



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

(भारत सरकार का उपक्रम)

**BHARAT HEAVY ELECTRICALS LIMITED**

(A Govt. of India Undertaking)

TCN - 01

Ref: PSER:SCT: NKP-C2005:TCN-01

Date: 14-01-2020

Sub	Tender Change Notice (TCN)- 01.	
Job	Construction of 3 nos. 150 meter high reinforced concrete single steel flue chimney with borosilicate glass block lining system on MS flue can and other incidentals complete including raft foundation for FGD system of 3 x 660 MW North Karanpura STPP, Jharkhand.	
Ref	1.0	Tender no PSER:SCT:NKP-C2005:20
	2.0	BHEL's NIT, vide reference no PSER:SCT:NKP-C2005:7745 Date: 06-01-2020.
	3.0	Other References, if any.

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

1. Revised BOQ cum Price Schedule, **VOLUME-III-PRICE SCHEDULE, REV-01** is attached superseding **VOLUME-III-PRICE SCHEDULE, REV-00** issued earlier along with NIT. **Bidders shall quote as per this revised Volume-III, Rev-01 only.** Bidders are also requested to submit a declaration in techno-commercial offer that they have submitted their price bid as per **REVISED Price Schedule** format.
2. Revised GCC-IA-Supply-Rev-01 is attached superseding GCC-IA-Supply-Rev-00 issued earlier alongwith NIT.
3. SI No (f) under Clause No 38.0 of NIT shall be read as "General Conditions of Contract (GCC) – Volume-IA & IB".
4. Revised 'No deviation certificate' is attached. Bidder to submit 'No deviation certificate' as per attached format only.
5. All other terms & conditions shall remain unchanged.

Thanking you,

Yours faithfully,  
for BHARAT HEAVY ELECTRICALS LTD

Dy. Mgr (SCT)

Encl: As Above.

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

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VOLUME-III PRICE SCHEDULE, REV-01	
JOB: CONSTRUCTION OF 3 NOS. 150 METER HIGH REINFORCED CONCRETE SINGLE STEEL FLUE CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN AND OTHER INCIDENTALS COMPLETE INCLUDING RAFT FOUNDATION FOR FGD SYSTEM OF 3 X 660 MW NORTH KARANPURA STPP, JHARKHAND.	
TENDER NO PSER:SCT:NKP-C2005:20	
PREAMBLE	
SL NO	DESCRIPTION
1	This preamble forms part of tender document and schedule of items. The tenderer should read this preamble carefully before filling in rates for various items. Clauses under this preamble shall be read in conjunction with various volumes of tender and other tender sections as applicable and shall have precedence over any contrary statement mentioned any where in this document.
2	The work shall be carried out strictly as per specifications, description of the items in these schedule and / or engineer's instructions. Drawings enclosed with the tender are only preliminary and for guidance/tender purposes giving some idea of the work involved. The work is to be executed as per terms & conditions of the tender and actual drawings/documents, which shall be furnished during execution.
3	Items of work provided in this schedule but not covered in this specification shall be executed strictly as per instruction of the engineer.
4	Unless specifically mentioned otherwise in the tender document, the tenderer shall quote for the finished items and shall provide for the complete cost towards power, fuel, tools, tackles, equipment, constructional plants, temporary works, labour, dismantling of all temporary piping, structures, valves, pumps, tanks & other misc. equipment, strengthening of roads/culverts/bridges etc. including arranging all clearances etc. required for carrying out different activities & tests, materials, levies, transport, layout, repairs, rectification, maintenance till handing over, supervisions, colonies, shops, establishments, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary to complete the work according to the complete tender document and this schedule.
5	The quantities of the various items mentioned in this schedule of items are approximate, based on very preliminary information and may vary to any extent or be deleted altogether. The quoted rates of each item will remain firm throughout the period of execution including extension, for reasons whatsoever, as long as variation in the total value of work executed under any part of this contract including extra items, if any but excluding any price variation remains, within plus minus fifteen percent ( $\pm 15\%$ ) of the awarded price as per LOI.
6	Prior written approval of BHEL shall be sought by the contractor in case quantity variation of any item crosses +50% (plus fifty percent) limit during execution and approval to be obtained before execution of further quantity for this item.
7	In case Sealed /Paper Price Bids are opened for finalisation of the tender, for any Item Rate/BOQ based service contract, possibility of variation of quantity/ addition/deletion of items can not be ruled out. Under such circumstances, after execution of work, if it is observed that standing as L-1 is changed based on actual quantity executed, the bidder shall give suitable rebate to maintain your standing as L-1. Since this aspect can be assessed at the end of execution, necessary adjustment will be effected at the end of execution in final bill. This condition shall not be applicable where the tender is finalised through Reverse Auction.
8	BHEL reserve the right to rationalize the rates, quoted by L-1 bidder against unit rate items and/ or other optional items with respect to item-wise lowest rates (amongst the participating bidders), before placement of order. The rates of unit rate/optional items shall remain valid till execution of the order, if the job/work is awarded to the bidder.
9	The rates quoted shall be inclusive of cleaning of site of any vegetation, dressing, clearing of old structures and leveling etc. including fixing of grid pillars, benchmarks etc. required for commencement of site activities. No separate payment will be made towards the same. However, if separate rate for such item is available in the rate schedule, the same shall be considered.
10	Rates shall be quoted in figures and in words in clear legible writing. No overwriting is allowed. All scoring and cancellations should be countersigned and in case of illegibility the interpretation of engineer shall be final. All entries shall be in English language.
11	All works item wise shall be measured upon completion and paid for at the rates quoted and accepted as per BHEL approved payment schedule/billing break-up.
12	The tenderer shall be deemed to have visited site and made himself aware of all the site conditions, studied the specifications and details of work to be done within the time schedule attached and to have acquainted himself of the conditions prevailing at site before submission of his bid/offer. No claim whatsoever due to lack of knowledge of site conditions shall be entertained after award of the work.
13	No splitting of the job is envisaged unless the same is specifically indicated in the TCC/Vol-1F. Decision of BHEL in this regard shall be final and binding to the bidders.
14	Bidders are not allowed to alter the Price Schedule format including item description, quantity etc. and the offer is liable for rejection if the bidders submit their prices in Price Schedules modified by them. BHEL reserves the right to reject the offers of bidders who submit offers in Price Formats which are modified/altered by them. Also putting any comments instead of rates/price in the designated column of the rate schedule shall make the offer liable for rejection.
15	Bidders to note that for Civil & Structural packages, against a particular item against a ST No. appearing in more than one schedule of the BOQ, same rate must be quoted in all schedules for that particular items with same descriptions. If by error, different rates are quoted in different schedules for same ST No. (i.e. item with same description), then the higher of the rates shall be considered for evaluation but awarding shall be done with the lower rate, if the bidder becomes L-1. The same modality shall be applicable for other item rate service contracts where item with same description is repeated in different schedules.
16	For Lumpsum Service Contract : The items/components indicated in the tender is indicative and may vary to any extent. No compensation shall be payable in case of any variation in the items/components listed in the bill of quantities if the executed weight remains within the variation limit. However, in case of deletion of any item or addition of new items over and above the items listed or variation of existing quantity beyond variation limit specified, adjustment (i.e. Payment or recovery as the case may be) shall be done on pro-rata basis based on the Rate per MT worked out from the quoted lump-sum Price and the total weight of components listed /indicated in price schedule plus 15% weight variation limit.
17	Engineer's decision shall be final and binding on the contractor regarding clarification of items in the schedule with respect to the other sections/volumes of the contract.
18	In case of tender for Civil and/or Structural works, if the Non-schedule items are not quoted by the bidder, it will be treated at par with rate of corresponding item of CPWD/PWD/DSR schedule as prescribed in the tender/BOQ cum Rate Schedule. PVC/escalation is not payable for these Non-scheduled items.
19	No interest, whatsoever, shall be payable by BHEL on the security deposit, any bank guarantee submitted or any amount due to successful bidder/contractor. No idling charge whatsoever (either for labour or any other resources) is payable by BHEL for any reason whatsoever.
20	Size and weights of various items are mentioned in the attached BOQ cum rate/price schedule for reference purpose only & these shall not be taken into consideration for quoting/calculating amount in the rate schedule. These shall be utilised as per relevant sections of tender. Bidders shall quote for each item in the rate column, taking unit as mentioned in the quantity column. Rates shall be filled in both figures and words. Amount shall be calculated based upon these rates multiplied by the mentioned quantity for the respective items.
21	Bidder's Total price shall be considered for evaluation unless stated otherwise.
22	In case of BOP packages, if Bidder does not quote/indicate the price for freight charges against indicated rate schedule, the same shall be considered as 2% of basic price and adjusted with the total quoted price against each item keeping the total quoted price unaltered.

VOLUME-III PRICE SCHEDULE, REV-01			
JOB: CONSTRUCTION OF 3 NOS. 150 METER HIGH REINFORCED CONCRETE SINGLE STEEL FLUE CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN AND OTHER INCIDENTALS COMPLETE INCLUDING RAFT FOUNDATION FOR FGD SYSTEM OF 3 X 660 MW NORTH KARANPURA STPP, JHARKHAND.			
TENDER NO PSER:SCT:NKP-C2005:20			
SCH-1 : TOTAL PRICE			
SL NO	DESCRIPTION	PRICE SCHEDULE REF	TOTAL PRICE (IN INR)
1.0	TOTAL PRICE FOR CONSTRUCTION OF 3 NOS. 150 METER HIGH REINFORCED CONCRETE SINGLE STEEL FLUE CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN AND OTHER INCIDENTALS COMPLETE INCLUDING RAFT FOUNDATION FOR FGD SYSTEM OF 3 X 660 MW NORTH KARANPURA STPP, JHARKHAND.	SCH 2 - PRICE BREAK UP	IN FIGURES:-
			IN WORDS:-
2.0	NON-SCHEDULE ITEM For items not covered in Price Schedule , quote % above or below or at par the CPWD Schedule of rates 2018		
a)	Rate of complete item	% above / % below/ at par of CPWD Rate Schedule 2018	
b)	Rate of supply of material at site only	% above / % below/ at par of CPWD Rate Schedule 2018	
c)	Rate for execution complete excluding supply of materials.	% above / % below/ at par of CPWD Rate Schedule 2018	
NOTE			
1.0	Bidder shall quote total price for SCH-1 Part only at SI No. 1 above. All other amounts / rates of each item of works in respective schedules / parts will be derived based on allocated percentages. As such, any uncalled figure/ amount noted at any other place / schedule of Volume-III will not be reckoned & will stand null & void.		
2.0	Bidder to note that total price at SI No. 1 above shall be considered for evaluation & awarding. As such grand total price should be complete in all respect for the full scope defined and considering all terms and conditions.		
3.0	Bidder's quoted total price of SCH-1 at SI. No 1 above, shall be apportioned into amount of various items of works based on allocated percentages against respective item, in respective schedules / parts. As such, bidder shall not indicate / quote any amount / rate in these schedules / parts and any amount / rate quoted against any item shall not be taken into cognizance / account and offer may be liable for rejection.		
4.0	Bidder to note that percentage break-up of above total price into supply part, service part are frozen and indicated in SCH-2. Based on this break-up and further break-up in subsequent schedules, separate orders will be placed for Supply and Service part as per respective price components.		
5.0	Based on the itemwise percentage allocations, the amount for the individual items of the Bill of Quantity shall be arrived at. The rates of individual items shall be derived from the amount against each items and its quantity after rounding off to upto 2 decimal places. However, RA bill payment shall be done after rounding off the gross amount to two decimal points. Any adjustment, if required, due to such methodology, will be effected / adjusted in final bill.		
6.0	Bidders to note that this is an item rate contract. Payment shall be made for the actual quantities of work executed at the unit rate arrived at as per SI No.3 above.		
7.0	Any item as per scope of work, if not included in the price quoted above and shown separately will not be taken cognizance of and the offer shall be liable for rejection.		
8.0	Price format shall not be changed by bidder in any case and it may lead to cancellation of their offer.		
9.0	The quoted price shall be excluding GST including freight on FOR site basis.		
10.0	The quantity of items may vary during execution mainly due to actual requirement etc. The unit rates work out from the overall amount quoted & accepted by BHEL shall be considered and no separate unit rates shall be allowed. Unit rates shall be valid throughout the contract period.		
11.0	For payment of non schedule items, the rate shall be derived from CPWD Schedule - 2018.		

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TENDER NO PSER:SCT:NKP-C2005:20		
SCHEDULE - 2 : TOTAL PRICE BREAK UP		
SL NO	DESCRIPTION	WEIGHTAGE
1.0	TOTAL SERVICE PART OF SCH-3	0.83541693
2.0	TOTAL SUPPLY PART OF SCH-4	0.16458307
3.0	TOTAL	1.00000000

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TENDER NO PSER:SCT:NKP-C2005:20							
SCHEDULE - 3 : SERVICE							
ITEM SL NO.	Description of Item	Unit	Quantity (Unit 1)	Quantity (Unit 2)	Quantity (Unit 3)	Total Quantity	Weightage
PART 1A	Civil Works						
1	Earth work in <b>excavation in all types of soil</b> including moorum, ash which can be excavated by any means including setting out, levelling, dewatering (but excluding special type of dewatering viz. well point method), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 1 km, spreading/levelling of disposed materials etc all complete for following depths below ground level including necessary men/women, materials, equipment, loading, transportation, unloading etc as per specification, drawing and as directed by engineer- in-charge. [Measurement of excavation shall be paid as per clause 5.2.0 of Technical Specification, Section D, Sub-Section D1 sheet 20 Of 23]						
a	Depth from ground level but not exceeding 2 m	cum	2760	2760	2760.0	8280	0.00231408
b	Depth exceeding 2 m but not exceeding 4 m	cum	2050	2050	2050.0	6150	0.00212028
c	Depth exceeding 4 m but not exceeding 6 m	cum	1250	1250	1250.0	3750	0.00174314
d	Depth exceeding 6 m but not exceeding 8 m	cum	650	650	650.0	1950	0.00119531
2	Extra over item No. 1 for <b>dewatering of ground water by well point method</b> as per IS 9759.	cum	800	800	800.0	2400	0.00016904
3	Earth work in <b>excavation in soft rock</b> (rock without any recovery of excavated materials in the form of hard stone/boulder) including weathered rock which can be excavated by means of crow bar, pick axe, pneumatic rock breaker attachment with excavator machine etc but does not require chiselling or blasting including setting out, levelling, dewatering (wherever required), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 1 km, spreading / levelling of disposed materials etc all complete for following depths below ground level including necessary men/women, materials, equipment, loading, transportation, unloading etc as per specification, drawing and as directed by engineer- in-charge. [Measurement of excavation shall be paid as per clause 5.2.0 of Technical Specification, Section D, Sub-Section D1 sheet 20 Of 23]						
a	Depth from ground level but not exceeding 2 m	cum	200	200	200.0	600	0.00019883
b	Depth exceeding 2 m but not exceeding 4 m	cum	300	300	300.0	900	0.00035252
c	Depth exceeding 4 m but not exceeding 6 m	cum	700	700	700.0	2100	0.00106386
d	Depth exceeding 6 m but not exceeding 8 m	cum	650	650	650.0	1950	0.00125133
5	Earth work in <b>excavation in hard rock requiring controlled blasting</b> including wedging, line drilling, pre shearing etc as required, setting out, levelling, dewatering (wherever required), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, necessary licenses/statutory clearances for blasting, supply, storage & handling of blasting materials, stacking/disposal of surplus excavated material within a lead upto 1 km, spreading / levelling of disposed materials etc all complete for following depths below ground level including necessary men/women, materials, equipment, loading, transportation, unloading etc as per specification, drawing and as directed by engineer- in-charge. [Measurement of excavation shall be paid as per clause 5.2.0 of Technical Specification, Section D, Sub-Section D1 sheet 20 Of 23]						
c	Depth exceeding 4 m but not exceeding 6 m	cum	100	100	100.0	300	0.0002594
d	Depth exceeding 6 m but not exceeding 8 m	cum	100	100	100.0	300	0.00032841
7	<b>Back filling</b> upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 300 mm thickness using/with selected materials <b>from compulsorily excavated soil</b> available within a lead upto 1 km and compacted as specified including re excavation of stacked earth, watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following including necessary men/women, materials, equipment, loading, transportation, unloading etc as per specification, drawing and as directed by engineer- in-charge. [Measurement of Backfilling shall be paid as per excavation quantity after deduction for concrete & other buried items etc.]						
a	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	cum	370	370	370.0	1110	0.00027505
b	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	cum	3260	3260	3260.0	9780	0.00218488
c	Each layer compacted so as to achieve at least 85% maximum dry density as per IS-2720 (Part-VII)	cum	370	370	370.0	1110	0.00026876
d	Each layer compacted so as to achieve at least 80% relative density as per IS-2720 part XIV in case of sandy soils.	cum	200	200	200.0	600	0.00015651
8	<b>Back filling</b> upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 300 mm thickness <b>using / with selected materials directly from excavation</b> and compacted as specified including watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following including necessary men/women, materials, equipment, loading, transportation, unloading etc as per specification, drawing and as directed by engineer- in-charge						
a	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	cum	100	100	100.0	300	0.00002696
b	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	cum	200	200	200.0	600	0.00005103
c	Each layer compacted so as to achieve at least 85% maximum dry density as per IS-2720 (Part-VII)	cum	100	100	100.0	300	0.00002695
d	Each layer compacted so as to achieve at least 80% relative density as per IS-2720 part XIV in case of sandy soils.	cum	100	100	100.0	300	0.00002838
9	Extra over item No. 1 and 3 to 7 for <b>carriage of excavated earth/selected materials</b> for every 500 m or part thereof beyond an initial lead of 1 km.	cum	12250	12250	12250.0	36750	0.00039261
10	<b>Back filling</b> upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 300 mm thickness <b>using/with approved borrowed soil</b> (borrowed soil to be arranged by the bidder) and compacted as specified including supplying borrowed soil, royalty (if any), watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following including necessary men/women, materials, equipment, loading, transportation, unloading etc as per specification, drawing and as directed by engineer- in-charge. [Measurement of Backfilling shall be paid as per excavation quantity after deduction for concrete & other buried items etc.]						
a	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	cum	210	210	210.0	630	0.00048128

