



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

(भारत सरकार का उपक्रम)

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

TCN - 04

Ref: PSER:SCT:IIS-T1077:TCN-04

Date: 20-02-2010

Sub	Tender change notice (TCN- 04).	
Job	Erection, Testing & Commissioning of steam turbine & auxiliaries, generator & auxiliaries, BPTG, Turbo-Blowers, Electrical and C & I items at 3X 18 MW, power & blowing station, IISCO Burnpur, West Bengal.	
Ref	1.0	Tender no PSER:SCT:IIS-T1077:10.
	2.0	BHEL's NIT, vide reference no Ref: PSER:SCT:IIS-T1077:10 Dated 27-01-2010
	3.0	BHEL's TCN-01, vide reference no Ref: PSER:SCT:IIS-T1077:TCN-01 Dated 06-02-2010
	4.0	BHEL's TCN-02, vide reference no Ref: PSER:SCT:IIS-T1077:TCN-02 Dated 12-02-2010
	5.0	BHEL's TCN-03, vide reference no Ref: PSER:SCT:IIS-T1077:TCN-03 Dated 16-02-2010
	6.0	Other references (if any).

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

- 1.0 Addition of clause no. 1.9 B 1.12 with the existing clauses as per 1.9 (B) (ELECTRICAL AND CONTROL & INSTRUMENTATION) of vol-ID & II as per annexure-A to TCN-04 .
- 2.0 Modification of clause no. 9 (TERMS OF PAYMENT) in page no. 67 of vol-ID & II as per annexure-B to TCN-04
- 3.0 **Items/ Quantities indicated against BOP electrical, BOP C & I, Electrical and C & I items of Boiler, TG, BPTG and Turbo-blower under Sl. no. 16 to 21 of Appendix-I Rev-01 of Vol-ID & II is tentative/ indicative only. Bidder to consider items as per Price Schedule (Package-2, Schedule-2 of Vol-III, REV-03) for quoting rates.**
- 4.0 **BOQ cum price schedule format VOL-III PRICE SCHEDULE, REV-2 has been revised as VOL-III-PRICE SCHEDULE, REV-3 which is enclosed herewith. As such you are requested to consider the revised BOQ/price schedule only and quote your price accordingly. Offer from bidders in superseded price schedule (Vol-III, REV-I/REV-2) shall not be considered. Bidders are also requested to submit a declaration in techno-commercial offer that they have submitted their price bid in sealed envelope as per REVISED price schedule format (VOL-III- PRICE SCHEDULE, REV-3).**
- 5.0 Revised 'No deviation certificate' is attached. Bidder to submit 'No deviation certificate' as per attached format only.
- 6.0 All other terms & conditions shall remain unchanged.

Thanking you,

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

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

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

Yours faithfully,
for BHARAT HEAVY ELECTRICALS LTD

DGM (SCT)

Encl:

- 1.0 ANNEXURE-A to TCN-04
- 2.0 ANNEXURE-B to TCN-04
- 3.0 Revised BOQ cum price schedule format (VOL-III- PRICE SCHEDULE, REV-3)
- 4.0 Revised format of 'No deviation certificate'.

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

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

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ANNEXURE-A TO TCN-04

JOB :- ERECTION, TESTING & COMMISSIONING OF STEAM TURBINE & AUXILIARIES, GENERATOR & AUXILIARIES, BPTG, TURBO-BLOWERS, ELECTRICAL AND C & I ITEMS AT 3X 18 MW, POWER & BLOWING STATION, IISCO BURNPUR, WEST BENGAL

REF. TENDER NO. :- PSER:SCT:IIS-T1077:09

1.9(B) ELECTRICALS AND CONTROLS & INSTRUMENTATION

- 1.9.B1.1 All the Electrical Controls Panel ,Power Distribution Board, MCC, Junction Box are to be erected with the base Channels (ISMC),which may be fabricated at site. All the structural materials will be supplied by BHEL on free of cost .All the necessary test, functional checking are to be carried out and system commissioning is to be done
- 1.9.B1.2. All the electronic (MAX DNA) panels are to be erected with the base channels (ISMC), which may be fabricated at site. All the structural materials will be supplied by BHEL on free of cost. All necessary test, functional checking are to be carried out and system commissioning is to be done
- 1.9.B1.3 All the loose Instruments (both field mounted & panel mounted) and control valves are to be calibrated/checked /set at alarm & tripping value and erected .For calibration the contractor will provide master Instruments with valid certificate of agency approved by BHEL. The Instruments are to be tested on line, commissioned and put into service.
- 1.9.B1.4. The cable is to be cut from cable drum, laid, dressed & terminated. All the items of required quantity ie PVC adhesive Tape, suitable Copper cable lug upto 2.5 sq.mm, wire marker, cable binding strap shall be supplied by the contractor within their quoted price. No separate additional payment will be admissible. All the necessary test including Insulation, continuity etc are to be carried out.
- 1.9.B1.5. Impulse Pipes are to be cleaned by compressed air, cut, bent with Pipe Bending Machine, erected with proper support & Clamps and terminated. All the required GI U Clamps are to be supplied by the contractor within their quoted price. No separate additional payment will be admissible. Unit rate of rate schedule(vol-iii) includes all the required pipe, fittings like union, coupling, cross, head & tail piece, connectors, valves, elbow, reducer ,tee etc.
- 1.9.B1.6. The Copper tube is to be cut properly, bent using Tube Bender and laid & terminated. Unit rate of rate schedule vol-iii includes all the required tube fitting like ferrule, union, connector, needle valve, tee, elbow, reducer etc.
- 1.9.B1.7. The Instrumentation job in general is to be done considering aesthetic look.
- 1.9.B1.8. All the control loops are to be commissioned.
- 1.9.B1.9 In case of Panel, Desk, Switch board, Gauge board, cabinet, MCC additional payment /recovery shall be applicable in case of variation in length (L) only and no other dimensions.

1.9.B1.10 Contractor's quoted rate for above items shall be inclusive of a variation limit of (+/-)10% of length (L), as specified in Volume-III Rev-III, Appendix-I. However, if actual length is found beyond (+/-) 10% variation in length as indicated in the schedule, additional payment/ recovery in rate will be derived in the following manner.

In case, actual length exceeds variation limit, the contractor will be entitled for additional payment for the portion beyond 1.1 times of indicated length and BHEL will be entitled to recover for the portion below 0.9 times of indicated length

- Length as indicated in the schedule = A
- Rate quoted = Rs. B
- Rate per unit length (L) to be considered for the purpose of additional payment/ recovery for variation in length = $B/A = C$
- Actual length = D
- Compensation entitled by the contractor in case of increase in length beyond 1.1A = $(D-1.1A) \times C$.
- Reduction entitled by BHEL in case of decrease in length below 0.9A = $(0.9A-D) \times C$.
- For variation in weight, width, height of above items, no variation of unit rate shall be applicable.

1.9.B1.11 Unit rate quoted by bidders, items other than panel, desk, switch board, gauge board, cabinet, MCC shall remain unaltered regardless of weight/ dimension.

1.9.B1.12 Liaison for obtaining statutory approvals from electrical Inspector or any other governing agencies shall be in Vendor' scope.

ANNEXURE-B TO TCN-04

JOB :- ERECTION, TESTING & COMMISSIONING OF STEAM TURBINE & AUXILIARIES, GENERATOR & AUXILIARIES, BPTG, TURBO-BLOWERS, ELECTRICAL AND C & I ITEMS AT 3X 18 MW, POWER & BLOWING STATION, IISCO BURNPUR, WEST BENGAL

REF. TENDER NO. :- PSER:SCT:IIS-T1077:10

9. TERMS OF PAYMENT

For Erection, Testing and Commissioning of the Unit for Steam Turbine, turbo-blowers, Turbo-Generator, Condenser with auxiliaries, integral piping and electrical & C & I job payments shall be made as follows on basis of percentage of total contract value of work as per rate schedule on monthly basis. The following break up is only for the purpose of regular stage payment and should not be construed as price for individual item and also it does not constitute total scope of work. The total scope of work is as detailed in this tender document and shall be completed by contractor without making any reference to the following break up.

9.1 Billing break up is as follows:

BILLING SCHEDULE FOR ERECTION & COMMISSIONING OF STG:TG & AUX. ELECTRICAL AND C&I PACKAGE (PRICE SCHEDULE-VOL-III REV-3/ STG)

- Note :
- 1) Payment shall be released on Pro - rata monthly basis on each item of works against submission of bills.
 - 2) It may please be noted that the break up given above is notional break up only, solely to facilitate progress billing thereof. The lump-sum contract price and contract conditions shall remain unchanged and difference, if any, shall be adjusted in accordance with total individual allocation as above and shall be paid along with the last pro-rata bill for individual item.
 - 3) Items not appearing in the above break-up but required for the purpose of system completion as per technical specification / drawing shall be executed with out any cross reference to the payment break-up and no additional payment shall be released by BHEL.
 - 4) BHEL site may further split up broad % progressive payment to maintain suitable fund flow in commensurate with the progress of the work.

RATE SCHEDULE.		
RATE SCHEDULE FOR PACKAGE-1		
SL.NO.	ACTIVITY DESCRIPTION	PERCENTAGE OF BILLING
1	STG-UNIT1	15 %
2	STG-UNIT2	15 %
3	STG-UNIT3	15 %
4	BPTG	10%
5	TURBO-BLOWER 1	15%
6	TURBO-BLOWER 2	15 %
7	TURBO-BLOWER 3	15 %
	TOTAL	100.00%
RATE SCHEDULE FOR PACKAGE -2		

ANNEXURE-B TO TCN-04

JOB :- ERECTION, TESTING & COMMISSIONING OF STEAM TURBINE & AUXILIARIES, GENERATOR & AUXILIARIES, BPTG, TURBO-BLOWERS, ELECTRICAL AND C & I ITEMS AT 3X 18 MW, POWER & BLOWING STATION, IISCO BURNPUR, WEST BENGAL

REF. TENDER NO. :- PSER:SCT:IIS-T1077:10

	ELECTRICAL & C&I ITEMS(BOTH FOR TG+BOP)	
	TOTAL	100.00%

Further break-up of percentage for each unit shall be done subsequently at site for Erection & Commissioning for monthly running payment.

