100A SFU (TPN) outgoings complete in all respects	1 SET											
3.0	Normal AC lighting panel outdoor type with degree of protection IP 55 with one no 100A SFU (TPN) Incomer, 18 outgoing (16A SP MCBs) complete in all respects.	3 SETS											
4.0	Emergency lighting panel outdoor type with degree of protection IP 55 with one no of 100A TPN/SFU incomer and 12 outgoings (16A, SP MCBs) complete in all respects.	3 SETS											

SL NO	DESCRIPTION	QUANTITY		UNIT RATE (Rs)					AMOUNT(Rs)					
				BASIC	ST (as per tender provision, if any)	VAT	FREIGHT	TOTAL	BASIC	ST (as per tender provision, if any)	VAT	FREIGHT	TOTAL	
5.0	Aviation lighting panel outdoor type with degree of protection IP 55 with one no 100A SFU (TPN) incomer, 8 outgoing (20A SP MCBs) complete in all respects.	1	SET											
6.0	Aviation obstruction lights.													
6.1	GEC Cat. No ZA750(L) NEON	12	NO											
6.2	High Intensity Flashing White Light having intensity>2000 candles & flashing frequency 40-60/min	12	NO											
7.0	Flood light with 250W HPSV lamps with all controlgears & accessories etc complete in all respects.	6	NO											
8.1	Well glass type luminaries with 70W/HPSV lamp with all controlgears & accessories etc complete in all respects	100	NO											
8.2	Well glass type luminaries with 150W/HPSV lamp with all controlgears & accessories etc complete in all respects.	70	NO											
9.0	63 A welding switch socket with plug & other Mounting accessories etc complete in all respects.	9	NO											
10.0	3 pin, 1 ph, 240V, 15 A power sockets complete with plug switches etc.	10	NO											
11.0	Al conductor, PVC insulated, armoured, PVC outer sheath, FRLS type 1100V grade conforming to IS-1554 Part I.													
11.1	3½ C x 95mm2 Al for connection between ACDB/ELDB/ welding sockets.	1400	RM											
11.2	3½ Cx35mm2 Al for lighting panel incoming supply.	1000	RM											

SL NO	DESCRIPTION	QUANTITY		UNIT RATE (Rs)					AMOUNT(Rs)					
				BASIC	ST (as per tender provision, if any)	VAT	FREIGHT	TOTAL	BASIC	ST (as per tender provision, if any)	VAT	FREIGHT	TOTAL	
11.3	3½ C/ 4 Cx16mm ² Al for lighting panel incoming supply.	1600	RM											
12.0	PVC insulated 650/1100V grade stranded Cu conductor lighting wires conforming to IS-694.													
12.1	2.5 mm ² .	3000	RM											
12.2	4.0 mm ² .	9000	RM											
13.0	GI conduit 25mm dia with junction boxes, pull boxes & accessories etc complete in all respects.	7000	RM											
14.0	Lightning protection air terminal.	25	RM											
15.0	Earthing materials etc, complete as per drawings & specifications.													
15.1	Above ground earthing system.	1500	RM											
16.0	Telephone socket with junction box etc., complete as per drawings and specifications.	10	NO											
17.0	Telephone hand sets etc, complete as per drawings and specifications.	10	NO											
18.0	Telephone cables etc, complete as per drawings and specifications.													
18.1	24 pairs.	150	RM											
18.2	4 pairs.	300	RM											
19.0	GS cable trays including cover, cabling material, accessories etc, complete as per drawings & specifications.													

SL NO	DESCRIPTION	QUANTITY		UNIT RATE (Rs)					AMOUNT(Rs)					
				BASIC	ST (as per tender provision, if any)	VAT	FREIGHT	TOTAL	BASIC	ST (as per tender provision, if any)	VAT	FREIGHT	TOTAL	
19.1	600mm wide.	150	RM											
19.2	300mm wide.	150	RM											
19.3	150mm wide.	100	RM											
20.0	Aviation light distribution board complete in all respects.	3	NO											
21.0	Lumpsum price for design, engineering, manufacturing & supply (inclusive of all taxes and duties - FOR site delivery basis) of one number stack elevator - climb 275 m internal with all accessories & associated steel work complete as per specification.	1	SET											
TOTAL(PART 2) OF SCH-10- BOK-SUPPLY														

NOTE:

1.0 Bidder to note that the TOTAL (PART 2) OF SCH-10- BOK-SUPPLY price as above should match with SI.No.2 of SCH-4