



An ISO 9001
Company

Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

CAPITAL EQUIPMENT / MATERIALS MANAGEMENT

ENQUIRY	Phone: +91 431 257 76 53 Fax : +91 431 252 00 31 Email : skaruna@bheltry.co.in Web : www.bhel.com
NOTICE INVITING TENDER	

TWO PART BID Tender to be submitted in two Parts	Enquiry Number: 2731300016	Enquiry Date: 30.11.2013	Due date for submission of quotation: 02.01.2014
--	---	---	---

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	Oxygen, Nitrogen and Hydrogen Analyser as per the respective 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 rate of EMD for this Tender will be (INR) : 1,50,000/-
2. 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.
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.

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 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**

Engineer / Capital Equipment / MM

SECTION - I

The BIDDER is expected to give complete details against each clause in the table given below, with additional sheets those may be attached (giving clear reference number) to furnish and cover the requisite details / documents.

Sl. No.	PARTICULARS	BIDDER'S RESPONSE
1	BIDDER to provide the Profile of their Company	
2	The Bidder (OEM) shall have a minimum of five Years of Continuous Experience in the field of Design, Manufacture and Supply of Oxygen-Nitrogen-Hydrogen Analyzer .	
3	List of customers to whom Oxygen-Nitrogen-Hydrogen Analyzer or similar analyzers were supplied, installed and commissioned till date.	
4	Details on SERVICE-AFTER-SALES Set-Up in India including the Addresses of Agents / Service Centres in India.	
5	Any Additional Data to supplement the manufacturing capability of the BIDDER for the subject equipment.	

Oxygen-Nitrogen-Hydrogen AnalyzerQty: 1 No

SECTION – II: The BIDDER has to compulsorily meet the following requirements to get qualified for submitting an offer for the "Oxygen-Nitrogen-Hydrogen Analyzer".

Sl. No.	REQUIREMENTS	BIDDER'S RESPONSE
1	<p>Only those Bidders (OEMs) should quote, who have supplied and commissioned at least three numbers of Oxygen-Nitrogen-Hydrogen Analyzer or similar analyzers, in the past five years (On the date of opening of Tender) and such equipment should presently be working satisfactorily for more than one year after commissioning (on the date of opening of Tender),.</p> <p>The Bidder should submit following information where the Oxygen-Nitrogen-Hydrogen Analyzer have been supplied:</p>	
1.1	Name and postal address of the customer or company where similar equipment is installed.	
1.2	Name and designation of the contact person of the customer.	
1.3	Phone, FAX no and email address of the contact person of the customer.	
1.4	Month and Year of commissioning of the equipment.	
1.5	Application for which the equipment is supplied	
2	<p>Along with the Technical offer, the Bidder should submit <u>one Performance certificates from the customers for the satisfactory performance of the equipment supplied as per clause 1.0 above</u> (For obtaining the Performance certificate, a suggestive format is provided in SECTION – IV).</p>	
3	Offers of only those Bidders who meet the above Qualifying Criteria will be considered for further evaluation.	
4	BHEL reserves the right to verify the information provided by Bidder. In case the information provided by Bidder is found to be false/ incorrect, the offer shall be rejected.	

SECTION – III

The BIDDER has to comply with the following, for accepting the Technical Offer for scrutiny by the Purchaser :

S. No.	REQUIREMENTS	BIDDER'S COMPLIANCE
1	The BIDDER shall submit the offer in TWO PARTS-Technical [with PART A & PART B] & Commercial and Price Bid.	
2	The offer shall contain a comparative statement of Technical Specifications given by BHEL and the offered details submitted by the Bidder, against each clause. Merely stating 'CONFIRMED' or 'COMPLIES' or 'YES' or 'NO-DEVIATION' or similar words wherever 'Bidder to Specify' details in the technical comparative statement may lead to disqualification of the Technical Offer.	
3	The Technical Offer shall be supported by product Catalogues & Data Sheets and also technical details of Bought-Out-Items with copies of Product Catalogue to the extent possible.	
4	The Commercial Offer (given with the Technical Offer) shall contain the Scope of Supply and the Un-Priced Part of the Price-Bid, for confirmation of the inclusion of all the accessories, tooling's, attachments, auxiliary parts, spares, consumables, etc. with the main and basic equipment, to meet the technical specification requirements.	
5	BIDDER has to indicate the Country of Origin for the supply of equipment.	

