



An ISO 9001
Company

Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

MATERIALS MANAGEMENT

TITLE: RETROFITTING OF PEGARD CNC MACHINE	Phone: +91 431 2577645/2577331 Fax : +91 431 252 07 19 Email : rba@bheltry.co.in srchandran@bheltry.co.in Web : www.bhel.com , http://tenders.gov.in
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	Reference Number: Enquiry 2680900045	Enquiry Date: 24.10.09	Due date for submission of quotation: 25.11.09
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 **PEGARD CNC MACHINE** details as per the technical specification (Annexure B & C) .

BHEL commercial terms & conditions with Technical specifications can be downloaded from BHEL web site http://www.bhel.com or from the Government tender website http://tenders.gov.in (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, For Bharath Heavy Electricals Limited Manager / Capital Purchase/ Manufacturing



ENQUIRY
(INDIGENOUS)

BHARAT HEAVY ELECTRICALS LIMITED

(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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429-002/A

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RETROFITTING OF PEGARD CNC MACHINE	Enquiry No	Enquiry Date	Due Date for Quotation
	2680900045 - 79	24.10.2009	25.11.2009
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	Up gradation of the existing Supply of CNC System, axis & spindle motors and drives for the Up gradation in PEGARD CNC machine as per the enclosed ANNEXURE - B. Upgradation and supply of Pegard cnc M/c	NO	1.000	1.00	29.01.10
20	Erection commissioning and prove out of the supplied items in PEGARD CNC machine as per the enclosed ANNEXURE - B. Erection & Commissioning	AU	1.000	1.00	29.01.10

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-II AND WITHOUT FILLING ANNEXURE-III(indicate all taxes & duties, Packing & Forwarding charge, freight & insurance charges)& ANNEXURE-IV (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

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)

R. BASHIR AHMED
Manager / Purchase / MFG
Bharat Heavy Electricals Ltd.,
Thiruchirappalli - 620 014.



BHARAT HEAVY ELECTRICALS LIMITED

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

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PHONE : 2577645
GRAMS : BHARATELEC
FAX NO: 2520719
E-mail: rba@bheltry.co.in
Web:

2680900045 / 24.10.2009

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, 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-5 pages
3. Annexure-C Scope of works-one page
4. Annexure-1 General Terms and conditions of RA- one page
5. Annexure-II Commercial terms and conditions-three pages
6. Annexure-III Commercial confirmations-Two pages
7. Annexure-IV Model Price bid format
8. Annexure-V 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"

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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,

R. BASHEER AHAMEDU
Manager / Purchase / MFG
Bharat Heavy Electricals Ltd.,
Thiruchirappalli - 620 014.

ANNEXURE -B**Up gradation of the existing CNC System, axis & spindle motors and drives in PEGARD CNC machine.**

Section A: Details of existing machine		Supplier to Confirm
	CNC SYSTEM: SIEMENS Make SINUMERIK 880M with 6-axis,one spindle & Face Plate and ATC	
1	<p>1.X axis:</p> <p>1.1 AC Servo motor: SIEMENS make 3(~) PERMANENT MAGNET MOTOR I FT5104-0AA71-1-Z Mo=37/45Nm Mn=41 Nm IEC 100 lm 82</p> <p>1.2 Drive : LT MODULE INT-50 A Type: 6SN1130-1AA11-OCA0</p> <p>1.3 Rapid traverse: 12 Metre/min 1.4 Manual rapid rate : 6 Metre /min 1.5 Feed rate :1 - 6000 mm/min. 1.6 Position Feedback :Heidenhein make, incremental Rotary encoder, Type: ROD426, 2000PPR. 1.7 Mechanical drive : Motor coupled to ball screw with torque limiter coupling</p>	
2	<p>2. Y axis:</p> <p>2.1 AC Servo motor: SIEMENS make 3(~) PERMANENT MAGNET MOTOR I FT5106-0AA71-1-Z Mo=45.0/55.0Nm, Mn=42.0Nm IEC 100 lm B5</p> <p>2.2 Drive: LT MODULE INT-50 A Type:6SN1130-1AA11-OCA0</p> <p>2.3 Rapid traverse :12 Metre/min 2.4 Manual rapid rate: 6 Metre/min 2.5 Feed rate : 1-6000 mm/min. 2.6 Position Feedback: Siemens make, incremental rotary encoder, Type: 6FC9320-3KK21, 2000PPR. 2.7 Mechanical drive: Motor coupled to ball screw with torque limiter coupling</p>	
3	<p>3. Z axis:</p> <p>3.1 AC Servo motor SIEMENS make 3(~) PERMANENT MAGNET MOTOR FT5074-0AF71-1-Z Mo=14/18Nm , Mn=14Nm IEC 71 lm B5 with brake</p> <p>3.2 Drive: LT MODULE INT25/50A Type:6SN1130-1AA11-OCA0</p> <p>3.3 Rapid traverse :6 Metre/min 3.4 Manual rapid rate: 3 Metre/min 3.5 Feed rate : 1-3000 mm/min. 3.6 Position Feedback: Heidenhein make, incremental rotary encoder, Type: ROD426, 2048PPR 3.7 Mechanical drive: Motor coupled to ball screw with torque limiter coupling</p>	

