



# भारत हेवी इलेक्ट्रिकल्स लिमिटेड

( भारत सरकार का उपक्रम )

## BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

### TCN - 02

Ref: PSER:SCT:MJA-M869:TCN-02

Date: 16-05-2008

Sub	Tender change notice (TCN) 02.	
Job	Erection, testing, commissioning etc of (1) Package-A – CW piping, ACW piping & DM water piping systems of unit # 1 and various balance piping systems (instrument air, service air, drinking water, service water etc) of unit # 1 & 2 and (2) Package-B - CW piping, ACW piping & DM water piping systems of unit # 2 for 2x500 MW unit # 1 & 2 at Mejia-B Thermal Power Station, West Bengal.	
Ref	1.0	Tender no PSER:SCT:MJA-M869:08.
	2.0	BHEL's NIT, vide reference no PSER:SCT:MJA-M869:1285, dated 28-04-08.
	3.0	BHEL's TCN-01, vide reference no PSER:SCT:MJA-M869:TCN-01, dated 08-05-08.
	4.0	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 19-05-08 to **26-05-2008 (15-00 hrs)**.
- 2.0 Amendment/ clarification to tender as per attached Annexure-A.
- 3.0 Quality plan (QP) is attached.
- 4.0 Revised Volume-III, Price Schedule, Rev-1 (for Package-A & Package-b) are attached. Bidder to submit offers as per revised price schedules only.
- 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,

Yours faithfully,  
for BHARAT HEAVY ELECTRICALS LTD

DGM (SCT)

Encl

- 1.0 Annexure-A.
- 2.0 Quality plan (QP).
- 3.0 Volume-III, Price Schedule, Rev-1 (for Package-A & package-B).
- 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

फैक्स/Fax : (033) 23211960

फोन/Phone : बोर्ड/EPABX : 23211798/ 1691

SL NO	AMENDMENT/ CLARIFICATIONS	
1.0	Clause 31.0 of Volume-ID shall stand revised as under.	
	CLAUSE NO	DESCRIPTION
	31.0	TOOLS & PLANTS TO BE PROVIDED BY BHEL (SHARED MACHINERY, APPLICABLE FOR EACH PACKAGE)
1.1	31.1	1 no 18 T/ 20 T crane (for loading of materials in yard) and 1 no 75 T crane or above for erection/ handling shall be provided to the contractor by BHEL on free of cost basis as per availability.
1.2	31.2	The contractor shall ensure that machinery provided to him is kept in good running condition, all along it's use by the contractor and after use is returned to BHEL in good condition. BHEL's decision regarding condition evaluation shall be final.
1.3	31.3	Depending on availability, cranes along with crane operator will be provided to successful bidder on sharing basis and free of any hire charges. Required fuel & consumables will be provided by BHEL free of cost
1.4	31.4	These cranes have to be shared with other agencies/ contractors of BHEL. The allocation of cranes shall be the discretion of BHEL engineer, which shall be binding on the contractor. All arrangements, including providing & laying of sleeper beds, back-filling of approaches wherever necessary for safe movement of the cranes as directed by BHEL shall be the responsibility of the contractor. The contractor shall provide sleepers for this purpose at his cost. Any boom reduction, extension for their use and restoration to previous state or as directed by BHEL after the use shall be contractor's responsibility. Major breakdowns will be attended to by BHEL. The cranes provided by BHEL will be withdrawn for regular and capital maintenance as per the respective schedule of maintenance. As far as possible such schedules will be intimated to the contractor in advance and may be adjusted depending on the work requirements at site. However, no claim whatsoever will be entertained on account of non-availability of cranes. Where the services of the cranes provided by BHEL are to be shared by other agencies/ contractors of BHEL, the contractor's responsibilities defined above will also be apportioned accordingly to the beneficiary agency. BHEL engineer will do working arrangements in this regard at site and in any case his decision shall be final and binding.
1.5	31.5	Any damage/ breakdown maintenance of the machinery arising out of improper handling by contractor shall be to the account of contractor. BHEL shall reserve the right of repairing the same to its own satisfaction at contractor's cost. During such outage of the machinery, BHEL shall not be responsible to provide any alternative. The contractor shall arrange for such alternative arrangement at his own cost.
1.6	31.6	The contractor shall return to BHEL the T&Ps issued to him in good condition as and when desired by BHEL. If the return is delayed, hire charges, as applicable shall be levied by BHEL.
1.7	31.7	In case of any machinery (given to contractor) remaining idle without any valid reason, BHEL shall withdraw the equipment immediately for allotment to the contractor next in priority.
1.8	31.8	In case any machinery (given to contractor) is idle and/ or in case of exigency of work, BHEL reserves the right to withdraw the same and no compensation shall be entertained on this account by BHEL.
1.9	31.9	In case the total work under scope is split, the tools & plants to be provided by BHEL shall be shared amongst the contractors as per discretion of BHEL.
1.10	31.10	The T&P scheduled to be provided shall be available on sharing basis and distribution of these shall be done at the discretion of project

