



An ISO 9001
Company

Bharat Heavy Electricals Limited
(High Pressure Boiler Plant)
Tiruchirappalli – 620014, TAMIL NADU, INDIA
CAPITAL EQUIPMENT / MATERIALS MANAGEMENT

ENQUIRY NOTICE INVITING TENDER	Phone: +91 431 257 76 53 Fax : +91 431 252 00 31 Email : saranyac@bheltry.co.in Web : www.bhel.com
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TWO PART BID	Enquiry Number:	Enquiry Date:	Due date for submission of quotation:
Tender to be submitted in two Parts	2631600050	09.08.2016	06.09.2016

You are requested to quote the Enquiry number date and due date in all your correspondence. This is only a request for quotation and not an order.

Please note that under any circumstances both delayed offer and late offers will not be considered. Hence vendors are requested to ensure that the offer is reaching physically our office before 14.00 hrs on the Date of tender opening.

Item	Description	Quantity
10	Universal Testing Machine 2.0 KN as per the technical specification & commercial conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	01 No.

Important points to be taken care during submission of offer

1. The Checklist for Acceptance of Commercial Terms & Conditions to be filled and enclosed along with the offer failing which, the offer will not be considered for evaluation.
2. All updates, amendments, corrigenda, etc., (if any), for each tender will be posted only on the above websites from time to time, as and when required, until each tender is opened. There will be no publication of such updates, amendments, corrigenda, etc., through newspapers or any other media.

BHEL's General guidelines / instructions (refer MM/CE/GENL/001) including bank guarantee formats and list of consortium banks, commercial terms check-list can be downloaded from BHEL web site <http://www.bhel.com> or from the Government tender website <http://tenders.gov.in> (public sector units > Bharat Heavy Electricals Limited page) under above Enquiry reference

Tenders should reach us before 14:00 hours on the due date.
Tenders 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 **BHARAT HEAVY ELECTRICALS
LIMITED**

Sr. Engineer / MM / Capital Equipment

UNIVERSAL TESTING MACHINE (UTM) 2.0 kN, Qty. – 1 No.

PART - A

S. No	BHEL SPECIFICATION	BIDDER / VENDOR'S OFFER
1.0	Qualifying Criteria: The BIDDER has to compulsorily meet the Qualifying criteria to get qualified otherwise the technical offer will not be considered.	
1.1	BIDDER / VENDOR to provide the Profile of their Company	
1.2	The BIDDER / VENDOR (OEM) shall have a minimum of five Years of Continuous Experience in the field of Design, Manufacture and Supply of UNIVERSAL TESTING MACHINE (UTM) Vendor may indicate the actual number of years of experience in the field.	
1.3	Only those vendors (OEMs), who have supplied and commissioned at least 2 numbers of UNIVERSAL TESTING MACHINE similar to the item specified under Part B, in the past 5 years (as on original date of opening of Tender) and are presently working satisfactorily should quote.	
1.4	Vendor has to submit at least one Performance Certificate from their customers, for satisfactory performance of UTM quoted against this enquiry, for a minimum period of one year (as on original date of opening tender). For obtaining the Performance Certificate, a suggestive format is provided.	
1.5	BHEL reserves the right to verify the information provided by the vendor. In case the information provided by the vendor is found to be false / incorrect, the offer shall be rejected.	
1.6	Details on SERVICE-AFTER-SALES set-up in India, Contact details (Name, Phone number, email ID) including the Address of Agents / Service Centres in India to be provided.	
2.0	Information to be provided by Vendor	
2.1	Year of launch of the model quoted against this enquiry	
2.2	Number of UTMs supplied and commissioned till date.	
2.3	The BIDDER / VENDOR to furnish Reference list of customers viz. Name and address of the customers or companies where the quoted model of equipment is installed, month / year of commissioning and application of the equipment supplied.	
2.4	The BIDDER shall give details about supply of similar equipment to BHEL units if any with Make, Model and Year of Supply & Commissioning etc.	
2.5	Details on Standards followed in Design and Testing of UTM.	
2.6	Details of Quality System followed (Furnish the salient aspects of the Quality Assurance System followed)	

