



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

(भारत सरकार का उपक्रम)

**BHARAT HEAVY ELECTRICALS LIMITED**

(A Govt. of India Undertaking)

**TCN - 01**

Ref: PSER:SCT:ADK-I1188:TCN-01

Date: 09/05/2011

Sub	Tender change notice (TCN) - 01	
Job	Providing of all services of manpower, tools & plants, watch & ward, supervision including supply of materials and consumables for Erection, Testing & Commissioning of Transformers, Bus duct, cabling and Control & Instrumentation works of SG & TG package etc. of unit#1 & Unit#2 at 2X270 MW Mahadeo Prasad Thermal Power Project, APNRL, Padampur, Saraila-Karsawan, Jharkhand.	
Ref	1.0	Tender no PSER:SCT:ADK-I1188:11
	2.0	BHEL's NIT, vide ref no Ref: PSER:SCT:ADK-I1188:11 Dated 25/04/2011
	3.0	Other references (if any).

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

- 1.0 Due date of submission of offer is extended from 16/05/2011 to 23/05/2011 at 1400 hrs.
- 2.0 BHEL clarifications to Bidder's query attached vide **Annexure-A** to TCN-01.
- 3.0 **BOQ cum price schedule format VOL-III A, PRICE SCHEDULE, REV-0** has been revised as **VOL-III A- PRICE SCHEDULE, REV-01** which is enclosed herewith. As such you are requested to consider the revised BOQ/price schedule only and quote your price accordingly. Offer from bidders in superseded price schedule (Vol-III, REV-0) shall not be considered. Bidders are also requested to submit a declaration in techno-commercial offer that they have submitted their price bid in sealed envelope as per **REVISED price schedule format (VOL-III A , PRICE SCHEDULE , REV-01)**
- 4.0 Revised 'No deviation certificate' is attached. Bidder to submit 'No deviation certificate' as per attached Format only.
- 5.0 All other terms & conditions shall remain unchanged.

Thanking you,

Yours faithfully,  
for BHARAT HEAVY ELECTRICALS LTD

ENGR (SCT)

Encl

- 1.0 BHEL's clarifications to bidder's query attached vide **Annexure-A** to TCN-01
- 2.0 Revised BOQ cum price schedule format (**VOL-III A , PRICE SCHEDULE , REV-01**)
- 3.0 Revised 'No deviation certificate' format.

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

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

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

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

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

Sub	No Deviation Certificate.	
Job	Providing of all services of manpower, tools & plants, watch & ward, supervision including supply of materials and consumables for Erection, Testing & Commissioning of Transformers, Bus duct, cabling and Control & Instrumentation works of SG & TG package etc. of unit#1 & Unit#2 at 2X270 MW Mahadeo Prasad Thermal Power Project, APNRL, Padampur, Saraila-Karsawan, Jharkhand.	
Ref	1.0	Tender no PSER:SCT:ADK-I1188:10.
	2.0	BHEL's NIT, vide reference no Ref: PSER:SCT:ADK-I1188:11 Dated 25-04-2011
	3.0	BHEL's TCN-01, vide reference no PSER:SCT:ADK-I1188:TCN-01, dated 07-05-2011.

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 offer in accordance with tender instructions and as per aforesaid references.

Thanking you,

Yours faithfully,

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

S.No.	Reference Clause No of tender Document	Existing Provision	Bidder's Query	BHEL's Clarification
1	Volume IF Clause 17.3.8, Pg. no. 16/35	The Contractor shall deploy adequate capacity of DG set to run Contractors's construction equipment and area/store illumination during initial period of three months	Kindly clarify whether the Electricity for initial three months not available at site.	Construction power is available. DG set shall be arranged by bidder as back up power.
2	Volume IF Clause 2, Pg. 3/25	Transformers	We have considered that Compensation,leveling, filling of soil surrounding the transformer's plinth not in bidder's scope	Land shall be generly levelled but further levelling/compaction/filling as reqd. shall be done by the contractor.
3	Volume IF Clause 2, Pg. 3/25	Transformers	Kindly confirm whether Transformer wheels will be available during unloading of transformers and will be installed simultaneously	Yes.
4	Volume IF Clause 2, Pg. 3/25	Transformers	Kindly provide us Dispatch schedule of transformers and its accessories so that we can estimate the mandays required for the job.	Man-days required for a job has got no relation with despatch schedule of items.
5	Volume IF Clause 2, Pg. 3/25	Transformers	Kindly confirm whether Cable laying/termination and branch tray of transformers is the part of transformers installation Billing or it has to be billed separately	The quoted clause is for site visit.The laying/termination & branch tray of Transformers are included in the scope.
6	Volume IF Clause 2, Pg. 3/25	Transformers	Radiator defects repaired/rectified shall be at extra cost.	Shall be as per Tender Provision.
7	Volume IF, Clause 3 Pg. 5/25	Isolated Phase Bus Duct	Kindly confirm IPB jointing is with welding or bolting.	Welding. However, such details shall be as per actual erection drawings etc. during execution of work.
8	Volume IF, Clause 3 Pg. 5/25	Isolated Phase Bus Duct	Kindly confirm whether Structural steel support for Bus Duct is the part of our scope of work. Pls quantify the qty of support. How the billing is to be done. Part of busduct or separate.	Steel supporting for Bus Duct is included in the scope of work. Separate billing for supports not envisaged.
9	Volume IF Clause 10 Pg. 12/25	Electrical Inspector's Approval & Pollution Control Board Clearance	Pollution control board clearance is not considered in bidder scope.Kindly confirm which part of work is related to pollution inspector.	PCB clearance not applicable but contractor shall be comply with PCB norms.
10	Volume IF, Clause 1.12.1.9 to 1.12.1.12 Pg. 21/25	Control Panel	We shall provide only assistance for commissioning. Commissioning is to be done by respective OEM.	Shall be as per Tender Provision.
11	Volume IF, Clause 1.12.2.3 to 1.12.2.5 Pg. 21/25	Control Desk	We shall provide only assistance for commissioning. Commissioning is to be done by respective OEM.	Shall be as per Tender Provision.
12	Volume IIIA, Part B, Pg. No.-12/15 BOM item no. 5.8/5.9	Structural Steel (for item no.5.8 & 5.9 material e.g.GI/SS tees,cross,socket, nipple, reducer, union etc are to be supplied by bidder within his quoted rate.	In order to estimate the quantity of supply item either Estimated qty or Hookup arrangement is required from BHEL.	The bidder may visit any similar plant or use previous experience for assessment of this work.
13	Volume IIIA, Part B, Pg. No.-14/15 BOM item no. 9.1	SADC Power Cylinder	Installation of on line valve is not considered in bidder's scope	Shall be as per Tender Provision.
14	Volume IIIA, Part B, Pg. No.-14/15 BOM item no. 9.5	Gravimetric feeder with local control panel with feeder calibration	We have considered that Gravimetric feeder installation shall be done by BHEL and bidder's scope is limited to calibration and testing only.	Revised Rate schedule with linkage of items to billing schedule attached.
15	Volume 1B Clause 2.8.6, Pg. 17	While BHEL would pay the Inspection Fees & Registration Fees of Boiler/Electrical Inspectorate all other arrangement for site visit periodically by the nspectorate to site, Inspection certificate etc will have to be made by contractor.	Boiler inspection assistance and related arrangements not considered in bidder's scope. Bidder's scope shall be limited to assistance for Electric Inspector visit /drwg approvals.	Clause applicable for Electrical inspectorate as applicable for the scope.
16	General Plant Layout	Bidder's Additional Requirement	General Layout of Plant shall be required	May visit site for this information.
17	Volume IB, GCC Clause no. 2.8.23, Pg. no. 19	Accuracy of work and timely execution shall be the <b>essence</b> of this contract.	Bidder proposes to remove the clause of the GCC & SCC:  Bidder proposes to delete from the Terms & conditions that " Time is the Essence of the Contract ".  If not possible to delete the clause at all, please amend the language of the clause stating that the delivery schedule as stipulated in the contract is to be strictly adhered by Siemens Ltd. and time shall be of utmost importance.	Shall be as per Tender Provision.
18	Volume IB, GCC clause no.2.20, pg. no. 25	FORCE MAJEURE Proposal to inclusion of text to existing clause	We propose the following inclusion of the clause:  i). The Purchaser shall pay the Supplier for the deliveries / services already rendered as per Contract. ii). In case the suspension on account of force majeure lasts beyond 60 days, then the Purchaser shall reimburse the Supplier for the additional costs / expenses caused by such suspension on mutually agreed basis. iii). In case a force majeure event lasts for more than 3 months, then Supplier shall have the right to suspend / terminate the Contract (refer deviation list sr. nos. ii & iii above).	Shall be as per Tender Provision.
19	Volume IB, GCC clause no. 2.21, Pg. no. 26	ARBITRATION & RECONCILLATION In case amicable settlement is not reached in the event of any dispute or difference arising out of the execution of the Contract or the respective rights and liabilities of the parties or in relation to interpretation of any provision by the Contractor in any manner touching upon the Contract, such dispute or difference shall (except as to any matters, the decision of which is specifically provided for therein) be referred to the sole arbitration of the arbitrator appointed by BHEL/In Charge (Region).	Sole arbitrator is not acceptable.	Shall be as per Tender Provision.