VOLUME-III PRICE SCHEDULE, REV-01							
JOB: CONSTRUCTION OF 3 NOS. 150 METER HIGH REINFORCED CONCRETE SINGLE STEEL FLUE CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN AND OTHER INCIDENTALS COMPLETE INCLUDING RAFT FOUNDATION FOR FGD SYSTEM OF 3 X 660 MW NORTH KARANPURA STPP, JHARKHAND.							
TENDER NO PSER:SCT:NKP-C2005:20							
SCHEDULE - 3 : SERVICE							
ITEM SL NO.	Description of Item	Unit	Quantity (Unit 1)	Quantity (Unit 2)	Quantity (Unit 3)	Total Quantity	Weightage
b	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	cum	1580	1580	1580.0	4740	0.00354868
c	Each layer compacted so as to achieve at least 85% maximum dry density as per IS-2720 (Part-VII)	cum	210	210	210.0	630	0.00046222
d	Each layer compacted so as to achieve at least 80% relative density as per IS-2720 part XIV in case of sandy soils.	cum	100	100	100.0	300	0.0002157
11	<u>Supplying and filling sand</u> upto any depth below grade slab, around foundations, etc. in layers not exceeding 300 mm thickness and compacted so as to achieve at least 80% relative density as per IS-2720 (Part-XIV) including spreading, watering, ramming/compaction by manual / mechanical means, dressing, royalty (if any) etc. all complete including necessary men/women, materials, equipment, loading, transportation, unloading etc as per specification, drawing and as directed by engineer- in-charge.	cum	150	150	150.0	450	0.00054091
12	<u>Supplying and laying</u> (inside chimney in the space below the grade level slab) <u>crushed rock</u> range 63 mm to 45 mm in layers not exceeding 200 mm in thickness including breaking of stone boulders to required sizes, filling the interstices with selected sand and compacting to 85 % of original volume of stone stack for all lifts etc. all complete. Payment shall be made for the measurement of the volume of the compacted fill.	cum	856	856	856.0	2568	0.00926699
13	Providing and laying <u>Nominal Mix plain cement concrete (M 7.5)</u> with graded aggregate (with maximum size of coarse aggregate not exceeding 40 mm) at all levels for all kinds of <u>work like mass concrete, lean concrete, mudmat, filling</u> etc. including labour, materials, equipment, handling, transporting, batching, curing, testing etc. all complete as per specifications, drawings and instructions of the Engineer. [Cement will be issued by BHEL Free of cost]	cum	140	140	140.0	420	0.00195454
14	Providing and laying <u>design mix cement concrete</u> with graded aggregate (maximum size of coarse aggregate not exceeding 20 mm) <u>for reinforced concrete work</u> at all levels for all kinds of work, including labour, materials, equipment, handling, transporting, batching, mixing, placing, levelling, compacting, curing, testing etc. and rendering or cleaning and finishing the exposed surface with cement mortar (1:3) to give smooth and even surface, all complete as per specifications, drawings and instructions of the Engineer, but excluding all formwork and reinforcing steel: [Cement will be issued by BHEL Free of cost]						
i	For all works below ground level (except chimney shell)						
b	Grade M-30 (foundations, etc)	cum	3200	3200	3200.0	9600	0.04881993
ia	Extra over St. No. 14(i) for <u>controlling of temperature</u> of fresh concrete for raft/pilecap to less than 23 degree centigrade using ice, including all related arrangements for providing, storing and mixing of ice with water, cooling of aggregates etc. All complete as per specification, drawing and instruction of engineer in charge.	cum	3200	3200	3200.0	9600	0.01550739
ii	For all other works						
a	Grade M-25 grade level slab, pit, trenches, drain etc.	cum	72	72	72.0	216	0.0010404
c	Grade M-35 for chimney shell, corbels and external platforms and other shell attachments.	cum	4000	4000	4000.0	12000	0.12235027
d	Grade M-30 for all other components of the super structure, roof slab, mini -shells, beams, columns wall etc.	cum	45	45	45.0	135	0.00138391
15	Providing and applying <u>two coats of bitumen</u> grade 85/25 as per IS-702 (@ 1.7kg/sqm) with 1% antistripping compound conforming to IS-6241 in foundation, shell, pedestal etc <u>on concrete surfaces exposed to soil / ash</u> including surface preparation etc. all complete.	Sqm	1020	1020	1020.0	3060	0.00113662
16	Providing and placing <u>steel reinforcements</u> of TMT steel of grade Fe-500 /Fe 500D conforming to IS:1786 and having minimum elongation 14.5% , <u>for reinforced concrete work</u> , at all levels, for all kinds of work, including transportation, cleaning, derusting, straightening, cutting, bending, binding in position with annealed wire and/or welding, providing concrete cover blocks, pins, separators, chairs, supports for reinforcement, etc. with all materials, labour, equipment, handling, testing, transportation to & from stores etc., preparation of bar bending schedules, all complete as per specifications, drawings and instructions of the Engineer.						
i	For all works below ground level (except chimney shell)						
a	High strength deformed bars [Reinforcement bars will be issued by BHEL Free of cost]	MT	350	350	350.0	1050	0.01249508
ii	For all other works						
a	Mild steel reinforcement bars [Mild steel reinforcement procurement in vendors scope]	MT	10	10	10.0	30	0.0025287
b	High strength deformed bars [Reinforcement bars will be issued by BHEL Free of cost]	MT	460	460	460.0	1380	0.01785168
17	Providing and fixing <u>formwork</u> of approved quality for cast-in-situ, plain or reinforced concrete works of any type and section (including curved surfaces and chimney shell) for all elevations, including labour, materials, equipment, waste of forms, shoring, strutting, scaffolding, staging, tying, nailing, caulking, bolting etc and removal of form work and staging etc. all complete as per specifications, drawings and instructions of the Engineer.						
i	For all works below ground level (except chimney shell)	Sqm	902	902	902.0	2706	0.00240772
ii	For all other works						
a	Inner and outer faces of wind shield with slip form shuttering	Sqm	18850	18850	18850.0	56550	0.0936247
b	All other components of the superstructure including slabs, beams, columns, walls, enclosures, mini shells, external platforms, corbels, other shell attachments, chases/recesses in shell etc.	Sqm	450	450	450.0	1350	0.0025858
18	Providing and fixing <u>formwork in shell openings</u> and pockets (above 0.1 sq.m surface area) including cutting, formation of shapes and all other operations required for making the required shape and size, removal of formwork, all complete as per specifications, drawings and instructions of the Engineer.	Sqm	120	120	120.0	360	0.00059989
19	Providing and placing in position at all levels, <u>building paper (kraft paper)</u> , as per IS:1397, between concrete surfaces including the cost of labour, material, etc. complete as per drawings and instruction of the Engineer.	Sqm	70	70	70.0	210	0.00002506
20	Providing and installing, at all levels, <u>bitumen impregnated fibre boards</u> , 12 mm thick, conforming to IS:1838, as joint filler at joints in concrete, including nailing, coating of both faces with coal tar pitch/bitumen, including the cost of all labour, material and equipments etc., complete as per drawings, specifications and instructions of the Engineer.	Sqm	32	32	32.0	96	0.0001503

VOLUME-III PRICE SCHEDULE, REV-01							
JOB: CONSTRUCTION OF 3 NOS. 150 METER HIGH REINFORCED CONCRETE SINGLE STEEL FLUE CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN AND OTHER INCIDENTALS COMPLETE INCLUDING RAFT FOUNDATION FOR FGD SYSTEM OF 3 X 660 MW NORTH KARANPURA STPP, JHARKHAND.							
TENDER NO PSER:SCT:NKP-C2005:20							
SCHEDULE - 3 : SERVICE							
ITEM SL NO.	Description of Item	Unit	Quantity (Unit 1)	Quantity (Unit 2)	Quantity (Unit 3)	Total Quantity	Weightage
21	Providing and filling, at all levels, <u>bitumen sealing compound</u> (hot applied type) conforming to IS:1834, for sealing gaps and joints in concrete, including cleaning, mixing, heating, pouring or injecting, application of primer, cost of all labour, material and equipments etc., complete as per drawings, specifications and instructions of the Engineer.	Kg	475	475	475.0	1425	0.00034357
22	Preparing detailed fabrication drawings and after approval by the Engineer, supplying, fabricating, erecting and installing <u>miscellaneous steel parts to be embedded/cast in concrete</u> (like staircase embedments, corbel face plates, etc) at all positions and levels including the cost of all labour, materials and equipments for setting materials in concrete, grouting, welding, bolts & bolting, expansion anchors, drilling, cutting, etc. complete as per drawings and specification.[Material supply including structural steel parts is in scope of contractor]	MT	3	3	3.0	9	0.00122841
A23	Supply, fabrication and erection of <b>high strength structural steel (E350 )</b> in built up section at shop conforming to IS:2062, in columns, beams, struts, monorails, stays, safety chains, ladders, gantry girders, roof trusses, portals, laced purlins, space frames, hangers, wall beams, sheeting runners, brackets, stiffeners, stub columns, bracings, cleats, base plates, splice plates,gussets, end plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs,stringers, treads, landings, decking and seal plates, galleries etc including blast cleaning, providing & applying primer,providing and applying intermediate, final and final finish coat of paint (blast cleaning,primer and paint shall be paid separately as per item no C23, D23 & E23),connection design & preparation of fabrication drgs, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts, nuts and welds not payable), assembly, edge preparation, preheating (However, permanent bolts are payable separately), assembly, edge preparation, preheating (min preheat and interpass temperature of 120-140o C for welding over 20 mm thickness & use of low hydrogen/ radiogenic electrodes), post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures, setting column bases, surface preparation by means of manual or mechanical power tools as per IS:1477 part 1, touch-up painting, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), etc all complete. Including appointment of a separate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL. [Structural steel shall be issued by BHEL free of cost] <b>Payment terms : (a) Fabrication - 65 % (b) Erection - 25% (c) Alignment - 10%</b>	MT	55	55	55.0	165	0.02107393
B23	Supply, fabrication and erection of structural <b>steel of grade E 250 in rolled/ built up section at shop</b> conforming to IS:2062, mild steel rounds in columns, beams, struts, monorails, stays, safety chains, ladders, MS gratings, gantry girders, roof trusses, portals, laced purlins, space frames, hangers, wall beams, sheeting runners, brackets, stiffeners, stub columns, bracings, cleats, base plates, splice plates,gussets, end plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs,stringers, treads, landings, decking and seal plates, galleries etc including blast cleaning, providing & applying primer,providing and applying intermediate, final and final finish coat of paint (blast cleaning,primer and paint shall be paid separately as per item no C23, D23 & E23), connection design & preparation of fabrication drgs, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts and nuts not payable), assembly, edge preparation, preheating / post heating if required, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures, setting column bases, surface preparation by means of manual or mechanical power tools as per IS:1477 part 1, touch-up painting, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), etc all complete. Including appointment of a separate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL. [Structural steel shall be issued by BHEL free of cost] <b>Payment terms : (a) Fabrication - 65 % (b) Erection - 25% (c) Alignment - 10%</b>	MT	165	165	165.0	495	0.05834468
C23	Extra over ST NO. A23 & B23 for blast cleaning of steel structures to near white metal surface conforming to Sa 2 ½ finish of ISO 8501-1 with surface profile 40-60 Micron and providing and applying two component moisture curing <b>zinc (ethyl) silicate primer coat</b> (having minimum 80% of metallic Zinc content in dry film, solid by volume minimum 60% ±2%) of minimum 70 micron DFT including the cost of all labour, material, equipments, protection of surface and cleaning, scaffolding, touch-up painting etc., complete as per drawings, specifications and instructions of the Engineer. Zinc dust composition and properties shall be Type-II as perASTM D520-00. Primer coat shall be applied in Shop immediately after blast cleaning by airless spray technique.	MT	220	220	220.0	660	0.00430342
D23	Extra over ST NO. A23 & B23 for providing and applying (by airless spray technique) <b>intermediate coat of two component polyamide cured epoxy with MIO Content</b> (containing lamellar MIO minimum 30% on pigment, solid by volume minimum 80% ±2%) of minimum 100 micron DFT after an interval of minimum 24 hours (from the application of primer coat) and of approved make including the cost of all labour, material, equipments, protection and cleaning, scaffolding, touch-up painting etc. all complete as per drawing and specifications.	MT	220	220	220.0	660	0.00248846
E23	Extra over ST NO. A23 & B23 for providing and applying <b>Finish coat of two-pack aliphatic Isocyanate cured acrylic finish paint</b> (solid by volume minimum 55% ±2%) with Gloss retention (SSPC Paint Spec No 36, ASTM D 4587, D 2244, D 523) of Level 2 (after minimum 1000 hours exposure, Gloss loss less than 30 and colour change less than 2.0 ΔE) and minimum 70 micron DFT over steel sections already having intermediate coats, including the cost of all labour, material, equipments, protection and cleaning, scaffolding etc. all complete as per drawing and specifications. This coat shall be applied after an interval of minimum 24 hours (from the application of sealer coat) and within six (6) months (from the completion of Intermediate coat). Colour and shade of the coat shall be as approved by the Employer.	MT	220	220	220.0	660	0.00240069

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JOB: CONSTRUCTION OF 3 NOS. 150 METER HIGH REINFORCED CONCRETE SINGLE STEEL FLUE CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN AND OTHER INCIDENTALS COMPLETE INCLUDING RAFT FOUNDATION FOR FGD SYSTEM OF 3 X 660 MW NORTH KARANPURA STPP, JHARKHAND.							
TENDER NO PSER:SCT:NKP-C2005:20							
SCHEDULE - 3 : SERVICE							
ITEM SL NO.	Description of Item	Unit	Quantity (Unit 1)	Quantity (Unit 2)	Quantity (Unit 3)	Total Quantity	Weightage
A24	Supplying, fabrication, erection and alignment of factory made <b>chequered plate</b> with mild steel conforming to IS:2062 in platforms, staircases with edge binding strips and anti-skid nosing in treads etc. including 2 coats of redoxide zinc-chromate primer (one coat at shop and one coat after erection), fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete. [Structural steel & chequered plate shall be issued by BHEL free of cost]	MT	55	55	55.0	165	0.00435037
25	Fixing in positing of <b>high strength structural bolts</b> (Material as per SI No. S25 of SCH-4 SUPPLY) for structural steel work at all level etc. complete.	Quintal	50	50	50.0	150	0.00119711
26	Preparing detailed fabrication drawings and after approval by the Engineer, providing, fabricating and erecting, at all levels, <b>structural steel flues (liners)</b> 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 issued by BHEL free of cost] . <b>The Flue can to be transported inside the concrete shell horizontally during erection activity . All necessary arrangement for horizontal movement of flue liner shall be in the scope of contractor .</b>	MT	360	360	360.0	1080	0.06080112
26 (i)	Supply & application including blast cleaning of outer surface of steel flue liner to near white metal surface conforming to Sa 2 ½ finish of ISO 8501-1 with surface profile 40-60 Micron and providing and applying two component moisture curing <b>zinc (ethyl) silicate primer coat</b> (having minimum 80% of metallic Zinc content in dry film, solid by volume minimum 60% ±2%) of minimum 70 micron DFT including the cost of all labour, material, equipments, protection of surface and cleaning, scaffolding, touch-up painting etc., complete as per drawings, specifications and instructions of the Engineer. Zinc dust composition and properties shall be Type-II as per ASTM D520-00. Primer coat shall be applied in Shop immediately after blast cleaning by airless spray technique.	SqM	2800	2800	2800.0	8400	0.05477081
26 (ii)	Providing and applying (by airless spray technique) on outer surface of steel flue liner, an <b>intermediate coat of two component polyamide cured epoxy with MIO Content</b> (containing lamellar MIO minimum 30% on pigment, solid by volume minimum 80% ±2%) of minimum 100 micron DFT after an interval of minimum 24 hours (from the application of primer coat) and of approved make including the cost of all labour, material, equipments, protection and cleaning, scaffolding, touch-up painting etc. all complete as per drawing and specifications.	SqM	2800	2800	2800.0	8400	0.03167136
26 (iii)	Providing and applying on outer surface of steel flue liner, <b>Finish coat of two-pack aliphatic Isocyanate cured acrylic finish paint</b> (solid by volume minimum 55% ±2%) with Gloss retention (SSPC Paint Spec No 36, ASTM D 4587, D 2244, D 523) of Level 2 (after minimum 1000 hours exposure, Gloss loss less than 30 and colour change less than 2.0 ΔE) and minimum 70 micron DFT over steel sections already having intermediate coats, including the cost of all labour, material, equipments, protection and cleaning, scaffolding etc. all complete as per drawing and specifications. This coat shall be applied after an interval of minimum 24 hours (from the application of sealer coat) and within six (6) months (from the completion of Intermediate coat). Colour and shade of the coat shall be as approved by the Employer.	SqM	2800	2800	2800.0	8400	0.03055422
A26	Application of suitable epoxy primer including grit/shot blasting of inner flue surface( Sa 2 ½ finish) , to fully cover the substrate material over all heights of chimney including cost of labour, material, tools & tackles etc. all complete as per drawings, specification, manufacturer's recommendation and engineer in charge. (Epoxy Primer shall be supplied by BHEL free of cost. Onsite supervision of borosilicate glass block lining work shall be provided by BHEL Free of Cost through the Borosilicate Glass Block Lining System supplier.)	SqM	2800	2800	2800.0	8400	0.0577448
C26	Installing borosilicate glass block lining over all heights of chimney by attaching it to inside surface of cleaned MS flue can, external exposed surface and internal surface of minishell, using suitable adhesive / membrane material under controlled temperature and humidity conditions mentioned in specification, including cost of skilled labour, material, tools & tackles, equipment required to create controlled temperature & humidity conditions inside chimney during installation, under the expert supervision by borosilicate glass manufacturer during installation, mixing of two components adhesive membrane by automated mixing machines etc. all complete. Nominal adhesive/ mebrane thickness shall be minimum 3 mm behind & between each block. A 1.5 mm thick layer should be troweled onto the liner as well as to the sides and back of each block before installation. Double buttering technique shall be used to ensure full bond of each block to the liner and to each other. Cost of application of adhesive/membrane is included in this item and shall not be paid separately. Installation of blocks shall be carried out as per specification, drawings, direction of engineer in charge and accepted by the customer. The surface properties of the installed lining system allow, without any significant re-entrainment of flue gas condensate, a flue velocity of atleast 18.3 m/s, contractor shall get the required surface properties of the lining system approved from customer. Contractor shall get installation procedure approved by BHEL/NTPC before installation including verification of installation procedure & workmanship standards of the lining system. (Borosilicate Glass Blocks, Adhesive / membrane material and mixing machine shall be provided by BHEL free of cost. Onsite supervision of borosilicate glass block lining work shall be provided by BHEL Free of Cost through the Borosilicate Glass Block Lining System supplier.)	SqM	2800	2800	2800.0	8400	0.05148438
26F	Fabricating and erecting C276 strips, plates, gutters / vanes / pipes, bends, fittings and any other appurtenances as required ( <b>Material as per SI No. S26F of SCH-4 SUPPLY</b> ) at all elevation in chimney for collection and withdrawal of condensate from inside of flue liner to outside based on the approved design in line with gas-flow-model study report, sealing, testing including surface preparation, TIG or any other type of specialised welding for C276 Strips etc all complete as per specification, drawing and as directed by the Engineer-in-charge. Measurement for payment shall be done for net weight of C276 strip only (weld thickness not to be considered).	Kg	1800	1800	1800.0	5400	0.00348384
27	Providing, fabricating and installing at various locations and elevations of the chimney system the following <b>miscellaneous mild steel items</b> complete with the cost of all labour, material and equipment, transporting, lifting, setting in place, cutting, grinding, drilling, welding, bolts and bolting, anchor fasteners and anchoring, priming, painting, grouting etc. complete as per drawings and specifications:						
a	<b>Mild steel ladders</b> with cage, hood access hatch, louvers, bird screens, hood drain basin covers and other miscellaneous mild steel items not specifically mentioned.	MT	9	9	9.0	27	0.00452591
b	32 / 40 mm nominal bore medium class <b>tubular hand railing</b> for stair case and internal and external platforms.	MT	13	13	13.0	39	0.00675852
c	Providing minimum 275 gsm <b>Hot dipped galvanisation</b> on mild steel parts as per specification.	MT	11	11	11.0	33	0.00197752
d	Providing minimum 610 gsm <b>Hot dipped galvanisation</b> on mild steel parts as per specification.	MT	11	11	11.0	33	0.0024719



