

	PPX-BOI DEPARTMENT BHARAT HEAVY ELECTRICALS LIMITED HEEP: HARDWAR-249 403 (Uttarakhand) FAX: +91 1334 226084/226462 TEL: +91 1334 28 1690/1362	ENQUIRY NO. R/5599/2017/2616V/1 DATE OF ISSUE OF ENQUIRY: 23/09/2017 ENQUIRY DUE DATE: 14/10/2017 (BY 1345 HRS IST)
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INSTRUCTION TO BIDDERS & SPECIAL TERMS OF ENQUIRY

1. SCOPE OF ENQUIRY

Sealed Bids are invited from the bidders for the supply of the Packages as per requirement mentioned below:

Sl. No.	Material Code & Item Description	Qty.	Project	Delivery Date
1	D55995236970 PACKAGE-1: Water Analysis Equipments for Yelahanka CCPP Project (As per list & details enclosed in Annexure-A)	1 Set	370 MW Yelahanka CCPP (Karnataka) project site	31/12/2017
2	D55995236989 PACKAGE-2: Oil & Gas Analysis Equipments for Yelahanka CCPP Project (As per list & details enclosed in Annexure-B)	1 Set		31/12/2017
3	D55995236997 PACKAGE-3: General Env. Lab Equipments for Yelahanka CCPP Project (As per list & details enclosed in Annexure-C)	1 Set		31/12/2017
4	D55995237012 PACKAGE-4: Air Monitoring Equipments for Yelahanka CCPP Project (As per list & details enclosed in Annexure-D)	1 Set		31/12/2017

2. EARNEST MONEY DEPOSITE (EMD)

2.1 Interested vendors must submit their offer along with the following Earnest Money Deposit (EMD) in a separate sealed envelope:

Details	Amount In INR	Amount in Foreign Currency	Type
EMD	INR 2,00,000/- (INR Two Lacs only)	Equivalent amount	Refundable

2.2 EMD should be submitted in the form of demand draft/Pay Order/Cash (as permissible under Income Tax Act). The Drafts shall be drawn in favor of "BHEL Hardwar". In case of foreign bidders, E- payment is also acceptable. For E-Payment, the RTGS details are as mentioned below:

Bank Details	SWIFT Details of bank	Contact Details of Banker
STATE BANK OF INDIA RANIPUR BRANCH, OPP: BHEL MAIN GATE, SECTOR-5, RANIPUR, HARIDWAR, UTTRAKHAND, INDIA PIN CODE : 249403	SWIFT NO : SBININBB225 CC ACCOUNT NO : 10667995458 IFSC CODE : SBIN0000586	Name: Sh. Sudhir Sharma Design: Chief Manager (IBD) Contact No. +91 1334 224201 +91 1334 226125 Fax: +91 1334 226512

2.3 **MSE Suppliers / Central / State - PSUs / Government departments are exempted from submission of the EMD.**

2.4 Bids not accompanied with requisite EMD or bids accompanied with EMD of inadequate value shall not be considered for further evaluation.

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- 2.5 The bidder whose bid is technically not accepted will be informed & EMD wherever submitted shall be refunded after the finalization of the contract. EMD shall be forfeited in the event of bidder opting out after tender opening (PART-I).

3. PRE-QUALIFICATION REQUIREMENT (PQR)

The Pre-Qualification Requirements have been compiled Package-wise and placed at **ANNEXURE-I**. All the bidders should ensure submission of complete details and documents as called for in the same. The offers submitted by the bidders would be scrutinized with respect to Pre-Qualification Requirements first. Techno-Commercial offer of only those bidders shall be evaluated who meet the Pre-Qualification Requirements.

4. TECHNICAL REQUIREMENT

Please quote your offer for the required Package/Packages as per BHEL Technical Specifications, Quality requirement specified at **Annexure-A, Annexure-B, Annexure-C & Annexure-D** separately (**Enclosed as ANNEXURE-II**).

Bidder to quote each item of a Package separately as per specifications and also submit original catalogue of the each item issued by its Original Equipment Manufacturer (OEM) alongwith Technical bid. Failing this, the offer for the package is liable to be rejected.

Bidder ensured that each page of the documents submitted with the offer/bid is signed and stamped by authorized representative.

5. SUBMISSION OF OFFER

- 5.1 Only English version of all documents would be valid & binding.
- 5.2 Bidders are advised to study all the tender documents carefully. Any submission of tender by the bidder shall be deemed to have been done after careful study and examination of the tender documents and with full understanding of the implications thereof. The specifications and terms & conditions shall be deemed to have been accepted unless otherwise specifically commented upon in 'Deviation' sheets by the bidder in his offer. Non-compliance with any of the requirements and instructions in the Tender Enquiry may result in rejection of the offer.
- 5.3 Name of vendor's dealing person with Contact No(s), Email ID and Address of correspondence shall be provided in the bid.
- 5.4 Tenders are to be submitted in Two (2) Parts and Part-I (Techno-Commercial Bid, as detailed below) will be opened first. The offers are to be submitted on or before the Due Date and time, as detailed below:

[A] PART-I: PRE-QUALIFICATION REQUIREMENT (PQR) & TECHNO-COMMERCIAL BID

Comprising of following documents:

- a. Earnest Money Deposit (EMD)/details of EMD in case of E-Payment.
- b. Bidders are required to furnish requisite details and supporting documents as specified in **Pre-Qualification Requirements (PQR)** for meeting the same. The package-wise Pre-Qualification requirements are enclosed as **ANNEXURE-I**.
- c. Complete Technical offer with relevant document/catalogue etc. as per "**Technical Specifications: Annexure-A, Annexure-B, Annexure-C & Annexure-D**" and "**Project Specific Terms & Conditions for Environmental Laboratory Equipment for 1x370 MW Yelahanka CCPP Project (Annexure-1)**" which are enclosed as **ANNEXURE-II**.

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- d. “INSTRUCTION TO BIDDERS & SPECIAL TERMS OF ENQUIRY” and “GISTC (GENERAL INSTRUCTIONS AND STANDARD TERMS & CONDITIONS AGAINST TENDER ENQUIRY)” are an integral part of this enquiry and endorsed copies of these documents (duly signed and stamped on each page, as a token of acceptance) are to be necessarily submitted along with the offer. Deviations if any are to be listed out separately.
- e. Commercial Terms & Conditions.
- f. Duly filled-in **Compliance Sheet** for Package-1, Package-2, Package-3 & Package-4 enclosed as **ANNEXURE-III**.
- g. **Quality Assurance Plan (QAP)** of each item of quoted package (as per clause 15 of this document)
- h. List of imported items proposed to be supplied in the quoted package/s.
- i. Any Deviation with reference to technical requirements/specification to be laid down on separate sheet. Acceptance of such technical deviations would be at the discretion of BHEL.
- j. Un-Priced replica of Price Bid (Package-wise with each item).
- k. **Supplier Registration Form (SRF)**: Online Registration Portal is operational in BHEL. Bidders not registered at BHEL Haridwar, have to apply through Online Registration portal, <https://supplier.bhel.in/>. All credentials and/or documents duly signed and stamped related to registration has to be uploaded on the website and the application submitted for registration. One set of hard copy of the filled up Supplier Registration Form (SRF) downloaded from Online Registration Portal duly signed and stamped has to be submitted along with the offer.

Note: The SRF complete in all respects, should be submitted necessarily before price bid opening. The bidders registered at BHEL, Haridwar are exempted from submission of the SRF.

[B] PART-II: PRICE-BID

Containing **Prices of each item (separately) of the quoted Package/Packages** is to be submitted in original, strictly as per enquiry conditions for complete scope of tender enquiry. Freight charges from vendor's works to project site should be mentioned (quoted) separately in the price bid.

- 5.5 Following shall be super scribed on the envelopes which shall be addressed by name and designation to the official inviting tender:

PART-I (refer clause 5.4 [A]) :

1. TENDER ENQUIRY NO. AND PACKAGE DESCRIPTION
2. DUE DATE FOR OPENING
3. "TECHNO-COMMERCIAL BID WITH PQR".

PART-II (refer clause 5.5 [B])

1. TENDER ENQUIRY NO AND PACKAGE DESCRIPTION
2. DUE DATE FOR OPENING
3. "PRICE BID".

- 5.6 Parts - I & II shall be submitted in separate sealed covers duly superscribed as indicated above and shall be enclosed further in a main cover duly sealed and superscribed as:

“OFFER FOR (PACKAGE NAME) AGAINST ENQUIRY NO. DUE ON CONTAINING PART-I & PART-II Bids”. Vendor's full name and address should be clearly mentioned on the envelope.

- 5.7 Envelope not marked with tender enquiry number is liable to be ignored and may not be opened.

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- 5.8 Quotation must be enclosed in sealed cover on which tender enquiry number and the due date MUST BE written and be invariably sent under REGISTERED POST / SPEED POST / COURIER/Dropped in the Tender Box, addressed as follows:

To,

**THE HEAD OF MATERIAL MANAGEMENT,
Heavy Electrical Equipment Plant,
Bharat Heavy Electricals Limited,
HARIDWAR-249403 (Uttarakhand), INDIA.**

- 5.9 Tender opening is scheduled to start in the Tender Room at 2:00 PM (IST), on the due date. Therefore bid/quotations must reach this office / tender Box latest by 1:45 PM (IST) on due date. Only participating bidders are allowed to attend tender opening. TENDERS RECEIVED AFTER THE SPECIFIED TIME OF THEIR 'SUBMISSION' WILL BE TREATED AS LATE TENDERS AND SHALL NOT BE CONSIDERED UNDER ANY CIRCUMSTANCES.
- 5.10 The bid/quotation must be posted before due date, keeping allowance for postal transit time. Alternatively, the tenders duly sealed and super-scribed as above may be deposited in the Tender Box. Quotations sent by any mode but not received in time will be ignored. Tender received through authorized E-mail is also acceptable. However, in time submission of tender in tender box shall be the responsibility of the bidder, sent through any mode. Documents submitted with the offer/bid shall be signed and stamped in each page by authorized representative of the bidder.
- 5.11 **PART-I (Techno-Commercial bid with PQR)** will be opened on Due Date and time specified in the Enquiry, or extension thereof, in presence of tenderers who may like to attend. Incomplete offers are liable to be rejected.
- 5.12 **Techno-Commercial offer of only those bidders shall be evaluated who meet the Pre-Qualification Requirements mentioned in our Enquiry and who have submitted the EMD as stipulated in clause 3 above.**
- 5.13 **After finalization of Technical evaluation, offers of vendors approved by BHEL's customer and who have qualified commercially shall be considered for Price Bid Opening/RA.**
- 5.14 All correspondence thereof, shall be addressed to the following persons:

Mr. Gurdeep Singh Designation: Dy. Engineer (PPX-BOI) 4th Floor, Main Administrative Building HEEP, BHEL Hardwar- 249403 Uttarakhand, India Email ID: singhg@bhelhwr.co.in Tel: +91 1334 28 1680	Mr. Shailendra Kumar Designation: Sr. Manager (PPX-BOI) 4th Floor, Main Administrative Building HEEP, BHEL Hardwar- 249403 Uttarakhand, India Email ID: shail@bhelhwr.co.in Tel: +91 1334 28 1362
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- 5.15 Bidders shall be allowed in the tender room in area identified for bidders and only one authorized representative from each bidder shall be allowed.
- 5.16 Bidder shall not be allowed to carry camera/laptop in the tender room. The use of Mobile Phone is also restricted in the Tender Room.
- 5.17 Details of offers shall be read out to bidders and in no case the offers shall be handed over to any of the bidders for noting down.
- 5.18 As per directives of CENTRAL VIGILANCE COMMISSION, GOVERNMENT OF INDIA, one agent cannot represent two or more suppliers or quote on their behalf in a particular tender. If so found at any stage, BHEL Hardwar is likely to cancel Enquiries / POs to such suppliers. Further, such Indian Agent is likely to be de-listed (Black listed for business from BHEL).

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- 5.19 Vendors operating from BHEL quarters, unauthorized colonies on BHEL Land and Dharamshalas/ Hotels shall not be considered, hence such vendors need not apply.

6 RIGHT OF ACCEPTANCE

- 6.1 BHARAT HEAVY ELECTRICALS LIMITED HARIDWAR reserves the right to reject any or all the bids/quotations without assigning any reason thereof. BHEL also reserves the right to increase or decrease the tendered quantities. Bidders should be prepared to accept order for reduced quantity without any extra charges.
- 6.2 Any discount/ revised offer submitted by a bidder on its own shall be accepted provided it is received on or before the due date and time of offer/bid submission (Part-I). Conditional discounts shall not be considered for evaluation of tenders.
- 6.3 Unsolicited discounts/revised offers given after enquiry opening (i.e. Part-I bid opening) shall not be accepted.
- 6.4 In case there is no change in the technical scope and/or specifications and/or commercial terms & conditions, the bidder/s shall not be allowed to change his/their price bid after the due date (i.e. Part-I bid opening).
- 6.5 In case of changes in scope and/or technical specification and/or commercial terms & conditions, having price implications, techno-commercially acceptable bidders shall be asked by BHEL (after freezing the scope, technical specifications and commercial terms & conditions) to submit the impact of such changes on their price bid. A cut-off date and time shall be given to all the techno-commercially acceptable bidders to submit the impact on their price bids.
- 6.6 In the event of any bidder, after finalizing the technical specification & scope of supply, opting to revise and submit their latest price bid instead of submitting impact on their price bid asked by BHEL, then their latest price bid shall prevail. However in such condition their original price bid will necessarily be opened.
- 6.7 After technical & commercial examination of the offers received and clarifications obtained (if required), Part-II (Revised Price Bid/ Original Price Bid along with Price Impact and Discount, if any) shall be opened, for which the date and time shall be intimated to technically and commercially acceptable bidders in case of public opening. BHEL may opt to finalise the prices through Reverse Auction amongst technically, BHEL's customer approved and commercially acceptable bidders. BHEL reserves the right to open the earlier price bids, if any, submitted by the bidder(s), if required.
- 6.8 No correspondence shall be entertained from the tenderers after opening of Part-II (Price bid), except clarifications (if any) asked by BHEL in writing.

7 BASIS OF QUOTATION

For Supplies from outside India:

The prices are necessarily to be quoted on FCA as well as CFR Mumbai (India) basis.

For Supplies from within India:

The prices are to be quoted on Ex-Works with freight Pre-paid up to destination basis. The goods must be dispatched through any Bank approved transporters having their branch at Haridwar. The names and addresses of transporters approved by IBA as well as BHEL are posted at our website www.bhelhwr.co.in. Pls.

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note that, if you dispatch the material by any BHEL un-approved transporter then you will be required to furnish the MRC (Material Receipt Certificate) from Project Site for processing of your invoice. No demurrage charges would be borne by BHEL.

Vendors should quote inland freight charges (for supplies within India, if any). In case the offer is silent regarding inland freight charges, then, **the same would be considered to be inclusive in the offer.** In such case, no separate freight charges would be payable to the supplier (in the event of ordering) and transportation has to be arranged by supplier at their own cost.

8 OFFER VALIDITY

The offer is to be submitted with a validity of 180 days from the date of opening of techno-commercial offers (Part-I Offer). BHEL will reserve the right to reject the offer, quoting validity less than 180 days.

9 PRICES & PRICE SCHEDULE

- 9.1 **The prices are to be quoted on firm basis. BHEL will reserve the right to reject the offer of the vendors not quoting the prices on Firm basis.**
- 9.2 Bidder shall closely peruse all clauses & specifications etc. indicated in tender documents before quoting. In case of any doubt about meaning of any portion of tender specifications or discrepancies or omissions in tender document or clarifications regarding scope of work etc., the official(s) inviting the tender can be contacted for clarifications, before submitting the offer.
- 9.3 *Bidder shall necessarily quote the prices of each individual item of the quoted package/packages separately in their Price bid.*
- 9.4 The prices for foreign scope of supply & services (i.e. from outside India) should be quoted in Euro/USD/JPY/UK Pound/ SF/Singapore Dollar or any other Internationally Freely Tradable Currency only.
- 9.5 In the Price Breakup source of billing, source country of supply, Currency of quotation, separate FOB & CFR Mumbai (India) Charges (for imported shipment) and rate of all applicable taxes & duties, should be clearly mentioned.
- 9.6 Transit Insurance (both Marine & Inland) would be arranged by BHEL.
- 9.7 Tenderer shall quote the rates in English language and international numerals only. Total Price shall be entered in figures as well as in words. All entries in the tender shall either be typed or written legibly in ink. Cancellations, corrections, insertions, erasures, over-writing (if unavoidable) shall be authenticated with signature and seal by the bidder.

10 APPLICABLE TAXES & DUTIES:

Details of applicable taxes & duties are to be mentioned as per clause 11 of General Instructions and Standards Terms & Conditions for bidding against tender enquiry (GISTC), Rev 01.

In this regard, following is to be specifically mentioned in the offer:

- a) GST Registration number
- b) Address of Principal place of Business
- c) Type of Business
- d) HSN code, its description & rate of applicable GST for the offered material.
- e) Whether registered under Composite Scheme of GST (Y/N)

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It should be noted that the evaluation of the offers shall be done considering the taxation/benefit as applicable under GST.

11 EVALUATION CRITERIA

- 11.1 Evaluation of bids for decision of Lowest (L-1) bidder will be done Package-wise (Material Code wise) based on **Total Landed Cost to BHEL upto project site** (considering Total Material value for the package, Taxes & duties, Packing & Forwarding, Freight, Insurance, I&C charges and Commercial Loading, if any etc.).

Note: Bidders to quote each item of a Package separately as mentioned in specifications failing to which the offer for the package is liable to be rejected.

- 11.2 Import Offers (supply portion offered on FCA as well as CFR Mumbai (India) basis) shall be loaded for Transit Insurance, Airport Handling/Clearing Charges, applicable custom duties for the project, freight element and other charges involved for delivery up to Project Site as following:
- o Transit Insurance - @ 0.01% of FCA value
 - o Airport handling/clearing charges - @ 1% of CIF value.
 - o Custom Duty (including GST): As prevailing on date of price bid opening.
 - o Inland Freight & Insurance (from Mumbai to project site): As per applicable rate of BHEL transportation contract/ standard practice at BHEL/GSTC, whichever is higher.
- 11.3 For evaluation (of offers quoted in Foreign Currency), Exchange Rate (TT selling rate of State Bank of India) as on date of tender opening (Part-I bid) shall be considered. If the relevant day happens to be a bank holiday, then the Forex rate as on the previous bank (SBI) working day shall be taken.

12 PAYMENT TERMS

12.1 STANDARD PAYMENT TERMS (For both Foreign & Indigenous Bidders):

90% payment of Package Cost shall be made after receipt and acceptance of material at site and balance 10% payment alongwith I & C charges after successful Installation & Commissioning of each item of Package at project site against work completion certificate/successful commissioning certificate, signed by BHEL representative at site.

- 12.2 The payment may be claimed thru bank (i.e. CAD) or directly to BHEL. In case of payment through bank, all bank charges shall be on either side i.e. your bank's charges shall be to your account and our bank's charges shall be to our account. In case documents are presented directly to our nominated Banks, bank charges shall be to your account.
- 12.3 **For Foreign Bidders:** In case Bidders insists Payment thru Letter of Credit, BHEL may agree for Un-Confirmed and Irrevocable Letter of Credit and will; be opened 60 days prior to the scheduled delivery and will be valid for 90 days.
- 12.4 **For Indian Bidders:** Payment thru Letter of Credit (LC) will not be allowed. BHEL reserves the right to either reject the offer or load the offer of Indian bidders insisting payment thru LC.

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- 12.5 **Loading for Deviation in Payment terms (for both Indian & Foreign Bidders):** BHEL reserves the right to load the offers of vendors for deviation in payment terms mentioned in the enquiry. Base rate of SBI (as on 31st March 2017) + 6% per annum, shall be considered for loading for the period of relaxation sought by bidders. Loading would be done on basic cost of items, as per table given below:

Payment Terms		Days of Loading
After Receipt & Acceptance of material at Site (Indian/Foreign Bidders)		No Loading
Against Delivery at BHEL Site (against Material Receipt Certificate) (Indian/Foreign Bidders)		15
Against documents through bank (CAD):	Foreign Bidders	45
	Indian Bidders	30
Letter of Credit (LC)	Foreign Bidders	60
	Indian Bidders (if allowed under exceptional circumstances)	45
Usance LC	Foreign Bidders	No Loading if usance period is > 45 Days.
		Loading of days difference i.e difference between 45 days and usance period if the usance period is < 45 days
	Indian Bidders (if allowed under exceptional circumstances)	No Loading if usance period is > 60 Days.
		Loading of days difference i.e difference between 60 days and usance period if the usance period is < 60 days

13 WARRANTY CLAUSE

- 13.1 The equipments shall be warranted as per 'Other Terms & Conditions' of Technical Specifications i.e. Annexure-A, Annexure-B, Annexure C & Annexure-D.
- 13.2 Warranty of each item of the package should be extended by vendor. BHEL reserves the right to seek warranty also issued from OEM of the item for any item of the package at its discretion.
- 13.3 Shelf life of Solutions/Standards required for the item/items should be valid for at least 18 months from date of supply. Shelf life of these Solutions/Standards should also be indicated in the packing list submitted for issue of Material Dispatch Clearance Certificate (MDCC) by BHEL prior to dispatch of item.

14 INSTALLATION & COMMISSIONING

- 14.1 Please note that Installation & Commissioning of the equipments are required as per 'Other Terms & Conditions' of Technical Specifications i.e. Annexure-A, Annexure-B, Annexure-C & Annexure-D at **1x370 MW Yelahanka CCPP** (Karnataka, India) project site.

The following points are to be specifically taken care & confirmed regarding I&C while quoting offer:

- a) Installation & Commissioning (I&C) of item/items shall have to be carried out either by approved vendor himself or its duly authorized representative. Authorization in this regard shall also have to be submitted with the offer.
- The entire responsibility of supply, I & C shall however remain with the bidder.