4	<p>4.U axis:</p> <p>4.1 AC Servo motor SIEMENS make 3(~) PERMANENT MAGNET MOTOR I FT5064-0AF71-1-Z Mo=4.5/5.5Nm Mn=4.2Nm IEC 100 lm B5</p> <p>4.2 Drive: LT MODULE INT7.5/15A Type:6SN1130-1AA11-OAA0</p> <p>4.3 Rapid traverse :1 Metre/min</p> <p>4.4 Manual rapid rate :1 Metre/min</p> <p>4.5 Feed rate :1-1000 mm/min.</p> <p>4.6 Position Feedback : Siemens make, incremental rotary encoder, Type: 6FC9320-3KK21, 2000PPR.</p> <p>4.7 Mechanical drive : Motor coupled to gear box with Torque limiter coupling.</p>	
5	<p>5. B axis:</p> <p>5.1 AC Servo motor SIEMENS make 3(~) PERMANENT MAGNET MOTOR I FT5134-0AC71-1-Z Mo=75/90Nm Mn=50 Nm</p> <p>5.2 Drive: LT MODULE INT80/160A Type:6SN1123-1AA00-0BA0</p> <p>5.3 Rapid traverse :1.8 Metre/min</p> <p>5.4 Manual rapid rate : 0.9 Metre /min</p> <p>5.5 Feed rate : 1-900 mm/min.</p> <p>5.6 Position Feedback :Angular encoder of 18000PPR with 0.0001 degree accuracy(meas.step)</p> <p>5.7 Mechanical drive : Motor coupled to belt and pulley with table.</p>	
6	<p>6. W axis:</p> <p>6.1 AC Servo motor SIEMENS make 3(~) PERMANENT MAGNET MOTOR I FT5104-0AC71-1-Z 23Amps</p> <p>6.2 Drive: LT MODULE INT -80A Type:6SN1123-1AA00-ODA0</p> <p>6.3 Rapid traverse : 12 Metre/min</p> <p>6.4 Manual rapid rate: 6 Metre/min</p> <p>6.5 Feed rate :1- 6000 mm/min.</p> <p>6.6 Position Feedback :Heidenhein make Incremental rotary encoder, Type: ROD426, 2000PPR.</p> <p>6.7 Mechanical drive : Motor coupled to ball screw with torque limiter coupling.</p>	

