

BOSE INSTITUTE Centenary Building, P-1/12, CIT Scheme – VII / M, Kankurgachi, Kolkata – 700054 (INDIA)

CHAPTER - I: INVITATION TO BIDS

Director, Bose Institute, Kolkata, West Bengal, India invites *sealed* offers in <u>two bid system</u> from foreign/Indian manufacturers or their Authorized Dealers for the supply, installation and commissioning of the following equipments :

	Sl. No.	Name of the inst	rument	Unit	Bid security (EMD)	
	1.	OC/EC Analyser		1	Rs. 1,70,000.00 lakh	
	2.	MOUDI Impactor		2	Rs. 1,70,000.00 lakh	
Tender Notice No.		: BI/T/03/2014-15 dt. 23.7.2014				
Last da	ite & Time	for Submission	: 26 th August, 2014 upto 14:00 hours			
Date/Time for opening of bids			: 26 th August, 2014 at 15:00 hours			
Venue of Bid Opening			: Centenary Building, Bose Institute, Seminar Room (Annexe Block), P-1/12, C.I.T. Scheme – VII / M, Kankurgachi, Kolkata – 700054			
Submi	ssion of te	ender	•	r in Ann 7 Buildi1		

Serial no. and name of the instrument shall be mentioned on the envelope positively.

The Techno-Commercial bids will be opened in the presence of representatives of tenderers who choose to attend. If the date of opening happens to be a holiday, the bids shall be opened on the next working day at the same time. Fax/email bids or Late/Delayed tenders shall not be considered. Only the technically approved bidders will be informed of the date for opening their corresponding price bids.

Director, Bose Institute reserves the right to accept or reject any or all tenders either in part or in full. The reasons for rejecting the tender of a prospective bidder will be disclosed only when enquiries are made.

REGISTRAR

BOSE INSTITUTE KOLKATA

CHECK LIST

::

Tender Notice No.

Nam	ne of the equipment ::		
1.	Whether separate tender submitted for separate items	YES	NO
2.	Whether all pages of the tender document is submitted	YES	NO
3.	Whether tender is submitted in two bid form i.e. Technical bid and Commercial bid	YES	NO
4.	Whether Technical and Commercial bids are separately sealed and marked accordingly	YES	NO
5.	Whether Bid Security (Earnest Money Deposit / EMD) and cost of bidding documents is furnished	YES	NO
6.	Whether Bid Security is submitted in a separate envelop and marked accordingly	YES	NO
7.	Whether Bid Security is enclosed with the technical bid	YES	NO
8.	Whether Bid Form in the official letter head is submitted	YES	NO
9.	Whether Manufacturer Authorization form submitted	YES	NO
10.	Whether Performance Statement form submitted	YES	NO
11	Whether Service Support details form submitted	YES	NO
12.	Whether the qualification requirement for submission of the tender has been examined and fulfilling / agrees with the conditions	YES	NO
13.	Whether technical compliance statement form is submitted	YES	NO

• Pl put tick (✓) mark whichever is applicable

Date :

Signature of the bidder with seal

CHAPTER – II: INSTRUCTION TO BIDDERS

A. INTRODUCTION

1. Eligible Bidders

- 1.1 This Invitation for Bids is open to all manufacturers or their dealers specifically authorised by the manufacturers to quote on their behalf for this tender as per manufacturer's authorization form and Indian agents of foreign principals, if any who possess the qualifying requirements specified in Chapter XIII.
- 1.2 Bidders should not be associated, or have been associated in the past, directly or indirectly, with a firm or any of its affiliates which have been engaged by the Purchaser to provide consulting services for the preparation of the design, specifications, and other documents to be used for the procurement of the goods to be purchased under this Invitation of Bids.

2. **Cost of Bidding**

2.1 The Bidder shall bear all costs associated with the preparation and submission of its bid, and "the Purchaser", will in no case be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.

B. THE BIDDING DOCUMENTS

3. Cost of Bid Document

3.1 Tender documents are available at Bose Institute website http://www.jcbose.ac.in. The cost of bidding documents is Rs 1500/-, nonrefundable by Pay order / demand draft on any nationalized bank of India in favour of "Director Bose Institute, Kolkata; bidder shall submit the same in a separate envelope with a cover letter, Interested and eligible bidders may download the bidding documents directly from the website and submit the same along with the bid price. No request for the sale tender document shall be entertained.

4. **Contents of Bid Document**

4.1 The goods required, bidding procedures and contract terms are prescribed in **this** Bid Document which includes the following:

S. No.	Title	Chapter No.
01.	Invitation to Bid	Ι
02.	Instructions to Bidder (ITB)	II
03.	General Conditions of Contract (GCC)	III
04.	Special Conditions of Contract (SCC)	IV
05.	Bid Form	V
06.	Techno-Commercial Bid Form	VI
07.	Financial/ Price Bid Form	VII
08.	Bid Security Form	VIII
09.	Manufacturer's Authorisation Form	IX
10.	Performance Security Form	Х
11.	Bidder's Performance Statement Form	XI
12.	Service Support Details	XII

13.	Qualification Requirements	XIII
14.	Technical Compliance Statement Form	XIV
15.	Contract Form	XV
16.	Detailed Technical Specifications	XVI

4.2 The Bidder is expected to examine all instructions, forms, terms (ITB/GCC/SCC etc.), and specifications in the bidding documents. Failure to furnish all information required by the bidding documents or submission of a bid not substantially responsive shall result in rejection of the bid.

5. Amendment To Bid Document

5.1 At any time prior to the deadline for submission of bids, the Purchaser may, for any reason, whether at its own initiative or in response to decisions taken in pre-bid conference, modify the Bid Document by amendment. Such amendments shall form an integral part of bid documents and it shall amount to an amendment of relevant clauses of the Bid Document. <u>Prebid</u> <u>conference</u> would be organised only on receipt of written request from the prospective bidders. Such requests should positively be forwarded to the Convener, Tender Opening Committee, (<u>bipurchase@jcbose.ac.in</u>), latest by 08.8.2014, otherwise such requests won't be entertained.

Prebid conference if required would be held at 13th August, 2014. The interested bidders are requested to keep a watch in the Bose Institute website regarding any announcement on prebid conference.

