



# Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

CAPITAL EQUIPMENT / MATERIALS MANAGEMENT

An ISO 9001  
Company

## ENQUIRY

### NOTICE INVITING TENDER

Phone: +91 431 257 79 38

Fax : +91 431 252 00 31

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

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

## TWO PART BID

Tender to be  
submitted in two Parts

Enquiry Number:  
**2851300016**

Enquiry Date:  
**24.09.2013**

Due date for submission of quotation:  
**28.10.2013**

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	Qty.	Delivery Required	Delivery Terms Required
10	Heavy Duty Mobile 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> )	1 No.	31.01.2015	F.O.R, BHEL Stores, POWER EQUIPMENT FABRICATION PLANT, BHARAT HEAVY ELECTRICALS LIMITED, Mundipar- 441804, Sakoli Taluk, Bhandara District, Maharashtra State.

### Important points to be taken care during submission of offer:-

1. Checklist No. BND/IMP/03 and BND/IND/03A to be filled and enclosed along with the offer failing which, the offer will not be considered for evaluation.
2. EMD for this Tender will be Rs. 40,000/-
3. 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.
4. The time period required for Erection & Commissioning of the item shall be maximum 1 week from the date of intimation from BHEL requesting supplier to depute Service Engineers about site readiness

BHEL's General guidelines / instructions (refer MM/CE/GENL/001-EMD) 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 Enquiry reference "2851300016".

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 / Capital Equipment / MM

**T. VENKATESWARAN**  
Senior Manager  
Capital Equipment / MM  
BHEL, Tiruchirappalli - 620 014

**PART - A**  
**QUALIFYING CRITERIA FOR**  
**HEAVY DUTY MOBILE SPECTROMETER**

S.No	BHEL Specification	Vendor's Offer
<b>1.0</b>	<b>QUALIFYING CRITERIA</b>	
1.1	The BIDDER / VENDOR (OEM) shall have a minimum of FIVE Years of Continuous Experience in the Design, Manufacture & Supply of "Optical Emission Spectrometer". Vendor may indicate the actual no. of years of experience in the field	
1.2	Only those vendors ( <b>OEMs</b> ), who have supplied and commissioned <b>at least ONE number of Heavy Duty Optical Emission Spectrometer</b> similar to the machine specified under Part B, in the past five years (as on date of opening of Tender) and such machine is presently working satisfactorily for a minimum period of one year after commissioning (as on date of opening of Tender) should quote.	
1.3	Vendor has to submit at least <b>One Performance Certificate</b> from their customers, for satisfactory performance of <b>Heavy Duty Optical Emission Spectrometer</b> quoted against this enquiry supplied to them with in the past five years and is working satisfactorily for a minimum period of one year (as on date of opening tender). For obtaining the Performance certificate, a suggestive format is provided.	
1.4	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.	

<b>2.0</b>	<b>INFORMATION TO BE PROVIDED BY VENDOR</b>	
2.1	Year of launch of the model quoted against this enquiry	
2.2	Number of "Optical Emission Spectrometer " supplied and commissioned till date in the quoted model.	
2.3	The BIDDER/VENDOR to furnish Reference List of Customers	
2.4	Details on SERVICE-AFTER-SALES set-up in India including the Address of Agents / Service Centres in India.	

Suggestive Format of Performance Certificate:

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

**PERFORMANCE CERTIFICATE**

- |   |  |  |
|---|--|--|
| 1 | Supplier of the machine  |  |
| 2 | Make & Model of the M/C  |  |
| 3 | Month & Year of Commissioning  |  |
| 4 | a. Application for which M/C is used<br>b. Materials /alloys analysed  |  |
| 5 | Performance of the Machine<br>(Strike off whichever is not applicable) | Satisfactory / Good / Average / Not Satisfactory |
| 6 | After sales service<br>(Strike off whichever is not applicable)        | Satisfactory / Good / Average / Not Satisfactory |
| 7 | Any Other remarks  |  |

Date:

Signature & Seal of the Authority  
Issuing the Performance Certificate

**PART-B****TECHNICAL SPECIFICATION FOR HEAVY DUTY MOBILE SPECTROMETER**

To carry out Positive Material Identification of various boiler components, where large number of components are involved and multiple tests have to be performed continuously on a large number of components. The checks are intended to analyse / sort low alloy steels, high alloy steels, stainless steels and nickel based alloys.

**BRIEF DESCRIPTION:**

Heavy Duty Mobile Spectrometer: This works on the principle of Optical Emission Spectrometry capable of giving a complete analysis within about 10 seconds, which includes elements in steels, cast iron, etc. The instrument can be used for material analysis as well as fast grade identification in arc mode. It incorporates rugged features, so that the optical system is stable against temperature changes and movement in shop floor environment.

