



# Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

MATERIALS MANAGEMENT / CAPITAL EQUIPMENT

An ISO 9001  
Company

<b>ENQUIRY</b>	Phone: +91 431 257 70 49 Fax : +91 431 252 07 19 Email : <a href="mailto:csguna@bheltry.co.in">csguna@bheltry.co.in</a> Web : <a href="http://www.bhel.com">www.bhel.com</a>
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	<b>Enquiry Number:</b>	<b>Enquiry Date:</b>	<b>Due date for submission of quotation:</b>
	<b>2620900048</b>	<b>18.02.2009</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	Gas Chromatograph with FID Detector System 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.	30.11.2009

**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 “2620900048”.**

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

## Coal Research Centre

Ref: CRC Eqpt: QC-a  
Rev No. 0/Dt. 05.01.2009  
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### 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.

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.	
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.	
4.1	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.	

Committee Members	Name & Design.	Signature	Initial
	Kannan K/DGM/CR/CRC		
	Vaidnath T R /Mgr/CR/CCDP		
	Balachandran Dr R/SM/CCDP		
For Specifications having reference numbers	CRC-21,	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>
	Kannan K/DGM/CR/CRC		
	Vaidnath T R /Mgr/CR/CCDP		
	Balachandran Dr R/SM/CCDP		
<b>For Specifications having reference numbers</b>	CRC-21,	DATE : 05 – 01 –2008	

<b>10.0</b>	<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		
	Vaidnath T R /Mgr/CR/CCDP		
	Balachandran Dr R/SM/CCDP		
<b>For Specifications having reference numbers</b>	CRC-21,	DATE : 05 – 01 –2008	

**Coal Research Centre**

**TECHNICAL SPECIFICATIONS FOR**  
**GAS CHROMOTOGRAPH**  
**WITH FID**

**Ref: CRC-21**  
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<b>Sl. No.</b>	<b>Particulars</b>	<b>BHEL specifications</b>	<b>Bidder's offer [With complete technical details]</b>
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	1. Design, Manufacture, Testing, at vendor's works. 2. Original software, Installation & Maintenance manuals, Consumables, Mandatory Spares.  3. UPS(if required)  4. Training, Installation, Commissioning & Proving performance at BHEL Trichy.  5. On-site Guarantee, On-site Annual Maintenance Contract.	
4	Gas Chromotograph	Microprocessor Controlled, designed robustly, rugged and suited for in house air conditioned environment.	
		To analyze gas sample with single sample input with simultaneous injection to cover the measurement of all the components with the accuracy level of +/- 1%Full Scale. Refer 4A1,4A2,4A3	
		Gas Sampling System for single sample input to inject simultaneously with built in filters for SPM and moisture	
		With suitable nos injection ports and columns	
		Suitable nos detectors of TCD(Thermal Conductivity Detector) and provision for FID(Flame Ionization Detector) and FPD(FlamePhotometric Detector).	
		With purification system and flow controls for the carrier gas stream	

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		With sufficiently large capacity single or two ovens to accommodate all multi columns, column switching valves and back flush valves	
		Oven temperature range is from ambient to 450° C above with dual over heat protection one by user and another by factory set.	
		Microprocessor temperature programmer with heating rate of 0.1° C/ minute to 50° C / minute	
		Alphanumeric display with soft touch keys in the front panel of the oven.	
		Provision for automatic cooling by using atmospheric air through flap control using stepper motor.	
		With ON / OFF pneumatic pressure switches for all individual gas lines	
		Auto Diagnostics checks. Corrects, operations and status of Gc control, Ram, ROM, CPU, Sensors, Keyboard and live auto diagnosis while starting and also during running.	
		Method files	
		With any accessories left out but required	
		Accuracy: + or – 1% FSD	

4A1	Component in Fuel Gas	Approximate Range % or ppm by volume	Vendor's offer			
			range	accuracy	resolution	Detector
	1. Carbon dioxide CO <sub>2</sub>	0 to 25 %				
	2. Oxygen O <sub>2</sub>	0 to 1%				
	3. Carbon Monoxide CO	0 to 25%				
	4. Hydrogen H <sub>2</sub>	0 to 25 %				
	5. Methane CH <sub>4</sub>	0 to 5 %				
	6. Nitrogen N <sub>2</sub>	0 to 60%				
	7. Hydrogen Sulphide H <sub>2</sub> S	0 to 5000 ppm				

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		8. Carbonyl Sulphide COS	0 to 1000 ppm					
		9. Ammonia NH <sub>3</sub>	0 to 1%					
		10. Hydrochloric Acid, HCl	0 to 500 ppm					
4A 2	Component in Flue Gas	Approximate Range % or ppm by volume	Vendor's offer					
			range	accuracy	resolution	Detector		
	1. Carbon dioxide CO <sub>2</sub>	0 to 25 %						
	2. Oxygen O <sub>2</sub>	0 to 25 %						
	3. Nitrogen N <sub>2</sub>	0 to 80 %						
	4. Carbon Monoxide CO	0 to 3000 ppm						
	5. Carbon Monoxide CO	0 to 5 %						
	6. Oxides of nitrogen NO <sub>x</sub>	0 to 1000 ppm						
	7. Oxides of Sulphur SO <sub>x</sub>	0 to 1000 ppm						
4A 3	Component in Ambient Air	Approximate Range % or ppm by volume	Vendor's offer					
			range	accuracy	resolution	Detector		
	1. Oxygen O <sub>2</sub>	0 to 25 %						
	2. Nitrogen N <sub>2</sub>	0 to 80 %						
	3. Carbon dioxide CO <sub>2</sub>	0 to 500 ppm						

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	4. Carbon Monoxide CO	0 to 3000 ppm						
	5.Oxides of nitrogen NO <sub>x</sub>	0 to 1000 ppm						
	6.Oxides of Sulphur SO <sub>x</sub>	0 to 1000 ppm						
	7.Ammonia NH <sub>3</sub>	0 to 1000 ppm						
5	Power supply	230V +/- 10% AC/1 Ph/50Hz- 1 Feeder						
6	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>						
7	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>						
8	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.						
9	Performance	The Supplier's Service Engineer has to conduct						



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	Prove-Out at BHEL	demonstration & calibration of the Equipment with Accessories.	
10	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.	
11	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.	
12	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>	
13	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. 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	
14	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.	
15	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.	