- 5.2 Normally no interim queries are entertained. However, for any specific clarifications on any aspect of the tender, the prospective bidders may write to : Convener, Tender Opening Committee, (<u>bipurchase@jcbose.ac.in</u>). Request for clarifications, if any, should reach latest by 08.8..2014.
- 5.3 All prospective bidders are required to keep a watch on the Bose Institute website <u>http://www.jcbose.ac.in</u> about any amendment to the tender document or any clarification to the queries raised by the bidders. The Purchaser reserves the right to reject the bids if the bids are submitted without taking into account these amendments/clarifications. In order to allow prospective bidders reasonable time in which to take the amendment into account in preparing their bids, the Purchaser, at its discretion, may extend the deadline for the submission of bids.

C. PREPARATION OF BIDS

6. Language of Bid

6.1 The Bid prepared by the Bidder and all correspondence and documents relating to the bid exchanged by the bidder and the purchaser shall be written in English language, provided that any printed literature furnished by the bidder may be written in another language but it is to be accompanied by an English translation of its pertinent passage(s) duly signed and verified as true English translation. The responsibility for the correctness of the translation will be solely and completely on the bidder and the Purchaser will not be responsible for any loss/likely loss due to error in translation whatsoever. In such cases, for the purpose of interpretation of the bid, the English translation shall only prevail.

7. **Documents Comprising the Bid**

7.1 (i) The tender form should be completed in all respects. Wherever the information is not relevant, the space should be appropriately filled with 'NA or NIL'. No space shall be left blank. All pages of the tender form should

be returned.

- (ii) The bid is liable to be set aside if complete information as specified in the techno-commercial bid form and the requirements specified in the tender notification is not given.
- (iii) If the given space is insufficient to give required information, additional sheets may be added. Each such additional page shall be numbered consecutively and shall bear our tender reference number and signature of bidder or his/her authorized agent.
- (iv) Attention should to be paid to the delivery dates, technical specifications and the terms and conditions of the tender notification.
- (v) The bid is required to be submitted in two parts. One part is the <u>Techno-Commercial Unpriced Bid</u> and the other part is the <u>Financial/Price Bid</u>.
 Techno-Commercial Bid and Financial/Price Bid should be identical in all respects except that the Techno-Commercial Bid should have blank space at the place where prices have been indicated in the Price Bid.
- (vi) The bidder may give additional commercial terms, if any, in their technocommercial bid only, and price bid should contain only price details.
- Techno-Commercial Unpriced Bid shall include the following :

(i) **Bid Form;**

7.2

- (ii) Techno-Commercial Bid Form;
- (iii) Technical Compliance Statement Form;
- (iv) List of Spares, if applicable to run the equipment;
- (v) Bid Security/ EMD as specified in the invitation to bids;
- (vi) Service Support Details Form;
- (vii) Performance Statement Form;
- (viii) Manufacturer's Authorization Form;
- (ix) Documentary evidence establishing that the bidder is eligible to bid and is qualified to perform the contract if its bid is accepted as per qualification requirements/criteria;
- (x) The Comprehensive Annual Maintenance Contract (CAMC) terms & conditions detailing the exclusions, if any.

Intending bidders are advised to furnish the particulars strictly in the downloaded format cited in chapters (V) to (XV) attached to the tender documents.

- 7.3 <u>The Financial/Price Bid</u> shall include only the Financial/Price Bid Form with price indicated in it.
- 8. **Bid Prices**
- 8.1 Bidders are requested to give their final and best offer. <u>Techno-Commercial</u> Discussions will be held with the Lowest Bidder only, if necessary.
- 8.2 Vendors, who do not accept our standard commercial terms are liable to be ignored. A categorical confirmation of acceptance of all our terms and conditions in toto will have to be observed which enable speedy processing of the offers.
- 8.3 Pre-conditioned, incomplete offers, not in line with the terms and conditions of the tender documents, are liable to be rejected.
- 8.4 The Bidder shall indicate the unit prices and total bid prices of the goods it proposes to supply under the order and enclose it with the priced bid.
- 8.5 **For Indigenous Items:** Prices indicated shall be entered separately in the following manner:
 - (i) The price of the goods, quoted (ex-works, ex-factory, ex-showroom, ex-

warehouse, or off-the-shelf, as applicable), including all duties and sales and other taxes already paid or payable.

- (ii) Taxes: The amount payable on account of Excise Duty, Customs Duty and other applicable taxes (VAT/CST/Service) should be mentioned clearly. If there is no explicit mention of taxes in your offer then quoted price will be deemed inclusive of such taxes. No other charges except those mentioned clearly in the quotation will be paid.
- (iii) Rates should be quoted FOR, Bose Institute, Kolkata inclusive of packing, forwarding, installation and commissioning charges etc. If ex-works prices are quoted then packing, forwarding, documentation, freight and insurance charges must be clearly mentioned separately. Vague terms like "packing, forwarding, transportation etc. extra" without mentioning the specific amount/percentage of these charges will NOT be accepted. Such offers shall be treated as incomplete and rejected. Where there is no mention of packing, forwarding, freight, insurance charges, such offers shall be summarily rejected as incomplete.
- 8.6 **For Imported Items:** Prices indicated shall be entered separately in the following manner:
 - (i) The price of the goods, quoted FOB/FCA port of shipment. Please note that Export Packing, Loading Charges, Inland Freight etc. in the shipper country will have to be paid by the Supplier.
 - (ii) The price for inland transportation, insurance and other local costs incidental to delivery of the goods upto their port of despatch (CIF/CIP).
- 8.7 Prices quoted by the bidder shall remain fixed during the entire period of contract and shall not be subject to variation on any account. A bid submitted with an adjustable price quotation will be treated as non responsive and rejected.

