



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

(भारत सरकार का उपक्रम)

**BHARAT HEAVY ELECTRICALS LIMITED**

(A Govt. of India Undertaking)

**TCN - 02**

Ref: PSER:SCT:MJA-C756:TCN-02

Date: 25-06-2007

Sub	Tender change notice (TCN) 02.	
Job	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 Mejia-B Thermal Power Station, West Bengal.	
Ref	1.0	Tender no PSER:SCT:MJA-C756:07.
	2.0	BHEL's NIT vide reference no PSER:SCT:MJA-C756:0909, dated 23-05-07.
	3.0	BHEL's TCN-01, vide reference no PSER:SCT:MJA-C756:TCN-01, dated 13-06-07.

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

- 1.0 Bidder shall refer to the attached chimney GA drawing (drawing no PE-DG-270-620-C001, Rev 0) for tender purpose.
- 2.0 Bidder shall refer to clarifications/ revision to tender terms as per enclosed Annexure-A.
- 3.0 Price schedule has been revised, superseding previous version. Bidder shall quote as per attached Volume-IIIA, Price Schedule, Rev-1 & Volume-IIIB, Price Schedule, Rev-1 only.
- 4.0 No deviation certificate has been revised and the same is attached. Bidder to submit 'No deviation certificate' as per attached format only.
- 5.0 All other terms & conditions shall remain unchanged.

Thanking you,

Yours faithfully,  
for BHARAT HEAVY ELECTRICALS LTD

DGM (SCT)

Encl

- 1.0 Chimney GA drawing, drawing no PE-DG-270-620-C001, Rev 0.
- 2.0 Clarification/ revision as per Annexure-A.
- 3.0 Volume-IIIA, Price Schedule, Rev-1 and Volume-IIIB, Price Schedule, Rev-1.
- 4.0 Revised format of 'No deviation certificate' as per Annexure-2.

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

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

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**CLARIFICATION ON QUERIES AND ADDITIONAL CLARIFICATIONS**  
**275 MTR STEEL FLUE RCC CHIMNEY FOR 2x500 MW UNIT # 1 & 2 AT MEJIA-B TPS**  
**TENDER NO - PSER:SCT:MJA-C756:07**

SL NO	CLAUSE NO, VOLUME	QUERY/ POINT	CLARIFICATION BY BHEL
<b>A. VOLUME-ID</b>			
A.1	33.1	<u>'Interest bearing mobilisation advance of 5 % (five percent) of the contract price'.</u>  To consider 10 % (ten percent) mobilisation advance in three stages, as lot of new equipments are to be purchased and mobilized for this chimney.	Shall be as per tender.
A.2	33.3.1	<u>Submission of BG equivalent to 1.2 times.....</u>  Equivalent amount of BG is to be submitted not 1.2 times amount.	Shall be as per tender.
A.4	45.3	<u>50 % of the value of such steel as worked out as per BHEL's procurement rates shall be furnished by the contractor in form of BG.</u>  As this steel will be ultimately concerned in works after galvanizing, we will submit Indemnity Bond of the same amount or 1.2 times more as deemed fit, not BG.	Shall be as per tender.
A.5	18.1	Cement, reinforcement, MS round for earthing, structural steel will be issued free of cost by BHEL for use in the work covered in this contract from it's project premises or any other issue point (within a distance of approx 5000 mts from work premises) as will be specified by the Engineer. Receipt of material from store area loading the same for transportation and transporting/unloading the same to the work site will be in the scope of contractor.	This clause stands modified as under.  Cement, reinforcement, MS round for earthing & others, structural steel & SS plate will be issued free of cost by BHEL for use in the work covered in this contract from it's project premises or any other issue point (within a distance of approx 5000 mts from work premises) as will be specified by the Engineer. Receipt of material from store area loading the same for transportation and transporting/unloading the same to the work site will be in the scope of contractor.
A.6	19.2.1.3	Stainless steel liner for bunker - Weighment basis (unit – MT).	This clause stands modified as under.  Stainless steel plate - Weighment basis (unit – MT).
<b>B. VOLUME-II</b>			
B.1	Nil	Basic tender drawing for 275 M twin flue chimney has not been issued alongwith the tender, drawing no PE-DG-270-626-C001- GA of chimney.	Drawing attached.
B.2	Sec D-1, Cl 3.03.08 for dewatering & Vol-III, Item no 3.0	<u>Trench dewatered and/or lower the sub-soil water level is 300 mm below level the foundation.</u>  To main water table by 300 below foundation level till back-filling is not required. However, open dewatering operation will be done.	Refer revised price schedule.
B.3	Nil	Water table and Soil Strata are to be mentioned to ascertain soil condition.	Item to be executed as per tender and price schedule.
B.4	3.03.09 & Vol-III, item no 1.1 (Part-A)	<u>Excavation including providing shoring, strutting, sheeting, bracing etc.</u>  Please specify whether sheeting are to be done throughout considering as 'Mandatory Item' in excavation.	Work to be carried out as per tender.

SL NO	CLAUSE NO, VOLUME	QUERY/ POINT	CLARIFICATION BY BHEL
B.5	4.01.00	<p>..... <u>Undercuts have been set right and all our excavation filled back to required levels</u>  ..... <u>by filling 1:4:8 proportion.</u></p> <p>In sloping surface in case of excavation placement of concrete is not practically possible, as it may not prevent the slip. Instead of this provision of berm at every 2M height (except hardrock portion) is feasible. Excavation scheme will be submitted for approval which is to be considered for payment.</p>	Work to be carried out as per tender.
B.6	Sec D, sub-sec D-V, cl 3.01.01, pt 2	<p><u>Care must be taken to prevent twist..... A through check on this aspect must be kept at every 15 minutes.</u></p> <p>Checking is practically done for twist &amp; tilt after completion of every 500mm concreting in shell as by making checks at every 15 minutes interval may hamper the work.</p>	Work to be carried out as per tender.
B.7	3.13.01	<p><u>Construction joint is allowed in segmental concrete.</u></p> <p>Whether shuttering is paid separately.</p>	Work to be carried out as per tender. Payment will be released as per drawing and respective item rate.
B.8	3.03.06	<p><u>'Epoxy paint' shall be adopted.</u></p> <p>This shall be periodically cleaned and to be well lubricated by grease oil at contract face of shutter.</p>	Initially epoxy paint to be applied, after which to be periodically cleaned & lubricated.
B.9	Nil	Vendor list for expansion compensator & others may be furnished.	Bidder to propose vendor for approval of BHEL prior to execution of this item.
<b>C. VOLUME-III</b>			
C.1	Part-1B	<p><u>Electrical works, Part-1B (electrical/ mechanical works)</u></p> <p>With reference to the discussion held on 6.6.07 at your office, you are requested to quantify the "LOT" items so that we can offer our competitive rates.</p>	Refer revised price schedule.
C.2	40.0, Part-1A	<p><u>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.</u></p> <p>Please confirm that SS 316L plates etc will be provided by BHEL free of cost.</p>	BHEL shall provide SS plate free of cost for this job. Refer revised price schedule.
<b>Enclosures</b>			
1.0	GA drawing of chimney, drawing no PE-DG-270-620-C001, Rev 0.		