9.2

9.2.1 For package-1:- Payment against each monthly running arrear (RA) bill will be restricted to 95% of the value arrived at, based on the accepted measurements. The 5% thus remaining shall be treated as amount payable but not due and shall be on account of Workmanship Guarantee (defect liability) of the work executed as per GCC, the same shall be released after completion of the guarantee period of 12 months from the date of completion of entire work as certified by BHEL engineer. However this amount may be released along with final bill on submission of Bank Guarantee of equal amount and tenure in prescribed format.

However the above 5% Retention Amount can be released during the guarantee period , against the submission of Bank Guarantee for an equivalent amount valid upto completion of guarantee period the Unit , in the prescribed format, subject to certification, acceptance by BHEL stating that all works of that particular Unit is completed.

Submission of Bank Guarantee towards above, is separate and the bank guarantee towards security deposit cannot be utilised for this purpose. The security deposit will be refunded as per certificate of site, on completion of final bill formalities and as per relevant clauses of GCC."

9.2.2 For package-2 :- Payment against each monthly running arrear (RA) bill will be Guided as per the annexure-X mention below

ANNEXURE-X **(Billing schedule)**

BILLING SCHEDULE

Sl. No.	Description of work	% of unit rate
1	Cable tray, accessories & supporting structure	
1.1	Fab. as reqd. fixing in position, painting etc. complete in all respect	60%
1.2	Laying of cables on trays	15%
1.3	Dressing and clamping & tagging of cable	8%
1.4	Tray covering	7%
1.5	Trial run of unit	5%

ANNEXURE-B TO TCN-04

JOB :- ERECTION, TESTING & COMMISSIONING OF STEAM TURBINE & AUXILIARIES, GENERATOR & AUXILIARIES, BPTG, TURBO-BLOWERS, ELECTRICAL AND C & I ITEMS AT 3X 18 MW, POWER & BLOWING STATION, IISCO BURNPUR, WEST BENGAL

REF. TENDER NO. :- PSER:SCT:IIS-T1077:10

	1.6	Handing over of unit	5%
		Total =	100%
2	Cable laying		
	2.1	Laying of cables	60%
	2.2	Termination of cables & tagging	15%
	2.3	Trial run/commissioning of connected equipment/system	8%
	2.4	Dressing and clamping of cable	7%
	2.5	Trial run of unit	5%
	2.6	Handing over of unit	5%
		Total =	100%
3	Junction box/Push button station (local)		
	3.1	Erection including fabrication of supporting frame	60%
	3.2	Fixing/testing of terminal block	15%
	3.3	Commissioning of connected equipment	8%
	3.4	Painting of supporting frame, name plate fixing	7%
	3.5	Trial run of unit	5%
	3.6	Handing over of unit	5%
		Total =	100%
4	Conduit/impulse pipe/other pipe/copper tube/SS tube etc.		
	4.1	Laying including fabrication/erection of supporting structure	45%
	4.2	Completion of erection including end connection	30%
	4.3	Dressing, clamping and tagging	8%
	4.4	Testing & commissioning of associated equipment/system	7%
	4.5	Trial run of unit	5%
	4.6	Handing over of unit	5%
		Total =	100%
5	Misc. Structural steel support /Canopy		
	5.1	Fabrication of support /Canopy	45%
	5.2	Erection of support /Canopy	30%
	5.3	Painting of support /Canopy	8%
	5.4	Completion of erection of connected equipment /Canopy	7%
	5.5	Trial run of unit /Canopy	5%
	5.6	Handing over of unit /Canopy	5%
		Total =	100%
6	Control panel/cubicle/desk/ups/transmitter rack/Insert / UPS / Battery / PLC		
	6.1	Receipt from store/yard, transportation to place of erection, placement, alignment including fabrication & erection of supporting frame	45%
	6.2	Fixing of loose items/instruments, charging	30%
	6.3	Loop testing and commissioning, Auto control commissioning	8%
	6.4	System commissioning	7%
	6.5	Trial run of unit	5%

ANNEXURE-B TO TCN-04

JOB :- ERECTION, TESTING & COMMISSIONING OF STEAM TURBINE & AUXILLIARIES, GENERATOR & AUXILLIARIES, BPTG, TURBO-BLOWERS, ELECTRICAL AND C & I ITEMS AT 3X 18 MW, POWER & BLOWING STATION, IISCO BURNPUR, WEST BENGAL

REF. TENDER NO. :- PSER:SCT:IIS-T1077:10

	6.6	Handing over of unit	5%
		Total =	100%
7	Instrument/equipment		
	7.1	Receipt of material, calibration/testing, checking, erection including fabrication and erection of supporting frame	60%
	7.2	Charging, local testing/commissioning & tagging	15%
	7.3	Remote testing/loop commissioning, Auto control commissioning	8%
	7.4	System commissioning	7%
	7.5	Trial run of unit	5%
	7.6	Handing over of unit	5%
		Total =	100%
8	Control valve (excluding erection of valve but including erect. of accessories)		
	8.1	fixing loose components like AFR, tubing etc including fabrication & erection of supports	25%
	8.2	Local testing, checking, calibration, Remote testing & commissioning	40%
	8.3	Loop testing and commissioning, Auto control commissioning	18%
	8.4	System commissioning	7%
	8.5	Trial run of unit	5%
	8.6	Handing over of unit	5%
		Total =	100%
9	Plant monitoring system		
	9.1	Placement and alignment, Interconnection of equipment & peripherals, cable laying & termination and fixing of loose items	30%
	9.2	Charging, Initialisation and configuring, Signal checking	20%
	9.3	Pre-commissioning, Commissioning	35%
	9.4	System commissioning	5%
	9.5	Trial run of unit	5%
	9.6	Handing over of unit	5%
		Total =	100%
10	Activities covering testing & commissioning only		
	10.1	Fixing loose components	15%
	10.2	Local testing, checking, calibration, Remote testing & commissioning	50%
	10.3	Loop testing and commissioning, Auto control commissioning	20%
	10.4	System commissioning	5%
	10.5	Trial run of unit	5%
	10.6	Handing over of unit	5%
		TOTAL	100%
11	Power Cylinders		

ANNEXURE-B TO TCN-04

JOB :- ERECTION, TESTING & COMMISSIONING OF STEAM TURBINE & AUXILLIARIES, GENERATOR & AUXILLIARIES, BPTG, TURBO-BLOWERS, ELECTRICAL AND C & I ITEMS AT 3X 18 MW, POWER & BLOWING STATION, IISCO BURNPUR, WEST BENGAL

REF. TENDER NO. :- PSER:SCT:IIS-T1077:10

	11.1	Fabrication & erection of supports, erection of power cylinder, levelling & alignment, grouting etc.	25%
	11.2	Local testing, checking, calibration, Remote testing & commissioning	40%
	11.3	Loop testing and commissioning, Auto control commissioning	20%
	11.4	System commissioning	5%
	11.5	Trial run of unit	5%
	11.6	Handing over of unit	5%
		Total =	100%
12	Supply of items		
		Supply of Misc items	100%
13	LT BUS DUCTS		
	13.1	Fixing support structures,levelling& alignment etc,pre-assambly of bus ducts and accessories,pre alignment, erection with proper leveling and alignment,including welding etc.	60%
	13.2	Pre-commissioning checks & testing	10%
	13.3	Charging	10%
	13.4	commissioning	10%
	13.5	Trial run of unit	5%
	13.6	Handing over of unit	5%
		Total =	100%
14	MISC EQUIPMENTS ETC.		
	14.1	Placement,alignment & coupling as applicable	60%
	14.2	Pre-commissioning checks & testing	10%
	14.3	Charging	10%
	14.4	commissioning	10%
	14.5	Trial run of unit	5%
	14.6	Handing over of unit	5%
		Total =	100%
15	GENERATOR TRANSFORMER/STATION TRANSFORMER/UNIT AUX.TRANSFORMERS /LT TRANSFORMER(OIL FILLED)		
	15.1	Reciept of transformer main tank,transportation to site of erection,placement on foundation	25%
	15.2	Fixing,fitting of piping,hydraulic test of radiator banks,erection of allied items/associated auxilliaries including filling of pre-treated,tested oil as applicable	20%

ANNEXURE-B TO TCN-04

JOB :- ERECTION, TESTING & COMMISSIONING OF STEAM TURBINE & AUXILIARIES, GENERATOR & AUXILIARIES, BPTG, TURBO-BLOWERS, ELECTRICAL AND C & I ITEMS AT 3X 18 MW, POWER & BLOWING STATION, IISCO BURNPUR, WEST BENGAL

REF. TENDER NO. :- PSER:SCT:IIS-T1077:10

	15.3	completion of dry out of transformer including oil filtration complete	10%
	15.4	Pre-commissioning checks & testing	15%
	15.5	Charging	10%
	15.6	commissioning	10%
	15.7	Trial run of unit	5%
	15.8	Handing over of unit	5%
		Total =	100%
16	BUS DUCTS(ISOLATED PHASE B/D AND SEGREGATED PHASE B/D)		
	16.1	Fixing support structures,levelling& alignment	15%
	16.2	Pre-assambly of bus ducts and accessories,pre alignment, erection with proper leveling and alignment,including welding etc.	40%
	16.3	Pre-commissioning checks & testing	15%
	16.4	Charging	10%
	16.5	commissioning	10%
	16.6	Trial run of unit	5%
	16.7	Handing over of unit	5%
		Total =	100%

Note:

01. Out of the above break up for progressive payment, 5% of the unit rates shall be retained from each RA bill which will be released in the following manner-
 - a. This 5% shall be released after the guarantee period is over.
 - b. However, this balance 5% can be released against submission of bank guarantee in the prescribed 'form' which shall be kept valid for the specified period. This bank guarantee is separate from the bank guarantee towards security deposit and the bank guarantee towards security deposit cannot be utilised for this purpose. The security deposit will be refunded as per relevant clause of GCC.
02. Site-in-charge, BHEL, at discretion, may further split up the above percentage and effect payment to suit the site conditions, cash flow requirement, according to the progress of work.

9.3 PAYMENT FOR WORK COMPLETED

- 9.3.1 The contractor should submit his on account bills with all the details required by BHEL on 5th of every month covering progress of work in all respects and areas up to last day of the previous month.
- 9.3.2 On receipt of the bill, joint measurement and checking of the work done will be carried out by the concerned BHEL engineer as per General Conditions of the Contract and break-up given vide clause 10.1 of payment break-up. It shall be final and binding on the contractor.

