



An ISO 9001  
Company

# Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

MATERIALS MANAGEMENT

<b>TITLE:</b>  <b>RETROFITTING OF UTA 160P HORIZONTAL BORING MACHINE</b>	Phone: +91 431 2577645/2577331 Fax : +91 431 252 07 19 Email : <a href="mailto:rba@bheltry.co.in">rba@bheltry.co.in</a> srchandran@bheltry.co.in Web : <a href="http://www.bhel.com">www.bhel.com</a> , <a href="http://tenders.gov.in">http://tenders.gov.in</a>
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	<b>Reference Number:</b> <b>Enquiry 2681000005</b>	<b>Enquiry Date:</b> <b>10.05.10</b>	<b>Due date for submission of quotation: 02.06.10</b>
You are requested to quote the Enquiry number date and due date in all your correspondences. This is only a request for quotation and not an order			

BHEL requires suppliers for Retrofitting of **UTA 160P HORIZONTAL BORING MACHINE** details as per the technical specification (Annexure A& B).

BHEL commercial terms & conditions with Technical specifications can be downloaded from BHEL web site <a href="http://www.bhel.com">http://www.bhel.com</a> or from the Government tender website <a href="http://tenders.gov.in">http://tenders.gov.in</a> (public sector units) Bharath Heavy Electricals Limited) under enquiry reference "2680900045"	
Tenders should reach us before 14:00 hours on the due date Technical bid will be opened at 14:30 hours on the due date Tenders would be opened in presence of the tenderers who have submitted their offers and who may like to be present.	Yours faithfully, <b>For Bharath Heavy Electricals Limited</b>  Manager / Capital Purchase/ Manufacturing



# BHARAT HEAVY ELECTRICALS LIMITED

**ENQUIRY**  
(INDIGENOUS)

( A Government of India Undertaking )  
HIGH PRESSURE BOILER PLANT  
PURCHASE DEPARTMENT - FOSSIL BOILERS  
THIRUCHIRAPALLI - 620014  
TAMILNADU (INDIA)

PHONE : 2577645  
GRAMS : BHARATELEC  
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Web:

Page  
1/2

429-002/A

	Enquiry No	Enquiry Date	Due Date for Quotation
RETROFITTING OF UTA 160P HORIZONTAL BORING MACHINE	2681000005 - 79	10.05.2010	02.06.2010
Please quote Enquiry No, Date and due date in all correspondences. This is only a request for quotation and not an order			

Item	Description	Unit	Quantity	Delivery Quantity	Schedule Date
10	CNC SYSTEM AND A.C DRIVE FOR X,Y,W,Z,U AND SPINDLE FOR UTA-160P HORIZONTAL BORING MACHINE AT TPCS 94 BLDG. DETAILE SCOPE OF SUPPLY AND QUALIFYING CRITERIA ARE AVAILABLE IN ANNEXURE-B & ANNEXURE-A New system and A.C.drive for UTA-160P	NO	1.000	1.00	30.07.10

## General Note:

- 1.,,PLEASE SUBMIT YOUR DETAILED OFFER IN THREE PART BID SYSTEM  
ie.PART-1, EMD AMOUNT ONE LAKH FIFTY THOUSAND IN ONE SEPARATE SEALED COVER.PART-II, TECHNICAL AND COMMERCIAL (UNPRICED BID) IN ANOTHER SEALED COVER.PART-III,PRICED OFFER IN ANOTHER SEPARATE SEALED COVER. NON SUBMISSION OF EMD AMOUNT WILL LEAD TO REJECTION OF SUBMITTED OFFER..
2. POINT-TO-POINT CONFIRMATION TO BHEL'S SPECIFICATION AND COMMERCIAL TERMS & CONDITIONS IS PROVIDED IN ANNEXURE-I AND WITHOUT FILLING ANNEXURE-II(indicate all taxes & duties, Packing & Forwarding charge, freight & insurance charges)& ANNEXURE-III (WITHOUT PRICE) SUBMITTED ALONG WITH PART-1 ie. TECHNO-COMMERCIAL BID, ELSE YOUR OFFER IS LIABLE FOR REJECTION.
- 3.PAYMENT TERMS WILL BE STRICLY FOLLOWED AS PER OUR PAYMENT TERMS INDICATED IN THE COMMERCIAL TERMS AND CONDITIONS.OTHER PAYMENT TERMS ARE NOT ACCEPTABLE.
4. OFFERS a) DEMANDING ADVANCE PAYMENT, b) DEMANDING EXEMPTION OF EMD AMOUNT (Rs.1,50,000/-) & PBG c)NON-ACCEPTANCE FOR PARTICIPATING IN REVERSE AUCTION d)WITH OFFER VALIDITY OF LESS THAN 4 MONTHS WILL LEAD TO REJECTION OF SUBMITTED OFFER.
- 5.ANY CLARIFICATIONS OR PRE-BID MEETING MAY BE SOUGHT BY BIDDER FROM THE UNDERSIGNED WITH DUE WRITTEN REQUESTS AT LEAST TEN DAYS PRIOR TO TENDER DUE DATE.
- 6.IF THE DUE DATE OF TENDER OPENING HAPPENS TO BE A HOLIDAY/STRIKE,

The offers should reach us before the time of opening of tenders.  
The offers will be opened at 14:30 hours on the due date in the presence of the tenderers who may like to be present.  
Late tenders are liable to be rejected.

Yours faithfully,  
For BHARAT HEAVY ELECTRICALS LIMITED

**R. BARNATHAN**  
Managing Director  
Bharat Heavy Electricals Ltd.,  
Tiruchirappalli - 620 014



# BHARAT HEAVY ELECTRICALS LIMITED

( A Government of India Undertaking )  
HIGH PRESSURE BOILER PLANT  
PURCHASE DEPARTMENT - FOSSIL BOILERS  
THIRUCHIRAPALLI - 620014  
TAMILNADU (INDIA)

PHONE : 2577645  
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Page  
2/2

2681000005 / 10.05.2010

THOSE TENDERS WILL BE OPENED ON NEXT WORKING DAYS.