7	7.Spindle and face plate: AC spindle motor SIEMENS make 3~ MOT 1PH6 186-4NF 46 -Z NON -159424-6.94 DIN VDE 0530 IEC 34-I 1983 S1 50 KW 100A 50 KW 83A KW A KW A S6-40% 75 KW 144A KW A KW A KW A IMB35 TH CI F KT 40°C IP54 WASSER I/MIN L11 K02 K09 K17 L53 spindle drive: AC SIMO DRIVE TYPE:6SC6612-0AA01 Feedback device :2 nos.Siemens make, 1024 PPR incremental rotary encoder mounted each one for spindle and face plate. Type: 6FC9320-3KB01 Mechanical drive : Motor coupled to gear box with torque limiter coupling Spindle speed range : Range I RPM 1-500 step less. Range II RPM 501-2000 step less Face plate speed range : Range I RPM 1-125 step less. Range II RPM 126-315 step	
8	8. Machine inbuilt with automatic Pallet change and automatic tool change.	
9	9. Auxiliary motors 9.1 Hydraulic pump motor :30KW,1465rpm,415V,3ph,a.c.motor 9.2 Hydraulic cooler motor 1:0.37KW,1370rpm 415V, 3ph,a.c.motor 9.3 Chip conveyor motor :0.37KW,1380rpm, 415V,3ph, a.c.motor 9.4 Coolant pump motor :0.75KW, 1400rpm, 415V,3ph, a.c.motor	
10	10.1.Isolation Transformer: (Under use) 140 KVA; 415/380V 10.2.Stabilizer Details: NEEL Servo Controlled Voltage Stabilizer: (Removed from machine. Now not in use) Input: 340V Min. to Max-480V Output: 415V Accuracy +/- 1% Rating: 100 KVA Current: 139A	
Section B: SCOPE OF SUPPLY		
	Design, selection and supply of suitable CNC systems, drives, motors , components etc. PACKAGE :Latest version of SIEMENS 840D package or FANUC 32i CNC system with 12.1" LCD Colour monitor package only.	
1	Supply of CNC system for controlling of 6-axis and a spindle with LCD color display in the suitable pedant box..	
2	Supply of 6 numbers of A.C.servo motors of suitable capacity ,for all six axis. (X,Y,Z,W,B,U) Torque and speed to match with the parameters of the existing A.C. servo motors mentioned above and suitable to interface with the CNC system offered. Any mechanical interfacing arrangement required (torque limiter coupling)to match the offered motor with the existing mechanical drive system should be included in their offer.	

3	The type number / model of the motors selected should be indicated in their offer and the technical leaflet showing the parameters and dimensional details should be enclosed.	
4	Supply of new Power cable, command signal cable, velocity feedback cable and external encoder with end connectors and of required length to suit the machine for all the six servo motors. (X,Y,Z,W,B,U)	
5	Supply of AC digital independent servo amplifier modules for all the six axis with suitable capacity for the proposed individual servo motors. The type number of the module and technical leaflet should be provided.	
6	Interfacing and commissioning with the new CNC system with new external encoder- feedback along with cables and required connectors for all the axis.	
7	supply of one number of A.C. spindle motor with suitable capacity in place of the existing spindle motor. The type number of the motor selected should be indicated in the offer and the technical leaflet showing the Parameters and dimensional details should be enclosed.	
8	Design, selection, supply and fixing suitable brackets for Mounting the new AC servomotors and spindle motor.	
9	Supply of new Power cable, command signal cable, velocity Feed back cable and external encoder with end connectors have required length to suit the machine for the spindle motor	
10	Supply of latest Spindle digital amplifier module for the New spindle motor selected. The type number of the Module and technical leaflet to be provided.	
11	Supply of required input transformers to the feed / spindle drives and 24V,20A SMPS power supply of Siemens/ Fanuc make.	
12	Supply of suitable programming and Data loading/downloading device with necessary software.	
13	The CNC system offered shall have the following features for a machining center. Back ground editing Automatic chamfer and radius. Direct Drawing Dimensioning (Blue Print) Static simulation. The memory capacity required for programming minimum of 2GB and the number of programs stored around 400 Cycles: Stock removal cycle (Facing, Finishing, Pattern repeating) Grooving cycle Threading cycle Drilling cycles:(Drill center, Drill sinking, Deep Hole, Boring, Back Boring, Fine Boring, Tapping, Left hand Tapping) Drill Pattern: Single Hole, Row Hole, Circle of Hole Milling Cycles: Rectangle Pocket, Circular pocket Milling Pattern: Slot, Elongation Hole, Circle Slot Parameter Programming (macro - A, B & Macro Call)	
14	The existing inputs/outputs are around 288/ 192.	
15	supply of required CNC KEY BOARD and machine control panel.	
16	Supply of suitable MPG unit along with 5 metres cable and adapter as required.	
17	Supply , mounting and wiring of suitable capacity MCB switch for incomer D.C, regulated power supply, 3ph digital energy meter and suitable ratings of MPCB (Motor Protection Circuit Breakers) for all the auxiliary motors / equipments in the new panel.	
18	The equipments should be suitable for 415V, 3ph, 50Hz, a.c. supply	
19	Supply of Oil Cooling unit as per the specifications given below: Capacity: 2000 Kcal/hrs; Type: 1002-H kW: 1.27; HP: 2.24; Voltage: 415V; Current: 8A; Phase:3; Hz:50; Refrigerant: R-34;	