Job : MATERIAL RECEIPT FROM STORE, UNLOADING/RELOADING, AND ERECTION, TESTING & COMMISSIONING OF STEAM TURBINE & AUXILIARIES , GENERATOR & AUXILIARIES, BPTG , TURBO-BLOWERS , ELECTRICALS AND CONTROL & INSTRUMENTATION WORK FOR 3 Nos 18 MW STG+1 No 8.275 MW BPTG + 3 Nos Turbo-blowers (each 2,28,600 Nm³/hr) POWER AND BLOWING STATION AT IISCO STEEL PLANT, BURNPUR, BURDWAN, WEST BENGAL, INDIA

<u>TENDER DOCUMENT NO: PSER:SCT:IIS-T1077:10</u>	
<u>PREAMBLE</u>	
1	This preamble forms part of tender document and schedule of items. The tenderer should read this preamble carefully in rates for various items. Clauses under this preamble shall be read in conjunction with Volume-IB, ID, IE , Volume – II and other tender sections as applicable.
2	The work shall be carried out strictly as per specifications, description of the items in these schedule and / or engineer's instructions.
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, taxes (except service tax), transport, layout, repairs, rectification, maintenance till handing over, supervisions, colonies, shops, establishments, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary to complete the work according to the complete tender document and this schedule.
5	The quantities of the various items mentioned in this schedule of items are approximate, based on very preliminary information and may vary to any extent or be deleted altogether. The quoted rates of each item will remain firm throughout the period of execution including extension, for reasons whatsoever, as long as variation in the total value of work executed under any part of this contract including extra items, if any but excluding any price variation remains, within thirty percent ($\pm 30\%$) of the awarded price as per LOI .
6	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.
7	Rates shall be quoted in figures and in words in clear legible writing. No overwriting is allowed. All scoring and cancellations should be countersigned and in case of illegibility the interpretation of engineer shall be final. All entries shall be in English language.
8	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.
9	The tenderer shall be deemed to have visited site and made himself aware of all the site conditions, studied the specifications, details of instruments/panels/equipments to be dismantled/reuse etc. and details of work to be done within the time schedule as per tender conditions and to have acquainted himself of the conditions prevailing at site.
10	No splitting of the job is envisaged. Decision of BHEL in this regard shall be final and binding to the bidders.
11	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.
12	Size and weights of various items are mentioned in the attached BOQ cum rate/price schedule for reference purpose. These shall be utilised as per relevant sections of tender. Bidders shall quote for each item in the rate 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.
	Note : Bidders to note the following for quoting their rates.
	A) Only authorised persons of bidder having power should sign in the price bid. All the pages must be signed.
	B) For bid evaluation purpose (deciding L1), grand total price (sch-1 & sch-2) of rate schedule shall be considered.
	C) Quoted rates shall be inclusive of all taxes, duties etc., except service tax as per tender terms. Service tax (as applicable) shall be payable/reimbursable extra as per tender terms. The rate quoted shall remain firm during the contract period and extended Contract period.

SUMMARY SCHEDULE

VOLUME - III, Rev-03

Job : MATERIAL RECEIPT FROM STORE, UNLOADING/RELOADING, AND ERECTION, TESTING & COMMISSIONING OF STEAM TURBINE & AUXILIARIES , GENERATOR & AUXILIARIES, BPTG , TURBO-BLOWERS , ELECTRICALS AND CONTROL & INSTRUMENTATION WORK FOR 3 Nos 18 MW STG+1 No 8.275 MW BPTG + 3 Nos Turbo-blowers(each 2,28,600 Nm³/hr) POWER AND BLOWING STATION AT IISCO STEEL PLANT, BURNPUR, BURDWAN, WEST BENGAL, INDIA		
TENDER NO. PSER:SCT:IIS-T1077:10		
SUMMARY PRICE SCHEDULE		
SL. NO.	DESCRIPTION OF ITEMS	PRICE
PACKAGE-1 (SCHEDULE-1)	Lumpsum price for providing manpower, supervision, T&P, IMTEs/ MMDs & all consumables etc. for Material receipt from store, unloading/reloading , handling, taking delivery of materials from stores, yard etc, transportation of these to pre-assembly yard/ place of erection, temporary storage, preservation as required prior to erection after receipt, watch & ward, erection, testing, commissioning, trial operation, PG test, handing over etc. of Steam Turbine, Generator, Auxiliaries, BPTG, turbo-blowers, Pumps, Heaters, De-aerator, piping system, thermal insulation, final painting etc, as enumerated in detail in the tender specification for 3 nos 18 mw STG+1 NO 8.275MW BPTG+3 NOS TURBO-BLOWERS(each 2,28,600 nm ³ /hr) at IISCO BURNPUR as per technical specification & terms & conditions as detailed in this tender document.	
PACKAGE-2 (SCHEDULE-2)	Price for Erection, Testing, Commissioning of all electrical and Control & instrumentation work of BOILER, STG, BPTG, TURBOBLOWER, BOP, Generator Transformer and their auxiliaries etc for 3 nos 18 mw STG+1 NO 8.275MW BPTG+3 NOS TURBO-BLOWERS(each 2,28,600 nm ³ /hr) at IISCO BURNPUR.	
	Total Price (Package-1+Package-2)	
NOTE:		
1	The items, quantities, weights, etc. mentioned in the tender specifications are approximate only and liable to variation and alteration as per design consideration of BHEL manufacturing units. The quoted/ accepted price of the bidder shall remain unchanged on account of any variation in these.	
2	Quoted Total price of Package-1 & Package-2 as above shall be considered for bid evaluation and awarding purpose.	
3	Bidder to note that total price quoted above should match with the sum of individual quoted rate schedule price of Package-1 and Package-2 quoted in Schedule-1 and Schedule-2 respectively. In case of any mismatch between the two the highest value will be considered for evaluation and the lowest value to be considered for awarding.	
4	The omission of specific reference to any method and equipment, system or material necessary for proper and efficient services towards installations of the plant shall not relieve the contractor of the responsibility of providing all services/facilities to complete the work or portion of the work involved. The quoted rate shall deem to be inclusive of such contingencies. Only exclusion specifically mentioned in this tender shall be entertained in all matters.	
5	Bidders should quote uniform rate for identical/ same items appearing in various sub-sections/ parts of the price schedule, VOL-III, Rev-03 of this tender. If it is found that different rates are quoted for identical/ same items the lowest quoted rate for such items shall be considered in the event of ordering for this tender.	

SCHEDULE-1

VOLUME - III, Rev-03					
Job : MATERIAL RECEIPT FROM STORE, UNLOADING/RELOADING, AND ERECTION, TESTING & COMMISSIONING OF STEAM TURBINE & AUXILIARIES , GENERATOR & AUXILIARIES, BPTG , TURBO-BLOWERS , ELECTRICALS AND CONTROL & INSTRUMENTATION WORK FOR 3Nos 18 MW STG+1 No 8.275 MW BPTG + 3 Nos Turbo-blowers(each 2,28,600 Nm ³ /hr) POWER AND BLOWING STATION AT IISCO STEEL PLANT, BURNPUR, BURDWAN, WEST BENGAL, INDIA					
TENDER NO. PSER:SCT:IIS-T1077:10					
PRICE FOR PACKAGE-1					
SL. NO.	DESCRIPTION OF ITEMS	DIMENSION(in mm) (Length)x(Width)x(Height) /DETAIL	QUANTITY	UNIT	PRICE
PACKAGE-1	Lumpsum price for providing manpower, supervision, T&P, IMTEs/ MMDs & all consumables etc. for Material receipt from store, unloading/reloading , handling, taking delivery of materials from stores, yard etc, transportation of these to pre-assembly yard/ place of erection, temporary storage, preservation as required prior to erection after receipt, watch & ward, erection, testing, commissioning, trial operation, PG test, handing over etc. of Steam Turbine, Generator, Auxiliaries, BPTG, turbo-blowers, Pumps, Heaters, De-aerator, piping system, thermal insulation, final painting etc, as enumerated in detail in the tender specification for 3 nos 18 mw STG+1 NO 8.275MW BPTG+3 NOS TURBO-BLOWERS(each 2,28,600 nm ³ /hr) at IISCO BURNPUR as per technical specification & terms & conditions as detailed in this tender document.		1	LOT	
	Total Price (PACKAGE-1)				

SCHEDULE-2							
VOLUME - III , Rev-03							
Title of the Job : MATERIAL RECEIPT FROM STORE,UNLOADING/RELOADING, AND ERECTION,TESTING & COMMISSIONING OF STEAM TURBINE &AUXILLIARIES , GENERATOR & AUXILLIARIES,BPTG , TURBO-BLOWERS , ELECTRICALS AND CONTROL & INSTRUMENTATION WORK FOR 3Nos 18 MW STG+1 No 8.275 MW BPTG + 3 Nos Turbo-blowers(each 2,28,600 Nm3/hr) POWER AND BLOWING STATION AT IISCO STEEL PLANT,BURNPUR, BURDWAN, WEST BENGAL, INDIA							
TENDER NO. PSER:SCT:IIS-T1077:10							
PRICE FOR PACKAGE-2							
SL. NO.	DESCRIPTION OF ITEMS	DIMENSION(in mm) (Length)x(Width)x(H eight)/DETAIL	QUANTITY	UNIT	UNIT RATE	TOTAL AMOUNT	Billing schedule ref clause no. 9.2.2 of vol-ID & II
package-2	B.O.Q of all electrical & C&I items						
2(a)	BALANCE OF PLANT EQUIPMENT- ELECTRICAL						
2(a1)	ITEMS TO BE ,ERECTED,TESTED & COMMISSIONED BY VENDOR						
2(a1).1	<u>BOP (ELECTRICAL) PACKAGE</u>						
2(a1).1.1	33kV GIS Sw.Board. (Total of 30 Panels)(unit weight-2000kg weight per panel) (includes laying of rubber mat 3mm thick)	24000x2200x2700 (Dimension of each Panel :800x2200x2700.)	1	set			6
2(a1).1.2	i) 1 no 6.6kV Power & Blowing Sw. Bd (Total of 59 Panels)(unit weight-2000 kg weight per panel) (includes laying of rubber mat 2.5 mm thick)	48380x2355x2700 (Dim. of each Panel : 820x2355x2700)	1	set			6
	ii) 1 no. 6.6kV Steel plant Emergency Board (Total of 16 Panels)(unit weight-2000 kg weight per panel) (includes laying of rubber mat 2.5 mm thick)	13120x2355x2700 (Dim. of each Panel : 820x2355x2700)	1	set			6
2(a1).1.3	11/34.5 kV, 25MVA,ONAN Generator Trafo. For STG-1,2 &3.(unit weight-48565 Kg. Oil Qty: 12880 lts)	6600x4800x5300mm Dimension of each Trafo.	3	Nos			15