## GENERAL NOTE FOR THE ENQ ON REVERSE AUCTION

1. BHEL RESERVES THE RIGHT TO GO FOR A REVERSE AUCTION (RA) INSTEAD OF OPENING THE SUBMITTED SEALED BID, WHICH WILL BE DECIDED AFTER TECHNICAL EVALUATION. INFORMATION AND GENERAL TERMS AND CONDITIONS COVERING RA ARE GIVEN IN ANNEXURE-I.

2. REVERSE AUCTION IS DONE THROUGH INTERNET/E-MAIL. HENCE VENDORS SHALL MAKE THEMSELVES EQUIPPED WITH EMAIL, FAX AND INTERNET FACILITIES.

3. IN CASE OF GOING FOR REVERSE AUCTION VENDORS WILL BE SUITABLY INFORMED ABOUT THE WORKING PROCEDURES OF REVERSE AUCTION AND BHEL WILL PROVIDE ALL THE RELEVANT DETAILS TO ENABLE THE VENDOR TO PARTICIPATE.

### List of Attachments:

1. Annexure-A Qualifying Criteria- one page
2. Annexure-B Scope of supply-4 pages
3. Annexure-1 Commercial terms and conditions-three pages
6. Annexure-II Commercial confirmations-Two pages
7. Annexure-III Model Price bid format
8. Annexure-IV EMD/SD Details-one Page

### Enclosures:

"LD clause has to be confirmed without fail."

"Payment to vendors will be made only thro E-Payment mode"

R. BASHEER AHAMED  
Manager / Purchase / MFG  
Bharat Heavy Electricals Ltd.,  
Tiruchirappalli - 620 014.

The offers should reach us before the time of opening of tenders.  
The offers will be opened at 14:30 hours on the due date in the presence of the tenderers who may like to be present  
Late tenders are liable to be rejected.

Yours faithfully,  
For BHARAT HEAVY ELECTRICALS LIMITED

MANAGER / PURCHASE  
(FOSSIL BOILERS)  
Yours faithfully,

SECTION – I: QUALIFYING CRITERIA		
S. No.	PARTICULARS	Vendor's Response
1.0	Only those vendors, who have carried out (supplied and commissioned) similar type of retrofitting/up gradation work with CNC system, axis & spindle motor and drive for at least three machine in the past ten years and such machine should be working satisfactorily for a minimum period of one year after up gradation/ retrofitting of the system, as on the date of opening of this Tender are eligible to quote. (However, if such machine is already supplied to BHEL, then that machine should be working satisfactorily for a minimum period of six months after commissioning, as on the date of opening of this Tender.)	
	<b>The vendor should submit following details which are necessary for qualifying their offer.</b>	
1.1	Name and postal address of the customer or company where similar up-gradation/ retrofitting for CNC machine with multi axis & spindle has been done.	
1.2	Name and designation of the contact person of the customer.	
1.3	Phone, FAX no and email address of the contact person of the customer.	
1.4	Month and Year of up-gradation/ retrofitting	
1.5	Details of CNC system, servo and spindle motors and drives.	
1.6	Along with the Technical offer, the Vendor should submit one Performance certificate from the customer for the satisfactory performance of the CNC system, drive and motors supplied to them.	
1.7	BHEL reserves the right to verify the information provided by vendor. In case the information provided by vendor is found to be false/ incorrect, the offer shall be rejected.	
2.0	DELIVERY - The bidder shall quote the best possible delivery. However the delivery shall not exceed 8 months with an additional grace period of 2 months. The additional grace period will attract a penalty which is explained in the commercial terms of the enquiry. The delivery period shall be reckoned from date of purchase order to dispatch from the vendor works.	
<b>SECTION – II : The BIDDER to note:</b>		
S. No.	PARTICULARS	Vendor's Response
3.0	The BIDDER / VENDOR shall submit the offer in TWO PARTS. 1. Technical Offer [with PART A & PART B] and Commercial offer. 2. Price Bid.	
4.0	The Technical Offer shall contain a comparative statement of Technical Specifications demanded by BHEL and Offer Details submitted by the Bidder, against each clause. A just 'CONFIRMED' or 'COMPLIED' or 'YES' or 'NO-DEVIATION' or similar words in the technical comparative statement may lead to disqualification of the Technical Offer.	
5.0	The Technical Offer shall be supported by product Catalogues & Data Sheets and also technical details of Bought-Out-Items with copies of Product Catalogue to the extent possible.	
6.0	The Commercial Offer (given with the Technical Offer) shall contain the Scope of Supply and the Un-Priced Part of the Price-Bid, for confirmation.	