S.No.	Reference Clause No of tender Document	Existing Provision	Bidder's Query	BHEL's Clarification
20	DEEMED ACCEPTANCE	New clause inclusion	There should be a deemed acceptance provision in the contract whereby acceptance of the equipment is triggered:  (i) if purchaser, for reasons not attributable to the contractor, fails to timely issue acceptance tests/certificates or (ii) if purchaser takes the equipment / system into commercial service before issuing final acceptance certificate or (iii) if purchaser, despite timely advance notice does not participate in inspection/acceptance tests. In case of deemed acceptance, the contractor shall be authorized to issue acceptance certificate or substitute document (test protocol or like), which should be defined as having the same effect as an acceptance certificate issued by the purchaser. Immediately upon completion or deemed acceptance, warranty period should commence, payments should be triggered and entire risks should be transferred to the purchaser.	No such new clauses are acceptable. However, provisions laid down in the tender shall only hold good.
21	SUB CONTRACTING	New clause inclusion	For E & C – We shall use the service of our registered contractor and the same shall be done under our supervision.	Not acceptable, This shall be as per tender provision
22	SUSPENSION OF WORKS	New clause inclusion	The employer right to suspend should be subject to the following :- a) a mutually agreed change order / variation, or b) a stipulation that requires (i) payment for the work performed. (ii) payment of all extra costs associated with suspension. (iii) schedule and price adjustments prior to recommencement. We further propose the inclusion of the following : 1. Suspension of contract will be done by either party only after sufficient notice (at least 15 days) & written mutual consent of the other party. 2. In case the contract is suspended for reasons not attributable to the Supplier and such suspension of contract lasts beyond 30 days, then the Purchaser will reimburse the Supplier for any additional costs / expenses caused by such suspension on mutually agreed basis. 3. In the event any of the following occurs Supplier may at its option suspend the provision of its obligations under this Contract and the time for completion, if any, shall be equitably extended: a) Customer fails to make payment of any amount within 30 days after it has become due and payable, or b) Customer fails to perform its obligations necessary for Supplier to deliver or complete the Work, or c) Delivery and/or completion of the Work is prevented by export or other legally mandated restrictions for more than 6 months; or d) Customer is insolvent or any proceeding is instituted against Customer. e) Delivery and/or completion of the Work is prevented by health & safety considerations. f) A Force Majeure event continues for more than 3 months.	No such new clauses are acceptable. However, provisions laid down in the tender shall only hold good.
23	TERMINATION	New clause inclusion	Termination of contract will be done by either party only after written mutual consent of the other party. However in case, a single force majeure event lasts for a continuous period, more than 3 months and if sum of such multiple events is more than 06 months, then we shall be allowed to terminate the contract. Also termination of contract should be possible only if substantial breach of contract occurs, making it unreasonable to continue. You will grant us reimbursement of expenses during force majeure events.	No such new clauses are acceptable. However, provisions laid down in the tender shall only hold good.
24	License & Work Permit	New clause inclusion	All licenses/certificates from government authorities/electricity boards/PWD/other relevant authorities, authorizing the work to be executed / certified shall be procured by you. We will obtain permits/approvals which are necessary for completion of our own scope of work. Unless expressly stated in this offer all other permits / approvals are to be obtained by you.	No such new clauses are acceptable. However, provisions laid down in the tender shall only hold good.
25	Limitation of liability & Consequential Damage	New clause inclusion	Notwithstanding anything contained in this Agreement and/or any of its parts, portions, allied contracts and agreements it is agreed between the parties hereto that the aggregate cumulative liability of the supplier/contractor under this agreement, at any and all times, for on any and all liabilities, claims, damages, indemnities etc., shall at all times not exceed in the aggregate 100% of the total value of the payment / price actually received by the contractor.	No such new clauses are acceptable. However, provisions laid down in the tender shall only hold good.
26	CHANGE ORDER	New clause inclusion	Any changes in the codes and standards or change in laws should trigger a change order process, which must entitle the contractor to extension of time and increase in costs and prices, if mutually agreed between the parties; in such case any change order should be mutually agreed between the parties and the contractor is not required to perform any changed scope of work till there is mutual agreement on the variation in costs and time for such events, if any, as submitted by the contractor.	No such new clauses are acceptable. However, provisions laid down in the tender shall only hold good.
27	TRANSFER / ASSIGNMENT	New clause inclusion	Transfer or assignment of contract to a third party with all rights and obligations can be done by either party only after prior written approval of other party.	No such new clauses are acceptable. However, provisions laid down in the tender shall only hold good.