SL. NO.	DESCRIPTION OF ITEMS	DIMENSION(in mm) (Length)x(Width)x(H eight)/DETAIL	QUANTITY	UNIT	UNIT RATE	TOTAL AMOUNT	Billing schedule ref clause no. 9.2.2 of vol-ID & II
2(a1).1.4	11/34.5 kV, 12MVA,ONAN Generator Trafo. For BPTG.(unit weight-31345 Kg.Oil Qty: 8250 lts.)	6050x4200x4800mm Dimension of each Trafo.	1	No			15
2(a1).1.5	11/34.5 kV, 20MVA,ONAN Generator Trafo. For TRT Gen.(unit weight-42465 Kg.Oil Qty:10745 lts.)	6500x4900x5000mm Dimension of each Trafo	1	No			15
2(a1).1.6	33/6.9kV, 31.5MVA,Dyn11 ONAN PTR-1 & 2(unit weight-60335 Kg.Oil Qty: 15430 lts)	7300x4900x5500mm	2	Nos			15
2(a1).1.7	11/6.9kV, 5MVA,Dyn11 ONAN,PTR-3 (unit weight-12000 Kg.Oil Qty: 2100 lts)	4700x3300x3750mm	1	No			15
2(a1).1.8	33/6.9kV, 12.5MVA,Dyn11 ONAN,PTR-4 (26710 Kg.Oil Qty: 6750 lts.)	5500x4800x4900mm	1	No			15
2(a1).1.9	6.6/0.433kV,2.0MVA,ONAN SAT-1 to 8 (unit weight-6,000 Kg.Oil Qty:1400Ltr)	2260x3350x2900mm	8	Nos			15
2(a1).1.10	Lighting Trafo 250 kVA ,415V/433V (unit weight-1800 Kg.)	1500x900x1900mm	2	Nos			15
2(a1).1.11	Emergency Lighting Trafo 100 kVA,415V/433V(unit weight-1200 Kg)	1500x800x1600mm	1	No			15
2(a1).1.12	LT Switchgear						15
i	415V PCC-1	1500x10370x2430	1	No			6
ii	415V PCC-2	1500x11970x2430	1	No			6
iii	415V PCC-3	1500x9570x2430	1	No			6
iv	415V PCC-4	1500x10370x2430	1	No			6
v	415V EPCC	1200x9180x2430	1	No			6
vi	415V STG MCC-1	1200x11580x2430	1	No			6
vii	415V STG MCC-2	1200x11580x2430	1	No			6
viii	415V STG MCC-3	1200x11580x2430	1	No			6
ix	415V BPTG MCC	1200x10780x2430	1	No			6
x	415V TB MCC-1	1200x12380x2430	1	No			6
xi	415V TB MCC-2	1200x12380x2430	1	No			6
xii	415V TB MCC-3	1200x12380x2430	1	No			6

SL. NO.	DESCRIPTION OF ITEMS	DIMENSION(in mm) (Length)x(Width)x(H eight)/DETAIL	QUANTITY	UNIT	UNIT RATE	TOTAL AMOUNT	Billing schedule ref clause no. 9.2.2 of vol-ID & II	
xiii	415V BOP MCC	1200x32380x2430	1	No			6	
xiv	415V ACDB	600x7260x2430	1	No			6	
xv	415V MLDB	600x8060x2430	1	No			6	
xvi	415V AC ELDB	600x4860x2430	1	No			6	
xvii	240V UPSDB-1	600x9660x2430	1	No			6	
xviii	240V UPSDB-2	600x9660x2430	1	No			6	
xix	220V DCDB-1	600x9660x2430	1	No			6	
xx	220V DCDB-2	600x10460x2430	1	No			6	
xxi	AC & VENT SYS MCC	1200x26780x2430	1	No			6	
	Note:- Laying of rubber mat 2 mm thick in front of the all LT Switch gear panel mentioned above)							
2(a1).1.13	HT Cable Kits.							
i	33kV AI Cables	1Cx630sq.mm	60	Nos			2	
ii	11kV,AI Cables	1Cx630 sqmm,	12	Nos			2	
iii	6.6kV AI Cables	1Cx630Sq.mm	110	Nos			2	
iv	6.6kV AI Cables	3Cx185Sq.mm,	70	Nos			2	
2(a1).1.14	PB Stations							
i	Start/stop PB with ammeter and L/R Selector	180x285x125	40	Nos			3	
ii	WP start/stop PB STN with lockable Stay put lock/Remote switch and stayput stop PB and Ammeter	180x295x125	40	Nos			3	
iii	WP start/stop PB STN with lockable stay put Lock/Remote switch and stay put stop PB	180x295x125	100	Nos			3	
iv	Weather proof break glass type,Mushroom type emergency stop push bottom station	145x245x116	20	Nos			3	
2(a1).1.15	220V Station Battery Chargers.(Total 2 Panels)	3200x830x2350	2	Nos			6	
2(a1).1.16	220V Station Battery Chargers.(Total 1 Panels)	4800x830x2350	1	Nos			6	
2(a1).1.17	220V Station Battery. (800AH, 110Cells)	4370x830x2500	2	Nos			6	
2(a1).1.18	220V Station Battery.(1600AH, 110Cells)	7000X830X2500	1	Nos			6	
2(a1).1.19	SCAP Panels (consists of 13 panels)	15600x1250x2200	1	nos			6	
2(a1).1.20	6.6 kV load break isolators for SAT-1 to 8	2400x1650x2300	8	Nos			6	

SL. NO.	DESCRIPTION OF ITEMS	DIMENSION(in mm) (Length)x(Width)x(H eight)/DETAIL	QUANTITY	UNIT	UNIT RATE	TOTAL AMOUNT	Billing schedule ref clause no. 9.2.2 of vol-ID & II
2(a1).1.21	NGR for generator Trafo 400A,47.63 Ohms on 33kV side	1900x3200x3000	5	Nos			15
2(a1).1.22	NGR for PTR -1,2,3&4 Trafos 600A, 6.35 Ohms	1800x1500x2000	4	Nos			15
2(a1).1.23	Deleted	-	-	-			
2(a1).1.24	Deleted	-	-	-			
2(a1).1.25	Deleted	-	-	-			
2(a1).1.26	Fire Proof Sealing System	-	3000	SQM			5
2(a1).1.27	RTCC panel	800x915x2350	8	Nos			6
2(a1).1.28	Data concentrator	800x800x220	3	Nos			6
2(a1).1.29	LT Bus ducts 415V,4000A,TPN Al Bus bar,50kA/!sec,Al enclosure non segregated from LT side of each Stn Aux Trafo to PMCC	400x800x10000 (each bus duct)	8	sets			13
2(a1).2	HT POWER CABLE PACKAGE(laying only)						
i	33kV (UE) Armoured, Al Conductor XLPE insulated FRLS outer-sheathed cable.	1C x 630 Sq.mm.	2100	Metre			2
ii	11kV (UE) Armoured, Al Conductor XLPE insulated FRLS outer-sheathed cable	1C x 630 Sq.mm.	400	Metre			2
iii	6.6kV (UE) Armoured; Al Conductor XLPE insulated FRLS outer-sheathed cable	1C x 630 Sq.mm.	4500	Metre			2
iv	6.6kV (UE) Armoured; Al Conductor XLPE insulated FRLS outer-sheathed cable.	3C x 185 Sq.mm.	4200	Metre			2

SL. NO.	DESCRIPTION OF ITEMS	DIMENSION(in mm) (Length)x(Width)x(H eight)/DETAIL	QUANTITY	UNIT	UNIT RATE	TOTAL AMOUNT	Billing schedule ref clause no. 9.2.2 of vol-ID & II
2(a1).3	LT POWER CABLE PACKAGE(laying only)						2
i	1.1KV Armoured Al. Conductor XLPE Insulated, FRLS outer sheathed.	3.5C x 240 Sq. mm	7500	Metre			2
ii	1.1KV Armoured Al. Conductor XLPE Insulated, FRLS outer sheathed.	3.5C x 185 Sq. mm	4900	Metre			2
iii	1.1KV Armoured Al. Conductor XLPE Insulated, FRLS outer sheathed.	3.5C x 120 Sq. mm	3500	Metre			2
iv	1.1KV Armoured Al. Conductor XLPE Insulated, FRLS outer sheathed.	3.5C x 95 Sq.mm	3500	Metre			2
v	1.1KV Armoured Al. Conductor XLPE Insulated, FRLS outer sheathed.	3.5C x 70 Sq.mm	3500	Metre			2
vi	1.1KV Armoured Al. Conductor XLPE Insulated, FRLS outer sheathed.	3.5 C x 50Sq.mm	3500	Metre			2
vii	1.1KV Armoured Al. Conductor XLPE Insulated, FRLS outer sheathed.	3.5C x 35Sq.mm	6300	Metre			2
viii	1.1KV Armoured Al. Conductor XLPE Insulated, FRLS outer sheathed.	1C x 240 Sq.mm	2100	Metre			2
ix	1.1KV armoured Cu. Conductor XLPE Insulated, FRLS outer sheathed.	3C x 4Sq.mm	7500	Metre			2
x	1.1KV Armoured Al. Conductor XLPE Insulated, FRLS outer sheathed.	3C x16 Sq.mm	10500	Metre			2
xi	1.1KV Armoured Al. Conductor XLPE Insulated, FRLS outer sheathed.	4C x16 Sq.mm	14000	Metre			2
xii	1.1KV PVC/FRLS Un-Armoured Cu. Conductor XLPE Insulated, FRLS outer sheathed.	1C x6 Sq.mm	700	Metre			2
xiii	1.1KV Un-Armoured Cu. Conductor XLPE Insulated, FRLS outer sheathed.	1C x 120 Sq.mm	1400	Metre			2
xiv	1.1KV Un-armoured Cu. Conductor XLPE Insulated, FRLS outer sheathed.	1C x 35 Sq.mm	700	Metre			2
xv	1.1KV armoured Cu. Conductor XLPE Insulated, FRLS outer sheathed.	4C x 4 Sq.mm	14000	Metre			2
2(a1).4	CONTROL & SIGNAL CABLES PACKAGE(these rates includes laying, glanding,dressing,clamping & termination also)						2
i	1.1kV PVC Insulated FRLS Outer Sheathed.	3C x 2.5 Sq. mm	10,500	Metre			2
ii	1.1kV PVC Insulated FRLS Outer Sheathed.	5C x 2.5 Sq.mm	24,000	Metre			2
iii	1.1kV PVC Insulated FRLS Outer Sheathed.	7C x 2.5 Sq. mm	2,100	Metre			2
iv	1.1kV PVC Insulated FRLS Outer Sheathed	10C x 2.5 Sq. mm	12,000	Metre			2
v	1.1kV PVC Insulated FRLS Outer Sheathed	16C x 2.5 Sq.mm	4,000	Metre			2
vi	1.1kV PVC Insulated FRLS Outer Sheathed.	19C x 2.5 Sq. mm	4,000	Metre			2
vii	1.1kV PVC Insulated FRLS Outer Sheathed.	24C x 2.5 Sq. mm	1400	Metre			2