<b>VOLUME-III PRICE SCHEDULE, REV-1</b>	
<b>Construction of 275 meter high RCC twin flue steel lined chimney including supply &amp; installation of stack elevator &amp; electrical items for 2x500 MW unit # 1 &amp; 2 at Mejia-B TPS, WB.</b>	
<b>TENDER NO - PSER:SCT:MJA-C756:07</b>	
<b>PREAMBLE</b>	
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 English language.
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  
(SUMMARY OF PART-1 AND PART-2)  
PRICE SCHEDULE, REV-1**

**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 Mejia-B TPS, WB.**

**TENDER NO - PSER:SCT:MJA-C756:07.**

<b>SL NO</b>	<b>DESCRIPTION</b>	<b>AMOUNT (Rs)</b>
1.0	TOTAL PRICE FOR PART-1.	
1.1	TOTAL PRICE FOR PART-2.	
<b>GRAND TOTAL</b>		
<b>NOTE</b>		
1.0	Bidder to note that the GRAND TOTAL price as above shall be considered for evaluation and shall be complete in all respects as per tender provision.	

**VOLUME-III A**  
**(PART-1 - CIVIL, STRUCTURAL, ERECTION & COMMISSIONING WORK)**  
**PRICE SCHEDULE, REV-1**

**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 Meja-B TPS, WB.**

**TENDER NO - PSER:SCT:MJA-C756:07.**

SL NO	DESCRIPTION	QUANTITY	UNIT RATE (Rs)	AMOUNT (Rs)
<b>PART-1A (CIVIL &amp; STRUCTURAL WORK ETC)</b>				
1.0	EARTH WORK IN EXCAVATION, BACKFILLING AND DISPOSAL AS PER SPECIFICATION AND DRAWINGS			
1.1	Earth work in excavation <b>upto 2m depth</b> below ground level for foundation, trenches, pipe lines, storm water drains, RCC wall, ducts, roads, embankment etc including setting out, clearing & grubbing, removal of debris, dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and ramming the bottom, stacking/ disposal of surplus excavated material within a lead of 1.0 km etc complete for all types of soils including ash, laterite, morrum, weathered rock, decomposed rock, soft rock etc which can be excavated by means of crow bar, pick axe and other mechanical means etc but does not require chiselling or blasting.	5000.0	CUM	
1.2	Earth work in excavation <b>upto 2m depth</b> below ground level for foundation, trenches, pipe lines, storm water drains, RCC wall, ducts, roads, embankment etc including setting out, clearing & grubbing, removal of debris, dewatering, if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and stacking/ disposal of surplus excavated material within a lead of 1.0 km etc complete for hard rock requiring blasting/ controlled blasting and/or chiselling, wedging, line drilling, pre shearing or any other means including supply, storage, handling of blasting materials etc without damaging the existing structures and as approved by engineer.			
1.2.1	By means of controlled blasting including provision of sensor to assess the impact of blast on the adjacent structures.	50.0	CUM	
1.2.2	By means of controlled blasting excluding provision of sensor.	200.0	CUM	
1.2.3	In hard rock (blasting Prohibited) by means of chiselling, wedging etc.	50.0	CUM	
1.3	Earth work in excavation for depth exceeding <b>2.0m but not exceeding 4.0m</b> below ground level for foundation, trenches, pipe lines, storm water drains, RCC wall, ducts, roads, embankment etc including dewatering if required, strutting, shoring/ sheet piling if required, dressing the sides, levelling to grade and ramming the bottom, stacking/ disposal of surplus excavated material within a lead of 1.0 km etc complete for all types of soils including ash, laterite, morrum, weathered rock, decomposed rock, soft rock etc which can be excavated by means of crow bar, pick axe and other mechanical means etc but does not require chiselling or blasting.	4000.0	CUM	
1.4	Earth work in excavation for depth exceeding <b>2.0m but not exceeding 4.0m</b> below ground level for foundation, trenches, pipe lines, storm water drains, RCC wall, ducts, roads, embankment etc including dewatering if required, strutting, shoring/ sheet piling if required, dressing the sides, levelling to grade and stacking/ disposal of surplus excavated material within a lead of 1.0 km etc complete for hard rock requiring blasting / controlled blasting and/ or chiselling, wedging, line drilling, pre shearing or any other means including supply, storage, handling of blasting materials etc without damaging the existing structures and as approved by engineer.			
1.4.1	By means of controlled blasting including provision of sensor to assess the impact of blast on the adjacent structures.	50.0	CUM	
1.4.2	By means of controlled blasting excluding provision of sensor.	200.0	CUM	
1.4.3	In hard rock (blasting Prohibited) by means of chiselling, wedging etc.	50.0	CUM	

