



An ISO 9001  
Company

## Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

CAPITAL EQUIPMENT / MATERIALS MANAGEMENT

<b>ENQUIRY</b>	Phone: +91 431 257 79 38 Fax : +91 431 252 07 19 Email : <a href="mailto:tvenkat@bheltry.co.in">tvenkat@bheltry.co.in</a> Web : <a href="http://www.bhel.com">www.bhel.com</a>
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	<b>Enquiry Number:</b> <b>2620900047</b>	<b>Enquiry Date:</b> <b>18.02.2009</b>	<b>Due date for submission of quotation:</b> <b>21.03.2009</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			

Item	Description	Quantity	Delivery (Item required at BHEL on)
10	Calorimeter as per the technical specification & commercial conditions applicable (to be downloaded from web site <a href="http://www.bhel.com">www.bhel.com</a> or <a href="http://tenders.gov.in">http://tenders.gov.in</a> )	1 No.	30.11.2009
<b>BHEL commercial terms &amp; conditions with Price Bid and Bank Guarantee formats along 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 &gt; Bharat Heavy Electricals Limited page) under Enquiry reference “2620900047”.</b>			
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 <b>BHARAT HEAVY ELECTRICALS LIMITED</b>  Manager / Capital Equipment / MM	

**QUALIFYING CRITERIA**

The BIDDER / VENDOR have to necessarily provide the following details, for making an assessment of the firm's capability and competency.

The bid consists of 2 parts namely Technical and Price bid. Vendor shall submit Technical and Price bid separately. BHEL will study both the Qualifying Criteria and Response for Technical Specifications. The Price bid can be studied only if both the Qualifying Criteria and Response for Technical Specifications are found acceptable.

[The BIDDER is expected to give complete details against each clause in the table given below and wherever necessary an additional sheet may be attached giving clear reference number to cover the required details]

**Name of the product:** BHEL uses the title “**CRC EQUIPMENT**” in this document. Please refer Technical Specification attached herewith for further details.

<b>S. No.</b>	<b>PARTICULARS</b>	<b>VENDOR's RESPONSE</b>
<b>1.0</b>	The BIDDER / VENDOR shall have a minimum of <b>FIVE</b> Years of Continuous Experience in the Design, Manufacture & Supply of “ <b>CRC EQUIPMENT</b> ”. Please indicate the actual experience.	
<b>2.0</b>	YEAR of launch of the Model quoted against this ENQUIRY	
<b>3.0</b>	Is there any other model launched after the quoted Model? Otherwise, indicate the likely year in which the next model is likely to be launched.	
<b>4.0</b>	Number of “ <b>CRC EQUIPMENT</b> ” supplied, installed and commissioned till date in India. Please furnish contact person name, address, phone number, fax number and mail id.	
<b>4.1</b>	Number of “ <b>CRC EQUIPMENT</b> ” supplied, installed and commissioned till date outside India. Please furnish contact person name, address, phone number, fax number and mail id.	

<b>Committee Members</b>	<b>Name &amp; Design.</b>	<b>Signature</b>	<b>Initial</b>
	Kannan K/DGM/CR/CRC		
	Pattabiraman Dr R /SM/Labs		
	Sivasubramanian R /Manager/Labs		
<b>For Specifications having reference numbers</b>	CRC- 5,	DATE : 05 – 01 –2008	

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<b>4.2</b>	Please enclose Performance Certificate from atleast <b><u>one</u></b> Indian or Foreign customer for the model quoted.	
<b>5.0</b>	Details of Design Set-Up and Technology Back-Up assured from the PRINCIPAL Equipment Maker.	
<b>6.0</b>	Details on Service-after-Sales set-up in India including the addresses of Agents/Service Centre in India.	
<b>7.0</b>	The BIDDER / VENDOR shall submit the offer in TWO PARTS namely <u>“Technical Bid”</u> & <u>“Price Bid”</u> .	
<b>8.0</b>	The <u>“Technical Bid”</u> shall have vendor's responses along with Product Catalogue, Data Sheets in ORIGINAL and complete technical details of 'Bought-Out-Items' with copies of Product Catalogue. All Technical & Commercial terms can be here. <b>NO PRICE DETAIL IS ENTERTAINED HERE.</b>	
<b>9.0</b>	The BIDDER / VENDOR shall assure a continuous support for SPARES and SERVICE for TEN Years, from the date of commissioning of the equipment at BHEL Works.	