SL. NO.	DESCRIPTION OF ITEMS	DIMENSION(in mm) (Length)x(Width)x(H eight)/DETAIL	QUANTITY	UNIT	UNIT RATE	TOTAL AMOUNT	Billing schedule ref clause no. 9.2.2 of vol-ID & II
2(a1).5	DOUBLE COMPRESION BRASS CABLE GLANDS AND HEAVY DUTY COPPER CABLE LUGS (this rate is for glanding,dressing,clamping & termination for LT Power Cables only)	-	2280	Set(set of one cable of required size and required lugs as per cores of cable at one end)for above variety of cables			14
	Note:-accessaries like cable tags,nylon cord,ferrule no, nut,bolt,washer etc which are required for cable dressing,clamping are to be supplied by the bidder.bidders to take care while quoting the same .						
2(a1).6	<u>PRE FABRICATED CABLE TRAYS AND ACCESSORIES</u>						
i	Ladder type strt run cable tray, W=750mm.(COMPLETE WITH COUPLER PLATES, FASTENERS, CLAMPS ,TEE, BEND,ELBOW,CROSS AND FIXING HARDWARE)	-	3000	Metre			1
ii	Ladder type strt run cable tray with or without cover, W=600mm.(COMPLETE WITH COUPLER PLATES, FASTENERS, CLAMPS AND FIXING HARDWARE)	-	7500	Metre			1
iii	Ladder type start run cable tray with or without cover W= 300mm (COMPLETE WITH COUPLER PLATES, FASTENERS, CLAMPS AND FIXING HARDWARE)	-	1500	Metre			1
IV	300mm(W) Perforated type cable tray with or without cover	-	1500	Metre			1
v	150mm (W) Perforated type cable tray with or without cover	-	1500	Metre			1

SL. NO.	DESCRIPTION OF ITEMS	DIMENSION(in mm) (Length)x(Width)x(H eight)/DETAIL	QUANTITY	UNIT	UNIT RATE	TOTAL AMOUNT	Billing schedule ref clause no. 9.2.2 of vol-ID & II
2(a1).7	<u>STRUCTURAL STEELS</u>						
i	ISMC 100x50 mm Channels	-	38000	Kgs			5
ii	ISA 50x50x6 mm Runner angles	-	13000	Kgs			5
iii	ISA 65x65x6 mm Runner angles	-	15000	Kgs			5
2(a1).8	<u>PLANT EARTHING & LIGHTNING PROTECTION MATERIALS</u>						
i	GI pipe Electrode	-	100	Nos			4
ii	75 x 10mm GI Strips	-	10,000	Metre			5
iii	50 x 6 mm GI Strip	-	2000	Metre			5
iv	35 x 6mm GI Strips	-	2000	Metre			5
v	8SWG GI wire ,solid	-	500	Metre			5
vi	16SWG GI wire , solid	-	500	Metre			5
vii	Vertical Air Termination Rod	-	15	Metre			5
viii	40 mm diameter, MS rod	-	5000	Metre			5
	Note:-seperate electronic & electrical earth pits are to be made with proper ingredient (as per BHEL drawing)to complete earthing system.Bidders to take care while quoaating for <u>plant earthing & lightning protection materials.</u>						

SL. NO.	DESCRIPTION OF ITEMS	DIMENSION(in mm) (Length)x(Width)x(H eight)/DETAIL	QUANTITY	UNIT	UNIT RATE	TOTAL AMOUNT	Billing schedule ref clause no. 9.2.2 of vol-ID & II
2(a1).9	PLANT ILLUMINATION PACKAGE						
2(a1).9.1	Details of Various Lighting Fixtures and lamps.						
i	Recessed mounting type downlighter suitable for false ceiling mounting & 60W GLS lamp	-	20	Nos			7
ii	Bulk head GLS wall mounting type	-	155	Nos			7
iii	Industrial type fixture suitable for surface mounting on wall or ceiling & 1x36W fluorescent tube	-	70	Nos			7
iv	Industrial type fixture suitable for surface mounting on wall or ceiling & 2x36W fluorescent tube	-	440	Nos			7
v	Corrosion resistant industrial batten for TLD 2x36W fluorescent lamp	-	70	Nos			7
vi	Recess mounting type decorative lighting fixture with 2x36W fluorescent lamps, copper blast ,starter & power factor improvement capacitor	-	400	Nos			7
vii	Integral well-glass luminary suitable for 1x125W HPMV	-	125	Nos			7
viii	Industrial wellglass luminary suitable for 1x70 HPSV lamp with non integral control gear	-	640	Nos			7
ix	Street lighting fixture suitable for 125W HPSV lamp with optic reflector & acrylic cover	-	105	Nos			7
x	Industrial High bay fixture suitable for 125W HPMV LampHigh bay fixture	-	70	Nos			7
xi	Industrial High bay fixture suitable for 250W HPMV LampHigh bay fixture	-	155	Nos			7
xii	Street lighting fixture suitable for 250W HPSV lamp with optic reflector & acrylic cover	-	20	Nos			7

SL. NO.	DESCRIPTION OF ITEMS	DIMENSION(in mm) (Length)x(Width)x(H eight)/DETAIL	QUANTITY	UNIT	UNIT RATE	TOTAL AMOUNT	Billing schedule ref clause no. 9.2.2 of vol-1D & II
2(a1).9.2	Details of Lighting Panels & JB's:						3
i	6 way AC Indoor lighting panels	800x600x250	24	Nos			3
ii	6 way AC Outdoor lighting panels	800x600x250	5	Nos			3
iii	6 way DC Indoor lighting panels	800x600x250	15	Nos			3
iv	6 way DC Outdoor lighting panels	800x600x250	4	Nos			3
v	12 way AC Indoor lighting panels	900x600x250	15	Nos			3
vi	12 way AC Outdoor Lighting panels	900x600x250	5	Nos			3
vii	18 way AC Indoor Lighting Panels	1000x600x250	4	Nos			3
viii	18 way AC Outdoor Lighting Panels	1000x600x250	4	Nos			3
2(a1).9.3	Flexible wires						
i	1.1KV, PVC Insulated Single Core Copper Conductor Flexible Wires	2.5 Sq .mm, Red	12000	Metre			2
ii		2.5 Sq .mm, Yellow	8400	Metre			2
iii		deleted	-	-			
iv		deleted	-	-			
v		deleted	-	-			
vi	1.1KV, PVC Insulated Single Core Copper Conductor Flexible Wires	4 Sq. mm, Red	2500	Metre			2
vii		4 Sq. mm, Black	7500	Metre			2
viii		4 Sq. mm, Blue	2500	Metre			2
ix		4 Sq. mm, Yellow	2500	Metre			2
x		4 Sq. mm, Green	7500	Metre			2

SL. NO.	DESCRIPTION OF ITEMS	DIMENSION(in mm) (Length)x(Width)x(H eight)/DETAIL	QUANTITY	UNIT	UNIT RATE	TOTAL AMOUNT	Billing schedule ref clause no. 9.2.2 of vol-ID & II
2(a1).10	<u>ACCESSORIES FOR ILLUMINATION PACKAGE</u>						
i	9 mtrs. Lighting pole	-	16	Nos			7
ii	2 mtrs. Lighting pole	-	150	Nos			7
iii	3 mtrs. Lighting pole	-	10	Nos			7
iv	Metsec channel 2500mm length	-	250	Nos			7
v	1200mm long 120 deg bend 50NB pipe with 2nos suitable clamp with base	-	125	Nos			7
vi	1200mm long 150 deg bend 50NB pipe with 2 nos suitable clamp with base	-	50	Nos			7
vii	3000mm long 25mm GI conduit	-	1000	Nos			4
viii	3000mm long 50 mm GI conduit	-	25	Nos			4
ix	deleted	-	-	-			
x	deleted	-	-	-			
xi	deleted	-	-	-			
xii	3000 mm long 19mm GI down conduit	-	100	Nos			4
xiii	3000 mm long 25mm PVC conduit	-	100	Nos			4
xiv	deleted	-	-	-			
xv	25mm Flexible PVC conduit	-	200m	Metre			4
xvi	PVC gland suitable for 25 mm PVC flexible conduit sl no 15	-	200	Nos			4
xvii	deleted	-	-	-			
xviii	deleted	-	-	-			
xix	deleted	-	-	-			

SL. NO.	DESCRIPTION OF ITEMS	DIMENSION(in mm) (Length)x(Width)x(H eight)/DETAIL	QUANTITY	UNIT	UNIT RATE	TOTAL AMOUNT	Billing schedule ref clause no. 9.2.2 of vol-ID & II
xx	deleted	-	-	-			
xxi	deleted	-	-	-			
xxii	deleted	-	-	-			
xxiii	deleted	-	-	-			
xxiv	deleted	-	-	-			
xxv	4 way 150x100x100mm rectangular sheet steel JB with two 1" and two 3/4" cable entries along with glands and TB suitable for 6nos. 35sq.mm cable	-	100	Nos			3
xxvi	Double compression nickle plated brass cable glands 1" for safe area suitable for item no. 25	-	250	Nos			14
xxvii	Double compression nickle plated brass cable glands 3/4" for safe area suitable for item no. 25	-	2000	Nos			14
xxviii	deleted	-	-	-			
xxix	deleted	-	-	-			
xxx	deleted	-	-	-			
xxxi	deleted	-	-	-			
xxxii	deleted	-	-	-			
xxxiii	FSB-2 Flush mounted swbd with 2 nos 15A piano type switched & 15A receptable with switch (modular type)	-	30	Nos			14
xxxiv	FSB-3 Flush mounted swbd with 5 nos piano 15A piano type switched & 15a receptable with switch (modular type)	-	30	Nos			14
xxxv	FSB-5 Flush mounted swbd with 5 nos piano 15A piano type switched & 15A receptable with switch (modular type)	-	20	Nos			14
xxxvi	Domestic type 5/15A socket with switch (flash mounted modular)	-	20	Nos			14
xxxvii	Industrial metal clad weather proof type 5/15A socket with switch	-	75	Nos			14
xxxviii	63ATPN welding receptacles weather proof type	-	35	Nos			14
xxxix	63A TPN welding receptacles(Flame proof area)	-	2	Nos			14
xxxx	240V to 24v Supply module with hand lamp and 15 mtr cable	-	4	Nos			14