SECTION - IV

PERFORMANCE CERTIFICATE
(On Customer's Letter Head)

1. Supplier of the "Oxygen-Nitrogen-Hydrogen Analyzer" : :
2. Make & Model of the "Oxygen-Nitrogen-Hydrogen Analyzer" : :
3. Month & Year of Commissioning : :
4. Application for which the "Oxygen-Nitrogen-Hydrogen Analyzer" is used : :
5. Measurement range & Accuracy : :
6. Performance of the equipment : :
(Strike off whichever is not applicable) Satisfactory / Good / Average /
Not Satisfactory
7. After Sales Service : :
Satisfactory / Good / Average /
Not Satisfactory
8. Any other remarks : :

Date: Signature & Seal of the Authority
issuing the Performance Certificate

PART B - TECHNICAL SPECIFICATIONOxygen-Nitrogen-Hydrogen AnalyzerQty: 1 No

S.No	SPECIFICATION / DESCRIPTION	BIDDER'S CONFIRMATION
1.0	<p>Purpose: Intended equipment is to be used for precise individual measurement of elements -Oxygen, Nitrogen and Hydrogen content in materials being used in High Pressure Boilers, Industrial Valve Components, Castings, Welding Qualification Test Plates, Procedure Qualification test coupons covering a wide range of materials from plain Carbon Steel, Low Alloy & High Alloy Steels, Quenched & Tempered Steels, Austenitic & Martensitic Stainless Steels, Nickel and Titanium Alloys. Readings shall be made available directly in a PC and shall able to be recorded.</p>	Bidder to note
2.0	<p>Scope of Supply: Manufacturing, Supply, Erection and commissioning of "Oxygen, Nitrogen, Hydrogen- Combined Analyzer (Determinator) to meet the purpose mentioned vide 1.0 &as per the specifications given below:-- 1 No. Supply of essential accessories as per the specifications - 1 Set Supply of essential spares for two years trouble free Operation & Maintenance - 1 Set Supply of essential consumables two years trouble free Operation - 1 Set Documents as specified - 3 Set</p>	Bidder to confirm
	<p>Principle of Operation: Principle of operation of the equipment shall be based on "Inert Gas Fusion" principle ie fusion of the sample material in a graphite crucible at high temperature under Helium atmosphere. Liberated Oxygen, Nitrogen and Hydrogen are being measured using suitable detectors.</p>	Bidder to confirm& provide details
	<p>Design Base: This should be a simultaneous & precise Oxygen, Nitrogen and Hydrogen Analyzer. The Determinator and exterminator with built in electrode furnace &Windows based OS.</p>	Bidder to confirm
3.0	<p>Specification of Oxygen, Nitrogen, Hydrogen- Combined Analyzer (Determinator): The minimum desired features are enlisted below:</p>	
3.1	<p>Sample Size: Weight of sample in grams that can be handled.</p>	Bidder to Specify

PART B - TECHNICAL SPECIFICATIONOxygen-Nitrogen-Hydrogen AnalyzerQty: 1 No

S.No	SPECIFICATION / DESCRIPTION	BIDDER'S CONFIRMATION
3.2	Analysis Time: Time required for the complete analysis of 1 gram of sample	Bidder to Specify
3.3	Measuring Ranges : Low Oxygen : 0.05 ppm minimum High Oxygen:5.0% Maximum Low Nitrogen :0.05ppm minimum High Nitrogen:3.0% Maximum Low Hydrogen :0.1 ppm minimum High Hydrogen:2500 ppm Maximum	Bidder to Specify
3.4	Sensitivity: Sensitivity shall be 0.01 ppm for Oxygen, Nitrogen and Hydrogen	Bidder to confirm
3.5	Accuracy: Low Oxygen : ± 0.025 ppm or ±0.3% of RSD High Oxygen: ± 2.0 ppm or ±1% of Oxygen content Low Nitrogen : ± 0.025 ppm or ±0.3% of RSD High Nitrogen: ± 2.0 ppm or ±1% of Nitrogen content Low Hydrogen : ± 0.05 ppm or ±2% of RSD High Hydrogen: ± 0.5 ppm or ±1% of Hydrogen content	Bidder to confirm
3.6	Detection method: Non-Dispersive Infrared Detection(NDIR) / Thermal Conductivity Detection (TCD) / Thermal Desorption Mass Spectrometry (TDMS) technology : Oxygen measurement : Nitrogen measurement : Hydrogen measurement :	Bidder to specify
3.7.0	Furnace:	
3.7.1	Type of Furnace: Impulse furnace with current and power control, liquid cooled type	Bidder to specify
3.7.2	It shall be controlled through a Programmable Temperature controller	Bidder to confirm
3.7.3	Maximum Temperature that can be achieved in the furnace (shall not be less than 2800° C):	Bidder to specify