9. **Bid Currencies**

9.1 Prices shall be quoted in Indian Rupees or in freely convertible foreign currency wherever possible for comparison.

10. **Documents Establishing Bidder's Eligibility and Qualifications**

- 10.1 Pursuant to ITB, the bidder shall furnish, as part of its bid, documents establishing the bidders' eligibility to bid and its qualification to perform the contract if its bid is accepted
- 10.2 That the bidder meets the qualification criteria listed in Bid Document.
- 11. Documents Establishing Goods' Eligibility and Conformity to Bid Document
- 11.1 The documentary evidence of the goods and services eligibility shall consist of a statement on the country of origin of the goods and services offered which shall be confirmed by a certificate of origin at the time of shipment.
- 11.2 **Specifications are basic essence of the product**. It must be ensured that the offers are strictly as per our specifications. At the same time it must also be kept in mind that merely copying our specifications in their quotation shall not make firms eligible for consideration. The documentary evidence of conformity of the goods and services to the Bid Document may be in the form of literature, drawings and data, and shall consist of:
 - (i) A detailed description of the essential technical and performance characteristics of the goods;
 - (ii) A list giving full particulars, including available sources and current prices, of spare parts, special tools, etc., necessary for the proper and continuing functioning of the goods for a period of two years, following commencement

of the use of the goods by the Purchaser; and

- (iii) An item-by-item commentary on the Purchaser's Technical Specifications demonstrating substantial responsiveness of the goods and services to those specifications or a statement of deviations and exceptions to the provisions of the Technical Specifications.
- 11.3 For purposes of the commentary to be furnished pursuant to above, the Bidder shall note that standards for workmanship, material and equipment, and references to brand names or catalogue numbers designated by the Purchaser in its Technical Specifications are intended to be descriptive only and not restrictive. The Bidder may substitute alternative standards, brand names and/or catalogue numbers in its bid, provided that it demonstrates to the Purchaser's satisfaction that the substitutions ensure substantial equivalence to those designated in the Technical Specifications. Technically unsuitable offers, and/or, offers not conforming to tender schedule, shall be rejected.
- 11.4 In case the bidder furnishes wrong or false information wilfully in the technical compliance chart, such action shall be viewed strictly and the bidders may be blacklisted.

12. Bid Security (Earnest Money Deposit)

- 12.1 The Bidder shall furnish, as part of its bid, a bid security for an amount as specified in the Invitation for Bids/NIT. The bid security is required to protect the Purchaser against the risk of Bidder's conduct, which would warrant the security's forfeiture.
- 12.2 The Bid Security shall be submitted in one of the following forms in the form provided in the Bid Document (Chapter VIII) and valid for **45 days beyond the validity of the bid:**
 - (i) <u>Pay order / demand draft</u> on any nationalized bank of India ; <u>bidder</u> shall submit the same in a separate envelope with a cover letter, giving therein details of the bid security along with tender number or
 - (ii) Indian manufacturers/suppliers or Authorized Indian Agents of the Foreign Principals can submit the bid security on behalf of their foreign principals in the form provided in the Bid Document (Chapter VIII), which contains the text of Bank Guarantee (Nationalized/Scheduled bank) with validity beyond 45 days of the bid, OR
 - (iii) Foreign Principals can submit bid security in the form of Bank Guarantee on the format provided in the bidding documents from any bank but the same has to be certified by a scheduled bank having branch in Kolkata, India.
- 12.3 Any bid not secured in accordance with Clauses 12.1 and 12.2 above will be rejected by the Purchaser as non-responsive.
- 12.4 Bid Security should be submitted in a separate envelope superscribed with 'Bid Security' for the Equipment -----' 'Tender Notice No. -----'
- 12.5 Bid Security should be submitted in favour of "Director, Bose Institute".
- 12.6 Unsuccessful bidder's bid security will be discharged as promptly as possible but not later than 15 days after the expiration of the period of bid validity or placement of order which ever is later. No interest shall be paid on the EMD.
- 12.7 The successful Bidder's bid security will be discharged upon the Bidder furnishing the performance security.
- 12.8 The bid security may be forfeited:
 - (i) If a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Bid Form; or

(ii) In case of a successful Bidder, if the Bidder fails to furnish order acceptance within 21 days of the order and/or fails to furnish Performance Security in the prescribed format.

13. **Period of Validity of Bids**

- 13.1 **Bids shall remain valid at least for <u>90 days</u> after the date of bid opening prescribed by the Purchaser**. A bid valid for a shorter period may be rejected by the Purchaser as non-responsive.
- 13.2 In exceptional circumstances, the Purchaser may solicit the Bidder's consent to an extension of the period of validity. The request and the responses thereto shall be made in writing (or by cable, telex, fax or e mail). The bid security provided under Clause 12 shall also be suitably extended. A Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request will not be required nor permitted to modify its bid.
- 13.3 Bid evaluation will be based on the bid prices without taking into consideration the above corrections.

14.Format and Signing of Bid

- 14.1 The Bidder shall submit the bids in two separate envelopes. One envelope shall contain <u>Techno-commercial un-priced bid</u> and the other shall contain the Financial/Price Bid.
- 14.2 The original and all copies of the bid shall be typed or written in indelible ink and shall be signed by the Bidder or a person or persons duly authorized to bind the Bidder to the Contract. All pages of the bid, except for un-amended printed literature, shall be signed and stamped by the person or persons signing the bid.
- 14.3 Any interlineations, erasures or overwriting shall be valid only if the persons or persons signing the bid signed and stamped them.
- 14.4 The Bidder shall furnish information on commissions or gratuities, if any paid or to be paid to agents relating to this Bid, and to contract execution if the Bidder is awarded the contract as per the bid form.

D. SUBMISSION OF BIDS

15 Sealing and Marking of Bids

- 15.1 Separate Bids shall be submitted for individual items.
- 15.2 Except the <u>Financial/Price Bid</u>, all pages of the bidding documents, duly filled in, should be returned intact with the Techno-Commercial Unpriced Bid, whether bidder is quoting for all items or not. The pages containing the <u>Financial/Price Bid</u> should be enclosed separately as mentioned below.
- 15.3 In the event of space on the tender form being insufficient for the required purpose, additional pages may be added. Each such additional page must be numbered consecutively, should bear the tender reference number and signature. In such cases reference to the additional pages must be made in the tender form.
- 15.4 If any modification of the tender form is considered necessary, the bidder should communicate the same by means of separate letter sent with the tender
- 15.5 The bid documents and enclosures, if any should be serially numbered, punched with a hole on the top left hand corner side and tagged properly.
- 15.6 The bidder shall seal the Techno Commercial Unpriced Bid and the Price/Financial Bid in two separate envelops duly marked as "Techno Commercial Unpriced Bid" and "Price/Financial Bid" respectively. Both the envelopes shall then be sealed in one outer (main) envelope.

