



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 7653 Fax : +91 431 252 0031 Email : skaruna@bheltry.co.in Web : www.bhel.com
NOTICE INVITING TENDER	

TWO PART BID	Enquiry Number:	Enquiry Date:	Due date for submission of quotation:
Tender to be submitted in two parts.	2631600015	09.07.2016	06.08.2016

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.

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	Delivery
10	Portable dissolved Oxygen Analyser as per the technical specification, BHEL commercial terms & conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	01 No.	05.11.2016
10	Cation Conductivity Meter as per the technical specification, BHEL commercial terms & conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	01 No.	05.11.2016

Important points to be taken care during submission of offer

1. Compliance Form to be duly filled and enclosed along with your offer, failing which the offer will not be considered for evaluation.
2. 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 including bank guarantee formats and list of consortium banks, commercial compliance form 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 "2631600015".

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

Kb Singh
KUMAR GAUTAM SINGH
Senior Engineer
MM / Capital Equipment
BHEL, TRICHY - 620 014.

PART A

QUALIFYING CRITERIA FOR THE SUPPLY OF DISSOLVED OXYGEN ANALYSER

SECTION- 1: Qualifying Criteria

Sl.No.	REQUIREMENTS	VENDOR'S RESPONSE
1.1	The bidder / Vendor (OEM) shall have a minimum of five years of continuous experience in the field of Design, manufacture and supply of Dissolved Oxygen Analyser. Vendor shall indicate the actual number of years of experience in the field.	
1.2	Only those vendors (OEMs) should quote, who have commissioned in the last 05 years (as on the original date of tender opening) at least TWO "Dissolved Oxygen Analyzers" exactly the same model proposed in the technical offer EITHER (i) In at least one country other than the country of origin to establish vendor's global business activity. OR (ii) In India, and the referred equipment are presently working satisfactorily for more than one year from the date of commissioning (as on the original date of tender opening).	
1.2.1	The supplier has to give following information about the offered model. (a) Model Name, Year of launch of the Model. (b) name and contact addresses of the customers	
1.3	Vendor has to submit at least ONE PERFORMANCE CERTIFICATE for satisfactory performance of Dissolved Oxygen Analyzers as referred under clause 1.2 above, for a minimum period of one year from the date of commissioning (as on the original date of tender opening) from their customers in India or in any other country outside the country of origin, supplied and commissioned in the last 05 years. Performance certificate as Original Certificate or E-mail directly from the customer may be submitted. The original certificate may be returned after verification by BHEL, if required. For obtaining the Performance certificate, a suggestive format is provided at Page-3.	
1.5	BHEL reserves the right to verify the information provided by the Vendor. In case the information provided by vendor is found to be false/ incorrect, the offer shall be rejected. BHEL reserves the right to accept or reject the OEMs based on the assessment of their technical and financial capability.	

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SECTION - 2:

The BIDDER / VENDOR are requested to provide the following information:-

S NO.	REQUIREMENTS	VENDOR'S RESPONSE
2.1	The BIDDER / VENDOR to furnish Reference List of Customers, with complete address, details of contact person, where Dissolved Oxygen Analyzers has been supplied in the past.	
2.2	Specify details of Dissolved Oxygen Analyzers supplied to other units of BHEL, if any (Year of commissioning with details etc.	
2.3	Details on SERVICE-AFTER-SALES Set-up in India including the Address of Agents / Service Centres in India.	
2.4	Any Additional data to supplement the manufacturing capability of the BIDDER for the subject equipment.	

SECTION – 3:

The BIDDER to note:

S NO.	REQUIREMENTS	VENDOR'S RESPONSE
3.1	The BIDDER / VENDOR shall submit the offer in TWO parts. 1. Technical Offer [with PART A & PART B] 2. Commercial Offer and Price bid.	
3.2	The Technical Offer shall contain complete details against all clauses of Technical Specifications given by BHEL.	
3.3	The Technical Offer shall be supported by Original Product Catalogues of the offered model, Data Sheets and technical details of Bought- Out- Items. Note: Photocopies of the catalogues are NOT ACCEPTED.	
3.4	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.	