PART B - TECHNICAL SPECIFICATIONOxygen-Nitrogen-Hydrogen AnalyzerQty: 1 No

Page 3 of 8

S.No	SPECIFICATION / DESCRIPTION	BIDDER'S CONFIRMATION
3.7.4	Power rating (shall not be less than 7.5 KW)	Bidder to specify
3.7.5	Cooling medium & quantity of flow in liters per min	Bidder to specify
3.7.6	Upper electrode of the impulse furnace shall be equipped with easily replaceable insert	Bidder to confirm
3.7.7	It should be easy to clean the furnace before each analysis	Bidder to confirm
3.8	Chemical reagents: List of chemical reagents being used for analysis and consumption per analysis	Bidder to specify
3.9	Gas requirements: List of gases being used for analysis and consumption per analysis	Bidder to specify
3.10	Carrier gases: Details of carrier gases, operating pressure, flow rate and purity requirements	Bidder to specify
3.10.1	Carrier gases regulators and Pneumatic gas regulators with hose and adaptors for connecting the gas cylinders with the equipment are to be included in the scope of supply.	Bidder to confirm
3.11.0	Calibration:	
3.11.1	Multipoint calibration	Bidder to confirm
3.11.2	Calibration standards for lower range of measurement of Oxygen, Nitrogen and Hydrogen in the alloys of Both Titanium & Steel	Bidder to provide
3.11.3	Calibration procedure and instructions are to be issued.	Bidder to provide
3.11.4	Details of Calibration Kit, if required. Should be quoted separately in the commercial bid.	Bidder to specify
3.12	Analysers control & Software: Hardware and Software details being used for the operation, calibration, setting and analysis.	Bidder to provide
3.13.0	Test results Display mechanism:	
3.13.1	Test results shall be captured and recorded directly in an external PC.	Bidder to confirm
3.13.2	PC & HP Laser printer (A4 Size) & its accessories with latest specification – Please provide	Bidder to confirm & provide complete details

PART B - TECHNICAL SPECIFICATIONOxygen-Nitrogen-Hydrogen AnalyzerQty: 1 No

S.No	SPECIFICATION / DESCRIPTION	BIDDER'S CONFIRMATION
	<p>specifications (to be upgraded if there is upgradation at the time of supply – without cost implications).</p> <p>Operating System : Windows based(latest)</p> <p>Processor details : Intel Pentium i-5 (Intel® Core™ i5- Processor)</p> <p>Mother board details: Intel make</p> <p>RAM: 4 GB</p> <p>Hard disk details: 500 GB SATA hard disk</p> <p>DVD writer details</p> <p>Monitor: 20” LED</p> <p>Multimedia Keyboard, Optical mouse</p> <p>Interface software _____</p> <p>Data connection (Communication) cable between the Analyzer & PC</p> <p>Suitable Laser Printer to print reports</p>	
3.13.3	All software shall be original and original CDs should be issued to BHEL.	Bidder to confirm
3.14	UPS: Un Interrupted Power stabilized Supply (UPS) of 30 minutes backup for the complete System is included in the scope of supply.	Bidder to confirm & provide complete details
3.15	Electronic Balance: Suitable Electronic Balance Range 0-120gm, readability 0.1mg, 220VAC, 50/60Hz, single phase. Including interface cable for the weight transfer to the instrument	Bidder to confirm & provide complete details
4.0	PNEUMATIC SYSTEM: BHEL will provide compressed air at 60 to 70 psi pressure (which is not 100 % dry) at one point near the equipment. Bidder to provide required pressure regulator / booster and suitable air drier & filter to maintain the air quality as per requirement of the equipment.	Bidder to confirm & provide complete details
5.0	ELECTRICAL SYSTEM :	Bidder to confirm