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- b) The scope of I&C shall include receipt of items from BHEL's site store, transportation to required location (Laboratory Building) for installation/erection, operation, calibration with standards/solutions, training and demonstration to BHEL/Customer officials. The vendor shall arrange all the required tools & tackles/chemicals/glasswares/consumables/commissioning spares/supply cables or any other requisite for successful I&C, demonstration of equipment without any additional financial implication on BHEL.
- c) The vendor may visit the site/Laboratory building prior to taking up I&C of the equipments to make all necessary arrangement at his end. It shall be responsibility of the vendor to arrange and complete all the I&C and demonstration of all the items of the package in time bound manner through required one or more visits and to entire satisfaction of BHEL/BHEL's customer as per BHEL specifications and contract conditions and also obtain unconditional handing over protocol for all the items in the package.
- d) Completion of I&C of the package shall be considered after receipt of unconditional handing over protocol of all the items of the package. No part completion of the package shall be considered for closure of I&C of the package for processing the balance payment.
- e) *Schedule of I&C of package shall be intimated by BHEL normally within 06 months from date of dispatch of package. I&C of the package shall have to be taken up promptly and completed within 08 weeks from date of issue of intimation for I&C. In case of delay in completion of I&C, a penalty of delay @ 1% of balance payment per week shall be imposed, subject to a maximum of 10 % of balance payment. The delay and applicable penalty shall be intimated in writing. In case of delay beyond 10 weeks, BHEL reserves the right to proceed and get the I&C done by alternate source at risk & cost to vendor without further intimation to vendor.*

14.2 *Kindly confirm that Lumpsum I&C charges (Package-wise) for complete scope of work for the quoted package (inclusive of everything i.e. conveyance, lodging and boarding etc. and irrespective of no. of man-days) has been quoted separately in your offer. These charges would be payable only after successful Installation & Commissioning of the equipment at site.*

The above charges for Installation & commissioning shall be considered during Price evaluation.

15 QUALITY REQUIREMENT AND INSPECTION & TESTING

- 15.1 Quality Assurance Plan (QAP) is to be submitted for each item of the package separately along with technical offer for approval of BHEL. Offers submitted without QAP are liable to be rejected.
- 15.2 The category of inspection of each item has been indicated in technical specification of the items. BHEL reserves the right to amend category of inspection as per project requirements.
- 15.3 The manufacturer shall conduct all routine/mandatory tests required to ensure that the equipment furnished conforms to the requirements of its specifications & approved QAP, applicable Codes and Standards.
- 15.4 BHEL/BHEL's Customer/Nominated third party inspection agency may inspect items as per approved QAP/Technical Specifications. The vendor will provide all necessary support without any additional financial implication on BHEL.

16 O&M MANUAL REQUIREMENT

O&M Manual of the equipments shall be provided as per 'Other Terms & Conditions' of Technical Specifications i.e. Annexure-A, Annexure-B, Annexure-C & Annexure-D.

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17 MATERIAL DISPATCH CLEARANCE CERTIFICATE (MDCC)

Material shall be dispatched only after issuance of Material dispatch clearance certificate (MDCC) by BHEL. For issuance of MDCC, you are required to submit the set of documents (i.e. Packing List, Test certificate, Calibration certificate & Guarantee certificate, as applicable) to BHEL in 15 days advance for review and release of MDCC by BHEL before dispatch of the consignment.

18 DELIVERY PERIOD

Material is required as per delivery schedule mentioned in the enquiry 'or' Intimation by BHEL, whichever is later. **However, you are requested to quote your best possible delivery period for the quoted Package (in totality) in number of weeks from the date of Intimation by BHEL.**

The following points are to be specifically taken care & confirmed while quoting the offer:

- a) *All the items in the Package would be required to be supplied in totality on intimation by BHEL.*
- b) *The intimation for supply of the package will be issued by BHEL within one year from the date of placement of Purchase Order without any additional financial implication on BHEL.*
- c) *It shall be responsibility of vendor to handover all the items of the package to any of the BHEL approved transporters in time.*

19 PENALTY FOR LATE DELIVERY

- 19.1 In case of delay in supply of material beyond the agreed contractual delivery, Penalty for Late Delivery would be applicable @ 0.5% of the **total package value (package-wise)** per week of delay or part thereof subject to a maximum of 10% of the **total package value (package-wise)**.
- 19.2 For Supplies from outside India, the date of OBL (Original Bill of Lading)/ Air Way Bill (AWB) would be treated as the date of delivery for penalty purposes.
- 19.3 For Supplies within India, the date of GR (Goods Receipt)/ LR (Lorry Receipt) would be treated as the date of delivery for penalty purposes.
- 19.4 In case of dispatch thru BHEL un-approved transporter (for indigenous supplies), receipted GR/LR from Project Site would be required for processing of the invoice. In such case, no demurrage charges would be borne by BHEL.
- 19.5 In case of any deviation to the above penalty clause, BHEL reserves the right to load the offers to the extent to which it is not agreed by vendors (at offered value).

20 REVERSE AUCTION

BHEL reserves the right to go for Reverse Auction (RA) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. All bidders to give their acceptance for participation in RA. Non-acceptance to participate in RA may result in non- consideration of their bids, in case BHEL decides to go for RA.

	PPX-BOI DEPARTMENT BHARAT HEAVY ELECTRICALS LIMITED HEEP: HARDWAR-249 403 (Uttarakhand) FAX: +91 1334 226084/226462 TEL: +91 1334 28 1690/1362	ENQUIRY NO. R/5599/2017/2616V/1 DATE OF ISSUE OF ENQUIRY: 23/09/2017 ENQUIRY DUE DATE: 14/10/2017 (BY 1345 HRS IST)
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In case BHEL decides to go for Reverse Auction, only those bidders who have given their unconditional acceptance to participate in RA will be allowed to participate in the Reverse Auction. Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit "Online sealed bid" in the Reverse Auction. Non-submission of "Online Sealed Bid" by the bidder will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.

Detailed terms and conditions for RA are enclosed (refer **Annexure-IV**)

21 SETTLEMENT OF DISPUTES /ARBITRATION :

For Supplies from outside India:

Any dispute/difference arising out of or in connection with this contract, including any question regarding its existence, validity or termination, shall be referred to and finally resolved by arbitration under the Arbitration and Conciliation Act, 1996 of India or statutory modifications or reenactments thereof and the rules made thereunder and for the time being in force shall apply to the arbitration proceedings under the clause. The seat or place of arbitration shall be Haridwar, India. The language to be used in the arbitration shall be English. The governing law of the contract shall be the substantive law of India.

JURIDICTION: The courts of Haridwar, India, shall have exclusive jurisdiction.

For Supplies from within India:

In case of dispute the matter shall be referred for ARBITRATION by sole arbitrator to be appointed by the Unit Head of Bharat Heavy Electricals Ltd., at HARIDWAR. The award of the Arbitrator shall be final and binding on both the parties. The place of Arbitration shall be Haridwar.

JURIDICTION: The courts of Haridwar, India, shall have exclusive jurisdiction.

BHEL reserves the right to reject the offer in case bidder does not agree to the arbitration clause.

22 RISK PURCHASE :

In case of abnormal delays (beyond the maximum late delivery period as per Penalty clause) in supplies / defective supplies or non-fulfillment of any other terms and conditions given in Purchase Order, BHEL may cancel the Purchase Order in full or part thereof, and may also make the purchase of such material from elsewhere / alternative source at the risk and cost of the supplier. BHEL will take all reasonable steps to get the material from alternate source at optimum cost. If bidder does not agree to the above Risk Purchase Clause, BHEL reserves the right to reject the offer. In case for compelling reasons BHEL accepts the offer without acceptance of this clause by the bidder and in the eventuality of Risk Purchase, appropriate action will be taken as per BHEL extant rules. This will be without prejudice to any other right of BHEL under the contract.

23 DEALING WITH BANNED SUPPLIERS/ CONTRACTORS IN BHEL

Offers of the bidders, who are on the banned list, as also the offers of the bidders who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL website www.bhel.com.

	PPX-BOI DEPARTMENT BHARAT HEAVY ELECTRICALS LIMITED HEEP: HARDWAR-249 403 (Uttarakhand) FAX: +91 1334 226084/226462 TEL: +91 1334 28 1690/1362	ENQUIRY NO. R/5599/2017/2616V/1 DATE OF ISSUE OF ENQUIRY: 23/09/2017 ENQUIRY DUE DATE: 14/10/2017 (BY 1345 HRS IST)
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24 PRE-BID MEETING :

Pre-Bid clarifications & deviations (if any) should be sought within 10 days of issue of the enquiry. Bidders to compile all clarifications, if any, preferably in single communication. The clarifications would be provided within 3 days of receipt of queries. Bidders may also have across the table discussions for seeking pre-bid clarifications (if required).

25 IMPORTANT NOTE

INSTRUCTION TO BIDDERS & SPECIAL TERMS OF ENQUIRY are to be read along with **GISTC (for both Foreign & Indian Bidders)**. A signed & stamped copy of these documents as a token of acceptance is to be submitted along with the offer. In the event of contradiction of terms and conditions mentioned, the order of preference shall be INSTRUCTION TO BIDDERS & SPECIAL TERMS OF ENQUIRY followed by GISTC (General Instructions and Standard Terms & Conditions against Tender Enquiry).

Kindly ensure the timely submission of your offer (by 1345 Hrs IST on the due date) and note that Late Offers shall not be entertained under any circumstances.

26 List of Enclosures

- i. INSTRUCTION TO BIDDERS & SPECIAL TERMS OF ENQUIRY
- ii. Pre-Qualification Requirements (**Annexure-I**) - No. of Pages: **04**
- iii. Technical Specifications & Project Specific Terms & Conditions (**Annexure-II**) - No. of Pages: **20**
- iv. Compliance Sheet (**Annexure-III**) - No. of Pages: **16**
- v. Terms & Conditions of Reverse Auction (**Annexure-IV**) - No. of Pages: **01**
- vi. GISTC (For Foreign Bidders) - No. of Pages: **10**
- vii. GISTC (for Indigenous Bidders) - No. of Pages: **09**

For and on behalf of BHEL, Hardwar

(S K Baveja)
AGM-Incharge (PPX-BOI)

PRE-QUALIFYING REQUIREMENT

Package-1 (Material Code: D55995236970)

No. of Pages = 1

PRE-QUALIFYING REQUIREMENT

Package-2 (Material Code: D55995236989)

No. of Pages = 1

PRE-QUALIFYING REQUIREMENT

Package-3 (Material Code: D55995236997)

No. of Pages = 1

PRE-QUALIFYING REQUIREMENT

Package-4 (Material Code: D55995237012)

No. of Pages = 1

Total No. of Pages = 4

Pre – Qualifying Requirement (PQR)**Package – 1 (Material Code : D55995236970)****Environment Lab Equipments for Yelahanka CCPP (Water Analysis Equipments)**

1. The average annual Turnover of the bidder for last three years (2014 – 15, 2015 – 16 and 2016 – 17) should not be less than Rs. 5 Lakh. Copies of audited balance sheet to be submitted in support of this.
2. The bidder should have supplied, installed & commissioned in India at least 4 items similar to the items listed in the package, against one or more orders placed on bidder within 05 years from the date of opening of this tender. At least one Alfoc Test kit for oxygen (DO Meter PPB level) should necessarily be included in the specified 04 items. Bidder to submit true copies (unedited) of P.Os. and I & C reports in support of this.
3. The total value of purchase order/orders submitted against PQR 2 should not be less than Rs. 5 Lakh.

Avinash
2/9/17
(Avinash Kumar)
Sr. Engineer (PCRI)

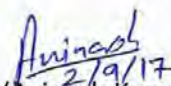
S. K. Mishra
2/9/17
(S. K. Mishra)
Dy. Manager (PCRI)

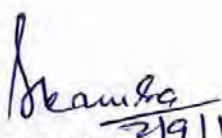
S. Bhatnagar
2/9/17
(Dr. S. Bhatnagar)
SDGM (PCRI-Labs)

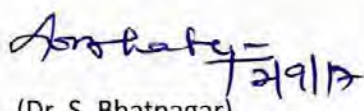
Ambrish
2/9/17
(Ambrish Goel)
AGM (PCRI-Labs)

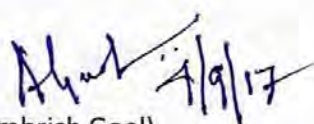
Pre – Qualifying Requirement (PQR)**Package – 2 (Material Code : D55995236989)****Environmental Lab Equipments for Yelahanka CCPP (Oil & Gas Analysis Equipments)**

1. The average annual Turnover of the bidder for last three years (2014 – 15, 2015 – 16 and 2016 – 17) should not be less than Rs. 8 Lakh. Copies of audited balance sheet to be submitted in support of this.
2. The bidder should have supplied, installed & commissioned in India at least 5 items similar to the items listed in the package, against one or more orders placed on bidder within 05 years from the date of opening of this tender. At least one Pensky Marten Flash Point apparatus should necessarily be included in the specified 5 items. Bidder to submit true copies (unedited) of P.Os. and I & C reports in support of this.
3. The total value of purchase order/orders submitted against PQR 2 should not be less than Rs. 8 Lakh.


(Avinash Kumar)
Sr. Engineer (PCRI)


(S. K. Mishra)
Dy. Manager (PCRI)

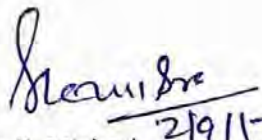

(Dr. S. Bhatnagar)
SDGM (PCRI-Labs)

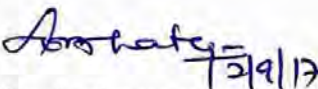

(Ambrish Goel)
AGM (PCRI-Labs)

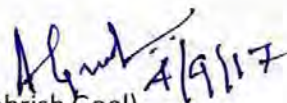
Pre – Qualifying Requirement (PQR)**Package – 3 (Material Code : D55995236997)****Environmental Lab Equipments for Yelahanka CCPP (General lab. equipments)**

1. The average annual Turnover of the bidder for last three years (2014 – 15, 2015 – 16 and 2016 – 17) should not be less than Rs. 35 Lakh. Copies of audited balance sheet to be submitted in support of this.
2. The bidder should have supplied, installed & commissioned in India at least 10 items similar to the items listed in the package, against one or more orders placed on bidder within 05 years from the date of opening of this tender. At least one Atomic Absorption Spectrophotometer & Microprocessor Based Gas Chromatograph each should necessarily be included in the specified 10 items. Bidder to submit true copies (unedited) of P.Os. and I & C reports in support of this.
3. The total value of purchase order/orders submitted against PQR 2 should not be less than Rs. 35 Lakh.


(Avinash Kumar)
Sr. Engineer (PCRI)


(S. K. Mishra)
Dy. Manager (PCRI)


(Dr. S. Bhatnagar)
SDGM (PCRI-Labs)


(Ambrish Goel)
AGM (PCRI-Labs)

Pre – Qualifying Requirement (PQR)**Package – 4 (Material Code : D55995237012)****Environmental Lab Equipments for Yelahanka CCPP (Air Monitoring Equipments)**

1. The average annual Turnover of the bidder for last three years (2014 – 15, 2015 – 16 and 2016 – 17) should not be less than Rs. 4 Lakh. Copies of audited balance sheet to be submitted in support of this.
2. The bidder should have supplied, installed & commissioned in India at least 2 items similar to the items listed in the package, against one or more orders placed on bidder within 05 years from the date of opening of this tender. At least one Weather Monitoring Station should necessarily be included in the specified 02 items. Bidder to submit true copies (unedited) of P.Os. and I & C reports in support of this.
3. The total value of purchase order/orders submitted against PQR 2 should not be less than Rs. 4 Lakh.

Avinash
2/9/17
(Avinash Kumar)
Sr. Engineer (PCRI)

S. K. Mishra
2/9/17
(S. K. Mishra)
Dy. Manager (PCRI)

S. Bhatnagar
2/9/17
(Dr. S. Bhatnagar)
SDGM (PCRI-Labs)

Ambrish Goel
4/9/17
(Ambrish Goel)
AGM (PCRI-Labs)

TECHNICAL SPECIFICATION

Annexure-A for Package-1 (Material Code: D55995236970)

No. of Pages = 4

TECHNICAL SPECIFICATION

Annexure-B for Package-2 (Material Code: D55995236989)

No. of Pages = 3

TECHNICAL SPECIFICATION

Annexure-C for Package-3 (Material Code: D55995236997)

No. of Pages = 8

TECHNICAL SPECIFICATION

Annexure-D for Package-4 (Material Code: D55995237012)

No. of Pages = 3

PROJECT SPECIFIC TERMS & CONDITIONS

Annexure-1

No. of Pages = 2

Total No. of Pages = 20

CHEMICAL LAB EQUIPMENTS FOR 1 X 370 MW YELAHANKA CCPP PROJECT

INDENT NO. 20172616 DATED 02.09.2017

Annexure - A for Package - 1 [Material Code - D55995236970]

Sl. No.	Item	Quantity	Inspection Category	Specification [Annexured]
1	Alfoc test kit for oxygen (DO Meter PPB level)	1 No	CAT-2	A1
2	pH meter (online operated)	1 No	CAT-2	A2
3	Jar Test apparatus	1 No	CAT-2	A3
4	Auto clave	1 No	CAT-2	A4
5	Inoculation chamber	1 No	CAT-2	A5
6	Dessicator	1 No	CAT-2	A6
7	BOD incubator	1 No	CAT-2	A7
8	COD incubator (COD digestion unit)	1 No	CAT-2	A8

CAT 2: Inspection by BHEL / BHEL Third Party Inspection Agency. MDCC shall be issued by BHEL based on inspection report.

Technical Specification of Items:**A1 - Alfoc test kit for oxygen (DO Meter PPB level)**

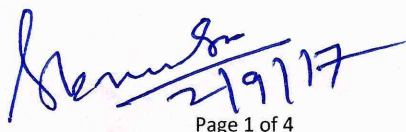
Dissolved Oxygen Meter should be microprocessor-based, with the following specification :

1. Range : 1 ppb to 20 ppm
2. Accuracy : $\pm 1.5\%$ of reading or ± 0.2 ppb
3. Temperature range : 0.0 to 50.0 OC
4. Probe : Dissolved Oxygen Probe with Cable
5. Power Requirement : Mains operated (220 Volts AC $\pm 10\%$, 50 Hz $\pm 3\%$, single phase supply) / Battery operated.
6. Standard Accessories :
 1. Dissolved Oxygen probe
 2. Flow through cell
 3. Battery
 4. Support stand

A2 - pH meter (online operated)

1. Range pH : 0 to 14.00 pH
2. Accuracy pH : 0.1% of span
3. Temperature compensation : Automatic
4. Display : Digital Display
5. Input connections : pH Combination electrode
6. Flow of liquid : 0-2 m/s
7. Operating temperature range : 0 to 100 OC
8. Pressure Limit : 6.9 bar at 100 OC
6. Power Requirement : 16-30 VDC
7. Standard Accessories :
 1. pH Transmitter
 2. General purpose pH glass electrode
 3. Buffer Tablets / Solutions (4, 7 & 10 pH) – 1 Pack of 100 Nos. or 1.0 Litre Solution of each pH)
 4. DIN 19267 Standard (1.09, 4.65, 6.79, 9.23 & 12.75).

Anirudh
02/09/17


21/9/17
Page 1 of 4

A3 - Jar Test apparatus

1. Microprocessor Based Floc Test Apparatus with 6 sets of programmable Timer, On Time & Off Time
2. Range : 5 to 120 RPM
3. Display : 3 Digit LED Display
4. Accuracy : ± 1 RPM
5. Resolution : 1 RPM
6. Power : Mains operated (230V AC $\pm$ 10%, 50Hz)
7. White Light Source CFL 11 W with suitable choke
8. Motor : Brushless DC motor
9. Detailed printed Catalogue must be provided with the offer submitted.

A4 - Autoclave

GENERAL : autoclave is required for sterilization & preparation of Culture media for microbiological tests.

SPECIFICATION OF EQUIPMENT :

1. The Autoclave should be double wall construction with boiler made of stainless steel 16 gauge sheets.
2. The Autoclave should be 50 liters capacity approximately.
3. There should be mineral wool/glass wool insulation between Boiler and outer shell.
4. Lid should be made of thick stainless steel plate and tightened all – around by radial locking / wing nut arrangement.
5. There should be joint less gaskets made of neoprene rubber.
6. This sterilizer should be hydraulically tested upto 40 psi.
7. Sterilizer should be fitted with arrangement to indicate water level inside the boiler.
8. Pressure gauge, air/Steam release cock and double safety valves should be provided. There should be Immersion type heating element of adequate wattage to achieve desired temperature and pressure. Stainless Steel basket should be provided.

Amirul

Shamir
21/9/17

A5 - Inoculation chamber

1. The Inoculation chamber should be Vertical laminar flow cabinet with 100% exhaust system, suitable for exhaust duct upto 6 ft. to throw the contaminated air from the work area into the atmosphere outside the room.
2. The size (working size) of the Inoculation chamber should be approx. 3 x 2 x 2 ft.
3. A plenum should be provided under the S.S. perforated working table, with exhaust system which should work in coordination with the main air flow system.
4. The whole cabinet should be made out of stainless steel.
5. The side panels should be made of thick transparent plexi glass duly framed.
6. The unit should be fitted pre-filter and HEPA filter so that air is drawn through pre-filter and is made to pass through highly effective HEPA filter, thus retaining all air-borne particles of size 0.3 micron and larger.
7. The air should flow down vertically from top towards the work table.
8. HEPA filter and virus burn out should also be provided at the exhaust.
9. The unit should be fitted with duly balanced, direct drive motor blower units sized to provide adequate air flow volume over the entire surface of HEPA filter. It should be fitted with reputed make motor which should operate with minimum noise level.
10. The unit should be complete with S.S. Table Top, Transparent front door (5 mm), Static Pressure Inclined Manometer, Built in U.V. Germicidal Light and cock for gas.
11. The work area should be properly illuminated by diffused, glare free fluorescent light fitted to the unit.
12. The number, location, rating and make of motor / motors being used in the equipment should be indicated in the offer.
13. The equipment should work on 230 Volts AC, 50 Hz single phase supply.
14. The following spare accessories should be quoted
 - HEPA Filter
 - Pre Filter

A6 - Dessicator

GENERAL : used in the laboratory for drying purposes.