S.No.	Reference Clause No of tender Document	Existing Provision	Bidder's Query	BHEL's Clarification
28	RETENTION CLAUSE	New clause inclusion	Siemens obligation to fulfill this agreement is subject to the provisions that the fulfillment is not prevented by any impediments arising out of national and international foreign trade and customs requirements or any embargos (or other sanctions).	<b>No such new clauses are acceptable. However, provisions laid down in the tender shall only hold good.</b>
29	BANK GUARANTEE	New clause inclusion	Kindly provide us the bank guarantee format for PBG.	<b>Not applicable</b>

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

**Job: Providing of all services of manpower, tools & plants, watch & ward, supervision including supply of materials and consumables for Erection, Testing & Commissioning of Transformers, Bus duct, cabling and Control & Instrumentation works of SG & TG package etc. of unit#1 & Unit#2 at 2X270 MW Mahadeo Prasad Thermal Power Project, APNRL, Padampur, Saraila-Karsawan, Jharkhand.**

**TENDER DOCUMENT NO - PSER:SCT:ADK-I1188:11**

**PREAMBLE**

01	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 various volumes of tender as per NIT together with subsequent changes/modifications etc thereto as applicable as on date of submission of price offer.
02	The work shall be carried out strictly as per specifications, description of the items in these schedule and / or engineer's instructions.
03	Items of work provided in this schedule but not covered in this specification shall be executed strictly as per instruction of the engineer.
04	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 (taxes, duties shall be as per tender terms, Vol- IF) , transport, layout, repairs, rectification, maintenance till handing over, supervisions, colonies, shops, establishments, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary to complete the work according to the tender document and this schedule.
05	The rates quoted shall be inclusive of cleaning of site of any grass , making benchmarks etc. required for commencement of site activities. No separate payment will be made towards the same.
06	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 ( $\pm 15\%$ ) of the awarded price as per LOI. Variation of $\pm 15\%$ shall be applied separately on part-A & part-B of contract.
07	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.
08	The tender shall be deemed to have visited site and made himself aware of all the site conditions, studied the specifications and details of work to be done within the time schedule attached and to have acquainted himself of the conditions prevailing at site.
09	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.
10	The final payment shall be on the basis of actual quantity erected and all payment shall be made on the basis of unit rates. The unit rate for identical item shall be same in all places of BOQ/Rate schedule.
11	The rebate, if any offered by the bidder shall apply to all unit rate prices and unit rate prices quoted by the bidder shall be reduced proportionately, unless specified otherwise by bidder.

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

**Job: Providing of all services of manpower, tools & plants, watch & ward, supervision including supply of materials and consumables for Erection, Testing & Commissioning of Transformers, Bus duct, cabling and Control & Instrumentation works of SG & TG package etc. of unit#1 & Unit#2 at 2X270 MW Mahadeo Prasad Thermal Power Project, APNRL, Padampur, Saraila-Karsawan, Jharkhand.**

**TENDER DOCUMENT NO - PSER:SCT:ADK-I1188:11**

**PREAMBLE**

12	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.
13	Note : Bidders to note the following for quoting their rates.
	1) Only authorised persons of bidder having power should sign in the price bid. All the pages must be signed.
	2) For bid evaluation purpose (deciding L1), grand total price of BOQ ( Part-A & Part-B) shall be considered.

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

**Job: Providing of all services of manpower, tools & plants, watch & ward, supervision including supply of materials and consumables for Erection, Testing & Commissioning of Transformers, Bus duct, cabling and Control & Instrumentation works of SG & TG package etc. of unit#1 & Unit#2 at 2X270 MW Mahadeo Prasad Thermal Power Project, APNRL, Padampur, Sarailela-Karsawan, Jharkhand.**

**TENDER DOCUMENT NO - PSER:SCT:ADK-I1188:11**

**SUMMARY**

SL NO	ITEM/SCHEDULE	TOTAL AMOUNT ( )
1	<b>RATE SCHEDULE,PART-A</b> (ERECTION, TESTING & COMMISSIONING OF TRANSFORMERS & BUS DUCTS, LT SWGRs ETC. FOR UNIT#1 & UNIT#2 AT 2X270 MW MAHADEO PRASAD THERMAL POWER PROJECT, APNRL, PADAMPUR, SARAILELA-KARSAWAN, JHARKHAND.)	
2	<b>RATE SCHEDULE,PART-B</b> (ERECTION, TESTING, COMMISSIONING OF CONTROL & INSTRUMENTAION WORK OF STATION, BOILER,TG AND THEIR AUXILLIARIES ETC. FOR UNIT#1 & UNIT#2 AT 2X270 MW MAHADEO PRASAD THERMAL POWER PROJECT, APNRL, PADAMPUR, SARAILELA-KARSAWAN, JHARKHAND.)	
	<b>GRAND TOTAL (PART-A + PART-B)</b>	

**VOLUME-IIIA, REV-01  
RATE SCHEDULE ,PART-A**

**ERECTION, TESTING & COMMISSIONING OF TRANSFORMERS & BUS DUCTS, LT SWGRs etc. FOR UNIT#1 & UNIT#2 AT 2X270 MW MAHADEO PRASAD THERMAL POWER PROJECT, APNRL, PADAMPUR, SARAILELA-KARSAWAN, JHARKHAND.**

**TENDER NO. PSER:SCT:ADK-I1188:11**

<b>SL. No.</b>	<b>ITEM</b>	<b>UNIT</b>	<b>Total Qty for Both Units</b>	<b>Unit Rate (in Rs.)</b>	<b>Total Amount (in Rs.) &amp; (In Figs.)</b>
1.0	Oil Filled Transformer				
1.1	<i>Generator Transformer</i>				
1.1.1	Unloading of Main Tank of Generator Transformer *Rating 330 MVA, 16.5 KV / 420 KV, 3PH, OFAF Cooled, with OLTC *Approx. weights : Shipping Weight (Gas filled) : 224 MT	No	2		
1.1.2	Erection, Testing & Commissioning of Generator Transformer with all accessories *Rating 330 MVA, 16.5 KV / 420 KV, 3PH, OFAF Cooled, with OLTC *Approx. weights : Total weight including oil 323 MT, Core & winding 193 MT, Total oil 60 MT	No	2		
1.2	<i>Unit Auxiliary Transformer</i>				
1.2.1	Unit Auxiliary Transformer with all accessories *Rating 20 MVA, 16.5 KV / 6.9 KV, ONAN / ONAF, with OLTC *Approx weights : Total weight including oil 50 MT, Core & winding 25 MT, Oil 10 MT	No	4		
2.0	Bus Duct				
2.1	<i>Isolated Phase Busduct, 16.5KV (With Galvanised supporting Structures and all accessories like Hoods, Canopies, Tap offs, bellows, shunts, CTs, etc)</i>				
2.1.1	Main Busduct, 1070 mm dia	Mtr	490.2		
2.1.2	Tap-off duct, 780 mm dia	Mtr	344		
2.1.3	SPVT Cubicle with accessories	Set	2		
2.1.4	LA & VT Cubicle with accessories	Set	2		
2.1.5	Neutral Grounding Transformer & resistance with neutral adaptor	No	2		
2.1.6	Air Pressurising Equipment with accessories	No	2		
3.0	ESP Electricals				
3.1	LT Main Switch Board (16000 x 1700 x 2400 )	No	2		
3.2	HV Rectifier Transformer for ESP 95 KV, 1200mA (Erection is EXCLUDED)				