SL NO	DESCRIPTION	QUANTITY	UNIT RATE (Rs)	AMOUNT (Rs)
1.5	Earth work in excavation for depth exceeding 4.0m but not exceeding 7.0m below ground level for foundation, trenches, pipe lines, storm water drains, RCC wall, ducts, roads, embankment etc including dewatering if required, strutting, shoring/ sheet piling if required, dressing the sides, levelling to grade and ramming the bottom, stacking/ disposal of surplus excavated material within a lead of 1.0 km etc complete for all types of soils including ash, laterite, morrum, weathered rock, decomposed rock, soft rock etc which can be excavated by means of crow bar, pick axe and other mechanical means etc but does not require chiselling or blasting.	5000.0	CUM	
1.6	Earth work in excavation for depth exceeding 4.0m but not exceeding 7.0m below ground level for foundation, trenches, pipe lines, storm water drains, RCC wall, ducts, roads, embankment etc including dewatering if required, strutting, shoring/ sheet piling if required, dressing the sides, levelling to grade and stacking/ disposal of surplus excavated material within a lead of 1.0 km etc complete for hard rock requiring blasting/ controlled blasting and/ or chiselling, wedging, line drilling, pre shearing or any other means including supply, storage, handling of blasting materials etc without damaging the existing structures and as approved by engineer.			
1.6.1	By means of controlled blasting including provision of sensor to assess the impact of blast on the adjacent structures.	50.0	CUM	
1.6.2	By means of controlled blasting excluding provision of sensor.	1000.0	CUM	
1.6.3	In hard rock (blasting prohibited) by means of chiselling, wedging etc.	50.0	CUM	
1.7	Earth work in excavation for depth exceeding 7.0m but not exceeding 10.0m below ground level for foundation, trenches, pipe lines, storm water drains, RCC wall, ducts, roads, embankment etc including dewatering if required, strutting, shoring/ sheet piling if required, dressing the sides, levelling to grade and ramming the bottom, stacking/ disposal of surplus excavated material within a lead of 1.0 km etc complete for all types of soils including ash, laterite, morrum, weathered rock, decomposed rock, soft rock etc which can be excavated by means of crow bar, pick axe and other mechanical means etc but does not require chiselling or blasting.	1500.0	CUM	
1.8	Earth work in excavation for depth exceeding 7.0m but not exceeding 10.0m below ground level for foundation, trenches, pipe lines, storm water drains, RCC wall, ducts, roads, embankment etc including dewatering if required, strutting, shoring/ sheet piling if required, dressing the sides, levelling to grade and stacking/ disposal of surplus excavated material within a lead of 1.0 km etc complete for hard rock requiring blasting/ controlled blasting and/ or chiselling, wedging, line drilling, pre shearing or any other means including supply, storage, handling of blasting materials etc without damaging the existing structures and as approved by engineer.			
1.8.1	By means of controlled blasting including provision of sensor to assess the impact of blast on the adjacent structures.	100.0	CUM	
1.8.2	By means of controlled blasting excluding provision of sensor.	1000.0	CUM	
1.8.3	In hard rock (blasting prohibited) by means of chiselling, wedging etc.	200.0	CUM	
2.0	Extra over item 1.1 to 1.8 above respectively for carriage of all types of excavated materials beyond the initial lead of 1.0 km dumping, levelling the dumped soil/ materials and levelling the area from where the material is transported, complete with all lifts as specified and directed by engineer for the following leads.			
2.1	Carriage beyond 1.0 km and not exceeding 2.0 km.	10000.0	CUM	
2.2	Carriage beyond 2.0 km and not exceeding 5.0 km.	5000.0	CUM	
2.3	Carriage beyond 5.0 km and not exceeding 10.0 km.	3000.0	CUM	

SL NO	DESCRIPTION	QUANTITY	UNIT RATE (Rs)	AMOUNT (Rs)
3.0	Filling using selected excavated materials in trenches, plinths, sides of foundations and other underground structures, pipes, area levelling etc in layers not exceeding 250 mm thickness with all lead and all 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 engineer to achieve the following densities.	8500.0	CUM	
3.1	95% Standard Proctor density.			
4.0	Supplying & 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.	2500.0	CUM	
5.0	Providing & 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 shall be provided by BHEL free of cost as per SCC).	400.0	CUM	
6.0	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, plasticiser, 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 shall be provided by BHEL free of cost as per SCC).			
6.1	For works below ground level			
6.1.1	Grade M-25 (foundations, etc)	9000.0	CUM	
6.2	For works above ground level			
6.2.1	Grade M-25 (grade level slab)	80.0	CUM	
8.2.2	Grade M-30 for chimney shell, corbels and other other shell attachments.	11500.0	CUM	
8.2.3	Grade M-30 for chimney shell, corbels and external platforms and other shell attachments.	600.0	CUM	
8.2.4	Grade M-25 for all other components of the super structure, roof slab, mini shells, beams, columns wall etc.	60.0	CUM	
9.0	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, 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 (reinforcement steel shall be provided by BHEL free of cost as per SCC).			
9.1	For works below ground level			
9.1.1	High strength deformed bars	900.0	MT	
9.2	For works above ground level			
9.2.1	Mild steel reinforcement bars	25.0	MT	
9.2.2	High strength deformed bars	1200.0	MT	

SL NO	DESCRIPTION	QUANTITY	UNIT RATE (Rs)	AMOUNT (Rs)
10.0	Providing & fixing formwork of approved quality for cast-in-situ, plain or reinforced concrete works of any type & section (including curved surfaces & chimney shell) for all elevations, including labour, materials, equipment, waste of forms, shoring, strutting, scaffolding, staging, tying, nailing, caulking, bolting etc & removal of form work & staging etc all complete as per spec, drawings & instructions of the Engineer.			
10.1	For works below ground level	2300.0	SQM	
10.2	For works above ground level			
10.2.1	Inner and outer faces of wind shield with slip form shuttering	38500.0	SQM	
10.2.2	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.	1200.0	SQM	
11.0	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.	500.0	SQM	
12.0	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.	50.0	SQM	
13.0	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.	75.0	SQM	
14.0	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.	200.0	KG	
15.0	Preparing detailed fabrication drawings and after approval by the Engineer, supplying, fabricating, erecting & 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 (structural steel shall be provided by BHEL free of cost as per SCC).	7.0	MT	
16.0	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 (structural steel shall be provided by BHEL free of cost as per SCC).	70.0	MT	
17.0	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, drillingl, 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 (structural steel shall be provided by BHEL free of cost as per SCC).	500.0	MT	

SL NO	DESCRIPTION	QUANTITY	UNIT	UNIT RATE (Rs)	AMOUNT (Rs)
18.0	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 (structural steel shall be provided by BHEL free of cost as per SCC).	150.0	MT		
19.0	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 (structural steel shall be provided by BHEL free of cost as per SCC).	1150.0	MT		
19.1	Preparing detailed fabrication drawings & after approval by the Engineer, providing, fabricating and erecting, at all levels, stainless steel (grade 316L 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 (stainless steel plates shall be provided by BHEL free of cost as per SCC).	30.0	MT		
20.0	Preparing detailed fabrication drawings & after approval by Engineer, providing, fabricating & installing at all levels, stainless plate (including stainless steel screws and fasteners) of grade AISI 316L and lead sheets beams & over the mild steel in the platform beam bearing, flue supports bearings, flue restraints brackets/ buffers etc. Including 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 & polishing the contact surfaces of stainless steel, coating polished surfaces with silicone grease, etc. complete as per drawings & specifications.				
20.1	Stainless steel components (only SS plate shall be provided by BHEL free of cost)	1.4	MT		
20.2	Lead Sheets (all materials to be provided by vendor)	150.0	KG		
21.0	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.	105.0	SQM		
22.0	Supplying "Fabricated Ready to Install" spare expansion compensators alongwith bolster including the cost of accessories, transporting, proper packaging (for several years of storage), and delivery to site store complete in all respects as per drawings and specification.	21.0	SQM		
23.0	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.	50.0	CUM		
24.0	Supplying, fabricating & installing, at all levels mild steel circumferen- tial reinforcing bands around the brick liners at all elevations including the cost of all labour, transportation, materials & equipments, lifting to all heights, setting in place, a/r mortar fill behind bands, cutting, bending, drilling, grinding, bolts and bolting, priming, finish painting, etc. complete as per drawings and specification	2.0	MT		