S. No	BHEL SPECIFICATION	BIDDER / VENDOR'S OFFER
2.7	BIDDER has to indicate the Country of Origin for the supply of equipment.	
2.8	Any Additional Data to supplement the manufacturing capability of the BIDDER for the subject equipment.	
3.0	Vendor to note the following:	
3.1	The BIDDER shall submit the offer in Two Parts – 1. Technical [with PART A & PART B] & 2. Commercial and Price Bid.	
3.2	The VENDOR's RESPONSE against each clause in PART A & B of the offer should be filled compulsorily with complete details.	
3.3	The BIDDER shall assure a continuous support for Spares and Service for Ten Years, from the date of commissioning of the equipment at BHEL Works.	
3.4	The Technical Offer shall be supported by Product Catalogue and Data Sheets and complete technical details / literature on the quoted model.	

The performance certificate should be produced **on Customer's Letter Head.**

Suggestive Format of Performance Certificate:

(On Customer's letter head)

PERFORMANCE CERTIFICATE

- 1 Supplier / Maker of the UNIVERSAL TESTING MACHINE :
- 2 Make & Model of the UNIVERSAL TESTING MACHINE :
- 3 Month & Year of Commissioning :
- 4 Performance of the UNIVERSAL TESTING MACHINE : Satisfactory / Not Satisfactory
(Strike off whichever is not applicable)
- 5 After sales service : Satisfactory / Not Satisfactory
(Strike off whichever is not applicable)
- 6 Any Other remarks :

Date:

Signature & Seal of the Authority
Issuing the Performance Certificate

UNIVERSAL TESTING MACHINE (UTM) 2.0 kN, Qty – 1 no.

PART B - Technical Specification

S. No.	BHEL REQUIREMENTS	BIDDER'S OFFER
1.0	General Specification : The facility shall be capable of testing mechanical properties like Tensile strength, % elongation at different loads & break, tear strength, cross breaking strength, compression strength, modulus of elasticity etc. of test material at ambient temperature.	
1.1	Type of material to be tested: Load cell. Dimensions: 280(L)x80(W)x50(D)mm	
1.2	Electronic type Universal Testing Machine with One master/reference Load Cell of Capacity 2.0 kN . The UTM shall be capable of measuring tensile loads.	
2.0	Machine Specification	
2.1	Crosshead Travel	350 mm or more excluding grip. Motorized adjustable crosshead with controls
2.2	Travel Resolution	0.01 mm
2.3	Crosshead Speed	0.1 to 300 mm/min
2.4	Speed Resolution	0.1 mm/min
2.5	Loading / Measuring accuracy	0.05%
2.6	Control Mechanism	Through PC & associated software
2.7	Load cell Range	0.2 kN to 2.0 kN
2.8	Frame Rigidity	To withstand 20 kN or More
2.9	Least Count	0.01 kN
2.10	Measuring Units	Newton & kg
2.11	Backlash Prevention	Backlash elimination system
2.12	Anti-Rust	Antirust plated column
3.0	Control & Output	
3.1	Control Unit	Supplied with Digital readout system for Load and Elongation with: i. Micro Processor Based Control Unit / Computer with DVD writer & USB port. ii.High Precision Encoder/ sensor for Elongation Measurement. Vendor to specify.
3.2	Interface	USB

S. No.	BHEL REQUIREMENTS		BIDDER'S OFFER
3.3	Outputs	Peak Load; Peak Elongation; Brake Load; Percentage elongation etc. Vendor to specify.	
3.4	Graphs	Load vs Length ; Load vs Displacement; Vendor to specify the other graphs available	
3.5	Zoom	Controller should have provision for Zooming in and out the graph outputs & export the data via USB.	
3.6	Comparison	Controller to have provision to take 1 No. of extra load cell input along with master load cell for processing. All the user options available for the master load cell have to be provided for the additional channel also. The master load cell vs specimen load cell characteristics shall be available as comparative analysis in report generation.	
3.7	Programming	Controller to have provision for programming the test mode and save user steps for repeatable tests.	
3.8	Software Features (Vendor to Specify)	<ul style="list-style-type: none"> • Window's based graphical user interface. • Provides platform for basic materials measurement, test control, report generation • Set-up and configuration of the display screen and control panel. Set-up of limits and gain controls. • Security with user login passwords. • User calculation creator for defining custom calculations. • On-line help and reference guide. • Automatic grip control (frame dependent). • Saving and retrieval of test methods and data. Advanced data management and high-speed data retrieval system for accessing history. • Option to edit/change/modify history. • Warning signals of vital parameters/settings in equipment. • User calculation creator for defining custom calculations 	