**VOLUME-III A, REV-01  
RATE SCHEDULE ,PART-A**

**ERECTION, TESTING & COMMISSIONING OF TRANSFORMERS & BUS DUCTS, LT SWGRs etc. FOR UNIT#1 & UNIT#2 AT 2X270 MW MAHADEO PRASAD THERMAL POWER PROJECT, APNRL, PADAMPUR, SARAILELA-KARSAWAN, JHARKHAND.**

**TENDER NO. PSER:SCT:ADK-I1188:11**

<b>SL. No.</b>	<b>ITEM</b>	<b>UNIT</b>	<b>Total Qty for Both Units</b>	<b>Unit Rate (in Rs.)</b>	<b>Total Amount (in Rs.) &amp; (In Figs.)</b>
3.2.1	Testing/Commissioning of HV Rectifier Transformer for ESP including Disconnecting switch.	No	64		
3.2.2	Dry Out / Oil Filtration of HV Rectifier Transformer for ESP	No	64		
3.3	Electronic controller with BAPCON SIGMA controller ( 650 x 550 x 2000 )	No	64		
3.4	Auxiliary control panel for ESP (11000 x 1700 x 2400 )	No	4		
3.5	Local start-stop push button for Rapping motor (180 x 100 x 250 )	No	136		
3.6	Ash level Indicator with electronic unit and accessories , wiring by teflon cables from ALI probe to electronic unit etc.	No	256		
3.7	Junction box.				
3.7.1	Junction box for Hopper heaters ( 450 x 150 x 300 )	No	64		
3.7.2	Junction box for Support insulator heaters ( 450 x 150 x 300 )	No	16		
3.7.3	Junction box for shaft insulator heaters ( 450 x 150 x 300 )	No	8		
3.7.4	Junction box for hopper thermostat with wireless controller ( 300 x 150 x 400 )	No	8		
3.7.5	Junction box for ALI - High & Low with wireless controller ( 300 x 150 x 400 )	No	16		
3.7.6	FRP Junction Box for start stop pushbutton with wireless controller ( 300 x 150 x 400 )	No	16		
3.8	IOS & DATA LOGGER PC with peripherals, furniture & printer, etc for ESP.	Set	2		
3.9	Cables, Cable trays & Accessories				
3.9.1	1.1KV arm/unarm LT, <b>Al/Cu</b> , power/control cables (Laying <b>including dressing, clamping etc</b> )				
3.9.1.1	3.5C - 300 sqmm.	Km	0.9		
3.9.1.2	2C - 120 sqmm.	Km	15.8		
3.9.1.3	3C - 35 sqmm.	Km	1.1		
3.9.1.4	3C - 16 sqmm.	Km	0.5		
3.9.1.5	3C - 10 sqmm.	Km	6		
3.9.1.6	10C - 2.5 sqmm.	Km	14		
3.9.1.7	7C - 2.5 sqmm.	Km	1.5		
3.9.1.8	3C - 2.5 sqmm.	Km	17.4		

**VOLUME-IIIA, REV-01  
RATE SCHEDULE ,PART-A**

**ERECTION, TESTING & COMMISSIONING OF TRANSFORMERS & BUS DUCTS, LT SWGRs etc. FOR UNIT#1 & UNIT#2 AT 2X270 MW MAHADEO PRASAD THERMAL POWER PROJECT, APNRL, PADAMPUR, SARAILELA-KARSAWAN, JHARKHAND.**

**TENDER NO. PSER:SCT:ADK-I1188:11**

SL. No.	ITEM	UNIT	Total Qty for Both Units	Unit Rate (in Rs.)	Total Amount (in Rs.) & (In Figs.)
3.9.1.9	2C - 2.5 sqmm.	Km	6.5		
3.9.1.10	4C - 1.5 sqmm. (Screened)	Km	15.5		
3.9.2	1.1KV arm/unarm LT, Al/Cu, power/control cables (Termination) (upto 2.5 sq mm. cable size, rate shall be inclusive of supply of heavy duty copper lugs )				
3.9.2.1	3.5C - 300 sqmm.	No	40		
3.9.2.2	2C - 120 sqmm.	No	40		
3.9.2.3	3C - 35 sqmm.	No	30		
3.9.2.4	3C - 16 sqmm.	No	50		
3.9.2.5	3C - 10 sqmm.	No	60		
3.9.2.6	10C - 2.5 sqmm.	No	100		
3.9.2.7	7C - 2.5 sqmm.	No	220		
3.9.2.8	3C - 2.5 sqmm.	No	340		
3.9.2.9	2C - 2.5 sqmm.	No	560		
3.9.2.10	4C - 1.5 sqmm. (Screened)	No	120		
3.10	Hot dip galvanised cable tray complete with coupler plates, fasteners, clamps and fixing hardware (ladder/perforated type) (including fabrication of irregular tray & accessories to suit layout as required)				
3.10.1	450mm wide.	Mtr	1437.5		
3.10.2	300mm wide.	Mtr	875		
3.10.3	150 mm wide.	Mtr	2625		
3.11	Cable tray support material (including fabrication of base frames of switchgears,LCP,LPB,Starters etc.)				
3.11.1	ISA 50 X 50 x 6	MT	5.85		
3.11.2	ISMC 200 X 75	MT	4.46		
3.11.3	ISMC 100 X 50	MT	1.912		
3.11.4	ISMC 75 X 40	MT	4.641		
3.11.5	Plate 16 X 400 X 400	MT	0.16		
3.11.6	Plate 6 Sq mm.	MT	0.47		
3.11.7	Conduits or pipes	Mtr	50		
3.12	Equipment earthing material				
3.12.1	Galvanised steel flats.				
3.12.1.1	75 x 6/8 mm.	MT	1		
3.12.1.2	50 x 6 mm.	MT	4.47		
3.12.1.3	30 x 5 mm.	MT	1.65		
3.12.1.3	25 x 3 mm.	MT	1		
3.12.1.4	Gi wire Dia. 3.15mm	Mtr	4500		
4.0	Control & Protection Panels				
4.1	Generator, GT, UAT relay & protection panel (Each Panel 1000 x 1000 x 2295).	No	8		

**VOLUME-III A, REV-01  
RATE SCHEDULE ,PART-A**

**ERECTION, TESTING & COMMISSIONING OF TRANSFORMERS & BUS DUCTS, LT SWGRs etc. FOR UNIT#1 & UNIT#2 AT 2X270 MW MAHADEO PRASAD THERMAL POWER PROJECT, APNRL, PADAMPUR, SARAILELA-KARSAWAN, JHARKHAND.**