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Suggestive Format of Performance Certificate:

The Performance should be certified by the customer on **Customer's Letter Head** and submitted along with the offer.

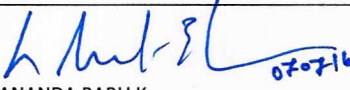
PERFORMANCE CERTIFICATE

1.0	Dissolved Oxygen Analyzers Supplied by : (Manufacturer's name)	
2.0	Make & Model number of the Machine	
3.0	Month & Year of Commissioning	
4.0	Performance of the Machine (Please tick the appropriate option)	Satisfactory
		Not Satisfactory
5.0	Service after sales (Please tick the appropriate option)	Satisfactory
		Not Satisfactory
6.0	Other remarks (if any)	
Date:		Signature & Seal of the Authority Issuing the Performance Certificate


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PART B**TECHNICAL SPECIFICATION FOR DISSOLVED OXYGEN ANALYSER, Qty: 01 No.**

Sl.No.	BHEL Specification	Bidder's offer
1.0	PURPOSE: Dissolved oxygen analyzer shall be a portable instrument capable of monitoring ultra-low levels of dissolved oxygen in high purity process systems. It shall be used for continuous monitoring of chemical water treatment in thermal power plants. Vendor to confirm.	
2.0	Portable dissolved oxygen analyzer should include following parts : a. Oxygen sensor b. Sample flow through chamber c. Carrying case Vendor to confirm.	
3.0	The portable dissolved oxygen analyzer should have following features a. Automatic temperature calibration/compensation b. Zero calibration for dissolved oxygen c. Automatic calibration for D.O in air d. Easy maintenance of sensor including membrane replacement. Vendor to confirm & specify.	
4.0	Dissolved oxygen measuring range : 0 ppb to 10 ppm Vendor to confirm.	
5.0	Resolution : 0.0001 ppm Vendor to confirm.	
6.0	Accuracy : ± 1 % of measuring value Vendor to confirm.	
7.0	SENSOR type: Electrochemical membrane type. Vendor to confirm. Vendor to clearly specify the mechanism of measurement e.g. membrane based detection or any other specific detection methods as the case may be.	
8.0	Temperature measuring range : 0 °C to 50 °C Automatic temperature correction should be available. Vendor to confirm.	
8.1	Resolution : 0.1 °C Vendor to confirm.	
8.2	Accuracy : ± 0.3 °C or lesser Vendor to confirm.	


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Sl.No.	BHEL Specification	Bidder's offer
9.0	The dissolved oxygen analyzer should be capable of working in 220 V, 50 Hz. If the offered model is battery powered suitable AC/DC adapters along with required no. of batteries (re-chargeable) are to be supplied. The battery shall give power for at least 200 hrs. Vendor to confirm & specify.	
10.0	CALIBRATION : The materials, methods required for calibrating the dissolved oxygen analyzer has to be supplied along with the instrument. Vendor to confirm & specify.	
11.0	OTHERS : a. Display: custom LCD. b. Tools and accessories kit c. standard scope of supply with detailed list: The listed items in the standard scope should be sufficient for the commissioning and two years of operation of the instrument; any additional spares or consumables shall be quoted extra.	
12.0	All types of spares for total Equipment and accessories should be available for at least FIVE years after supply of the machine. If equipment or control is likely to become obsolete in this period, the vendor should inform BHEL sufficiently in advance and provide drawings of parts / details of spares & suppliers to enable BHEL to procure these in advance, if required Vendor to confirm.	
13.0	COMMISSIONING : The supplier shall depute his competent technical persons for commissioning of the equipment at BHEL works. Supplier shall be responsible for carrying out the commissioning of the Dissolved Oxygen Analyzer. Since this instrument is intended to be used at various power plants located in India, in the case of any service requirement, vendor has to support at corresponding site on chargeable basis.	
14.0	TRAINING : The supplier shall impart training to BHEL's crew in Operation, calibration and Maintenance during commissioning of the equipment at BHEL works for ONE working day.	
15.0	GUARANTEE : Equipment has to be guaranteed for its performance, for a minimum of 24 months from the date of commissioning.	