TECHNICAL SPECIFICATIONS :

1. Dessicator Vacuum with flat flanges.
2. Outlet in lid with Stopcock.
3. Diameter – 250 mm approx.
4. Height - 344 mm approx.
5. Riviera/Duran Cat. No. 24782 66 or Borosil Cat. No. 3119 or JSGW Cat. No. 882/3 or equivalent.
6. Material – Borosilicate Neutral Glass
7. Accessories – Perforated porcelain plate.

A7 - BOD incubator

1. Thermostatically Controlled BOD Incubator of Volume 230 Ltrs.(approx.)
2. Internal Dimension : 513 D x 431 W x 702 H mm (approx.)
3. External Dimension : 600 D x 600 W x 855 H mm (approx.)
4. The equipment should work on 230 Volts AC, 50 Hz single phase supply.
5. Regulation Range : 2°C
6. Dual LCD Display, fully insulated cabinet with universal temp. regulation device with glass door in aluminium frame, including 3 metal grids and 1 bottom grid.
7. Temperature Range : 5 - 60°C (for inner chamber)
8. Temperature Accuracy : $\pm 1^\circ\text{C}$
9. Provision should be there for heating and cooling of inner chamber.
10. To achieve uniformity of temperature in the inner chamber it should be fitted with 2 nos. circulating fans.
11. Temperature indicator should be there with L-shape Thermometer.
12. Detailed printed Catalogue must be provided with the offer submitted.

Anindya

Member
2/9/17

A8 - COD incubator (COD digestion unit)

General: The instrument is used for distillation of water samples for determination of Chemical Oxygen Demand.

Specifications of Equipment:

1. It should be suitable for heating of 500mL flasks.
2. Unit should be supplied with Heating Box fitted with heating mantles, individual energy regulators, Neon lights etc. along with adjustable rod, clamps and boss heads.
3. Power Source : 230V AC, 50Hz
4. Essential/Standard Accessories should be provided including 500mL flasks (6 nos.), appropriate Condensers (6 nos.), Clamps and Connecting Rubber Tube.

Other Terms & Conditions

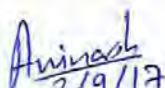
Document: One hard copy of O&M Manual in English language giving complete technical information for operation and maintenance of the equipment.

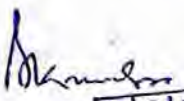
Installation and Commissioning: The supplier shall install & commission the equipment at site. Supplier should demonstrate the performance of the Equipment and all its accessories to ensure compliance with complete specifications & parameters quoted by them to the satisfaction of BHEL/end user. Cost of installation & Commissioning, if any, should be indicated separately. Training to chemists at site during installation should be provided for routine maintenance, operation and safety purpose. Failing to comply to the Installation and Commissioning clause, the offer is liable to be rejected.

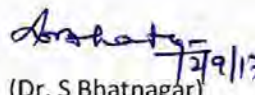
Warranty: The equipment shall be warranted for satisfactory performance for a period of 12 months from the date of installation or 18 months from date of dispatch, whichever is later. Failing to comply to the warranty clause, the offer is liable to be rejected.

Packing & Dispatch: The equipment / accessories shall be packed in a suitable water proof/vibration proof packing box capable of bearing air and road transit hazards. Packing box shall be properly identified and marked with BHEL's (India) Purchase Order Number. Also, "PCRI HWR" should be written in bold letters on all four sides of the packing box.

The Project Specific Terms and Conditions Annexed at Annexure-1 are also to be read in conjunction with this document.


(Avinash Kumar)
Sr. Engineer
Initiated by


(S K Mishra,
Dy Manager
Checked by


(Dr. S Bhatnagar)
SDGM
Supervised by


Ambirish Goel
AGM
Approved by

CHEMICAL LAB EQUIPMENTS FOR 1 X 370 MW YELAHANKA CCPP PROJECT

INDENT NO. 20172616 DATED 02.09.2017

Annexure - B for Package - 2 [Material Code - D55995236989]

Sl. No.	Item	Quantity	Inspection Category	Specification [Annexured]
1	Apparatus for oxidation stability test	1 No	CAT-2	B1
2	Redwood viscometer No.1	1 No	CAT-2	B2
3	Redwood viscometer No. 2	1 No	CAT-2	B3
4	Apparatus for water in oil by Dean and Stack method	1 No	CAT-2	B4
5	Interfacial tension apparatus	1 No	CAT-2	B5
6	Pensky-Martens flash point apparatus	2 Nos	CAT-2	B6
7	Penitro Meter for Grease Testing	1 No	CAT-2	B7
8	Three-bulb Orsat	1 No	CAT-2	B8
9	Explosimeter (Combustible gas analyser)	1 No	CAT-2	B9
10	Hydrogen purity test apparatus	1 No	CAT-2	B10

CAT 2: Inspection by BHEL / BHEL Third Party Inspection Agency. MDCC shall be issued by BHEL based on inspection report.

Technical Specification of Items:**B1 - Apparatus for oxidation stability test**

Test Capacity: 8 or 12 oxidation cells

Temperature Range: ambient to 212°F (100°C)

Temperature Control Stability: 0.2°F (0.1°C)

Bath Medium: white technical oil

Bath Capacity: 8-place model: 10 gal (37.8L) , 12-place model: 19 gal (71.9L)

Electrical Requirements

8-place model: 115V 60Hz, Single Phase, 13.0A 220-240V 50/60Hz, Single Phase, 6.8A

12-place model: 115V 60Hz, Single Phase, 32.6A 220-240V 50/60Hz, Single Phase, 17.0A

B2 - Redwood Viscometer No. 1 for oil analysis

According to IP 70 used OR Determination of Viscosity of Lubricating oils and fuels with stainless steel jet:

1.0 Viscosity below 2000 secs

2.0 Electrically heated model with control (Voltage varrier copper type)

3.0 Spare receiving flask (50 ml)

4.0 Thermometer for Redwood (with Calibration Certificate) *I.P 8C (0/45 X 0.2 C) *I.P. 9C (40/85C X 0.2C)

5.0 Calibration certificates of the thermometer should be supplied along with the equipment

B3 - Redwood Viscometer No. 2 for oil analysis

According to IP 70 with stainless steel jet:

1. Viscosity below 2000 secs

2. Electrically heated model with control (Voltage varrier copper type)

3. Spare receiving flask (50 ml)

4. Thermometer for Redwood (with Calibration Certificate) *I.P 8C (0/45 X 0.2 C) *I.P. 9C (40/85C X 0.2C)

5. Calibration certificates of the thermometer should be supplied along with the equipment

Aminabh.
2/9/17

S. Kumar
2/9/17

B4 - Apparatus for water in oil by Dean and Stack method

Temperature range up to 450°C
 Accepts 1000ml flasks
 350W Mantle type heater
 Integral energy regulator
 Complete with support rod

B5 - Interfacial tension apparatus

250mm borosilicate glass capillary tube
 Engraved graduations
 Graduated from 0 to 10cm, in 1mm divisions
 Cork holds capillary tube inside outer tube
 Outer tube accommodates rubber tubing

B6 - Pensky-Martens flash point apparatus

APPLICATION: Automatic measurement of Flash Point of oil and lubricants.

TECHNICAL SPECIFICATION :

1. MEASURING RANGE : 15°C to 370 °C
2. FLASH POINT DETECTION : Differential thermocouple/Ionization.
3. STIRRING SPEED : 120 & 250 rpm
4. TEMPERATURE CONTROL: Programmable, software for temperature control.
5. CORRECTIONS: Automatic correction of flash point, as per actual barometric pressure.
6. OPERATION: Micro processor controlled, 14 pre-programmed test methods, programmable library for the user with suitable software support for easy to operate .
7. ENCASMENT : Encasement/cabinet of Corrosion resistant stainless steel material.
8. POWER SUPPLY : 230 V , 50 Hz.
9. DATA OUTPUT : RS 232 interface.
10. AMBIENT CONDITION : Equipment shall be suitable for operation in ambient temperature from 0 to 50 degree Celsius and relative humidity of 0 to 98%

B7 - Penitro Meter for Grease Testing

Test Method Compliance : ASTM D217 IP 50 ISO 2137 FTM 791-373

Automatic Grease Worker

Power supply : 230V $\pm$ 10% 50Hz
 Power : 800W
 Weight : 37 kg
 Dimensions : 41x30x50 cm
 Automatic Grease Worker : 2 POSITIONS
 Power supply : 230V $\pm$ 10% 50Hz

B8 - Three-bulb Orsat

GENERAL: Equipment is required for analysis of CO, O₂, CO₂ in the flue gases.

SPECIFICATION OF EQUIPMENT:

1. Orsat Apparatus should be equipped with three absorption Pipettes of two compartments type, 100 ml Gas burette with outer jacket & manifold with aspirator bottle.
2. Equipment should be fixed in the polished wooden cabinet with sliding doors.
3. Equipment should be made of heavy walled borosilicate glass tube & stopcocks.

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B9 - Explosimeter (Combustible gas analyser)

Gas To Be Detected	: All Explosive Gases
Range	: 0 to 100% LEL
Detection Principle	: Catalytic Pellister
Display	: LCD
Battery	: Rechargeable Battery
Battery Operating Time	: 3 Hours
Temperature	: -10 to 50 Deg C
Alarm	: Audible & Visual
Warm up time	: 10 Sec

B10 - Hydrogen Purity Test Apparatus**DESCRIPTION**

Function : Sensing & Measurement of Hydrogen in Air, gas holders, valves, pipelines etc.

TECHNICAL SPECIFICATIONS :

Range	: 0-100% Purity
Sensor	: Thermal Conductivity Detector
Readout	: LCD Digital display
Sampling Method	: Suction
Alarms	: Audio-Visual alarm for LO, Hi ranges & Battery Low
Response Time	: Less than 10 seconds.
Power	: Rechargeable batteries + Charger
Instrument shall be supplied with all required accessories.	

Other Terms & Conditions

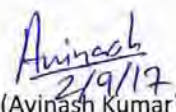
Document: One hard copy of O&M Manual in English language giving complete technical information for operation and maintenance of the equipment.

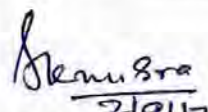
Installation and Commissioning: The supplier shall install & commission the equipment at site. Supplier should demonstrate the performance of the Equipment and all its accessories to ensure compliance with complete specifications & parameters quoted by them to the satisfaction of BHEL/end user. Cost of installation & Commissioning, if any, should be indicated separately. Training to chemists at site during installation should be provided for routine maintenance, operation and safety purpose. Failing to comply to the Installation and Commissioning clause, the offer is liable to be rejected.

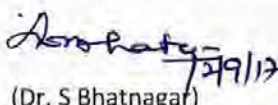
Warranty: The equipment shall be warranted for satisfactory performance for a period of 12 months from the date of installation or 18 months from date of dispatch, whichever is later. Failing to comply to the warranty clause, the offer is liable to be rejected.

Packing & Dispatch: The equipment / accessories shall be packed in a suitable water proof/vibration proof packing box capable of bearing air and road transit hazards. Packing box shall be properly identified and marked with BHEL's (India) Purchase Order Number. Also, "PCRI HWR" should be written in bold letters on all four sides of the packing box.

The Project Specific Terms and Conditions Annexed at Annexure-1 are also to be read in conjunction with this document.


(Avinash Kumar)
Sr. Engineer
Initiated by


(S K Mishra,
Dy Manager
Checked by


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SDGM
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CHEMICAL LAB EQUIPMENTS FOR 1 X 370 MW YELAHANKA CCPP PROJECT

INDENT NO. 20172616 DATED 02.09.2017

Annexure - C for Package - 3 [Material Code - D55995236997]

Sl. No.	Item	Quantity	Inspection Category	Specification [Annexured]
1	Magnetic stirrer	1 No	CAT-2	C1
2	Balance (chainomatic) with weight box	1 No	CAT-2	C2
3	Atomic absorption spectrophotometer	1 No	CAT-2	C3
4	Triple beam balance	1 No	CAT-2	C4
5	Single pan balance	1 No	CAT-2	C5
6	Gas heating assembly	1 No	CAT-2	C6
7	Water bath	1 No	CAT-2	C7
8	Hot plate	1 No	CAT-2	C8
9	Water distilling still	1 No	CAT-2	C9
10	Vacuum pump	1 No	CAT-2	C10
11	Heating mantle	1 No	CAT-2	C11
12	Kipp's apparatus	1 No	CAT-2	C12
13	Flame photometer	1 No	CAT-2	C13
14	Lovibond comparator	1 No	CAT-2	C14
15	Voltage stabiliser	1 No	CAT-2	C15
	Oil Centrifuge	1 No	CAT-2	C16
17	Hot plate-cum-magnetic stirrer	1 No	CAT-2	C17
18	Karl-Fisher titration apparatus	1 No	CAT-2	C18
19	Gas chromatograph with data processor	1 No	CAT-2	C19
20	Refrigerator	1 No	CAT-2	C20

CAT 2: Inspection by BHEL / BHEL Third Party Inspection Agency. MDCC shall be issued by BHEL based on inspection report.

Technical Specification of Items:**C1 - Magnetic stirrer**

GENERAL : used in the laboratory for stirring of various solutions and chemicals as a requirement during analysis of some parameters.

TECHNICAL SPECIFICATIONS :

1. Magnetic Stirrer should be electrically operated.
2. It should be fitted with a speed regulator with maximum speed of 1200 RPM.
3. Top plate should be made of stainless steel.
4. Capacity – 2 Litres
5. The magnetic stirrer should be supplied with Teflon coated stirring bar.
6. The magnetic stirrer is required without hot plate.

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C2 - Balance (Chainomatic) with Weight Box

GENERAL : To be used in the laboratory for weighing purposes, (Double Pan).

TECHNICAL SPECIFICATIONS :

1. Double Pan Mechanical Balance with Standard Weight Box.
2. Capacity : 0-200 gms
3. Scale Division : 1.0 mg
4. Pan Diameter : Standard
5. Reading Accuracy : 0-10 mg
6. Detailed Printed Leaflet in Original of the model offered be supplied along with quotation.

C3 - Atomic Absorption Spectrophotometer

General: Instrument is required for measurement of concentration of metals and heavy metals in liquids.

Specifications of Equipment:

1. Optics : True Double Beam optical design
2. Monochromator : The system should be based on Echelle Grating/ Hollow Graphitic Grating or equivalent
3. Focal Length : 300mm
4. Slit : Slit Width should be auto selectable
5. Detector : Detector technology based on PMT or solid state Design for complete wavelength range
6. Wavelength : 189 – 900nm
7. Turret : Six lamp turret
8. Burner Assembly : Air Acetylene burner head and N₂O burner head
9. Software for Parameter Control : All the method parameters related with lamp selection, calibration, control of flow gases should be through integrated software
10. Gas Control : The instrument should have programmable gas controls both for air, N₂O and C₂H₂
11. Software : Software for controlling analyzer, setting-up the method parameters, analyzing the samples and performing calibration
12. Lamps for AAS : Coded Hollow Cathode lamp with usage meter for Automatic recognition & automatic other parameter settings, e.g. lamp current, slit width for following elements- Copper, Chromium, Iron, Nickel, Silicon, Aluminum, Sodium, Zinc, Calcium, Lead, Mercury, Arsenic
13. Mercury Hydride System : Mercury Hydride system for the high sensitivity determination of Mercury and metallic hydride forming elements such as Bi, As, Sb, Sn, Se and Te, alongwith sample flask, reagent reservoir and quartz cell
14. Graphite Furnace : Heated Graphite Atomizer system
15. Fume Extraction System : Equipment should be supplied along with compatible Fume Extraction system
16. Power Source : 230V AC, 50Hz
17. Air cylinder, Acetylene gas cylinder and Nitrous Oxide cylinder along with regulators, colour coded pressure tubings and air compressor should be supplied from reliable/standard Indian source.
18. Computer System : Branded PC and Printer of reputable Indian manufacturer, Compatible with the software mentioned above

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C4 - Triple Beam Balance

GENERAL : To be used in the laboratory for weighing chemicals or various substances.

TECHNICAL SPECIFICATIONS :

1. Capacity : 111 gm
2. Readability : 0.1 gram
3. The tripple beam balance should be a typical mechanical balance which has a beam supported by a fulcrum. On one side should be a pan on which the object is placed. On the other side, the beam should be split into three notched parallel beams, each supporting one weight. In measuring the weight of an object, rather than adding additional weights, each of the three weights could be slid along the beam to increase their lever arm. It should work like a tetter-totter.
4. The balance should have three beams which carry weights. The middle beam should read only in 100 gm increments. The far beam should read only in 10 g increments. The weights in each of these beams must always sit in a "notch". They cannot be placed at arbitrary points on the beam. The weight on the front beam can be placed to read continuously from 0 to 10 grams.
5. Balance to be supplied complete with stainless steel pan, set of weights and protective dust cover.

C5 - Single Pan Balance

GENERAL : used in the laboratory for weighing purposes, it is same as Top Pan Balance or equivalent.

TECHNICAL SPECIFICATIONS :

1. Fully Automatic Microprocessor Controlled Single Pan Balance.
2. The balance should have built in automatic calibration and auto zero tracking.
3. Capacity : 5 Kg Maximum weight
4. Readability : 0.5 gm
5. Pan Size : 180 x 210 mm approx.
6. Display : Digital LCD display.
7. Detailed Printed Leaflet be supplied along with quotation.
8. Price be also given for optional battery back up.

C6 - Gas Heating Assembly

GENERAL : used in the laboratory for heating purposes. (It is same as domestic kitchen gas stove).

TECHNICAL SPECIFICATIONS :

1. The Gas Heating Assembly (Gas Stove) should conform to IS: 4246.
2. It should be a Double Burner Cooking Gas Stove without cover and with Non-Automatic Ignition System.
3. Size – Approx. Dimensions (when packed) 690 x 370 x 110 mm.
4. It should be sleek, streamlined, high efficiency with stainless steel body.
5. It should have brass burner tops and stainless steel drip-trays.
6. It should have one small burner and one big burner.

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C7 - Water Bath

GENERAL : Used in the laboratory for indirect heating of various solutions and chemicals as a requirement during analysis of some parameters.

TECHNICAL SPECIFICATIONS :

1. Temperature Range : From ambient temperature to 100°C.
2. Water bath should have arrangement for fixing mercury thermometer, constant water level device and overflow arrangement.
3. Double walled inside stainless steel and outside mild steel.
4. The water should be heated by a copper clad immersion heater controlled with 3 position heater switch.
5. It should work on 220 Volts AC $\pm 10\%$, 50 Hz $\pm 3\%$, single phase supply.
6. The water bath should have Electrically Heated concentric rings of flanged formed stainless steel with 8 holes of 7.5 cm dia with support frame.
7. Size: 20" x 14" x 4" (approx.)
8. Capacity 7.5 litres (approx.)

C8 - Hot Plate

GENERAL : used in the laboratory for general heating purpose of various solutions and chemicals.

TECHNICAL SPECIFICATIONS :

1. This is general purpose Hot Plate for continuous heating upto 250°C.
2. It should have a step control switch for low, medium and high level of heating.
3. The top cast iron plate should be rectangular of size 10" x 12" x 6" (approx), with heating element of 1.0 KW rating.
4. Power Supply : 220/230 volts A.C.
5. The body of the hot plate should be of thick M.S. sheet and finished with white heat resistant glossy enamel.

C9 - Water Distilling Still

1. Should be made of quartz/borosil with compact NPL design
2. Automatically Electrically heated all Glass Distillation unit
3. 3.0 to 4.0 KW heater
4. Dual safety cutout
5. Flask Capacity 3 L
6. High purity, low conductivity, Pyrogen free distillate. Conductivity < 5.0 micro Siemens
7. Easy service and maintenance
8. Output Capacity : 2L/hour
9. Double Distillation with thermal sensor auto cut off.

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C10 - Vacuum Pump**TECHNICAL SPECIFICATIONS:**

1. Vacuum Pump should be of single stage /double stage of 75 L /minute free air displacement
2. Vacuum : upto 600 to 700 mm in Hg.
3. To be driven by suitable rating single phase motor (~1/2 H.P), 230 V AC.

C11 - Heating Mantle

Capacity - three liters

Wattage - 450 W, Mantle should have two or three circuits so that upper circuits can be switched off when smaller size of flask is being heated or when liquid level drops.

The mantle should be equipped with temperature controller arrangement by energy regulator.

Mantle should be powder coated with textured siemens grey finish

C12 - Kipp's Apparatus

GENERAL : used in the laboratory for gas generation.

TECHNICAL SPECIFICATIONS :

1. Kipp's Apparatus with interchangeable joints.
2. Capacity – 1000 ml.
3. Borosil Cat. No. 6550 or JSGW Cat. No. 697/3 or equivalent

C13 - Flame Photometer

1. Type : Electrically operated along with all filters, temperature, single channel
2. Range : 0 – 199.9 ppm
3. Working Range : Na 0.50 - 10 ppm, K 0.75 – 25 ppm,
Li 0.75 – 20 ppm, Ca 3 - 40 ppm,
Ba 5 - 100 ppm
4. Detection Limits : Na 0.15 ppm, K 0.20 ppm, Li 0.25 ppm,
Ca 1.50 ppm, Ba 2.50 ppm
5. Reproducibility : $\leq 1\%$ coefficient of variation for 20 consecutive samples using 10 ppm Na set to read 50.0
6. Read Out : 3½ Digit LED
7. Linearity : Better than 2% when concentration of 3 ppm Na and K and 5 ppm Li are set to 100
8. Specificity : Interference from Na, K, and Li equal in concentration to test of element will be less than 0.5%
9. Recorder Output : Nominal 1.00V for a reading of 100.0
10. Fuel : Propane, Butane, Natural Gas or LPG
11. Electrical Supply : 190-250V @50/60Hz
12. Air Supply : Moisture and Oil free, 6Litre/min @14psi (1 Kg/cm²), Air Compressor
13. Detailed printed Catalogue must be provided with the offer submitted.