SL. NO.	DESCRIPTION OF ITEMS	DIMENSION(in mm) (Length)x(Width)x(H eight)/DETAIL	QUANTITY	UNIT	UNIT RATE	TOTAL AMOUNT	Billing schedule ref clause no. 9.2.2 of vol-ID & II
2(a2)	<u>MISCELLANEOUS ITEMS REQUIRED FOR ERECTION. (ITEMS TO BE SUPPLIED BY VENDOR)</u>						
i	deleted	-	-	-			
ii	Trefoil clamps for single core cables –25mm wide 8SWG Aluminium Strips.	-	500	Nos			12
iii	Clamps for multicore cables---25x3mm Aluminium flats.	-	500	Nos			12
iv	deleted	-	-	-			
v	deleted	-	-	-			
2(b)	<u>BALANCE OF PLANT EQUIPMENT- C&I AREA</u>						
2(b).1	<u>ITEMS TO BE SUPPLIED BY VENDOR</u>						
2(b).1.1	Cable Glands (Non –ex proof), Double compression, Ni coated brass/SS. (approved make/manufacturer of items to be supplied by bidders as per COMET or equivalent to be approved by BHEL)						
i	Size- ½”	-	1500	Nos			12
ii	Size- ¾”	-	1000	Nos			12
iii	Size-1”	-	1000	Nos			12
iv	Size-1-1/4”	-	500	Nos			12
v	Size- 1-1/2”	-	1200	Nos			12
vi	Size- 2”	-	800	Nos			12
2(b).1.2	Cable Glands (Ex- proof)), Double compression, Ni coated brass/SS. (approved make/manufacturer of items to be supplied by bidders as per COMET orequivalent to be approved by BHEL)	-					
i	Size- ½”	-	300	Nos			12
ii	Size- ¾”	-	400	Nos			12
iii	Size-1”	-	400	Nos			12
iv	Size-1-1/4”	-	200	Nos			12
v	Size- 1-1/2”	-	200	Nos			12
vi	Size- 2”	-	300	Nos			12
2(b).1.3	Tinned Cable Lugs at both ends (approved make/manufacturer of items to be supplied by bidders as per DOWELL or equivalent to be approved by BHEL)						

SL. NO.	DESCRIPTION OF ITEMS	DIMENSION(in mm) (Length)x(Width)x(H eight)/DETAIL	QUANTITY	UNIT	UNIT RATE	TOTAL AMOUNT	Billing schedule ref clause no. 9.2.2 of vol-ID & II
i	Size- for 0.5 mm2 cable	-	2000	nos			12
ii	Size- for 1 mm2 cable	-	2000	nos			12
iii	Size- for 1.5 mm2 cable	-	2000	nos			12
iv	Size- for 2.5 mm2 cable	-	2000	nos			12
2(b).1.4	PVC Cable Gland shrouds (covers)	-	9000	nos			12
2(b).1.5	deleted	-	-	-			
2(b).1.6	deleted	-	-	-			
2(b).1.7	deleted	-	-	-			
2(b).1.8	deleted	-	-	-			
2(b).1.9	deleted	-	-	-			
2(b).1.10	deleted	-	-	-			
2(b).2	C&I ITEMS ERECTED & COMMISSIONED BY VENDOR						
2(b).2.1	for Instrumentation package						
2(b).2.1.1	Control valves (Approx weight 80 kgs)(instrumentation job only)	-	100	Nos			8
2(b).2.1.2	Desuperheaters (Approx weight 100 kgs)(instrumentation job only)	-	8	Nos			8
2(b).2.1.3	Turbine Bypass system(Approx weight 130 kgs)(instrumentation job only)	-	4	Nos			8
2(b).2.1.4	deleted	-	-	-			
2(b).2.1.5	deleted	-	-	-			
2(b).2.1.6	deleted	-	-	-			
2(b).2.1.7	deleted	-	-	-			
2(b).2.1.8	Mass flow meters	-	3	Nos			7
2(b).2.1.9	Pressure gauges	-	220	Nos			7
2(b).2.1.10	Pressure transmitters	-	100	Nos			7
2(b).2.1.11	Pressure switches	-	25	Nos			7
2(b).2.1.12	Diff. pressure gauges	-	35	Nos			7
2(b).2.1.13	Diff. pressure transmitters	-	50	Nos			7
2(b).2.1.14	Diff. pressure switches	-	25	Nos			7
2(b).2.1.15	Temperature gauges	-	200	Nos			7
2(b).2.1.16	RTDs	-	60	Nos			7
2(b).2.1.17	Thermo couples	-	70	Nos			7
2(b).2.1.18	Level gauges	-	35	Nos			7
2(b).2.1.19	Level transmitters (Displacer Type)	-	40	Nos			7
2(b).2.1.20	Level switches	-	80	Nos			7
2(b).2.1.21	Annubars	-	10	Nos			7
2(b).2.1.22	deleted	-	-	-			
2(b).2.1.23	deleted	-	-	-			

SL. NO.	DESCRIPTION OF ITEMS	DIMENSION(in mm) (Length)x(Width)x(H eight)/DETAIL	QUANTITY	UNIT	UNIT RATE	TOTAL AMOUNT	Billing schedule ref clause no. 9.2.2 of vol-ID & II
2(b).2.1.24	Erection material for above items						
	(i) deleted	-	-	-			
	(ii)deleted	-	-	-			
	(iii) condensing chambers	-	350	Nos			7
	(iv) Syphon	-	350	Nos			7
	(v) 5 way manifolds	-	500	Nos			7
	(vi) Air filter regulators	-	100	Nos			7
	(vii) Thermowells	-	400	Nos			7
2(b).2.1.25	Impulse pipes & tubes for impulse connection for instrument hookup						
	(i) SS tube 12.7 x 2.1 mm including comp fittings/connectors/needle valve etc	-	2000	Metre			4
	(ii) SS tube 6.35 x 0.9 mm including comp fittings/connectors/needle valve etc	-	1200	Metre			4
	(iii) ERW / SAW Steel tube 60.8 x 3.65 (NB 50)	-	3000	Metre			4
	(iv) SS pipe 33.4 x 3.4 mm	-	1400	Metre			4
	(v) SS pipe 21.3 x 3.7 mm	-	3000	Metre			4
	(vi) SS pipe 6 x 1 mm	-	4000	Metre			4
2(b).2.1.26	STRL Steel (Std Quality)						
	(i) Strl ST equal angle 50 x 50 x 6	-	1500	Kgs			5
	(ii) Strl St channel 100 x 50	-	1000	Kgs			5
	(iii) Strel St PL 6	-	600	Kgs			5
2(b).2.2	Cables Package						
2(b).2.2.1	Signal Cables						
	1P x 1.5 sq.mm (Intrinsic Safe), Individual & Overall shielded	-	3500	Metre			2
	8P x 0.5 sq.mm (Intrinsic Safe), Individual & Overall shielded	-	10500	Metre			2
	12P x 0.5 sq.mm (Intrinsic Safe), Individual & Overall shielded	-	10500	Metre			2
	1P x 1.5 sq.mm, Individual & Overall shielded	-	35000	Metre			2
	8P x 0.5 sq.mm, Individual & Overall shielded	-	40000	Metre			2
	12P x 0.5 sq.mm, Individual & Overall shielded	-	50000	Metre			2
	1P x 0.5 sq.mm, Overall shielded	-	200	Metre			2
	6P x 0.5 sq.mm, Overall shielded	-	200	Metre			2
	12P x 0.5 sq.mm, Overall shielded	-	200	Metre			2
	2T x 0.5 sq.mm (Intrinsic Safe), Individual & Overall shielded	-	200	Metre			2
	1T x 1.5 sq.mm, Individual & Overall shielded	-	4200	Metre			2
	8T x 1.5 sq.mm, Individual & Overall shielded	-	10500	Metre			2

SL. NO.	DESCRIPTION OF ITEMS	DIMENSION(in mm) (Length)x(Width)x(H eight)/DETAIL	QUANTITY	UNIT	UNIT RATE	TOTAL AMOUNT	Billing schedule ref clause no. 9.2.2 of vol-ID & II
	1P x 16 AWG Cr-Al Extension	-	3500	Metre			2
	6P x 20 AWG Cr-Al Extension	-	200	Metre			2
	12P x 20 AWG Cr-Al Extension	-	750	Metre			2
2(b).2.2.2	Junction Boxes						
	44 terminals, weather proof	-	150	Nos			3
	44 terminals, explosion proof	-	30	Nos			3
2(b).2.3	Analysers Package						
	CONDUCTIVITY ANALYZERS	-	10	No			7
	PH ANALYZERS	-	10	No			7
	DISSOLVED OXYGEN ANALYZERS	-	5	No			7
2(b).2.4	UPS & VMS Package						
i)	UPS Package	-		-			6
a	UPS charger,inverter etc suit of panels		3	set			6
b	battery with racks contains cells		377	cells			6
c	UPS ACDB Panel	1000x850x2400	6	nos			6
ii)	Vibration Monitoring panel	-	10	No			6
2(C)	DCS/maxDNA Package(Erection,Tested,Commissioned by vendor)						
1	Panels for MaxDNA cabinets for SG,TG and Stn DCS	750mmx750mmx231 5mm (each)	124	nos			6
2	Engineer work station (EWS) : PC, Intel Core 2Duo Dual core processor: RAM – 1GB, Hard Disk – 160GB, Graphics Card,Ethernet Port – 3 Nos., DVD ROM Drive, DVD Writer,Floppy Drive, Keyboard, Mouse, USB Ports – 4 Nos.,Windows XP Professional Operating System.)	-	2	sets			9
3	Operator workstation(OWS) : PC, Intel Core 2 Duo Dual core processor: RAM – 1GB, Hard Disk – 160GB, Graphics Card Ethernet Port – 3 Nos., DVD ROM Drive, Keyboard, Mouse, USB Ports – 4 Nos., Windows XP Professional Operating System)	-	16	sets			9
4	Control desk (standard height &depth)(wt-54,000kgs)	-	18	metre			6