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SECTION - 2:


The BIDDER / VENDOR are requested to provide the following information:-

S NO.	REQUIREMENTS	VENDOR'S RESPONSE
2.1	The BIDDER / VENDOR to furnish Reference List of Customers, with complete address, details of contact person, where Cation conductivity meter has been supplied in the past.	
2.2	Specify details of Cation conductivity meter supplied to other units of BHEL, if any (Year of commissioning with details etc.	
2.3	Details on SERVICE-AFTER-SALES Set-up in India including the Address of Agents / Service Centres in India.	
2.4	Any Additional data to supplement the manufacturing capability of the BIDDER for the subject equipment.	

SECTION - 3:

The BIDDER to note:

S NO.	REQUIREMENTS	VENDOR'S RESPONSE
3.1	The BIDDER / VENDOR shall submit the offer in TWO parts. 1. Technical Offer [with PART A & PART B] 2. Commercial Offer and Price bid.	
3.2	The Technical Offer shall contain complete details against all clauses of Technical Specifications given by BHEL.	
3.3	The Technical Offer shall be supported by Original Product Catalogues of the offered model, Data Sheets and technical details of Bought- Out- Items. Note: Photocopies of the catalogues are NOT ACCEPTED.	
3.4	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.	

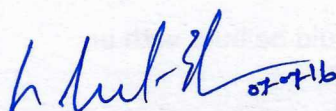

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Suggestive Format of Performance Certificate:

The Performance should be certified by the customer on **Customer's Letter Head** and submitted along with the offer.

PERFORMANCE CERTIFICATE

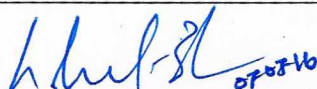
1.0	Cation conductivity meter Supplied by : (Manufacturer's name)	
2.0	Make & Model number of the Machine	
3.0	Month & Year of Commissioning	
4.0	Performance of the Machine (Please tick the appropriate option)	Satisfactory
		Not Satisfactory
5.0	Service after sales (Please tick the appropriate option)	Satisfactory
		Not Satisfactory
6.0	Other remarks (if any)	
Date:		Signature & Seal of the Authority Issuing the Performance Certificate


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PART B

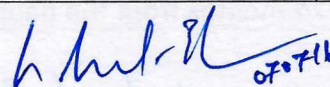
TECHNICAL SPECIFICATION FOR THE CATION CONDUCTIVITY METER, Qty: 01 No.

Sl.No.	BHEL Specification	Bidder's offer
1.0	<p>PURPOSE:The cation conductivity meter shall be a portable/ bench top model used for measuring the cation conductivity of aqueous solutions encountered in power plants namely steam condensates, boiler feed water and ultra-pure water samples.</p> <p>Vendor to confirm.</p>	
1.1	<p>Cation Conductivity: Cation conductivity is not equivalent to specific conductivity. Specific conductivity is measured by directly filling the conductivity cell with test solution / dipping the conductivity probe.</p> <p>But for measuring cation conductivity the test solution is first passed through a cation exchanger column for removing the cations present in the test solution; after that the test solution is measured for conductivity using a the conductivity cell / conductivity probe .</p> <p>Vendor to confirm and specify.</p>	
1.2	<p>The portable cation conductivity meter should include following parts:</p> <p>(a) Removable cation exchange column</p> <p>(b) Conductivity sensors for two ranges of measurement.</p> <p>(c) Sample flow through chamber for low level conductivity measurement</p> <p>Vendor to confirm and specify.</p>	
1.3	<p>Cation Exchanger Column :</p> <p>(a) The offered model should be accompanied with a cation exchange column which can be filled with strong acid cation exchange resin.</p> <p>(b) The resin shall be sulphonated styrene-divinyl benzene or strong acid gel cation resin. It is preferable if the cation exchanger resin indicates the exhaustion by color change.</p> <p>(c) 1.0 Litre of strong acid cation exchange resin has to be supplied with the cation exchanger column</p> <p>(d) The sample flow rate through the column should be 100 - 200 mL min⁻¹</p> <p>(e) Cation exchanger column should be built with un leachable material e.g. FEP, PVDF.</p> <p>Vendor to confirm & specify</p>	