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C14 - Lovibond Comparator

Lovibond Disc Comparator Model 2000+

Disc Range

Disc : 1 No for each range as described below

Comparator – 05 Nos-pH Range :-

2.8 to 4.4 Brophenol blue 2/1B

4.4 to 6.0 Methyl Red, 2/1 E

6.0 to 7.6 Bromomethyl Blue, 2/1H

7.2 to 8.8 Cersol Red, 2/1K

8.8 to 9.6 Thymol Blue, 2/1L

4.0 to 11.0 Universal Indicator, 2/1P

Chlorine in water:- 0.1 to 1.0 ppm, 3/40 A

Phosphate :- 0.0 to 80 pp m, 3/102

Hydrazine: 0.02 to 0.2 ppm, 3/135

Silica :- 2.5 to 20.0 ppm, 3/13

Ammonia:- 0.0 to 40mgm, 3/112

C15 - Voltage Stabiliser

5 KVA

C16 - Oil Centrifuge

Conforms to safety requirements IEC 1010-1; 1010-2-D;

4 place swing out rotor

Static, near vertical bucket positioning

Specifically designed for testing oils

Heated chamber, ambient to 80°C,

Membrane 'touch' control panel

Pre-heat facility to ensure bowl is at test temperature prior to test

Universal buckets for 12.5ml, 6 and 8 inch glassware

Optional 'Setafuge' Hazard Reduction System

Microprocessor control with 99 memories

Optional trolley

C17 - Hot Plate-cum-Magnetic Stirrer

GENERAL : used in the laboratory for stirring of various solutions and chemicals during analysis of some parameters.

TECHNICAL SPECIFICATIONS :

1. Magnetic Stirrer cum Hot Plate should be electrically operated.
2. The equipment should be complete with hot plate controlled by an energy regulator.
3. It should be capable to stir 2 litre of solution.
4. Plate Surface Area : 7x7 inch (approx.).
5. It should be fitted with a speed regulator, Stirring Speed : 60 to 1000 RPM.
6. Temperature Range : 50 to 500°C, accuracy within $\pm 3^\circ\text{C}$.
7. The magnetic stirrer should be supplied with Teflon coated stirring bar.
8. Detailed original printed leaflet about Magnetic Stirrer with Hot Plate be supplied.
9. Spares Required : (i) Spare Element
(ii) TFE Coated Stirrer
(iii) Temperature Sensor

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C18 - Karl-Fisher Titration Apparatus

1. Type : Microprocessor Based Digital Automatic Karl Fischer Titration Apparatus (Coulometric)
2. Suitability : Suitable for estimating very minute traces of moisture in samples such as Transformer Oils / Insulating Oils & Petrochemical Products
3. Method : Coulometric Karl-Fisher Titration
4. Moisture Measuring Range : upto 10 mg
5. Readability : 0.001 mg
6. Accuracy : 0.01 mg (Highest Accuracy with simple operation)
7. Display Format : Liquid Crystal Display in ppm (mg/Kg)
8. Printer : Printer Port provided to connect printer
9. Power Supply : 230V AC, 50Hz
10. Serial Interface : RS 232 port
11. It shall have coulometric cell without diaphragm, constant current pulse time control by microprocessor, AC polarization end detection with electronic sound.
12. The equipment shall have facility to compensate drift automatically and independent memory literation conditions and calculation formula.
13. The instrument shall have facility to connect to printer/computer and balances separately along with in-built clock calendar.
14. Essential/Standard Accessories and spares should be included along with Built-in magnetic stirrer, Titration cell (200 ml), Reagent for Coulometric KF Titration and Water Standard.
15. Detailed printed Catalogue must be provided with the offer submitted.

C19 - Gas Chromatograph with Data Processor

1. GC Controller : Microprocessor Based Gas Chromatograph with Data Processor, Digital Pressure and flow control for carrier gas, along with auto leak check facility in the digital measurement through hardware complete with necessary standard accessories. Column Oven
2. Temperature Range : Ambient - 400°C
3. Oven Capacity : 15 - 25 litres
4. Temperature Deviation : 2°C maximum
5. Temperature variation coefficient : 0.01°C/°C
6. Temperature program steps : Up to 20 (cooling program possible)
7. Programmed rate setting range : -250°C ~ 250°C/min
8. Total time for all steps : 9999.99 minutes max.
9. Linear heating rate : 30°C/min upto 150°C; 20°C/min upto 250°C
10°C/min upto 380°C; 7°C/min upto 400°C
10. Cooling Rate : 250°C or 300°C to 50°C in 6 or 7 mins
11. Columns : Capillary columns: 2; Packed columns: 2 Sample Injection Unit
12. Temperature Range : Up to 400°C
14. Heating Settings : 1°C steps
15. Number of units that can be installed : Up to Three simultaneously

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16. Type : Dual packed, single capillary injection- Split/splitless
(Compatibility to complete range of capillary columns) Carrier Gas flow Controller
17. Range : 0-100 m2/min
18. Steps : 6 or 7 Thermal Conductivity Detector (TCD) and FID Detector System
19. Temperature Range : 400°C
20. The chromatograph shall be equipped with Column Oven, Sample Injection unit, Carrier gas flow controller, Thermal Conductivity Detector System (TCD) and FID Detector System for both capillary & packed column.
21. Suitable Capillary and packed column as per application to be provided.
22. Filled Nitrogen gas cylinder (99.9 % pure, 7-8 cu.m.), Hydrogen gas cylinder (99.9 %, 7cu.m.) and Zero Air cylinder along with double stage regulators with gas purification panel and colour coded pressure tubings should be supplied from reliable/standard Indian source.
23. Standards for calibration of TCD and FID Detector System.
24. Computer System : Branded PC of reputable Indian manufacturer with printer with compatible software alongwith 5 KVA online UPS with 30 minutes backup.
25. All essential accessories required for the operation of the Gas Chromatograph should be quoted.

C20 - Refrigerator

General: Used in laboratory for storing of chemicals under refrigerated condition.

Specifications of Equipment:

1. Type : Electrically operated with freezer, chill trays, crispators and provided with magnetic door latch, pilot bulb, thermostat temperature control, automatic voltage stabilizer, leads, plugs, Double door with auto defrosting etc.
2. Capacity : 230 litres
3. Voltage : 230V AC nominal with input voltage range
4. Detailed printed Catalogue must be provided with the offer submitted.

Other Terms & Conditions

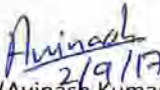
Document: One hard copy of O&M Manual in English language giving complete technical information for operation and maintenance of the equipment.

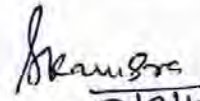
Installation and Commissioning: The supplier shall install & commission the equipment at site. Supplier should demonstrate the performance of the Equipment and all its accessories to ensure compliance with complete specifications & parameters quoted by them to the satisfaction of BHEL/end user. Cost of installation & Commissioning, if any, should be indicated separately. Training to chemists at site during installation should be provided for routine maintenance, operation and safety purpose. Failing to comply to the Installation and Commissioning clause, the offer is liable to be rejected.

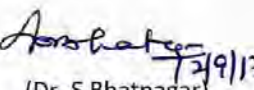
Warranty: The equipment shall be warranted for satisfactory performance for a period of 12 months from the date of installation or 18 months from date of dispatch, whichever is later. Failing to comply to the warranty clause, the offer is liable to be rejected.

Packing & Dispatch: The equipment / accessories shall be packed in a suitable water proof/vibration proof packing box capable of bearing air and road transit hazards. Packing box shall be properly identified and marked with BHEL's (India) Purchase Order Number. Also, "PCRI HWR" should be written in bold letters on all four sides of the packing box.

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CHEMICAL LAB EQUIPMENTS FOR 1 X 370 MW YELAHANKA CCPP PROJECT

INDENT NO. 20172616 DATED 02.09.2017

Annexure - D for Package - 4 [Material Code - D55995237012]

Sl. No.	Item	Quantity	Inspection Category	Specification [Annexured]
1	Ambient Air Monitoring Weather Monitoring Station comprising of wind-vane, anemometer, thermometer, hygrometer, sunshine recorder, evaporimeter, rain-fall recorder.	1 No	CAT-2	D1
2	Stack monitoring kit complete with all accessories for manual monitoring of stack gases	1 No	CAT-2	D2
3	High Volume Sampler	4 No	CAT-2	D3

CAT 2: Inspection by BHEL / BHEL Third Party Inspection Agency. MDCC shall be issued by BHEL based on inspection report.

Technical Specification of Items:

D1 - Ambient Air Monitoring Weather Monitoring Station comprising of wind-vane, anemometer, thermometer, hygrometer, sunshine recorder, evaporimeter, rain-fall recorder.

TECHNICAL SPECIFICATION : Weather monitoring station comprising of following:

1. WIND SPEED SENSOR:

1.1 Measuring Range : 0-50 m/s

1.2 Resolution: 0.2 m/s

2. WIND DIRECTION SENSOR:

2.1 Measuring Range : 0 to 360 degree angle

2.2 Resolution: 2 degree

3. AMBIENT TEMPERATURE SENSOR:

3.1 Measuring Range : 0 to 50 degree centigrade

3.2 Resolution: 0.5 degree centigrade

4. RELATIVE HUMIDITY SENSOR :

4.1 Measuring Range : 0 - 100% RH

4.2 Resolution : 1%

5. RAINFALL SENSOR :

5.1 Sensor: Tripping bucket Rain gauge sensor

5.2 Measuring Range : 0-400 mm/Hrs.

5.3 Resolution : 1 mm

6. SOLAR RADIATION (SUNSHINE RECORDER):

6.1 Measuring Range : 0 to 1000 W/m²6.2 Resolution : 1 W/m²

7. DATA LOGGER : Data logger with driver software should be provided with PC based data acquisition system suitable for storing, logging, reporting and printing data.

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8. A PC should be supplied along with the automatic weather station to store, analysis and printing of data.
PC should have Minimum configuration as mentioned below:-
i5, Windows 7, RAM : 1.97 GB or better, Hard disk : 320 GB or better, CD-ROM : 52xCD-ROM drive IDE compatible or better, Monitor : 14" LCD colour monitor, Ports : 2 serial & 1 parallel, Keyboard : Standard Windows, Mouse, Software : Windows based data logging / driver software, Black & White printer
 9. SOFTWARE : Suitable Window based software package for data transfer and storage to PC for further analysis and reporting.
 10. MOUNTING ACCESSORIES: Tripod stand with provision of mounting all sensors with fittings and connecting cable of approximately 10 meter length from sensors to data logger.
 11. UPS AND CONSTANT VOLTAGE STABILISER : Suitable UPS (minimum power backup for 15 minute) & constant voltage stabilizer (230 V AC, 50 Hz).
 12. COMPASS : Standard magnetic compass for setting direction of Wind direction sensor.
 13. AMBIENT CONDITION : Equipment shall be suitable for operation in ambient temperature from 0 to 50 degree Celsius and relative humidity of 0 to 98%.
- QUALITY ASSURANCE: Calibration and Test certificate should be supplied along with the equipment

D2 - Stack monitoring kit complete with all accessories for manual monitoring of stack gases

Stack monitoring Kit as per IS 11255, consisting of :-

1. Instrument Panel with fibre cover consisting of thermocouple, inclined cum vertical manometer, stop watch, rotameters, Cold Box Assembly.
2. Vacuum Pump Assembly
3. Probe Set consisting of probe pipe, pitot tube, thermocouple, filter holder, interconnecting hose pipes, nozzles .etc.
4. Dry Gas Meter

Technical Specifications:

1. Stack Temperature Range: Ambient to 600 Deg C.
2. Stack Velocity Range: 0-50 m/sec
3. Particulate sampling: 10– 60 lpm
4. Gaseous sampling: 1-2 lpm in a of Borosilicate glass impingers.
5. Digital Temperature Indicator : 0-600 deg. C
6. Thermocouple : Thermocouple sensor in SS casing, Length of insertion 1 m with 2m long cable
7. Pitot Tube : S-type pitot tube fabricated from SS, 1.5 m in length
8. Rotameter: Rotameter with 2% FSD accuracy, 0-60 lpm for Particulates and 0.6-5 lpm for gases
9. Differential Density Manometer Assembly
10. Extension Vacuum Hose Pipe, 10 m long
11. Sampling Probes: Made from SS, 1.5m length
12. Filter Holder: Fabricated from SS suitable to hold either cellulose filtration thimble (size-28mm ID & 100mm long) or glass micro fibre, thimble (Size-19mmID, 90 mm long)
13. Whatman Cellulose Thimble (size-28mm ID & 100mm long) – 1 pkt. with kit
14. Nozzles: A set of 3 SS nozzles (1/4, 3/8, 1/2 inch)
15. Digital Clock: 0-60 minutes, 1 second, readout with start and stop watches.
16. Sampling Train: 5 borosilicate glass impingers of 250 ml cap., accommodated in cold box .
17. Vacuum Pump: 100 lpm approx free flow capacity.
18. Dry Gas Meter: To measure dry gas volume.

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D3 - High Volume Sampler

GENERAL : High volume sampler is intended to be used for ambient air quality monitoring for Total Suspended Particulate Matter (less than 100 micron) and Respirable Suspended Particulate Matter (less than 10 micron) and gaseous sampling.

EQUIPMENT WILL BE COMPLETE WITH FOLLOWING COMPONENT :

1. BLOWER: High flow rate (0.9 m³/min to 1.4 m³/min free flow) having brushless motor.
2. FLOW METER: To measure flow rate (0.9 m³/min to 1.4 m³/min).
3. SAMPLING TIME : 28 hours continuous (maximum)
4. SAMPLING TIME RECORD : 0 to 9999.99 hrs recorded on a Time Totalizer.
5. AUTOMATIC SAMPLING : 24 hrs. programmable Timer to automatically shut off the system at pre set time interval
6. POWER REQUIRMENT : 230 V AC, single phase , 50Hz mains supply
7. VOLTAGE STABILIZER: Built-in automatic voltage stabilizer to keep output voltage 230±10 V with input variation from 180 to 270 V.
8. GASEOUS SAMPLING ATTACHMENT
 - 8.1 FLOW RATE : 0.3 to 3 LPM , ±2% accuracy on span.
 - 8.2 FLOW CONTROL : Four Inlet and one out let with built in needle valves for flow control.
 - 8.3 FLOW METER: To measure flow rate (0.3 to 3 LPM , ±2% accuracy on span) in gaseous sampling train.
 - 8.4 SAMPLING TRAIN : 4 nos. of 35ml Borosilicate midget glass impingers.
9. AMBIENT CONDITION : Equipment shall be suitable for operation in ambient temperature from 0 to 50 degree Celsius and relative humidity of 0 to 98%
10. QUALITY ASSURANCE: The blower should be calibrated against a standard orifice/meter or a U tube manometer. The graph in case of the U-tube manometer should be fixed on the sampler. The Calibration and Test certificate of the High Volume Sampler and calibration certificate from the manufacturer of the rotameter / flow meter should be supplied along with the equipment.

Other Terms & Conditions

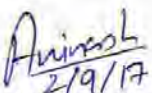
Document: One hard copy of O&M Manual in English language giving complete technical information for operation and maintenance of the equipment.

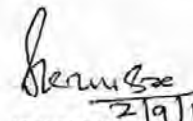
Installation and Commissioning: The supplier shall install & commission the equipment at site. Supplier should demonstrate the performance of the Equipment and all its accessories to ensure compliance with complete specifications & parameters quoted by them to the satisfaction of BHEL/end user. Cost of installation & Commissioning, if any, should be indicated separately. Training to chemists at site during installation should be provided for routine maintenance, operation and safety purpose. Failing to comply to the Installation and Commissioning clause, the offer is liable to be rejected.

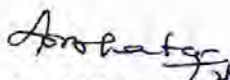
Warranty: The equipment shall be warranted for satisfactory performance for a period of 12 months from the date of installation or 18 months from date of dispatch, whichever is later. Failing to comply to the warranty clause, the offer is liable to be rejected.

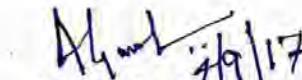
Packing & Dispatch: The equipment / accessories shall be packed in a suitable water proof/vibration proof packing box capable of bearing air and road transit hazards. Packing box shall be properly identified and marked with BHEL's (India) Purchase Order Number. Also, "PCRI HWR" should be written in bold letters on all four sides of the packing box.

The Project Specific Terms and Conditions Annexed at Annexure-1 are also to be read in conjunction with this document.


2/9/17
(Avinash Kumar)
Sr. Engineer
Initiated by


2/9/17
(S K Mishra,
Dy Manager
Checked by


2/9/17
(Dr. S Bhatnagar)
SDGM
Supervised by


7/9/17
Ambrish Goel
AGM
Approved by

Annexure – 1**Project Specific Terms & Conditions for Environmental Laboratory Equipment for
1 x 370 MW YELAHANKA CCPP Project**

These conditions are in addition to latest version of General Instructions and Standard Terms & Conditions (GISTC) for bidding against Tender Enquiry.

1. Bidder to quote each item of a Package separately as per specifications and also submit original catalogue of the each item issued by its Original Equipment Manufacturer (OEM) alongwith Technical bid. Failing this, the offer for the package is liable to be rejected.
2. Price bid of those technically qualified vendors would be opened which would be approved by BHEL's Customer.

Installation & Commissioning (I & C) of item/items shall have to be carried out either by approved vendor himself or its duly authorized representative. Authorisation in this regard shall also have to be submitted with the offer.

Warranty of each item of the package should be extended by vendor. BHEL reserves the right to seek warranty also issued from OEM of the item for any item of the package at its discretion.

The entire responsibility of supply, I & C shall however remain with the bidder.

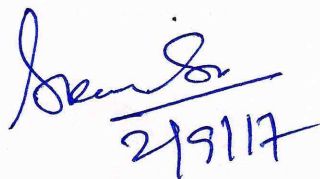
3. All the items in the package would be required to be supplied in totality on intimation by BHEL.
4. The intimation for supply of the package will be issued by BHEL within one year from the date of placement of Purchase Order without any additional financial implication on BHEL.
5. Shelf life of Solutions/Standards required for the item/items should be valid for at least 18 months from date of supply. Shelf life of these Solutions/Standards should also be indicated in the packing list submitted for issue of Material Dispatch Clearance Certificate (MDCC) by BHEL prior to dispatch of item.
6. The prices should be quoted Ex-works freight pre-paid basis. Freight Charges from vendor's works to project site should be mentioned (quoted) separately in the price bid.
7. It shall be responsibility of vendor to handover all the items of the package to any of the BHEL approved transporters in time.
8. Evaluation of bids for decision of lowest bidder would be made based on offered price for complete package which shall include all taxes, duties, freight, Packing & Forwarding, I & C charges etc.
9. Bidder should submit list of imported items proposed to be supplied in the package alongwith technical bid.

Inspection and Testing :

1. Quality Assurance Plan (QAP) is to be submitted for each item of the package separately along with technical offer for approval of BHEL. Offers submitted without QAP are liable to be rejected.
2. The category of inspection of each item has been indicated in technical specification of the items. BHEL reserves the right to amend category of inspection as per project requirement.

Contd...

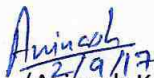
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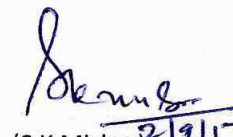

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3. The manufacturer shall conduct all routine/mandatory tests required to ensure that the equipment furnished conforms to the requirements of its specifications & approved QAP, applicable Codes and Standards.
4. BHEL / BHEL's Customer / Nominated third party inspection agency may inspect items as per approved QAP/Technical Specifications. The vendor will provide all necessary support without any additional financial implication on BHEL.

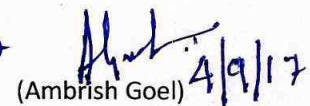
Installation & Commissioning (I & C) :

1. The scope of I & C shall include receipt of items from BHEL's site store, transportation to required location (Laboratory Building) for installation/erection, operation, calibration with standards/solutions, training and demonstration to BHEL/Customer officials. The vendor shall arrange all the required tools & tackles/chemicals/glasswares/consumables/commissioning spares/supply cables or any other requisite for successful I & C, demonstration of equipment without any additional financial implication on BHEL.
2. The vendor may visit the site/Laboratory building prior to taking up I & C of the equipments to make all necessary arrangement at his end. It shall be responsibility of the vendor to arrange and complete all the I & C and demonstration of all the items of the package in time bound manner through required one or more visits and to entire satisfaction of BHEL/BHEL's Customer as per BHEL specifications and contract conditions and also obtain unconditional handing over protocol for all the items in the package.
3. Completion of I & C of the package shall be considered after receipt of unconditional handing over protocol of all the items of the package. No part completion of the package shall be considered for closure of I & C of the package for processing the balance payment.
4. Schedule of I & C of package shall be intimated by BHEL normally within 06 months from date of dispatch of package. I & C of the package shall have to be taken up promptly and completed within 08 weeks from date of issue of intimation for I & C.. In case of delay in completion of I & C, a penalty of delay @ 1% of balance payment per week shall be imposed, subject to a maximum of 10 % of balance payment. The delay and applicable penalty shall be intimated in writing. In case of delay beyond 10 weeks, BHEL reserves the right to proceed and get the I & C done by alternate source at risk & cost to vendor without further intimation to vendor.