SL NO	DESCRIPTION	QUANTITY	UNIT RATE (Rs)	AMOUNT (Rs)
25.0	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.			
25.1	25 mm (diameter) at expansion joints between brick lining segments	100.0	RM	
25.2	12 mm (diameter) at expansion joints between brick lining segments	350.0	RM	
26.0	Providing, fabricating and laying in position asbestos mill boards, over the mini shells below the cast iron cap segments, in between the cap segments and wherever as directed by the engineer, including the cost of all labours, material and equipment, cutting, drilling, etc., complete as per drawings and specifications.			
26.1	25 mm thick asbestos mill boards	7.0	SQM	
26.2	3 mm thick asbestos mill boards	5.0	SQM	
27.0	Providing & installing, at all levels, resin bonded glass wool insulation slabs of density not less than 64 kg/m <sup>3</sup> or resin bonded rock wool insulation slabs of density not less than 100 kg/ cum 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.	12000.0	SQM	
28.0	Providing & packing, at all levels, loose glass wool insulation to a density not less than 64 kg/m <sup>3</sup> or loose rock wool insulation to a density not less than 100 kg/cum 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 & specification.	25.0	CUM	
29.0	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.	17000.0	SQM	
30.0	Providing and painting, at all levels, the external surfaces of chimney shell and wherever as directed by the Engineer, with synthetic enamel 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.	16500.0	SQM	
31.0	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.	150.0	SQM	
32.0	Providing, fabricating & installing at various locations & 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	UNIT	UNIT RATE (Rs)	AMOUNT (Rs)
32.1	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 vendor)	2.0	MT		
32.2	Tubular hand railing for stair case and internal and external platforms (All materials are to be supplied by vendor)	20.0	MT		
33.0	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.	8.0	NO		
34.0	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:				
34.1	150 mm nominal bore cast iron pipes.	55.0	RM		
34.2	150 mm nominal bore medium class galvanised mild steel pipes.	275.0	RM		
35.0	Providing & laying 50 mm thick cement concrete flooring (comprising of 12 mm thick mettalic concrete hardener topping over a 38 mm thick under bed of concrete) over grade level slab inside chimney, including cost of all labour, material & equipment, etc complete as required for preparation of base, laying underbed & topping, finishing, rounding of edges, corners & junctions, curing, testing, etc complete as per drawing & specifications.	550.0	SQM		
36.0	Providing & 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 & mechanisms, fittings & 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.	1.0	NO		
37.0	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.	7.0	NO		
38.0	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 embedded in concrete, primer and finish painting of exposed components, etc. complete as per drawing and specifications. (all steel material to be supplied by vendor).	25.0	MT		
39.0	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. (Stainless steel plate shall be supplied by BHEL free of cost).	22.0	MT		
40.0	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 specifications.	1200.0	SQM		
<b>SUB-TOTAL (PART-1A)</b>					
<b>PART-1B (ELECTRICAL/ ELEVATOR WORKS ETC. BIDDER TO QUOTE RATES FOR ERECTION, COMMISSIONING ONLY).</b>					
42.0	415V, 200A, 50 KA for 0.25 sec, 4 wire AC distribution board with 1 no incomer (SFU) & 9 nos of 100A (TPN) outgoing complete in all respects.	1.0	NO		

SL NO	DESCRIPTION	QUANTITY	UNIT RATE (Rs)	AMOUNT (Rs)
43.0	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	1.0	NO	
44.0	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.	3.0	NO	
45.0	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.	3.0	NO	
46.0	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.	1.0	NO	
47.0	Aviation obstruction lights.			
47.1	Low intensity Type-B as per ICAO, LED type with 20 years maintenance free life, including all accessories, controller etc complete in all respects.	12.0	NO	
47.2	Medium intensity Type-B as per ICAO, LED type with 20 years maintenance free life, including all accessories, controller, flasher etc complete in all respects.	12.0	NO	
48.0	Flood light with 250W HPSV lamps with all controlgears & accessories etc complete in all respects.	6.0	NO	
48.1	Well glass type luminaries with 70W/HPSV lamp with all controlgears & accessories etc complete in all respects.	100.0	NO	
48.2	Well glass type luminaries with 150W/HPSV lamp with all controlgears & accessories etc complete in all respects.	70.0	NO	
49.0	63Amp welding switch socket with plug & other Mounting accessories etc complete in all respects.	9.0	NO	
50.0	3 pin, 1 ph, 240V,15Amp. Power socketscomplete with plug switches etc.	10.0	NO	
51.0	Al conductor, PVC insulated, armoured, PVC outer sheath, FRLS type 1100V grade conforming to IS-1554 Part I.			
51.1	3½ C x95mm <sup>2</sup> Al for connection between ACDB/ELDB/ welding sockets.	1400.0	RM	
51.2	3½ Cx35mm <sup>2</sup> Al for lighting panel incoming supply.	1000.0	RM	
51.3	3½ C / 4 Cx16mm <sup>2</sup> Al for lighting panel incoming supply.	1600.0	RM	
52.0	PVC insulated 650/1100V grade stranded Cu Conductor lighting wires conforming to IS-694.			
52.1	2.5 mm <sup>2</sup> .	3000.0	RM	
52.2	4.0 mm <sup>2</sup> .	9000.0	RM	
53.0	GI conduit 25mm dia with junction boxes, pull boxes & accessories etc complete in all respects.	7000.0	RM	
53.1	Lightning protection air terminal.	50.0	RM	
53.2	Earthing system complete as per drawings and specifications.			
54.0	Below ground earthing system.	4.0	MT	
55.0	Above ground earthing system.	4500.0	RM	
56.0	Telephone socket with junction box etc, complete as per drawings and specifications.	10.0	NO	
57.0	Telephone hand sets etc, complete as per drawings and specifications.	10.0	NO	
58.0	Telephone cables etc, complete as per drawings and specifications.			
58.1	24 pairs.	150.0	RM	
58.2	4 pairs.	300.0	RM	
59.0	GS cable trays including cover, cabling material, accessories etc, complete as per drawings and specifications.			