## TECHNICAL SPECIFICATION

S. No.	PARTICULARS	Vendor's Response
	The existing UTA 160P horizontal boring machine is provided with SINUMERIC 3M CNC system and & all the axis are provided with DC servomotors of GETTYS make with AEG make DC drives. A suitable offer is required for converting the obsolete DC servomotors & drives with AC servomotors and AC digital drives for all the 6 axes, and spindle and a suitable 6 axes CNC - PLC system with spindle to be provided.	
<b>1.0</b>	<b>TECHNICAL SPECIFICATIONS OF THE EXISTING UTA160P - HORIZONTAL BORING MACHINE, MOTORS, SYSTEM AND DRIVES:</b>	
1.1	SYSTEM: SINUMERIC #3M	
1.2	SPINDLE DRIVE: 6RA SIEMENS MICROPROCESSOR BASED DRIVE TYPE-6RA 2775-6DV 57, 400V, 190 A, 3 Phase.  MOTOR: SIEMENS TYPE- 1GF 5184-0WC 41 RPM: 50-3000 rpm34 KW Tacho- TYPE # 1HU 1050, 20mv/PER RPM	
1.3	X - AXIS DRIVE: AEG MAKE TYPE- A111-Q 9138 J K4 INPUT VOLTAGE-2X140 V AC DC SERVO AMPLIFIER  MOTOR- GETTYS MAKE TYPE- M138-J6CB 900F (built in break) TORQUE-37.8Nm, 2000 rpm.	
1.4	Z - AXIS : DRIVE- AEG MAKE TYPE- A111-Q 9138 J K4 INPUT VOLTAGE-2X140 V AC DC SERVO AMPLIFIER  MOTOR- GETTYS MAKE TYPE- M138-J6CB 900F (built in break) TORQUE-37.8Nm, 2000 rpm.	
1.5	Y - AXIS DRIVE- AEG MAKE TYPE- A111-Q 9138 J K4 INPUT VOLTAGE-2X140 V AC DC SERVO AMPLIFIER  MOTOR- GEETYS MAKE TYPE- M138 J6OB- 900F TORQUE-37.8Nm, 2000rpm	
1.6	W - AXIS DRIVE- AEG MAKE TYPE- A111-Q 9138 J K4 INPUT VOLTAGE-2X140 V AC DC SERVO AMPLIFIER  MOTOR- GEETYS MAKE TYPE- M138 J6OB- 900F TORQUE-37.8Nm, 2000rpm,	
1.7	B - AXIS DRIVE- AEG MAKE TYPE- A111-Q 9138 J K4 INPUT VOLTAGE-2X140 V AC DC SERVO AMPLIFIER  MOTOR- GEETYS MAKE TYPE- M138 J6 OB- 900F TORQUE-37.8Nm, 2000rpm	

1.8	<p>U - AXIS DRIVE  Make : VICKERS AC/DC  INPUT VOLTAGE-3 PHASE 110 VOLT  AC/DC CONVERTOR  SD/DC 140/20/140</p> <p>MOTOR- SIMENS MAKE PERM MAGNET MOTOR  TYPE- 1HU 5042 OAF01 1EC 50  166 VOLTS 4.7 AMPS 3000 RPM/MIN  0.656 KW, S3-40%, INSUL CLASS F  TORQUE-1.75Nm</p>	
1.9	<p>HYDRAULIC PUMP MOTOR  Capacity: 15 HP,1500 RPM, 415V, 3 Ph  Full load current: 21.1A</p>	
1.10	<p>RE-CIRCULATION MOTOR FOR OIL COOLER  Capacity: 1 HP, 1500 RPM, 415V, 3 Ph  Full load current: 2A</p>	
1.11	<p>COOLANT PUMP MOTOR  Capacity: 1 HP, 1500 RPM, 415V.,2.1 A,3 Ph</p>	
1.12	<p>CENTRAL LUBRICATION PUMP MOTOR  Capacity: 180W, 1500 RPM, 415 V, 3 Ph  Full load current: 0.7A</p>	
1.13	<p>SPINDLE LUBRICATION PUMP MOTOR  Capacity: 250W, 1500 RPM, 415 V, 3 Ph,  Full load current: 0.7A</p>	
1.14	<p>AIR BLAST MOTOR FOR OIL COOLER  Capacity: 150W, 415V, 3 Ph, 1500 RPM,  Full load current: 0.69A</p>	
1.15.0	FEED BACK ELEMENTS	
1.15.1	<p>X # axis  Linear Scale  Make: HIDEINHAIN  Model No. LS 107,  Specification: GRATING PITCH, 20 Microns</p>	
1.15.2	<p>Y # axis  Linear scale  Make: HIDEINHAIN  Model No. LS 107,  Specification: GRATING PITCH, 20 Microns</p>	
1.15.3	<p>Z # axis  Encoder  Make: HIDEINHAIN  Model No. ROD 426, 2500 PPR</p>	
1.15.4	<p>W axis  Encoder  Make: HIDEINHAIN  Model No. ROD 426, 2500 PPR</p>	
1.15.5	<p>U axis  Encoder  Make: HIDEINHAIN  Model No. ROD 426, 500 PPR</p>	
1.15.6	<p>B axis  No Encoder,Proximity switches were used for positioning and presently they are not working.</p>	
<b>2.0</b>	<b>SCOPE OF MATERIAL SUPPLY:</b>	
2.1	Replacing the existing DC motors & DC drives in X, Y, Z, U, B, and W axes with suitable AC Motors & AC digital drives of SIEMENS / FANUC to suit the existing machine system.	
2.2	Replacing of existing DC motor & DC drive in Spindle with suitable AC motor & AC digital drive of SIEMENS / FANUC to suit the existing system.	