20	Supply of lubrication unit (CENLUB) as per the specification shown below: Lubrication Motor: 0.12 kW/0.16 HP; Amp: 0.50A; RPM:1300; Ref: IS:325-1996; Duty: S1; 415V;50Hz; Pressure Switch Model: PS-8-30A	
21	Supply of isolation transformer of rating 140 KVA (to be decided by the supplier after studying the conditions of the existing isolation transformer at site). Oil cooled stabilizer of 125 KVA rating. Isolation Transformer & Stabilizer shall be of following make: i) M/s. NEEL ii) M/s. AEI iii) M/s. POWER AID	
22	19a) Three sets of O&M manual for the CNC system, servo motors, spindle motors, drives ,spare parts list and manuals of bought-out components should be supplied along with the hardware. b)Three sets of power circuit ,control circuit and logic circuit of updated wiring drawing for entire machine should be supplied after retrofitting. c)Three sets of system NC MD,PLC MD, Setting Data and PLC program should be supplied in the CD and Hard copy in Ladder logic and STL logic of original copy.	
23	Training shall be given for three maintenance persons and three production persons for System and drives at suitable works.	
24	The supplier must visit BHEL and study the entire machine and work involved before submitting the offer.	
Control Panel :		
a	The panel shall be metal enclosed, indoor , floor mounting and freestanding type of Rital make. The panel shall be free from flaws, dents and undulations. The panel shall be cold rolled sheet of 2.5mm thickness shall be used for all members expect for doors, covers and partitions where it may be of 2mm.	
b	All mating surfaces shall be provided with 3mm thick neoprene gaskets. Panel shall be provided with three point locking arrangement. Hardware used shall be chrome/ nickel - plated. The anti-vibration pad shall be of hard rubber.	
c	The pre treatment of all steel work including de greasing ,rust / scale removal, phosphating and oven drying shall be carried out. Panel shall be coated with two coat of anti- rust paint (primer) and two coat of acid alkali resisting epoxy based paint suitable for working in saline and corrosive atmosphere. Exterior : Apple green shade 281 of IS-5/1994. Finish : Semi glossy Interior : Brilliant White Finish : Glossy	
d	Degree of protection of panel enclosure: IP 55	
e	Removable cable entry shall be provided.	
f	The doors shall be suitable for 180 degree opening at Front.	
g	Mounting Bolt of spring loaded mounting bolts with nuts Shall be supplied by vendor .No of suitable lifting Eye bolts with nuts and washers shall be provided.	
h	Air conditioner shall be of following make. i. M/s Advanced cooling System pvt ltd ii. M/S Werner Finley pvt ltd iii. M/S Avon controls and Systems iv. M/S Chilton Refrigeration Industries	
i	The above panel should be accommodate all the above drives including and all the electrical and electronic elements used in the machine.	
j	Supplier shall send detailed drawings along with the offer for approval for area Executive. Both the panels shall be manufactured after getting approval from area Executive.	
k	The bottom surface of the control panel should be free and no components should be mounted on it.	

ANNEXURE -C**Erection commissioning and Prove out of CNC System, axis & spindle motors and drives in PEGARD CNC machine**

No	SCOPE	SUPPLIER TO CONFIRM
1	Removing of existing AC spindle motor, six numbers of AC servo motors and its drives along with coupling and pulley and note down all the parameters, inter connections of power, control and signal cables.	
2	Fixing of the new AC spindle motor and six numbers of AC servo motors with suitable mounting brackets in the existing motor location on the machine.	
3	Mounting of X ,Y,Z,U,W and B axis and spindle drives in the existing panels.	
4	Erection and commissioning of the new control Panel and Interfacing the machine control elements like limit switches, pressure switches, level switches ,pushbuttons etc., with the new controls in this new control panel with required wiring materials.	
5	Interfacing with the new system, ac spindle drive and X, Y, Z, U, W and B axis drives with spindle and servo motors along with power cables, command signal cables, velocity feedback cables etc.	
6	Interface software development debugging in the new CNC system using necessary PG unit and prove out all the machine functions available before retrofitting.	
7	The existing ATC should be interfaced with the proposed CNC and should be bring into operation.	
8	Prove out of the positioning accuracy and repeatability of the axis using laser interferometer. (The positioning accuracy and repeatability to be taken once before undertaking the retrofit work also. The accuracy after the retrofit to be the same or better than the accuracy before the retrofit.)	
9	Commissioning of oil chiller, lubrication unit, isolation transformer (if required) and stabilizer.	
10	The required hand tools and other accessories will be brought by the vendor.	
11	The supplier must visit BHEL and study the entire machine and work involved before submitting the offer.	