**TECHNICAL SPECIFICATION****Qty:1 No**

SL.NO	Description	BHEL REQUIREMENT	Bidder comment
<b>1.0 Purpose</b>			
1.1	Purpose	To carry out Positive Material Identification of various boiler components, where large number of components are involved and multiple tests have to be performed continuously on a large number of components.	
1.2	Jobs to be analyzed	Boiler components like Pipes, Tubes, Plates, Fittings & Castings, Weldments of Carbon Steel, High Alloy Steel, Low Alloy steels, Stainless Steel, Nickel based alloys etc	
<b>2.0 Principle of operation &amp; machine requirements</b>			
2.1	Application	To know the chemistry of elements in a particular material specification	
2.2	Elements to be analyzed	<b>Chemistry of all elements present in a metal like Mn, Ni, Cr, Mo, Fe, V, W, Cu, Al, Si etc (supplier to indicate complete list). Preferably with 'C'</b>	
2.3	Principle of operation	The Mobile spectrometer shall work on the principle of Optical Emission Spectrometry capable of analysing multi-base materials (Fe and Ni base). No radioactive source shall be permitted. Hand held spectrometers are not acceptable (working on either optical spectrometry or by X-ray Fluorescence principle).	
2.4	Continuous operation	The Equipment shall be heavy duty type meant for continuous usage. It shall be capable of at least 1000 sparks continuously without any break. Vendor to specify life of spark producing electrode.	
2.5	Detector	Anti blooming CCD or CID type detector, or any other proven type detectors	
2.6	Modes of operation	The Equipment shall be capable of providing both analysis mode as well as sorting mode i.e., approximate chemical analysis of the material shall be detected and the equipment shall be capable of Identifying the specific Grade from a lot (Sorting mode).	

## HEAVY DUTY MOBILE SPECTROMETER

SL.NO	Description	BHEL REQUIREMENT	Bidder comment
<b>3.0 Machine Configuration</b>			
3.1	Portable	Heavy duty spectrometer shall be easily moveable on rubber roller driven cart/trolley. Vendor to provide the trolley & details.	
3.2	Power Supply	230 ± 10% V, 50 Hz, Single Phase AC Power supply will be provided. The Equipment shall work on this power supply with in-built transformer as required.	
3.3	Ambient operating conditions	The instrument is meant for rugged shop floor use (around 50 Deg C, Dusty environment, varying humidity levels, handling by many personnel) and should be suitable for the intended rough use and ergonomically designed for heavy duty usage.	
<b>4.0 User Interface</b>			
4.1	PC	The Spectrometer shall have a Modern Industrial PC along with dust proof membrane Keyboard and Serial Printer	
4.2	Interface	USB or RS232 serial communication could be provided in order to transfer the data to external computer for displaying the data and taking printout if needed	
4.3	Memory	Memory of Computer shall be minimum 16GB.	
4.4	Display	LED/LCD display	
4.5	Software	The Software shall have the following features: <ul style="list-style-type: none"> <li>Alloy Identification of commonly used materials (low alloy, high alloy, stainless steel and nickel based alloys) meeting ASME, EN and DIN.</li> <li>Alloy Verification giving chemical compositions</li> <li>Alloy table with editing facility to include newer materials in Sorting Mode</li> </ul>	
4.6	Calibration	Pre calibrated (factory) analytical programs shall be provided with the equipment for the following analytical programs- Carbon and Carbon Manganese Steels, Low Alloy Steels, High Alloy Steels and Stainless Steels, Nickel Base alloys.  A set of (SUS) Calibration Samples shall be provided for routine calibration of equipment for all the above said ranges.	
4.7	Calibration Certificate	Vendor to provide the calibration certificate.	
<b>5.0 Accessories</b>			
5.1	List of essential accessories to be provided along with offer	Vendor has to specify the entire list of accessories like probes, electrode etc	
<b>6.0 SAFETY</b>			
6.1	Safety of operation	There shall not be any operator health or Environmental hazards associated with the equipment, and the specific precautions if any shall be clearly specified in the offer.	
7.0	List of spares recommended	Vendor has to provide the list of recommended spares.	
8.0	Service manual and software CD	Three hard copies of service manual and one software CD to be provided	
9.0	Pre dispatch Inspection	The equipment shall be tested by the supplier at supplier's work prior to dispatch of the equipment and test certificate shall be given	

## HEAVY DUTY MOBILE SPECTROMETER

SL.NO	Description	BHEL REQUIREMENT	Bidder comment
<b>10.0 Commissioning</b>			
10.1	Commissioning & performance prove out	Erection and commissioning shall be done by the supplier at our BHEL works. After the installation, the supplier has to operate the equipment and prove out its performance at BHEL works for various alloy steels presented during commissioning	
<b>11.0 Training</b>			
11.1	Training on operation & maintenance	Training on Operation and Maintenance for BHEL Staff should be given by the supplier	
<b>12.0 Guarantee</b>			
12.1	Guarantee	Vendor shall provide a guarantee for a period of 12 months from the date of Commissioning of the equipment or 18 months from the date of dispatch, whichever is earlier	
12.2	Annual Maintenance Contract	Vendor to indicate whether Annual Maintenance services can be provided on contract after the guarantee period is completed	