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Sl.No.	BHEL Specification	Bidder's offer
2.0	Conductivity measuring ranges : Type- I: 0 μ S/cm to 1000 μ S/cm with suitable conductivity sensor/cell constant. Type- II: 0 μ S/cm to 10000 μ S/cm with suitable conductivity sensor/cell constant. Vendor to confirm & specify	
3.0	Resolution : 0.0001 μ S/cm Vendor to confirm & specify	
4.0	Accuracy : Type- I : \pm (0.003 μ S/cm + less than 2 %*measuring value) Type- II : \pm (0.05 μ S/cm + less than 2 %*measuring value) Vendor to confirm & specify	
5.0	Temperature measuring range : 0 $^{\circ}$ C to 60 $^{\circ}$ C Automatic temperature correction should be available. Vendor to confirm & specify	
6.0	SENSOR: (a) The conductivity sensor should have temperature sensor in built with sensor body. The material quality of the sensor and the sensor body should be resistant to the corrosivity of the liquids being tested. The vendor has to confirm in this regard with clear statements. Any discrepancies in this regard will lead to disqualification of the offer. (b) The connector type of the sensor has to be specified clearly. Vendor to confirm & specify.	
7.0	Low level conductivity : The offered cation conductivity meter should have necessary arrangements like flow through chambers for measuring the conductivity level in the low range below 10 μ S/cm to avoid any interferences from any external factors such as atmosphere. Vendor to confirm & specify	
8.0	The cation conductivity meter should be capable of working in 220 v, 50 Hz. If the offered model is battery powered suitable AC/DC adapters along with required no. of batteries (re-chargeable) are to be supplied. The battery shall give power for at least 200 hrs. Vendor to confirm & specify	

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Sl.No.	BHEL Specification	Bidder's offer
9.0	<p><u>CALIBRATING SOLUTIONS :</u> The vendor should supply at least three numbers of standard solutions of certified conductivity values in the operating range of the cation conductivity meter. Vendor to confirm.</p>	
10.0	<p><u>OTHERS:</u></p> <p>a. Display: custom LCD. b. The Instrument should be bench top type supplied with electrode stand, sample holder arrangements. c. Soft copies and Hard copies of the operating manual shall be supplied along with the instrument. d. standard scope of supply with detailed list: The listed items in the standard scope should be sufficient for the commissioning and two years of operation of the instrument; any additional spares or consumables shall be quoted extra.</p>	
11.0	<p>All types of spares for total Equipment and accessories should be available for at least FIVE years after supply of the machine. If equipment or control is likely to become obsolete in this period, the vendor should inform BHEL sufficiently in advance and provide drawings of parts / details of spares & suppliers to enable BHEL to procure these in advance, if required Vendor to confirm.</p>	
12.0	<p><u>COMMISSIONING :</u> The supplier shall depute his competent technical persons for commissioning of the equipment at BHEL works. Supplier shall be responsible for carrying out the commissioning of the Cation Conductivity Meter. Since this instrument is intended to be used at various power plants located in India, in the case of any service requirement, vendor has to support at corresponding site on chargeable basis.</p>	
13.0	<p><u>TRAINING :</u> The supplier shall impart training to BHEL's crew in Operation, calibration and Maintenance during commissioning of the equipment at BHEL works for ONE working day.</p>	
14.0	<p><u>GUARANTEE :</u> Equipment has to be guaranteed for its performance, for a minimum of 24 months from the date of commissioning.</p>	

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