<b>Committee Members</b>	<b>Name &amp; Design.</b>	<b>Signature</b>	<b>Initial</b>
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	Sivasubramanian R /Manager/Labs		
<b>For Specifications having reference numbers</b>	CRC- 5,	DATE : 05 – 01 –2008	

10.0	<p>The <u>"Price Bid"</u> shall have Price Part with following options.</p> <p><b>In case the offered model requires PC with special hardware and software, then bidder should include the same in their scope. The scope includes 17" TFT monitor, Laser printer B/W, Windows XP+ services packages also.</b></p> <p><b>In case the offered model requires only general PC hardware and software, then bidder should include only the application software in their scope. Bidder should give detailed Hardware and Software specification for arranging at BHEL.</b></p> <p><b><u>Option 1(Incase bidder supplies PC):</u></b>          Basic Equipment.          All PC hardware and software.          All software CDs (1 set) with valid license.          Installation &amp; Maintenance manuals (2 Hard copies &amp; 1 set of CDs)          Mandatory spares.          Consumables.          AMC</p> <p><b><u>Option 2(Incase bidder does not supply PC)</u></b>          Basic Equipment.          Application software CDs 1 set with valid license.          Responsibilities of interfacing BHEL supply PC with Basic Equipment(including interconnecting cables)          Installation &amp; Maintenance manuals (2 Hard copies &amp; 1 set of CDs)          Mandatory spares.          Consumables.          AMC</p>	
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Committee Members	Name & Design.	Signature	Initial
	Kannan K/DGM/CR/CRC		
	Pattabiraman Dr R /SM/Labs		
	Sivasubramanian R /Manager/Labs		
For Specifications having reference numbers	CRC- 5,	DATE : 05 – 01 –2008	

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**TECHNICAL SPECIFICATIONS FOR BOMB CALORIMETER**

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Sl. No.	Particulars	BHEL specifications	Bidder's offer [With complete technical details]
1	Confirmation for each point of specification.	Vendor is requested to give specific confirmation for each point. Deviations if any shall be clearly indicated.	
2	Ambient Condition	The uncontrolled ambient room conditions are- a) Temperature: 10 to 50 ° C, b) Relative Humidity: 100 % c) Dusty	
3	Scope of Vendor	<ol style="list-style-type: none"><li>1. Design, Manufacture, Testing, at vendor's works.</li><li>2. Original software, Installation &amp; Maintenance manuals, Consumables, Mandatory Spares.</li><li>3. UPS(if required)</li><li>4. Training, Installation, Commissioning &amp; Proving performance at BHEL Trichy.</li><li>5. On-site Guarantee, On-site Annual Maintenance Contract.</li></ol>	
4	Name of Equipment	BOMB CALORIMETER	
4.1	Area of Application	In the field of Coal and fossil fuel research and for determination of Calorific value of coal, coke, fossil fuels, oil and biomass samples. Study of heat release rate for many fuels.	
4.2	Principle of Operation	Isoperibol calorimetry	
4.3	Design Base	Automated bucket and jacket fill as well as bomb fill and rinse with software operated isoperibol control and calculation and projection of end results.	
4.4	Equipment Configuration	The minimum desired features are enlisted below	
4.5	Typical Material Specifications to be analysed	Coal, coke, biomass, oil and other fossil fuels.	
4.6	Tests per Hour	6 Minimum	