**TENDER NO. PSER:SCT:ADK-I1188:11**

SL. No.	ITEM	UNIT	Total Qty for Both Units	Unit Rate (in Rs.)	Total Amount (in Rs.) & (In Figs.)
4.2	Electrical control desk-cum-panel for generator, GT, aux system, etc control/ monitoring comprising of ammeter, voltmeter, megawatt meter, frequency meter, synchroscope, transducers, annunciators, etc	No	2		
4.3	Automatic voltage regulator panel consisting of regulation cubicle (1150 x 750 x 2295), thyristor cubicle (950 x 750 x 2295) & field suppression cubicle (950 x 750 x 2295)	Set	2		
4.4	Local DC starter panel including resistance box with all accessories	No	10		
4.5	Commissioning of Local Control panel	No	10		
4.6	Commissioning of actuators for soot blowers (Rate is inclusive of Commissioning of associated Motors)	No	308		
4.7	Commissioning of actuators for Bi-directional Drives like motor operated valves, Damper, etc (Rate is inclusive of Commissioning of associated Motors)	No	480		
4.8	Soot Blower MCC	No	2		
4.9	Commissioning of HT Motors (including erection/testing of loose supplied NCTs with the motor and its wiring, if applicable)				
4.9.1	Dry out of HT Motors	No	10		
4.9.2	Testing, Commissioning of HT Motors ( Dry out is excluded)	No	25		
4.10	Dry out of LT Motors				
4.10.1	Upto 5 KW	No	30		
4.10.2	More than 5 KW & Upto 50 KW	No	20		
4.10.3	Above 50 KW	No	20		
4.11	Testing, Commissioning of LT Motors (Dry out is EXCLUDED)				
4.11.1	Upto 5 KW	No	60		
4.11.2	More than 5 KW & Upto 50 KW	No	40		
4.11.3	Above 50 KW	No	40		
5.0	MINOR CIVIL WORK				
5.1	Chipping / breaking of brick wall and concrete floor/wall [Including Finishing]	Cu. M	2		
5.2	Supply & installation of Heavy duty Galvanised friction anchor fasteners of Hilti / Bosch or any other approved make of dia 16 mm and 100 mm length with supply of all hardwares as required.	No	30		
5.3	Excavation with lift up to 0.5 meters including draining and pumping out water to maintain reasonably dry working condition for all activities, including backfilling & compaction of excavated material after completion of the activities etc. all complete as per drawings and/or instructions of the engineer	Cu. M	2		
	<b>GRAND TOTAL PRICE IN RUPEES (IN FIGURES &amp; IN WORDS)-PART.A</b>				

**VOLUME-III, REV-01  
RATE SCHEDULE,PART-B**

**Job : Erection, Testing, Commissioning of Control & instrumentaion work of Station, Boiler,TG and their auxiliaries etc. for unit#1 & Unit#2 at 2X270 MW Mahadeo Prasad Thermal Power Project, APNRL, Padampur, Saraila-Karsawan, Jharkhand.**

**TENDER NO. PSER:SCT:ADK-I1188:11**

SL. NO.	DESCRIPTION	Billing Sch. Ref.	UNIT	Qty for Both Units (A)	Unit Rate (in Rs.) (B)	Total Amount (in Rs.) & (In Figs.) (C=AxB)
<b>1.0</b>	<b>PANELS &amp; CUBICLES</b>					
1.1	<b>DDCMIS Cabinet :</b>					
1.11	For Station C&I (800X800X2415 )	6	No.	67		
1.12	For Steam Generator (800X800X2415 )	6	No.	36		
1.13	For Turbo Generator (800X800X2415 )	6	No.	52		
1.2	Cabinet for Transducers-(CFA01) non maxDNA panel. (800X800X2415 )	6	No.	2		
1.3	Interposing Relay Panel- non maxDNA panel CTE-01, 02 & 03. (800X800X2415 )	6	No	6		
1.4	Unit Control Panel (UCP) CWD 01 ( 1500 X 800 X 2415 )	6	No.	2		
1.5	Network Interface Panel (800x800X2415) NWP 01,NWP 02,NWP 03.	6	No.	6		
1.6	Master Slave (GPS) Clock & Panel (Common for Units 1 & 2) (900X600X2415)	6	No.	1		
1.7	Steam Leak detection Panel (800x800x2315) & PC	6	No.	2		
1.8	ID/FD/PA/Mill/BFP/CEP Vib. Monitoring Panel (800X800X2415)	6	No.	10		
1.9	Remote Gravemetric Feeder Panel (1200x600x2315)	6	No.	12		
1.10	EWLI Local Panel (600X600X350)	6	No.	4		
1.11	EWLI Remote Display unit (99X184X81)	6	No.	8		
1.12	ERV Control Box (400x350X270)	6	No.	8		
1.13	Furnace Temperature Probe Local Starter Box (600X600X300)	6	No.	4		
1.14	Generator Instrumentation cabinet (1000X800X2200)	6	No.	2		
1.15	Generator system Annunciation cabinet (1000 X800X2200)	6	No.	2		
1.16	Gas Analyser Cabinet (1200X800X2110)	6	No.	2		
1.17	MAX Engineer Stations (EWS): (1 Set comprises of 1 No. CPU , Printer, accessories and 1 No. Monitor) (1500x750x740)	9	Set	4		
1.18	Maxstorian Stations (EWS): (1 Set comprises of 2 No. CPU ,Printer, accessories and 1 No. Monitor) (1500x750x740)	9	Set	2		
1.19	MAX operator Work Station (OWS) :computer consisting of CPU,Printer,Accessories and monitor)	9	Set	8		
1.20	CRT Desk ( 800X1195X825)	6	No.	8		
1.21	MAX Work Station (DeskTop): (01 No. each for Performance Calculation, Shift In-Charge, TSC, 02 nos LVS Station & 01 no SOE station)	9	No.	10		
1.22	MAX Link Work Station : (01 Set comprises of 1 No. CPU, Printer, accessories and 01 No. Monitor) (1500x750x740)	9	Set	2		
1.23	Printer of various types.( Colour laser A4, A3, B/W Mono laser A4, Colour Inkjet A4, DOT matrix)	9	Set	1		

**VOLUME-III, REV-01  
RATE SCHEDULE,PART-B**

**Job : Erection, Testing, Commissioning of Control & instrumentaion work of Station, Boiler,TG and their auxiliaries etc. for unit#1 & Unit#2 at 2X270 MW Mahadeo Prasad Thermal Power Project, APNRL, Padampur, Saraila-Karsawan, Jharkhand.**