		manager, BHEL, on the requirement / priority of the job and the availability of these items. In the event of non-availability of the listed crane, BHEL may explore the possibility of providing alternate higher/nearby capacity crane, if found sparable with BHEL site. However, this is not a binding for BHEL.
1.11	31.11	In the event of any damage or theft occurring to the issued T&Ps, while in use with contractor, due to their negligence, the same shall be repaired/ replaced by contractor at their own cost within the time stipulated by Construction Manager, BHEL. Contractor's failure to do so shall entitle BHEL to get the above done through other agency and cost so incurred by BHEL shall be recovered from contractor's bill.
1.12	31.12	The above mentioned items are for general guidance only. Except the above mentioned items, contractor has to deploy all other tools & plants required for proper & satisfactory completion of job. The number of such item will be as per requirement.
2.0	Clause 45.0 of Volume-ID shall stand revised as under.  For all materials issued by BHEL units, reconciliation shall be done PGMA/ DU wise. For non-fabricated raw structural steel, if issued by BHEL on free of cost basis, following additional clause (Clause no 45.4) is included to govern issue, consumption, wastage, return, reconciliation etc.	
	CLAUSE NO	DESCRIPTION
	45.4	ISSUE, CONSUMPTION, WASTAGE, RETURN, RECONCILIATION ETC OF STRUCTURAL STEEL
2.1	45.4.1	HANDLING OF STRUCTURAL STEEL
2.1.1	45.4.1.1	Structural steel, if required for permanent work, will be issued free of cost by BHEL for use in the work covered in this contract from project premises or any other issue point (within a distance of approx 3000 mtr from work premises) as will be specified by engineer. Receipt of material from store area loading the same for transportation and transporting/ unloading the same to the work site will be in the scope of contractor.
2.1.2	45.4.1.2	BHEL reserve the right to recover from the contractor any loss arising out of damage/ theft or any other causes of the issued material at receiving point at BHEL stores or storage yard or during verification/ stacking at contractor premises or at any time under the custody of the contractor.
2.1.3	45.4.1.3	The contractor shall collect the materials from the specified places at their own cost and store the same at the work site or in his stores as per standard norms. Materials issued will be used only for construction of permanent work.
2.1.4	45.4.1.4	The contractor shall take care of material issued by BHEL and shall protect the same from damage and weathering.
2.1.5	45.4.1.5	The contractor shall in no case be entitled for any compensation or damages on account of any delay in supply or non-supply thereof for all or any such material.
2.1.6	45.4.1.6	Excessive rusting of steel must be avoided. In case, due to any cause attributable to the contractor, such rusting of steel occur, rendering the same unusable, then such quantity of steel shall be recovered from the interim payment of contractor at the penal rate specified in the tender.
2.1.7	45.4.1.7	The contractor shall maintain proper store account for BHEL issued materials and shall give 3 copies of monthly reconciliation statement of such account to the BHEL.
2.1.8	45.4.1.8	The contractor shall solely be responsible for the safety & quality of material after it is handed over and issued to contractor by BHEL.
2.1.9	45.4.1.9	BHEL issued materials shall not under any circumstances taken out of the project site unless otherwise permitted by BHEL.
2.1.10	45.4.1.10	All the necessary lifting tackles & equipments of suitable capacities,

		incidental to carry out this work, shall have to be arranged by the contractor at their cost. BHEL engineer reserves the right to inspect lifting tackles & equipment before allowing their use. Such approval however, shall not relieve the responsibility of the contractor to ensure safe handling of equipment taking the precautions to avoid any accident and damage to other equipment and personnel.
2.2	45.4.2	<b>ISSUE OF STRUCTURAL STEEL</b>
2.2.1	45.4.2.1	Structural steel shall be issued to the contractor free of cost on weightment basis (unit – MT).
2.2.2	45.4.2.2	Structural steel issued by BHEL shall be properly accounted for. The total quantity of structural steel required for the work will be calculated from approved drawings. The measurement for payment as well as for accounting, shall be based on the sectional weights as indicated in the following IS specifications.  IS:808-1964 - Beams, channels and angles. IS:1730-1961 - Plates, sheets and strips.
2.2.3	45.4.2.3	The structural steel issued to the contractor shall be mainly in standard length and sections as received from the supplier. However, the contractor shall be bound to accept the steel in length as available in the project stores. No claims for extra payment because of issue of non-standard length will be entertained.
2.2.4	45.4.2.4	The contractor shall satisfy himself of the quality and quantity of the materials at the time of taking delivery from BHEL stores. No claims whatsoever will be entertained by BHEL because of quality or quantity after the materials are taken by the contractor from BHEL stores.
2.2.5	45.4.2.5	The contractor shall submit to the engineer, a statement indicating estimated quantity of structural steel required at least two months in advance. In addition, the contractor shall also furnish the estimated requirement of structural steel during a month by the third week of the previous month indicating his requirement.
2.2.6	45.4.2.6	Contractor to ensure that no lamination material is taken over by them from BHEL. Fabrication wastage, if any due to above, shall not be compensated by BHEL
2.2.7	45.4.2.7	Contractor to note that all material required for their enabling job like store/ site office etc shall be arranged at their own cost.
2.3	45.4.3	<b>CONSUMPTION OF STRUCTURAL STEEL</b>
2.3.1	45.4.3.1	The theoretical consumption of various sections shall be based on approved drawings. Weights shall be calculated considering the sectional weights as per Indian Standard. No extra shall be payable to the contractor for any deviation in weights for the two different procedures adopted for issue and calculation of the theoretical consumption including rolling tolerances.
2.3.2	45.4.3.2	Actual consumption = Issue – Surplus.
2.3.3	45.4.3.3	Surplus = Untempered, unused, uncut quantity of steel returned by the contractor to BHEL store.
2.3.4	45.4.3.4	Wastage = Actual consumption – Theoretical consumption.
2.4	45.4.4	<b>WASTAGE OF STRUCTURAL STEEL</b>
2.4.1	45.4.4.1	Allowable wastage – 5 % (five percent) of theoretical consumption shall be considered. Wastage is further classified as cut pieces & scrap measured as per actual weightment basis. Invisible wastage (loss of materials due to gas cutting, straightening of edges etc) shall be limited to 0.5 % (zero point five percent) of theoretical consumption and shall be considered for reconciliation purposes only. But this invisible wastage shall be considered to be included in allowable wastage (ie five percent).
2.4.2	45.4.4.2	For material issued by BHEL to the contractor free of cost and which is not accounted for by the contractor to BHEL, then recovery for such