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TENDER NO PSER:SCT:NKP-C2005:20							
SCHEDULE - 3 : SERVICE							
ITEM SL NO.	Description of Item	Unit	Quantity (Unit 1)	Quantity (Unit 2)	Quantity (Unit 3)	Total Quantity	Weightage
29A	Supplying, fabricating and installing gas sampling and gas oapacity measurement ports made of C276 pipe in chimney liners, including bolts, non metallic gaskets, cover plates and any other accessories as required, painting etc, all complete as per specification, drawing and as directed by the engineer-in-charge.	KG	80	80	80.0	240	0.0007158
30AA	Fabricating and erecting above roof level 2mm thick titanium sheet (Material as per SI S30AA of SCH-4 SUPPLY) wrapped over chimney mini-shell (as described in item no. 30AAA and insulation over it) external surface, including weldables/consumables, equipment, material, acid resistant nuts, bolts, washers, screws and any other accessories as required for proper fixing, surface finishing, testing, preparation of detailed fabrication drawings etc all complete per specification, drawing and as directed by the Engineer-in-charge.	MT	2.00	2.00	2.00	6	0.00253252
30AAA	Preparing detailed fabrication drawings after approval by the Engineer, providing, fabricating and erecting, Mini Shell above roof level made of solid titanium plate((Material as per SI S30AAA of SCH-4 SUPPLY) including all stiffeners, accessories, cover at top fixing arrangement, nut, bolts, washers, screws etc , weldables/consumables, equipment, material, surface finishing, sealing, testing for quality , etc. all complete as per drawing and specifications.	MT	12.00	12.00	12.00	36	0.01519513
31	Preparing detailed fabrication drawings and after approval by the Engineer, providing, fabricating and installing at all levels, <u>stainless plates</u> (including stainless steel screws and fasteners) of grade AISI 316L <u>and lead sheets</u> over the mild steel in the platform beam bearing, flue supports bearings, flue restraints brackets / buffers etc. including the cost of all labour material & equipment, transporting, lifting to all heights, setting in place, cutting, grinding, drilling, welding of stainless steel using compatible & approved stainless steel electrodes, testing & machining flat and polishing the contact surfaces of stainless steel, coating the polished surfaces with silicone grease, etc., complete as per drawings and specifications.						
a	<u>Stainless steel</u> components.	KG	120	120	120.0	360	0.00012386
b	<u>Lead Sheets</u> .	KG	40	40	40.0	120	0.00009423
32	Preparing detailed fabrication drawings and after approval by the Engineer and as per actual site condition to withstand the wet flue gas, providing, fabricating and installing <u>expansion compensator joints</u> including bolster in the flue liner including all labour, material and equipment transporting, hoisting, fixing in position, drilling, cutting, bolts and bolting, etc. along with the user handbooks (giving details of installation, dismantling and maintenance procedures for the expansion joints), testing, approval form BHEL/NTPC etc complete as per drawings and specifications.	Sqm	40	40	40.0	120	0.00464157
37	Supplying, and placing in position (at the beam supports bearings) <u>Neoperne pads</u> between concrete surface and mild steel including the cost of all labour materials, cutting to shape, grinding, drilling etc., complete as per drawings and specifications.	Cum	0.5	0.5	0.5	2	0.00149403
42	Supplying and installing ready mix castable refractory <u>concrete at opening</u> of chimney shell baffle wall and at other locations including all necessary arrangement for keeping them in position as per drawings and approval of Engineer.	Cum	5	5	5.0	15	0.0006747
43	Providing, laying and packing, at all levels, <u>asbestos ropes</u> at expansion joints including the cost of all labour material, etc. complete as per drawing and specifications.						
b	<u>12 mm (diameter)</u> at expansion joints between linig segments.	Rm	320	320	320.0	960	0.00028397
47	Providing and installing, at all levels, <u>resin bonded rock wool insulation</u> slabs of density not less than 100 kg/cu.m with an installed thickness of not less than 100 mm, on the outside surface of steel flue liners, on the outside surface of brick liner, on the inside surface of concrete windshield, 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.	Sqm	300	300	300.0	900	0.00179219
49	Providing and packing, at all levels, <u>loose rock wool insulation</u> to a density not less than 100 kg/cu.m between the insulated minishells and brick liners at expanjoints between the lining segments and wherever as directed by the Engineer including the cost of all labour, material and equipment, filling, ramming, testing, etc. complete as per drawings and specifications.	Cum	10	10	10.0	30	0.0005246
50	Providing and painting, at all levels, inside surface of chimney shell, inside and outside surfaces of minishells, underside of roof slab and other concrete components/surfaces of the chimney as indicated in the drawings and wherever as directed by the Engineer, with <u>acid and heat resisting black bituminous paint</u> (conforming to type (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.	Sqm	500	500	500.0	1500	0.00067489
51	Providing and painting, at all levels, inside surface of chimney shell, inside and outside surfaces of minishells, underside of roof slab and other concrete components/surfaces of the chimney as indicated in the drawings and wherever as directed by the Engineer, with <u>epoxy phenolic coating system having total 220 microns DFT</u> including the cost of all labour, materials, equipment, surface preparation, primer and finish painting, protecting, cleaning etc. complete as per drawings and specifications.	Sqm	500	500	500.0	1500	0.00047781
55	Providing and painting, at all levels, the external surfaces of chimney shell and wherever as directed by the Engineer, with <u>aliphatic acrylate system having total 170 microns DFT</u> including the cost of all labours, material and & equipment surface preparation, primer and finish painting, and consisting of : i) Two component transparent polyamide cured epoxy sealer coating (having solid by volume minimum 40% ±2%) of minimum 100 micron DFT to be applied over cleaned surface in multiple coats. Surface to be coated shall be absolutely dry, clean and dust free. ii) finish coat of two-pack aliphatic Isocyanate cured acrylic finish paint (solid by volume minimum 55% ±2%) with Gloss retention (SSPC Paint Spec No 36, ASTM D 4587, D 2244, D 523) of Level 2 (after minimum 1000 hours exposure, Gloss loss less than 30 and colour change less than 2.0 ΔE) and minimum 70 micron DFT. This coat shall be applied after an interval of minimum 24 hours and within six (6) months (from the completion of Intermediate coat). Colour and shade of the coat shall be as approved by the Employer, protecting, cleaning etc. complete as per drawings and specification.	Sqm	500	500	500.0	1500	0.00077667

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TENDER NO PSER:SCT:NKP-C2005:20							
SCHEDULE - 3 : SERVICE							
ITEM SL NO.	Description of Item	Unit	Quantity (Unit 1)	Quantity (Unit 2)	Quantity (Unit 3)	Total Quantity	Weightage
56	Providing and painting, at all levels, the external surfaces of chimney shell and wherever as directed by the Engineer, with <u>acid and heat resistant polyurethane paint</u> in alternate bands of colours 'signal red' and 'pure/bright white including the cost of all labours, material and & equipment surface preparation, primer and finish painting, protecting, cleaning etc. complete as per drawings and specification.	Sqm	10	10	10.0	30	0.00002155
57	Providing and painting, at all levels, the external surfaces of chimney shell and wherever as directed by the Engineer, with <u>epoxy phenolic coating having total 220 microns DFT in alternate bands of 'signal red' and 'bright white' colours</u> including the cost of all labours, material and & equipment surface preparation, primer and finish painting, protecting, cleaning etc. complete as per drawings and specification. Concrete surfaces shall be provided with two component transparent polyamide cured epoxy sealer coating (having solid by volume minimum 40% ±2%) of minimum 50 micron DFT to be applied over cleaned surface in multiple coats. Surface to be coated shall be absolutely dry, clean and dust free. Sealer coat shall be followed with the application of Intermediate coat of epoxy phenolic coating (solid by volume minimum 63%) of minimum 100 micron DFT. This coat shall be applied after an interval of minimum 24 hours (from the application of primer coat) by airless spray technique. Intermediate coat shall be followed with the application of finish coat of two-pack aliphatic Isocyanate cured acrylic finish paint (solid by volume minimum 55% ±2%) with Gloss retention (SSPC Paint Spec No 36, ASTM D 4587, D 2244, D 523) of Level 2 (after minimum 1000 hours exposure, Gloss loss less than 30 and colour change less than 2.0 ΔE) and minimum 70 micron DFT. This coat shall be applied after an interval of minimum 10 hours and within six (6) months (from the completion of Intermediate coat), Colour and shade of the coat shall be as approved by the Employer.	Sqm	10000	10000	10000.0	30000	0.00955615
58	Providing and painting, at all levels, the inside surface of chimney shell above roof, horizontal surface of shell at top, underside of concrete roof slab, external surface of minishell above roof and wherever as directed by the Engineer, with <u>epoxy phenolic coating having total 220 microns DFT</u> including the cost of all labours, material and & equipment surface preparation, primer and finish painting, protecting, cleaning etc. complete as per drawings and specification. All concrete surfaces shall be provided with two component transparent polyamide cured epoxy sealer coating (having solid by volume minimum 40% ±2%) of minimum 50 micron DFT to be applied over cleaned surface in multiple coats. Surface to be coated shall be absolutely dry, clean and dust free. Sealer coat shall be followed with the application of Intermediate coat of epoxy phenolic coating (solid by volume minimum 63%) of minimum 100 micron DFT. This coat shall be applied after an interval of minimum 24 hours (from the application of primer coat) by airless spray technique. Intermediate coat shall be followed with the application of finish coat of two-pack aliphatic Isocyanate cured acrylic finish paint (solid by volume minimum 55% ±2%) with Gloss retention (SSPC Paint Spec No 36, ASTM D 4587, D 2244, D 523) of Level 2 (after minimum 1000 hours exposure, Gloss loss less than 30 and colour change less than 2.0 ΔE) and minimum 70 micron DFT. This coat shall be applied after an interval of minimum 10 hours and within six (6) months (from the completion of Intermediate coat), Colour and shade of the coat shall be as approved by the Employer.	Sqm	400	400	400.0	1200	0.00038225
59	Providing and laying over the <u>chimney roof, a composite acid and heat protection treatment</u> including providing of slopes for roof drainage including the cost of all labour, material and equipment, etc., complete as required for preparing the roof concrete, laying under bed of plain cement concrete screed to slopes, preparation of screed surface for painting, painting the screed surface with black bituminous paint, applying bitumenmastic in layers, laying acid resisting(A/R) mortar bed and laying 75 mm thick acid resisting(A/R) bricks with A/R mortar, curing, pointing(with phenolic based A/R cement), protection and cleaning, finishing, etc., complete as per drawing and specifications.	Sqm	200	200	200.0	600	0.0036836
60	Providing, fitting& <u>fixing, outlet and overflow, cast iron roof drain heads (with gratings)</u> 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.	Each	8	8	8.0	24	0.000341
61	Providing, fitting and fixing <u>rainwater pipes</u> 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 seant, foam backing material, jointing, socketing, grouting, caulking, primer and finish painting etc. complete including the cost of all labour, material and equipment, complete as per drawing and specifications:						
a	150 mm nominal bore <u>cast iron pipes</u> .	Rm	32	32	32.0	96	0.00041824
b	150 mm nominal bore <u>medium class galvanised mild steel pipes</u> .	Rm	300	300	300.0	900	0.00339448
62	Providing and laying 50 mm thick <u>cement concrete flooring</u> (comprising of 12 mm thick metallic concrete hardener topping over 38 mm thick under bed of concrete) over the grade level slab inside the chimney, including the cost of all labour, material and equipment, etc. complete as required for preparation of base, laying underbed and topping, finishing, rounding of edges, corners and junctions, curing, testing, etc. complete as per drawing and specifications.	Sqm	472	472	472.0	1416	0.00122341
63	Providing and installing an <u>electrically operated grill type steel roll-up door</u> (with the bottom one third of the curtain in solid type) at chimney base, in opening of approx size of 65 sqare m, with all hardware and mechanisms, fittings and fixtures, locking arrangements, frames, fasteners, gear handle arrangement for standby manual operation, all electrical accessories such as motors, control systems, cables, etc. including the cost of all labour, material and equipment, fixing in position, grouting primer and finish painting, testing, etc., complete as per drawing and specifications.	Each	1	1	1	3	0.0020326
64	Providing and installing at any level and location, mild steel, double plate, <u>personnel access doors</u> , 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 heighls, setting in place, grouting primer and finish painting, etc., complete as per drawing and specifications.	Each	1	1	1	3	0.00008592
65	Supply, fabricating and fixing of <u>cleanout door</u> of size 650X825 mm. The door should be solid steel construction with inner plate 8mm and outer plate 6mm with suitable infill of stiffners, & filled with insulation mateterial and all other fittings, fixtures, fasteners including the cost of painting etc complete as per drawings and specification. The door should be hinged type and providing with locking device in addition to swivel studs with wing nuts on remaining 3 edges. The should be openable both from inside & outside and removable insulation to be provided around door opening. The door shall be provided with a minimum two coats of acid & alkali resistant paint conforming to IS158 type-I to give a DFT of 75microns. The outside surface shall be provided with minimum 2 coats of Zinc redoxide primer and two coats of synthetic enamel paint.	Each	1	1	1	3	0.00007957
67	Supplying, fabricating and installing <u>mild steel hatches</u> at various locations in the chimney system complete with locking arrangements, frames, insulation, fittings and fixtures and all mechanisms and accessories reqd. for proper operation including all labour, painting etc. complete as per drawings and specifications.						

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JOB: CONSTRUCTION OF 3 NOS. 150 METER HIGH REINFORCED CONCRETE SINGLE STEEL FLUE CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN AND OTHER INCIDENTALS COMPLETE INCLUDING RAFT FOUNDATION FOR FGD SYSTEM OF 3 X 660 MW NORTH KARANPURA STPP, JHARKHAND.							
TENDER NO PSER:SCT:NKP-C2005:20							
SCHEDULE - 3 : SERVICE							
ITEM SL NO.	Description of Item	Unit	Quantity (Unit 1)	Quantity (Unit 2)	Quantity (Unit 3)	Total Quantity	Weightage
a	Hood Access Hatch	Each	1	1	1.0	3	0.00014211
68	Conducting <u>load testing on girders</u> for 1.25 times the full load, on ground , including provision of test bed and jacks, dial gauges and other supplies complete as per specification and drawings and approval of engineer in-charge.	Pair	1	1	1.0	3	0.00098961
69	Designing, supplying, fabricating and installing after approval by the Engineer, <u>non-metallic expansion joints</u> to seal gaps between chimney components and to meet the service requirements of wet stack and as given in the specifications alongwith the cost of all components of the expansion joint, insulation, galvanised bolts, nuts, washers, anchor fasteners and retaining bars, packing materials and reinforcements at the connecting ends and flanges, lapping etc. including cost of all labour and equipment, user hand books (giving details of installation, dismantling and maintenance procedures for the expansion joints) etc. complete as per drawings and specifications for:						
a	Expansion joint <u>between ducts and liners</u> .	Sqm	50	50	50.0	150	0.00405824
b	Expansion joint <u>between duct and chimney shell</u> .	Sqm	50	50	50.0	150	0.00405824
70	Providing & grouting of pocket holes, pipe sleeves and under base plates of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with Conbextra GP-1 or equivalent. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	Cum	1	1	1.0	3	0.00015777
71	Providing & grouting of pocket holes, pipe sleeves and under base plate of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with mix 1:1:2 (1 cement : 1 coarse sand : 2 aggregate of 6 mm down graded stonechips ) using non shrink admixture. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor).	CUM	1	1	1.0	3	0.00005697
72	Erecting after Supply as per SI No. <b>S72</b> of SCH-4 SUPPLY, of <u>Elevator</u> from ground upto top of chimney with landing at various platform level complete as per spec. and drawings.	Lumpsum	1	1	1.0	3	0.00514384
73	Fabricating and erecting FRP Pipes (Material as per SI No. S73 of SCH-4 SUPPLY) with all bends, flanges, stiffeners, all other flue attachments, including support system, collars, connection with C276 pipes and any other accessories as required outside chimney flue liner at all elevation based on the approved design in line with gas-flow-model study report, including surface finishing, sealing, lamination, moulding, testing, guarantee / warranty etc. complete as per drawings, specification, manufacturer's recommendations and relevant codes.	Kg	488	488	488.0	1464	0.00015475
PART 1B (E1 TO E29)	<b>ELECTRICAL WORKS (Installation, testing &amp; commissioning of following items as per specification) (Material as per SI No. SE1 to SE29 of SCH-4 SUPPLY)</b>						
E1	415V, 200A, 50 KA for 1 sec, 4 wire AC Distribution Board with 1No. Incomer (SFU) , 12 nos. of 100A SFU (TPN) outgoing alongwith 100KVA lighting transformer (415/433) V in Incomer, Dyn11, Z=4%, ±2x2.5% off ckt. Tap) complete in all respects	no.	1	1	1	3	0.00004256
E2	415V, 200A, 4 wire AC Emergency Lighting distribution board alongwith 50KVA lighting transformer (415/433 V, Dyn11, Z=4%, ±2x2.5% off ckt. Tap) with 2 nos. of SFU (TPN) incomers with auto changeover facility using contactors and <b>8 nos.</b> 100A SFU (TPN) outgoing complete in all respects. In case load requirement of chimney can not be met by 50 kVA lighting transformer after considering loading, 100 kVA lighting transformer shall be provided alongwith suitably rated components without any commercial implications to the purchaser..	no.	1	1	1	3	0.00004256
E3	Normal AC lighting panel outdoor type with degree of protection IP 55 with one no. 100A SFU (TPN) Incomer , <b>20</b> outgoing (16A SP MCBs)	no.	2	2	2	6	0.00002317
E4	Emergency lighting panel outdoor type with degree of protection IP 55 with One no. of 100A SFU(TPN) Incomer and 12 outgoing (16A, SP MCBs)	no.	2	2	2	6	0.00002317
E5	Aviation lighting panel outdoor type with degree of protection IP 55 with one no. 100A SFU (TPN) Incomer , <b>8</b> outgoing <b>32A SFU (TPN)</b> , photodetector and timer circuit along with 100A contactor to control aviation lighting system.	no.	1	1	1	3	0.00001159
E6	Aviation obstruction lights (mounted on door panel openable from interior) :						
	a. High intensity flashing white light Type-A as per ICAO standard having an effective intensity of 4000 to 200,000 cd (minimum) depending upon back ground illuminance.Obstacle lights shall have a day time effective intensity of minimum 200000 cd. The intensity of lights shall be 20000 cd ± 25% at twilight and shall reduce automatically to a night time intensity of 4000 cd ± 25% through the use of photocell. shall be provided with all accessories, photocell, timer etc.	no.	16	16	16	48	0.00014604
	b. Temporary obstruction light located at diametrically opposite points at the top of chimney during period of construction with four fixture each .	no.	4	4	4	12	0.00023888
E7	Aviation Distribution Board (ADB) with one 32A SFU (TPN) incomer and 8 nos. SP 20A MCB. Construction is same as Lighting Panel.	no.	1	1	1	3	0.00000993
E8	Flood light type 120W(approx) LED luminaire with fitting (integrated /retrofitted LED lamp ) having an integral driver.The luminaire efficacy shall not be less than 80 Lm/W.	no.	6	6	6	18	0.00024778
E9	Well glass type 30W(approx) LED luminaire with fitting (integrated /retrofitted LED lamp ) having an integral driver.The luminaire efficacy shall not be less than 80 Lm/W.	no.	64	64	64	192	0.00070203
E10	Well glass type 70W(approx) LED luminaire with fitting (integrated /retrofitted LED lamp ) having an integral driver.The luminaire efficacy shall not be less than 80 Lm/W.	no.	35	35	35	105	0.00027191
E11	Well glass type 50W(approx) LED luminaire with fitting (integrated /retrofitted LED lamp ) having an integral driver.The luminaire efficacy shall not be less than 80 Lm/W.	no.	20	20	20	60	0.00018062
E12	63Amp welding switch socket with plug & other Mounting accessories	no.	9	9	9	27	0.00003873

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TENDER NO PSER:SCT:NKP-C2005:20							
SCHEDULE - 3 : SERVICE							
ITEM SL NO.	Description of Item	Unit	Quantity (Unit 1)	Quantity (Unit 2)	Quantity (Unit 3)	Total Quantity	Weightage
E13	3 pin, 1 ph, 240V, 20Amp. Industrial Power sockets complete with plug Switches etc.	no.	9	9	9	27	0.00001809
E14	Al conductor, HR PVC insulated, Armoured, PVC inner sheath,PVC outer sheath, FRLS type 1100V grade conforming to IS-1554 Part I.						
a	3½ C x95mm <sup>2</sup> Al for connection between ACDB/ELDB/ welding sockets	Mtrs.	1500	1500	1500	4500	0.00067393
b	3½ Cx35mm <sup>2</sup> Al for Lighting panel incoming supply	Mtrs.	1000	1000	1000	3000	0.00028376
c	4C x16mm <sup>2</sup> Al for connection between ALP/ADB/Aviation Lights	Mtrs.	250	250	250	750	0.00006503
d	4C x 2.5mm <sup>2</sup> Cu Control cable for Aviation lighting system	Mtrs.	500	500	500	1500	0.00010496
E15	Cu conductor, HR-PVC insulated, PVC inner sheath,PVC outer sheathed and FRLS type 1100V grade conforming to IS-1554 Part I.						
a	2.5 mm <sup>2</sup>	Mtrs.	2000	2000	2000	6000	0.00017544
b	4.0 mm <sup>2</sup>	Mtrs.	5000	5000	5000	15000	0.00056483
E16	GI pipe conduit with minimum 25 mm dia with GI junction boxes, GI pull boxes (Size 200x200x100mm of 16 SWG sheet steel for junction & pull boxes) & accessories etc. complete in all respects.	Mtrs.	2000	2000	2000	6000	0.0010687
E17	PVC coated Flexible steel conduit 25mm dia with accessories	Mtrs.	100	100	100	300	0.00000945
E18	Lightning protection Air terminal : Lead coated copper material of 20 mm dia & 3 metre long.	no.	6	6	6	18	0.00013857
E19	50x6 Lead Coated GI Strip for coronal band on flue and top platform	Mtrs.	100	100	100	300	0.00005885
E20	Electrical equipment earthing materials including down conductors 50x6 GI Strip	Mtrs.	700	700	700	2100	0.00036348
E21	Electrical equipment earthing materials including down conductors 25x3 GI Strip	Mtrs.	700	700	700	2100	0.00012109
E22	8 SWG GI wire for equipment earthing	Mtrs.	2000	2000	2000	6000	0.00004729
E23	Test links for 50x6 down conductors enclosed in 200mm X 200mm X 100mm GI box of 16SWG sheet steel..	no.	6	6	6	18	0.00006923
E24	40mm dia MS rod for earthing of down conductor (BHEL will provide Earthing Rod free of cost)	Mtrs.	200	200	200	600	0.00023079
E25	Earthpit with earthing electrode including brick chamber with cover, accessories etc. complete in all respect..	no.	6	6	6	18	0.00010586
E26	Telephone socket with junction box etc. complete.	no.	6	6	6	18	0.00003551
E27	Telephone handsets complete.	no.	6	6	6	18	0.00003429
E28	Telephone cable of minimum 0.6 mm dia annealed high conductivity electro copper conductor, PVC insulated, twisted, PVC tape wrapped, screened, tip corded, PVC sheathed, conforming to relevant ITD (Indian Telephones department) specification						
	a) 24 pairs	Mtrs.	300	300	300	900	0.00012291
	b) 2 pairs	Mtrs.	100	100	100	300	0.00000982
E29	GS cable trays. Cable trays shall be of ladder type constructed of minimum 2 mm thick mild steel hot dip galvanise including cover, cabling material, accessories etc.						
a	600 mm wide	Mtrs.	200	200	200	600	0.00023647
b	300 mm wide	Mtrs.	200	200	200	600	0.00015134
c	150 mm wide	Mtrs.	400	400	400	1200	0.00028376
	<b>Miscellaneous Works</b>						
<b>M1</b>	<b>BORE WELL</b>						
<b>M1.1</b>	Boring/drilling bore well of required dia for casing/strainer pipe, by suitable method prescribed in IS:2800 (Part I), including collecting samples from different strata, preparing and submitting strata chart/bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all equipments, tools & machineries required for the job, all complete as per direction of Engineer-in-charge, Upto 90 metre depth below ground level. All types of soil						