**TENDER NO. PSER:SCT:ADK-I1188:11**

SL. NO.	DESCRIPTION	Billing Sch. Ref.	UNIT	Qty for Both Units (A)	Unit Rate (in Rs.) (B)	Total Amount (in Rs.) & (In Figs.) (C=AxB)
1.24	TSI & VMS System consisting of Server, Monitor, printer and accessories.	9	Set	4		
1.25	Furniture (consisting of 06 nos Printer tables, 06 nos computer tables & 12 nos chairs)	6	Set	2		
1.26	Large Video Screen Control Station containing 67 inch Video screen (1368x940x 2369)	6	No.	4		
1.27	SWAS Wet Panel (3300x 2200x1400)	6	No.	2		
1.28	SWAS Dry Panel (3600x2200x800)	6	No.	2		
1.29	SWAS Chiller Panel (3040x1800x1350)	6	No.	2		
1.30	SWAS Pimary Panel (BOILER) (1500x2000x600)	6	No.	2		
1.31	SWAS Pimary Panel (TG) (600x2000x600)	6	No.	2		
<b>2.0</b>	<b>FIELD RACKS AND ENCLOSURES</b>					
2.1	Transmitter Enclosers (LIE) (2000X1500X2300) -500 Kg	6	No.	70		
2.2	Transmitter Racks ( LIR ) (1800X800X2000) -300Kg	6	No.	60		
2.3	Local Gauge Board (LGB) Assembly for Feed Water & Sealing Cooling Water service for BFP.(2000x300x1800)	6	No.	6		
2.4	Local Gauge Board (LGB) assembly for oil service of BFP (2200x300x1800)	6	No.	6		
2.5	Local Gauge Board (LGB) Assembly for CEP (2000x300x1800)	6	No.	2		
2.6	Local instrument rack (LIR) assembly for 3 BFPs Pressure transmitters.	6	No.	2		
2.7	Local Instrument Rack (LIR) assembly for 3 BFPs to mount Differential Pressure Transmitters.	6	No.	2		
2.8	Local Instrument Rack (LIR) assembly for CEP-A &B pumps to mount Pressure & diff.pressure Transmitters.	6	No.	2		
<b>3.0</b>	<b>FIELD INSTRUMENT</b>					
3.1	Electronic Transmitters (Pr.,Diff. Pr., Flow, Level)	7	No.	378		
3.2	Guided Wave Radar type level transmitters.	7	No.	22		
3.3	UCB mounted instruments viz Digital Indicator/Recorder/Integrater/control station/controller etc.	7	No.	140		
3.5	Flow Switch	7	No.	16		
3.6	Flow meter/Rotameter/Flow Indicator	7	No.	12		
3.7	Pressure Guage	7	No.	480		
3.8	Differential Presure Guage	7	No.	18		
3.9	Temperature Guage	7	No.	290		
3.10	Pressure Switch	7	No.	190		

**VOLUME-III, REV-01  
RATE SCHEDULE, PART-B**

**Job : Erection, Testing, Commissioning of Control & instrumentation work of Station, Boiler, TG and their auxiliaries etc. for unit#1 & Unit#2 at 2X270 MW Mahadeo Prasad Thermal Power Project, APNRL, Padampur, Saraila-Karsawan, Jharkhand.**

**TENDER NO. PSER:SCT:ADK-I1188:11**

SL. NO.	DESCRIPTION	Billing Sch. Ref.	UNIT	Qty for Both Units (A)	Unit Rate (in Rs.) (B)	Total Amount (in Rs.) & (In Figs.) (C=AxB)
3.11	Limit Switch (for Burner Tilt Shear pin fail & other application)	7	No.	168		
3.12	Differential Pressure Switch	7	No.	75		
3.13	RTD (PT - 100)	7	No.	270		
3.14	Thermocouple with Thermowell- (K-Type, R-Type & T-Type)	7	No.	260		
3.15	Level Switch (Conductivity Type for CRH Drain pot lv)	7	No.	4		
3.16	Level Switch (Float Type/ Capacitance Type/Displacement Type)	7	No.	30		
3.17	Condensing Pot consisting of 03 types (7.6mm thk, 12mm thk & 17.6mm thk).	7	No.	142		
3.18	<b>Machine Monitoring System-Loose items : (Station C&amp;I area for HT drives &amp; TSI system)</b>	7				
3.19	Vibration sensor	7	No.	328		
3.20	Proximity sensor	7	No.	66		
3.21	Velocity Transducers	7	No.	100		
3.22	Overall expansion (LVDT) Probe	7	No.	16		
3.23	Speed Detectors	7	No.	8		
3.24	Oxygen (O2) Analyser	7	No.	8		
3.25	Flue Gas Analyser (SOx + NOx + CO2 + CO) Analyser - In Situ Type	7	No.	2		
3.26	Dust / Smoke Density / Opacity Analyser	7	No.	2		
3.27	Conductivity Analyser	7	No.	20		
3.28	Dissolved Oxygen (DO) Analyser	7	No.	6		
3.29	Hydrazine Analyser	7	No.	2		
3.30	Sodium Analyser Multi Stream	7	No.	2		
3.31	pH Analyser pHT	7	No.	12		
3.32	Phosphate Analyser	7	No.	2		
3.33	Silica Analyser Multi Stream	7	No.	2		
3.34	Capacitance Type Level Probe with amplifier (for Seal Oil system & other appl)	7	No.	26		
3.35	MOISTURE MONITORING SYSTEM (Containing Sensor and sample handling system cabinet (Size-1500 x 1000 x 500mm approx.)	7	No.	4		
3.36	Miniature RTDs (thrust bearing)	7	No.	48		
3.37	12 port Pr. Vessel with loose supplied electrodes for EWLI	7	No.	4		

**VOLUME-III, REV-01  
RATE SCHEDULE,PART-B**

**Job : Erection, Testing, Commissioning of Control & instrumentaion work of Station, Boiler,TG and their auxilliaries etc. for unit#1 & Unit#2 at 2X270 MW Mahadeo Prasad Thermal Power Project, APNRL, Padampur, Sarailela-Karsawan, Jharkhand.**

**TENDER NO. PSER:SCT:ADK-I1188:11**

SL. NO.	DESCRIPTION	Billing Sch. Ref.	UNIT	Qty for Both Units (A)	Unit Rate (in Rs.) (B)	Total Amount (in Rs.) & (In Figs.) (C=AxB)
3.38	Positive displacement Flowmeter ( consisting of Pulse amplifier, strainer, expander, reducer, mating flanges, cables and its remote sensing element)	7	No.	4		
3.39	6 MM OD SS sheathed type K, MTMTCs of Route Length - 10 Mtrs.	7	No.	12		
3.40	6 MM OD SS sheathed type K, MTMTCs of Route Length - 14 Mtrs	7	No.	14		
3.41	6 MM OD SS sheathed type K, MTMTCs of Route Length - 16 Mtrs	7	No.	76		
3.42	6 MM OD SS sheathed type K, MTMTCs of Route Length - 18 Mtrs	7	No.	76		
3.43	6 MM OD SS sheathed type K, MTMTCs of Route Length -20 Mtrs	7	No.	50		
3.44	6 MM OD SS sheathed type K, MTMTCs of Route Length -22 Mtrs	7	No.	8		
3.45	Accoustic Transducer along with PRE-Fab cable	7	No.	36		
3.46	Accoustic Wave Guard assembly	7	No.	36		
3.47	Flame Scanner head Assembly	7	No.	40		
3.48	Local Gun maintenance switch	7	No.	24		
3.49	12 port pr. Vessel for EWLI	7	No.	4		
<b>4.0</b>	<b>Junction Boxes :</b>					
4.1	Miniature JB for Flame Scanner	3	No	40		
	HEA Exciter Box	3	No	24		
4.2	12 way	3	No.	116		
4.3	24 way	3	No.	280		
4.4	36 way	3	No.	55		
4.5	48 way	3	No.	25		
4.6	64 way	3	No.	4		
4.7	96 way	3	No.	4		
4.8	MTM JUNCTION BOX- 24 WAY	3	No.	50		
<b>5.0</b>	<b>Misc. items :</b>					
5.1	Local Pneumatic Controller with mechanical transmitter for Seal Air Dynavane.	7	No.	2		
5.2	Electro Pneumatic (E/P) Converter	7	No.	98		
5.3	Air Filter Regulator - 1/4 inch	7	No.	98		
5.4	Purge meter for Mill	7	No.	20		
5.5	AFR For SADC System -1 inch	7	No.	16		