SL. NO.	DESCRIPTION OF ITEMS	DIMENSION(in mm) (Length)x(Width)x(H eight)/DETAIL	QUANTITY	UNIT	UNIT RATE	TOTAL AMOUNT	Billing schedule ref clause no. 9.2.2 of vol-ID & II
5	MaxStorian : PC, Intel Core 2 Duo Dual core processor RAM – 1GB, Hard Disk – 160GB, Graphics Card, Ethernet Port – 3 Nos., DVD ROM Drive, DVD Writer, Keyboard, Mouse, USB Ports – 4 Nos., Windows XP Professional Operating System.	-	2	sets			9
6	Link station : PC, Intel Core 2 Duo Dual core processor:RAM – 1GB, Hard Disk – 160GB, Graphics Card, Ethernet Port – 3 Nos., DVD ROM Drive, Keyboard, Mouse, USB Ports – 4 Nos., Windows XP Professional Operating System	-	1	set			9
7	SOE Station : PC, Intel Core 2 Duo Dual core processor:RAM – 1GB, Hard Disk – 160GB, Graphics Card, Ethernet Port – 3 Nos., DVD ROM Drive, Keyboard, Mouse, USB Ports – 4 Nos., Windows XP Professional Operating System.	-	1	set			9
8	21" TFT Monitor	-	19	nos			9
9	NETWORK Panels	-	3	nos			6
10	Ethernet switches(Wt-Approx 50kg)	-	12	nos			14
11	deleted	-	-	-			
12	Maxnet Ethernet UTP cables(300 kgs)	-	1500	metre			2
13	Printers	-					
i	Dot matrix printer(300 kg)	-	3	nos			9
ii	Colour inkjet printer(A4)(network ready)	-	6	nos			9
iii	Laser jet printer(A4)	-	2	nos			9
14	Large video screen 67" diagonal rear projection system(overview Cdr+67,8deg)(wt-900 kg)	-	3	sets(set consist of 3x1cDR+67)			7
15	Dot matrix printer Table	-	3	nos			14
16	Master clock system(wt-200 kg)						
i	Digital clock	-	20	nos			
ii	panel	1200mmX800mmX24	1	no			6
iii	PC	-	1	no			9
iv	Keyboard	-	1	no			9
v	Monitor		1	no			9
vi	printer		1	no			9
17	Hart management system for 1450 transmitters						
i	PC with printer(100kg)	-	2	no			9
ii	Panels	1200mmX800mmX24	2	no			6
iii	Keyboard	-	2	no			9

SL. NO.	DESCRIPTION OF ITEMS	DIMENSION(in mm) (Length)x(Width)x(H eight)/DETAIL	QUANTITY	UNIT	UNIT RATE	TOTAL AMOUNT	Billing schedule ref clause no. 9.2.2 of vol-ID & II
iv)	monitor		2	no			9
18	Brushless AVR	1250x1250x2315mm	4	no			6
19	C&I cables for STG internal controls(200 kg)	-					
i	Thermocouple cable 0.5 Sq mm	-	6400	meters			2
ii	FEP extruded/PTFE taped 0.5 Sq mm	-	14000	meters			2
iii	4 Pair 1.5 Sq mm Armoured PVC CU cable	-	3300	meters			2
iv	Armoured FRLS 0.5 Sq mm 4 Pair PVC CU cable	-	21000	meters			2
v	deleted	-	-	-			
20	Pressure transmitters	-	180	Nos			7
21	Pressure gauges	-	168	Nos			7
22	Temperature element	-	390	Nos			7
23	Temperature gauges	-	93	Nos			7
24	Analysis transmitter	-	45	Nos			7
25	Level transmitter	-	18	Nos			7
26	flow tranmitter	-	30	Nos			7
27	LABORTORY INSTRUMENTS (Receipt from store,transportation to laboratory,placement,functional check,demonstation and handing over)						
i	mechanical,electrical and electronic instruments of state of the art		3	nos			7
ii	Table		10	metre			14
iii	Chair		15	nos			14
2(d)	ITEMS TO BE FABRICATED,ERECTED AND COMMISSIONED BY VENDOR						
i	deleted	-	-	-			
ii	2" GI pipe for transmitter and JB mounting and support set up	-	1200	Metre			4
ii(a)	deleted	-	-	-			
ii(b)	2" GI pipe elbow	-	200	nos			4
iii	MS angle iron- 50x50x6 mm for site fabrication	-	5000	kgs			5
iv	deleted	-	-	-			
v	deleted	-	-	-			
v(a)	deleted	-	-	-			
v(b)	deleted	-	-	-			
v©	deleted	-	-	-			

SL. NO.	DESCRIPTION OF ITEMS	DIMENSION(in mm) (Length)x(Width)x(H eight)/DETAIL	QUANTITY	UNIT	UNIT RATE	TOTAL AMOUNT	Billing schedule ref clause no. 9.2.2 of vol-ID & II
vi	Gusset Plates (6mm TH) 200mm x 80mm, MS	for instrument stand pipe	1000	kgs			5
vii	Base Plates (6mm TH) 250mm x 250mm, MS	for instrument stand pipe	800	kgs			5
viii	40x40x4 mm Angle, MS	-	1000	kgs			5
ix	35x35x4 mm Angle, MS	-	1000	kgs			5
x	50x50x6 mm Angle	-	1200	kgs			5
xi	ISMC 100x50 mm Channel, MS	-	1000	kgs			5
xii	6mm TH plate, MS	-	1000	kgs			5
xiii	deleted	-	-	-			
xiv	deleted	-	-	-			
xv	deleted	-	-	-			
xvi	pre-fabricated canopies for jb's,transmitters,field switches,gauge boards etc	-	800	Nos			5
xvii	deleted	-	-	-			
xviii	false flooring frame stand for panels		50	Nos			14
2(e)	<u>C&I ITEMS FOR BOILER(3 UNITS)(items to be erected ,tested and commissioned by vendor)</u>						
1	Boiler LTMCC(sf-do type)	19000x2500x1500	3	Nos			6
2	VMS remote cabinet for FD fans and ID fans A&B	1000x2345x800	3	Nos			6
3	Furnace Temp. Probe starter Box	600x600x300	6	Nos			6
4	DC scanner air fan motor starter box	900x1120x375	3	Nos			6
5	Bhelvision 20m (EWLI) ascertor cabinet	600x600x350	3	Nos			6
6	Flue gas analyser(sox,nox,hc&co2)	1000x2100x800	3	Nos			6
7	Swas-wet panel	2000x2100x600	3	Nos			6
8	Swas-dry panel	1000x2100x800	3	Nos			6
9	BFG goggle valve-hydraulic power pack cabinet	1200x1600x850	3	Nos			6
10	BFG goggle valve-Control panel	500x800x300	3	Nos			7
11	ERV local controller box	400x350x270	3	Nos			7
12	BHElvision 20m (EWLI) display unit	99x194x68	3	Nos			7
13	ERV control station	-	3	Nos			7
14	Co analyser(ps unit)	-	3	Nos			7
15	O2 analyser(after APH)	-	6	Nos			7
16	Silica panel	860x560x420	3	Nos			7
17	EWLI BHELVISION pressure vessel	-	3	Nos			7
18	electrodes with Gaskets for Ewli(BHELVISION)	-	40	Nos			14
19	PTFF cable(4 core) between electrode &local BHEL ascertor unit	-	300	metre			2
20	MTM thermocouple	-	144	Nos			7
21	Junction Boxes	-	72	nos			3
22	Fsss local gun maintenance switch	-	24	nos			3
23	flame scanner head assly	-	36	nos			7
24	vibration pick up for ID and FD fan	-	24	nos			7
25	pneumatic regulating power cylinder for dampers-FD/ID fans	-	12	Nos			11
26	pneumatic regulating power cylinder for dampers-SADC	-	72	Nos			11

SL. NO.	DESCRIPTION OF ITEMS	DIMENSION(in mm) (Length)x(Width)x(H eight)/DETAIL	QUANTITY	UNIT	UNIT RATE	TOTAL AMOUNT	Billing schedule ref clause no. 9.2.2 of vol-ID & II
27	Smart positioners for pneumatic regulating power cylinders/control valves	-	33	Nos			11
28	1p convertor for regulating pneumatic power cylinder/control valve	-	18	Nos			11
29	deleted	-	-	-			
30	pneumatic on/off power cylinder for scanner emergency damper	-	3	Nos			11
31	deleted	-	-	-			
32	deleted	-	-	-			
33	deleted	-	-	-			
34	deleted	-	-	-			
35	deleted	-	-	-			
36	deleted	-	-	-			
37	deleted	-	-	-			
38	ITEMS TO BE CALIBRATED,TESTED AND COMMISSIONED BY VENDOR(EXCLUDING ERECTION)	-					
a	pneumatic regulating control valve	-	24	Nos			8
b	pneumatic ON/OFF control valve	-	93	Nos			8
39	CONTROL CABLES /SIGNAL CABLES(these rates includes laying, glanding,dressing,clamping & termination also) AND ACCESSORIES AND PIPES	-					
i	4C Scanner cable	-	300	metre			2
ii	Thermocouple Compensation cable(2p/6p/8p)	-	2100	metre			2
iii	deleted	-	-	-			
iv	deleted	-	-	-			
v	Catch pot		105	nos			14
vi	SS 304 condensing pot		12	nos			14
vii	Pipe od 21.3x3.73-SA106GRB		1100	Metre			4
viii	Pipe od 21.3x4.78-SA335P22		500	Metre			4
ix	Flat 50x6-IS2062GRA		1600	kgs			5
x	Channel 100x50-IS2062E250A(Fe410W)		600	Kgs			5
xi	Angle 50x50x6-IS2062E250A(Fe410W)		500	Kgs			5
xii	Copper tube(6mm/10mm)		1100	Metre			4
xiii	2PX0.5 sqmm O/A shielded inst.cable		6300	Metre			2
xiv	4P x 0.5 sqmm O/A shielded inst.cable		13000	Metre			2
xv	8P X 0.5 sqmm O/A shielded inst.cable		27000	Metre			2
xvi	4C X2.5 sqmm control cable		3600	Metre			2
xvii	2PX0.5 sqmm P/O shielded inst.cable		7700	Metre			2
xviii	Perforated cable tray with accessories-100mm width		2600	Metre			1
xix	Perforated cable tray with accessories-150mm width		2600	Metre			1
xx	Perforated cable tray with accessories-50mm width		2400	Metre			1
xxi	Flame proof junction box-24 way		120	nos			3
xxii	Flame proof junction box-48 way		60	nos			3
xxiii	Flame proof junction box-60 way		33	nos			3
xxiv	deleted		-	-			
xxv	Angle 40x40x5-IS2062E250A(Fe410W)		270	kgs			5
xxvi	deleted		-	-			