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TENDER NO PSER:SCT:NKP-C2005:20							
SCHEDULE - 3 : SERVICE							
ITEM SL. NO.	Description of Item	Unit	Quantity (Unit 1)	Quantity (Unit 2)	Quantity (Unit 3)	Total Quantity	Weightage
	300 mm dia	metre	450			450	0.00026608
M1.2	Boring/drilling bore well of required dia for casing/strainer pipe, by suitable method prescribed in IS:2800 (Part I), including collecting samples from different strata, preparing and submitting strata chart/bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer-in-charge, beyond 90 metre & upto 150 metre depth below ground level. All types of soil						
	300 mm dia	metre	300			300	0.00020694
M1.3	Labour for boring through any type of soil for sinking tubewell of required dia. With top enlargement by rig boring system ( either by reverse circulation or by direct rotary method ) including hire charges and labour for Rig Machine tools and plants, staging force pumping set, and making arrangement for water required for boring etc. complete and lowering of casing pipes , strainers blind pipes etc. complete for 300 mm dia . Depth of boring to be decided at the time of execution.						
	Beyond 150 ( Hundred Fifty ) From Ground Level ( In case good water strata is not available upto 150 M Depth.)	metre	875			875	0.00081904
M1.4	Supplying assembling lowering and fixing in vertical position in bore well, upvc midium bell casing of required dia confirming to IS 12818 including required higher and labour charges fitting and nessesary etc all complete for all depths as per direction of ngnieer incharge						
	200 mm dia Nominal bore GI pipe	metre	550			550	0.00067672
M1.5	Providing and fixing to filter / submersible pump and lowering to proper levels 40 mm G.I. pipe for tube well including cleaning and priming the tube well	Mtrs.	1500			1500	0.00075128
M1.6	Supply, installation, commissioning of 5 HP KSB make or equivalent submersible pump motor set having capacity of discharging minimum 4 LPS of clear water at a total head as per site requirement or maximum 300 mtr depth . Pump shall be connected with 40 mm dia GI column pipes of length as per site requirement as directed by BHEL . Supply , assembling, lowering and fixing in vertical position in bore well including required fixing and labour charges etc. of 40 mm column pipe shall be paid in separet item. Depths of lowering of pump will be as per direction of Engineer- in-charge.	SET	5			5	0.00029309
M1.7	Supplying , delivery and installation of Shakti 3-phase DOL Submersible Pump Starter (with Auto Switch-3 position selection, with SPP), Overload Relay Range 6.0(A) - 9.0(A) of make BCH or equivalent to be installed for bore well.	SET	5			5	0.00017585
M1.8	Supplying & laying 10 Sq. m 1.1 Kv grade 3.5 core PVC armoured ALUMINIUM cable on wall by means of saddles from ICTPN switch to busbars to MCCB, NCCB to starter including all end termination and interconnections etc. complete.	Mtrs.	1500			1500	0.00026378
M1.9	Providing and fixing M.S. clamp of required dia to the top of casing/housing pipe of tubewell as IS:2800 ( part I), including necessary bolts & nuts of required size complete.						
	200 mm clamp	Nos.	5			5	0.00000976
M2	Deployment of Tools & Plants like Poclain, dumper etc. at nearby Coal Mines ( around 10-15 km distance), liaising with concerned authority / owner, loading of the coal rejected boulders, transporting to the work place at North Karanpura site including incidental charges, if any, laying the boulders at designated location(s) as per instruction of BHEL engineer, deployment of dozer/poclain for spreading the boulders in required thickness, breaking the boulders in small sizes to fill up the interstitial voids and compacting with 8-10 Ton capacity roller so as to provide even finished surface. (Rate to be quoted excluding taxes. GST, as applicable will be paid extra on submission of requisite documents)	cum	5000			5000	0.00365958
<b>TOTAL</b>							<b>0.83541693</b>

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TENDER NO PSER:SCT:NKP-C2005:20							
SCHEDULE - 4 : SUPPLY							
ITEM SL NO.	Description of Item	Unit	Quantity (Unit 1)	Quantity (Unit 2)	Quantity (Unit 3)	Total Quantity	Weightage
S25	Supplying <b>high strength structural bolts</b> (of property class 8.8 and product grade 'C' as per IS: 1367) and conforming to IS: 3757 and high strength structural hardened and tempered nuts (of property class '8' as per IS:1367) conforming to IS:6623 with hardened and tempered washers as per IS:6649 etc. up to and inclusive of 39 mm diameter and upto 300 mm long for structural steel work etc all complete. (Final measurement of total qty of this item shall be restricted to total quantity of Item no. 25 of SCHEDULE-3 admitted in final bill).	Quintal	50	50	50	150	0.00279325
S26F	Supplying C276 strips, plates, gutters / vanes / pipes, bends, fittings and any other appurtenances as required in chimney for collection and withdrawal of condensate from inside of flue liner to outside based on the approved design in line with gas-flow-model study report all complete as per specification, drawing and as directed by the Engineer-in-charge. Final measurement for payment shall be done for net weight of C276 strip only after erection (weld thickness not to be considered). (Final measurement of total qty of this item shall be restricted to total quantity of Item no. 26F of SCHEDULE-3 admitted in final bill).	Kg	1800	1800	1800	5400	0.01393521
S30AA	Supplying 2mm thick titanium sheet (Grade 2 as per ASME B265) to be wrapped over chimney mini-shell (as described in item no. 30AAA and insulation over it) external surface as per specification, drawing and as directed by the Engineer-in-charge. (Final measurement of total qty of this item shall be restricted to total quantity of Item no. 30AA of SCHEDULE-3 admitted in final bill).	MT	2.00	2.00	2.00	6	0.01013009
S30AAA	Supplying solid titanium (grade 2 as per ASME SB265) plate of minimum 10mm thk required for fabrication and erection of Mini Shell above roof level as per specification, drawing and as directed by the Engineer-in-charge. (Final measurement of total qty of this item shall be restricted to total quantity of Item no. 30AAA of SCHEDULE-3 admitted in final bill).	MT	12.00	12.00	12.00	36	0.06078051
S33	Supplying, Fabricated Ready to Install, <b>spare expansion compensators</b> alongwith bolster including the cost of all labour, material and equipment, accessories, transporting, proper packaging (for several years of storage), and delivery to site store complete in all respects as per drawings and specification. (Final measurement of total qty of this item shall be restricted to total quantity of Item no. 33 of SCHEDULE-3 admitted in final bill).	Sqm	30	30	30	90	0.00302217
S72	Design, engineering and supply after approval by Engineer for an <b>Elevator</b> from ground upto top of chimney with landing at various platform level complete as per spec. and drawings.	Lumpsum	1	1	1	3	0.02420325
S73	Supplying FRP Pipes with all bends, flanges, stiffeners, all other flue attachments, including support system, collars, connection with C276 pipes and any other accessories as required outside chimney flue liner at all elevation based on the approved design in line with gas-flow-model study report, including moulding, testing, guarantee / warranty etc. complete as per drawings, specification, manufacturer's recommendations and relevant codes. (Final measurement of total qty of this item shall be restricted to total quantity of Item no. 73 of SCHEDULE-3 admitted in final bill).	Kg	488	488	488	1464	0.00061903
	<b>ELECTRICAL WORKS (Design, Engineering and Supply of following items as per specification)</b>						
SE1	415V, 200A, 50 KA for 1 sec, 4 wire AC Distribution Board with 1No. incomer (SFU) , 12 nos. of 100A SFU (TPN) outgoing alongwith 100KVA lighting transformer (415/433) V in Incomer, Dyn11, Z=4%, $\pm 2 \times 2.5\%$ off ckt. Tap) complete in all respects	no.	1	1	1	3	0.00203442
E2	415V, 200A, 4 wire AC Emergency Lighting distribution board alongwith 50KVA lighting transformer (415/433 V, Dyn11, Z=4%, $\pm 2 \times 2.5\%$ off ckt. Tap) with 2 nos. of SFU (TPN) incomers with auto changeover facility using contactors and 8 nos. 100A SFU (TPN) outgoing complete in all respects. In case load requirement of chimney can not be met by 50 kVA lighting transformer after considering loading, 100 kVA lighting transformer shall be provided alongwith suitably rated components without any commercial implications to the purchaser..	no.	1	1	1	3	0.0020584
SE3	Normal AC lighting panel outdoor type with degree of protection IP 55 with one no. 100A SFU (TPN) Incomer, 20 outgoing (16A SP MCBs)	no.	2	2	2	6	0.00058493
SE4	Emergency lighting panel outdoor type with degree of protection IP 55 with One no. of 100A SFU(TPN) incomer and 12 outgoing (16A, SP MCBs)	no.	2	2	2	6	0.00068555
SE5	Aviation lighting panel outdoor type with degree of protection IP 55 with one no. 100A SFU (TPN) Incomer , 8 outgoing 32A SFU (TPN), photodetector and timer circuit along with 100A contactor to control aviation lighting system.	no.	1	1	1	3	0.00046123
SE6	Aviation obstruction lights (mounted on door panel openable from interior) :						

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TENDER NO PSER:SCT:NKP-C2005:20							
SCHEDULE - 4 : SUPPLY							
ITEM SL NO.	Description of Item	Unit	Quantity (Unit 1)	Quantity (Unit 2)	Quantity (Unit 3)	Total Quantity	Weightage
	a. High intensity flashing white light Type-A as per ICAO standard having an effective intensity of 4000 to 200,000 cd (minimum) depending upon back ground illuminance.Obstacle lights shall have a day time effective intensity of minimum 200000 cd. The intensity of lights shall be 20000 cd $\pm$ 25% at twilight and shall reduce automatically to a night time intensity of 4000 cd $\pm$ 25% through the use of photocell. shall be provided with all accessories, photocell, timer etc.	no.	16	16	16	48	0.02480047
	b. Temporary obstruction light located at diametrically opposite points at the top of chimney during period of construction with four fixture each .	no.	4	4	4	12	0.0005574
SE7	Aviation Distribution Board (ADB) with one 32A SFU (TPN) incomer and 8 nos. SP 20A MCB. Construction is same as Lighting Panel.	no.	1	1	1	3	0.00011258
SE8	Flood light type 120W(approx) LED luminaire with fitting (integrated /retrofitted LED lamp ) having an integral driver.The luminaire efficacy shall not be less than 80 Lm/W.	no.	6	6	6	18	0.00027869
SE9	Well glass type 30W(approx) LED luminaire with fitting (integrated /retrofitted LED lamp ) having an integral driver.The luminaire efficacy shall not be less than 80 Lm/W.	no.	64	64	64	192	0.00116206
SE10	Well glass type 70W(approx) LED luminaire with fitting (integrated /retrofitted LED lamp ) having an integral driver.The luminaire efficacy shall not be less than 80 Lm/W.	no.	35	35	35	105	0.00107887
SE11	Well glass type 50W(approx) LED luminaire with fitting (integrated /retrofitted LED lamp ) having an integral driver.The luminaire efficacy shall not be less than 80 Lm/W.	no.	20	20	20	60	0.00058905
SE12	63 Amp welding switch socket with plug & other Mounting accessories	no.	9	9	9	27	0.00049953
SE13	3 pin, 1 ph, 240V, 20Amp. Industrial Power sockets complete with plug Switches etc.	no.	9	9	9	27	0.00010558
SE14	Al conductor, HR PVC insulated, Armoured, PVC inner sheath,PVC outer sheath, FRLS type 1100V grade conforming to IS-1554 Part I.						
a	3½ C x 95mm <sup>2</sup> Al for connection between ACDB/ELDB/ welding sockets	Mtrs.	1500	1500	1500	4500	0.00336452
b	3½ C x 35mm <sup>2</sup> Al for Lighting panel incoming supply	Mtrs.	1000	1000	1000	3000	0.00111243
c	4C x 16mm <sup>2</sup> Al for connection between ALP/ADB/Aviation Lights	Mtrs.	250	250	250	750	0.00043073
d	4C x 2.5mm <sup>2</sup> Cu Control cable for Aviation lighting system	Mtrs.	500	500	500	1500	0.00024491
SE15	Cu conductor, HR-PVC insulated, PVC inner sheath,PVC outer sheathed and FRLS type 1100V grade conforming to IS-1554 Part I.						
a	2.5 mm <sup>2</sup>	Mtrs.	2000	2000	2000	6000	0.00040937
b	4.0 mm <sup>2</sup>	Mtrs.	5000	5000	5000	15000	0.00131795
SE16	GI pipe conduit with minimum 25 mm dia with GI junction boxes, GI pull boxes (Size 200x200x100mm of 16 SWG sheet steel for junction & pull boxes) & accessories etc. complete in all respects.	Mtrs.	2000	2000	2000	6000	0.00249362
SE17	PVC coated Flexible steel conduit 25mm dia with accessories	Mtrs.	100	100	100	300	0.00002205
SE18	Lightning protection Air terminal : Lead coated copper material of 20 mm dia & 3 metre long.	no.	6	6	6	18	0.00032332
SE19	50x6 Lead Coated GI Strip for coronal band on flue and top platform	Mtrs.	100	100	100	300	0.00013732
SE20	Electrical equipment earthing materials including down conductors 50x6 GI Strip	Mtrs.	700	700	700	2100	0.00084813
SE21	Electrical equipment earthing materials including down conductors 25x3 GI Strip	Mtrs.	700	700	700	2100	0.00028254
SE22	8 SWG GI wire for equipment earthing	Mtrs.	2000	2000	2000	6000	0.00012145
SE23	Test links for 50x6 down conductors enclosed in 200mm X 200mm X 100mm GI box of 16 SWG sheet steel.	no.	6	6	6	18	0.00016153
SE25	Earthpit with earthing electrode including brick chamber with cover, accessories etc. complete in all respect.	no.	6	6	6	18	0.00024702
SE26	Telephone socket with junction box etc. complete	no.	6	6	6	18	0.00008287
SE27	Telephone handsets complete	no.	6	6	6	18	0.00008001
SE28	Telephone cable of minimum 0.6 mm dia annealed high conductivity electro copper conductor, PVC insulated, twisted, PVC tape wrapped, screened, tip corded, PVC sheathed, confirming to relevant ITD (Indian Telephones department) specification						
	a) 24 pairs	Mtrs.	300	300	300	900	0.00028678
	b) 2 pairs	Mtrs.	100	100	100	300	0.00002291
SE29	GS cable trays. Cable trays shall be of ladder type constructed of minimum 2 mm thick mild steel hot dip galvanise including cover, cabling material, accessories etc.						

VOLUME-III PRICE SCHEDULE, REV-01							
JOB: CONSTRUCTION OF 3 NOS. 150 METER HIGH REINFORCED CONCRETE SINGLE STEEL FLUE CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN AND OTHER INCIDENTALS COMPLETE INCLUDING RAFT FOUNDATION FOR FGD SYSTEM OF 3 X 660 MW NORTH KARANPURA STPP, JHARKHAND.							
TENDER NO PSER:SCT:NKP-C2005:20							
SCHEDULE - 4 : SUPPLY							
ITEM SL NO.	Description of Item	Unit	Quantity (Unit 1)	Quantity (Unit 2)	Quantity (Unit 3)	Total Quantity	Weightage
a	600 mm wide	Mtrs.	200	200	200	600	0.00066289
b	300 mm wide	Mtrs.	200	200	200	600	0.00052621
c	150 mm wide	Mtrs.	400	400	400	1200	0.00091224
TOTAL							0.16458307



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PART – I

INSTRUCTION TO TENDERER

CLAUSE NO	DESCRIPTION
<b>1.0</b>	<b>SUBMISSION OF TENDERS</b>
	The tenderers must submit their tenders in two parts in separate sealed covers as detailed below and as per instructions of NIT.
	PART – I (TECHNO-COMMERCIAL PART).
	PART – II (PRICE PART).
1.1	PART – I (TECHNO-COMMERCIAL PART)
1.1.1	This shall include the following.
1.1.1.1	Covering letter of tenderer.
1.1.1.2	Volume-IA/IB/IC/ID/ IF – General, Special and Technical Conditions of Contract.
1.1.1.3	Volume-II – Technical specification including drawings, if any.
1.1.1.4	Volume-III – ‘Price schedule’, (No rate shall be entered in the rate column. Only write ‘quote’ against each rate of the schedule).
1.1.1.5	Drawings.
1.1.1.6	Schedules, annexures, proformas and other documents as indicated in the tender document and as specified in the tender enquiry letter.
1.1.1.7	<p>The above documents shall form one set of the Part –I tender. Tenderers shall submit requisite sets of Part-I tender, i.e. original and duplicate sets as specified in the tender enquiry letter. All the sets shall be sealed and marked ‘Original Part – I tender’ and ‘Copies of Part – I tender’ on the respective sets and superscribed as :</p> <p>PART – I (TECNHO-COMMERCIAL PART).  TENDER DOCUMENT NO.  NAME OF WORK AND PROJECT.  SUE DATE OF SUBMISSION.</p>
1.2	PART –II (PRICE PART)
	This shall include following:
1.2.1	Copy of the covering letter enclosed in Part-I tender.
1.2.2	Volume III – Schedule of item of work (in the rate /price column the rate / price figures should be entered in words as well as in figures).
1.2.3	<p>Tenderer shall submit requisite sets of Part-II tender duly sealed in one cover, superscribed as:</p> <p>PART – I (PRICE PART).  TENDER DOCUMENT NO.  NAME OF WORK AND PROJECT.  SUE DATE OF SUBMISSION.</p>
1.3	<p>PART – III (EMD)</p> <p>Earnest Money Deposit should be made in the form as indicated in tender document and shall be submitted inside a sealed envelope superscribing the following.</p> <p>PART – III (EMD).  TENDER DOCUMENT NO.  NAME OF WORK AND PROJECT.  SUE DATE OF SUBMISSION.</p>
1.4	MAIN COVER
	<p>Duly sealed and superscribed, as detailed above of Part – I, Part- II and Part – III tenders shall be enclosed in one main cover duly sealed and superscribed as:</p> <p>PART – IV (TECNHO-COMMERCIAL PART, PRICE PART AND EMD).  TENDER DOCUMENT NO.  NAME OF WORK AND PROJECT.  SUE DATE OF SUBMISSION.</p>
<b>2.0</b>	<b>OPENING OF TENDERS</b>
2.1	Unless otherwise specified, techno-commercial bids will be opened one day after latest due date of submission of offer at 15-00 hrs for which bidder may depute representative.
2.2	While BHEL reserve the right to open the price bid (Cover-II) of the offers in camera, the date & time to open to Cover-II tender opening shall be intimated to the bidders in case