15.7 **The inner and outer envelopes shall**:

(i) Be addressed to the Purchaser at the following address:

The Registrar, Bose Institute, Centenary Building, P-1/12, CIT Scheme-VII/M, Kankurgachi, Kolkata – 700054 (WB) INDIA

- Bear the Tender Notice No./ Item Name / Last Date for Submission of Tender/ Date of Opening of Tender/ Firm's Name & Address and a statement "Do not open before Time hrs. (IST) on Date." As per the NIT details.
- 15.8 If the outer envelope is not sealed and marked as required in Clause 15.3, the Purchaser will assume no responsibility for the bid's misplacement or premature opening.
- 15.9 Telex, Cable, Fax or e-mail bids will be rejected.

16 **Deadline for Submission of Bids**

- 16.1 Bids must be received by the Purchaser at the address specified under Clause 15.3 not later than the time and date specified in the Invitation for Bids. In the event of the specified date for the submission of Bids being declared a holiday for the Purchaser, the Bids will be received upto the appointed time on the next working day.
- 16.2 The Purchaser may, at its discretion, extend this deadline for submission of bids by amending the bid documents in accordance with Clause 5 of ITB, in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

17 Late Bids

17.1 Any bid received by the Purchaser after the deadline for submission of bids prescribed by the Purchaser, pursuant to Clause 16 above, will be rejected and/or returned to the Bidder.

18 Modification and Withdrawal of Bids

- 18.1 The Bidder may modify or withdraw its bid after the bid's submission; provided that written notice of the modification or withdrawal is received by the Purchaser prior to the deadline prescribed for submission of bids.
- 18.2 The Bidder's modification or withdrawal notice shall be prepared, sealed, marked and dispatched in accordance with the provisions of Clause 15. A withdrawal notice may also be sent by telex or cable or fax or e mail but followed by a signed confirmation copy, post marked not later than the deadline for submission of bids.
- 18.3 No bid may be modified subsequent to the deadline for submission of bids.
- 18.4 No bid may be withdrawn in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the bid form. Withdrawal of a bid during this interval may result in the Bidder's forfeiture of its bid security, pursuant to Clause 12.7.

E. OPENING AND EVALUATION OF BIDS

19 **Opening of Bids by the Purchaser**

19.1 The Purchaser will open all Techno Commercial Unpriced Bids as per the schedule given in invitation to bids.

- 19.2 In the event of the specified date of Bid opening being declared a holiday for the Purchaser, the Bids shall be opened at the appointed time and location on the next working day.
- 19.3 The firm is at liberty to be present or authorise a representative to be present during opening of Techno-Commercial bid at the time and date as specified.
- 19.4 The Bidders' representatives who are present shall sign the quotation opening sheet evidencing their attendance. In the event of the specified date of Bid opening being declared a holiday for the Purchaser, the Bids shall be opened at the appointed time and location on the next working day.
- 19.5 The bidders' names, bid modifications or withdrawals, specifications, and the presence or absence of requisite bid security and such other details as the Purchaser, at its discretion, may consider appropriate, will be announced at the opening. No bid shall be rejected at bid opening, except for late bid.
- 19.6 Bids (and modifications sent pursuant to Clause 18.2) that are not opened and read out at bid opening shall not be considered further for evaluation, irrespective of the circumstances.
- 19.7 If in response to our TWO BID enquiry, a single combined bid is submitted, it will be considered as a technical bid at the risk of the bidder. Similarly if 'PRICE BID' has been found enclosed in the envelope marked 'TECHNICAL BID' the same shall also be evaluated as a single bid.
- 19.8 The Director reserves the right to call for techno-commercial/price negotiations. The company should depute competent representative for such discussion/ negotiations whenever called for and the representative should be competent to take on the spot decisions.
- 19.9 No correspondence/discussions/visits whatsoever will be entertained on the subject unless specifically called by this office after opening the tenders for technical discussions/ price negotiations. Any violation of this will render the bid invalid and the firm is liable to be blacklisted.

20 Clarification of Bids

20.1 To assist in the examination, evaluation and comparison of bids, the Purchaser may, at its discretion ask the bidder for any clarification(s) of its bid. The request for clarification and the response shall be in writing and no change in the price substance of the bid shall be sought, offered or permitted. However no post-Bid clarifications at the initiative of the Bidder shall be entertained.

21 **Preliminary Examination**

- 21.1 The Purchaser will examine the bids to determine whether they are complete, whether required sureties have been furnished, whether the documents have been properly signed, and whether the bids are generally in order. Bids from suppliers, without proper Authorization from the manufacturers and from Indian agents without DGS&D Registration Certificate in case the items fall under the restricted list of the current EXIM Policy shall be treated as non-responsive and rejected summarily. Similarly, bids submitted without EMD shall be rejected.
- 21.2 Arithmetical errors in the priced bids will be rectified on the following basis. If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected. If there is a discrepancy between the price quoted in words and figures, whichever is the higher of the two shall be taken as the bid price.
- 21.3 The Purchaser may waive any minor informality, non-conformity, or irregularity in a bid, which does not constitute a material deviation, provided such a waiver, does not prejudice or affect the relative ranking of any Bidder.

- 21.4 Prior to the detailed evaluation, the Purchaser will determine the substantial responsiveness of each bid to the Bid Document. For purposes of these Clauses, a substantially responsive bid is one, which conforms to all the terms and conditions of the Bid Document without material deviations. Deviations from or objections or reservations to critical provisions such as those concerning Bid Security/ Performance Security, Warranty, Force Majeure, Applicable law and Taxes & Duties will be deemed to be a material deviation. The Purchaser's determination of a bid's responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence.
- 21.5 If a bid is not substantially responsive, it will be rejected by the Purchaser and may not subsequently be made responsive by the Bidder by correction of the non-conformity.
- 21.6 After downloading, the language of standard clauses etc. mentioned in this 'Bid Document' should not be tampered with/ changed/modified in any manner whatsoever. If any such modification etc. comes to our knowledge at any stage, the bid shall be rejected immediately and *Earnest Money Deposit* shall also be forfeited.