2.3	<p>Feedback elements for different axes &amp; spindle as given below:</p> <ul style="list-style-type: none"> <li>a) Spindle Inbuilt Encoder</li> <li>b) X # axis Inbuilt &amp; External encoder</li> <li>c) Z # axis Inbuilt &amp; External encoder</li> <li>d) W # axis Inbuilt &amp; External encoder</li> <li>e) B # axis (A suitable feedback device to incorporate indexing of the said axis - vendor to specify in the offer).</li> </ul> <p>The existing feedback elements in the above mentioned axes are to be replaced with new HEIDENHEIN / SIEMENS make ones. However for Y- axis, the existing linear scale with scanner head shall be used.</p>	
2.4	Inbuilt brake for X , Z # axes and Inbuilt / External fail-safe brake for Y # axis.	
2.5	Motor mounting adopter brackets and couplings to fix the axis and spindle motors on the existing frame of the machine for all axes.	
2.6	Suitable capacity SMPS power supply of make SIEMENS / FANUC.	
2.7	Line filter & choke for main power circuit.	
2.8	A suitable CNC system with PLC.	
2.9	Interconnecting power, control and feedback cables to connect the various equipments to the system / drives.	
2.10	Other control elements like relays, MCBs, control transformer, fuses, contactors, limit switches, etc., to suit the proposed motors / drives (the existing limit switches to be replaced with new one).	
2.11	Floor mounting type electrical control panel of suitable size to accommodate the proposed AC drives, other control elements & switchgears.	
2.12	A suitable capacity air cooler for the above electrical control panel (Preferably of RITTEL make)	
2.13	An operator pendent to accommodate the PLC display unit and operator keyboard with suitable capacity air cooler.	
2.14	A portable MPG (Magnetic Pulse Generator) unit.	
2.15	Machine lamp with suitable fittings.	
2.16	Conduits & cable trays required for machine wiring.	
2.17	Provisions for providing 24V DC to field elements like pressure switches and solenoid valves (the existing pressure switches & solenoid valves may be used).	
2.18	A suitable capacity UPS to give a minimum back up of 15 minutes for CNC system, in case of sudden power failure.	
<b>3.0</b>	<b>SCOPE OF WORK:</b>	
3.1	Assembly and commissioning of all the above supplied components after removing the existing old ones.	
3.2	For B # axis (Rotary table axis) indexing is required and the system to be designed to incorporate this feature.	
3.3	Proving out the performance of the CNC system with PLC programming after interfacing all the axes & drives.	
3.4	Proving out job machining using CNC programming.	
3.5	Laser calibration before retrofitting the machine to find out the accuracy & repeatability and proving out the same after retrofication through laser calibration. (Ref. Std: VDI/DGQ-3441 shall be followed	
3.6	Earthing of Control panel, motors to be done.	
<b>4.0</b>	<b>GENERAL POINTS:</b>	
4.1	All the drives should be of digital only.	
4.2	The system should be suitable for 415V, +/- 10%, 3 phase, 3 wire system (without neutral) and the electrical control panel should be neatly wired with proper ferrule numbering. The isolation transformer and servo controlled voltage stabilizer in the existing machine shall be used.	
4.3	The electrical system is to be designed to accommodate other loads which are mentioned in clause 1 (Technical specifications of the existing machine) from 'i' to 'n'.	
4.4	In the operator pendent the Spindle RPM & loading of spindle motor to be displayed.	
4.5	Leaflets providing dimensional details, complete technical details of the motor (like capacity, torque, type, & rating) along with make & the technical details of the system (its features) are to be submitted with the offer for technical assessment.	

4.6	The control panel shall be coated with two coats of anti- rust paint (primer) and two coats of acid alkali resisting epoxy based paint suitable for working in saline and corrosive atmosphere. The following shade & finishing shall be followed. i.Exterior : Apple green shade 281 of IS-5/1994. ii.Finish : Semi glossy iii.Interior: Brilliant White iv. Finish : Glossy	
4.7	All electrical control cabinets & panels should be dust and vermin proof and shall have IP 54 protection.	
4.8	For the successful bidder, the existing machine's PLC logic and electrical circuit diagram will be given by BHEL for writing the logic for the new CNC system.	
4.9	The supplier shall visit & inspect the machine before giving their offer.	
4.10	The retrofitting work is to be done in BHEL only.	
4.11	The control voltage used in the system shall be of 24V DC.	
4.12	All electrical components in the cabinets should be mounted on DIN Rail.	
4.13	All electrical switchgears like contactors, relays,OLR, limit switches, push buttons etc. shall be from Siemens / L&T / Telemechanique.	
4.14	The servomotors, drives & CNC system shall be of following make SIEMENS, FANUC.	
4.15	Three hard copies and one soft copy (in CD) of O&M Manuals giving the following details are to be provided along with the supply of components: Complete details and catalogues of Servomotors, controllers (Drives) b. Electrical Circuit diagrams with PLC ladder logic, Axis data, Machine data. c. Catalogues of all Bought out items. d. Mechanical drawings involved in the above retrofitting (if any). e. CNC System manuals for commissioning, operation, programming and maintenance.	
4.16	The laser calibration report after retrofitting is to be submitted.	
4.17	The supplier should bring the required tools and accessories for the above said retrofication work.	
4.18	The supplier should give the offer in TWO PARTS # i.e. TECHNICAL BID AND PRICE BID separately in sealed covers. Only technically suitable offers will be considered for Price bid opening.	
4.19	Before manufacturing / procurement, all the drawings shall be sent to BHEL for approval.	
4.20	The supplier should offer all the material for pre-dispatch inspection at supplier's works.	
4.21	The supplier should give training on the offered CNC system & drive to two BHEL engineers for a minimum period of 5 days at the system supplier's works.	



**CAPITAL PURCHASE****COMMERCIAL TERMS AND CONDITIONS****1.0 QUOTATIONS**

The Bidders shall submit the offer in **THREE INNER ENVELOPES** as indicated below which shall be sealed in one outer envelope.

**Envelope I** : This sealed envelope should contain the required EMD amount of **Rs.1,50,000/-**

**Envelope II** : This sealed envelope should contain all the copies of technical bid together with un-priced commercial bid. This envelope should be clearly marked "**Part II - Technical and commercial bid**", indicating Enquiry No., Due Date and Address & Reference of the Bidder.

**Envelope III** : This sealed envelope should contain **price details**. This envelope should be clearly marked "**Part III - Price bid**", indicating Enquiry No., Due Date and Address & Reference of the Bidder.