**VOLUME-III, REV-01  
RATE SCHEDULE, PART-B**

**Job : Erection, Testing, Commissioning of Control & instrumentation work of Station, Boiler, TG and their auxiliaries etc. for unit#1 & Unit#2 at 2X270 MW Mahadeo Prasad Thermal Power Project, APNRL, Padampur, Sarailela-Karsawan, Jharkhand.**

**TENDER NO. PSER:SCT:ADK-I1188:11**

SL. NO.	DESCRIPTION	Billing Sch. Ref.	UNIT	Qty for Both Units (A)	Unit Rate (in Rs.) (B)	Total Amount (in Rs.) & (In Figs.) (C=AxB)
5.6	1/4"SIZE TEFLON HOSE LENG.	7	No.	128		
5.7	1"SIZE TEFLON HOSE LENG.	7	No.	8		
	<b>STRUCTURAL STEEL (for items Sl.no. 5.8 &amp; 5.9, materials e.g. GI/SS tees, cross, socket, nipple, reducer, union etc. are to be supplied by the bidder within his quoted rate.)</b>					
5.8	Fab. & erection of Air header for SADC Power cylinder with 1/2" to 2" GI/SS pipe, and valves etc. (1 I/L, 14 O/L, drain & vent valves).	5	No	10		
5.9	Fab. & erection of Air filter station for SADC Power cylinder with 1" GI/SS pipe, valves and air filter regulator	5	No	8		
5.10	Fab. & erection of dust collector / catch pot	5	No	10		
5.11	Fab. & erection of structural steel (Angle, Channel, flat, plate etc.)	5	MT	40		
5.12	Fabrication & erection of canopy (structural matl. and GI/SS sheet will be provided by BHEL free of cost)	5	MT	6		
<b>6.0</b>	<b>Impulse Pipe :</b>					
6.1	ASTM A 312 TP 316 1/2 " NB Sch 40S	4	mtr.	2600		
6.2	IASTM A106 GR C 1/2" NB SCH 80	4	mtr.	3650		
6.3	ASTM A106 Gr C 3/4 " NB Sch 80	4	mtr.	4000		
6.4	ASTM A106 Gr C 1/2 " NB SCH 160	4	mtr.	1500		
6.5	ASTM A335 P22 1/2 " NB XXS	4	mtr.	1800		
6.6	ASTM A312 TP 316 1/2 " Nb Sch 160S	4	mtr.	1000		
6.7	ASTM A106 Gr C 1 " NB Sch 80	4	mtr.	50		
6.8	1/2" Sch 80, CS impulse pipe	4	mtr.	800		
6.9	1" Sch 80, CS impulse pipe	4	mtr.	1000		
6.10	1/2" Sch 160, CS impulse pipe	4	mtr.	500		
6.11	3/4"Sch 80 CS Impulse Pipe, Matl.	4	mtr.	600		
6.12	Impulse pipe for Pr. Instruments CS 16 X2.6 ( BFP - 600mtr, CEP-165 mtr. )	4	mtr.	1500		
6.13	3/4"Sch 80 CS Impulse Pipe,	4	mtr.	600		
6.14	GI Pipe NB15 X 3.25 (IS 1239 GAL)	4	mtr.	1600		
6.15	Pneumatic Copper Tubes up to 1/4" OD	4	mtr.	4000		
6.16	S.S.Pipe upto 3/4" OD	4	mtr.	100		
6.17	S.S. Tube upto 1/4" OD	4	mtr.	100		
6.18	Copper Tubes >1/4" mm & upto 12mm OD	4	mtr.	1000		
6.19	Valves of various types of size 1/4" to 1/2" (SS/CS/MS/Brass etc).	4	Nos	20		
<b>7.0</b>	<b>Cables of different types:</b>					
7.1	UTP cable for Max System	2	mtr.	14000		
7.2	Fibre optic cable with conduit -Only Laying, termination excluded.	2	mtr.	4000		
7.3	4Px 0.5 sqmm I&OA shielded unarmoured	2	mtr.	1000		
7.4	12Px 0.5sq.mm OA shielded unarmoured	2	mtr.	800		
7.5	24Px 0.5sq.mm OA shielded unarmoured	2	mtr.	400		

**VOLUME-III, REV-01  
RATE SCHEDULE,PART-B**

**Job : Erection, Testing, Commissioning of Control & instrumentaion work of Station, Boiler,TG and their auxiliaries etc. for unit#1 & Unit#2 at 2X270 MW Mahadeo Prasad Thermal Power Project, APNRL, Padampur, Saraila-Karsawan, Jharkhand.**

**TENDER NO. PSER:SCT:ADK-I1188:11**

SL. NO.	DESCRIPTION	Billing Sch. Ref.	UNIT	Qty for Both Units (A)	Unit Rate (in Rs.) (B)	Total Amount (in Rs.) & (In Figs.) (C=AxB)
7.6	2Px 0.5sq.mm I&OA shielded armoured	2	mtr.	10000		
7.7	4Px 0.5sq.mm I&OA shielded armoured	2	mtr.	49000		
7.8	8Px 0.5sq.mm I&OA shielded armoured	2	mtr.	6000		
7.9	4Px 0.5sq.mm OA shielded armoured	2	mtr.	22000		
7.10	8Px 0.5sq.mm OA shielded armoured	2	mtr.	8000		
7.11	12Px 0.5sq.mm OA shielded armoured	2	mtr.	4000		
7.12	16Px 0.5sq.mm shielded armoured for EWLI	2	mtr.	1000		
7.13	10Px 0.6sq.mm PTFE for EWLI	2	mtr.	120		
7.14	2Px 1.31mm <sup>2</sup> , 16 AWG K type I&OA shielded armoured	2	mtr.	9000		
7.15	4Px20 AWG K type I&OA shielded armoured	2	mtr.	10000		
7.16	6Px20 AWG K type I&OA shielded armoured	2	mtr.	16000		
7.17	2Px16 AWG R type I&OA shielded armoured	2	mtr.	1000		
7.18	2Px20 AWG R type I&OA shielded armoured	2	mtr.	2400		
7.19	Flame Scanner Shielded Cable	2	mtr.	6400		
7.20	2P X 0.5 SQ.mm. O/A Shielded Cable	2	mtr.	7000		
7.21	4P X 0.5 SQ.mm. O/A Shielded Cable	2	mtr.	2000		
7.22	8P X 0.5 SQ.mm. O/A Shielded Cable	2	mtr.	4000		
7.23	4Px 0.5 SQ.mm ATC Conductor, PVC Insulated, Armoured, Cable	2	mtr.	3000		
7.24	8P x 0.5 SQ.mm ATC Conductor, PVC Insulated Armoured Cable	2	mtr.	3000		
7.25	2Px 0.5 SQ.mm ATC Conductor, PVC Insulated, Armoured Cable	2	mtr.	600		
7.26	2CX2.5 SQ.mm Copper Power Cable	2	mtr.	4000		
7.27	3CX2.5 SQ.mm Copper Power Cable	2	mtr.	20000		
7.28	2CX2.5 SQ.mm Control Cable	2	mtr.	500		
7.29	3CX2.5 SQ.mm Control Cable	2	mtr.	2400		
7.30	5C X2.5 SQ.mm Control Cable	2	mtr.	8000		
7.31	7CX2.5 SQ.mm Control Cable	2	mtr.	6000		
7.32	9CX2.5 SQ.mm Control Cable	2	mtr.	10000		
7.33	2P 1.5 sq.mm shielded cable	2	mtr.	1000		
7.34	19 core 2.5 sq.mm control cable	2	mtr.	2400		