SL NO	DESCRIPTION	QUANTITY	UNIT RATE (Rs)	AMOUNT (Rs)
59.1	600mm wide.	400.0	RM	
59.2	300mm wide.	400.0	RM	
59.3	150mm wide.	300.0	RM	
60.0	Aviation light distribution board complete in all respects.	3.0	NO	
61.0	Stack elevator - climb 275 m internal as per technical specification.	1.0	SET	
<b>SUB-TOTAL (PART-1B)</b>				
<b>TOTAL (PART-1 A + PART-1 B)</b>				
62.0	For items not covered above, quote % above or below the CPWD schedule (DSR-2002).			
62.1	Rate of complete item.			
62.2	Rate of supply of materials at site only.			
62.3	Rate for execution complete excluding supply of materials.			

**VOLUME-III A**  
**(PART-2 - SUPPLY OF ELECTRICAL ITEMS, ELEVATORS ETC)**  
**PRICE SCHEDULE, REV-1**

**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 Mejia-B TPS, WB.**

**TENDER NO - PSER:SCT:MJA-C756:07.**

SL NO	DESCRIPTION	QUANTITY	UNIT RATE (Rs)					AMOUNT(Rs)					
			BASIC	ST	ED	OTHERS	TOTAL	BASIC	ST	ED	OTHERS	TOTAL	
				(For self manufactured items only)					(For self manufactured items only)				
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 NO											
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) outgoing complete in all respects	1 NO											
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 NO											
4.0	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 NO											
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 NO											
6.0	Aviation obstruction lights.												
6.1	Low intensity Type-B as per ICAO, LED type with 20 years maintenance free life, including all accessories, controller etc complete in all respects.	12 NO											
6.2	Medium intensity Type-B as per ICAO, LED type with 20 years maintenance free life, including all accessories, controller, flasher etc complete in all respects.	12 NO											
7.0	Flood light with 250W HPSV lamps with all controlgears & accessories etc complete in all respects.	6 NO											

SL NO	DESCRIPTION	QUANTITY		UNIT RATE (Rs)					AMOUNT(Rs)					
				BASIC	ST	ED	OTHERS	TOTAL	BASIC	ST	ED	OTHERS	TOTAL	
					(For self manufactured items only)					(For self manufactured items only)				
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 socketscomplete 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 Cx95mm <sup>2</sup> Al for connection between ACDB/ELDB/ welding sockets.	1400	RM											
11.2	3½ Cx35mm <sup>2</sup> Al for lighting panel incoming supply.	1000	RM											
11.3	3½ C/ 4 Cx16mm <sup>2</sup> 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 <sup>2</sup> .	3000	RM											
12.2	4.0 mm <sup>2</sup> .	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.	4500	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											

SL NO	DESCRIPTION	QUANTITY		UNIT RATE (Rs)					AMOUNT(Rs)				
				BASIC	ST	ED	OTHERS	TOTAL	BASIC	ST	ED	OTHERS	TOTAL
					(For self manufactured items only)					(For self manufactured items only)			
19.0	GS cable trays including cover, cabling material, accessories etc, complete as per drawings & specifications.												
19.1	600mm wide.	400	RM										
19.2	300mm wide.	400	RM										
19.3	150mm wide.	300	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										
<b>TOTAL (PART-2)</b>													

<b>VOLUME-IIIB PRICE SCHEDULE, REV-1</b>	
<b>Construction of 275 meter high RCC twin flue steel lined chimney including supply &amp; installation of stack elevator &amp; electrical items for 2x500 MW unit # 1 &amp; 2 at Mejia-B TPS, WB.</b>	
<b>TENDER NO - PSER:SCT:MJA-C756:07</b>	
<b>PREAMBLE</b>	
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 English language.
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.

<b>VOLUME-IIIIB (SUMMARY OF PART-1 AND PART-2) PRICE SCHEDULE, REV-1</b>		
<b>Construction of 275 meter high RCC twin flue steel lined chimney including supply &amp; installation of stack elevator &amp; electrical items for 2x500 MW unit # 1 &amp; 2 at Mejia-B TPS, WB.</b>		
<b>TENDER NO - PSER:SCT:MJA-C756:07.</b>		
<b>SL NO</b>	<b>DESCRIPTION</b>	<b>AMOUNT (Rs)</b>
1.1	TOTAL PRICE FOR PART-1.	
1.2	TOTAL PRICE FOR PART-2.	
<b>GRAND TOTAL</b>		<b>100%</b>
<b>NOTE</b>		
1.0	Bidder to fill only percent against each items out of total (100%). These percents are to be worked out based on amount works out against each items with respect to total quoted amount. However, bidder shall indicate absolute values, instead of percentages, against item no 62.1, 62.2 & 62.3 in PART-1.	