22 Conversion to Single Currency

22.1 To facilitate evaluation and comparison, the Purchaser will convert all bid prices expressed in an amount in various currencies in which the bid prices are payable, to Indian Rupees at the selling exchange rate established by any bank in India as notified in the web site <u>www.xe.com</u> or <u>Newspapers/RBI's</u> website on the date of opening of Price/Financial Bid.

23 Evaluation & Comparison of Bids

- 23.1 For the bids surviving the technical evaluation which have been found to be responsive the evaluation & comparison shall be made as under:
 - (i) *Indigenous Offers*: The final landing cost of purchase after all discounts, freight, forwarding, insurance, taxes etc. shall be the basis of evaluation.
 - (ii) *Imported Offers*: The FOB/FCA price shall be the basis of evaluation.
 - (iii) *Imported Vs. Indigenous Offers*: The final landing cost of purchase taking into account, freight, forwarding, insurance, taxes etc. (CIF/CIP with customs clearance charges, Bank/LC charges, transportation upto Bose Institute as per available records with Bose Institute for imported goods) shall be the basis of evaluation. However, the Purchaser prefers firms who undertake to supply the goods on High sea sales basis with the customs clearance either by the bidder or by the Purchaser.
- 23.2 Conditional tenders etc. shall not be accepted.
- 23.3 Where there is no mention of packing, forwarding, freight, insurance charges, taxes etc. such offers shall be rejected as incomplete.

24 Contacting the Purchaser

- 24.1 Subject to ITB Clause 20, no Bidder shall contact or attempt to contact the Purchaser or anyone related to the Purchaser on any matter relating to its bid, from the time of the bid opening to the time the Contract is awarded. If the bidder wishes to bring additional information to the notice of the Purchaser, it should do so in writing.
- 24.2 Any effort by a Bidder to influence the Purchaser in its decisions on bid evaluation, bid comparison or contract award may result in rejection of the Bidder's bid.

25 **Post Qualification**

25.1 In the absence of pre-qualification, the Purchaser will determine to its satisfaction whether the Bidder that is selected as having submitted the lowest evaluated

responsive bid is qualified to perform the contract satisfactorily, in accordance with the criteria listed in ITB Clause 10.

- 25.2 The determination will take into account the Bidder's financial, technical and production capabilities. It will be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB Clause 10, as well as such other information as the Purchaser deems necessary and appropriate.
- 25.3 An affirmative determination will be a prerequisite for award of the contract to the Bidder. A negative determination will result in rejection of the Bidder's bid.

26 Award Criteria

26.1 Subject to ITB Clause 28, the Purchaser will award the contract to the successful Bidder whose bid has been determined to be substantially responsive and has been determined to be the lowest evaluated bid, provided further that the Bidder is determined to be qualified to perform the contract satisfactorily.

27 Purchaser's Right to vary Quantities at the Time of Award

27.1 The Purchaser reserves the right at the time of Contract award to increase or decrease the quantity of goods and services originally specified in the Schedule of Requirements without any change in unit price or other terms and conditions. However, the Purchaser reserves the right to call the lowest firm for negotiation in case of increase in quantity.

28 Purchaser's Right to Accept Any Bid and to Reject any or All Bids

28.1 The Purchaser reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to award of Contract, without thereby incurring any liability to the affected Bidder or bidders or any obligation to inform the affected Bidder or bidders of the grounds for the Purchaser's action.

29 Notification of Award

- 29.1 Prior to the expiration of the period of bid validity, the Purchaser will notify the successful bidder in writing by registered letter or by cable or telex or fax or e mail that the bid has been accepted by way of a Purchase Order.
- 29.2 Upon the successful Bidder's furnishing of performance security pursuant to ITB Clause 30, the Purchaser will promptly notify each unsuccessful Bidder and will discharge its bid security, pursuant to Clause 12.

30 **Performance Security**

- 30.1 Within 30 days of the receipt of notification of award/purchase order from the Purchaser, the successful Bidder shall furnish the performance security, in the Performance Security Form (**Chapter X**) provided in the Bid Document.
- 30.2 Failure of the successful bidder to accept the order shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security and procure the items at the risk and cost of the bidder.

31 Order Acceptance

31.1 The successful bidder should submit acceptance of the Purchase Order immediately but not later than 30 days in any case from the date of issue of the Purchase Order failing which it shall be presumed that the vendor is not interested and his bid security is liable to be forfeited pursuant to clause 12.6 of ITB.

CHAPTER - III: GENERAL CONDITIONS OF CONTRACT (GCC)

1. **Definitions**

1.1

In this Contract, the following terms shall be interpreted as indicated:

- (i) "The Order" means the Purchase Order placed by the Purchaser including all the attachments and appendices thereto and all documents incorporated by reference therein;
- (ii) "The Contract Price" means the price payable to the Supplier under the Order for the full and proper performance of its contractual obligations;
- (iii) "The Goods" means all the equipment, machinery, and/or other materials, which the Supplier is required to supply to the Purchaser under the Contract;
- (iv) "Services" means services ancillary to the supply of the Goods, such as transportation and insurance, and any other incidental services, such as installation, commissioning, provision of technical assistance, training and other obligations of the Supplier covered under the Contract;
- (v) "GCC" mean the General Conditions of Contract contained in this section.
- (vi) "SCC" means the Special Conditions of Contract.
- (vii) "The Purchaser" as specified in Special Conditions of Contract.
- (ix) "The Purchaser's country" is "India".
- (x) "The Supplier" means the individual or firm supplying the Goods and Services under this Contract.
- (xi) "Day" means calendar day

2. Application

2.1 These General Conditions shall apply to the extent that they are not superseded by provisions in other parts of the Contract.

3. Standards

3.1 The Goods supplied under this Contract shall conform to the standards mentioned in the Technical Specifications, and, when no applicable standard is mentioned, to the authoritative standard appropriate to the Goods' country of origin and such standards shall be the latest issued by the concerned institution.