**VOLUME-III, REV-01  
RATE SCHEDULE,PART-B**

**Job : Erection, Testing, Commissioning of Control & instrumentaion work of Station, Boiler,TG and their auxiliaries etc. for unit#1 & Unit#2 at 2X270 MW Mahadeo Prasad Thermal Power Project, APNRL, Padampur, Saraila-Karsawan, Jharkhand.**

**TENDER NO. PSER:SCT:ADK-I1188:11**

SL. NO.	DESCRIPTION	Billing Sch. Ref.	UNIT	Qty for Both Units (A)	Unit Rate (in Rs.) (B)	Total Amount (in Rs.) & (In Figs.) (C=AxB)
7.35	XLPE cable 1P, 2P,3P etc x1.5 mm2	2	mtr.	400		
	<b>Note : (1). Insulated copper lugs of std quality, Numbered ferrules by machine printed ,Tags ,ties are to be supplied by the Bidder at his cost. Gland will be supplied by BHEL free of Cost. (2). For item under Sl.no.7.2 bider has to do the laying only, termination is excluded.</b>					
<b>8.0</b>	<b>Cable Trays :</b>					
8.1	GI CABLE TRAY – 50 mm Width	1	mtr.	2000		
8.2	GI CABLE TRAY – 100 mm Width	1	mtr.	3000		
8.3	GI CABLE TRAY – 150 mm Width	1	mtr.	2000		
8.4	GI CABLE TRAY - 300 mm Width	1	mtr.	400		
<b>9.0</b>	<b>CALIBRATION/ COMISSIONING (Erection excluded)</b>					
9.1	SADC power cylinders	10	No.	112		
9.2	Burner tilt Power cylinder	10	No.	8		
9.3	HEA power cylinder	10	No.	24		
9.4	Power cylinder for scoop	10	No.	10		
9.5	Gravimetric Feeder with local control panel with Feeder calibration.	10	No.	12		
9.6	Power cylinder (on-off type)	10	No.	110		
9.7	Power cylinder (regulating type)	10	No.	54		
9.8	Control valves (ON-OFF)	8	No.	46		
9.9	Open/ Close type cont valve (pneumatic) for fuel oil station at AB, CD & EF elevation.	8	No.	72		
9.10	Control valves (Regulating)	8	No.	100		
9.11	Extraction NRV/Spray water control valve	8	No.	10		
9.12	Gland steam control valves.	8	No.	4		
9.13	HPBP Pr. & temp. control valve	8	No.	8		
9.14	HPBP spray block valve	8	No.	2		
9.15	LP Bypass spray Control valve with Feedback Transmitter	8	No.	4		
9.16	Governing System Control Rack (erection is excluded, rate to be quoted only for calibration and commissioning of instruments)	8	No.	2		
9.17	LP Bypass control rack (erection is excluded, rate to be quoted only for calibration and commissioning of instruments)	8	No.	2		
9.18	Motorised Temperature Control Valve with actuator NB250 VAR-02 for Generator cold gas.	8	No	2		
9.19	Vacuum Breaker Valve with pneumatic actuator.	8	No	2		
9.20	Hydrogen Gas dyier panel	8	No	2		
9.21	Oil Purification Unit.	8	No	2		
9.22	Motorised Three way turbine lube oil temp control valve.	8	No	2		
9.23	Pressure Limit valve.	8	No	2		

**VOLUME-III, REV-01  
RATE SCHEDULE,PART-B**

**Job : Erection, Testing, Commissioning of Control & instrumentaion work of Station, Boiler,TG and their auxiliaries etc. for unit#1 & Unit#2 at 2X270 MW Mahadeo Prasad Thermal Power Project, APNRL, Padampur, Saraila-Karsawan, Jharkhand.**

**TENDER NO. PSER:SCT:ADK-I1188:11**

SL. NO.	DESCRIPTION	Billing Sch. Ref.	UNIT	Qty for Both Units (A)	Unit Rate (in Rs.) (B)	Total Amount (in Rs.) & (In Figs.) (C=AxB)
9.24	Generator Stroboscope	8	No	2		
10.0	POWER CYLINDERS					
10.1	Power Cylinder for ID fan inlet damper	11	No.	4		
10.2	Power Cylinder for FD fan inlet damper	11	No.	4		
10.3	Power Cylinder for PA fan inlet damper	11	No.	4		
10.4	Power Cylinder for Hot air damper	11	No.	12		
10.5	Power Cylinder for Cold air damper	11	No.	12		
10.6	Removal, calibration, re-mounting and commissioning of instruments for Skid. Each skid will have minimum of 05 no. instruments e.g. PG/PS/TG/DPI /DPS/TS/RPM meter with probe/LS/LG /FS/FI etc. Dressing of capillary & cables if any, repair of Cu-tube/impulse pipe, if any, changing of terminals of JB. if any, is also included.	10	No.	10		
11.0	<b>PG TEST ITEMS :</b>					
11.1	1/2" Impulse Pipe	4	mtr.	1600		
11.2	Compensating Cable (2C, Core size upto 2.5 sqmm) laying & termination	2	mtr.	2700		
11.3	2C, Core size upto 2.5 sqmm cable laying & termination	2	mtr.	6000		
11.4	4C, Core size upto 2.5 sqmm cable laying & termination	2	mtr.	6000		
11.5	Pre-fab cable from Data logger to computer	2	mtr.	100		
11.6	Junction Box	3	No.	160		
11.7	Thermocouple	7	No.	90		
11.8	Pr. / vacuum / DP Transmitters	7	No.	140		
11.9	Data logger	7	No.	2		
11.10	Manometer	7	No.	20		
11.11	Thermowell	7	No.	200		
11.12	PRT (Pt. Resistance thermometer)	7	No.	180		
11.13	Barometer	7	No.	2		
11.14	Power meter / transducer	7	No.	20		
	<b>GRAND TOTAL PRICE IN RUPEES (IN FIGURES &amp; IN WORDS) -PART.B</b>					