**VOLUME-IIIB**  
**(PART-1 - CIVIL, STRUCTURAL, ERECTION & COMMISSIONING WORK)**  
**PRICE SCHEDULE, REV-1**

**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 Mejia-B TPS, WB.**

**TENDER NO - PSER:SCT:MJA-C756:07.**

SL NO	DESCRIPTION	QUANTITY	Price in percent (%) of total price for each item (in figures & words)
<b>PART-1A (CIVIL &amp; STRUCTURAL WORK ETC)</b>			
1.0	EARTH WORK IN EXCAVATION, BACKFILLING AND DISPOSAL AS PER SPECIFICATION AND DRAWINGS		
1.1	Earth work in excavation upto 2m depth below ground level for foundation, trenches, pipe lines, storm water drains, RCC wall, ducts, roads, embankment etc including setting out, clearing & grubbing, removal of debris, dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and ramming the bottom, stacking/ disposal of surplus excavated material within a lead of 1.0 km etc complete for all types of soils including ash, laterite, morrum, weathered rock, decomposed rock, soft rock etc which can be excavated by means of crow bar, pick axe and other mechanical means etc but does not require chiselling or blasting.	5000.0	CUM
1.2	Earth work in excavation upto 2m depth below ground level for foundation, trenches, pipe lines, storm water drains, RCC wall, ducts, roads, embankment etc including setting out, clearing & grubbing, removal of debris, dewatering, if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and stacking/ disposal of surplus excavated material within a lead of 1.0 km etc complete for hard rock requiring blasting/ controlled blasting and/or chiselling, wedging, line drilling, pre shearing or any other means including supply, storage, handling of blasting materials etc without damaging the existing structures and as approved by engineer.		
1.2.1	By means of controlled blasting including provision of sensor to assess the impact of blast on the adjacent structures.	50.0	CUM
1.2.2	By means of controlled blasting excluding provision of sensor.	200.0	CUM
1.2.3	In hard rock (blasting Prohibited) by means of chiselling, wedging etc.	50.0	CUM
1.3	Earth work in excavation for depth exceeding 2.0m but not exceeding 4.0m below ground level for foundation, trenches, pipe lines, storm water drains, RCC wall, ducts, roads, embankment etc including dewatering if required, strutting, shoring/ sheet piling if required, dressing the sides, levelling to grade and ramming the bottom, stacking/ disposal of surplus excavated material within a lead of 1.0 km etc complete for all types of soils including ash, laterite, morrum, weathered rock, decomposed rock, soft rock etc which can be excavated by means of crow bar, pick axe and other mechanical means etc but does not require chiselling or blasting.	4000.0	CUM
1.4	Earth work in excavation for depth exceeding 2.0m but not exceeding 4.0m below ground level for foundation, trenches, pipe lines, storm water drains, RCC wall, ducts, roads, embankment etc including dewatering if required, strutting, shoring/ sheet piling if required, dressing the sides, levelling to grade and stacking/ disposal of surplus excavated material within a lead of 1.0 km etc complete for hard rock requiring blasting / controlled blasting and/ or chiselling, wedging, line drilling, pre shearing or any other means including supply, storage, handling of blasting materials etc without damaging the existing structures and as approved by engineer.		
1.4.1	By means of controlled blasting including provision of sensor to assess the impact of blast on the adjacent structures.	50.0	CUM
1.4.2	By means of controlled blasting excluding provision of sensor.	200.0	CUM
1.4.3	In hard rock (blasting Prohibited) by means of chiselling, wedging etc.	50.0	CUM

SL NO	DESCRIPTION	QUANTITY		Price in percent (%) of total price for each item (in figures & words)
1.5	Earth work in excavation for depth exceeding 4.0m but not exceeding 7.0m below ground level for foundation, trenches, pipe lines, storm water drains, RCC wall, ducts, roads, embankment etc including dewatering if required, strutting, shoring/ sheet piling if required, dressing the sides, levelling to grade and ramming the bottom, stacking/ disposal of surplus excavated material within a lead of 1.0 km etc complete for all types of soils including ash, laterite, morrum, weathered rock, decomposed rock, soft rock etc which can be excavated by means of crow bar, pick axe and other mechanical means etc but does not require chiselling or blasting.	5000.0	CUM	
1.6	Earth work in excavation for depth exceeding 4.0m but not exceeding 7.0m below ground level for foundation, trenches, pipe lines, storm water drains, RCC wall, ducts, roads, embankment etc including dewatering if required, strutting, shoring/ sheet piling if required, dressing the sides, levelling to grade and stacking/ disposal of surplus excavated material within a lead of 1.0 km etc complete for hard rock requiring blasting/ controlled blasting and/ or chiselling, wedging, line drilling, pre shearing or any other means including supply, storage, handling of blasting materials etc without damaging the existing structures and as approved by engineer.			
1.6.1	By means of controlled blasting including provision of sensor to assess the impact of blast on the adjacent structures.	50.0	CUM	
1.6.2	By means of controlled blasting excluding provision of sensor.	1000.0	CUM	
1.6.3	In hard rock (blasting prohibited) by means of chiselling, wedging etc.	50.0	CUM	
1.7	Earth work in excavation for depth exceeding 7.0m but not exceeding 10.0m below ground level for foundation, trenches, pipe lines, storm water drains, RCC wall, ducts, roads, embankment etc including dewatering if required, strutting, shoring/ sheet piling if required, dressing the sides, levelling to grade and ramming the bottom, stacking/ disposal of surplus excavated material within a lead of 1.0 km etc complete for all types of soils including ash, laterite, morrum, weathered rock, decomposed rock, soft rock etc which can be excavated by means of crow bar, pick axe and other mechanical means etc but does not require chiselling or blasting.	1500.0	CUM	
1.8	Earth work in excavation for depth exceeding 7.0m but not exceeding 10.0m below ground level for foundation, trenches, pipe lines, storm water drains, RCC wall, ducts, roads, embankment etc including dewatering if required, strutting, shoring/ sheet piling if required, dressing the sides, levelling to grade and stacking/ disposal of surplus excavated material within a lead of 1.0 km etc complete for hard rock requiring blasting/ controlled blasting and/ or chiselling, wedging, line drilling, pre shearing or any other means including supply, storage, handling of blasting materials etc without damaging the existing structures and as approved by engineer.			
1.8.1	By means of controlled blasting including provision of sensor to assess the impact of blast on the adjacent structures.	100.0	CUM	
1.8.2	By means of controlled blasting excluding provision of sensor.	1000.0	CUM	
1.8.3	In hard rock (blasting prohibited) by means of chiselling, wedging etc.	200.0	CUM	
2.0	Extra over item 1.1 to 1.8 above respectively for carriage of all types of excavated materials beyond the initial lead of 1.0 km dumping, levelling the dumped soil/ materials and levelling the area from where the material is transported, complete with all lifts as specified and directed by engineer for the following leads.			
2.1	Carriage beyond 1.0 km and not exceeding 2.0 km.	10000.0	CUM	
2.2	Carriage beyond 2.0 km and not exceeding 5.0 km.	5000.0	CUM	
2.3	Carriage beyond 5.0 km and not exceeding 10.0 km.	3000.0	CUM	

SL NO	DESCRIPTION	QUANTITY		Price in percent (%) of total price for each item (in figures & words)
3.0	Filling using selected excavated materials in trenches, plinths, sides of foundations and other underground structures, pipes, area levelling etc in layers not exceeding 250 mm thickness with all lead and all 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 engineer to achieve the following densities.	8500.0	CUM	
3.1	95% Standard Proctor density.			
4.0	Supplying & 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.	2500.0	CUM	
5.0	Providing & 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 shall be provided by BHEL free of cost as per SCC).	400.0	CUM	
6.0	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, plasticiser, 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 shall be provided by BHEL free of cost as per SCC).			
6.1	For works below ground level			
6.1.1	Grade M-25 (foundations, etc)	9000.0	CUM	
6.2	For works above ground level			
6.2.1	Grade M-25 (grade level slab)	80.0	CUM	
8.2.2	Grade M-30 for chimney shell, corbels and other other shell attachments.	11500.0	CUM	
8.2.3	Grade M-30 for chimney shell, corbels and external platforms and other shell attachments.	600.0	CUM	
8.2.4	Grade M-25 for all other components of the super structure, roof slab, mini shells, beams, columns wall etc.	60.0	CUM	
9.0	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, 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 ( reinforcement steel shall be provided by BHEL free of cost as per SCC).			
9.1	For works below ground level			
9.1.1	High strength deformed bars	900.0	MT	
9.2	For works above ground level			
9.2.1	Mild steel reinforcement bars	25.0	MT	
9.2.2	High strength deformed bars	1200.0	MT	