All the three envelopes ( Part I,II & III) shall be put in one cover, duly sealed, super scribing as Part I ,Part II and Part III of Enquiry No., due date of opening and the address and reference of the Bidder.

The above offer should reach this office on or before the due date by 14.00 Hrs (IST). Late offers will not be considered.

Tender should not be addressed to any Individual's name but only by designation to:

**MANAGER / CAPITAL PURCHASE / MFG  
BHARAT HEAVY ELECTRICALS LIMITED  
HIGH PRESSURE BOILER PLANT  
TIRUCHIRAPALLI - 620 014  
TAMIL NADU, INDIA**

Tenders should be free from **CORRECTION AND ERASURES**, Corrections if any, must be attested. All amount shall be indicated both in words as well as in figures. Where there is difference between amount quoted in words and figures, amount quoted in words shall prevail.

Offers should be in **ENGLISH** and accompanied by detailed technical literature, catalogue and detailed dimensional drawings in **ENGLISH** or otherwise, the offers will not be considered.

**2.0 PART I (TECHNICAL & COMMERCIAL BID)****2.1 Technical**

This part shall include / indicate the following :

- 2.1.1. Offer should contain complete scope of supply with all technical details, specifications, delivery and other commercial terms and conditions.
- 2.1.2. Point by point confirmation for the Technical Specification enclosed to be provided. if there are any deviation, the same should be clearly specified. Offers received without confirmation to our specification will be liable for rejection.
- 2.1.3. List of customers to whom same or similar equipment have been supplied along with performance certificates to be enclosed.
- 2.1.4. Relevant catalogues to be attached
- 2.1.5. List of spares parts (with part numbers) for two years operation and maintenance should be attached.
- 2.1.6. Information on shipping weight and cubage (length, width & height) to be provided.
- 2.1.7. Incase of foreign bidder offer, the Principal's technical offer should be enclosed.

**2.2 Commercial**

This part shall include / indicate the following :

- 2.2.1. Station of dispatch/Port Of Shipment
- 2.2.2. Terms of payment
- 2.2.3. Taxes & duties applicable.
- 2.2.4. Delivery Schedule
- 2.2.5. Offer validity
- 2.2.6. Country of origin
- 2.2.7. Percentage of agency commission if any along with a copy of Agency agreement.
- 2.2.8. A copy of "Un-Priced Part III" i.e., a copy of the Price Bid **without the price details** to be enclosed.

**3.0 PART III (PRICE- BID)**

This part should contain the schedule of price particulars and to be co-related to the technical details provided in Part II.

**4.0 OPENING OF TENDERS**

The part I – EMD would be opened on the tender opening date and if EMD is not furnished the offer will be duly rejected.

The Part II- Technical & commercial bid would be opened on the Tender opening date.

The Part III - Price bid of Technically suitable Bidders alone would be opened. The Technically suitable Bidders would be informed about the tender opening date.

Clarifications if any required by BHEL for Technical evaluation would be sought from Bidders before opening of Part III - price bid.

## 5.0 **GENERAL**

5.1. Incomplete offers will not be considered.

5.2. **Fixed price:** Prices quoted by the bidder shall be fixed and not subject to any escalation whatsoever during the period of bid validity and execution of the Purchase Order. A bid submitted with an adjustable price will be treated as non - responsive and rejected. Prices shall be written in words and figures. In the event of difference, the price in words shall be valid and binding. Unit prices shall be considered correct in the event of any discrepancy with regard to total price.

5.3. **Bid currency:** Indian bidders should submit the prices only in Indian Rupees. Foreign bidders may submit their bid in their home currency.

5.4. **Terms of Delivery:** Bidders are required to quote their best delivery period. Foreign Bidders should submit their offer for net **FOB Nearest Sea / Air Port**. Indian Bidders should submit their offer for **FOR Despatching station**.

5.5. **Taxes and Duties :** All Taxes and Duties payable as extra to the quoted price should be specifically stated in offers along with CST & TNGST No / Tariff No. etc., failing which the purchaser will not be liable for payment of such Taxes and Duties. Our T.N.G.S.T No. 356005 Dt. 04-04-1995, C.S.T. No. 239383 dt. 11-06-1991 and TIN NO.33243560005..

5.6. **Validity:** The offers for main equipment and spares shall be kept open for acceptance for **120 days (one hundred and twenty days)** from the date of opening of the tender (Part I).

5.7. **Terms of Payment:**

5.7.1. **Indian Bidders**

5.7.1.1. The preferred payment terms are indicated below:

### **SUPPLY PORTION:**

100% payment, within 45 to 90 days, after receipt / acceptance / commissioning of equipment at BHEL, Tiruchi.

or

5.7.1.3 80% value of the goods will be paid within 45 to 90 days against dispatch documents negotiated through bank. Balance **20%** against submission of supplementary invoice will be paid on acceptance / commissioning of goods and also against remittance of required Security Deposit to BHEL in accordance with the terms of the Contract.

**All bank charges are to vendor's account only.**

### **ERECTION & COMMISSIONING PORTION:**

100% of the Erection / commissioning charges (in case contract involves erection/commissioning) shall be paid only on completion of such erection / commissioning at BHEL and also against remittance of required Security Deposit to BHEL in accordance with the terms of the Contract

### 5.7.3 **Common to both Indian & Foreign Bidders**

E&C charges will be released after deduction of Income Tax as per the Govt. of India rules. The TDS certificate will be issued by BHEL. Applicable service tax on E&C charges will be payable extra. The liability of depositing the same to the Govt. will be of the supplier.