		material shall be done at penal rates.	
		Sl no	Description
			Basis of issue & penal recovery
		S-1	Theoretical consumption (without considering any wastage, scrap or loss) as per specification & drg.
		S-2	Wastage limited to plus five percent (+5%) of the aforesaid theoretical consumption (S-1) towards allowable wastage.
		S-3	Wastage beyond five percent (5%) of the aforesaid theoretical consumption (S-1).
2.4.3	45.4.4.3	All wastage structural steel materials shall be returned to BHEL.	
2.5	45.4.5	RETURN OF STRUCTURAL STEEL	
2.5.1	45.4.5.1	All surplus structural steel and all wastage structural steel will be taken back on weighment basis.	
2.5.2	45.4.5.2	Surplus, unused and un-tampered structural steel shall be sorted section-wise and returned separately for a place directed by BHEL engineer within the project area. Return of such materials will not be entitled to any handling and incidental charges.	
2.5.3	45.4.5.3	All wastage/ scrap (including wastage, unusable scrap) shall be returned to stores on weighment basis and a receipt obtained for material accounting purposes. Return of such material will not be entitled to any additional cost due handling and transportation and incidental charge.	
2.5.4	45.4.5.4	Scrap for shall be returned separately	
2.6	45.4.6	RECOVERY OF STRUCTURAL STEEL	
		If wastage exceeds the specified limit, recovery of excess wastage shall be made from monthly RA bill at the penal rate of Rs 60,000.00 per MT.	
3.0	Bidder shall note that all erectable materials for the job (pipes, fittings, valves, hanger & supports, permanent gaskets & hardware etc) shall be supplied by BHEL free of cost. All consumables are to be arranged by contractor with in his quoted rate as per tender specification.		
4.0	Clause no 42.4.1 of Volume-ID shall stand revised as under.  Average single man-hour rates including overtime, if any, supervision, use of tools & tackles and other site expenses and incidentals including consumables for carrying out rework/ revamping as certified by site as may arise during the course of erection testing and commissioning.  - Rs 40.00 (forty) per man-hour.		
5.0	Clause no 42.4.2 of Volume-ID shall stand revised as under.  Average single man-hour rates including overtime if any, supervision, use of tools & tackles and other site expenses and incidentals excluding consumables for carrying out rework/ revamping as certified by site as may arise during the course of erection testing and commissioning.  - Rs 25.00 (twenty five) per man-hour.		
6.0	Bidder shall refer to enclosed Quality Plant (QP) for scope of work of field coating, painting etc.		
7.0	Procedure of civil work for burried pipe shall be as per following.		
7.1	Necessary excavation for buried pipe, concrete bedding/ encasing and backfilling with earth/ sand are excluded from the scope of this tender.		
7.2	BHEL will release excavated clear front for erection of buried pipe. Dewatering with all necessary arrangement, if required after handing over of excavated front, is included in the scope of this tender.		
7.3	Finished leveling and 250 mm sand bed preparation including supply of sand as per drawing/ instruction of BHEL engineer are included in the scope of work.		