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	BHEL decides it to be 'Public opening' and in such a case, one representative of the bidder shall be allowed to attend.
2.3	Price bids of those bidders who will be qualified for the subject job on the basis of pre-bid discussions, evaluation of techno commercial bids etc will be opened on specified date. Bidders may depute their representatives to participate in opening of price bids. BHEL's decision in this regard is final & binding.
<b>3.0</b>	<b>RATES TO BE IN FIGURES AND WORDS</b>
3.1	The tenderer shall quote in English both in figures as well as in words the rates and amounts tendered by him in the priced schedule of items of work forming part of the tender in such a way that interpolation is not possible. The amount for each item shall be worked out and entered and requisite totals given of all items. The tendered amount for the work shall be entered in the tender and duly signed by the tenderer.
3.2	If some discrepancies are found between the rate given in words and figures or the amount shown in the tender the following procedure shall be followed.
3.2.1	When there is a difference between the rates in figures and words, the rates which correspond to the amount worked out by the tenderer shall be taken as correct.
3.2.2	When the rate quoted by the tenderer in figures and words tallies but the amount is incorrect, the rate quoted by the tenderer shall be taken as correct.
3.2.3	When it is not possible to ascertain the correct rate, in the manner prescribed above, the lesser of the two (ie between figures and words) will be treated as valid rate.
<b>4.0</b>	<b>CORRECTIONS AND ALTERATIONS</b>
	All entries in the tender shall either be typed or be in ink, erasures and over-writing are not permitted and may render such tenders liable to summary rejection. All corrections and alterations shall be duly attested by the tenderer with date.
<b>5.0</b>	<b>ALL PAGES TO BE INITIALLED</b>
	All signatures in tender documents shall be dated as well. All pages of all volumes and sections including drawing of tender documents shall be initialed with seal at the lower right hand corner or signed with seal wherever required in the tender documents by the tenderer or by a person holding power of attorney (copy to be enclosed with Part-I of tender) authorizing him to sign on behalf of the tenderer before submission of tender.
<b>6.0</b>	<b>ADDENDA</b>
	Addenda to the tender documents may be issued prior to the date of opening of the tenders to clarify documents or to reflect modifications in the design or contract terms. All such addenda issued shall form part of tender documents.
<b>7.0</b>	<b>RATES TO BE ALL INCLUSIVE</b>
	The tenderer shall quote for the jobs on the basis of the items entered in the schedule of items of work and shall quote separately for each and every items entered in schedule of items of work. The rates and prices quoted shall be all inclusive as provided for in the schedule of items of work and any claim whatsoever for enhancement of rates or prices quoted on any account shall not be entertained.
<b>8.0</b>	<b>INFORMATION</b>
	The information given in the tender documents and the plans and drawings forming part thereof is merely intended as general information without undertaking on the part of BHEL as to their accuracy and without obligation relative thereto upon BHEL. Before tendering, the tenderers are advised to inspect the site of work and the environments and be well acquainted with the actual working and other prevalent conditions, facilities available, position of labour etc. No claim will be entertained later on the ground of lack of knowledge.
<b>9.0</b>	<b>QUANTITIES</b>
	The quantities indicated in the schedule of items of work with respect to the various items are only approximate and are intended merely as a general information without undertaking as to the correctness thereof and without any obligation relative thereto upon BHEL.
<b>10.0</b>	<b>ENCLOSURES</b>
	The enclosures to be enclosed alongwith Part-I of the tender shall include the following besides other such enclosures which may have been specified elsewhere in the tender documents.
10.1	Valid Income Tax Clearance Certificate and Sales Tax Clearance Certificate in original or true copies/ photocopies duly attested by a Gazetted Officer.
10.2	Solvency certificate from a nationalized scheduled bank.
10.3	In case of an proprietorship firm, full name of proprietor, address, place and nature of business shall be furnished. In case of partnership firm, names of all the partners and their address, attested copy of partnership deed, instrument of partnership duly certified by the Notary Publics shall be enclosed. In case of company, date and place of registration including date of commencement – certificate, certified copies of Memorandum and Articles

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	of Association, nature of business carried on by the company and provisions of the memorandum relating thereof, names and particulars including addresses of all the directors and their previous experiences etc shall be furnished.
10.4	Power of Attorney or other proof of authority of the person who has signed the tender.
10.5	Provident Fund Account No through which PF of the Employees are deposited including supporting document for the same.
10.6	In case of a consortium arrangement consisting of prime bidder and his associate, the prime bidder to furnish as exclusive undertaking jointly executed by him and his associate for the successful performance of the entire contract. At the time of contract finalisation, a legal document on the formation of such group has to be submitted to BHEL which will be a part of the contract document.
10.7	Any other documents required in terms of this notice.
<b>11.0</b>	<b>GENERAL</b>
11.1	The tender shall be completely filled in all respects and shall be tendered together with requisite information in the manner detailed above. Any tender incomplete in any respect and violating any of the instructions shall be liable to be rejected. If the space in the tender or any schedule or proforma is insufficient pages shall be separately added and numbered.
11.2	The acceptance of tender will rest with BHEL which does not bind itself to accept the lowest tender or any tender and reserves to itself full rights for the following without assigning any reasons whatsoever :-
11.2.1	To reject any or all the tender.
11.2.2	To split up the work amongst two or more tenderers.
11.2.3	To award the work in part.
11.2.4	Either of the contingencies stated in 11.2.2 and 11.2.3 to modify the time for completion suitably.
11.3	Conditions and unwitnesses tenders, tenders containing absurd or unworkable rates and amounts and tenders which are incomplete and otherwise considered defective and not in accordance with the tender conditions, specification, etc are liable to be rejected.
11.4	If a tenderer expires after his submission of the tender or after the acceptance of his tender BHEL may at their discretion cancel such tender. If a partner of a firm expires after the submission of the tender or after the acceptance of the tender, BHEL may cancel such tender at their discretion unless the firm retains its character.
11.5	BHEL will not be bound by any power of attorney / granted by the tenderer or by changes in the composition of the firm made subsequent to the execution of the contract. They may however, recognize such power of attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the contractor, concerned.
11.6	If the tenderer deliberately gives wrong information in his tender, BHEL reserves the right to reject such tender at any stage or to cancel the contract, if awarded and forfeit Earnest money / Security Deposits.
11.7	Canvassing in any form in connection with the tenders is strictly prohibited and the tenders submitted by the contractor who resort to canvassing are liable to rejection.
11.8	Should a tenderer or contractor or in the case of a firm or Company one or more of its partners / shareholders / directors have a relation or relations employed in the capacity of an officer of BHEL, the authority inviting tender shall be informed of the fact alongwith detail of the officer. Failing this, BHEL may, at its sole discretion, reject the tender or cancel the contract and forfeit the Earnest Money /Security Deposit.
11.9	The tender submitted by a bidder shall become property of BHEL who shall have no obligation to return the same to the bidder.
11.10	BHEL shall not be liable for any expenses incurred by the bidder in the preparation of the tender irrespective of whether the tender is accepted or not.

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CLAUSE NO	DESCRIPTION
1.0	<b>APPLICATION</b> Unless otherwise provided in the contract documents, these general conditions shall govern the works of the accompanying technical specifications. special conditions of this volume shall be read in conjunction with these general condition and these conditions will from a part of the contract documents.
2.0	<b>DEFINITION OF TERMS :</b> In construing these General Conditions, Special, Technical conditions and accompanying Specification the following words shall have the meaning herein assigned to them except where the context otherwise requires.
2.1	The owner/ purchaser shall mean CUSTOMER and shall include its successor in office, legal representative and permitted assigns.
2.2	Purchaser/ vendee/ BHEL shall mean Bharat Heavy Electricity Limited a Company registered under the Indian Companies Act 1956, with its Registered Office at BHEL House, Siri Fort, New Delhi. Power Sector Eastern Region, Kolkata or its Administrative Officers or its engineer or other employees are authorised to deal with any matter with which these persons are concerned on its behalf.
2.3	EXECUTIVE DIRECTOR/ GENERAL MANAGER shall mean the officer in administrative charge of BHEL, Power Sector - Eastern Region or their other regional offices
2.4	The bidder/ tenderer shall mean well established reputed organisations, manufacturer etc having requisite financial and technical capability and experience participating in the Tender invited by BHEL for supply and delivery, erection, testing and commissioning or plant equipment and status including associated civil structural and architectural works complete as per applicable technical specifications.
2.5	The contractor shall mean the successful bidder/ tenderer who is awarded the contract and shall be deemed to include the contractor's successors assigns, heirs executors, administrators of representatives approved by the BHEL.
2.6	The sub-contractor shall mean individual or firm to whom any part of the work has been subletted by the contractor with the consent in writing of BHEL and shall include his/its heirs, executors, administrators, legal representative and permitted assigns.
2.7	The Engineer shall mean an Officer of BHEL as may be duly appointed and authorised in writing by BHEL to act as Engineer on his behalf for the purpose of the Contract, to perform the duty set forth in this General Condition of Contract and other Contract Documents.
2.8	The Consulting Engineer shall mean any firm or person as may be duly appointed and authorised in writing by BHEL/Purchaser from time to time to review plant and equipment, works and services under the Contract.
2.9	The "Review Consulatant" shall mean any firm or person as may be duly appointed and authorised in writing by BHEL/Purchaser from time to time for final review of the plant and equipment, works and services under the Contract.
2.10	The "Inspector" shall mean any firm or person as may be duly appointed and authorised in writing by BHEL/Purchaser from time to time to inspect plant and equipment, works and services under the Contract.
2.11	'Acceptance of Tender" shall mean Telegraphic/ Telex/ Tele-fax Letter of Intent or Notification communicating to the Contractor the acceptance by BHEL of his tender.
2.12	"Contract Price" shall mean the agreed sum of money stated in the Contract to be paid to the Contractor for the successful fulfilment of the Works in accordance with the terms of the Contract Documents.
2.13	"Contract" shall mean the Agreement between the Contractor and BHEL for execution of and payment for the works as defined in the Contract Documents.
2.14	The "Contract Documents" shall mean and includes the General Conditions of Contract. Specifications and Schedules. Drawings, Form of Tender, Covering Letters, Schedule of Prices and Quantities submitted by the successful Bidder, Letter of Interest of BHEL, Drawings, subsequent amendments mutually agreed upon and the Agreement to be entered in to between BHEL and the Contractor duly signed by them under the Clause – Contract" of these General Conditions and other documents that may form part (s) of the Contract Documents.
2.15	"Work or Works" shall mean the plant / equipment to be supplied and / or works to be done by the Contractor under the contract Documents.
2.16	"Plant" shall mean the portion of the work (under the scope of this contract) which includes permanent equipment, machinery, apparatus, materials, articles and civil, structural and

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	architectural works and things of all kinds to be provided under the contract documents.
2.17	“Test” shall mean such test as is prescribed or considered necessary by BHEL / purchaser whether performed or made by the Engineer or any Agency acting under the direction of the Engineer.
2.18	“Constructional Plant” means all appliances or things of whatsoever nature required in or about the execution completion or maintenance of the works or temporary works by the contractor at his own cost and risk (as hereinafter defined) but does not include materials or other things intended to form or forming part of the permanent work.
2.19	“Goods” shall mean plants, equipment or materials to be supplied under the Contract Documents.
2.20	“Temporary Work” shall mean all temporary works of every kind required in or about the execution, completion or maintenance of the work by the contractor at their cost and risk.
2.21	“Completion Time” shall mean the period by date/month specified in the acceptance of tender for handing over of the intended scope of work, erected equipment / plant, which are found acceptable by the engineer being of required standard and conforming to the specifications of the contract.
2.22	“Consignee” shall mean the authorised representative or officer of the Purchaser / BHEL to whom the plant, equipment and materials are required to be delivered in the manner indicated in the Contract Documents.
2.23	The “Specification” or Specification / Technical Specifications” shall mean all Specifications including technical specifications of the Works and the Tender Drawings and schedules attached thereto and any modification made thereof.
2.24	“Drawings” shall mean drawings referred to in the Contract Documents including modifications if any and such other drawings as may be from time to time furnished by the Contractor and approved by BHEL / purchaser.
2.25	“Site” shall mean the land and other places including existing roads, paths etc., put at the disposal of the Contractor by BHEL / purchaser in connection with the execution of the Contract.
2.26	“Tests on Completion” shall mean such tests as are prescribed in the specifications and/or other tests as mutually agreed upon by BHEL/ Purchaser and the Contract to be carried out by the Contractor on erection of the plant to prove satisfactory performance as per Specification.
2.27	“Acceptance Test / Performance Guarantee Test” shall mean such test as are required to determine and demonstrate guaranteed capacity, efficiency and operating characteristics of the Plant as stipulated in the contract Documents.
2.28	“Commissioning” shall mean the successful completion of trial operations and readiness of the contracted / ordered plant and materials for commercial use. This will include all consumables and inputs required for pre-commissioning.
2.29	“Initial Operation”, “Reliability Run” or “Trial Run” shall mean the first continuous operation of the plant by the Contractor covered under the Contract with sub-systems under varying loads to demonstrate satisfactory operation for a specified period which shall not be less than fifteen (15) days.
2.30	“Commercial Operation” shall mean the conditions of operation in which all the equipment covered under the Contract are officially declared by BHEL/ purchaser, to be available for continuous operation at different loads and including rated capacity. Such declaration by BHEL / purchaser will be issued within thirty days after successful trial run made by the Contractor.
2.31	“Service” shall mean furnishing of labour and services as per specifications and supervision of complete erection, testing and putting equipment and materials to be supplied into satisfactory operation, supervision of inland transportation, loading and unloading and storage at the site as defined in the Contract Documents.
2.32	“Warranty Period” shall mean the period during which the Contractor shall remain liable for repair or replacement of any defective part of the plant supplied, works done and services rendered under the Contract.
2.33	“Code” shall mean the applicable International and Indian standards as on the date of letter of intent and any subsequent modification thereof.
2.34	“Month” shall mean calendar month. “Day” or “Days” unless herein otherwise expressly defined shall mean calendar day or days of twenty four (24) hours each. A week shall mean continuous period of seven (7) days.
2.3	“Letter of Intent” / “Purchaser Order” shall mean BHEL’s letter or notification conveying his acceptance of the Tender subject to such conditions as may have been stated therein.
2.36	“Writing” shall include any manuscript typed or handwritten or printed statement, including Telex, Cable and facsimile transmission under or over signature or seal as the case may

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	be.
2.37	“Approved” or “Approval” shall mean as approved by or approval of the Purchaser/ BHEL.
2.38	Words incorporating “Persons” shall include firms, companies, corporations and other bodies whether incorporated or not.
2.39	“Words” incorporating the singular only shall also include the plural and vice-versa where the context requires.
2.40	“F.O.B” shall mean delivery free of expenses to the Purchaser / BHEL on board the vessel at the port of shipment.
2.41	“CIF Price” shall mean delivery free of expenses to the purchaser / BHEL on board the vessel at the port of entry including the insurance coverage.
2.42	“F.O.R. “ Destination” shall mean delivery free of expenses to the Purchaser / BHEL on rail wagons at destination Railway Station or the purchaser’s siding as may be named or / and by road transport at customer’s destination.
2.43	“F.O.R. Works” shall mean loaded and stowed or trimmed free of expenses to the purchaser / BHEL on board rail wagons at the Contractor’s Works siding or the nearest Railway station for transportation.
2.44	“Tonne” shall mean 1000 Kilogram weight. “Gallon” shall mean Imperial gallon, unless otherwise mentioned specifically.
2.45	“Final Acceptances” mean the BHEL’s/ purchaser’s acceptance of the work/plant completed in every respect as per terms of the contract Documents on expiry of the Warranty / guarantee / maintenance period.
2.46	Terms and conditions not herein defined shall have the same meaning as are assigned to them in the latest edition of Indian Sale of Goods Act/Indian Contract Act as applicable.
2.47	<b>SINGULAR AND PLURAL</b> Words importing the masculine gender or singular number shall also include the feminine gender and plural and vice versa where the context so requires.
2.48	<b>HEADINGS OR NOTES</b> The headings or notes in these conditions are solely for the purpose of facilitating reference and shall not be deemed to be part thereof or be taken into consideration in the interpretation or construction thereof or of the contract.
2.49	<b>LANGUAGE</b> All documentations and correspondence regarding the contract shall be in English language.
2.50	<b>DOCUMENTS MUTUALLY EXPLANATORY</b> Except if and to the extent otherwise provided by the contract the provisions of technical Conditions of contract shall prevail over General Conditions of Contract and over those of any other documents forming part of the Contract. Subject to the foregoing the several documents forming the Contract are to be taken as mutually explanatory of one another but in case of ambiguities or discrepancies the same shall be explained and adjusted by the Engineer who shall thereupon issue to the contractor instructions directing in what manner the work is to be carried out.
<b>3.0</b>	<b>SCOPE ON CONTRACT</b> The scope of work, if not otherwise mentioned in the contract, shall be on the basis of a single contractor’s responsibility, completely covering all Technical Specifications under the accompanying Technical Specification. Some of the salient features are hereunder.
3.1	Detailed design of all the equipment and subsystem and work as per specification.
3.2	Complete, manufacture of all the equipment / subsystem including shop, field testing and assembly as per specification.
3.3	Providing of special tools and tackles and services necessary for satisfactory execution of the contract.
3.4	Providing engineering drawings, data operation manual, etc.
3.5	Packing and transportations of the Goods from the manufacturer’s works to the site.
3.6	Receipt, storage, preservation and conservation of the Goods at the site as applicable.
3.7	Supply of spares.
<b>4.0</b>	<b>CONTRACT PRICE</b> <b>(UNLESS SPECIFIED OTHERWISE IN TECHNICAL CONDITION OF CONTRACT)</b>
4.1	The contract price is the agreed sum of money stated in the contract documents to be paid to the contractor for the successful completion of the works in accordance with the terms of the contract documents. The contract price shall be for the entire scope of the work with the break-ups as specified.
4.2	The individual item rates or lumpsum price as the case may be, in the schedule of this contract shall be deemed to be firm for the entire period of the Contract or extended period of contract and no escalation in the rates or price shall be permissible for any reason



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	whatsoever unless otherwise specified.
4.3	The contract price shall not be varied in respect of the fluctuations in rate of wages or allowances payable to the labour or in the cost of materials, consumables, water, fuel, power or for anticipated profit or alleged losses or for any reason whatsoever,
<b>5.0</b>	<b>TAXES AND DUTIES</b> (UNLESS SPECIFIED OTHERWISE IN TECHNICAL CONDITION OF CONTRACT)
5.1	EXCISE DUTY
5.1.1	Excise duty actually incurred by contractor against the despatch made from his factory constituting sale under the contract alone shall be reimbursed at actuals against requisite documentary evidence like clean invoice cum excise duty gate pass in original or certificate copy, if separately indicated in the prices bid. If excise duty is included in the price quoted by the contractor then he is not eligible for reimbursement of excise duty or statutory variation of excise duty.
5.1.2	The invoice cum excise duty gate pass should show the name of ultimate consignee as specified in the contract. If excise duty is paid under protest or dispute it shall not be eligible for reimbursement until the dispute is settled.
5.1.3	No excise duty shall be payable by BHEL on inputs bought out items, raw materials and components consigned directly to site from sources other than contractor's factory.
5.1.4	The contractor is required to ensure that excise duty is properly calculated and paid and available exemption and benefits are fully availed.
5.1.5	If required by BHEL the contractor will provide certificate, if modvat benefit has been availed on his inputs and have been passed on to BHEL.
5.1.6	If the contractor claims / obtains any refund of the excise duty paid and got reimbursed, the same shall be refunded to BHEL.
5.1.7	Excise duty shall be restricted to the amount and percentage shown in the price format. BHEL is not liable to reimburse if the excise duty shown by the contractor in his offer is incorrect.
5.1.8	The excise duty on self manufactured items of the contractor alone shall be reimbursed against submission of clean original excise duty invoice or true copy thereof duly attested by excise authorities. The payment of excise duty shall however be limited to the amount indicated in the price in the schedule. Statutory variation shall be limited to change in the tariff within the delivery specified in the order/contract only. Provisional / Conditional gate passes / excise duty invoices are not acceptable for reimbursement.
5.1.9	Contractors are required to ensure that excise duty including surcharge , if any, quoted are as per the existing tariff on the date of the offer and have availed all benefits as per existing rules.
5.1.10	EXCISE DUTY (IN CASE OF DEEMED EXPORT) In case of deemed export and order placed under similar financing arrangement, contractors are required to ensure that original gate passes and document to claim draw backs are made available to BHEL alongwith disclaimer certificate. In the absence of above the offer is liable to be loaded. In these cases, excise duty shall be billed separately with the above documents.
5.1.11	No statutory variation during extended period shall be allowed.
5.2	SALES TAX
5.2.1	Sales tax can be reimbursed only if the same is payable by the contractor to the respective authorities. In case any concessional provisions are applicable the same shall be availed by the bidder/ contractor.
5.2.2	Contractors are expected to meet all statutory requirements and ensure that the Sales Tax charged are not exempted under the respective Sales Tax Act. The bid/offer should clearly indicate the percentage and total amount. Concessional forms required should be clearly indicated in the bid/offer.
5.2.3	BHEL is registered in Kolkata vide registration number  WB Sales Tax No - PS/2214, dated 14-12-1998.
5.2.4	Tenderers are to ensure that their offer includes all applicable taxes. In case of Intra-state sales tax. The same shall be specified.
5.2.5	Sales tax on direct sales by the contractor to BHEL shall be reimbursed, as per tariff applicable to the approved items but restricted to the amount shown in the price bid separately. If it is shown as included in the quoted price. Then it shall not be eligible for reimbursement by BHEL.
5.2.6	BHEL proposed to make sale-in-transit "C" form shall be issued / exchanged against E1/E2 forms "C" form shall be issued based on financial year transaction. Contractors are required to submit their request for issue of "C" forms in the format enclosed.