5.8. **Performance Bank Guarantee (PBG):** The Bidder, in the event of an order, should furnish a bank Guarantee from an Indian Bank approved by BHEL, at no extra cost in a proforma prescribed by BHEL, alongwith the order, for an amount equivalent to **10% (Ten percent)** of the value of the contract. The PBG shall be valid for period of 18 months from the date of despatch or **12 months** from the date of receipt / acceptance / commissioning of the equipment at BHEL, Tiruchi which ever is more, with a claim period of two months.

The Performance Bank Guarantee shall be obtained from any one of the following banks who is a member bank in our consortium of banks.

#### **LIST OF CONSORTIUM BANKS**

1.DEUTSCHE BANK 2.HDFC BANK 3.ANZ GRINDLAYS BANK 4.CITI BANK 5.STANDARD CHARTERED BANK 6.BANK OF AMERICA 7.ABN AMRO BANK 8.IDBI LTD 9.ICICI BANK LTD 10.THE HONGKONG AND SHANGHAI BANKING .CORPORATION LTD.

#### **LIST OF NATIONALISED BANKS**

1.ALLAHABAD BANK 2.ANDHRA BANK 3.BANK OF INDIA 4.BANK OF BARODA 5.BANK OF MAHARASTRA 6.BHARATH OVERSEAS BANK 7.CANARA BANK 8.CENTRAL BANK OF INDIA 9.CORPORATION BANK 10.DENA BANK 11.INDIAN BANK 12.INDIAN OVERSEAS BANK 13.OREINTAL BANK OF COMMERCE 14.PUNJAB NATIONAL BANK 15.PUNJAB & SIND BANK 16.STATE BANK OF INDIA 17.STATE BANK OF TRAVANCORE 18.STATE BANK OF MYSORE 19.STATE BANK OF BIKANER & JAIPUR 20.STATE BANK OF HYDERABAD 21.STATE BANK OF PATIALA 22.STATE BANK OF MAHARASTRA 23.STATE BANK OF SOURASTRA(SBI-13.09.08) 24.SYNDICATE BANK 25.UCO BANK 26.UNION BANK OF INDIA 27.UNITED BANK OF INDIA 28.VIJAYA BANK

5.9 **Liquidated damages :** It is clearly understood among the parties to the contract the

“ **Time is the essence of the contract** ”. Therefore, the delivery of the goods specified in the purchase order should be made within the time prescribed. Where the seller supplies or despatches the goods, beyond the delivery period specified the purchaser will have no obligation to accept the goods. If accepted liquidated damages at the rate of 1/2% of the value of goods delayed for each week of delay subject to a maximum of 15% of the order value will be levied. Liquidated damages @ ½% per week subject to a maximum of 15% of the Erection Charges shall be applicable for delay in the Period for completion of the Retrofitting / Reconditioning work

- 5.10 Risk purchase :** Alternatively the purchaser at his option will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of the seller either the whole of the goods or any part which the supplier has failed to deliver or despatch within the time stipulated as aforesaid or if the same were not available, the best and the nearest available substitute therefor. The supplier shall be liable for any loss which the Purchaser may sustain by reason of such risk purchases.
- 5.11 Agency commission :** In case of Foreign Bidders, agency commission if any, payable to their Indian Agents, shall shown separately in the Offer. This will be paid by us in India, in Indian Rupees, on satisfactory completion of the Contract. Copies of current Agency Agreement / Authorization Letter in respect of Agency Commission shall be furnished alongwith offer. For calculation of Rupee equivalent of Agency Commission, exchange rate as prevailing on the date of offer will be taken.
- 5.12 Inspection & Testing:** All goods shall be subject to inspection by BHEL or its authorized representatives at supplier's works or at BHEL stores or at any other place in India indicated by BHEL as the case may be. The supplier will not charge for the facilities provided for inspection of goods. In case of machine tools, the machine would be inspected and proved at supplier's works prior to dispatch however, final inspection and acceptance of the machine will be carried after installation of the machine at BHEL, Tiruchirappalli.
- 5.13 Test certificates / Operating and Maintenance manuals :** The Bidders shall clearly mention in their offer, that Test Certificates and Operating Maintenance Manuals, etc., as called for in the Technical Specification, in the required number of copies will be provided at no extra cost.
- 5.14 Cenvat credit** (for Indian Bidders only) : If any Excise Duty is payable, the chapter head / sub-head reference and the rate of the duty should be quoted. If the tenderer is availing **CENVAT** credit for his input materials, the effect of proforma credit should be passed on to the purchaser..
- 5.15 Packing and marking :** The Supplier shall arrange for securely protecting and packing the stores to avoid loss or damages during transit.
- 5.16** Purchase preference will be given to CPSUs as per Government guidelines.
- 5.17** BHEL shall be at liberty to reject or accept any tender, part or in full, at their own discretion and any such action is not liable for any question or claim against BHEL.
- 5.18 Earnest Money Deposit** shall be payable as per the instructions furnished in the **Annexure-V**. Otherwise the offer will be rejected.
- 5.19 Security Deposit** shall be payable as per the instructions furnished in the Annexure.
- 5.20 BHEL reserves the right to go for a Reverse Auction (RA)** instead of Opening the submitted sealed bid, which will be decided after technical evaluation. Information and general terms and conditions governing RA are given below.

#### **5.21 GENERAL TERMS AND CONDITIONS OF RA**

Against this enquiry for the subject item/system with detailed scope of supply as per enquiry specifications, BHEL may resort to "REVERSE AUCTION PROCEDURE" i.e., ON LINE BIDDING ON INTERNET.