PART A**SECTION – I: QUALIFYING CRITERIA**

The BIDDER has to compulsorily meet the following requirements to get qualified for considering the technical offer:

S. No.	REQUIREMENTS	Vendor's Response
1	<p>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.</p> <p><i>(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.)</i></p>	
	The vendor should submit following details which are necessary for qualifying their offer.	
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.	

SECTION – II

The BIDDER to note:

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.	

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**.

1. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
2. 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.
3. BHEL will inform the vendor in writing in case of reverse auction, the details of Service Provider to enable them to contact & get trained.
4. Business rules like event date, time, Start price, bid decrement, extensions etc. also will be communicated through service provider for compliance.
5. 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.
6. 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.
7. Reverse auction will be conducted on scheduled date & time.
8. At the end of Reverse Auction event, the lowest bidder value will be known on the network.
9. 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.
10. 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.
11. 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.

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.

5.7.2. **Foreign Bidders**

~~An Irrevocable Letter of Credit shall be established for 80% of the value of the goods. Balance 20% shall be paid on receipt / acceptance / commissioning of the goods at BHEL against 10% Performance Bank Guarantee on total order value. All bank charges outside India are to Vendor's account. Letter of Credit shall be opened through a branch of State Bank of India in the country where order shall be placed. In case, in the country where order is placed, State Bank of India is not there, Letter of Credit will be opened through our bankers or as permitted by Government of India. All bank charges outside India are to supplier's account. Lump sum erection and commissioning charges, if any, shall be payable after satisfactory erection and commissioning of the equipment by sight draft against certificate issued by the competent authority.~~

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.

(1) State Bank of India, 2) State Bank of Hyderabad, 3) State Bank of Travancore, 4) Canara Bank, 5) Bank of Baroda, 6) Punjab National Bank, 7) Deutsche Bank AG, 8) HDFC Bank Ltd, 9) Standard Chartered Bank, 10) CITI Bank N.A., 11) ABN AMRO Bank N.V. 12) ICICI Bank Ltd. 13) IDBI Ltd. 14) The Hongkong and Shanghai Banking Corporation Ltd. 15) Syndicate Bank. 16) State Bank of Mysore. 17) State Bank of Maharastra. 18) UCO Bank. 19) Allahabad Bank. 20) Andhra Bank. 21) Corporation Bank. 22) Dena Bank 23) Union Bank of India. 24) United Bank of India. 25) Vijaya Bank. 26) Axis Bank (Unit Trust of India). 27) Bank of Maharastra. 28) Bharat Overseas Bank. 29) Bank of India. 30) Indian Bank. 31) Indian Overseas Bank. 32) Oriental Bank of Commerce. 33) Central Bank of India. 34) State Bank of Patiala. 35) Punjab & Sind Bank. 36) State Bank of Bikaner & Jaipur. 37) Kotak Mahindra Bank Limited. 38) Central Bank of India. 39) The Federal Bank Limited

- 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.

For any queries / clarifications the bidders may contact us through our FAX NO. +91 431 2520719 or through e-mail 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)**