(Avinash Kumar)
Sr. Engineer
Initiated by


(S K Mishra)
Dy Manager
Checked by


(Dr. S Bhatnagar)
SDGM
Supervised by


(Ambrish Goel)
AGM
Approved by

COMPLIANCE SHEET

[Package-1]

No. of Pages = 3

COMPLIANCE SHEET

[Package-2]

No. of Pages = 3

COMPLIANCE SHEET

[Package-3]

No. of Pages = 7

COMPLIANCE SHEET

[Package-4]

No. of Pages = 3

Total No. of Pages = 16

Compliance Sheet [Package - 1]

A1 - Alfoc test kit for oxygen (DO Meter PPB level)

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	Range:	1 ppb to 20 ppm	
2	Accuracy :	± 1.5% of reading or ± 0.2 ppb	
3	Temperature range:	0.0 to 50.0 0C	
4	Probe:	Dissolved Oxygen Probe with Cable	
5	Power Requirement:	Mains operated (220 Volts AC ± 10%, 50 Hz ± 3%, single phase supply) / Battery operated.	
6	Standard Accessories:	1. Dissolved Oxygen probe 2. Flow through cell 3. Battery 4. Support stand	

A2 - pH meter (online operated)

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	Range pH:	0 to 14.00 pH	
2	Accuracy pH:	0.1% of span	
3	Temperature compensation:	Automatic	
4	Display:	Digital Display	
5	Input connections:	pH Combination electrode	
6	Flow of liquid:	0-2 m/s	
7	Operating temperature range:	0 to 100 0C	
8	Pressure Limit:	6.9 bar at 100 0C	
9	Power Requirement:	16-30 VDC	
10	Standard Accessories:	1. pH Transmitter 2. General purpose pH glass electrode 3. Buffer Tablets / Solutions (4, 7 & 10 pH) – 1 Pack of 100 Nos. or 1.0 Litre Solution of each pH) 4. DIN 19267 Standard (1.09, 4.65, 6.79, 9.23 & 12.75).	

A3 - Jar Test apparatus

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	Microprocessor Based Floc Test Apparatus with 6 sets of programmable Timer, On Time & Off Time		
2	Range : 5 to 120 RPM		
3	Display : 3 Digit LED Display		
4	Accuracy : ± 1 RPM		
5	Resolution : 1 RPM		
6	Power : Mains operated (230V AC±10%, 50Hz)		
7	White Light Source CFL 11 W with suitable choke		
8	Motor : Brushless DC motor		
9	Detailed printed Catalogue must be provided with the offer submitted.		

A4 - Autoclave

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	General: Autoclave is required for sterilization & preparation of Culture media for microbiological tests.		
2	SPECIFICATION OF EQUIPMENT :		
2.1	The Autoclave should be double wall construction with boiler made of stainless steel 16 gauge sheets.		
2.2	The Autoclave should be 50 liters capacity approximately.		
2.3	There should be mineral wool/glass wool insulation between Boiler and outer shell.		
2.4	Lid should be made of thick stainless steel plate and tightened all – around by radial locking / wing nut arrangement.		
2.5	There should be joint less gaskets made of neoprene rubber.		
2.6	This sterilizer should be hydraulically tested upto 40 psi.		
2.7	Sterilizer should be fitted with arrangement to indicate water level inside the boiler.		
2.8	Pressure gauge, air/Steam release cock and double safety valves should be provided. There should be Immersion type heating element of adequate wattage to achieve desired temperature and pressure. Stainless Steel basket should be provided.		

A5 - Inoculation chamber

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	The Inoculation chamber should be Vertical laminar flow cabinet with 100% exhaust system, suitable for exhaust duct upto 6 ft. to throw the contaminated air from the work area into the atmosphere outside the room.		
2	The size (working size) of the Inoculation chamber should be approx. 3 x 2 x 2 ft.		
3	A plenum should be provided under the S.S. perforated working table, with exhaust system which should work in coordination with the main air flow system.		
4	The whole cabinet should be made out of stainless steel.		
5	The side panels should be made of thick transparent plexi glass duly framed.		
6	The unit should be fitted pre-filter and HEPA filter so that air is drawn through pre-filter and is made to pass through highly effective HEPA filter, thus retaining all air-borne particles of size 0.3 micron and larger.		
7	The air should flow down vertically from top towards the work table.		
8	HEPA filter and virus burn out should also be provided at the exhaust.		
9	The unit should be fitted with duly balanced, direct drive motor blower units sized to provide adequate air flow volume over the entire surface of HEPA filter. It should be fitted with reputed make motor which should operate with minimum noise level.		
10	The unit should be complete with S.S. Table Top, Transparent front door (5 mm), Static Pressure Inclined Manometer, Built in U.V. Germicidal Light and cock for gas.		
11	The work area should be properly illuminated by diffused, glare free fluorescent light fitted to the unit.		
12	The number, location, rating and make of motor / motors being used in the equipment should be indicated in the offer.		
13	The equipment should work on 230 Volts AC, 50 Hz single phase supply.		
14	The following spare accessories should be quoted		
14.1	• HEPA Filter		
14.2	• Pre Filter		

A6 - Dessicator

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	GENERAL : Used in the laboratory for drying purposes.		
2	TECHNICAL SPECIFICATIONS :		
2.1	Dessicator Vacuum with flat flanges.		
2.2	Outlet in lid with Stopcock.		
2.3	Diameter – 250 mm approx.		
2.4	Height - 344 mm approx.		
2.5	Riviera/Duran Cat. No. 24782 66 or Borosil Cat. No. 3119 or JSGW Cat. No. 882/3 or equivalent.		
2.6	Material – Borosilicate Neutral Glass		
2.7	Accessories – Perforated porcelain plate.		

A7 - BOD incubator

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	Thermostatically Controlled BOD Incubator of Volume 230 Ltrs.(approx.)		
2	Internal Dimension : 513 D x 431 W x 702 H mm (approx.)		
3	External Dimension : 600 D x 600 W x 855 H mm (approx.)		
4	The equipment should work on 230 Volts AC, 50 Hz single phase supply.		
5	Regulation Range : 2°C		
6	Dual LCD Display, fully insulated cabinet with universal temp. regulation device with glass door in aluminium frame, including 3 metal grids and 1 bottom grid.		
7	Temperature Range : 5 - 60°C (for inner chamber)		
8	Temperature Accuracy : ±1°C		
9	Provision should be there for heating and cooling of inner chamber.		
10	To achieve uniformity of temperature in the inner chamber it should be fitted with 2 nos. circulating fans.		
11	Temperature indicator should be there with L-shape Thermometer.		
12	Detailed printed Catalogue must be provided with the offer submitted.		

A8 - COD incubator (COD digestion unit)

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	General: The instrument is used for distillation of water samples for determination of Chemical Oxygen Demand.		
2	Specifications of Equipment:		
2.1	It should be suitable for heating of 500mL flasks.		
2.2	Unit should be supplied with Heating Box fitted with heating mantles, individual energy regulators, Neon lights etc. along with adjustable rod, clamps and boss heads.		
2.3	Power Source : 230V AC, 50Hz		
2.4	Essential/Standard Accessories should be provided including 500mL flasks (6 nos.), appropriate Condensers (6 nos.), Clamps and Connecting Rubber Tube.		

Compliance Sheet [Package - 2]

B1 - Apparatus for oxidation stability test

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	Test Capacity: 8 or 12 oxidation cells		
2	Temperature Range: ambient to 212°F (100°C)		
3	Temperature Control Stability: 0.2°F (0.1°C)		
4	Bath Medium: white technical oil		
5	Bath Capacity: 8-place model: 10 gal (37.8L) , 12-place model: 19 gal (71.9L)		
6	Electrical Requirements		
7	8-place model: 115V 60Hz, Single Phase, 13.0A 220-240V 50/60Hz, Single Phase, 6.8A		
8	12-place model: 115V 60Hz, Single Phase, 32.6A 220-240V 50/60Hz, Single Phase, 17.0A		

B2 - Redwood Viscometer No. 1 for oil analysis

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	According to IP 70 used OR Determination of Viscosity of Lubricating oils and fuels with stainless steel jet:		
1.1	Viscosity below 2000 secs		
1.2	Electrically heated model with control (Voltage varrier copper type)		
1.3	Spare receiving flask (50 ml)		
1.4	Thermometer for Redwood (with Calibration Certificate) *I.P 8C (0/45 X 0.2 C) *I.P. 9C (40/85C X 0.2C)		
1.5	Calibration certificates of the thermometer should be supplied along with the equipment		

B3 - Redwood Viscometer No. 2 for oil analysis

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	According to IP 70 with stainless steel jet:		
1.1	Viscosity below 2000 secs		
1.2	Electrically heated model with control (Voltage varrier copper type)		
1.3	Spare receiving flask (50 ml)		
1.4	Thermometer for Redwood (with Calibration Certificate) *I.P 8C (0/45 X 0.2 C) *I.P. 9C (40/85C X 0.2C)		
1.5	Calibration certificates of the thermometer should be supplied along with the equipment		

B4 - Apparatus for water in oil by Dean and Stack method

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	Temperature range up to 450°C		
2	Accepts 1000ml flasks		
3	350W Mantle type heater		
4	Integral energy regulator		
5	Complete with support rod		

B5 - Interfacial tension apparatus

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	250mm borosilicate glass capillary tube		
2	Engraved graduations		
3	Graduated from 0 to 10cm, in 1mm divisions		
4	Cork holds capillary tube inside outer tube		
5	Outer tube accommodates rubber tubing		

B6 - Pensky-Martens flash point apparatus

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	APPLICATION: Automatic measurement of Flash Point of oil and lubricants.		
2	TECHNICAL SPECIFICATION :		
2.1	MEASURING RANGE : 15°C to 370 °C		
2.2	FLASH POINT DETECTION : Differential thermocouple/Ionization.		
2.3	STIRRING SPEED : 120 & 250 rpm		
2.4	TEMPERATURE CONTROL: Programmable, software for temperature control.		
2.5	CORRECTIONS: Automatic correction of flash point, as per actual barometric pressure.		
2.6	OPERATION: Micro processor controlled, 14 pre-programmed test methods, programmable library for the user with suitable software support for easy to operate .		
2.7	ENCASEMENT : Encasement/cabinet of Corrosion resistant stainless steel material.		
2.8	POWER SUPPLY : 230 V , 50 Hz.		
2.9	DATA OUTPUT : RS 232 interface.		
3	AMBIENT CONDITION : Equipment shall be suitable for operation in ambient temperature from 0 to 50 degree Celsius and relative humidity of 0 to 98%		

B7 - Penitro Meter for Grease Testing

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	Test Method Compliance : ASTM D217 IP 50 ISO 2137 FTM 791-373		
2	Automatic Grease Worker		
3	Power supply : 230V ±10% 50Hz		
4	Power : 800W		
5	Weight : 37 kg		
6	Dimensions : 41x30x50 cm		
7	Automatic Grease Worker : 2 POSITIONS		
8	Power supply : 230V ±10% 50Hz		

B8 - Three-bulb Orsat

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	GENERAL: Equipment is required for analysis of CO, O2, CO2 in the flue gases.		
2	SPECIFICATION OF EQUIPMENT:		
2.1	Orsat Apparatus should be equipped with three absorption Pipettes of two compartments type, 100 ml Gas burette with outer jacket & manifold with aspirator bottle.		
2.2	Equipment should be fixed in the polished wooden cabinet with sliding doors.		
2.3	Equipment should be made of heavy walled borosilicate glass tube & stopcocks.		

B9 - Explosimeter (Combustible gas analyser)

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	Gas To Be Detected : All Explosive Gases		
2	Range : 0 to 100% LEL		
3	Detection Principle : Catalytic Pellister		
4	Display : LCD		
5	Battery : Rechargeable Battery		
6	Battery Operating Time : 3 Hours		
7	Temperature : -10 to 50 Deg C		
8	Alarm : Audible & Visual		
9	Warm up time : 10 Sec		

B10 - Hydrogen Purity Test Apparatus

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	Function : Sensing & Measurement of Hydrogen in Air, gas holders, valves, pipelines etc.		
2	TECHNICAL SPECIFICATIONS :		
2.1	Range : 0-100% Purity		
2.2	Sensor : Thermal Conductivity Detector		
2.3	Readout : LCD Digital display		
2.4	Sampling Method : Suction		
2.5	Alarms : Audio-Visual alarm for LO, HI ranges & Battery Low		
2.6	Response Time : Less than 10 seconds.		
2.7	Power : Rechargeable batteries + Charger		
2.8	Instrument shall be supplied with all required accessories.		

Compliance Sheet [Package - 3]

C1 - Magnetic stirrer

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	GENERAL : used in the laboratory for stirring of various solutions and chemicals as a requirement during analysis of some parameters.		
2	TECHNICAL SPECIFICATIONS :		
2.1	Magnetic Stirrer should be electrically operated.		
2.2	It should be fitted with a speed regulator with maximum speed of 1200 RPM.		
2.3	Top plate should be made of stainless steel.		
2.4	Capacity – 2 Litres		
2.5	The magnetic stirrer should be supplied with Teflon coated stirring bar.		
2.6	The magnetic stirrer is required without hot plate.		

C2 - Balance (Chainomatic) with Weight Box

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	GENERAL : To be used in the laboratory for weighing purposes, (Double Pan).		
2	TECHNICAL SPECIFICATIONS :		
2.1	Double Pan Mechanical Balance with Standard Weight Box.		
2.2	Capacity : 0-200 gms		
2.3	Scale Division : 1.0 mg		
2.4	Pan Diameter : Standard		
2.5	Reading Accuracy : 0-10 mg		
2.6	Detailed Printed Leaflet in Original of the model offered be supplied along with quotation.		

C3 - Atomic Absorption Spectrophotometer

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	General : Instrument is required for measurement of concentration of metals and heavy metals in liquids.		
2	Specifications of Equipment :		
2.1	Optics : True Double Beam optical design		
2.2	Monochromator : The system should be based on Echelle Grating/ Hollow Graphic Grating or equivalent		
2.3	Focal Length: 300mm		
2.4	Slit: Slit Width should be auto selectable		
2.5	Detector: Detector technology based on PMT or solid state Design for complete wavelength range		
2.6	Wavelength: 189 – 900nm		
2.7	Turret : Six lamp turret		
2.8	Burner Assembly: Air Acetylene burner head and N2O burner head		
2.9	Software for Parameter Control : All the method parameters related with lamp selection, calibration, control of flow gases should be through integrated software		
2.10	Gas Control: The instrument should have programmable gas controls both for air, N2O and C2H2		
2.11	Software: Software for controlling analyzer, setting-up the method parameters, analyzing the samples and performing calibration		

2.12	Lamps for AAS:	Coded Hollow Cathode lamp with usage meter for Automatic recognition & automatic other parameter settings, e.g. lamp current, slit width for following elements- Copper, Chromium, Iron, Nickel, Silicon, Aluminum, Sodium, Zinc, Calcium, Lead, Mercury, Arsenic		
2.13	Mercury Hydride System:	Mercury Hydride system for the high sensitivity determination of Mercury and metallic hydride forming elements such as Bi, As, Sb, Sn, Se and Te, alongwith sample flask, reagent reservoir and quartz cell		
2.14	Graphite Furnace:	Heated Graphite Atomizer system		
2.15	Fume Extraction System:	Equipment should be supplied along with compatible Fume Extraction system		
2.16	Power Source:	230V AC, 50Hz		
2.17	Air cylinder, Acetylene gas cylinder and Nitrous Oxide cylinder along with regulators, colour coded pressure tubings and air compressor should be supplied from reliable/standard Indian source.			
2.18	Computer System:	Branded PC and Printer of reputable Indian manufacturer, Compatible with the software mentioned above		

C4 - Triple Beam Balance

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	GENERAL : To be used in the laboratory for weighing chemicals or various substances.		
2	TECHNICAL SPECIFICATIONS :		
2.1	Capacity : 111 gm		
2.2	Readability : 0.1 gram		
2.3	The tripple beam balance should be a typical mechanical balance which has a beam supported by a fulcrum. On one side should be a pan on which the object is placed. On the other side, the beam should be split into three notched parallel beams, each supporting one weight. In measuring the weight of an object, rather than adding additional weights, each of the three weights could be slid along the beam to increase their lever arm. It should work like a tetter-totter.		
2.4	The balance should have three beams which carry weights. The middle beam should read only in 100 gm increments. The far beam should read only in 10 g increments. The weights in each of these beams must always sit in a "notch". They cannot be placed at arbitrary points on the beam. The weight on the front beam can be placed to read continuously from 0 to 10 grams.		
2.5	Balance to be supplied complete with stainless steel pan, set of weights and protective dust cover.		

C5 - Single Pan Balance

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	GENERAL : used in the laboratory for weighing purposes, it is same as Top Pan Balance or equivalent.		
2	TECHNICAL SPECIFICATIONS :		
2.1	Fully Automatic Microprocessor Controlled Single Pan Balance.		
2.2	The balance should have built in automatic calibration and auto zero tracking.		
2.3	Capacity : 5 Kg Maximum weight		
2.4	Readability : 0.5 gm		
2.5	Pan Size : 180 x 210 mm approx.		
2.6	Display : Digital LCD display.		
2.7	Detailed Printed Leaflet be supplied along with quotation.		
2.8	Price be also given for optional battery back up.		

C6 - Gas Heating Assembly

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	GENERAL : used in the laboratory for heating purposes. (It is same as domestic kitchen gas stove).		
2	TECHNICAL SPECIFICATIONS :		
2.1	The Gas Heating Assembly (Gas Stove) should conform to IS: 4246.		
2.2	It should be a Double Burner Cooking Gas Stove without cover and with Non-Automatic Ignition System.		
2.3	Size – Approx. Dimensions (when packed) 690 x 370 x 110 mm.		
2.4	It should be sleek, streamlined, high efficiency with stainless steel body.		
2.5	It should have brass burner tops and stainless steel drip-trays.		
2.6	It should have one small burner and one big burner.		

C7 - Water Bath

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	GENERAL : Used in the laboratory for indirect heating of various solutions and chemicals as a requirement during analysis of some parameters.		
2	TECHNICAL SPECIFICATIONS :		
2.1	Temperature Range : From ambient temperature to 100oC.		
2.2	Water bath should have arrangement for fixing mercury thermometer, constant water level device and overflow arrangement.		
2.3	Double walled inside stainless steel and outside mild steel.		
2.4	The water should be heated by a copper clad immersion heater controlled with 3 position heater switch.		
2.5	It should work on 220 Volts AC $\pm$ 10%, 50 Hz $\pm$ 3%, single phase supply.		
2.6	The water bath should have Electrically Heated concentric rings of flanged formed stainless steel with 8 holes of 7.5 cm dia with support frame.		
2.7	Size: 20" x 14" x 4" (approx.)		
2.8	Capacity 7.5 litres (approx.)		

C8 - Hot Plate

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	GENERAL : used in the laboratory for general heating purpose of various solutions and chemicals.		
2	TECHNICAL SPECIFICATIONS :		
2.1	This is general purpose Hot Plate for continuous heating upto 250oC.		
2.2	It should have a step control switch for low, medium and high level of heating.		
2.3	The top cast iron plate should be rectangular of size 10" x 12" x 6" (approx), with heating element of 1.0 KW rating.		
2.4	Power Supply : 220/230 volts A.C.		
2.5	The body of the hot plate should be of thick M.S. sheet and finished with white heat resistant glossy enamel.		

C9 - Water Distilling Still

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	Should be made of quartz/borosil with compact NPL design		
2	Automatically Electrically heated all Glass Distillation unit		
3	3.0 to 4.0 KW heater		
4	Dual safety cutout		
5	Flask Capacity 3 L		
6	High purity, low conductivity, Pyrogen free distillate. Conductivity < 5.0 micro Siemens		
7	Easy service and maintenance		
8	Output Capacity : 2L/hour		
9	Double Distillation with thermal sensor auto cut off.		

C10 - Vacuum Pump

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	Vacuum Pump should be of single stage /double stage of 75 L/minute free air displacement		
2	Vacuum : upto 600 to 700 mm in Hg.		
3	To be driven by suitable rating single phase motor (~1/2 H.P.), 230 V AC.		

C11 - Heating Mantle

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	Capacity - three liters		
2	Wattage - 450 W, Mantle should have two or three circuits so that upper circuits can be switched off when smaller size of flask is being heated or when liquid level drops.		
3	The mantle should be equipped with temperature controller arrangement by energy regulator.		
4	Mantle should be powder coated with textured siemens grey finish		

C12 - Kipp's Apparatus

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	GENERAL : used in the laboratory for gas generation.		
2	TECHNICAL SPECIFICATIONS :		
2.1	Kipp's Apparatus with interchangeable joints.		
2.2	Capacity – 1000 ml.		
2.3	Borosil Cat. No. 6550 or JSGW Cat. No. 697/3 or equivalent		

C13 - Flame Photometer

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	Type : Electrically operated along with all filters, temperature, single channel		
2	Range: 0 – 199.9 ppm		
3	Working Range: Na 0.50 - 10 ppm, K 0.75 – 25 ppm, Li 0.75 – 20 ppm, Ca 3 - 40 ppm, Ba 5 - 100 ppm		
4	Detection Limits: Na 0.15 ppm, K 0.20 ppm, Li 0.25 ppm, Ca 1.50 ppm, Ba 2.50 ppm		
5	Reproducibility: ≤1% coefficient of variation for 20 consecutive samples using 10 ppm Na set to read 50.0		

6	Read Out:	3½ Digit LED		
7	Linearity:	Better than 2% when concentration of 3 ppm Na and K and 5 ppm Li are set to 100		
8	Specificity:	Interference from Na, K, and Li equal in concentration to test of element will be less than 0.5%		
9	Recorder Output:	Nominal 1.00V for a reading of 100.0		
10	Fuel:	Propane, Butane, Natural Gas or LPG		
11	Electrical Supply:	190-250V @50/60Hz		
12	Air Supply:	Moisture and Oil free, 6Litre/min @14psi (1 Kg/cm ²), Air Compressor		
13	Detailed printed Catalogue must be provided with the offer submitted.			