S. No.	BHEL REQUIREMENTS	BIDDER'S OFFER
		<ul style="list-style-type: none"> • Prompted test sequence creator • Live routine test plots with automatic scaling zoom-in/out • Loading units to be in kN. Provision for conversion load unit to N, Kg, ton, lb to be available. Displacement unit to be in mm, with provision for conversion to cm and inch. • Report generation with basic report templates. • Example of test methods for easy test creation.
3.9	DATA acquisition System	Suitable DATA acquisition system to be provided along with the equipment for local/remote monitoring using suitable Computer.
4.0	Environmental	
4.1	Ambient conditions	Temperature up to 50°C; Humidity up to 90% but both upper limits do not occur simultaneously.
4.2	Ingress Protection	All electrical & electronic control cabinets & panels should be dust and vermin proof and shall have minimum IP 54 protection. Vendor to specify the IP rating.
5.0	Power Requirement	
5.1	Power Supply	415V ±10%, 3 Phase, 3 Wire System (R, B, Y) & Protective Earth / 220V AC 1 Phase, 3 Wire (P, N, E) ±10%, 50 Hz (Universal input or Auto/Man selection)
5.2	Cables	All types of power and communication cables, connections required for connecting BHEL's power supply point to the equipment, shall be provided by Bidder.
5.3	Tropicalisation	All electrical / electronic equipment shall be tropicalized. All control cables should be of copper.
5.4	Earthing	Bidder should ensure proper earthing for the machine and its peripherals.
6.0	Details of the Equipment offered:	
6.1	Make & Model	Vendor to specify
6.2	Overall Dimensions in mm	Vendor to specify

S. No.	BHEL REQUIREMENTS	BIDDER'S OFFER
6.3	Equipment Layout Plan	Information on the requirements for proper layout plan for erection and installation of equipment's with set off dimensions to be furnished along with the offer in order to enable BHEL to check suitability in the identified location.
6.4	Gross Weight in kg	Vendor to specify
6.5	Total Connected load in KW	Vendor to specify
7.0	Safety Features: The facility shall be equipped with adequate safety precautions to avoid damage to the facility and to the operator to the extent possible. Details shall be provided	
7.1	Emergency Stop Button.	
7.2	Electronic Over load protection for Load cell.	
7.3	Upper & Lower Limit Switches for Over travel protection.	
7.4	Details of other safety systems to be provided	
7.5	Other safety features. Vendor to specify	
7.6	Regulatory requirements	<ul style="list-style-type: none"> • Safety Compliance as per IEC 61010-1:2001 or more. • EMC Compliance as per IEC/ EN 61326-1:2002 or more.
7.7	Shock and Vibration	As per IEC /EN 60086-2
8.0	Accessories & Fixtures: Bidder shall provide the list of all fixtures, essential and optional accessories which are required to enhance the operating efficiency and features of the offered equipment. An indicative list is given below: <ul style="list-style-type: none"> • Mains / Power cord / Grips • Probes / Test lead kit • USB interface cable • Prop. / Special software • Storage Bags / Covers 	
9.0	Spares	List of spares required for 2 years of trouble free operation, to be quoted along with the offer. Also the list of consumables, if any, shall be supplied along.