7.4	Dewatering with all necessary arrangement required after handing over of excavated front is under the scope of bidder.	
7.5	No separate payment shall be made on account of finished leveling, sand bed preparation including supply of sand, fox holes, dewatering, as detailed above. Bidder's quoted rates shall be inclusive of the same.	
8.0	It is clarified that commissioning assistance, post commissioning assistance, valve servicing, till trial run & handing over of the unit to customer, is included in scope of work.	
9.0	It is clarified that all erectable gaskets, fasteners and other hardware shall be supplied by BHEL free of cost. However, temporary gasket, if required during testing, shall have to be provided by bidder. Bidder's quoted rates shall be inclusive of this.	
10.0	It is clarified that in lieu of hydraulic test of CW piping, 100% ultrasonic test (UT) is also envisaged in line with clause no 5.22 of Volume-II.	
11.0	Bidder shall note that there will be 2-cut for 45° bend, 3-cut for 90° bend and for other bends, job shall be executed as per direction of BHEL site engineer.	
12.0	Bidder shall note that internal cleaning, internal painting , final painting (except for SS pipe) etc of CW/ LP piping system are included in scope of work.	
13.0	Scope of painting is further broadly detailed below.	
13.1	Refer clause no 4.11.1 of Volume-II: Internal coating of CW pipe end (200 mm length at each end) including supply of paints is included in the scope of this tender and to be executed as per sl no 3.1 of attached QP no 6922:QPC:02/Rev-01.	
13.2	External field painting of over ground piping, supporting structures etc including supply of paints are included in the scope of this tender and to be executed as per sl no 4.1 of attached QP no 6922:QPC:02/Rev-01 (minimum one coat of red oxide zinc phosphate primer and two coats of synthetic enamel final paint to be applied as per approved colour & shed).	
13.3	Paints shall be arranged by the bidder from approved supplier only.	
13.4	Cl no 2.10 and 7.5 of Volume-II stands deleted.	
14.0	Bidder shall note that painting of SS piping is excluded from scope.	
13.0	Bidder shall note that fabrication of reducer is included in scope of work under relevant items of Volume-III. Bidder to refer revised Volume-III.	
14.0	Bidder shall note that recordable UT machine shall be provided and used by the vendor and all records of UT shall be jointly signed & submitted to BHEL	
15.0	Bidder shall note that water, including DM water, wherever required for hydraulic test, shall be supplied by BHEL.	
16.0	Providing of crawler crane (35 T/ 40 T) is excluded from bidder's scope. Bidder shall refer to following revised Annexure-1 of Volume-ID.	
	<u>REVISED ANNEXURE-I</u>	
	<u>LIST OF T&amp;Ps TO BE PROVIDED BY CONTRACTOR</u> <u>(APPLICABLE FOR PACKAGE A &amp; B EACH)</u>	
	Bidder may note that following list is not exhaustive & given for guidance purpose. The bidder may have to deploy additional T&Ps not covered in this list at their own cost for proper execution of job.	
	SL NO	QUANTITY
16.1	1.0	HYDRA CRANE (16T/18T)
16.2	2.0	TRACTOR-TRAILOR WITH LONG BED (20T/10T)
16.3	3.0	ELECTRICAL WINCH (2T)
16.4	4.0	HYDRAULIC TEST PUMP (0-16 KG/SQCM)
16.5	5.0	HAND WINCH
16.6	6.0	WELDING GENERATOR, K-320
16.7	7.0	WELDING TRANSFORMER (300/ 450 AMP)
16.8	8.0	WELDING RECTIFIER

16.9	9.0	HYDRAULIC PIPE BENDING M/C	1 NO
16.10	10.0	CHAIN PULLEY BLOCK (5T, 3T, 2T)	AS REQUIRED
16.11	11.0	PULL LIFT (6T, 5T, 3T, 1.5T)	- DO -
16.12	12.0	HYDRAULIC JACK (20T, 10T, 5T)	- DO -
16.13	13.0	SINGLE SHEAVE SNATCH PULLEY (10T, 5T)	- DO -
16.14	14.0	D SHAKLES (20T, 10T, 5T)	- DO -
16.15	15.0	TURN BUCKLES (3T, 5T, 8T, 10T, 15T, 20T)	- DO -
16.16	16.0	TIG WELDING SET	- DO -
16.17	17.0	OXYGEN REGULATOR	- DO -
16.18	18.0	ACETYLENE REGULATOR	- DO -
16.19	19.0	CUTOGEN 5	- DO -
16.20	20.0	OXYGEN HOSE (10 MM)	- DO -
16.21	21.0	ACETYLENE HOSE (10 MM)	- DO -
16.22	22.0	ELECTRODE DRYING OVEN	- DO -
16.23	23.0	PORTABLE ELECTRODE DRYING OVEN	- DO -
16.24	24.0	COPPER WELDING CABLE (600 AMP, 400 AMP)	- DO -
16.25	25.0	ALUMINIUM CABLE (600 AMP, 400 AMP)	- DO -
16.26	26.0	THERMAL-CHALK (100 DEG C TO 800 DEG C)	- DO -
16.27	27.0	ELECTRODE BAKING OVEN	- DO -
16.28	28.0	THEODOLITE (1 SEC ACCURACY)	- DO -
16.29	29.0	SPIRIT LEVEL (12 INCH, 0.1 MM ACCURACY)	- DO -
16.30	30.0	DIAL GAUGES	- DO -
16.31	31.0	FLOOD LIGHT WITH BULB	- DO -
16.32	32.0	DRILLING M/C OF DIFFERENT SIZES	- DO -
16.33	33.0	GRINDING M/C OF DIFFERENT SIZES	- DO -
16.34	34.0	TRIP TORQUE WRENCH	- DO -
16.35	35.0	ALUMINIUM TELESCOPIC LADDER	- DO -
16.36	36.0	MANILA ROPES OF DIFFERENT SIZES	- DO -
16.37	37.0	STEEL WIRE ROPES OF DIFFERENT SIZES	- DO -
16.38	38.0	DYE PENETRANT TEST KIT	- DO -
16.39	39.0	RT/ RECORDABLE UT ARRANGEMENT	- DO -
16.40	40.0	DEWATERING PUMPS (10 HP)	4 NOS
16.41	41.0	DEWATERING PUMP (5 HP)	2 NOS
16.42	42.0	DEWATERING PUMP (2 HP)	2 NOS
16.43	43.0	DEWATERING PUMP (1 HP)	4 NOS
16.44	44.0	AIR COMPRESSOR	1 NO
16.45	45.0	DG SET (FOR WELDING IN AREAS IN CASE OF NON AVAILABILITY OF ELECTRCIAL POWER)	1 NO
17.0	Bidder shall submit price offer as per attached revised Volume-III.		
18.0	Due date of submission of offer is extended to 26-05-2008 (15-00 hrs).		
19.0	All other terms & conditions shall remain unchanged.		