4. Use of Contract Documents and Information

- 4.1 The Supplier shall not, without the Purchaser's prior written consent, disclose the Contract, or any provision thereof, or any specification, plan, drawing, pattern, sample or information furnished by or on behalf of the Purchaser in connection therewith, to any person other than a person employed by the Supplier in performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far, as may be necessary for purposes of such performance. The Supplier shall not, without the Purchaser's prior written consent, make use of any document or information except for purposes of performing the Contract.
- 4.2 Any document, other than the Contract itself, enumerated in GCC Clause 4.1 shall remain the property of the Purchaser and shall be returned (in all copies) to the Purchaser on completion of the Supplier's performance under the Contract if so required by the Purchaser.
- 4.3 The purchaser may be under obligation to make any document/information submitted by the bidder in response to this bid public if required under the provision of Right to Information Act 2005 or other statutory provisions. Therefore the bidder may explicitly indicate if any document/information in

his tender includes information of commercial confidence, trade secrets or intellectual property, the disclosure of which would jeopardize the competitive position of the bidder.

5. **Patent Rights**

5.1 The Supplier shall indemnify the Purchaser against all third-party claims of infringement of patent, trademark or industrial design rights arising from use of the Goods or any part thereof in India.

6. **Submission of the bids**

- 6.1 All bids complete in every respect must reach this office within the last date and time of receipt of bid. No extension shall be allowed for any reason what so ever. Late tenders, Tenders received without Bid security/Earnest Money, cost of bidding documents, if applicable etc. shall be rejected summarily.
- 6.2 Tender documents are available free of cost at <u>http://www.jcbose.ac.in</u> Interested bidders may download the same directly from the website. No request for the tender document shall be entertained. The Purchaser is not liable for either non-receipt of the tender document or for late receipt of the tender documents.

7. **Performance Security**

- 7.1 Within 30 days of receipt of the notification of contract award/purchase order, the Supplier shall furnish performance security for the amount specified in SCC.
- 7.2 The proceeds of the performance security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.
- 7.3 The Performance Security shall be submitted in one of the following forms:
 - (i) Indian manufacturers/suppliers or Authorized Indian Agents of the Foreign Principals can submit the performance security on behalf of their foreign principals in the form of Bank Guarantee issued by a Nationalized/Scheduled bank located in India on the format provided in the bidding documents. **OR**
 - (ii) Foreign Principals can submit performance security directly in the form of bank guarantee on the format provided in the bidding documents from any bank but the same has to be certified by a scheduled bank having branch in Kolkata, India.
- 7.4 The performance security shall be valid for a period of 60 days following the date of completion of the Supplier's performance obligations, including any warranty obligations, unless specified otherwise in SCC. The performance Security shall be discharged by the Purchaser and returned to the Supplier on expiry.
- 7.5 In the event of any contract amendment, the supplier shall, within 30 days of receipt of such amendment, furnish the amendment to the performance security, rendering the same valid for the duration of the contract, as amended for further period of 60 days thereafter.

8. **Inspections and Tests**

8.1 The Purchaser or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Contract specifications at no extra cost to the Purchaser. SCC and the Technical Specifications shall specify what inspections and tests the Purchaser requires and where they are to be conducted. The Purchaser shall notify the Supplier in writing in a timely manner of the identity of any representatives retained for these purposes.

- 8.2 The inspections and tests may be conducted on the premises of the Supplier or its subcontractor(s), at the point of delivery and/or at the Goods final destination. If conducted on the premises of the Supplier or its subcontractor(s), all reasonable facilities and assistance, including access to drawings and production data shall be furnished to the inspectors at no charge to the Purchaser.
- 8.3 Should any inspected or tested Goods fail to conform to the specifications, the Purchaser may reject the goods and the Supplier shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to the Purchaser.
- 8.4 The Purchaser's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival at Project Site shall in no way be limited or waived by reason of the Goods having previously been inspected, tested and passed by the Purchaser or its representative prior to the Goods shipment.
- 8.5 Nothing in GCC Clause 8 shall in any way release the Supplier from any warranty or other obligations under this Contract.

9. Packing

- 9.1 The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination as indicated in the Contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit.
- 9.2 The packing, marking and documentation within and outside the packages shall comply strictly with such special requirements as shall be provided for in the Contract including additional requirements, if any, specified in SCC and in any subsequent instructions ordered by the Purchaser.

10 **Delivery and Documents**

10.1 Delivery of the Goods shall be made by the Supplier in accordance with the terms specified by the Purchaser in the order within the period as indicated in the SCC. The details of shipping and/or other documents to be furnished by the supplier are specified in SCC.

11 Insurance

11.1 The Goods supplied under the Contract shall be fully insured in Indian Rupees against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the manner specified in SCC.

12 Transportation

12.1 Where the Supplier is required under the Contract to transport the Goods to a specified place of destination within India defined as Project site, transport to such place of destination in India including insurance, as shall be specified in the Contract, shall be arranged by the Supplier, and the related cost shall be included in the Contract Price.

13 Incidental Services

- 13.1 The supplier may be required to provide any or all of the following services, including additional services, specified in SCC, if any:
 - (i) Performance or supervision of the on-site assembly and/or start-up of the supplied Goods;
 - (ii) Furnishing of tools required for assembly and/or maintenance of the supplied

Goods;

- (iii) Furnishing of detailed operations and maintenance manual for each appropriate unit of supplied Goods;
- (iv) Performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Supplier of any warranty obligations under this Contract; and
- (v) Training of the Purchaser's personnel, at the Supplier's plant and/or on-site, in assembly, start-up, operation, maintenance and/or repair of the supplied Goods.

14Spare Parts

- 14.1 As specified in the SCC, the Supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier:
 - (i) Such spare parts as the Purchaser may elect to purchase from the Supplier, providing that this election shall not relieve the Supplier of any warranty obligations under the Contract; and
 - (ii) In the event of termination of production of the spare parts:
 - (a) Advance notification to the Purchaser of the pending termination, in sufficient time to permit the Purchaser to procure needed requirements; and
 - (b) Following such termination, furnishing at no cost to the Purchaser, the blueprints, drawings and specifications of the spare parts, if requested.
- 14.2 Supplier shall carry sufficient inventories to assure ex-stock supply of consumable spares for the Goods, such as gaskets, plugs, washers, belts etc. Other spare parts and components shall be supplied as promptly as possible but in any case within six months of placement of order.