BHEL Commercial Terms and Conditions for Indigenous Supplies	Vendor's Confirmation / Comments
EMD for Rs 1,50,000/- shall be payable as per the instructions furnished in the annexure. Otherwise the offer will not be considered. Pay order / DD No / Cash receipt no & date may be furnished	
Security Deposit shall be payable by the successful vendors as per the instructions furnished in the Annexure-V	
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.	
Prices shall be quoted item wise only as per the model format enclosed. An unpriced copy shall be submitted along with technical bid where in the applicable Taxes and Duties Shall be clearly specified	
Prices shall be quoted on " FIRM PRICE " basis only. The prices should be only on F.O.R / Despatching station basis inclusive of Packing & Forwarding charges if any. Applicable % of ED & Sales Tax , Freight & Insurance, Installation & Commissioning Charges should be clearly indicated.	
Validity of offer shall be for a minimum period of 120 days from the date of Tender opening	
Delivery period (for supply portion) from the date of Letter of Intent / Purchase order shall be clearly mentioned in the offer.	
Period for completion of the Retrofitting / Reconditioning (erection & Commissioning) work at BHEL shall be clearly specified in the offer	
Liquidated damages @ ½% per week subject to a maximum of 15% of the order value shall be applicable for delay in deliveries.	
Liquidated damages @ ½% per week 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.	
Following Risk Purchase clause 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.	
Submission of Performance Bank Guarantee (PBG): 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. <i>(1) State Bank of India, 2) State Bank of Hyderabad, 3) State Bank of Travancore, 4) Canara Bank, 5) Bank of Baroda, 6) Punjab National Bank, 7) Deutsche Bank AG, 8) HDFC Bank Ltd, 9) Standard Chartered Bank, 10) CITI Bank N.A., 11) ABN AMRO Bank N.V. 12) ICICI Bank Ltd. 13) IDBI Ltd. 14) The Hongkong and Shanghai Banking Corporation Ltd. 15) Syndicate Bank. 16) State Bank of Mysore. 17) State Bank of Maharashtra. 18) UCO Bank. 19) Allahabad Bank. 20) Andhra Bank. 21) Corporation Bank. 22) Dena Bank 23) Union Bank of India. 24) United Bank of India. 25) Vijaya Bank. 26) Axis Bank (Unit Trust of India). 27) Bank of Maharashtra. 28) Bharat Overseas Bank. 29) Bank of India. 30) Indian Bank. 31) Indian Overseas Bank. 32) Oriental Bank of Commerce. 33) Central Bank of India. 34) State Bank of Patiala. 35) Punjab & Sind Bank. 36) State Bank of Bikaner & Jaipur. 37) Kotak Mahindra Bank Limited. 38) Central Bank of India. 39) The Federal Bank Limited</i>	
Payment terms for supply portion: * 100% 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. (or) * 80% 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. All bank charges are to vendor's account only.	

Erection / commissioning Charges: 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.		
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.		
Offers should be submitted only in sealed cover super-scribing clearly the Enquiry reference and due date.		
DETAILS REQUIRED FOR CONDUCTING REVERSE AUCTION (Please fill up all columns)		
Delivery Terms (Ex-works Basis (or) For Destination Basis)		
% of Excise Duty with cess		
% of TAX (CST/VAT) (TNGST with FORM-17 or CST with C-FORM)		
Packing & Forwarding Charges (in % only)		
Percentage of Freight & transit insurance charges (if any, in Lumpsum) 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		

NOTE:-

- 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.
- 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.
- 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.
- No row shall be left blank. Please indicate NA, in case the item is "not applicable"

Signature & Office Seal of the vendor

MODEL PRICE BID FORMAT FOR INDIAN BIDDERS

Enquiry No. & Date:

Bidder's Offer No. & Date:

Sl No.	Description of item	Unit	Quantity	Rate in Rs.	Value in Rs.
	The price indicated shall be inclusive of all accessories, spares etc. as given in the scope of supply. Individual item-wise break-up price shall be attached as an annexure to this price bid format.				
	Ex-Works value in Rs.				
	Packing & Forwarding charges (if any) in Rs.(or) Percentage				
	FOR Dispatching station value in Rs.				
	Excise Duty (indicate the % as well as value)				
	% Of TAX (TNGST with FORM-17 or CST with C-FORM)				
	% Of TAX (TNGST without FORM-17 or CST with C-FORM)				
	Any other taxes/duties applicable (indicate the % as well as value)				
	Percentage of Freight & transit insurance charges (if any, in Lumpsum) 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 Charges in Rs				
	% of Service Tax if applicable extra				
	Approximate Net weight of the total consignment				
	Approximate Gross weight of the total consignment				
	Approximate Dimensions of the Consignment				

Signature & 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.

Value of Contract	Rate of Security Deposit
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.