Sl No	COMPONENT & OPERATION	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		REMARKS	
								M	B		
3.1	Coating (Internal)										
(a)	PRIMER	Epoxy Resin based Zinc Rich Primer.	Major	Visual & Elcometer Measurement	100%	Minimum DFT:50 microns		HC	P	Y	* For approved paints, Ref page 4 E spots identification By BHEL
(b)	OVER COAT	Coal tar epoxy finish Paint	Major	-do-	100%	2 coats, DFT:100 microns min Per coat, Total DFT: Primer + Over coat =250 microns min.		HC	P	W	
(c)	Inspection of Coating	Dry film thickness	Major	-do-	100% at 5 spots 5 min	250 microns min.		HC	P	W	
		Holiday detection	Major	Visual	100%	No Holiday		HC	P	W	

*[Handwritten signature]*

1	Approved	3	Approved except noted rework/revision required
2	Approved except as noted rework/revision not required	4	Not Approved

D V C Letter ref :  
 DAMODAR VALLEY CORPORATION  
 Electricity Department  
 The equipment is for Spcc the contractor is responsible for correct details and fittings of parts which are specified.  
 Date 12.10.07

*[Handwritten signature]*

SL No	COMPONENT & OPERATION	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		REMARKS
								M	B	
4.0	<u>Coating (External) - Over ground piping / Supply</u>									
4.1	Surface preparation of out side surface	Power tool cleaning / Rotary wire brush	Major	Visual	100%	Free from all dirt, oil, grease, rust, scale, weld slag, fluxdeposit, foreign matters etc.		HC	P	V
	Primer	Red oxide Zinc Phosphate primer to IS 12744	Major	Visual & Elcometer Measurement	100%	Minimum DFT: 50 microns		HC	P	W
	Finish paint	Synthetic enamel IS2932 smoke grey / Shade No.692 As per IS: 5 <i>* approved color std.</i>	Major	-do-	100%	Minimum DFT: 75 microns		HC	P	W
4.2	<u>Coating (External) - Buried Piping</u>									
	No painting required for Pipes buried (under ground) - as Coal Tar Tape Wrapping shall be carried-out at site. Surface shall be cleaned with wire brush / power tool									
5.0	Marking & Identification	Work order NO, Du No, Length Makers Identification	Major	Visual	100%	Each pipe punched & stenciled As per P.O		HC	P	V
<u>APPROVED PAINT SUPPLIERS</u>										
(1) BERGER PAINTS (2) SHALIMAR PAINTS (3) ASIAN PAINTS, (4) JENSON & NICHOLSON, (5) GDS-CARBOENE										

1	Approved	3	Approved except as noted resubmission required
2	Approved except as noted resubmission not required	4	Not Approved

D. V. C. Letter ref. :  
 DAMODAR VALLEY CORPORATION  
 Electrically Department  
 This approved is for general arrangement and does not relieve the contractor of responsibility for conformity to specification and correct details and fitting of parts when assembled.  
 Engineer: [Signature]  
 Date: 12.12.07

[Signature]

<b>TENDER NO</b>	<b>PSER:SCT:MJA-M869:08</b>	
<b>VOLUME</b>	<b>III</b>	<b>PRICE SCHEDULE (PACKAGE-A), REV-1</b>

<b>JOB</b>	<b>ERECTION, TESTING, COMMISSIONING ETC OF</b>  <b>(1) PACKAGE-A – CW PIPING, ACW PIPING &amp; DM WATER PIPING SYSTEMS OF UNIT # 1 AND VARIOUS BALANCE PIPING SYSTEMS (INSTRUMENT AIR, SERVICE AIR, DRINKING WATER, SERVICE WATER ETC) OF UNIT # 1 &amp; 2</b>  <b>AND</b>  <b>(2) PACKAGE-B - CW PIPING, ACW PIPING &amp; DM WATER PIPING SYSTEMS OF UNIT # 2</b>
<b>CAPACITY</b>	<b>2 x 500 MW UNIT # 1 &amp; 2</b>
<b>PROJECT</b>	<b>MEJIA-B THERMAL POWER STATION, WEST BENGAL</b>

**BHARAT HEAVY ELECTRICALS LIMITED**  
**(A Govt Of India Undertaking)**  
**POWER SECTOR – EASTERN REGION**  
**PLOT – DJ 9/1, SECTOR II, SALT LAKE**  
**KOLKATA – 700 091**

**VOLUME-III, PACKAGE-A  
PRICE SCHEDULE, REV-1**

**Erection, testing, commissioning etc of Package-A of CW piping, ACW piping & DM water piping systems of unit # 1 and various balance piping systems (instrument air, service air, drinking water, service water etc) of unit # 1 & 2 for 2x500 MW unit # 1 & 2 at Mejia-B TPS, West Bengal.**