15 Warranty

- 15.1 The Supplier shall warrants that the Goods supplied under this Contract are new, unused, of the most recent or current models and that they incorporate all recent improvements in design and materials unless provided otherwise in the Contract. The Supplier shall further warrants that all Goods supplied under this Contract shall have no defect arising from design, materials or workmanship (except when the design and/or material is required by the Purchaser's Specifications) or from any act or omission of the Supplier, that may develop under normal use of the supplied Goods in the conditions prevailing in the country of final destination. The warranty should be comprehensive and on site.
- 15.2 This warranty shall remain valid at least for 12 months after the Goods or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the Contract, or for 18 months after the date of shipment whichever period concludes earlier, unless specified otherwise in the SCC.
- 15.3 The Purchaser shall promptly notify the Supplier in writing of any claims arising under this warranty. Upon receipt of such notice, the Supplier shall immediately, within a reasonable period, arrange to repair or replace the defective goods or parts thereof free of cost at the ultimate destination. The Supplier shall take over the replaced parts/goods at the time of their replacement. No claim whatsoever shall lie on the Purchaser for the replaced parts/goods thereafter. In case any component has to be imported the same shall be done on DDU Kolkata basis and the purchaser shall provide the

customs duty exemption certificate. If the supplier having been notified fails to remedy the defects within a reasonable period, the purchaser may proceed to take such remedial action as may be necessary, at the supplier's risk and expenses and without prejudice to any other rights, which the purchaser may have against the supplier under the contract.

16 Payment

- 16.1 The general conditions of payment for any indigenous items are 100% payment within 30 days from the date of successful installation & commissioning of the equipment. In case the equipment does not need any installation & commissioning the period shall be reckoned from the date of delivery & inspection.
- 16.2 In case of imports, payments are usually made through <u>Letter of Credit (LC)</u>. The LC will be opened for 100% value but the payment shall be released partly after despatch and partly after installation & commissioning.
- 16.3 The Supplier's request(s) for payment shall be made to the Purchaser in writing, accompanied by an invoice describing, as appropriate, the Goods delivered and the Services performed, and by documents, submitted pursuant to GCC Clause 10, and upon fulfilment of other obligations stipulated in the contract.
- 16.4 Payments shall be made promptly by the Purchaser normally within thirty (30) days after submission of the invoice or claim by the Supplier.
- 16.5 Payment shall be made in currency as indicated in the order.

17 **Prices**

17.1 Prices charged by the Supplier for Goods delivered and Services performed under the Contract shall not vary from the prices quoted by the Supplier in its bid. Conditional offers indicating changes to price quoted due to price increase/ decrease by the principal firm, market fluctuations, foreign exchange fluctuations etc. shall make the bid liable to be cancelled.

18Change Orders

- 18.1 The Purchaser may at any time, by written notice given to the Supplier pursuant to GCC Clause 30, make changes within the general scope of the Contract in any one or more of the following:
 - (i) Drawings, designs, or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser;
 - (ii) The method of shipping or packing;
 - (iii) The place of delivery; and/or
 - (iv) The Services to be provided by the Supplier.
 - (v) The delivery schedule
- 18.2 If any such change causes an increase or decrease in the cost of, or the time required for, the Supplier's performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or delivery schedule, or both, and the Contract shall accordingly be amended. Any claims by the Supplier for adjustment under this clause must be asserted within fifteen (15) days from the date of the Supplier's receipt of the Purchaser's change order.

19Contract Amendments

19.1 Subject to GCC Clause 18, no variation in or modification of the terms of the Contract shall be made except by written amendment signed by the parties.

20 Assignment

20.1 The Supplier shall not assign, in whole or in part, its obligations to perform under the Contract, except with the Purchaser's prior written consent.

21 Subcontracts

- 21.1 The Supplier shall notify the Purchaser in writing of all subcontracts awarded under this Contract if not already specified in the bid. Such notification, in his original bid or later, shall not relieve the Supplier from any liability or obligation under the Contract.
- 21.2 Sub-contract shall be only for bought-out items and sub-assemblies.

22 Delays in the Supplier's Performance

- 22.1 Since time is the essence of the contract, delivery of the Goods and performance of the Services shall be made by the Supplier in accordance with the time schedule specified by the Purchaser in the Contract.
- 22.2 If at any time during performance of the Contract, the Supplier or its subcontractor(s) should encounter conditions impeding timely delivery of the Goods and performance of Services, the Supplier shall promptly notify the Purchaser in writing of the fact of the delay, its likely duration and its cause(s).
- As soon as practicable after receipt of the Supplier's notice, the Purchaser shall evaluate the situation and may, at its discretion, extend the Supplier's time for performance with or without penalty, in which case the extension shall be ratified by the parties by amendment of the Contract.
- 22.4 Except as provided under GCC Clause 25, a delay by the Supplier in the performance of its delivery obligations shall render the Supplier liable to the imposition of penalty pursuant to GCC Clause 23, unless an extension of time is agreed upon pursuant to GCC Clause 22.2 without the application of penalty clause.

23 **Penalty**

23.1 Subject to GCC Clause 25, if the Supplier fails to deliver any or all of the Goods or to perform the Services within the period(s) specified in the Contract, the Purchaser shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as penalty, a sum equivalent to the percentage specified in SCC of the delivered price of the delayed Goods or unperformed Services for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of the Percentage specified in SCC. Once the maximum is reached, the Purchaser may consider termination of the Contract pursuant to GCC Clause 24.

24 **Termination for Default**

- 24.1 The Purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Supplier, terminate the Contract in whole or part:
 - (i) If the Supplier fails to deliver any or all of the Goods within the period(s) specified in the order, or within any extension thereof granted by the Purchaser pursuant to GCC Clause 22; or
 - (ii) If the Supplier fails to perform any other obligation(s) under the Contract; or
 - (iii) If the Supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.