SL NO	DESCRIPTION	QUANTITY	Price in percent (%) of total price for each item (in figures & words)
10.0	Providing & fixing formwork of approved quality for cast-in-situ, plain or reinforced concrete works of any type & section (including curved surfaces & chimney shell) for all elevations, including labour, materials, equipment, waste of forms, shoring, strutting, scaffolding, staging, tying, nailing, caulking, bolting etc & removal of form work & staging etc all complete as per spec, drawings & instructions of the Engineer.		
10.1	For works below ground level	2300.0	SQM
10.2	For works above ground level		
10.2.1	Inner and outer faces of wind shield with slip form shuttering	38500.0	SQM
10.2.2	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.	1200.0	SQM
11.0	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.	500.0	SQM
12.0	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.	50.0	SQM
13.0	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.	75.0	SQM
14.0	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.	200.0	KG
15.0	Preparing detailed fabrication drawings and after approval by the Engineer, supplying, fabricating, erecting & 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 (structural steel shall be provided by BHEL free of cost as per SCC).	7.0	MT
16.0	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 (structural steel shall be provided by BHEL free of cost as per SCC).	70.0	MT
17.0	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 (structural steel shall be provided by BHEL free of cost as per SCC).	500.0	MT

SL NO	DESCRIPTION	QUANTITY		Price in percent (%) of total price for each item (in figures & words)
18.0	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 (structural steel shall be provided by BHEL free of cost as per SCC).	150.0	MT	
19.0	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 (structural steel shall be provided by BHEL free of cost as per SCC).	1150.0	MT	
19.1	Preparing detailed fabrication drawings & after approval by the Engineer, providing, fabricating and erecting, at all levels, stainless steel (grade 316L 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 (stainless steel plates shall be provided by BHEL free of cost as per SCC).	30.0	MT	
20.0	Preparing detailed fabrication drawings & after approval by Engineer, providing, fabricating & installing at all levels, stainless plate (including stainless steel screws and fasteners) of grade AISI 316L and lead sheets beams & over the mild steel in the platform beam bearing, flue supports bearings, flue restraints brackets/ buffers etc. Including 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 & polishing the contact surfaces of stainless steel, coating polished surfaces with silicone grease, etc. complete as per drawings & specifications.			
20.1	Stainless steel components (only SS plate shall be provided by BHEL free of cost)	1.4	MT	
20.2	Lead Sheets (all materials to be provided by vendor)	150.0	KG	
21.0	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.	105.0	SQM	
22.0	Supplying "Fabricated Ready to Install" spare expansion compensators alongwith bolster including the cost of accessories, transporting, proper packaging (for several years of storage), and delivery to site store complete in all respects as per drawings and specification.	21.0	SQM	
23.0	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.	50.0	CUM	
24.0	Supplying, fabricating & installing, at all levels mild steel circumferen- tial reinforcing bands around the brick liners at all elevations including the cost of all labour, transportation, materials & equipments, lifting to all heights, setting in place, a/r mortar fill behind bands, cutting, bending, drilling, grinding, bolts and bolting, priming, finish painting, etc. complete as per drawings and specification	2.0	MT	

SL NO	DESCRIPTION	QUANTITY	Price in percent (%) of total price for each item (in figures & words)
25.0	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.		
25.1	25 mm (diameter) at expansion joints between brick lining segments	100.0	RM
25.2	12 mm (diameter) at expansion joints between brick lining segments	350.0	RM
26.0	Providing, fabricating and laying in position asbestos mill boards, over the mini shells below the cast iron cap segments, in between the cap segments and wherever as directed by the engineer, including the cost of all labours, material and equipment, cutting, drilling, etc., complete as per drawings and specifications.		
26.1	25 mm thick asbestos mill boards	7.0	SQM
26.2	3 mm thick asbestos mill boards	5.0	SQM
27.0	Providing & installing, at all levels, resin bonded glass wool insulation slabs of density not less than 64 kg/m <sup>3</sup> or resin bonded rock wool insulation slabs of density not less than 100 kg/ cum 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.	12000.0	SQM
28.0	Providing & packing, at all levels, loose glass wool insulation to a density not less than 64 kg/m <sup>3</sup> or loose rock wool insulation to a density not less than 100 kg/cum 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 & specification.	25.0	CUM
29.0	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.	17000.0	SQM
30.0	Providing and painting, at all levels, the external surfaces of chimney shell and wherever as directed by the Engineer, with synthetic enamel 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.	16500.0	SQM
31.0	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.	150.0	SQM
32.0	Providing, fabricating & installing at various locations & 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	Price in percent (%) of total price for each item (in figures & words)
32.1	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 vendor)	2.0 MT	
32.2	Tubular hand railing for stair case and internal and external platforms (All materials are to be supplied by vendor)	20.0 MT	
33.0	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.	8.0 NO	
34.0	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:		
34.1	150 mm nominal bore cast iron pipes.	55.0 RM	
34.2	150 mm nominal bore medium class galvanised mild steel pipes.	275.0 RM	
35.0	Providing & laying 50 mm thick cement concrete flooring (comprising of 12 mm thick mettalic concrete hardener topping over a 38 mm thick under bed of concrete) over grade level slab inside chimney, including cost of all labour, material & equipment, etc complete as required for preparation of base, laying underbed & topping, finishing, rounding of edges, corners & junctions, curing, testing, etc complete as per drawing & specifications.	550.0 SQM	
36.0	Providing & 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 & mechanisms, fittings & 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.	1.0 NO	
37.0	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.	7.0 NO	
38.0	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, galvanising components to be embeded in concrete, primer and finish painting of exposed components, etc. complete as per drawing and specifications. (all steel material to be supplied by vendor).	25.0 MT	
39.0	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. (Stainless steel plate shall be supplied by BHEL free of cost).	22.0 MT	
40.0	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 specifications.	1200.0 SQM	
<b>PART-1B (ELECTRICAL/ ELEVATOR WORKS ETC. BIDDER TO QUOTE RATES FOR ERECTION, COMMISSIONING ONLY).</b>			
42.0	415V, 200A, 50 KA for 0.25 sec, 4 wire AC distribution board with 1 no incomer (SFU) & 9 nos of 100A (TPN) outgoing complete in all respects.	1.0 NO	