**TENDER NO - PSER:SCT:MJA-M869:08**

**PREAMBLE**

1.0	This preamble forms part of tender document and schedule of items. The tenderer should read this preamble carefully in rates for various items. Clauses under this preamble shall be read in conjunction with other volumes of tender as applicable.
2.0	The work shall be carried out strictly as per specifications, description of the items in these schedule and/ or engineer's instructions.
3.0	Items of work provided in this schedule but not covered in this specification shall be executed strictly as per instruction of the engineer.
4.0	Unless specifically mentioned otherwise in the tender document, the tenderer shall quote for the finished items and shall provide for the complete cost towards power, fuel, tools, tackles, equipment, constructional plants, temporary works, labour, dismantling of all temporary piping, structures, valves, pumps, tanks & other misc. equipment, strengthening of roads/culverts/bridges etc. including arranging all clearances etc. required for carrying out different activities & tests, materials, levies, taxes, transport, layout, repairs, rectification, maintenance till handing over, supervisions, colonies, shops, establishments, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary to complete the work according to the tender document and this schedule.
5.0	The quantities of the various items mentioned in this schedule of items are approximate, based on very preliminary information and may vary to any extent or be deleted altogether. The quoted rates of each item will remain firm throughout the period of execution including extension, for reasons whatsoever, as long as variation in the total value of work executed under any part of this contract including extra items, if any but excluding any price variation remains within thirty percent ( $\pm 30\%$ ) of the contract price.
6.0	The rates quoted shall be inclusive of cleaning of site of any vegetation, dressing and leveling etc. including fixing of grid pillars, benchmarks etc. required for commencement of site activities. No separate payment will be made towards the same.
7.0	Rates shall be quoted in figures and in words in clear legible writing. No overwriting is allowed. All scoring and cancellations should be countersigned and in case of illegibility the interpretation of engineer shall be final. All entries shall be in English language.
8.0	All works item wise shall be measured upon completion and paid for at the rates quoted and accepted.
9.0	The tender shall be deemed to have studied the specifications, details of work to be done within the time schedule attached and to have acquainted himself of the conditions prevailing at site.
10.0	Engineer's decision shall be final and binding on the contractor regarding clarification of items in the schedule with respect to the other sections/volumes of the contract.

**VOLUME-III, PACKAGE-A  
PRICE SCHEDULE, REV-1**

**Erection, testing, commissioning etc of Package-A of CW piping, ACW piping & DM water piping systems of unit # 1 and various balance piping systems (instrument air, service air, drinking water, service water etc) of unit # 1 & 2 for 2x500 MW unit # 1 & 2 at Mejia-B TPS, West Bengal.**

**TENDER NO - PSER:SCT:MJA-M869:08.**

<b>SL NO</b>	<b>DESCRIPTION</b>	<b>QUANTITY</b>	<b>RATE (Rs)</b>	<b>AMOUNT (Rs)</b>
1.0	Handling from storage, erection, welding, non-destructive testing, inspection, internal cleaning & painting (as per scope), final painting, testing & commissioning of circulation water piping system ( <b>CW/ ACW Carbon Steel piping (700 NB-3200 NB)</b> ) and associated material (covering fittings and valves etc) including preparation of sand bed for buried pipe as applicable as per tender. Payment shall be released as per following. (i) Erection - 35%; (ii) Alignment - 5%; (iii) Welding - 38%; (iv) NDT - 10%; (v) Hydraulic test/UT - 5%; (vi) Painting completion - 5% and (vii) As-built drawing submission - 2%.	2,500 MT		
2.0	Handling from storage, erection, welding, non-destructive testing, inspection, internal cleaning & painting (as per scope), final painting, testing & commissioning of various LP piping system (CW, ACW, DMCW, lub oil etc - for dia <b>below 700 NB Carbon Steel piping</b> ) and associated material (including fitting and valves etc) as per tender. Payment shall be released as per following. (i) Erection - 35%; (ii) Alignment - 5%; (iii) Welding - 38%; (iv) NDT - 10%; (v) Hydraulic test/ UT/leakage test - 5%; (vi) Painting completion - 5% and (vii) As-built drawing submission - 2%.	252 MT		
3.0	Handling from storage, erection, welding, non-destructive testing, inspection, internal cleaning & painting (as per scope), final painting, testing & commissioning of <b>Carbon Steel drinking water (up to 150 NB) and service water system (up to 350 NB)</b> piping system and associated material (including fitting and valves etc) as per tender. Payment shall be released as per following. (i) Erection - 35%; (ii) Alignment - 5%; (iii) Welding - 38%; (iv) NDT - 10%; (v) Hydraulic test/leakage test - 5%; (vi) Painting completion - 5% and (vii) As-built drawing submission - 2%.	162 MT		
4.0	Handling from storage, erection, welding, non-destructive testing, inspection, internal cleaning (as per scope), testing & commissioning of <b>SS (stainless steel) LP piping system (condensate transfer/ DMCW etc) - for dia up to 350 NB</b> and associated material (including fitting and valves etc) as per tender. Payment shall be released as per following. (i) Erection - 35%; (ii) Alignment - 5%; (iii) Welding - 40%; (iv) NDT - 10%; (v) Hydraulic test/ leakage test - 8%; (vi) As-built drawing submission - 2%.	25 MT		
5.0	Handling from storage, erection, welding/ jointing, non-destructive testing, inspection, internal cleaning & painting (as per scope), final painting, testing & commissioning of <b>instrument air and service air system (up to 150 NB galvanised &amp; threaded)</b> and associated material (including fitting and valves etc) as per tender. Payment shall be released as per following. (i) Erection - 35%; (ii) Alignment - 5%; (iii) Jointing - 38%; (iv) NDT - 10%; (v) Pnuematic test - 5%; (vi) Painting completion - 5% and (vii) As-built drawing submission - 2%.	125 MT		