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5.2.7	Form “C” will be issued after the financial year against the issue of E-1/E-2 form. Contractors are required to give the details for claiming “C” form.
5.2.8	If documents are submitted through bank. Form-C shall not be insisted for retirement.
5.2.9	Contractors are expected to avail taxation benefit. The bid/offer should clearly indicate the percentage and total amount. Concessional forms requirement should be clearly indicated in the bid/offer.
5.3	<b>OTHER TAXES</b> Bidder/tenderer are required to include all other taxes applicable on the date of the offer/bid over and above ED. ST. This will include but not limited to Octroi, turnover, works contract tax, entry tax, consignment tax, income tax, etc as applicable.
5.4	<b>CUSTOMS DUTY</b> Contractor shall arrange for their own import licence if required since BHEL will not provide any import licence. The custom duty element for imported items shall be included in the basic price. No. variation in customs duty / exchange rate for imported items shall be payable by BHEL.
5.5	<b>FREIGHT CHARGES</b> Contractor shall be required to transport the items through transport contractor of repute and with due consent / approval of BHEL. Freight charges shall be payable by the contractor. However, all documents in proof of payment of freight charges are to be submitted along with the bills to BHEL.
<b>6.0</b>	<b>PRICE VARIATION</b> <b>(UNLESS SPECIFIED OTHERWISE IN TECHNICAL CONDITION OF CONTRACT)</b>
6.1	The price shall remain firm, for any increase or decrease in order value upto +/- 30% BHEL shall have the right to increase / decrease quantity upto the above order value and tenderer shall be bound to accept the same at the same price without any escalation.
6.2	Transport: If for any reason, the contractor has to resort to a mode of transport other than what was contemplated by him at the time of tendering to keep up the completion schedule and consequently has to incur more expenditure, BHEL will not under any circumstances reimburse such extra expenditure and price will not exceed the firm contract / order price.
<b>7.0</b>	<b>STATURORY VARIATIONS</b> <b>(UNLESS SPECIFIED OTHERWISE IN TECHNICAL CONDITION OF CONTRACT)</b>
7.1	It is the responsibility of the tenderer to inform himself of the correct rates of customs or other duties or taxes leviable on the on the materials at the time of tendering. If the rates assumed by the tenderer are less than the correct rates prevailing at the time of tendering the tenderer will be responsible for such errors.
7.2	If the rates assumed are higher than the correct rates prevailing at the time of tendering, the difference will be to the credit of BHEL.
7.3	Should, however, any statutory alternation be made based on the rate prevailing at the time of tendering, the difference for excise duty & sales tax only, either up or down, will be to the account of BHEL. No variations on customs duty / exchange rate / minimum wages, prices of controlled commodities or any other input shall be payable by BHEL.
7.4	Notwithstanding the above, where the actual completion of the supply occurs beyond the period stipulated in the order/contract, variations above referred to will be limited to the rates prevailing on the dates of the stipulated completion period only and for variations after the agreed completion period the tenderer alone shall bear the impact if it is upward revision and if it is downward revision BHEL shall be given credit to the extent. This will be without prejudice to the levy of penalty for delay in completion.
<b>8.0</b>	<b>TERMS OF PAYMENT</b> <b>(UNLESS SPECIFIED OTHERWISE IN TECHNICAL CONDITION OF CONTRACT)</b>
8.1	<b>SUPPLY</b>
8.1.1	Ninety (90%) percent value of equipment supplied alongwith applicable 100% taxes and duties etc. for the consignment shall be paid against despatch documents on pro-rata basis. All bank charges shall be to the account of the contractor.
8.1.2	Balance ten (10%) percent payment shall be made after receipt and physical verification of materials at site by site engineer on pro-rata basis (against material receipt certificate (MRC) from site office) and on availability of extended security bank guarantee to cover the guarantee period.
8.1.3	No advance payments shall be made.
8.2	<b>SUPERVISION, ERECTION AND COMMISSIONING / SUPERVISION OF ERECTION &amp; COMMISSIONING</b> Hundred (100%) percent payment shall be made only after commissioning of the equipment, final acceptance and receipt of bank guarantee to cover guarantee period.
8.3	Recommended/ Mandatory Spares.

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	Same as clause no 8.1 above.
<b>9.0</b>	<b>DOCUMENTS FOR CLAIMING SUPPLY PAYMENT (FOR INDIGENOUS SUPPLIERS ONLY)</b> <b>(UNLESS SPECIFIED OTHERWISE IN TECHNICAL CONDITION OF CONTRACT)</b> Following documents shall be submitted for claiming supply payments in required number of sets.
9.1	Invoice.
9.2	LR/RR/GR
9.3	Delivery challan.
9.4	Packing list showing item-wise details, size, quantity/ number, net & gross weight, number of packages and their identification.
9.5	BHEL MDCC (Material Despatch Clearance Certificate).
9.6	QS note issued by BHEL inspection agency.
9.7	Copy of letter to Insurance company to cover items despatched under insurance policy.
9.8	Original material receipt certificate (MRC) from site office shall be required for claiming payment against receipt of material at site.
<b>10.0</b>	<b>BANK CHARGES</b>
10.1	All bank charges for documents through bank shall be to the account of contractor.
10.2	The address of BHEL banker is STATE BANK OF INDIA, N. S.ROAD BRANCH,KOLKATA
<b>11.0</b>	<b>TIME (THE ESSENCE OF CONTRACT)</b>
11.1	The time and date of completion of the work as stipulated in the contract Documents shall be deemed to be the essence of the Contract. The contractor shall commence the works and shall proceed with the same with due expedition and without delay except as may be expressly sanctioned or ordered by the Engineer. If the contractor fails to commence the work within the stipulated time. BHEL at his sole discretion will have the right to cancel the contract. In such an event the contractor's security deposit with BHEL will stand forfeited without any further reference to the contractor, without prejudice to any and all of the BHEL's other rights and remedies in this regard. The Contractor shall so organise his resources and perform so as to complete the work not later than the aforesaid date of completion.
11.2	The contractor shall submit a PERT Network showing various key phases of the work such as design, procurement, manufacturing, shipment, etc. within thirty (30) days after the date of Letter of intent/purchase order. This network shall also indicate the interface facilities to be provided by the owner / BHEL and the dates by which such facilities are needed by the contractor and also the programme for phase wise release of work site for construction work as may be needed by the contractor, as applicable.
11.3	The Contractor shall discuss the network so submitted with BHEL. The agreed network may be in the form as submitted or in revised form in line with the outcome of discussion and shall form a part of the contract documents.
11.4	The above PERT Network shall be reviewed and periodic review reports shall be submitted by the Contractor to BHEL as directed by him.
11.5	The Contractor shall make available to BHEL detailed manufacturing, erection, testing and commissioning and construction programmes, as applicable, in line with the agreed PERT Network in the form of PERT or Bar Chart as desired by BHEL within 30 days from the date of receipt of LO1/PO. During performance of the contract, such programmes shall be renewed, updated and submitted to BHEL as and when needed by him or periodically as specified by him. If in the opinion of BHEL proper progress is not maintained suitable changes shall be made in the Contractor's operation to ensure proper progress.
<b>11.6</b>	<b>PROGRESS REPORTS AND PHOTOGRAPHS</b>
11.6.1	The Contractor shall furnish eight(8) prints each of monthly progress reports as approved by BHEL and photographs of the work done. Photographs shall be taken when and where indicated by the Engineer or his representative. Photographs shall be approximately 100mm x 125mm in size including margin of 5 mm side for fixing. Adequate number of photographs shall be submitted indicating various stages of manufacture and / or installation as applicable. Each photograph shall contain the date, the name of the contractor and the title of the view taken.
11.6.2	Monthly progress report shall be submitted. These shall detail the status of design, drawings, procurement of raw materials and manufacture of the equipment and delivery of the equipment. BHEL shall advise the contractor about the progress schedule and photographs he has to submit each month together with the names and address of persons to whom they are to be sent. The contractor shall also furnish actual progress against schedule and such other information as BHEL may require to satisfy himself about

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	the timely manufacture and delivery of equipment and timely construction and erection work to suit the commissioning date. The report shall also indicate the reasons for the variance between the scheduled and actual progress and the action proposed for corrective measure wherever necessary.
11.6.3	The submission and acceptance of the photographs and / or reports shall not prejudice the rights of BHEL in any manner.
11.6.4	In the event of contractor's continued poor progress of work, BHEL shall at his option treat this as breach of the contract by the contractor. In such an event it shall be open to BHEL to have the work completed through any other agency or agencies and claim the difference in cost in addition to damages from the contractor without prejudice to any other right or remedy of BHEL under this contract.
11.6.5	The contractor shall be responsible, wherever applicable, for developing detail drawings to adopt equipment and materials to be supplied to the requirement indicated in the specification and shall submit a list of such drawings and programme for submission of these drawings and programme within 30 days from the date of LO1.
11.6.6	Within a reasonable time not exceeding 30 days from the date of LO1 the contractor shall also provide BHEL with the following drawings and data as applicable :
11.6.6.1	Eight (8) marked up copies of technical particulars conforming to the specification.
11.6.6.2	Outline drawings of all equipment together with weights and sufficient overall dimensions.
11.6.6.3	Other drawings and data as indicated in different sections of the tender documents.
11.6.6.4	The contractor shall within 3 weeks from the date of LO1 submit for approval of BHEL the original copies of Codes and Standards which shall govern the design, manufacture, construction, erection, testing, commissioning and trial operation of the plant as applicable under scope of contract.
11.7	<b>MISTAKE IN DRAWINGS</b>
	The Engineer shall have the right at all reasonable times to inspect at the office / premises of contractor all shop and / or detailed drawings of the works or any portion of the works. The Contractor shall be responsible for and shall pay for any alternations of the work due to any discrepancies, errors or omission in the drawings or other particulars supplied by him whether such drawings or particulars has been approved by the Engineer or not. Provided that such discrepancies, errors or omissions be not due to inaccurate information or particulars furnished to the contractor by the Engineer, in which event BHEL shall pay for any alternations of work necessitated by reason of inaccurate information supplied by the Engineer to the Contractor.
<b>12.0</b>	<b>DELIVERY FAILURE TERMINATION/ LIQUIDATED DAMAGES (UNLESS SPECIFIED OTHERWISE IN TECHNICAL CONDITION OF CONTRACT)</b>
12.1	It should be clearly understood by the Contractor that time and the date of delivery of despatch stipulated in the order/contract is the essence of the contract, If the contractor fails to complete the order / contract within the time fixed in the order / contract, or within any extension of time granted by BHEL, it shall be lawful for BHEL to recover damages for breach of order / contract without prejudice to any other rights and / or remedies provided for, in the order / contract and hereunder. To be entitled to impose such damage, BHEL will not be required to prove that he has incurred such amount as actual damage.
12.2	<b>DELAYED DELIVERY</b>
12.2.1	<p>This being a turnkey BOP package, if vendor fail to complete the total job of (supply &amp; service parts) as per the completion period for the service part (as per of Vol-1D), BHEL shall have the right to recover from the contractor, as agreed liquidated damages a sum equivalent to half percent (1/2%) of the executed contract price(for the supply part) for the delayed portion per week or part thereof subject to a maximum of ten percent (10%) of the total executed contract price (i.e. sum total of supply &amp; service part) if the contractor fails to install any part of equipment /item within the period fixed for installation of the same (as per Vol-1D).</p> <p><b>Note:</b></p> <p>1. The cumulative LD for the supply &amp; service part shall be limited to 10% of the executed contract value (for the supply &amp; service parts).</p> <p>2. (applicable for supply of the Mandatory spares, if ordered separately only): Recovery shall be done as agreed liquidated damages a sum equivalent to half percent (1/2%) of the order /contract price (only for mandatory spares) for the delayed portion per week or part thereof subject to a maximum of ten percent (10%) of total order/contract price (for mandatory spares only) if the contractor has fails to deliver any part of equipment /item within the period fixed for delivery of the same as per Vol-1C.</p>

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12.2.2	Purchase from elsewhere on account and at the risk of the contractor of the equipment /item not so delivered or others of a similar description without cancelling the order / contract in respect of the instalment not yet due for delivery or
12.2.3	Cancel the order / contract or a portion thereof and if so desired purchase the equipment/item not so delivered at the risk and cost of the contractor and the contractor shall be liable to BHEL for any excess costs provided that the contractor shall continue the performance of the contract to the extent not cancelled under the provisions of this clause.
12.2.4	Where action is taken under clause mentioned above at b & c, contractor shall be liable for any loss which BHEL may sustain on that account. The contractor shall not be entitled to any gain on such purchase and the manner and the method of such purchase shall be at the entire discretion of BHEL. It shall not be necessary for BHEL to serve a notice of such purchase on the contractor.
<b>13.0</b>	<b>COMPETENCE AND GUARANTEES</b>
13.1	Contractor shall have sound technical and financial capabilities and possess recognised experience in executing the works of similar kind and magnitude. The contractor shall properly fill in the various schedules and proforma prescribed in the tender documents. Non submission of the information in the prescribed schedules and proforma may lead to rejection of the bid.
13.2	<b>SECURITY DEPOSIT (SD)</b>
13.2.1	Upon acceptance of tender, the successful tenderer within the time specified in the letter of intent must deposit required amount as security deposit for satisfactory completion of work and shall not commence work under the contract before remitting security deposit except as directed by BHEL.
13.2.2	The total amount of Security Deposit will be 5% of the contract value. EMD of the successful tenderer shall be converted and adjusted towards the required amount of Security Deposit.
13.2.3	The Security deposit may be deposited in any of the following form.
13.2.3.1	<p>The balance amount to make up the required Security Deposit of 5% of the contract value may be accepted in the following forms:</p> <ul style="list-style-type: none"> <li>a) Cash (as permissible under the extant Income Tax Act)</li> <li>b) Local cheques of Scheduled Banks (subject to realization)/ Pay Order/ Demand Draft/ Electronic Fund Transfer in favour of BHEL</li> <li>c) Bank Guarantee from Scheduled Banks/ Public Financial Institutions as defined in the Companies Act. The Bank Guarantee format should have the approval of BHEL</li> <li>d) Fixed Deposit Receipt issued by Scheduled Banks/ Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the Contractor, a/c BHEL)</li> <li>e) Securities available from Indian Post offices such as National Savings Certificates, Kisan Vikas Patras etc. (held in the name of Contractor furnishing the security and duly endorsed/ hypothecated/ pledged, as applicable, in favour of BHEL)</li> </ul> <p>(Note: BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith).</p>
13.2.3.2	<p>At least 50% of the required Security Deposit, including the EMD, should be furnished before start of the work. Balance of the Security Deposit can be deposited by deducting 10% of the gross amount progressively from each of the running bills of the Contractor till the total amount of the required Security Deposit is collected.</p> <p>The recoveries made from running bills (cash deduction towards balance SD amount) can be released against submission of equivalent Bank Guarantee in acceptable form, but only once, before completion of work, with the approval of competent authorities.</p>
13.2.3.3	Deleted
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13.2.4	Deleted
13.2.5	If the value of the work done at any time exceeds accepted agreement value, the security deposit shall be correspondingly enhanced and the extra security deposit shall be immediately deposited by the contractor or recovered from payments due to him.
13.2.6	Regarding adjustment of Earnest Money deposit towards part of Security Deposit, refer clause under EMD above.
13.2.7	Failure to deposit security money within stipulated time may lead to forfeiture of Earnest Money and cancellation of award of work.
13.2.8	If any parts of security deposit of the contractor is held in the form of approved securities it

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	shall be kept transferred in the name of Bharat Heavy Electricals Limited, Power Sector, Eastern Region, Kolkata in such a manner the BHEL can realize it fully without reference to the contractor. BHEL shall not be responsible for any depreciation in the value of the security while in BHEL's custody or for any loss of interest thereon.
13.2.9	BHEL reserve the right of forfeiture of security deposit in addition to other claims and penalties in the event of the contractor's failure to fulfil any of the contractual obligations (including liquidation or bankruptcy of the contractor, non-payment of money payable by means of arbitration award in favour of BHEL) or in the event of termination of contract as per terms and conditions of contract. BHEL reserve the right to set off these security deposit, against any claims of any other contract with BHEL.
13.2.10	<p>"If the final price of successful bidder is lesser by 'more than 20%' of BHEL's estimate - 'Additional Security Deposit' will be required to be submitted by the successful bidder with value as follows:</p> <p><b>Additional Security Deposit</b> = 30 % of (A-B) limited to a maximum of 10% of the 'Total Price/Contract Value', where,</p> <p>A = 80% of BHEL estimate  B = The final offered price of successful bidder through RA (In case of RA)  OR  Sealed paper price bid of successful bidder (in case of paper bid)</p> <p>This 'Additional Security Deposit' shall have the same validity as that of the 'Security Deposit' and shall be revalidated/released in the manner as spelt out for the 'Security Deposit' as per relevant clause of GCC.</p> <p>The BHEL's estimated value shall be disclosed to the successful bidder (on their request) at appropriate juncture in case 'Additional Security Deposit' is applicable."</p>
13.2.11	<b>RETURN OF SECURITY DEPOSIT</b>
	Security Deposit shall be refunded/Bank Guarantee(s) released to the Contractor along with the 'Final Bill' after deducting all expenses / other amounts due to BHEL under the contract / other contracts entered into with them by BHEL upon fulfilment of contractual obligations as per terms of the contract.
13.3	<b>PERFORMANCE BOND</b>
13.3.1	In addition to the security deposit the contractor shall provide to BHEL guarantee of an approved nationalised bank for an amount equal to 5% of the awarded/executed contract price (as per LOI/RA bills) as Performance Bond (under the terms of a bond) within 30 days from the date of LOI (Letter of Intent) and terms of the said bond shall be such as shall be approved by BHEL. The bond shall remain valid until 6 (SIX) month after the expiry of warranty / guarantee period. The obtaining of such guarantee and the cost of bond to be so entered into shall be at the expense in all respects to the contractor.
13.3.2	BHEL reserve the right of forfeiture of the above bond in addition to other claims and damages in the event of the contractor's failure to fulfil any of the contractual obligations or in the event of termination of contract as per terms and conditions of contract. BHEL reserve the right to set off this bond against any claims of any other contract with BHEL.
13.4	<p>"SD/PB BG may be submitted by the vendor before release of 1st payment by BHEL. Payment will be released on submission of SD&amp; PB BG or after recovery from RA bill(s) of requisite SD (minimum 50% as per tender provision) and PB amount.</p> <p>In case, agency submits SD &amp; PB BG for the equivalent amount, recovered amount will be refunded.</p> <p>In case of delay in extension of SD/PB BG at a later date as per the tender requirement, SD/PB BG will be invoked. However, if the vendor submits a new BG after invocation of the previous BG then, it shall be refunded and recovery for the gap period, i.e. the duration for which BG is not available, shall be made as @SBI PLR +2% on amount equivalent to SDBG / PBG value to be made for the gap period."</p>
14.0	<b>DELIVERY TERMS</b>
	When the goods are ready for shipment BHEL / owner should be notified by the contractor through Fax or Telex. Notification of delivery or despatch in regard to each and every consignment shall be made to the owner/BHEL immediately after despatch or delivery ensuring arrangements for its receipt at the site at least 48 hours ahead of actual delivery. The contractor shall further supply to the consignee a priced invoice and packing list of all goods delivered or despatched by him and other shipping particulars. All packages,