PART B - TECHNICAL SPECIFICATIONOxygen-Nitrogen-Hydrogen AnalyzerQty: 1 No

S.No	SPECIFICATION / DESCRIPTION	BIDDER'S CONFIRMATION
5.1	415V + 10% / -10%, 50HZ +/- 1.5 HZ, 3 Phase AC (3 wire system without neutral) and / or 230V + 10% / -10%, 50HZ +/- 1.5 HZ, Single Phase AC through a 3 wire system (Phase, Neutral and Protective earthing) Power Supply Source will be provided by BHEL near the equipment. All types of cables, connections, circuit breakers etc. required for connecting BHEL's power supply point to the equipment, shall be the responsibility of Bidder.	Bidder to confirm
5.2	Tropicalisation: All electrical / electronic equipment shall be tropicalized. All control cables should be of copper.	Bidder to confirm
5.3	All electrical & electronic control cabinets & panels should be dust and vermin proof and shall have IP 54 protection.	Bidder to confirm
5.4	Bidder should ensure the proper earthing for the machine and its peripherals.	Bidder to confirm
6.0	Essential Spares: Bidder to attach un-priced list (priced list with Unit Rate shall be attached in the commercial offer) of various essential spares to be procured with the equipment for two years of trouble free Operations and Maintenance. Ordering No. and Details / Specifications of the spares to be mentioned.	Bidder to confirm & provide complete list
7.0	All types of spares for the equipment and its accessories should be available for minimum ten years , after supply of the equipment. If any spares or controls are likely to become obsolete within this period, the Bidder should inform BHEL and provide details of its suppliers to enable BHEL to procure them in advance.	Bidder to confirm
8.0	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 1000 operations. Details / specifications of the consumables to be mentioned.	Bidder to confirm & provide complete list
9.0	Optional Accessories: Bidder to attach un-priced list (priced list with Unit Rate shall be attached in the commercial offer) of various Optional accessories to be procured with the equipment to enhance the operating efficiency and features of the offered equipment, over and above those	Bidder to confirm & provide complete list

PART B - TECHNICAL SPECIFICATIONOxygen-Nitrogen-Hydrogen AnalyzerQty: 1 No

S.No	SPECIFICATION / DESCRIPTION	BIDDER'S CONFIRMATION
	mentioned in the specifications. Details of the accessories to be specified.	
10.0	Pre-Dispatch Inspection: The equipment, its accessories, etc shall be offered for inspection and performance prove-out to BHEL Engineers, prior to dispatch.	Bidder to confirm
11.0	Installation & Commissioning, Performance Prove-out& training at BHEL: The equipment, its accessories, etc shall be installed and commissioned at BHEL works by the service engineer of the supplier. 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. The Service Engineer has to impart training to a minimum of 3 BHEL Engineers on the Calibration, Operation, Data processing and Maintenance of the equipment and accessories.	Bidder to confirm
12.0	Training at supplier's Works: Training is to be given to Two BHEL Engineers on the Calibration, Operation, Data processing and Maintenance of the equipment and accessories at Suppliers Works. Travelling, Boarding & Lodging will be Born by BHEL. Program details & training venue shall be indicated in the offer.	Bidder to confirm
13.0	Performance Guarantee: The equipment and its accessories (including bought-out items) are to be guaranteed for its performance for a minimum period of One year from the date of performance acceptance at BHEL works.	Bidder to confirm
14.0	Service Support requirement: Bidder shall ensure AMC service support facilities in India after the guarantee period, through trained Service personnel in India.	Bidder to confirm
15.0	AMC (Annual Maintenance Contract): The bidder has to quote for AMC under two patterns given below, for a period of Three years after the expiry of original warranty period.	
15.1	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).	Bidder to confirm (Quote shall be in Commercial Bid)

PART B - TECHNICAL SPECIFICATIONOxygen-Nitrogen-Hydrogen AnalyzerQty: 1 No

S.No	SPECIFICATION / DESCRIPTION	BIDDER'S CONFIRMATION
15.2	AMC - CASE-II: Technical service for Preventive Maintenance, Trouble shooting and Re-commissioning of the equipment including the cost of Spares and Consumables (BHEL will not be responsible for the timely availability of Spares and Consumables).	Bidder to confirm (Quote shall be in Commercial Bid)
15.3	AMC Response time: The bidder has to furnish / 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.	Bidder to specify.
15.4	AMC Service Calls: The Bidder has to furnish details on service calls for preventive maintenance (number of calls and intervals) and Break-down maintenance.	Bidder to confirm.
16.0	Documents should be submitted along with offer: Apart from the details / documents mentioned above in various clauses, following documents <u>in English language</u> are to be submitted along with this technical offer, for technical evaluation. Catalogues of the Equipment & Accessories Details of bought out items with their specifications / catalogues	
17.0	Documents should be submitted at the time of PDI: Three sets of hard copies and one soft copy in CD, following mentioned documents <u>in English language</u> are to be submitted to BHEL Engineers at the time of Pre Dispatch Inspection: Catalogues of the Equipment& Accessories O&M manuals containing electric schematics, circuit diagrams, PCB drawings, Troubleshooting charts, mechanical sub-assemblies, Bill of materials etc. List of bought out items with their specifications / catalogues.	
18.0	Details of the Equipment offered:	Bidder to specify.
18.1	Make:	
18.2	Model:	

PART B - TECHNICAL SPECIFICATIONOxygen-Nitrogen-Hydrogen AnalyzerQty: 1 No

S.No	SPECIFICATION / DESCRIPTION	BIDDER'S CONFIRMATION
18.3	Dimensions:	
18.4	Weight in Kg:	
18.5	Total Connected load in KW:	