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
6.0	Handling from storage, fabrication, erection, welding, inspection, fixing/ embedding, painting etc of hangers, supports & structures, misc supporting material etc all complete. Payment shall be released as per following. (i) Erection - 60%; (ii) Welding - 35%; (iii) Painting completion - 3% and (iv) As-built drawing submission - 2%.	100 MT		
7.0	Handling from storage, erection, welding, inspection, fixing/ embedding, etc of RE joints, expansion bellows, annubars & flow elements all complete. Payment shall be released as per following. (i) Erection - 60%; (ii) Welding - 38% and (iii) As-built drawing submission - 2%.	30 MT		
8.0	Fabrication of mitre bends, reducer, tees of sizes NB 250 and above for various carbon steel LP piping system (other than CW piping system) etc from straight pipes. Straight pipes will be supplied by BHEL free of cost. Payment shall be released as per following. (i) Fabrication - 95%; (ii) Erection - 5%.	100 MT		
9.0	Wrapping of burried pipe covering supply and application of coal tar based plasticised pre-fabricated tape of approved brand (Pypkote/ Rustech/ any other BHEL/ customer approved equivalent) as detailed in tender conforming to IS 15337:2003. Wrapping material to be laid in 2 layers having minimum thickness of 2mm with 12-13 mm overlapping for all pipe sizes including bends etc (Qty indicated is surface area of buried pipe in sq mtr). Payment shall be released as per following. (i) Supply - 80% and (ii) Application - 20%.	12000 SQM		
<b>TOTAL</b>				

<b>TENDER NO</b>	<b>PSER:SCT:MJA-M869:08</b>	
<b>VOLUME</b>	<b>III</b>	<b>PRICE SCHEDULE (PACKAGE-B), REV-1</b>

<b>JOB</b>	<b>ERECTION, TESTING, COMMISSIONING ETC OF</b>  <b>(1) PACKAGE-A – CW PIPING, ACW PIPING &amp; DM WATER PIPING SYSTEMS OF UNIT # 1 AND VARIOUS BALANCE PIPING SYSTEMS (INSTRUMENT AIR, SERVICE AIR, DRINKING WATER, SERVICE WATER ETC) OF UNIT # 1 &amp; 2</b>  <b>AND</b>  <b>(2) PACKAGE-B - CW PIPING, ACW PIPING &amp; DM WATER PIPING SYSTEMS OF UNIT # 2</b>
<b>CAPACITY</b>	<b>2 x 500 MW UNIT # 1 &amp; 2</b>
<b>PROJECT</b>	<b>MEJIA-B THERMAL POWER STATION, WEST BENGAL</b>

**BHARAT HEAVY ELECTRICALS LIMITED**  
**(A Govt Of India Undertaking)**  
**POWER SECTOR – EASTERN REGION**  
**PLOT – DJ 9/1, SECTOR II, SALT LAKE**  
**KOLKATA – 700 091**

<b>VOLUME-III, PACKAGE-B PRICE SCHEDULE, REV-1</b>	
<b>Erection, testing, commissioning etc of Package-B of CW piping, ACW piping &amp; DM water piping systems of unit # 2 for 2x500 MW unit # 1 &amp; 2 at Mejia-B TPS, West Bengal.</b>	
<b>TENDER NO - PSER:SCT:MJA-M869:08</b>	
<b>PREAMBLE</b>	
1.0	This preamble forms part of tender document and schedule of items. The tenderer should read this preamble carefully in rates for various items. Clauses under this preamble shall be read in conjunction with other volumes of tender as applicable.
2.0	The work shall be carried out strictly as per specifications, description of the items in these schedule and / or engineer's instructions.
3.0	Items of work provided in this schedule but not covered in this specification shall be executed strictly as per instruction of the engineer.
4.0	Unless specifically mentioned otherwise in the tender document, the tenderer shall quote for the finished items and shall provide for the complete cost towards power, fuel, tools, tackles, equipment, constructional plants, temporary works, labour, dismantling of all temporary piping, structures, valves, pumps, tanks & other misc. equipment, strengthening of roads/culverts/bridges etc. including arranging all clearances etc. required for carrying out different activities & tests, materials, levies, taxes, transport, layout, repairs, rectification, maintenance till handing over, supervisions, colonies, shops, establishments, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary to complete the work according to the tender document and this schedule.
5.0	The quantities of the various items mentioned in this schedule of items are approximate, based on very preliminary information and may vary to any extent or be deleted altogether. The quoted rates of each item will remain firm throughout the period of execution including extension, for reasons whatsoever, as long as variation in the total value of work executed under any part of this contract including extra items, if any but excluding any price variation remains within thirty percent ( $\pm 30\%$ ) of the contract price.
6.0	The rates quoted shall be inclusive of cleaning of site of any vegetation, dressing and leveling etc. including fixing of grid pillars, benchmarks etc. required for commencement of site activities. No separate payment will be made towards the same.
7.0	Rates shall be quoted in figures and in words in clear legible writing. No overwriting is allowed. All scoring and cancellations should be countersigned and in case of illegibility the interpretation of engineer shall be final. All entries shall be in English language.
8.0	All works item wise shall be measured upon completion and paid for at the rates quoted and accepted.
9.0	The tender shall be deemed to have studied the specifications, details of work to be done within the time schedule attached and to have acquainted himself of the conditions prevailing at site.
10.0	Engineer's decision shall be final and binding on the contractor regarding clarification of items in the schedule with respect to the other sections/volumes of the contract.