S. No.	BHEL REQUIREMENTS		BIDDER'S OFFER
10.0	Consumables	Bidder to attach un-priced list (priced list with Unit Rate shall be attached in the commercial offer) of various consumables to be procured with the equipment for 10000 impressions. Details / specifications of the consumables to be mentioned.	
11.0	Operation & Maintenance manual		
11.1	Hard copy	Two sets of O&M manuals in English language shall be supplied along with the Test facility. The O&M manual shall comprise of Trouble shooting guideline (Diagnostics, Do's & Don'ts) and maintenance aspects along with schematic drawings illustrating the principle of operation, detailed assembly drawings with clear marking of each component /sub-assembly/assembly, all essential circuit diagrams, broad specifications of components used.	
11.2	Soft copy	1 soft copy of the O&M manual in English (CD or pen drive)	
12.0	Documents to be submitted along with offer: Apart from the details / documents mentioned above in various clauses, following documents (in English) are to be submitted along with the technical offer, for evaluation. <ul style="list-style-type: none"> • Catalogues of the Equipment & Accessories • Details of bought out items with specifications / catalogues. 		
13.0	Test Report	As applicable to system / instrument requirement, traceable to Indian standard.	
14.0	Calibration Certificate & procedure	The Test facility shall be accompanied by calibration certificate for overall system accuracy and measurement accuracy of all the instruments traceable to national/ international standards. Along with the calibration certificates, complete details of calibration procedures & instructions, periodicity, acceptance criteria, methodology for corrections etc. shall be provided.	
15.0	Pre-Dispatch Inspection	The equipment shall be offered for inspection by BHEL prior to dispatch at Vendor's works.	

S. No.	BHEL REQUIREMENTS		BIDDER'S OFFER
16.0	Installation & commissioning	Commissioning and demonstration of all the features of the offered equipment at BHEL works shall be carried out by the supplier's representative including the following: <ul style="list-style-type: none"> i. Levelling and mounting of the equipment; guidance for special flooring (if needed). ii. Mount and test all peripheral fixtures and transducers. iii. Install any environmental chambers, advanced extensometers, etc. check correct operation of any/all hydraulic, pneumatic, mechanical assemblies, electrical components and transducers. iv. Configure controller and test for correct operation including any/all adjustments and tuning. v. Calibration and certification of equipment after commissioning. 	
17.0	Utility Requirements	Requirement of various utilities such as power, hydraulic oil, cooling facility (if required), handling facilities such as cranes during commissioning are to be furnished by the vendor.	
18.0	Prove-Out	The service engineer has to calibrate the equipment and its accessories by direct and indirect methods and to carryout performance prove-out as per BHEL specifications.	
19.0	Training	The Service Engineer has to impart training to BHEL Engineers on the Operation, calibration, Data processing and Maintenance of the equipment during commissioning.	
20.0	Performance Guarantee period	The equipment shall be guaranteed for a period of 12 months from the date of commissioning at BHEL or 18 months from dispatch whichever is earlier.	
21.0	Annual maintenance Contract (AMC)		
21.1	AMC after the Guarantee period	Quote optionally.	
21.2	Service Support requirement: Bidder shall ensure continuous AMC service support facilities in India after the guarantee period for a minimum period of 10 years, through Service personnel in India.		

S. No.	BHEL REQUIREMENTS		BIDDER'S OFFER
21.3	Response time	The Response time for attending to the break down during AMC is expected to be within 7 working days. The bidder has to indicate the response time for the service engineer to be at BHEL works from the time of reporting the breakdown through e-mail or tele-fax.	
21.4	AMC Service Calls: The Bidder has to furnish details on service calls (number of calls and intervals) for preventive and Break-down maintenance.		
21.5	Calibration	Machine shall be calibrated once in a year for integrity. Calibration charges per annum to be included in the offer separately.	
21.6	The bidder has to quote for AMC under two patterns given below, for a period of three years after the expiry of the guarantee period:		
21.6.1	AMC – CASE I: Technical service for Preventive Maintenance, Trouble shooting and Re-commissioning of the equipment excluding the cost of Spares and Consumables (BHEL will not be responsible for the timely availability of Spares and Consumables).		
21.6.2	AMC – CASE II: Technical service for Preventive Maintenance, Trouble shooting and Re-commissioning of the equipment including the cost of Spares and Consumables.		

--- End of Technical Specification ---