C14 - Lovibond Comparator

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	Lovibond Disc Comparator Model 2000+ Disc Range		
2	Disc : 1 No for each range as described below		
3	Comparator – 05 Nos-pH Range :-		
	2.8 to 4.4 Brophenol blue 2/1B		
	4.4 to 6.0 Methyl Red, 2/1 E		
	6.0 to 7.6 Bromomethyl Blue, 2/1H		
	7.2 to 8.8 Cersol Red, 2/1K		
	8.8 to 9.6 Thymol Blue, 2/1L		
	4.0 to 11.0 Universal Indicator, 2/1P		
5	Chlorine in water:- 0.1 to 1.0 ppm, 3/40 A		
6	Phosphate :- 0.0 to 80 pp m, 3/102		
7	Hydrazine: 0.02 to 0.2 ppm, 3/135		
8	Silica :- 2.5 to 20.0 ppm, 3/13		
9	Ammonia:- 0.0 to 40mgm, 3/112		

C15 - Voltage Stabiliser

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	5 KVA		

C16 - Oil Centrifuge

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	Conforms to safety requirements IEC 1010-1; 1010-2-D;		
2	4 place swing out rotor		
3	Static, near vertical bucket positioning		
4	Specifically designed for testing oils		
5	Heated chamber, ambient to 80°C,		
6	Membrane 'touch' control panel		
7	Pre-heat facility to ensure bowl is at test temperature prior to test		
8	Universal buckets for 12.5ml, 6 and 8 inch glassware		
9	Optional 'Setafuge' Hazard Reduction System		
10	Microprocessor control with 99 memories		
11	Optional trolley		

C17 - Hot Plate-cum-Magnetic Stirrer

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	GENERAL : used in the laboratory for stirring of various solutions and chemicals during analysis of some parameters.		
2	TECHNICAL SPECIFICATIONS :		
2.1	Magnetic Stirrer cum Hot Plate should be electrically operated.		
2.2	The equipment should be complete with hot plate controlled by an energy regulator.		
2.3	It should be capable to stir 2 litre of solution.		
2.4	Plate Surface Area : 7x7 inch (approx.).		
2.5	It should be fitted with a speed regulator, Stirring Speed : 60 to 1000 RPM.		
2.6	Temperature Range : 50 to 500°C, accuracy within $\pm 3^\circ\text{C}$.		
2.7	The magnetic stirrer should be supplied with Teflon coated stirring bar.		
2.8	Detailed original printed leaflet about Magnetic Stirrer with Hot Plate be supplied.		
2.9	Spares Required : (i) Spare Element		
	(ii) TFE Coated Stirrer		
	(iii) Temperature Sensor		

C18 - Karl-Fisher Titration Apparatus

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	Type: Microprocessor Based Digital Automatic Karl Fischer Titration Apparatus (Coulometric)		
2	Suitability: Suitable for estimating very minute traces of moisture in samples such as Transformer Oils / Insulating Oils & Petrochemical Products		
3	Method: Coulometric Karl-Fisher Titration		
4	Moisture Measuring Range: upto 10 mg		
5	Readability: 0.001 mg		
6	Accuracy: 0.01 mg (Highest Accuracy with simple operation)		
7	Display Format: Liquid Crystal Display in ppm (mg/Kg)		
8	Printer: Printer Port provided to connect printer		
9	Power Supply: 230V AC, 50Hz		
10	Serial Interface: RS 232 port		
11	It shall have coulometric cell without diaphragm, constant current pulse time control by microprocessor, AC polarization end detection with electronic sound.		
12	The equipment shall have facility to compensate drift automatically and independent memory iteration conditions and calculation formula.		
13	The instrument shall have facility to connect to printer/computer and balances separately along with in-built clock calendar.		
14	Essential/Standard Accessories and spares should be included along with Built-in magnetic stirrer, Titration cell (200 ml), Reagent for Coulometric KF Titration and Water Standard.		
15	Detailed printed Catalogue must be provided with the offer submitted.		

C19 - Gas Chromatograph with Data Processor

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	GC Controller: Microprocessor Based Gas Chromatograph with Data Processor, Digital Pressure and flow control for carrier gas, along with auto leak check facility in the digital measurement through hardware complete with necessary standard accessories. Column Oven		

2	Temperature Range: Ambient - 400°C		
3	Oven Capacity: 15 - 25 litres		
4	Temperature Deviation: 2°C maximum		
5	Temperature variation coefficient: 0.01°C/°C		
6	Temperature program Up to 20 (cooling program possible) steps:		
7	Programmed rate setting range: -250°C ~250°C/min		
8	Total time for all steps: 9999.99 minutes max.		
9	Linear heating rate: 30°C/min upto 150°C; 20°C/min upto 250°C 10°C/min upto 380°C; 7°C/min upto 400°C		
10	Cooling Rate: 250°C or 300°C to 50°C in 6 or 7 mins		
11	Columns: Capillary columns: 2; Packed columns: 2 Sample Injection Unit		
12	Temperature Range: Up to 400°C		
13	Heating Settings: 1°C steps		
14	Number of units that can be installed : Up to Three simultaneously		
15	Type: Dual packed, single capillary injection- Split/splitless (Compatibility to complete range of capillary columns) Carrier Gas flow Controller		
16	Range: 0-100 ml/min		
17	Steps: 6 or 7 Thermal Conductivity Detector (TCD) and FID Detector System		
18	Temperature Range: 400°C		
19	The chromatograph shall be equipped with Column Oven, Sample Injection unit, Carrier gas flow controller, Thermal Conductivity Detector System (TCD) and FID Detector System for both capillary & packed column.		
20	Suitable Capillary and packed column as per application to be provided.		
21	Filled Nitrogen gas cylinder (99.9 % pure, 7-8 cu.m.), Hydrogen gas cylinder (99.9 %, 7cu.m.) and Zero Air cylinder along with double stage regulators with gas purification panel and colour coded pressure tubings should be supplied from reliable/standard Indian source.		
22	Standards for calibration of TCD and FID Detector System.		
23	Computer System : Branded PC of reputable Indian manufacturer with printer with compatible software alongwith 5 KVA online UPS with 30 minutes backup.		
24	All essential accessories required for the operation of the Gas Chromatograph should be quoted.		

C20 - Refrigerator

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	General: Used in laboratory for storing of chemicals under refrigerated condition.		
2	Specifications of Equipment:		
2.1	Type : Electrically operated with freezer, chill trays,crispators and provided with magnetic door latch, pilot bulb, thermostat temperature control, automatic voltage stabilizer, leads, plugs , Double door with auto defrosting etc.		
2.2	Capacity: 230 litres		
2.3	Voltage: 230V AC nominal with input voltage range		
2.4	Detailed printed Catalogue must be provided with the offer submitted.		

Compliance Sheet [Package - 4]

D1 - Ambient Air Monitoring Weather Monitoring Station comprising of wind-vane, anemometer, thermometer, hygrometer, sunshine recorder, evaporimeter, rain-fall recorder.

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	WIND SPEED SENSOR:		
1.1	Measuring Range : 0-50 m/s		
1.2	Resolution: 0.2 m/s		
2	WIND DIRECTION SENSOR:		
2.1	Measuring Range : 0 to 360 degree angle		
2.2	Resolution: 2 degree		
3	AMBIENT TEMPERATURE SENSOR:		
3.1	Measuring Range : 0 to 50 degree centigrade		
3.2	Resolution: 0.5 degree centigrade		
4	RELATIVE HUMIDITY SENSOR :		
4.1	Measuring Range : 0 - 100% RH		
4.2	Resolution : 1%		
5	RAINFALL SENSOR :		
5.1	Sensor: Tripping bucket Rain gauge sensor		
5.2	Measuring Range : 0-400 mm/Hrs.		
5.3	Resolution : 1 mm		
6	SOLAR RADIATION (SUNSHINE RECORDER):		
6.1	Measuring Range : 0 to 1000 W/m2		
6.2	Resolution : 1 W/m2		
7	DATA LOGGER : Data logger with driver software should be provided with PC based data acquisition system suitable for storing, logging, reporting and printing data.		
8	A PC should be supplied along with the automatic weather station to store, analysis and printing of data. PC should have Minimum configuration as mentioned below:- i5, Windows 7, RAM : 1.97 GB or better, Hard disk : 320 GB or better, CD-ROM : 52xCD-ROM drive IDE compatible or better, Monitor : 14" LCD colour monitor, Ports : 2 serial & 1 parallel, Keyboard : Standard Windows, Mouse, Software : Windows based data logging / driver software, Black & White printer		
9	SOFTWARE : Suitable Window based software package for data transfer and storage to PC for further analysis and reporting.		
10	MOUNTING ACCESSORIES: Tripod stand with provision of mounting all sensors with fittings and connecting cable of approximately 10 meter length from sensors to data logger.		
11	UPS AND CONSTANT VOLTAGE STABILISER : Suitable UPS (minimum power backup for 15 minute) & constant voltage stabilizer (230 V AC, 50 Hz).		
12	COMPASS : Standard magnetic compass for setting direction of Wind direction sensor.		
13	AMBIENT CONDITION : Equipment shall be suitable for operation in ambient temperature from 0 to 50 degree Celsius and relative humidity of 0 to 98%.		
14	QUALITY ASSURANCE: Calibration and Test certificate should be supplied along with the equipment		

D2 - Stack monitoring kit complete with all accessories for manual monitoring of stack gases

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	Stack monitoring Kit as per IS 11255, consisting of :-		

1.1	Instrument Panel with fibre cover consisting of thermocouple, inclined cum vertical manometer, stop watch, rotameters, Cold Box Assembly.		
1.2	Vacuum Pump Assembly		
1.3	Probe Set consisting of probe pipe, pitot tube, thermocouple, filter holder, interconnecting hose pipes, nozzles .etc.		
1.4	Dry Gas Meter		
2	Technical Specifications:		
2.1	Stack Temperature Range: Ambient to 600 Deg C.		
2.2	Stack Velocity Range: 0-50 m/sec		
2.3	Particulate sampling: 10– 60 lpm		
2.4	Gaseous sampling: 1-2 lpm in a of Borosilicate glass impingers.		
2.5	Digital Temperature Indicator : 0-600 deg. C		
2.6	Thermocouple : Thermocouple sensor in SS casing, Length of insertion 1 m with 2m long cable		
2.7	Pitot Tube : S-type pitot tube fabricated from SS, 1.5 m in length		
2.8	Rotameter: Rotameter with 2% FSD accuracy, 0-60 lpm for Particulates and 0.6-5 lpm for gases		
2.9	Differential Density Manometer Assembly		
2.10.	Extension Vacuum Hose Pipe, 10 m long		
2.11	Sampling Probes: Made from SS, 1.5m length		
2.12	Filter Holder: Fabricated from SS suitable to hold either cellulose filtration thimble (size-28mm ID & 100mm long) or glass micro fibre, thimble (Size-19mmID, 90 mm long)		
2.13	Whatman Cellulose Thimble (size-28mm ID & 100mm long) – 1 pkt. with kit		
2.14	Nozzles: A set of 3 SS nozzles (1/4, 3/8,1/2 inch)		
2.15	Digital Clock: 0-60 minutes,1 second, readout with start and stop watches.		
2.16	Sampling Train:5 borosilicate glass impingers of 250 ml cap., accommodated in cold box .		
2.17	Vacuum Pump:100 lpm approx free flow capacity.		
2.18	Dry Gas Meter: To measure dry gas volume.		

D3 - High Volume Sampler

Sl. No.	Technical Requirement	Offered Specification (Bidder to Specify against each Particulars)	Document attached in Support of Offered Specification (Catalogue / Confirmation by OEM)
1	GENERAL : High volume sampler is intended to be used for ambient air quality monitoring for Total Suspended Particulate Matter (less than 100 micron) and Respirable Suspended Particulate Matter (less than 10 micron) and gaseous sampling.		
2	EQUIPMENT WILL BE COMPLETE WITH FOLLOWING COMPONENT :		
2.1	BLOWER: High flow rate (0.9 m3/min to 1.4 m3/min free flow) having brushless motor.		
2.2	FLOW METER: To measure flow rate (0.9 m3/min to 1.4 m3/min).		
2.3	SAMPLING TIME : 28 hours continuous (maximum)		
2.4	SAMPLING TIME RECORD : 0 to 9999.99 hrs recorded on a Time Totalizer.		
2.5	AUTOMATIC SAMPLING : 24 hrs. programmable Timer to automatically shut off the system at pre set time interval		
2.6	POWER REQUIREMENT : 230 V AC, single phase , 50Hz mains supply		
2.7	VOLTAGE STABILIZER: Built-in automatic voltage stabilizer to keep output voltage 230±10 V with input variation from 180 to 270 V .		
2.8	GASEOUS SAMPLING ATTACHMENT		
2.8.1	FLOW RATE : 0.3 to 3 LPM , ±2% accuracy on span.		
2.8.2	FLOW CONTROL : Four Inlet and one out let with built in needle valves for flow control.		
2.8.3	FLOW METER: To measure flow rate (0.3 to 3 LPM , ±2% accuracy on span) in gaseous sampling train.		
2.8.4	SAMPLING TRAIN : 4 nos. of 35ml Borosilicate midget glass impingers.		
2.9	AMBIENT CONDITION : Equipment shall be suitable for operation in ambient temperature from 0 to 50 degree Celsius and relative humidity of 0 to 98%		

2.10.	QUALITY ASSURANCE: The blower should be calibrated against a standard orifice/meter or a U tube manometer. The graph in case of the U-tube manometer should be fixed on the sampler. The Calibration and Test certificate of the High Volume Sampler and calibration certificate from the manufacturer of the rotameter / flow meter should be supplied along with the equipment.		
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Terms & Conditions of Reverse Auction

Against this enquiry for the subject item with detailed scope of supply as per enquiry specifications, BHEL may resort to "REVERSE AUCTION PROCEDURE" i.e., ON LINE BIDDING (THROUGH A SERVICE PROVIDER). The philosophy followed for reverse auction shall be English Reverse (No ties).

1. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
2. Those bidders who have given their acceptance for Reverse Auction (quoted against this tender enquiry) will have to necessarily submit „online sealed bid“ in the Reverse Auction. Non-submission of „online sealed bid“ by the bidder for any of the eligible items for which techno- commercially qualified, will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.
3. BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
4. In case of reverse auction, BHEL will inform the bidders the details of Service Provider to enable them to contact & get trained.
5. Business rules like event date, time, bid decrement, extension etc. also will be communicated through service provider for compliance.
6. Bidders have to fax the Compliance form (annexure IV) before start of Reverse auction. Without this, the bidder will not be eligible to participate in the event.
7. In line with the NIT terms, BHEL will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at "Total Cost to BHEL" like Packing & forwarding charges, Taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for non-compliance to BHEL standard Commercial terms & conditions) for each of the bidder to enable them to fill-in the price and keep it ready for keying in during the Auction.
8. Reverse auction will be conducted on scheduled date & time.
9. At the end of Reverse Auction event, the lowest bidder value will be known on auction portal.
10. The lowest bidder has to fax/e-mail the duly signed and filled-in prescribed format for price breakup including that of line items, if required, (Annexure VII) as provided on case-to-case basis to Service provider within two working days of Auction without fail.
11. In case BHEL decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids and price impacts, if any, already submitted and available with BHEL shall be opened as per BHEL"s standard practice.
12. Bidders shall be required to read the "Terms and Conditions" section of the auctions site of Service provider, using the Login IDs and passwords given to them by the service provider before reverse auction event. Bidders should acquaint themselves of the „Business Rules of Reverse Auction“, which will be communicated before the Reverse Auction.
13. If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action *as per extant BHEL guidelines*, shall be initiated by BHEL and the results of the RA scrapped/ aborted.
14. The Bidder shall not divulge either his Bids or any other exclusive details of BHEL to any other party.
15. In case BHEL decides to go for reverse auction, the H1 bidder (s) (whose quote is highest in online sealed bid) may not be allowed to participate in further RA.



BHARAT HEAVY ELECTRICALS LIMITED

HEEP-HARIDWAR, UTTARAKHAND (249403)

General Instructions and Standard Terms & Conditions for bidding against Tender Enquiry (GISTC) For Foreign Bidders (Version June-2017, Rev: 01)

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1. GENERAL.

These general terms & conditions shall apply to all the Tender Enquiries, notice inviting tenders, request for quotations concerning the supply of goods and / or rendering of services to Bharat Heavy Electricals Ltd., HEEP, Haridwar (hereinafter referred to as BHEL or the Purchaser).

2. ORIGIN OF QUOTATION.

- a) The quotation should preferably be from the principal bidder. However tender specific authorized registered dealer / agent can also submit the bid on

their behalf, failing which the quotation is liable to be ignored. BHEL prefers to deal directly with the principal manufacturers.

- b) An agent cannot quote on behalf of more than one principal in the same Tender Enquiry.

3. SUBMISSION OF TENDER.

- a) Bid / Quotation must be enclosed in sealed cover on which tender enquiry number and the due date MUST BE written and be invariably sent under REGISTERED POST / SPEED POST / COURIER / Dropped in the Tender Box: addressed as follows:-

Quotation Against Enquiry No. _____

Dated: _____

Due on: _____

To,
THE HEAD OF MATERIALS MANAGEMENT,
Heavy Electrical Equipment Plant,
Bharat Heavy Electricals Limited,
HARIDWAR-249403 (Uttarakhand), INDIA.

- b) In case of Three / Two Part Bid, technical bid containing technical offer, duly signed; and un-priced copy of the Price Bid should be kept in one envelope. Price Bid containing only the price should be kept in a separate envelope. All envelopes indicating Part-1 or Part-2 or Part-3 as the case may be to be put in a bigger envelope. Please note that un-priced bid should be the exact replica of price bid but without prices.
- c) The bid / quotation must be posted before due date, keeping allowance for postal transit time. Alternatively, the tenders duly sealed and superscribed as above may be deposited in the Tender Box. Quotations sent by any mode but not received

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in time will be ignored. Tender received through authorized E-mail is also acceptable. However, in time submission of tender in tender box shall be the responsibility of the bidder, sent through any mode. Documents submitted with the offer / bid shall be signed and stamped in each page by authorized representative of the bidder.

- d) Any additional documents submitted by supplier / bidder, during processing of registration application / tender or after placement of order shall not be accepted unless it is submitted with forwarding letter and duly signed and stamped as mentioned above in clause c.
- e) The bids of the bidders who are on the banned list and also the bids of the bidders, who engage the services of the banned firms, shall be rejected. The cutting / overwriting in the bid / offer must be duly attested by the signatories to the bid. The list of firms banned by BHEL is available on BHEL web site www.bhel.com.
- f) Being PMD vendor, if you are not quoting against this tender enquiry, please send your regret letter positively for our reference with valid reasons for not participating in the tender enquiry. Repeated lack of response on the part of bidder may lead to deletion of such PMD vendor from BHEL's approved vendor list.
- g) The bidders will submit Integrity Pact, duly signed by its authorized signatory, along with their bids wherever estimated tender value is Rs. 5 Crore or more.
- h) In case of open tender, the unregistered bidder shall submit inter alia duly filled-in Supplier Registration Form (SRF) along with the bid. Bidders can download the SRF from www.bhel.com
- i) BHEL reserves the right to award tendered quantities among more than one bidder (after acceptance of L1 price by the other bidders). BHEL can also consider awarding of part of the tendered quantity to other than L-1 bidder at L1 counter offered rates, if the quantity offered by the L-1 bidder is less than the quantity tendered for.
- j) BHEL may also reduce the Tender Quantity for offering it to Micro & Small Enterprise (MSE) Indian Vendors as per applicable Government of India rules whose prices are within 15% of L1 prices as per directives of Government of India.

4. TENDER OPENING.

Tender opening is scheduled to start in the Tender Room at 2:00 PM, on the due date. Therefore bid/quotations must reach this office / tender Box latest by 1:45 PM on due date. Only participating bidders are allowed to attend tender opening. **TENDERS RECEIVED AFTER THE SPECIFIED TIME OF THEIR 'SUBMISSION' WILL BE TREATED AS LATE TENDERS AND SHALL NOT BE CONSIDERED UNDER ANY CIRCUMSTANCES.** The bidders or their authorized representatives may be allowed to attend tender opening if duly authorized by their principals, through a tender specific letter, for price bid opening on that particular day. General authorization letter is not acceptable.

5. SPECIFICATION, DRAWINGS & STANDARD.

- a) Bidders must give their detailed specification in the quotation along with relevant technical literature / catalogue etc. against the tender enquiry.
- b) The Bid should be accompanied with relevant copies of catalogues, drawings or specification as per tender enquiry. If these documents are not furnished, the offer is liable to be rejected.

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- c) Wherever national / international (N/IN) standards are referred, the latest N/IN standards are to be followed. Mention year & date of standard revision that shall be followed for the supply.
- d) All Drawings and Standards are proprietary of BHEL. It must not be used in anyway detrimental to the interest of the company.

6. PRICE SCHEDULE.

- a) Kindly quote your prices in figures and words both. In case of any discrepancy in value, the prices quoted in words shall be considered for evaluation and establishing L1 status.
- b) Prices quoted should not be more than the prices quoted to any other BHEL units / offices / divisions. Vendor to submit copy of latest Purchase Order placed by any unit of BHEL for similar items in the technical bid. In case no order has been placed on such items, specific confirmation that no order has been placed on such items should be provided.
- c) Bidders need to quote their prices on CFR any sea port in Mumbai or FCA basis to the named airport in Euro / USD / JPY / UK Pound / SF / Singapore Dollar or any other Internationally freely tradable currency only. The name of the currency should be clearly indicated in your bids.
- d) Offers received other than CFR basis may result in non-consideration of such bids.
- e) However if BHEL agrees to accept the FOB condition, to arrive at landed cost at our plant / site, the FOB prices shall be loaded for 3% (of FOB Value) towards marine insurance, port handling charges & inland freight or actual freight / port handling charges as per BHEL contract whichever is higher.

f) Basis of Evaluation for Bid / Quotation in foreign currency:

- I. Currency exchange rate (TT selling rates of SBI) for evaluation of the bid/quotation received in foreign currency will be as follows:
- II. Single part bid – Date of tender opening.
- III. Two / Three part bid – Date of part 1 opening.
- IV. Reverse auction – Date of part-1 opening.