<b>VOLUME-III, PACKAGE-B PRICE SCHEDULE, REV-1</b>				
<b>Erection, testing, commissioning etc of Package-B of CW piping, ACW piping &amp; DM water piping systems of unit # 2 for 2x500 MW unit # 1 &amp; 2 at Mejia-B TPS, West Bengal.</b>				
<b>TENDER NO - PSER:SCT:MJA-M869:08.</b>				
<b>SL NO</b>	<b>DESCRIPTION</b>	<b>QUANTITY</b>	<b>RATE (Rs)</b>	<b>AMOUNT (Rs)</b>
1.0	Handling from storage, erection, welding, non-destructive testing, inspection, internal cleaning & painting (as per scope), final painting, testing & commissioning of circulation water piping system ( <b>CW/ ACW Carbon Steel piping (700 NB-3200 NB)</b> ) and associated material (covering fittings and valves etc) including preparation of send bed for buried pipe as applicable as per tender. Payment shall be released as per following. (i) Erection - 35%; (ii) Alignment - 5%; (iii) Welding - 38%; (iv) NDT - 10%; (v) Hydraulic test/UT - 5%; (vi) Painting completion - 5% and (vii) As-built drawing submission - 2%.	2200	MT	
2.0	Handling from storage, erection, welding, non-destructive testing, inspection, internal cleaning & painting (as per scope), final painting, testing & commissioning of various LP piping system (CW, ACW, DMCW, lub oil etc - for dia <b>below 700 NB Carbon Steel Piping</b> ) and associated material (including fitting and valves etc) as per tender. Payment shall be released as per following. (i) Erection - 35%; (ii) Alignment - 5%; (iii) Welding - 38%; (iv) NDT - 10%; (v) Hydraulic test/UT/ leakage test - 5%; (vi) Painting completion 5% and (vii) As-built drawing submission - 2%.	100	MT	
3.0	Handling from storage, erection, welding, non-destructive testing, inspection, internal cleaning (as per scope), testing & commissioning of <b>SS LP piping system (condensate transfer/ DMCW etc - for dia up to 250 NB)</b> and associated material (including fitting and valves etc) as given in the tender. Payment shall be released as per following. (i) Erection - 35%; (ii) Alignment - 5%; (iii) Welding - 40%; (iv) NDT - 10%; (v) Hydraulic test/ leakage test - 8%; (vi) As-built drawing submission - 2%.	15	MT	
4.0	Handling from storage, fabrication, erection, welding, inspection, fixing/ embedding, painting etc of hangers, supports & structures, misc supporting material etc all complete. Payment shall be released as per following. (i) Erection - 60%; (ii) Welding - 35%; (iii) Painting completion - 3%; (iv) As-built drawing submission - 2%.	50	MT	
5.0	Handling from storage, erection, welding, inspection, fixing/ embedding, etc of RE joints, expansion bellows, annubars & flow elements all complete. Payment shall be released as per following. (i) Erection - 60%; (ii) Welding - 38% and (iii) As-built drawing submission - 2%.	10	MT	
6.0	Fabrication of mitre bends, reducer, tees of sizes NB 250 and above for various Carbon Steel LP piping system (other than CW piping system) etc from straight pipes. Straight pipes will be supplied by BHEL free of cost. Payment shall be released as per following. (i) Fabrication - 95% and (ii) Erection - 5%.	50	MT	

SL NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
7.0	Wrapping of buried pipe covering supply and application of coal tar based plasticised pre-fabricated tape of approved brand (Pypkote/ Rustech/ any other BHEL/DVC approved equivalent) as detailed in tender conforming to IS 15337: 2003. Wrapping material to be laid in 2 layers having minimum thickness of 2mm with 12-13 mm overlapping for all pipe sizes including bends etc (Qty indicated is surface area of buried pipe in sq mtr). Payment shall be released as per following. (i) Supply - 80% and (ii) Application - 20%.	12000	SQM		
<b>TOTAL</b>					

**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 etc of (1) Package-A – CW piping, ACW piping & DM water piping systems of unit # 1 and various balance piping systems (instrument air, service air, drinking water, service water etc) of unit # 1 & 2 and (2) Package-B - CW piping, ACW piping & DM water piping systems of unit # 2 for 2x500 MW unit # 1 & 2 at Mejia-B Thermal Power Station, West Bengal.	
Ref	01	Tender no PSER:SCT:MJA-M869:08.
	02	BHEL's NIT, vide reference no PSER:SCT:MJA-M869:1285, dated 28-04-08.
	03	BHEL's TCN-01, vide reference no PSER:SCT:MJA-M869:TCN-01, dated 08-05-08.
	04	BHEL's TCN-02, vide reference no PSER:SCT:MJA-M869:TCN-02, dated 16-05-08.
	05	Other references (if any).

Dear Sirs,

With reference to above, this is to confirm that as per tender conditions, we have visited site before submission of our offer and noted the job content & site conditions etc. We also confirm that we have not changed/ modified the tender documents as appeared in the website/ 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)

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

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

फैक्स/Fax : (033) 23211960

फोन/Phone : बोर्ड/EPABX : 23211798/ 1691