- For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
- BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
- BHEL will inform the vendor in writing in case of reverse auction, the details of Service Provider to enable them to contact & get trained.
- Business rules like event date, time, Start price, bid decrement, extensions etc. also will be communicated through service provider for compliance.
- Vendors have to fax the Compliance form in the prescribed format (provided by Service provider) before start of Reverse auction. Without this, the vendor will not be eligible to Participate in the event.
- BHEL will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at "Total Cost to BHEL" like Packing & forwarding charges, Taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for non-compliance to BHEL standard Commercial terms & conditions) for each of the vendor to enable them to fill-in the price and keep it ready for keying in during the Auction.
- Reverse auction will be conducted on scheduled date & time.
- At the end of Reverse Auction event, the lowest bidder value will be known on the network.
- The lowest bidder has to Fax the duly signed Filled-in prescribed format as provided on case-to-case basis to BHEL through Service provider within 24 hours of Auction without fail.
- Any variation between the on-line bid value and the signed document will be considered as sabotaging the tender process and will invite disqualification of vendor to conduct business with BHEL as per prevailing procedure.
- In case BHEL decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids and price impacts, if any, already submitted and available with BHEL shall be opened as per BHEL's standard practice.

**For any queries / clarifications the bidders may contact us through our FAX NO. +91 431 2520719 or through e-mail [rba@bheltry.co.in](mailto:rba@bheltry.co.in) and <srchandran@bheltry.co.in>**

**Bharat Heavy Electricals Limited, Trichirapalli – 620 014****MM : CAPITAL PURCHASE****(To be filled and submitted along with offer )**

<b>BHEL Commercial Terms and Conditions for Indigenous Supplies</b>	<b>Vendor's Confirmation / Comments</b>
<b>EMD for Rs 1,50,000/-</b> shall be payable as per the instructions furnished in the annexure. Otherwise the offer will not be considered. <b>Pay order / DD No / Cash</b> receipt no & date may be furnished	
Security Deposit shall be payable by the successful vendors as per the instructions furnished in the <b>Annexure-V</b>	
Security Deposit will be refunded within 30 days after successful completion of Contract by the successful vendor.	
Technical confirmation to BHEL's Specification as called for in BHEL Format shall be furnished. If needed additional sheets shall be used.	
<b>Prices</b> shall be <b>quoted item wise</b> only as per the model format enclosed. An <b>unpriced</b> copy <b>shall be submitted along with technical bid</b> where in the applicable Taxes and Duties Shall be clearly specified	
Prices shall be quoted on " <b>FIRM PRICE</b> " basis only. The prices should be only on <b>F.O.R / Despatching station</b> basis inclusive of <b>Packing &amp; Forwarding</b> charges if any. <b>Applicable % of ED &amp; Sales Tax , Freight &amp; Insurance, Installation &amp; Commissioning Charges should be clearly indicated.</b>	
<b>Validity of offer</b> shall be for a minimum period of 120 days from the date of Tender opening	
<b>Delivery period</b> (for supply portion) from the date of Letter of Intent / Purchase order shall be clearly mentioned in the offer.	
<b>Period for completion of the Retrofitting / Reconditioning</b> (erection & Commissioning) work at BHEL shall be clearly specified in the offer	
<b>Liquidated damages @ ½% per week</b> subject to a maximum of 15% of the order value shall be applicable for delay in deliveries.	
<b>Liquidated damages @ ½% per week</b> subject to a maximum of 15% of the Erection Charges shall be applicable for delay in the period of completion of the Retrofitting / Reconditioning works.	
<b>Following Risk Purchase clause</b> shall be applicable: The purchaser at his option will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of the seller either the whole of the goods or any part which the supplier has failed to deliver or dispatch within the time stipulated or if the same were not available, the best and the nearest available substitute therefore. The supplier shall be liable for any loss which the Purchaser may sustain by reason of such risk purchases.	
<b>Submission of Performance Bank Guarantee (PBG):</b> Vendor should provide a performance bank guarantee(PBG) for 10% of the total Purchase order value valid for a period of 12 months from the date of commissioning (or) 18 months from the date of dispatch whichever is later with an additional claim period of 2 months. This PBG shall form one of the documents for effecting payment. The PBG shall be submitted in non-judicial stamp paper value of not less than Rs.80/- issued by any one of the following banks who is a member bank in our consortium of banks.	
<b>Payment terms for supply portion:</b> * <b>100%</b> payment will be made within 45 to 90 days after receipt and acceptance / commissioning of goods at BHEL. against submission of PBG for 10% of Order value with required validity. <b>(or )</b> * <b>80%</b> value of the goods will be paid within 45 to 90 days against dispatch documents negotiated through bank. Balance 20% will be paid within 45 to 90 days from the date of acceptance / commissioning of goods against submission of supplementary invoice and also against submission of PBG for 10% of Order value with required validity. <b>All bank charges are to vendor's account only.</b>	
<b>Erection / commissioning Charges:</b> Erection / commissioning shall be done at free of cost. If any charges, 100% of the Erection / commissioning charges (in case contract involves erection/commissioning) shall be paid only on completion of such erection / commissioning at BHEL and also against remittance of required Security Deposit to BHEL in accordance with the terms of the Contract	
The equipment shall be guaranteed for a period of 12 months from the date of commissioning.	