NB: Financial evaluation of L1, L2 ----- status will be on the basis of Landed Cost to BHEL.

g) Evaluation of Indian Agents Commission:

- I. BHEL prefers to deal directly with foreign bidder, wherever required, for procurement of Goods. However if the Foreign Principal desires to avail services of an Indian Agent then the Principal should ensure compliance to applicable guidelines.
- II. The FOB / CIF price quoted will be deemed to be inclusive of Indian Agency commission. Agency commission if payable shall be converted to Indian Rupees at TT buying rates of exchange ruling on tender opening date which shall not be subjected to any further exchange rate variation, as disclosed by the bidder in his quoted FOB / CIF price will be paid in Indian Rupees on receipt & acceptance of Materials or it's installation at destination, as the case may be. The lower of the TT buying rate prevailing on the date of technical bid opening shall be considered for computation of Agency commission.
- III. In a tender either the Indian Agent on behalf of Principal / OEM or the Principal / OEM itself can bid, but both cannot bid simultaneously for same item / product in the same Tender. If both OEM and its authorized agent submit their bids

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separately in that case only the offer of OEM can be considered as an exception.

h) While submitting your bids please clearly indicate:

- I. Expected weight of goods (lots wise).
- II. The size of packed goods.
- III. Whether the goods can be dispatched in containers?
- IV. Port of Loading.
- V. Port of Discharge.

7. REVERSE AUCTION.

- a) BHEL reserves the right to go for Reverse Auction (RA) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after Techno-Commercial Evaluation. All bidders to give their acceptance for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides for RA. Detailed guidelines available at our site www.bhel.com
- b) In case BHEL decides to go for Reverse Auction, only those bidders who have given their acceptance to participate in RA will be allowed to participate in the Reverse Auction. Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit 'online sealed bid' in the Reverse Auction. Non-Submission of 'online sealed bid' by the bidder will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.

8. DELIVERY TERMS.

- a) Goods shall be dispatched by sea, unless stated otherwise in the tender enquiry or purchase order.

- b) In the event of bidder offering CFR delivery terms for delivery in FCL (Full Container Load), the bidder shall provide 21 days' time free of detention for General Purchase Container / High Cube Container and 14 days for the other types from the date of delivery at delivery port. Wherever the detention free period offered is less than the above specified period, the consequential cost at port of clearance shall be to the account of the bidder. Number of detention free days must be mentioned on Bill of Lading (BL).
- c) In case of CFR delivery, Port congestion charges or any additional charges claimed by shipping line till delivery at destination port shall be to the bidder's account.
- d) Specifically confirm your agreement to change the mode by Air at BHEL's request as per mutually agreed terms even after placement of Purchase Orders.
- e) The Trans-shipment is not permissible in case of Break Bulk Cargo. In rest of the case Trans-shipment condition in BHEL purchase order / letter of credit will be as per Uniform Custom and Practice for documentary credits, UCP 600 of International Standard Bank proceed re-issued by International chamber of Commerce (ICC).
- f) No demurrage / godown rent will be payable to the vendor / vendor's transporter for any delay in payments attributable to the vendor.
- g) The shipping line should be ready to move the containers to consignees nominated CFS (Container Freight Station) yard and Indian agent of shipping line should issue Cargo Arrival Notice (CAN) 7 days in advance for filing the IGM (Import General Manifest) at discharge port.

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- h) In case of CFR contract, bidder to supply the material through a Certified Sea worthy vessel.
- i) A certificate of origin (COO) sanctioned in country of origin from chamber of commerce of the manufacturing country is mandatory to be provided. However a certificate of origin (COO) from the countries under the restricted list of Govt. of India will not be acceptable.
- j) For reasons of delay in receipt of documents from suppliers or due to the same being found to be incomplete, and / or faulty, the suppliers shall be responsible to reimburse in all demurrages / wharfages, if any paid by BHEL (for stated reasons).
- k) **The invoices being issued by shipping lines must be in the name of BHEL. Otherwise, BHEL will have to forego Input Credit on GST.**
- l) While booking the shipment, bidder to also finalize destination charges and the same should appear over BL or agreed tariff to be provided to BHEL before arrival of shipment.
- m) If cargo is stuffed in container then the same should be allowed to be moved to CFS of importers choice without any additional charges.
- n) Load port charges shall be settled by the supplier and not be passed on to BHEL in form of destination charges.
- o) NNDs (Non Negotiable Documents) (preferably with OBLs) should be sent at least 7 days in advance i.e. 7 days before the arrival of vessel so as to enable BHEL to move the containers to JWC CFS.
- p) **Information related to OBL / AWB Documents:**
- I. Consignee name and address should be same as mentioned in the Purchase order.
- II. Notify party: Name and address will be as follows :(For discharge port Mumbai or Nhava Sheva)
Bharat Heavy Electricals Limited
14th Floor World Trade Centre-1, Cuffe Parade, Colaba, Mumbai -400005
Email: msseahwr@bhel.in &
ppximx@bhelhwr.co.in (in case of Sea Shipments)
Email: msair@bhel.in and
ppximx@bhelhwr.co.in (in Case of Air shipments)
For latest updating please refer our web site:
www.bhelhwr.co.in
- III. OBL should clearly mention the Indian agent address and contact details.
- IV. OBL should be issued as per UCP 600.
- V. In case of incoterms other than FOB, OBL should mention the container detention free period.
- VI. In case of placement of an Order, BHEL requests bidder to supply one Original Bill of Lading / AWB directly to their Mumbai office with other non-negotiable documents to ensure timely clearance of goods. The other Original Bill of Ladings may be routed through bank based on the other agreed terms and conditions of purchase order.
- 9. PENALTY FOR LATE DELIVERY.**
- a) Date of delivery will be considered as per the delivery terms mentioned in the Purchase Order. Penalty will be applicable on total order value @0.5% per week or part thereof subject to maximum of 10% of the PO value unless otherwise specified in Special Conditions of tender enquiry. Acceptance / Non Acceptance of this CONDITION

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must be specifically mentioned in your quotation. Any deviation from this will be loaded accordingly i.e. BHEL shall load maximum penalty under penalty for late delivery Clause, to the extent the same is not agreed by the bidder, for the purpose of evaluation.

- b) Bidders are requested to quote the best delivery meeting the delivery requirements. BHEL reserves the right to reject the offers not meeting BHEL's delivery requirement.
- c) Commencement of delivery period shall be reckoned from the date of PO / LOI or any other agreed milestone.
- d) Bidder shall deliver the goods in the manner and schedule agreed under the terms and conditions of Purchase order.
- e) The delivery date for penalty purpose will be the Bill of Lading Date / Air way bill.

10. PAYMENT TERMS.

- a) BHEL's standard payment term is Payment after Receipt and Acceptance of Material / Item at HEEP, BHEL-Store or at desired destination unless otherwise specified in Special Terms attached to the tender enquiry.
- b) BHEL reserves the right to accept or reject the offer of the bidder who quotes the payment term other than BHEL's standard payment term.
- c) Loading on account of deviation in payment terms shall be done as per extant rules of BHEL-Haridwar.
- d) Where the payments are through bank, the documents may be presented for negotiation through BHEL designated banks which will be

specified in Purchase order. Documents should be submitted within 5 days of vessel sailing and receipt of OBL from shipping line.

- e) In case BHEL agrees for payment through LC, the same shall be irrevocable, unconfirmed and will be opened 30 days prior to the scheduled delivery and will be valid for a period of 60 days.

11. BANK GUARANTEE.

In case the bank guarantees are required to be deposited towards security deposit / performance guarantee or for any other purpose as per the terms of this tender enquiry, such bank guarantees of the requisite value in the denominated currency of the purchase order should be from one of the Indian branch of BHEL consortium banks and the bank guarantee should be in the proforma as prescribed by BHEL. The proforma of bank guarantee and the list of consortium banks are displayed at BHEL website www.bhelhwr.co.in. However, in case the bank guarantee is not from BHEL consortium banks, then the bidder has to get the bank guarantee confirmed from one of the Indian branch of BHEL consortium banks and the bank charges for such confirmation will be borne by the bidder.

12. GUARANTEE / WARRANTY AND CORRESPONDING REPAIRS / REPLACEMENT OF GOODS.

- a) Goods shall comply with the specifications for material, workmanship and performance. Unless otherwise specified, the warranty shall be for a period of 18 months from the date of receipt. If the delivery is found non-compliant during the warranty period, leading to rejection, the Seller shall arrange free replacement / repair of goods, within one month from the date of intimation or any mutually agreed period. The rejected goods shall be taken away by the Seller at his cost and replaced on

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Delivered Duty Paid (DDP) (FOR - BHEL Stores / designated destination basis) within such period. In the event of the Seller's failure to comply, Purchaser may take action as appropriate, including Repair / Replenish rejected goods & disposal of rejections, at the risk & cost of the Seller. In case the defects attributable to Seller are detected during processing of the goods at BHEL or at our subcontractor's works, the Seller shall be responsible for free replacement / repair of the goods as required by BHEL.

- b) In case the material is rejected, then date of replacement will be considered as the actual date of delivery.
- c) The bidder shall have to pay 5% incidental charges while taking back supplied material if it is found rejected on receipt. The rejected material shall be sent back only after receipt of replacement / submission of BG/refund of amount paid.

13) QUALITY REQUIREMENT.

Your bid / quotation should have specific confirmation regarding meeting all our quality requirements such as. (i) Test Certificate (TC), (ii) Guarantee Certificate (GC) / Warranty Certificate (WC), (iii) Quality Plan (QP) (if applicable); and (iv) Pre-Dispatch Inspection at your works (if applicable).

14. VALIDITY.

The quotation should be valid for a minimum period of 90 days effective from the date of opening of tender, unless otherwise specified in the tender enquiry.

15. RIGHT OF ACCEPTANCE.

- a) **BHARAT HEAVY ELECTRICALS LIMITED HARIDWAR** reserves the right to reject any or all the bids / quotations without assigning any reason thereof. BHEL also reserves the right to increase or decrease the tendered quantities. Bidders should be prepared to accept order for reduced quantity without any extra charges.
- b) Any discount / revised offer / bids submitted by a bidder on its own shall be considered, provided it is received on or before the due date and time of offer / bid submission (Part-1). Conditional discounts shall not be considered for evaluation of tenders.
- c) Unsolicited discounts / revised offers / bids given after Part-1 bid opening shall not be accepted. No change in price will be permitted within the validity period asked for in the tender enquiry.
- d) In case of changes in scope and / or technical specification and / or commercial terms & conditions having price implication, techno-commercially acceptable bidders shall be asked by BHEL to submit the impact of such changes on their price bids. In case a bidder opts to submit revised price bid instead of impact called for, then latest price bid shall prevail. However in both situations, original price bid will be necessarily opened.
- e) The bidder whose bid is technically not accepted will be informed & EMD wherever submitted shall be returned after finalization of contract. EMD shall be forfeited in the event of bidder opting out after tender opening.
- f) BHEL reserves the right to short close the existing Purchase Order / Rate Contract / Work Order or any extension thereof at any stage.

16. TRANSIT INSURANCE.

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- a) Transit Insurance will be covered by BHEL under its open Marine Insurance Policy. Seller shall inform dispatch particulars (Purchase Order, RR / GR / BL / AWB, Invoice value etc.) to Finance department (Store bill Section), BHEL Ranipur Haridwar (Uttarakhand -India) with value of consignment to the Purchaser within 07 days of dispatch for BHEL to arrange insurance coverage in its policy. Failure on the part of seller to inform dispatch particulars will make him liable to pay for any transit damages / losses suffered by the Purchaser.
- b) If Quoted Prices are inclusive of transit insurance, no weightage shall be given while evaluating the bids for Cost of Insurance, being in BHEL Scope.

17. PHYTOSANITARY CERTIFICATE:

- a) As per the Indian Law, all consignments being imported into India by air/sea require a phytosanitary certificate from the country of origin-if articles have been packed with wooden packaging materials. This is mandatory. Please confirm in your offer/dispatch documents that the required phytosanitary certificate will be submitted.
- b) Packaging material means any kind of material of plant origin used for packing which include hay, straw wood shavings, wood chips, saw dust, wood waste, wooden pallets, dunnage mats, wooden packages, coir pith, peat or sphagnum moss etc.

18. RISK PURCHASE.

In case of abnormal delays (beyond the maximum late delivery period as per Penalty clause) in supplies / defective supplies or non-fulfillment of any other terms and conditions given in Purchase Order, BHEL may cancel the Purchase Order in full or part

thereof, and may also make the purchase of such material from elsewhere / alternative source at the risk and cost of the supplier. BHEL will take all reasonable steps to get the material from alternate source at optimum cost. If bidder does not agree to the above Risk Purchase Clause, BHEL reserves the right to reject the offer. In case for compelling reasons BHEL accepts the offer without acceptance of this clause by the bidder and in the eventuality of Risk Purchase, appropriate action will be taken as per BHEL extant rules. This will be without prejudice to any other right of BHEL under the contract.

19. FORCE MAJEURE CLAUSE.

Notwithstanding any other thing contained anywhere else in the contract or PO (Purchase Order), In case the discharge of obligation under the contract by either party is impeded or made unreasonably onerous, neither party shall be considered in breach of the contract to the extent that performance of their respective obligation is prevented by an event of Force Majeure that arises after the effective date (PO date).

In the above clause, Force Majeure means an event beyond the control of the parties to the contract which prevents a party from complying with any obligation of the contract including but not limited to:

- a) Act of God (Such as but not limited to earthquake, drought, tidal waves, floods etc.).
- b) War (whether war be declared or not), Hostilities Invasion, Act of foreign enemy etc.
- c) Rebellion, revolution, insurrection, civil war etc.
- d) Contamination of Radio Activity from any nuclear fuel or from any other nuclear waste or any other hazardous materials.
- e) Riots, commotions, strike unless restricted to the employees of supplier.
- f) Acts of terrorism.

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- g) Other unforeseeable circumstances beyond the control of the parties and which the affected party cannot avoid even by using its best efforts.
- h) Cancellation of contract by customer.
- i) Change in law / government. Regulation making the performance impossible.

The party claiming to be affected by force majeure shall notify the other party in writing immediately without delay on the intervention and on the cessation of such circumstances.

Irrespective of any extension of time, if an event of force majeure occurs and its effect continues for more than 180 days the affected party shall have right to cancel the contract.

As soon as reasonably practicable following the date of commencement of a Force Majeure Event, and within a reasonable time following the date of termination of a Force Majeure Event, either Party invoking it shall submit to the other Party reasonable proof of the nature of the Force Majeure Event and of its effect upon the performance of the Party's obligations under this Agreement.

The party shall, and shall ensure that its Subcontractors shall, at all times take all reasonable steps within their respective powers and consistent with Good Operating Practices (but without incurring unreasonable additional costs) to:

- a) Prevent Force Majeure Events affecting the performance of the party's obligations under this Agreement;
- b) mitigate the effect of any Force Majeure Event; and
- c) Comply with its obligations under this Agreement.

If the war like situation has developed in a country where a seller's works is located in this P.O. or there is political instability and Indian Embassy located in that country forbids or advises for not having any business dealing

with the sellers located in such zone / region/ country then BHEL reserves the right to cancel the order.

20. NON-DISCLOSURE AGREEMENT.

All Drawing and Technical Documents relating to the product or it's manufacture submitted by one party to the other, prior or subsequent to the formation of contract, shall remain property of the submitting party. Drawing, technical documents or other technical information received by one party, shall not without the consent of the other party, be used for any other purpose than that, for which they were provided. Such technical information shall not without the consent of the submitting party, otherwise be used or copied, reproduced, transmitted or communicated to a third party. Patterns supplied by BHEL will remain BHEL's property which shall be returned by the bidder on demand to BHEL. Bidder shall in no way share or use such intellectual property of BHEL to promote his own business with others. BHEL reserves the right to claim damages from the bidder, or take appropriate penal action as deemed fit against the bidder, for any infringement of the provisions contained herein.

21. SETTLEMENT OF DISPUTES / ARBITRATION.

Any dispute / difference arising out of or in connection with this contract, including any question regarding its existence, validity or termination, shall be referred to and finally resolved by arbitration under the Arbitration and Conciliation Act, 1996 of India by a Sole Arbitrator to be appointed with mutual consent of the parties. Such Sole Arbitrator shall be either a retired judge of Supreme Court or High Court or District Court of India or some Advocate having practiced in Indian Courts. The seat or place of arbitration shall be New Delhi, India. The language to be used in the arbitration shall be English. The governing law of the contract shall be the substantive law of India. In case the parties fail

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to agree on the appointment of arbitrator within 2 months of the notice invoking arbitration by one party, then the arbitrator shall be appointed in accordance with the Arbitration and Conciliation Act, 1996 of India.

JURIDICTION: The courts of New Delhi, India, shall have exclusive jurisdiction.

22. INFORMATION TO THE BIDDERS.

- a) Purchase related information is available at our Business-to-Business (B2B) Portal available on our website www.bhelhwr.co.in. The user ID & password can be obtained by sending a request to concerned purchase executives.
- b) Intimate your change in mail address or communication address or changes, if any, by email to ppx_idx@bhelhwr.co.in giving your bidder Code.
- c) Please resolve your rejections and unexecuted overdue purchase order immediately which are posted at our B2B Portal, which can be visited through our site www.bhelhwr.co.in.
- d) Copy of this Tender Enquiry is being sent through the post/ Courier / E-mail or by any existing means.
- e) Invoice description and Unit of measurement should be strictly in accordance with Purchase order.
- f) Unit of measurement for dimension and weight should be in metric system only.

23. NOTE.

- a) Special conditions of enquiry, if enclosed By BHEL, will supersede the respective standard / general terms of enquiry.

- b) Any other Standard terms and Conditions of the bidder attached / referred against the tender enquiry will be treated as null and void ab initio.
- c) In order to protect the commercial interests of BHEL, it becomes necessary to take action against suppliers / contractors by way of supervision of business dealings, who either fail to perform or are in default without any reasonable cause, cause loss of business / money / reputation, indulged in malpractices, cheating, bribery, fraud or any other misconducts or formation of cartel so as to influence the bidding process or influence the price etc. Guidelines for Suspension of Business Dealings with Suppliers / Contractors shall prevail over which is available at BHEL website <http://www.bhel.com>
- d) The bidder along with its associate / collaborators / sub-contractors / sub-vendors / consultants / service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of BHEL-Management about any fraud or suspected fraud as soon as it comes to their notice.

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1. GENERAL.

These general terms & conditions shall apply to all the Tender Enquiries, notice inviting tenders, request for quotations concerning the supply of goods and / or rendering of services to Bharat Heavy Electricals Ltd., HEEP, Haridwar (hereinafter referred to as BHEL or the Purchaser).

2. ORIGIN OF QUOTATION.

- a) The quotation should preferably be from the principal bidder. However tender specific authorized registered dealer / agent can also submit the bid on their behalf, failing which the quotation is liable to be ignored. BHEL prefers to deal directly with the principal manufacturers.

- b) An agent cannot quote on behalf of more than one principal in the same Tender Enquiry.

3. SUBMISSION OF TENDER.

- a) Bid / Quotation must be enclosed in sealed cover on which tender enquiry number and the due date MUST BE written and be invariably sent under REGISTERED POST / SPEED POST / COURIER / Dropped in the Tender Box: addressed as follows:-

Quotation Against Enquiry No. _____

Dated: _____

Due on: _____

To,

**THE HEAD OF MATERIALS MANAGEMENT,
Heavy Electrical Equipment Plant,
Bharat Heavy Electricals Limited,
HARIDWAR-249403 (Uttarakhand), INDIA.**

- b) In case of Three / Two Part Bid, technical bid containing technical offer, duly signed and un-priced copy of the Price Bid should be kept in one envelope. Price Bid containing only the price should be kept in a separate envelope. All envelopes indicating Part-1 or Part-2 or Part-3 as the case may be to be put in a bigger envelope. Please note that un-priced bid should be the exact replica of price bid but without prices.
- c) The bid / quotation must be posted before due date, keeping allowance for postal transit time. Alternatively, the tenders duly sealed and super-scribed as above may be deposited in the Tender Box. Quotations sent by any mode but not received in time will be ignored. Tender received through authorized E-mail is also acceptable. However, in time submission of tender in tender box shall be the responsibility of the bidder, sent through any mode. Documents submitted with the offer / bid shall be signed and stamped in each page by authorized representative of the bidder.
- d) Any additional documents submitted by supplier / bidder, during processing of registration application / tender or after placement of order shall not be accepted unless it is

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submitted with forwarding letter and duly signed and stamped as mentioned above in clause c.

- e) The bids of the bidders who are on the banned list and also the bids of the bidders, who engage the services of the banned firms, shall be rejected. The cutting / overwriting in the bid / offer must be duly attested by the signatories to the bid. The list of firms banned by BHEL is available on BHEL web site www.bhel.com.
- f) Being PMD vendor, if you are not quoting against this tender enquiry, please send your regret letter positively for our reference with valid reasons for not participating in the tender enquiry. Repeated lack of response on the part of bidder may lead to deletion such PMD vendor from BHEL's approved vendor list.
- g) The bidders will submit Integrity Pact, duly signed by its authorized signatory, along with their bids wherever estimated tender value is Rs. 5 Crore or more.
- h) In case of open tender, the unregistered bidder shall submit inter alia duly filled-in Supplier Registration Form (SRF) along with the bid. Bidders can download the SRF from www.bhel.com
- i) BHEL reserves the right to award tendered quantities among more than one bidder (after acceptance of L1 price by the other bidders). BHEL can also consider awarding of part of the tendered quantity to other than L-1 bidder at L1 counter offered rates, if the quantity offered by the L-1 bidder is less than the quantity tendered for.