SL NO	DESCRIPTION	QUANTITY	Price in percent (%) of total price for each item (in figures & words)
43.0	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	1.0 NO	
44.0	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.	3.0 NO	
45.0	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.	3.0 NO	
46.0	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.	1.0 NO	
47.0	Aviation obstruction lights.		
47.1	Low intensity Type-B as per ICAO, LED type with 20 years maintenance free life, including all accessories, controller etc complete in all respects.	12.0 NO	
47.2	Medium intensity Type-B as per ICAO, LED type with 20 years maintenance free life, including all accessories, controller, flasher etc complete in all respects.	12.0 NO	
48.0	Flood light with 250W HPSV lamps with all controlgears & accessories etc complete in all respects.	6.0 NO	
48.1	Well glass type luminaries with 70W/HPSV lamp with all controlgears & accessories etc complete in all respects.	100.0 NO	
48.2	Well glass type luminaries with 150W/HPSV lamp with all controlgears & accessories etc complete in all respects.	70.0 NO	
49.0	63Amp welding switch socket with plug & other Mounting accessories etc complete in all respects.	9.0 NO	
50.0	3 pin, 1 ph, 240V,15Amp. Power socketscomplete with plug switches etc.	10.0 NO	
51.0	Al conductor, PVC insulated, armoured, PVC outer sheath, FRLS type 1100V grade conforming to IS-1554 Part I.		
51.1	3½ C x95mm <sup>2</sup> Al for connection between ACDB/ELDB/ welding sockets.	1400.0 RM	
51.2	3½ Cx35mm <sup>2</sup> Al for lighting panel incoming supply.	1000.0 RM	
51.3	3½ C / 4 Cx16mm <sup>2</sup> Al for lighting panel incoming supply.	1600.0 RM	
52.0	PVC insulated 650/1100V grade stranded Cu Conductor lighting wires conforming to IS-694.		
52.1	2.5 mm <sup>2</sup> .	3000.0 RM	
52.2	4.0 mm <sup>2</sup> .	9000.0 RM	
53.0	GI conduit 25mm dia with junction boxes, pull boxes & accessories etc complete in all respects.	7000.0 RM	
53.1	Lightning protection air terminal.	50.0 RM	
53.2	Earthing system complete as per drawings and specifications.		
54.0	Below ground earthing system.	4.0 MT	
55.0	Above ground earthing system.	4500.0 RM	
56.0	Telephone socket with junction box etc, complete as per drawings and specifications.	10.0 NO	
57.0	Telephone hand sets etc, complete as per drawings and specifications.	10.0 NO	
58.0	Telephone cables etc, complete as per drawings and specifications.		
58.1	24 pairs.	150.0 RM	
58.2	4 pairs.	300.0 RM	

SL NO	DESCRIPTION	QUANTITY		Price in percent (%) of total price for each item (in figures & words)
59.0	GS cable trays including cover, cabling material, accessories etc, complete as per drawings and specifications.			
59.1	600mm wide.	400.0	RM	
59.2	300mm wide.	400.0	RM	
59.3	150mm wide.	300.0	RM	
60.0	Aviation light distribution board complete in all respects.	3.0	NO	
61.0	Stack elevator - climb 275 m internal as per technical specification.	1.0	SET	
<b>TOTAL (PART-1 A + PART-1 B)</b>				<b>100%</b>
62.0	For items not covered above, quote % above or below the CPWD schedule (DSR-2002).			
62.1	Rate of complete item.			
62.2	Rate of supply of materials at site only.			
62.3	Rate for execution complete excluding supply of materials.			
NOTE				
Bidder to fill only percent against each items out of total (100%). These percents are to be worked out based on amount works out against each items with respect to total quoted amount. However, bidder shall indicate absolute values, instead of percentages, against item no 62.1, 62.2 & 62.3.				

**VOLUME-IIIB  
(PART-2 - SUPPLY OF ELECTRICAL ITEMS, ELEVATORS ETC)  
PRICE SCHEDULE, REV-1**

**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 Mejia-B TPS, WB.**

**TENDER NO - PSER:SCT:MJA-C756:07.**

SL NO	DESCRIPTION	QUANTITY		AMOUNT(Rs)				
				BASIC	ST	ED	OTHERS	Price in percent (%) of total price for each item (in figures & words)
					(For self manufactured items only)			
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	NO					
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) outgoing complete in all respects	1	NO					
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	NO					
4.0	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	NO					
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	NO					
6.0	Aviation obstruction lights.							
6.1	Low intensity Type-B as per ICAO, LED type with 20 years maintenance free life, including all accessories, controller etc complete in all respects.	12	NO					
6.2	Medium intensity Type-B as per ICAO, LED type with 20 years maintenance free life, including all accessories, controller, flasher etc complete in all respects.	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 socketscomplete 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 Cx95mm <sup>2</sup> Al for connection between ACDB/ELDB/ welding sockets.	1400	RM					

SL NO	DESCRIPTION	QUANTITY		AMOUNT(Rs)				Price in percent (%) of total price for each item (in figures & words)
				BASIC	ST	ED	OTHERS	
					(For self manufactured items only)			
11.2	3½ Cx35mm <sup>2</sup> Al for lighting panel incoming supply.	1000	RM					
11.3	3½ C/ 4 Cx16mm <sup>2</sup> 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 <sup>2</sup> .	3000	RM					
12.2	4.0 mm <sup>2</sup> .	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.	4500	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.							
19.1	600mm wide.	400	RM					
19.2	300mm wide.	400	RM					
19.3	150mm wide.	300	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					
<b>TOTAL (PART-2)</b>				<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
NOTE								
Bidder to fill only percent against each items out of total (100%). These percents are to be worked out based on amount works out against each items with respect to total quoted amount.								

**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 275 meter high RCC twin flue steel lined chimney including supply & installation of stack elevator & electrical items for 2x500 MW unit # 1 & 2 at Mejia-B Thermal Power Station, West Bengal.	
Ref	01	BHEL's NIT vide reference no PSER:SCT:MJA-C756:0909, dated 23-05-07.
	02	Tender no PSER:SCT:MJA-C756:07.
	03	BHEL's TCN-01 vide reference no PSER:SCT:MJA-C756:TCN-01, dated 13-06-07.
	04	BHEL's TCN-02 vide reference no PSER:SCT:MJA-C756:TCN-02, dated 25-06-07.
	05	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 and in case of 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 and confirm our acceptance to reverse auctioning process and we hereby convey our unqualified acceptance to all terms and conditions as stipulated in the tender and NIT.

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 strictly in accordance with tender instructions.

Thanking you,

Yours faithfully,

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