SL. NO.	DESCRIPTION OF ITEMS	DIMENSION(in mm) (Length)x(Width)x(H eight)/DETAIL	QUANTITY	UNIT	UNIT RATE	TOTAL AMOUNT	Billing schedule ref clause no. 9.2.2 of vol-ID & II
xxvii	Wire dia 1.219 mm-GI-IS280		3000	metre			5
xxviii	deleted		-	-			
xxix	deleted		-	-			
xxx	7C x2.5 sqmm Control cable		19600	metre			2
xxx1	10C X 2.5 sqmm Control cable		8000	metre			2
xxxii	4P x 0.5 sqmm P/O shielded inst.cable		5500	Metre			2
xxxiii	deleted		-	-			
xxxiv	deleted		-	-			
xxxv	deleted		-	-			
xxxvi	deleted		-	-			
xxxvii	2Px0.5 sqmm ind shielded control cable		4700	Metre			2
xxxviii	4Px0.5 sqmm ind shielded control cable		1050	Metre			2
xxxix	2Cx2.5 sqmm control cable		1050	Metre			2
xxxx	deleted		-	-			
xxxx1	deleted		-	-			
xxxxii	4C X4 sqmm copper power cable		27000	metre			2
xxxxiii	4Cx10 sqmm al power cable		6000	Metre			2
xxxxiv	4C x 16 sqmm al power cable		1050	Metre			2
xxxxv	3.5Cx25 sqmm al power cable		2100	Metre			2
xxxxvi	3.5Cx35 sqmm al power cable		2100	Metre			2
xxxxvii	3.5Cx70 sqmm al power cable		3000	metre			2
xxxxviii	deleted		-	-			
xxxxix	75x 10 mm galvanised ms flat		6600	metre			
xxxxx	8 SWG GI wire		3660	metre			5
xxxxxi	3/8" STRANDED GI wire		600	metre			5
xxxxxii	6 sqmm GI wire		3750	metre			5
xxxxxiii	25X3 mm galvanised ms flat		1200	metre			5
xxxxxiv	deleted		-	-			
xxxxxv	24 way flame proof junction boxes		120	Nos			3
xxxxxvi	48 way flame proof junction boxes		9	nos			3
xxxxxvii	deleted		-	-			
xxxxxviii	deleted		-	-			
xxxxxix	deleted		-	-			
xxxxxx	Ref junction box		6	Nos			3
xxxxxx1	compensating cable(details are as belows)						
	i)2P		800	metre			2
	ii)4P		400	metre			2
	ii)6p/8p/12p		300	metre			2
xxxxxxii	deleted		-	-			
	Note: -accsaries like cable tags,nylon cord,ferrule no, nut,bolt,washer etc which are required for cable dressing,clamping are to be supplied by the bidder.bidders to take care while quoting the same .						
2(f)	<u>ELECTRICAL AND C&I ITEMS FOR 3X18 STG(items to be erected ,tested and commissioned by vendor)</u>						
	PHASE SEGREGATED BUS DUCT	4000X1250X 400	3	sets			16

SL. NO.	DESCRIPTION OF ITEMS	DIMENSION(in mm) (Length)x(Width)x(H eight)/DETAIL	QUANTITY	UNIT	UNIT RATE	TOTAL AMOUNT	Billing schedule ref clause no. 9.2.2 of vol-ID & II
	PTSP CUBICLE	1950 X 2100 X 2500	3	nos			6
	NGT CUBICLE	1400X1300X2300	3	nos			6
	GENERATOR CONTROL DESK	1722X1566X1677	3	nos			6
	RELAY PANEL	1600X800X2300	6	nos			6
	CONTROL CABLES:(these rates includes laying,glinding,dressing,clamping & termination also)	-					
	3Cx4 sq.mm x 1000	-	2100	metre			2
	5Cx2.5 sq.mm x 1000	-	2100	metre			2
	10Cx2.5 sq.mm x 1500	-	3100	metre			2
	2Cx0.75 sq.mm x 500	-	1050	metre			2
	3Cx6 sq.mm	-	1050	metre			2
	Note: -accsaries like cable tags,nylon cord,ferrule no, nut,bolt,washer etc which are required for cable dressing,clamping are to be supplied by the bidder.bidders to take care while quoting the same .						
2(g)	<u>ELECTRICAL AND C&I ITEMS FOR 1X8.275 MW BPTG(items to be erected ,tested and commissioned by vendor)</u>						
	PTSP CUBICLE	1950 X 2100 X 2500	1	set			6
	NGT CUBICLE	1400X1300X2300	1	set			6
	CONTROL DESK	1722 X 1566 X1677	1	set			6
	RELAY PANEL	1600X800X2300	2	set			6
	deleted	-	-	-			
	CONTROL CABLES:(these rates includes laying,glinding,dressing,clamping & termination also)						
	3Cx4 sq.mm x 1000		700	metre			2
	5Cx2.5 sq.mm x 1000		700	metre			2
	10Cx2.5 sq.mm x 1500		1050	metre			2
	2Cx0.75 sq.mm x 500		400	metre			2
	3Cx6 sq.mm		400	metre			2
	Note: -accsaries like cable tags,nylon cord,ferrule no, nut,bolt,washer etc which are required for cable dressing,clamping are to be supplied by the bidder.bidders to take care while quoting the same .						

SL. NO.	DESCRIPTION OF ITEMS	DIMENSION(in mm) (Length)x(Width)x(H eight)/DETAIL	QUANTITY	UNIT	UNIT RATE	TOTAL AMOUNT	Billing schedule ref clause no. 9.2.2 of vol-ID & II
2(h)	ELECTRICAL AND C&I ITEMS FOR TURBO BLOWER/STG/BPTG(items to be erected ,tested and commissioned by vendor)						
2(h).1	LOCAL/FIELD MOUNTED INSTRUMENTS AND DEVICES						
	Pressure gauges	-	40	Nos			7
	Differential Pressure gauges.	-	4	Nos			7
	Electronic Pressure transmitters/Temperature transmitters	-	110	Nos			7
	Pressure switches	-	10	Nos			7
	Electronic diff. Pressure transmitters	-	6	Nos			7
	Temperature Gauges (Bimetallic)	-	6	Nos			7
	Temperature Gauges (MIS)	-	6	Nos			7
	Thermo couples	-	20	Nos			7
	Thermo wells	-	35	Nos			7
	Level gauges	-	3	Nos			7
	Level transmitters	-	2	Nos			7
	Speed measuring loop	-	6	Nos			7
	Control valves	-	10	Nos			7
	Electro-pneumatic converters	-	3	Nos			7
	Vibration Probes	-	12	Nos			7
	Axial Displacement Probe	-	5	Nos			7
	LVDT Casing Expansion Probe	-	1	Nos			7
	Probe Housing Assembly	-	5	Nos			7
	Differential Expansion Probe	-	2	Nos			7
	Safety relief valve	-	2	Nos			7
	Solenoid valves	-	4	Nos			7
	Velocity probes(Velomitor)	-	2	Nos			7
2(h).2	Panel mounted instruments						
	Vibration, Axial displacement monitoring system. (Mounted on EDN panel)	-	1	Nos			7
	Tubo log Antisurge control system(Mounted on EDN panel)& surge detector	-	2	Nos			7
	Configuration Work station for TSI	-	1	Nos			9
2(h).3	PANELS AND CUBICLES:						
	Local gauge board (1200X1300)	-	1	Nos			6
	Governing console board (1400X1600X350)	-	1	Nos			6
	CHANNEL (75X40MM)	-	50	metre			5
	ANGLE (50X50X6mm)	-	50	metre			5
	SHEET 4mm THICK (400x120mm)	-	60	Nos			5
	PLATE 10mm thick (375x770mm)	-	10	Nos			5

SL. NO.	DESCRIPTION OF ITEMS	DIMENSION(in mm) (Length)x(Width)x(H eight)/DETAIL	QUANTITY	UNIT	UNIT RATE	TOTAL AMOUNT	Billing schedule ref clause no. 9.2.2 of vol-1D & II
2(h).4	PROCESS IMPULSE TUBING AND PNEUMATIC TUBING FITTINGS						
	CS PIPE 21.3 X 3.73	-	600	Metre			4
	SS TUBE 12.7 X 2.1	-	300	Metre			4
	SS TUBE 6 X 1	-	100	Metre			4
2(h).5	LOOP CHECKING						
	PNEUMATIC DRIVE	-	9	Nos			10
	ELECTRICAL DRIVE	-	180	Nos			10
	TOTAL (PACKAGE-2)						
	NOTE: Bidders should quote uniform rate for identical/ same items appearing in various sub-sections/ parts in ABOVE schedule, . If it is found that different rates are quoted for identical/ same items the lowest quoted rate for such items shall be considered in the event of ordering for this tender.						

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	Erection, Testing & Commissioning of steam turbine & auxiliaries, generator & auxiliaries, BPTG, Turbo-Blowers, Electrical and C & I items at 3X 18 MW, power & blowing station, IISCO Burnpur, West Bengal.	
Ref	1.0	Tender no PSER:SCT:IIS-T1077:10.
	2.0	BHEL's NIT, vide reference no Ref: PSER:SCT:IIS-T1077:10 Dated 27-01-2010
	03	BHEL's TCN-01, vide reference no PSER:SCT:IIS-T1077:TCN-01, dated 06-02-10.
	04	BHEL's TCN-02, vide reference no PSER:SCT:IIS-T1077:TCN-02, dated 12-02-10.
	05	BHEL's TCN-03, vide reference no PSER:SCT:IIS-T1077:TCN-03, dated 16-02-10.
	06	BHEL's TCN-04, vide reference no PSER:SCT:IIS-T1077:TCN-04, dated 20-02-10.

Dear Sirs,

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

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

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

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

Thanking you,

Yours faithfully,

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