4. TENDER OPENING.

Tender opening is scheduled to start in the Tender Room at 2:00 PM, on the due date. Therefore bid / quotations must reach this office / tender Box latest by 1:45 PM on due date. Only participating bidders are allowed to attend tender opening. **TENDERS RECEIVED AFTER THE SPECIFIED TIME OF THEIR 'SUBMISSION' WILL BE TREATED AS LATE TENDERS AND SHALL NOT BE CONSIDERED UNDER ANY CIRCUMSTANCES.** The bidders or their authorized representatives may be allowed to attend tender opening if duly authorized by their principals, through a tender

specific letter, for price bid opening on that particular day. General authorization letter is not acceptable.

5. SPECIFICATION, DRAWINGS & STANDARD.

- a) Bidders must give their detailed specification in the quotation along with relevant technical literature / catalogue etc. against the tender enquiry.
- b) The Bid should be accompanied with relevant copies of catalogues, drawings or specification as per tender enquiry. If these documents are not furnished, the offer is liable to be rejected.
- c) Wherever national / international (N/IN) standards are referred, the latest N/IN standards are to be followed. Mention year & date of standard revision that shall be followed for the supply.
- d) All Drawings and Standards are proprietary of BHEL. It must not be used in anyway detrimental to the interest of the company.

6. PRICE SCHEDULE.

- a) Kindly quote your prices in figures and words both. In case of any discrepancy in value, the prices quoted in words shall be considered for evaluation and establishing L1 status.
- b) Prices quoted should not be more than the prices quoted to any other BHEL units / offices / divisions. Vendor to submit copy of latest Purchase Order placed by any unit of BHEL for similar items in the technical bid. In case no order has been placed on such items, specific confirmation that no order has been placed on such items should be provided.
- c) Prices should be quoted on F.O.R. Destination basis. Transit insurance shall be arranged by BHEL and not to be included in the prices. The offers quoted on other than F.O.R destination basis may result in non consideration of such bids.

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- d) In case BHEL accepts the EX-Works prices, such offers will be loaded by 1.5% of EX-Works value towards freight or with actual freight charges as per BHEL freight rate contract whichever is higher.
- e) In case of Indigenous items covered by DGS & D Rate Contract, the bidders should submit latest valid copy of the rate contract along with bid / quotation
- f) Applicable **IGST / CGST / SGST** and any other statutory levy should be indicated separately and clearly in the bid / quotation.
- g) Bidders can dispatch goods through any Indian Bank Association approved transporters having their branch at HARIDWAR / destination. If material is dispatched through other than Indian Bank Association approved transporter, material to be delivered on door delivery BHEL Stores basis.
- h) In case of dispatch of material through any other unapproved transporter, payment shall be made only after receipt of material and any additional charges payable to the transporter shall be to the bidder's account.
- i) No demurrage / godown rent will be payable to the vendor / vendor's transporter for any delay in payments attributable to the vendor.

NB: Financial evaluation of L1, L2 Status will be on the basis of Landed Cost to BHEL.

7. REVERSE AUCTION.

- a) BHEL reserves the right to go for Reverse Auction (RA) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after Techno-Commercial Evaluation. All bidders to give their acceptance for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides for RA. Detailed guidelines available at our site www.bhel.com
- b) In case BHEL decides to go for Reverse Auction, only those bidders who have given their acceptance to participate in RA will be allowed to participate in the Reverse Auction. Those bidders who have given their acceptance to

participate in Reverse Auction will have to necessarily submit 'online sealed bid' in the Reverse Auction. Non-Submission of 'online sealed bid' by the bidder will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.

8. DELIVERY TERMS.

- a) Goods shall be delivered on 'FOR Destination' basis to the named destination unless otherwise called for in the tender enquiry.
- b) Loading on account of 3rd party inspection charges in case of Indian bidders shall be 0.20%.

9. PENALTY FOR LATE DELIVERY.

- a) Date of delivery will be considered as per the delivery terms mentioned in the Purchase Order. Penalty will be applicable on total order value @0.5% per week or part thereof subject to maximum of 10% of the PO value unless otherwise specified in Special Conditions of tender enquiry. Acceptance / Non Acceptance of this condition must be specifically mentioned in your quotation. Any deviation from this will be loaded accordingly i.e. BHEL shall load maximum penalty under penalty for late delivery Clause, to the extent the same is not agreed by the bidder, for the purpose of evaluation.
- b) Bidders are requested to quote the best delivery meeting the delivery requirements. BHEL reserves the right to reject the offers not meeting BHEL's delivery requirement.
- c) Commencement of delivery period shall be reckoned from the date of PO / LOI or any other agreed milestone.
- d) Bidder shall deliver the goods in the manner and schedule agreed under the terms and conditions of Purchase order.
- e) **DELIVERY IN CASE OF REJECTION:** In case the material is rejected, then date of replacement will be considered as the actual date of delivery.
- f) **DELIVERY AGAINST BANK DOCUMENTS:** In case payment terms quoted by bidder are documents through bank, and

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the delivery terms being "FOR Haridwar / FOR Transporter Go-down" then date of delivery will be date of intimation by transporter / bidder of delivery of material at Haridwar for the penalty purpose.

- g) Where the payments are through bank, the documents may be presented for negotiation to BHEL authorized / nominated bank.

10. PAYMENT TERMS.

- a) BHEL's standard payment term is Payment after receipt and acceptance of materials / items at HEEP, BHEL-Store or at desired destination unless otherwise specified in Special Terms attached to the tender enquiry.
- b) BHEL reserves the right to accept or reject the offer of the bidder who quotes the payment term other than BHEL's standard payment term.
- c) Loading on account of deviation in payment terms shall be done as per extant rules of BHEL-Haridwar.

11. TAXES & DUTIES.

- a) The bidder to specify in their offer (part 1 bid) the category of their registration under GST like Registered, Unregistered and composite dealer.
- b) The provisional GST registration number of Bharat Heavy Electrical Ltd, Heavy Electricals Equipment Plant, Ranipur, Haridwar is "05AAACB4146P1ZL" with state Code as "05" and State Name as "Uttarakhand".
- c) Please quote our provisional GST registration number in all invoices raised for supply of goods and services under GST regime and also ensure filing of timely return and payment of tax and compliance of other applicable provisions on supplier under GST regime.
- d) No GST will be reimbursed to unregistered or composite dealer. In the event, any GST is quoted by composite dealer, the same shall be added to the cost of supply in evaluating the bid.

- e) Since, input credit of GST will be available to BHEL-Haridwar only after correct filing of return and payment of applicable GST by supplier, reimbursement of GST shall be made by BHEL-Haridwar on matching of vendor inputs at GST portal, ensuring availability of input credit to BHEL Haridwar. Payment of GST will be made to vendor after matching of input credit and vendor to ensure submission of their invoices along with consent to accept payment of tax after such matching in all cases where bills are submitted directly to BHEL-Haridwar or through bank or under LC or through any other mode.
- f) In the event of any disallowance of input credit or applicability of interest or any other financial liability arises on BHEL-Haridwar due to any default of supplier under GST, such implication shall be to supplier's account.
- g) In the event of any change in the status of the vendor after the submission of the bid but before the supply, GST applicable at the time of supply or in the bid, based on the registration status of the vendor, whichever is lower shall be payable.
- h) Where ever applicable If PAN (Permanent Account Number) of the recipient is not available, income tax is deductible either at the normal rate or at the rate of 20 percent, whichever is higher as per Section 206AA of Indian Income Tax Act 1961.
- i) The bidder shall clearly indicate HSN (*Harmonised System Nomenclature*) / SAC (*Service Accounting Code*), its description and applicable rate of GST for each item in his techno-commercial bid.
- j) Statutory Variation in Taxes & duties as applicable at the time of supply shall be payable. However, in the event of no change in law but bidder quoting certain tax structure in bid document which is lower than the applicable one, such amount shall be the maximum amount of tax that can be claimed by bidder.
- k) IMPORTED GOODS OFFERED BY INDIAN BIDDERS AGAINST DEALER INVOICE: Wherever the material being offered is imported, the bidder must quote the prices inclusive of IGST. The rate and value of IGST as included in

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the price must be indicated separately. In case quantum of IGST is not mentioned by the bidder the same will not be considered for evaluation. However, bidder will have to pass on the benefit of IGST to BHEL at the time supply.

- i) In case of directly dispatchable items to Customer's Site, BHEL-Haridwar will inform the GST registration number of the respective customer which must be mentioned on the vendor's invoice. Vendor to ensure availability of such information from BHEL-Haridwar before dispatch of any material. However while filing GSTN-1, BHEL Haridwar GSTN number to be quoted.

Note: - Vendors must ensure compliance of all the applicable rules and procedure as envisaged in the GST Regime. Any loss to BHEL-Haridwar due to fault / non-compliance by the vendor will be to the vendor's account.

12. BANK GUARANTEE.

In case the bank guarantees are required to be deposited towards security deposit/performance guarantee or for any other purpose as per the terms of this tender enquiry, such bank guarantees of the requisite value in the denominated currency of the purchase order should be from one of the Indian branch of BHEL consortium banks and the bank guarantee should be in the proforma as prescribed by BHEL. The proforma of bank guarantee and the list of consortium banks are displayed at BHEL website www.bhelhwr.co.in. However, in case the bank guarantee is not from BHEL consortium banks, then the bidder has to get the bank guarantee confirmed from one of the Indian branch of BHEL consortium banks and the bank charges for such confirmation will be borne by the bidder.

13. GUARANTEE / WARRANTY AND CORRESPONDING REPAIRS / REPLACEMENT OF GOODS.

Goods shall comply with the specifications for material, workmanship and performance. Unless otherwise specified, the warranty shall be for a period of 18 months from the date of receipt. If the delivery is found non-compliant during the warranty period, leading to rejection, the Seller shall arrange free replacement / repair of goods, within one month from the date of intimation or any mutually agreed period. The rejected goods shall be taken

away by the Seller at his cost and replaced on Delivered Duty Paid (DDP) (FOR - BHEL Stores / designated destination basis) within such period. In the event of the Seller's failure to comply, Purchaser may take action as appropriate, including Repair / Replenish rejected goods & disposal of rejections, at the risk & cost of the Seller. In case the defects attributable to Seller are detected during processing of the goods at BHEL or at our subcontractor's works, the Seller shall be responsible for free replacement / repair of the goods as required by BHEL.

- b) **RETURN OF REJECTED MATERIAL FOR REPLACEMENT:** The bidder shall have to pay 5% incidental charges while taking back supplied material if it is found rejected on receipt. The rejected material shall be sent back only after receipt of replacement / submission of BG/refund of amount paid.

14. QUALITY REQUIREMENT.

Your bid/quotation should have specific confirmation regarding meeting all our quality requirements such as. (i) Test Certificate (TC), (ii) Guarantee Certificate (GC) / Warranty Certificate (WC), (iii) Quality Plan (QP) (if applicable); and (iv) Pre-Dispatch Inspection at your works (if applicable).

15. VALIDITY

The quotation should be valid for a minimum period of 90 days effective from the date of opening of tender, unless otherwise specified in the tender enquiry.

16. RIGHT OF ACCEPTANCE.

- a) **BHARAT HEAVY ELECTRICALS LIMITED HARIDWAR** reserves the right to reject any or all the bids / quotations without assigning any reason thereof. BHEL also reserves the right to increase or decrease the tendered quantities. Bidders should be prepared to accept order for reduced quantity without any extra charges.
- b) Any discount / revised offer / bids submitted by a bidder on its own shall be considered, provided it is received on or before the due date and time of offer / bid submission (Part-1). Conditional discounts shall not be considered for evaluation of tenders.

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- c) Unsolicited discounts / revised offers / bids given after Part-1 bid opening shall not be accepted. No change in price will be permitted within the validity period asked for in the tender enquiry.
- d) In case of changes in scope and / or technical specification and / or commercial terms & conditions having price implication, techno-commercially acceptable bidders shall be asked by BHEL to submit the impact of such changes on their price bids. In case a bidder opts to submit revised price bid instead of impact called for then the latest price bid shall prevail. However in both situations, original price bid will be necessarily opened.
- e) The bidder whose bid is technically not accepted will be informed & EMD wherever submitted shall be returned after finalization of contract. EMD shall be forfeited in the event of bidder opting out after tender opening.
- f) BHEL reserves the right to short close the existing Purchase Order / Rate Contract / Work Order or any extension thereof at any stage.

17. TRANSIT INSURANCE.

- a) Transit Insurance will be covered by BHEL under its open Insurance Policy. Seller shall inform dispatch particulars (Purchase Order, RR/GR/, Invoice value etc.) to "Finance department (Store bill Section), BHEL Ranipur Haridwar (Uttarakhand -India) with value of consignment to the Purchaser within 07 days of dispatch for BHEL to arrange insurance coverage in its policy. Failure on the part of seller to inform dispatch particulars will make him liable to pay for any transit damages / losses suffered by the Purchaser.
- b) If Quoted Prices are inclusive of transit insurance, no weightage shall be given while evaluating the bids for Cost of Insurance, being in BHEL Scope.

18. RISK PURCHASE.

In case of abnormal delays (beyond the maximum late delivery period as per Penalty clause) in supplies / defective supplies or non-fulfillment of any other terms and

conditions given in Purchase Order, BHEL may cancel the Purchase Order in full or part thereof, and may also make the purchase of such material from elsewhere / alternative source at the risk and cost of the supplier. BHEL will take all reasonable steps to get the material from alternate source at optimum cost. If bidder does not agree to the above Risk Purchase Clause, BHEL reserves the right to reject the offer. In case for compelling reasons BHEL accepts the offer without acceptance of this clause by the bidder and in the eventuality of Risk Purchase, appropriate action will be taken as per BHEL extant rules. This will be without prejudice to any other right of BHEL under the contract.

19. FORCE MAJEURE CLAUSE.

Notwithstanding any other thing contained anywhere else in the contract or PO (Purchase Order), In case the discharge of obligation under the contract by either party is impeded or made unreasonably onerous, neither party shall be considered in breach of the contract to the extent that performance of their respective obligation is prevented by an event of Force Majeure that arises after the effective date (PO date).

In the above clause, Force Majeure means an event beyond the control of the parties to the contract which prevents a party from complying with any obligation of the contract including but not limited to:

- a) Act of God (Such as but not limited to earthquake, drought, tidal waves, floods etc.).
- b) War (whether war be declared or not), Hostilities Invasion, Act of foreign enemy etc.
- c) Rebellion, revolution, insurrection, civil war etc.
- d) Contamination of Radio Activity from any nuclear fuel or from any other nuclear waste or any other hazardous materials.
- e) Riots, commotions, strike unless restricted to the employees of supplier.
- f) Acts of terrorism.
- g) Other unforeseeable circumstances beyond the control of the parties and which the affected party cannot avoid even by using its best efforts.
- h) Cancellation of contract by customer.
- i) Change in law/ government. Regulation making the performance impossible.

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The party claiming to be affected by force majeure shall notify the other party in writing immediately without delay on the intervention and on the cessation of such circumstances.

Irrespective of any extension of time, if an event of force majeure occurs and its effect continues for more than 180 days the affected party shall have right to cancel the contract.

As soon as reasonably practicable following the date of commencement of a Force Majeure Event, and within a reasonable time following the date of termination of a Force Majeure Event, either Party invoking it shall submit to the other Party reasonable proof of the nature of the Force Majeure Event and of its effect upon the performance of the Party's obligations under this Agreement.

The party shall, and shall ensure that its Subcontractors shall, at all times take all reasonable steps within their respective powers and consistent with Good Operating Practices (but without incurring unreasonable additional costs) to:

- a) Prevent Force Majeure Events affecting the performance of the party's obligations under this Agreement.
- b) mitigate the effect of any Force Majeure Event and
- c) Comply with its obligations under this Agreement.

If the war like situation has developed in a country where a seller's works is located in this P.O. or there is political instability and Indian Embassy located in that country forbids or advises for not having any business dealing with the sellers located in such zone / region/ country then BHEL reserves the right to cancel the order.

20. NON-DISCLOSURE AGREEMENT.

All Drawing and Technical Documents relating to the product or it's manufacture submitted by one party to the other, prior or subsequent to the formation of contract, shall remain property of the submitting party. Drawing, technical documents or other technical information received by one party, shall not without the consent of the other party, be used for any other purpose than that, for which they were provided. Such technical information shall not without the consent of the submitting party, otherwise be used or copied, reproduced, transmitted or communicated to a third party. Patterns supplied by BHEL will remain BHEL's property which shall be returned by the

bidder on demand to BHEL. Bidder shall in no way share or use such intellectual property of BHEL to promote his own business with others. BHEL reserves the right to claim damages from the bidder, or take appropriate penal action as deemed fit against the bidder, for any infringement of the provisions contained herein.

21. SETTLEMENT OF DISPUTES / ARBITRATION.

In all cases of dispute the matter shall be referred for ARBITRATION by sole arbitrator to be appointed by the Unit Head of Bharat Heavy Electricals Ltd., at HARIDWAR. The award of the Arbitrator shall be final and binding on both the parties. The place of Arbitration shall be Haridwar.

JURISDICTION: The courts of Haridwar, India, shall have exclusive jurisdiction.

22. WHARFAGE / DEMURRAGE RESPONSIBILITY.

In the event of delay in receipt of documents by Manager (Stores-Shipping) BHEL-Haridwar and in case where dispatches are made through Unapproved Transporter the sole responsibility for wharfage /demurrage for such delay shall be that of supplier.

23. CONDITIONS FOR AVAILING MICRO & SMALL ENTERPRISES (MSE'S) BENEFITS.

- a) "MSE Suppliers can avail the intended benefits only if they submit along with the offer, attested copies of either EM II certificate having deemed validity (**five years** from the date of issue of acknowledgement in EM II) or valid NSIC certificate or EM II certificate along with attested copy of a CA certificate (Format enclosed at annexure-1 where deemed validity of EM II certificate of five years has expired) applicable for the relevant financial year (latest audited). Date to be reckoned for determining the deemed validity will be the date of bid opening (Part 1 in case of two part bid). Non submission of such documents will lead to consideration of their bid at par with other bidders. No benefit shall be applicable for this enquiry if any deficiency in the above required documents is found or the requisite documents are not submitted before price bid opening. If the tender is to be submitted through e-procurement portal, then the above required documents are to be

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uploaded on the portal. Documents should be notarized or attested by a Gazetted officer."

- b) Any new supplier will be eligible for registration with BHEL as MSE supplier provided at least any one of the following documents are submitted along with application for registration :-
- c) Valid NSIC Certificate or
- d) Entrepreneurs Memorandum part II (EM II) certificate (valid based on deemed validity of 5 years) or
- e) EM II certificate along with attested copy of CA Certificate (as per prescribed format at annexure-A) applicable for the relevant financial year (latest audited), where the deemed validity of EM II is over.
- f) However, credentials of all MSE suppliers will be verified before advancing the intended benefits.
- g) MSE bidders claiming SC/ST status will have to submit SC/ST certificate of the Proprietor from competent authority. Attested (notarized or attested by Gazetted officer) copy to be submitted along with the offer.
- h) In case techno-commercial accepted bidders include MSE source and their prices (based on landed cost – considering quoted prices) are within the price band of 15% w.r.t. L-1 bidder, then BHEL can offer 20% of quantity of respective item (rounded off to nearest number) to MSE bidders at L-1 price and in case, more than one MSE bidder is in 15 % band and the same is accepted by more than one MSE bidders then 20% quantities of respective items will be considered for ordering on proportionate basis amongst MSE bidders.
- i) While distributing the 20% quantity amongst MSE bidders the decimal points in quantity shall be ignored for all the bidders except the L-1 amongst MSE bidders. Balance quantity after allocating the quantity to other MSE bidders ignoring the quantities in decimal, shall be given to L-1 (amongst MSE) bidder. However if there are more than one MSE bidder at the same price level than preference for additional quantities due to ignoring off the decimal (as mentioned above) shall be given to the bidder offering

favorable terms to BHEL and if the conditions offered are also same then preference will be given to the bidder having high SPR rating.

- j) In case there are more than one MSE bidders (with different landed cost to BHEL) within 15% price band of lowest bidder and quantity to be offered is 1 no. only, then preference shall be given to the MSE bidder with lowest landed cost .
- k) In case there are more than one MSE bidders (with same landed cost to BHEL) within 15% price band of lowest bidder and quantity to be offered is 1 no. only, then preference shall be given first, based on the favorable terms in the bid and in case terms are also same, the bidder with high SPR rating shall be given preference.
- l) If L1 bidder is MSE bidder, entire quantity will be given to such MSE bidder only.
- m) Note: It may however be noted that MSE guidelines as on date (Date of Technical Bid Opening Part-1) shall prevail

24. INFORMATION TO THE BIDDERS.

- a) Purchase related information is available at our Business-to-Business (B2B) Portal available on our website www.bhelhwr.co.in The user ID & password can be obtained by sending a request to concerned purchase executives.
- b) Intimate your change in mail address or communication address or changes, if any, by email to ppx_idx@bhelhwr.co.in giving your bidder Code.
- c) Please resolve your rejections and unexecuted overdue purchase order immediately which are posted at our B2B Portal, which can be visited through our site www.bhelhwr.co.in
- d) Copy of this Tender Enquiry is being sent through the post.

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- a) Special conditions of enquiry, if enclosed by BHEL, will supersede the respective standard/general terms of enquiry.
- b) Any other Standard terms and Conditions of the bidder attached/referred against the tender enquiry will be treated as null and void ab initio.
- c) In order to protect the commercial interests of BHEL, it becomes necessary to take action against suppliers / contractors by way of supervision of business dealings, who either fail to perform or are in default without any reasonable cause, cause loss of business / money / reputation, indulged in malpractices, cheating, bribery, fraud or any other misconducts or formation of cartel so as to influence the bidding process or influence the price etc. Guide- lines for Suspension of Business Dealings with Suppliers / Contractors shall prevail over which is available at BHEL website <http://www.bhel.com>
- d) The bidder along with its associate / collaborators / sub-contractors / sub-vendors / consultants / service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of BHEL-Management about any fraud or suspected fraud as soon as it comes to their notice.

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