## ANNEXURE-II

Equipment will be inspected and proved at vendor's works prior to dispatch. However final inspection and acceptance of equipment will be after installation at BHEL,Trichy.	
All Equipments / Services including concern Personal for carrying out the erection and commissioning of the Equipment shall be arranged by the vendor. If any Services is availed from BHEL, it is only on chargeable basis unless otherwise specified.	
The vendor shall provide necessary drawings,Test Certificates and Operating Maintenance Manuals etc., as called for in the Technical Specification, in the required number of copies at no extra cost.	
Any warranty replacement during warranty period shall be supplied free of charge on FOR BHEL, Trichy basis.	
<b>Offers</b> should be submitted only in <b>sealed cover super-scribing clearly the Enquiry reference and due date.</b>	
<b>MANDATORY Details Required For Conducting Reverse Auction</b> (Please fill up all columns)	
Delivery Terms ( <i>Ex-works Basis (or) For Destination Basis</i> )	
% of Excise Duty with cess	
% of TAX (CST/VAT) (TNGST with FORM-17 or CST with C-FORM)	
Packing & Forwarding Charges ( in % or Lumpsum)	
Percentage of Freight & transit insurance charges (if any, in Lumpsum (or) percentage) from Dispatching station to BHEL Tiruchirappalli, (Note:If the delivery terms is Ex Works the materials has to be sent through BHEL approved carrier only, in this case the freight & Insurance will be borne by BHEL)	
Erection & commissioning charge is inclusive (or) exclusive of basic rate	
% of Service Tax if applicable	
As per Clause 5.20 of Commercial terms and conditions (Annexure-II) acceptance for participation in Reverse auction (RA). Yes/No to be indicated	
Name of the person for participating reverse auction.	
Land Line Number	
Fax Number	
Mobile Number	
E-mail ID	
Pan No	
TIN No	
CST No	

**NOTE:-**

- a) It is confirmed that all the terms and conditions stipulated in the Enquiry have been fully understood by us and all clarifications & details have been obtained.
- b) Your offer should be indicating applicable if any P&F Charges, % of ED, Sales Tax -CST or VAT, Service Tax), Freight, Insurance and Installation and Commissioning Charges etc., as per our Price Format.
- c) Your specific acceptance to our Payment terms, LD, Risk Purchase Clause & Submission of PBG for 10% of the order value are essential for consideration of your offer. Other wise your offer is liable for rejection.
- d) **No row shall be left blank. Please indicate NA, in case the item is “not applicable”****NOTE:-**

Signature &amp; Office Seal of the vendor

**MODEL PRICE BID FORMAT FOR INDIAN BIDDERS**

Enquiry No. &amp; Date:

Bidder's Offer No. &amp; Date:

Sl No.	Description of item	Unit	QTY	VAT/CST in % (TNGST with FORM-17 or CST with C-FORM)	ED in %	Service Tax in %	Rate in Rs.	Value in Rs.
1	Supply portion							
3	Installation & Commissioning							
	Packing & Forwarding charges (if any) in percentage (or) Lumpsum							
	FOR Dispatching station value in Rs.							
	Percentage of Freight & transit insurance charges, if any (Lumpsum or %) Freight & Insurance charges from Dispatching station to BHEL, Tiruchirappalli (Note: If the delivery terms is Ex Works the materials has to be sent through BHEL approved carrier only, in this case the freight & Insurance will be borne by BHEL)							
	Approximate Net weight of the total consignment							
	Approximate Gross weight of the total consignment							
	Approximate Dimensions of the Consignment							

Signature &amp; Seal of Vendor

The price bid should be submitted only as per the above format. No row shall be left blank.  
Please indicate NA, in case the item is "not applicable"

### **EARNEST MONEY DEPOSIT**

Earnest Money is to be paid by the Tenderer either in **Cash** (as permissible under Income Tax Act), **Pay Order** (or) **Demand Draft** drawn in favour of Bharat Heavy Electricals Ltd, Trichirapalli payable at Trichirapalli.

EMD by the Tenderer will be forfeited as per Tender Documents if

- 1) After opening the Tender, the Tenderer revokes his Tender within the validity period or increases his earlier quoted rates
- 2) The Tenderer does not commence the work within the period as per LOI/Contract. In case the LOI/Contract is silent in this regard then within 15 days after award of the Contract.

EMD given by all unsuccessful Tenderers shall be refunded normally within 15 days of acceptance of award of work by the successful Tenderer.

EMD shall not carry any interest.

### **SECURITY DEPOSIT**

The successful Tenderer should pay Security Deposit before start of the work and the Rate of Security Deposit will be as below.

<b>Value of Contract</b>	<b>Rate of Security Deposit</b>
Upto Rs.10 Lakhs	10%
Above Rs.10 lakhs and upto Rs.50 lakhs	Rs.1 Lakh + 7.5% of the amount exceeding Rs.10 Lakhs
Above Rs.50 lakhs	Rs.4 Lakhs + 5% of the amount exceeding Rs.50 Lakhs

Security Deposit may be furnished in any one of the following forms.

- i) Cash (as permissible under the Income Tax Act)
- ii) Pay Order, Demand Draft in favour of Bharat Heavy Electricals Limited, Trichirapalli payable at Trichirapalli
- iii) Local Cheques of Scheduled Banks, subject to realization
- iv) Securities available from Post Offices such as National Savings Certificates, Kisan Vikas Patras etc ( Certificate should be held in the name of Contractor furnishing the security and duly pledged in favour of BHEL and discharged on the back)
- v) Bank Guarantee from Scheduled banks / Public Financial Institutions as defined in the Companies Act subject to a maximum of 50% of the total Security Deposit value. The balance 50% has to be remitted either by cash or in the other form of security. The Bank Guarantee format should have the approval of BHEL.
- vi) Fixed Deposit Receipt issued by Scheduled banks / Public Financial Institutions as defined in the Companies Act. The FDR should be in the name of the Contractor, A/C BHEL, duly discharged on the back.
- vii) Security Deposit will also be recovered at the rate of 10% from the running bills. However in such cases at least 50% of Security Deposit shall be paid by the Contractor before start of the work and the balance 50% will be recovered from the running bills.
- viii) EMD of the successful Tenderer shall be converted and adjusted against Security Deposit.

Note: Acceptance of security Deposit against sl.no.(iv) and (vi) above will be subject to hypothecation or endorsement on the documents infavour of BHEL. However BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith.

Security deposit shall not carry any interest. Security Deposit shall not be refunded to the Contractor except in accordance with the terms of the Contract.