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	containers, bundles and loose materials forming part of each and every consignment shall be described fully in the packing list, and full details of the contents of packages and quantity of goods shall be submitted to enable the consignee to check the goods on arrival at destination.
<b>15.0</b>	<b>SHOP ASSEMBLY AND INSPECTION</b>
15.1	Shop assembly to the largest extent feasible shall be performed by the contractor to assure proper fitting of the various parts and for checking the correctness of clearances and dimensions. Parts thus assembled shall be match – marked for reassembly at the site. Prior to be dismantled for shipment. A detailed description of the intended shop assemblies shall be submitted along with the Quality Assurance Plan.
15.2	No Goods shall be shipped before all tests and inspection have been carried out according to the approved Quality Assurance Plan unless otherwise instructed by BHEL.
15.3	The acceptance of any Goods prior to shipment shall in no way relieve the contractor of any of his responsibilities for meeting all the requirement of the specification and shall not prevent subsequent rejection if such Goods are found to be defective.
15.4	BHEL/ owner and his duly authorized representative shall have the power at all reasonable times to inspect drawings of any portion of the work or examine the materials and workmanship of the equipments/ items during its manufacture
15.5	Such inspection, examination and testing shall not relieve the contractor from any obligation under the contract.
15.6	BHEL engineer shall on giving seven (7) days notice in writing to the contractor setting our any ground of objection which he may have in respect of the plant/equipment /work, be at liberty to reject any drawings and all or any plant or workmanship, subject to any of the said ground of objection, which in his opinion are not in accordance with the contract / order. The contractor shall give due consideration to such objection and shall either make the modifications that may be necessary to meet the said objections or shall satisfy the engineer that no modifications are necessary to comply with the contract/order.
15.6	The contractor shall give the engineer and his duly authorized representatives notice of any material being ready for testing, and the engineer or the said representative shall (unless the inspection of tests voluntarily waived) on giving reasonable previous notice in writing to the contractor attend at the contractor's premises (as the case may be ) within twenty (20) days of the date on which the material is notified as being ready, failing which the contractor may proceed with the tests which shall be deemed to have been made in the engineer's presence. All standard shop tests physical and chemical tests required by the standards or as may be prescribed or approved by the engineer reserves the right to waive any of the above tests requirement and to prescribe new tests required if fours necessary to expedite the work or to confirm to the latest and best practice. Definition, method of measurement, calibration of inspection, measuring and test equipments and required procedure as referred in the above standard and / or those approved by the engineer and equivalent shall be followed. The contractor shall forthwith forward to the engineer duly certified copies of the test certificates in quadruplicate for approval. Further copies of the shop test certificate shall be bound will the instruction manuals.
15.7	In all cases where the order/ contract provided for tests/ inspections whether at the premises or works of the contractor or any sub-contractor the contractor, except where otherwise specified shall provide free of charge to BHEL such labour, materials, electricity, fuel, water, stores, apparatus, inspection measuring and test equipments as may reasonably be required to carry out efficiently such tests of the equipment/ plant, in accordance with the order/ contract and shall give facilities to the engineer or his authorised representative to accomplish such testing.
15.8	The contractor shall maintain & ensure necessary safety measures as required for inspection and tests like HV test, Pneumatic test, Hydraulic test, Loan test Spring test, Bend test etc, of his/his subcontractors works to enable inspection Agency for performing inspections. If any test equipment is found not complying with proper safety requirements, then the inspection agency may withheld inspection, till such time desired safety requirements are met.
15.9	<b>INSPECTION MEASURING AND TEST EQUIPMENTS (IMTE)/ MMD</b>
15.9.1	Inspection measuring and test equipments (IMTE) whether used by the contractor or his sub-contractor shall be calibrated, maintained and controlled. Calibration shall be valid and IMTE shall be in sound condition during usage.
15.9.2	In addition to above, contractor shall ensure the following.
15.9.2.1	Measurement uncertainly is known and consistent with required measurement capability of the IMTE.
15.9.2.2	Selection of IMTEs is compatible with the necessary accuracy precision of required

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	measurement.
15.9.2.3	IMTEs are calibrated at the required internal against certified equipments having known valid relationship to nationality recognised standard/ recognised calibration labs.
15.9.2.4	Calibration records are available and traceable to the particular IMTE.
15.9.2.5	In case during recalibration the IMTE is found out of calibration, report on action taken to validate the previous results along with both calibration records of the IMTE should be furnished to BHEL. NOTE: BHEL decision on acceptability of the product in such case shall be binding.
15.9.2.6	IMTEs are stored, handled and preserved such that accuracy and fitness are maintained and safeguarded from adjustments.
15.9.2.7	Responsibility of usage of valid and calibrated IMTEs by sub-contractors shall be of the contractor.
15.9.2.8	In case calibration records are required by owner/ BHEL, copies of the same shall be furnished.
<b>16.0</b>	<b>MATERIALS AND WORKMANSHIP</b>
16.1	All Goods to be supplied and all works to be done by the Contractor under Contract shall be manufactured and executed in the manner stipulated in the specification or where not specified, to the satisfaction of the Engineer.
16.2	All materials used in the manufacture of the plant/equipment/system shall be selected from the best available for the purpose considering strength, durability and best engineering practice, free from defects and imperfection of recent manufacture and unused. Liberal factors of safety shall be used throughout the design and specially in the design of all parts subject to alternating stresses or shocks.
16.3	All the work shall be performed and completed in a thorough work-man like manner and shall follow the best modern practice in the manufacture of high grade equipment notwithstanding any omission in the Specification.
16.4	Castings shall be free from blow holes, flaws, cracks or other defects and shall be smooth, close – grained and of true forms and dimensions. No plugged or filled –up holes or other defects will be allowed. Such castings are liable to be rejected. However, the Contractor may rectify minor casting defects by welding or other method in accordance with the standard manufacturing practice provided such rectifications does not affect the strength of the casting or impair with the efficient working of the Plant and prior approval of BHEL is obtained for the same.
<b>17.0</b>	<b>COMPLETENESS OF EQUIPMENT</b>
17.1	The equipment shall be completely installed in every respect with all mountings, fixtures and standard accessories which are normally supplied even through not specifically detailed in the Specification. The Contractor shall not be eligible for any extra payment in respect of such mountings, fittings, fixtures and accessories if needed for safe operation of the equipment as require as per applicable codes of the country through they may not have been included in the Contract.
17.2	Parts of all similar equipment supplied shall be interchangeable with on another.
17.3	All the equipment supplied under this contract shall be subject to BHEL/owner's approval according to applicable stipulations set-forth in the specifications.
<b>18.0</b>	<b>REJECTION OF DEFECTIVE PLANT</b>
18.1	If the completed plant or any portion thereof before it is taken over under clause taking over or during the guarantee / warranty period, be found defective or fails to fulfil the requirements of the contract, the Engineer shall give the contractor notice setting forth particulars of such defects or failure, and the contractor shall forthwith make the defective plant good or alter the same to make it comply with the requirements of the contract. Should he fail to do so within a reasonable time, BHEL after giving seven (7) days written notice may reject and replace at the cost of the contractor the whole or any portion of the plant, as the case may be, which is defective or fails to fulfil the requirements of the contract. The contractor's full and extreme liability under this clause shall be satisfied by the payment to BHEL of erection plus difference, if any between the replacement price of the equipment including charges for erection and supervision of erection and the original contract price including charges for erection and supervision of erection in respect of such defective plant.
18.2	In the event of such rejection, BHEL shall have the right to operate any and all equipment as long as it is in operating condition, whether or not, such equipment has been accepted as complete and satisfactory to enable him to obtain necessary replacement except that this shall not be constructed to permit operation of any equipment which may become damaged by such operation before any required alterations or repairs and /or replacements have been made. All repairs or alterations or replacements required of the



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	contractor shall be made by the contractor at such times as directed and in such a manner as will cause the minimum interruption in the use of the equipment. Should the contractor not so replace the rejected plant within the time frame as directed by the engineer upto the requirement of the specification, the contractor's full and extreme liability under this clause will be satisfied by the repayment of all money paid by BHEL to him in respect of such plants.
18.3	Nothing in this clause shall be deemed to deprive BHEL or, effect any right under the contract which he may otherwise have in respect of such defects or deficiencies or in any way relieve the contractor or his obligation under the contract.
<b>19.0</b>	<b>TAKING OVER</b> Upon successful completion of all the tests to be performed at the site on equipment, systems and material furnished and erected by the contractor and on completion of successful trial run, BHEL shall issue to the contractor a taking over certificate. Issuance of such certificate shall not be reasonably withheld on account of minor omissions or defects which do not affect the satisfactory operation and / or causes any serious risk to the equipment and systems provided the contractor gives an undertaking to rectify such defects / omissions within a reasonable period time. However until a final acceptance certificate is issued on completion of warranty / guarantee period by BHEL/owner, the contractor shall not be relieved of any of his obligations, duties, responsibilities under the terms and conditions of the contract including insurance as specified elsewhere in the contract documents. The taking over by BHEL / the owner may be for each unit completed in all respects for satisfactory operation at the discretion of BHEL/ the owner.
<b>20.0</b>	<b>GUARANTEE/ WARRANTY</b>
20.1	The contractor shall warrant that the equipment / item supplied shall be free from all defects and faults in design, material, workmanship and manufacture and shall be of the highest rate and consistent with the established and generally accepted standards for stores of the type ordered in full conformity with the order/contract, specifications, drawings or samples, if any Contractor shall be responsible for the quality of products supplied by its sub-contractors.
20.2	The contractor shall provide guarantee / warranty in respect of the equipment, materials and services furnished by him as enumerated in section "Technical Condition of Contract" of this tender document.
20.3	The contractor shall, if required, replace, or repair the equipment/item of such portion thereof, as is rejected by BHEL free of cost at the site or at the option of BHEL the contractor shall pay to BHEL value thereof at the order/contract price and such other expenditure and damages, as may arise by reason of the breach of the condition therein specified.
20.4	All replacements and repairs that BHEL shall call upon the contractor to deliver or perform under the guarantee shall be delivered free cost and performed promptly and satisfactorily by the contractor within three months. If the contractor so desires and BHEL agrees subject to import control regulation, the replaced parts can be taken over by him or his representative or the same can be arranged to be despatched by the contractor or his representative at contractor's cost as he deems fit within a period of three months from the date of replacement of equipment/ item/ parts.
20.5	The cost of any special or general overhaul rendered necessary during guarantee / warranty period due to defects in the plant or, defective work carried out by the contractor the same shall be borne by the contractor.
20.6	If for rectification or replacement of any part of equipment or work due to defective materials, manufacture or design or workmanship, the services of the contractor's personal are requisitioned within the guarantee/ warranty period, these services shall be made available free any cost to BHEL/ owner.
20.7	All the replaced equipment/ item shall also be guaranteed as per provision of guarantee/ warranty.
<b>21.0</b>	<b>INSURANCE</b>
21.1	BHEL shall arrange for insuring the materials / properties of BHEL/Customer covering the risks during transit, storage, erection and commissioning.
21.2	It is the sole responsibility of the contractor to insure the workmen, his properties including tools and plants against accident and injury while work as required by relevant rules and to pay compensation, if any, to workmen as per workmen's compensation Act. This policy shall also cover the contractor against claims for injury, disability, disease or death of his or his sub-contractor's employee, which for any reasons are not covered under the Workmen's Compensation Act & Employee's liability, the liability of which shall not be less than statutory provisions.

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21.3	All the rules and regulations of the purchaser/ BHEL in the area of project which are in force from time to time will have to be followed by the contractor.
21.4	If due to negligence and / or non-observance of safety and other precautions and accident/ injury occurs to any other person/ public, the contractor shall have to pay necessary compensation and other expenses. If so decided by the appropriate authorities.
21.5	If due to contractor's carelessness, negligence or non-observance of safety precautions damage to BHEL's/ owner's property and personnel should occur, and if BHEL is unable to recover, in full cost from the insurance company, the balance will be recovered from the contractor. The damage is to be reported within 48 hours of occurrence along with Engineers report. In the event of loss/ theft of BHEL's/ purchaser's property while in the custody of the contractor, it will be the responsibility of the contractor to lodge an FIR with responsibility of the contractor to lodge an FIR with local policy authorities and furnish the details of FIR and Engineer's investigation report about loss/ theft within 48 hours of occurrence. This is for the purpose of lodging insurance claim. If BHEL is unable to recover full cost from Insurance Company, the balance including deductible franchise wherever applicable will be recovered from the contractor.
21.6	The contractor shall be responsible for furnishing all the despatch details including invoice value, plant / components despatched, packing slip, LR/RR/CR copy, shipping details etc. to underwriter and BHEL, to cover no. to be intimated to the contractor afterwards.
21.7	Failure to comply the above on time and in case any loss / damage occurs in transit, the contractor shall be responsible for making good such loss / damage.
21.8	Save provisions as stated above the contractor at his cost shall arrange, secure and maintain insurance as may be necessary to protect his interests and the interests of BHEL against all risk and the responsibility to maintain such insurance coverage at all times during the period of contract shall be that of the contractor alone. Contractor's failure in this regard shall not relieve him of any of his contractual responsibilities and obligations.
<b>22.0</b>	<b>NO WAIVER OF RIGHTS</b> Neither the inspection by the BHEL or any other official, employee or agent nor any order by BHEL for payment of money or any payment for or acceptance of the whole or any part of the scope under this contract by BHEL, nor any extension of time, nor any possession taken by BHEL shall operate as a waiver, of any provision of the contract or of any power herein reserved to BHEL or any right to damages herein provided nor shall any waiver of any breach in the contract / order be held to be a waiver or any other subsequent breach.
<b>23.0</b>	<b>MATERIAL DESPATCH CLEARANCE CERTIFICATE (MDCC)</b> When the tests have been satisfactorily completed at the contractor's work, the Engineer shall issue a certificate to that effect within fifteen (15) days after completion of test, but if the tests were not witnessed by the engineer or his representative, the certificate would be issued within fifteen (15) days of the receipt of the test certificates by the Engineer. No plant / equipment shall be transported before such a certificate has been issued. The satisfactory completion of these tests or the issue of this certificate, shall not bind BHEL to accept the plant / equipment should it, on further test after erection, be found not to comply with the order / contract provisions.
<b>24.0</b>	<b>PACKING</b>
24.1	The packing shall be in conformity with specification and shall be such as to ensure prevention of damages, corrosion, deterioration, shortages, pilferage and loss in transit or storage.
24.2	The packing shall be capable of withstanding the rigours of transit and handling at various points / ports.
24.3	In case of shipment by sea the packing shall be sea worthy of international standard.
24.4	Packing list shall also be submitted along with advance set of documents for claiming payment indicating following.  Packing size. Gross weight and set weight of each package.
<b>25.0</b>	<b>SHORTAGE/ DAMAGE</b>
25.1	In case of shortages/ damages noticed on receipt of materials at site, the contractor should replenish the same immediately. Replenishment of damages arising out of faulty and insufficient packing will be to the cost of contractor and shortages out of sound cases, if not accepted by under writer, will have to be replenished free of cost by the contractor.
25.2	In case of faults, deficiencies in materials, components assemblies, subassemblies etc, these are to be supplied free of cost to enable the equipment to be put in order.
<b>26.0</b>	<b>INTER-CHANGEABILITY</b>
26.1	All similar components / parts of similar equipment supplied shall be interchangeable with

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	one another.
26.2	Even though all the work and materials necessary to the satisfactory completion of the works may not be detailed in the specifications and schedules, their cost will be considered to be within the order / contract and no extra charges will be accepted.
<b>27.0</b>	<b>DEFAULT BREACH OF CONTRACT, INSOLVENCY AND RISK PURCHASE</b>
27.1	If the contractor fails to deliver the equipment / plant or any instalment thereof within the period (s) fixed for such delivery or at any time repudiates or otherwise abandons the order /contract before expiry of such period or otherwise fails to perform the order/contract or commits any breach of the order / contract not herein specifically provided for or if the contractor being an individual or if a firm or a partner thereof, shall at any time, be adjudged insolvent or shall have a receiving order for administration of his estate made against him or shall take any proceeding for composition under any insolvency Act for the time composition under any insolvency Act for the time being in force or make any assignment of the order / contract or enter into any assignment of the order/contract or enter into any arrangement or composition with his creditors or suspend payment or if the firm dissolved under the partnership Act or if the contractor being a company is wound up voluntarily or by order of a court or a Receiver. Liquidator or Manager on behalf of the debenture holders/ creditors is appointed or circumstances shall have arisen which entitles the Court of debenture holder / creditors to appoint a receiver, liquidator or manager, BHEL without prejudice to his right to recover any expenses, losses or damages to which BHEL may be put to incur or sustain by reason of the contract shall be entitled to cancel the order/contract on whole or portion thereof without compensation to contractor and if so desires, he may procure upon such terms and in such manner as he deems appropriate items not so delivered or others of a similar description where items exactly complying with particulars are not, in the opinion of BHEL, which shall be final, readily procurable, at the risk and cost of the contractor and the contractor shall be liable to BHEL for any excess costs provided that the contractor shall continue the performance of the order/contract to the extent not cancelled under the provisions of this clause. Provided also that the contractor shall not be entitled to any gain on repurchase etc.
27.2	<b>NEGLIGENCE</b>
	If the Contractor shall neglect to execute the work with due diligence and expedition or such refuse or neglect to comply with any reasonable orders given to him in writing by BHEL in connection with the work, or shall contravention the provisions of the contract BHEL may give notice in writing to the Contractor calling upon him to make good the failure, neglect or contravention complained of, Should the Contractor fail so comply with such notice within a period considered reasonable by BHEL from the date of such notice service thereof, in the case of a failure, neglect or contravention capable of being made good within that time, or otherwise within such time as may be in the opinion of BHEL be reasonably necessary for making it good, then and in such cash BHEL shall the option and be at liberty to take the work wholly or in part, out of the Contractor's hand and may carry on the work envisaged in the Contract either by himself or his agents or may re-contract with any other person or person to execute the same or any part thereof and provide, as applicable, any other materials, tools, tackle or labour for the purpose or completing the works or any parts thereof. In such event BHEL shall without being responsible to the Contractor for normal wear and tear or the same, be entitled to seize and take possession and have free use of all materials, tools, tackle, or other things which may be on the Site, for use at any time in connection with the work to the exclusion of any right of the Contractor over the same and BHEL shall be entitled to retain and apply any balance sum which may otherwise be then due on the contract by him to the contractor or such part thereof as may be necessary to the payment of the cost of execution of such work as aforesaid . If the cost of completing the works or executing a part thereof as aforesaid shall exceed the balance due to the contractor, the contractor shall pay such excess.
<b>28.0</b>	<b>FORECLOSURE OF CONTRACT</b>
	If at any time after acceptance of the Tender the owner/BHEL shall decide to abandon or reduce the scope of the work for any reason whatsoever and hence not require the whole or any part of the work to be carried out, BHEL shall give notice in writing to that effect to contract and the Contractor shall have no claim to any payment of compensation or otherwise, whatsoever, on account of any profit or advance which he might have derived from the execution of the works in full but which he could not derive in consequence of the foreclosure of the whole or part of the work. The contractor shall have no claim for compensation against certificate vouchers or explanations, to enable the contractor to properly identify such claims. Such claims shall be paid by the contractor within fifteen (IS) days of the receipt of the corresponding bills and if not paid by the contractor within the

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	said period. BHEL may then deducted the amount from any money due or becoming due by him to the contractor under the contract or may be recovered by actions of law or otherwise, if the contractor fails to satisfy BHEL of such claims.
<b>30.0</b>	<b>ASSIGNMENT AND SUB-CONTRACTING</b>
30.1	ASSIGNMENT
	The Contract shall not assign or transfer the Contract or any part thereof or any benefit or any obligation thereof or interest therein or there under (otherwise than by a charge in favour of the Contractor's Bankers of and moneys due to become due under this contract) without the prior written consent of BHEL.
30.2	SUB-CONTRACTING
	Subcontracting of work, normally should not be permitted. However in case of unavoidable instances, the contractor may, after informing BHEL and getting his written approval along with approval of the owner, assign or subcontract any part of the contract other than for raw materials, for minor details or any part of the plant for which details or any part of the plant for which makes are identified in the contract. BHEL shall not be liable in any way, in case such approval for sub-contracting is not permitted by the owner. Sub-contractor of the equipment not identified in the contract or any change in the identified sub-contractor shall be subject to approval by BHEL and the owner. The experience list of the equipment sub-contractor under consideration by the contractor for this contract shall be furnished to BHEL, for approval prior to procurement of all such items / equipment such assignments/ subcontracting shall not relieve the contractor from any obligation, duty or responsibility under the contract. Any assignment as above without prior written approval of BHEL and the purchaser shall be null and void. For components/equipments procured by the contractor for the purposes of the contract after obtaining written approval of BHEL/ the owner, the contractor's purchase specifications and enquiries shall call for quality plans to be submitted by his subcontractor alongwith their proposals. The quality plans called for from the subcontractor shall set out during the various stages of manufacture and installation, the quality practices and procedures followed by the sub-contractor quality control organisation, the relevant reference documents, standards used, acceptance levels inspection of documentation raised, etc. Such quality plans of the sub-contractor shall be discussed and finalised in consultation with BHEL and shall form a part of the contract between the contractor and the sub-contractor, The contractor along with the subcontractor and BHEL shall furnish a joint undertaking to the owner for guaranteed performance or the equipment and subsystems. The contractor should desist from seeking approval for two-tier sub-contracting which may not be permitted by BHEL/the owner.
<b>31.0</b>	<b>FORCE MAJEURE</b>
	The Following shall amount to force majeure.
31.1	Acts of God, acts of any Government, war, sabotage, riots civil commotion, police action, revolution, flood, fire, cyclone, earthquake, epidemic and other similar causes over which the contractor has no control.
31.2	If the contractor suffers delay in the due execution of the contractual obligation due to delays caused for force majeure as defined above the agreed time of completion of the job covered by this contract or the obligations of the contract shall be extended by a period or time equal to the period of delay provided that on the occurrence of any such contingency the contractor immediately reports of BHEL in writing the causes or delay and contractor shall not be eligible for any compensation.
<b>32.0</b>	<b>RISK IN STORES</b>
	The contractor shall perform the order / contract in all respects in accordance with the terms and conditions thereof. The equipment / plant and every constituent part thereof, whether in the possession or control of the contractor his agents or servants or a carrier, or in the joint possession of the contractor his agent or servants and BHEL, his agents or servants shall remain in every respect at the risk of the contractor until their actual delivery to the consignee at the stipulated place or destination or where so provided in the acceptance of offer until their delivery to a person specified by the BHEL as inter in consignee for the purpose of despatch to the consignee. The contractor shall be solely responsible for all loss destruction damage or deterioration of or to the plants / equipment / items from any cause whatsoever while the same, after approval by the engineer, are awaiting despatch or delivery or are in the course or transit from the seller / contractor to the consignee or interim consignee as the case may be.
<b>33.0</b>	<b>CONSIGNEE'S RIGHT OF REJECTION</b>
	Notwithstanding any approval which BHEL or the engineer may have given in respect of the plants / equipment / items or any materials or other particulars or the work or workmanship involved in the performance of the order / contract (whether with or without any test carried out by contractor or the engineer or under the direction of the engineer),

