



An ISO 9001  
Company

## Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

MATERIALS MANAGEMENT / CAPITAL EQUIPMENT

### ENQUIRY

Phone: +91 431 257 70 49

Fax : +91 431 252 07 19

Email : [csguna@bheltry.co.in](mailto:csguna@bheltry.co.in)

Web : [www.bhel.com](http://www.bhel.com)

	<b>Enquiry Number:</b>	<b>Enquiry Date:</b>	<b>Due date for submission of quotation:</b>
	2620900064	26.02.2009	04.04.2009

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	FTNMR Spectrometer 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> )	01 No.	31.10.2009

**BHEL commercial terms & conditions with Price Bid and Bank Guarantee formats 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 Enquiry reference “2620900064”.**

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.Manager / MM / Capital Equipment

**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 3 parts namely Qualifying Criteria, Technical bid and Price bid. Vendor shall submit Qualifying Criteria & Technical bid together in a sealed cover. Price bid shall be in a separate sealed cover. BHEL will consider Technical bid only if the vendor/bidder qualifies. BHEL will consider Price bid only if the Technical bid is 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

S. No.	PARTICULARS	VENDOR's RESPONSE
1.0	The BIDDER / VENDOR shall have a minimum of <b>FIVE</b> Years of Continuous Experience in the Design, Manufacture & Supply of "CRC EQUIPMENT". Please indicate the actual experience. <b>This is a qualifying criteria.</b>	
2.0	YEAR of launch of the Model quoted against this ENQUIRY	
3.0	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.	
4.0	Number of "CRC EQUIPMENT" supplied, installed and commissioned till date in India. Please furnish contact person name, address, phone number, fax number and mail id. Please mention that how many are used for coal analysis purpose.	
5.0	Number of "CRC EQUIPMENT" supplied, installed and commissioned till date outside India. Please furnish contact person name, address, phone number, fax number and mail id. Please mention that how many are used for coal analysis purpose.	

Committee Members	Name & Design.	Signature	Initial
	Kannan K/DGM/CR/CRC		
	Pattabiraman Dr R /SM/Labs		
	Sivasubramanian R/Manager/Labs		
<b>For Specifications having reference numbers</b>	CRC- 1,	DATE : 05 – 01 –2008	

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<b>6.0</b>	Please enclose Performance Certificate from atleast <b>Five</b> Indian customers for the model quoted. This certificate should not have been received prior to <b>01.Jan.2007. This is a qualifying criteria.</b>	
<b>7.0</b>	Details of Design Set-Up and Technology Back-Up assured from the PRINCIPAL Equipment Maker.	
<b>8.0</b>	Details on Service-after-Sales set-up in India including the addresses of Agents/Service Centre in India.	
<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>This is a qualifying criteria</b>	
<b>10.0</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>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- 1,	DATE : 05 – 01 –2008	

<b>11.0</b>	<p>The “Price Bid” 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		
<b>For Specifications having reference numbers</b>	CRC- 1,	DATE : 05 – 01 –2008	

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### TECHNICAL SPECIFICATIONS FOR FT NMR SPECTROPHOTOMETER

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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	FT-NMR SPECTROPHOTOMETER	
4.1	Type of Instrument	400 MHz FT-NMR SPECTROMETER : FTNMR spectrometer at 400 MHz with specially shielded superconducting magnet at 9.39 tesla. Solid state <sup>13</sup> C N.M.R. spectrum	
4.2	Purpose	<ol style="list-style-type: none"> <li>1. For rapid and nondestructive determination of the total hydrogen content and distribution of hydrogen among chemical functional groups present.</li> <li>2. To analyze organic part of coal and coal derived products.</li> <li>3. Characterizing coal liquifaction products.</li> <li>4. For quantifying the total aliphatic carbon content.</li> </ol>	
4.3	Spectrometer	Solid State Ready -2 channels -Spectrometer Control Unit (SCU) – CPU :	

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		<ul style="list-style-type: none"> <li>Intel Pentium 1.3 GHz</li> <li>-SCU Hard Disc capacity minimum 250 GB</li> <li>-SCU Memory – 3.0 GB</li> <li>-Pulser – Multiple</li> <li>-electronics for gradient enhanced experiments max 90 G/cm</li> <li>-Power amplifiers : HF Output 100W , LF Output 300W</li> <li>-HF Preamplifier GaAs (1H,19F common), LF Preamplifier GaAs (13C)and TFT for multinuclear experiments</li> <li>-Lock Frequency Transmitter by DDS</li> <li>-Lock Signal Receiver : DDS QD</li> <li>-Z0 auto-correction for effective solid NMR</li> </ul>	
4.4	Magnet	<ul style="list-style-type: none"> <li>-liquid helium hold time of magnet &gt;120 days</li> <li>-54 mm room temperature bore , antivibration pads for magnet legs</li> <li>-radial stray 5 G field &lt;0.95 m and axial: &lt;1.5 m</li> <li>-at least 8 cryoshims</li> <li>-liquid helium transfer line</li> <li>-built-in liquid helium level sensor</li> <li>-at least 17 RT shims</li> <li>-Shim system – Digital Matrix 17 channels</li> </ul>	
4.5	Probe	<ul style="list-style-type: none"> <li>-CPMAS Probe for solid samples, High speed 4mm</li> <li>-<sup>13</sup>C sensitivity : ≥120 (methyl peak of Hexamethylbenzene, 8 scans for a sample length of 7 mm)</li> </ul>	
4.6	Data System	<p>Software for 1D, 2D and 3D acquisition and processing.</p> <p>-Provision for automatic measurements using non-deuterated/protonated solvents.</p> <hr/> <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</p>	

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		for arranging at BHEL	
4.7	Power supply	230V +/- 10% AC/1 Ph/50Hz- 1 Feeder	
5	Along with offer the following details in hard copies shall be indicated.	<ul style="list-style-type: none"> <li>a) Scope and interconnection diagrams-2 copies.</li> <li>b) Catalogs-2 copies.</li> <li>c) Dimensional details for preparing Civil Engg Drawings-2 copies.</li> <li>d) Mandatory spares with Unit price if applicable.</li> <li>e) Consumables along with unit price if applicable.</li> <li>f) Power supply requirement.</li> <li>g) Instrument air and compressed air if required.</li> <li>h) PC configuration.</li> <li>i) Vents and drains if required.</li> <li>j) Space requirement around the equipment.</li> <li>k) List of software.</li> </ul>	
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 & Training at Vendor works.	BHEL's Inspection is applicable. Complete Training for BHEL Engineers is to be given on Operation & Maintenance free of cost.	
9	Training on Operation & Maintenance at BHEL works.	Complete Training for BHEL Engineers is 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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		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 visits per year</b> .	
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.	