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**TECHNICAL SPECIFICATIONS FOR BOMB CALORIMETER**

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4.7	Operator time per test	< 1 minute	
4.8	Repeatability (% RSD)	< 0.1 %	
4.9	Temperature Resolution	0.0001°C	
4.10	calorie sample range	1000 – 10000	
4.11	Linearity across operating range	0.05%	
4.12	Bomb type	Fixed cylinder removable head	
4.13	Bucket type and Bucket filling	Fixed bucket & automatic filling	
4.14	Oxygen filling, Pressure release and bucket washing	All automatic	
4.15	Memory	1000 tests	
4.16	Balance connection	RS232C Serial or better	
4.17	Calorimeter accessories	Pellet press, Fuel capsules, Fuse wire, Benzoic acid and tape for volatile liquids	
4.18	Oxygen combustion bomb	Constructed using Niobium stabilized stainless steel, Resistant to mixture of Sulphuric and nitric acids, and combustion products of halogen containing fuels. To safely burn fuels up to 8000 Calories at 40 atm oxygen pressure.	
4.19	Calorimeter	To use thermistor [range 0-70 deg C, ] Resolution:0.0001°C, Repeatability: single point:± 0.002°C, Linearity, 10°C span:± 0.002°C	
4.20	Other accessories	Water cooler [25 Lit min per Hr, 5-10°C.]	
4.21	Power supply	230V ± 10% AC/1 Ph/50Hz- 1 Feeder	
4.22	Data System	<p>In case the offered model requires PC with special hardware and software, then bidder should include the same in their scope. The scope includes 17" TFT monitor, Laser printer B/W, Windows XP+ services packages also.</p> <p>In case the offered model requires only general PC hardware and software, then bidder should include only the application software in their scope. Bidder should give detailed Hardware and Software specification for arranging at BHEL</p>	

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5	Along with offer the following details in hard copies shall be indicated.	a) Scope and interconnection diagrams-2 copies. b) Catalogs-2 copies. c) Dimensional details for preparing Civil Engg Drawings-2 copies. d) Mandatory spares with Unit price if applicable. e) Consumables along with unit price if applicable. f) Power supply requirement. g) Instrument air and compressed air if required. h) PC configuration. i) Vents and drains if required. j) Space requirement around the equipment. k) List of software.	
6	Installation and Commissioning	The Equipment with all Accessories is to be installed & commissioned at BHEL Works, free of cost, by the service engineer of the supplier.	
7	Performance Prove-Out at BHEL	The Supplier's Service Engineer has to conduct demonstration & calibration of the Equipment with Accessories.	
8	Inspection and Training at vendor's works	Incase the Equipment is of Indian origin, then BHEL's inspection and free training for 2 persons are applicable. Incase the Equipment is of Foreign Origin, the vendor should thoroughly inspect the equipment, furnish inspection certificate for BHEL's review and get clearance prior to dispatch of Equipment.	
9	Training on Operation & Maintenance at BHEL works.	Complete Training for BHEL Engineers to be given on Operation & Maintenance of the offered equipment at BHEL works, free of cost.	
10	Onsite Performance Guarantee	The Equipment & Accessories (including Bought-Out Items) are to be guaranteed for its performance for a minimum period of <b>one year from the date of performance acceptance at BHEL Works.</b>	
11	Draft and Final Installation and O&M manual in ENGLISH Language	1No Draft Installation, Operation & Maintenance Manual.It shall contain Electric Schematics, Circuit Diagrams, PCB Drawings, Trouble Shooting Charts, Mechanical Sub-Assemblies, Rating of Bought-Out Items, etc.	

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**TECHNICAL SPECIFICATIONS FOR BOMB CALORIMETER**

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		BHEL will review its completeness and inform supplier to make necessary corrections if applicable and ask to furnish 2 more final sets. In addition, one soft copy in CD to be supplied.	
12	Annual Maintenance Contract - AMC	The bidder has to quote for AMC through trained service personnel in India for a period of three years after the expiry of ORIGINAL WARRANTY period. Technical Service for <b>Preventive and breakdown Maintenance</b> , Trouble Shooting and Re- Commissioning of the Equipment INCLUDING the Cost of SPARES and Consumables .Please consider <b>4</b> visits per year.	
13	AMC - RESPONSE	The bidder has to furnish / indicate the response time for the service engineer to be at BHEL works, from the time of reporting breakdown through e-mail or telefax.	