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	and notwithstanding delivery of the same where so provided to the interim consignee, it is shall be lawful for the consignee, on behalf of BHEL, to reject the plants /equipments / items or any part, portion or consignment thereof within thirty (30) days after actual delivery, thereof to him at the stipulated place or destination, if such plants / equipment or part, portion of consignment thereof is not in all respects in conformity with the terms and conditions of order / contract whether on account of any loss, storage, deterioration or damage before despatch or delivery or during transit or otherwise, howsoever.
<b>34.0</b>	<b>ARBITRATION &amp; CONCILIATION</b>
<b>34.1</b>	<b>ARBITRATION:</b>
34.1.1	<p>Except as provided elsewhere in this Contract, in case Parties are unable to reach amicable settlement (whether by Conciliation to be conducted as provided in Clause 34.2 herein below or otherwise) in respect of any dispute or difference; arising out of the formation, breach, termination, validity or execution of the Contract; or, the respective rights and liabilities of the Parties; or, in relation to interpretation of any provision of the Contract; or, in any manner touching upon the Contract (hereinafter referred to as the 'Dispute'), then, either Party may, commence arbitration in respect of such Dispute by issuance of a notice in terms of section 21 of the Arbitration &amp; Conciliation Act, 1996 (hereinafter referred to as the 'Notice'). The Notice shall contain the particulars of all claims to be referred to arbitration in sufficient detail and shall also indicate the monetary amount of such claim. The arbitration shall be conducted by a sole arbitrator to be appointed by the Head of the BHEL Power Sector Region issuing the Contract within 60 days of receipt of the complete Notice. The language of arbitration shall be English.</p> <p>The Arbitrator shall pass a reasoned award.</p> <p>Subject as aforesaid, the provisions of Arbitration and Conciliation Act 1996 (India) or statutory modifications or re-enactments thereof and the rules made thereunder as in force from time to time shall apply to the arbitration proceedings under this clause. The seat of arbitration shall be Kolkata (the place from where the contract is Issued). The Contract shall be governed by and be construed as per provisions of the laws of India. Subject to this provision 34.1.1 regarding ARBITRATION, the principal civil court exercising ordinary civil jurisdiction over the area where the seat of arbitration is located shall have exclusive jurisdiction over any DISPUTE to the exclusion of any other court.</p>
34.1.2	<p>In case of Contract with Public Sector Enterprise (PSE) or a Government Department, the following shall be applicable:</p> <p>In the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contract(s) between Central Public Sector Enterprises (CPSEs)/ Port Trusts inter se and also between CPSEs and Government Departments/Organizations (excluding disputes concerning Railways, Income Tax, Customs &amp; Excise Departments), such dispute or difference shall be taken up by either party for resolution through AMRCD (Administrative Mechanism for Resolution of CPSEs Disputes) as mentioned in DPE OM No. 4(1)/2013-DPE(GM)/FTS-1835 dated 22-05-2018 as amended from time to time.</p>
34.1.3	The cost of arbitration shall initially be borne equally by the Parties subject to the final allocation thereof as per the award/order passed by the Arbitrator.
34.1.4	Notwithstanding the existence of any dispute or differences and/or reference for the arbitration, the Contractor shall proceed with and continue without hindrance the performance of its obligations under this Contract with due diligence and expedition in a professional manner unless the dispute inter-alia relates to cancellation, termination or short-closure of the Contract by BHEL.
34.2	<p><b>CONCILIATION:</b></p> <p>If at any time (whether before, during or after the arbitral or judicial proceedings), any Disputes (which term shall mean and include any dispute, difference, question or disagreement arising in connection with construction, meaning, operation, effect, interpretation or breach of the agreement, contract), which the Parties are unable to settle mutually, arise inter-se the Parties, the same may, be referred by either party to Conciliation to be conducted through Independent Experts Committee (IEC) to be appointed by competent authority of BHEL from the BHEL Panel of Conciliators.</p> <p>Notes:</p> <ol style="list-style-type: none"> <li>1. No serving or a retired employee of BHEL/Administrative Ministry of BHEL shall be included in the BHEL Panel of Conciliators.</li> </ol>

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	<p>2. Any other person(s) can be appointed as Conciliator(s) who is/are mutually agreeable to both the parties from outside the BHEL Panel of Conciliators.</p> <p>The proceedings of Conciliation shall broadly be governed by Part-III of the Arbitration and Conciliation Act 1996 or any statutory modification thereof and as provided in Procedure 2.3 to the GCC. The Procedure 2.3 together with its Formats will be treated as if the same is part and parcel hereof and shall be as effectual as if set out herein in the GCC.</p> <p>The Contractor hereby agrees that BHEL may make any amendments or modifications to the provisions stipulated in the Procedure 2.3 to the GCC from time to time and confirms that it shall be bound by such amended or modified provisions of the Procedure 2.3 with effect from the date as intimated by BHEL to it.</p>
34.3	<p>No Interest payable to Contractor</p> <p>Notwithstanding anything to the contrary contained in any other document comprising in the Contract, no interest shall be payable by BHEL to Contractor on any moneys or balances including but not limited to the Security Deposit, EMD, Retention Money, RA Bills or the Final Bill, or any amount withheld and/or appropriated by BHEL etc., which becomes or as the case may be, is adjudged to be due from BHEL to Contractor whether under the Contract or otherwise.</p>
<b>35.0</b>	<b>CONTRACT AGREEMENT, EFFECT AND JURISDICTION</b>
35.1	The contractor shall within 60 days from the date of LOI/P.O. but in any case before submitting his first bill for payment enter into and execute a contract agreement (to be prepared at the cost of the contractor). In the event of the failure of the contractor to execute the contract agreement within the time specified above, BHEL may cancel the LOI and forfeit his SD unless this period is extended by BHEL.
35.2	The agreement will be signed in seven (7) originals and the contractor shall be provided with one (1) signed original and the rest will be retained by BHEL. These General conditions together with the specifications, tenders drawings and technical particulars, tender data with subsequent agreed modification thereof. Tender, all correspondences with BHEL and signed agreement and other supporting documents shall constitute the contract document(s) No variation or modification of terms and conditions of the contract documents or waiver of any of these terms and conditions shall be deemed valid unless agreed in writing and signed by the BHEL and the Contractor.
35.3	The failure of either party to endorse at any time of the provisions of the contract or any right thereto or to an option herein provided shall in no way be construed to be a waiver of such provisions, rights or option or in any way to affect the validity of the Contract. The exercise by either party of any of his rights herein shall not preclude or prejudice either party from exercising the same or any other right in may have hereunder.
35.4	The contract shall in all respects be deemed to be and shall be construed and shall operate as an Indian contract as defined in the Indian Contract Act 1972 and all payments there under shall be made in Indian Rupees unless otherwise specified.
35.5	The Contract shall be considered to come into force on the date of notification of Award by the BHEL to the Contractor which may be in the form of a Fax. of Award or Letter of Intent / purchase order.
35.6	The law applicable to the Contract, shall be the law in force in India. The Courts of Kolkata under this contract shall have exclusive Jurisdiction in all matters arising under this contract, including Arbitration Awards.
<b>36.0</b>	<b>DIRECT TAX</b>
36.1	BHEL shall not be liable towards income tax of whatever nature including variations thereof arising out of this order/contract as well as tax liability of the contractor and his personnel.
36.2	Deductions of tax at source at the prevailing rate shall be effected by BHEL before payment as a statutory obligation.
<b>37.0</b>	<b>PATENT RIGHTS</b>
37.1	The Contractor shall defend any claim which alleges in a suit of proceeding against BHEL that equipment or any part thereof constitutes an infringement of any patent, if notified promptly in writing and given authority, information and assistance for the defence and the Contractor shall pay all damage and costs awarded against BHEL in such suit or proceeding for the patent infringement and the use of equipment or part is prohibited, the contractor shall, at his own expenses either procure for BHEL the right to continue using the equipment or replace the same with a non-infringing equipment, or modify it so that it

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	becomes non-infringing, or move the equipment and refund the Contract Price plus the transportation and installation costs thereof.
37.2	The contractor shall indemnify BHEL from and against all claims and proceeding for or on account of infringement or alleged infringement of any patent rights, design trade mark or name or other protected rights in respect of execution of the contract.
<b>38.0</b>	<b>INDEMNIFICATION OF BHEL</b> The Contractor shall insure all his personnel, tools and tackles, drawings etc. and shall also take a third party liability cover to indemnify BHEL of all liabilities such may come up due to any act or omission on the part of Contractor, his agent, representative, or sub-contractor(s) and cause harm/damage to other contractor / representatives of the owner / BHEL or all or anybody rendering service to the owner/BHEL or is connected with the owner's /BHEL's work in any manner whatsoever. The Contractor shall necessarily indemnify BHEL in all these respects and the indemnification and insurance policy shall be subject to approval of the owner / BHEL.
<b>39.0</b>	<b>PREVENTION OF EXTRAORDINARY TRAFFIC AND PROTECTION OF HIGHWAY</b> The Contractor shall use every reasonable means to prevent any of the highways of bridges communicating with or on the routes to the Site from being damaged or injured by any traffic of the contractor or any or his sub-contractors and in particulars shall select routes, choose and use vehicles and restrict and distribute loads so that any such extraordinary traffic as will inevitably arise from the moving of Plant and material from and to the site shall be limited as far as reasonably possible and so that no damage or injury may be occasioned to such highways and bridges. Should it be found necessary for the Contractor to move one of more loads or construction plant machinery or reconstructed units or parts of units or work as applicable over part of a highway or bridge and that the moving or such load must in all probability damage the damage highway or bridge unless means of protection of strengthening are carried out then the contractor shall before moving the load on to such highway or bridge. Carryout such protection or strengthening at his own cost. If during the execution of the works or at anytime thereafter BHEL or purchaser shall receive any claim arising out of the execution of the works in respect or damage or injury to highways or bridges, he shall immediately notify the same to the contractor and thereafter the contractor shall negotiate the settlement of and pay all sum due in respect of such claim and shall indemnify BHEL in respect thereof and in respect or all claims demands, cost charges and expenses in relation thereto.
<b>40.0</b>	<b>MEMBERS OF STAFF ETC NOT PERSONALLY LIABLE</b> Neither any member of BHEL's staff nor the Engineer, nor the Engineer's representative shall be in any way personally liable for the acts or obligations under the contract or answerable for any default or omission on the part of BHEL in the observance or performance of any of the acts, matters, or things which are herein contained.
<b>41.0</b>	<b>POWER TO VARY OR OMIT WORK</b>
41.1	No alternations, amendments, omissions, additions, suspensions or variation of the work (hereinafter referred as "variations") under the contract shall be made by the contractor except as directed in writing by BHEL. But BHEL shall have full power, subject to the provision hereinafter contained from time to time during the execution of the contract by notice in writing to instruct the contractor to make such variation without prejudice to the contract and the contractor shall carry out such variations and be bound by the same conditions as far as applicable, as though the said variations occurred in the contract Documents.
41.2	If any suggested variations would in the opinion of the contractor, if carried out, prevent him from fulfilling any of his obligations or guarantee under the contract he shall notify BHEL thereof in writing and BHEL shall decide forthwith whether or not the same shall be carried out and if BHEL confirms his instruction, the contractor's obligations and guarantee shall be modified to such and extent as may be justified.
<b>42.0</b>	<b>SUSPENSION OF WORK</b>
42.1	BHEL reserves the right to suspend and reinstate execution of the whole or any part of the work without invalidating the provision of the contract. Orders for suspension or reinstatement of the work will be issued by BHEL to the contractor in writing. The time for completion of the work be extended for a period equal to duration of the suspension.
42.2	Any necessary demonstrable costs incurred by the contractor as a result of such suspension of the work will be paid by BHEL, provided such costs are substantiated to the satisfaction of BHEL/owner. BHEL shall not be responsible for any liabilities is suspension or delay is due to some default on the part of the contractor or his sub-contractor.
<b>43.0</b>	<b>LIST OF STANDARDS FOR REFERENCE</b>
43.1	International Standards Organisation (ISO).

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43.2	International Electro-technical Commission (IEC).
43.3	American Society of Mechanical Engineers (ASME).
43.4	American National Standards Institute (ANSI).
43.5	American Society for Testing and Materials (ASTM).
43.6	American Institute of Steel Construction (AISC).
43.7	American Wilding Society (AWS).
43.8	Architecture Institute of Japan (AIJ).
43.9	National Fire Protection Association (NFPA).
43.10	National Electrical Manufacturer's Association (NEMA).
43.11	Japanese Electro-Technical Committee (JEC).
43.12	Institute of Electrical and Electronics Engineers (IEEE).
43.13	Federal Occupation Safety and Health Regulations (FOSHA).
43.14	Instrument Society of America (ISA).
43.15	National Electric Code (NEC).
43.16	Heat Exchanger Institute (HEI).
43.17	Tubular Exchanger Manufacturer's Association (TEMA).
43.18	Hydraulic Institute (HIS).
43.19	International Electro-Technical Commission Publications.
43.20	Power Test Code for Steam Turbines (PTC).
43.21	Application German Standards (AGS).
43.22	Application British Standards (ABS).
43.23	Application Japanese Standards (AJS).
43.24	Electric Power Research Institute (EPRI).
43.25	Standard of Manufacturer's Standardisation Society (MSS).
43.26	Bureau of Indian Standards Institute (BIS).
43.27	Indian Electricity Rules.
43.28	Indian Boiler Regulations (IBR).
43.29	Indian Explosives Act.
43.30	Indian Factories Act.
43.31	Tariff Advisory Committee (TAC) Rules.
43.32	Emission regulation of Central Pollution Control board (CPCB).
43.33	Pollution Control regulations of Dept of Environment Govt of India.
43.34	Central Board of Irrigation and Power (CBIP) Publications.
43.35	Any other statutory Codes/ Standards/ Regulations.
<b>44.0</b>	Introduced below mentioned clauses superseding all pertinent clauses of risk and cost mentioned above.
44.1	<p>Risk and cost may be invoked in any of the following cases:</p> <ul style="list-style-type: none"> <li>i). Contractor's poor progress of the work vis-à-vis execution timeline as stipulated in the Contract, backlog attributable to contractor including unexecuted portion of supply does not appear to be executable within balance available period considering its performance of execution.</li> <li>ii). Withdrawal from or abandonment of the work by contractor before completion of the work as per contract.</li> <li>iii). Non completion of work/ Non-supply by the Contractor within scheduled completion/ delivery period as per Contract or as extended from time to time, for the reasons attributable to the contractor.</li> <li>iv). Termination of Contract on account of any other reason (s) attributable to Contractor.</li> <li>v). Assignment, transfer, subletting of Contract without BHEL's written permission resulting in termination of Contract or part thereof by BHEL.</li> <li>vi). Non-compliance to any contractual condition or any other default attributable to Contractor.</li> </ul> <p>Risk &amp; Cost Amount against Balance Work:  Risk &amp; Cost amount against balance work shall be calculated as follows:  Risk &amp; Cost Amount= [(A-B) + (A x H/100)]  Where,  A= Value of Balance scope of Work/ Supply (*) as per rates of new contract  B= Value of Balance scope of Work/ Supply (*) as per rates of old contract being paid to the contractor at the time of termination of contract i.e. inclusive of PVC &amp; ORC, if any.  H = Overhead Factor to be taken as 5</p> <p>In case (A-B) is less than 0 (zero), value of (A-B) shall be taken as 0 (zero).</p>



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	<p>* Balance scope of work/ supply (in case of termination of contract):  Difference of Contract Quantities and Executed Quantities as on the date of issue of Letter for 'Termination of Contract', shall be taken as balance scope of Work/ Supply for calculating risk &amp; cost amount.  Contract quantities are the quantities as per original contract. If, Contract has been amended, quantities as per amended Contract shall be considered as Contract Quantities. Items for which total quantities to be executed have exceeded the Contract Quantities based on drawings issued to contractor from time to time till issue of Termination letter, then for these items total Quantities as per issued drawings would be deemed to be contract quantities.  Substitute/ extra items whose rates have already been approved would form part of contract quantities for this purpose. Substitute/ extra items which have been executed but rates have not been approved, would also form part of contract quantities for this purpose and rates of such items shall be determined in line with contractual provisions.  However, increase in quantities on account of additional scope in new tender shall not be considered for this purpose.</p> <p>NOTE: Incase portion of work is being withdrawn at risk &amp; cost of contractor instead of termination of contract, contract quantities pertaining to portion of work withdrawn shall be considered as 'Balance scope of work/ supply' for calculating Risk &amp; Cost amount.</p> <p>LD against delay in executed work/ supply in case of Termination of Contract:</p> <p>LD against delay in executed work/ supply shall be calculated in line with the relevant LD clause(s) of GCC, for the delay attributable to contractor. For limiting the maximum value of LD, contract value shall be taken as Executed Value of work/ supply till termination of contract.</p> <p>Method for calculation of "LD against delay in executed supply in case of termination of contract" is given below.</p> <p>i). Let the time period from scheduled date of start of work till termination of contract excluding the period of Hold (if any) not attributable to contractor = T1  ii). Let the value of executed work/supply till the time of termination of contract= X  iii). Let the Total Executable Value of work/supply for which inputs/fronts were made available to contractor and were planned for execution till termination of contract = Y  iv). Delay in executed work/supply attributable to contractor i.e. <math>T2 = [1 - (X/Y)] \times T1</math>  v). LD shall be calculated in line with LD clause of GCC for the delay attributable to contractor taking "X" as Contract Value and "T2" as period of delay attributable to contractor.</p>
44.2	<p>Recoveries arising out of Risk &amp; Cost and LD or any other recoveries due from Contractor Following sequence shall be applicable for recoveries from contractor:</p> <p>a) Dues available in the form of Bills payable to contractor, SD, BGs against the same contract.</p> <p>b) Demand notice for deposit of balance recovery amount shall be sent to contractor, if funds are insufficient to effect complete recovery against dues indicated in (a) above.</p> <p>c) If contractor fails to deposit the balance amount to be recovered within the period as prescribed in demand notice, following action shall be taken for balance recovery:  Dues payable to contractor against other contracts in the same Region shall be considered for recovery.</p> <p>If recovery cannot be made out of dues payable to the contractor as above, balance amount to be recovered, shall be informed to other Regions/Units for making recovery from the Unpaid Bills/Running Bills/SD/BGs/Final Bills of contractor.</p> <p>In-case recoveries are not possible with any of the above available options, Legal action shall be initiated for recovery against contractor.</p>

**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 3 nos. 150 meter high reinforced concrete single steel flue chimney with borosilicate glass block lining system on MS flue can and other incidentals complete including raft foundation for FGD system of 3 x 660 MW North Karanpura STPP, Jharkhand.	
Ref	1.0	Tender no PSER:SCT:NKP-C2005:20.
	2.0	BHEL's NIT, vide reference no PSER:SCT:NKP-C2005:7745 Date: 06-01-2020
	3.0	BHEL's TCN-01, vide reference no PSER:SCT: NKP-C2005:TCN-01 Date: 14-01-2020.
	4.0	All other pertinent issues till date.

Dear Sirs,

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

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

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

We confirm to have submitted/uploaded offer/documents in accordance with tender instructions with acceptance of the terms & conditions of the tender by us and as per aforesaid references.

Thanking you,

Yours faithfully,

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

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

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

फैक्स/Fax : (033) 23211960

फोन/Phone : बोर्ड/EPABX : 033-2339 8000/ 2339 8236