24.2 For the purpose of this Clause:

- (i) "Corrupt practice" means the offering, giving, receiving or soliciting of any thing of value to influence the action of a public official in the procurement process or in contract execution.
- (ii) "Fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among Bidders (prior to or after

bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition;"

24.3 In the event the Purchaser terminates the Contract in whole or in part, pursuant to GCC Clause 24.1, the Purchaser may procure, upon such terms and in such manner, as it deems appropriate, Goods or Services similar to those undelivered, and the Supplier shall be liable to the Purchaser for any excess costs for such similar Goods or Services. However, the Supplier shall continue the performance of the Contract to the extent not terminated.

25. **Force Majeure**

- 25.1 Notwithstanding the provisions of GCC Clauses 22, 23 and 24, the Supplier shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.
- 25.2 For purposes of this Clause, "Force Majeure" means an event beyond the control of the Supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but are not limited to, acts of the Purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.
- 25.3 If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such conditions and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

26 Termination for Insolvency

26.1 The Purchaser may at any time terminate the Contract by giving written notice to the Supplier, if the Supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right of action or remedy, which has accrued or will accrue thereafter to the Purchaser.

27 **Resolution of Disputes**

- 27.1 The Purchaser and the supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.
- 27.2 If, after thirty (30) days from the commencement of such informal negotiations, the Purchaser and the Supplier have been unable to resolve amicably a Contract dispute, either party may require that the dispute be referred for resolution to the formal mechanisms specified in the SCC. These mechanisms may include, but are not limited to, conciliation mediated by a third party, adjudication in an agreed national or international forum, and national or international arbitration.

28 Governing Language

28.1 The contract shall be written in English language. Subject to GCC Clause 30, English language version of the Contract shall govern its interpretation. All correspondence and other documents pertaining to the Contract, which are exchanged by the parties, shall be written in the same language.

29 Applicable Law

29.1 The Contract shall be interpreted in accordance with the laws of the Union of India and all disputes shall be subject to place of jurisdiction as specified in SCC.

30 Notices

- 30.1 Any notice given by one party to the other pursuant to this contract/order shall be sent to the other party in writing or by cable, telex, FAX or e mail and confirmed in writing to the other party's address specified in the SCC.
- 30.2 A notice shall be effective when delivered or on the notice's effective date, which ever is later.

31 **Taxes and Duties**

31.1 Supplier shall be entirely responsible for all taxes, duties, license fees, octroi, road permits, etc., incurred until delivery of the contracted Goods to the Purchaser. However, VAT in respect of the transaction between the Purchaser and the Supplier shall be payable extra, if so stipulated in the order

CHAPTER - IV: SPECIAL CONDITIONS OF CONTRACT (SCC)

The following Special Conditions of Contract shall supplement the General Conditions of Contract. Whenever there is a conflict, the provisions herein shall prevail over those in the General Conditions of Contract. The corresponding clause number of the General Conditions is indicated in parentheses.

- 1 **Definitions (GCC Clause 1)**
- 1.1 The Purchaser is 'The Director, Bose Institute, Kolkata (WB), INDIA.
- 2 **Performance Security (GCC Clause 7)** Substitute clause 7.1 of the GCC by the following:
- 2.1 Within 30 days after the Supplier's receipt of order, the Supplier shall furnish Performance Security to the Purchaser for an amount of 10% of the contract value, valid upto 60 days after the date of completion of performance obligations including warranty obligations.
- 2.2 If the performance security is not furnished within the stipulated time as per 2.1 above, the contract shall be deemed terminated in pursuance of GCC Clause 24.
- 3 **Inspection and Tests:** Inspection and tests prior to shipment of Goods and at final acceptance are as follows:
- 3.1 After the goods are manufactured and assembled, inspection and testing of the goods shall be carried out at the supplier's plant by the supplier, prior to shipment to check whether the goods are in conformity with the technical specifications attached to the purchase order. Manufacturer's test certificate with data sheet shall be issued to this effect and submitted along with the delivery documents. The purchaser shall be present at the supplier's premises during such inspection and testing if need is felt. The location where the inspection is required to be conducted should be clearly indicated. The supplier shall inform the purchaser about the site preparation, if any, needed for installation of the goods at the purchaser's site at the time of submission of order acceptance.
- 3.2 The acceptance test will be conducted by the Purchaser, their consultant or other such person nominated by the Purchaser at its option after the equipment is installed at purchaser's site in the presence of supplier's representatives. The acceptance will involve trouble free operation and ascertaining conformity with the ordered specifications and quality. There shall not be any additional charges for carrying out acceptance test. No malfunction, partial or complete failure of any part of the equipment is expected to occur. The Supplier shall maintain necessary log in respect of the result of the test to establish to the entire satisfaction of the Purchaser, the successful completion of the test specified.
- 3.3 In the event of the ordered item failing to pass the acceptance test, a period not exceeding one weeks will be given to rectify the defects and clear the acceptance test, failing which the Purchaser reserve the right to get the equipment replaced by the Supplier at no extra cost to the Purchaser.
- 3.4 Successful conduct and conclusion of the acceptance test for the installed goods and equipments shall also be the responsibility and at the cost of the Supplier.
- 4 Manuals and Drawings

- 4.1 Before the goods and equipments are taken over by the Purchaser, the Supplier shall supply operation and maintenance manuals. These shall be in such details as will enable the Purchaser to operate, maintain, adjust and repair all parts of the works as stated in the specifications.
- 4.2 The Manuals shall be in the ruling language (English) in such form and numbers as stated in the contract.
- 4.3 Unless and otherwise agreed, the goods equipment shall not be considered to be completed for the purposes of taking over until such manuals and drawing have been supplied to the Purchaser.
- 5 **Packing (GCC Clause 9)** Add as Clause 9.3 of the GCC of the following:
- 5.1 <u>Packing Instructions</u>: Each package will be marked on three sides with proper paint/indelible ink, the following:
 - (i) Item Nomenclature
 - (ii) Order/Contract No.
 - (iii) Country of Origin of Goods
 - (iv) Supplier's Name and
 - (v) Packing list reference number

6 Delivery and Documents (GCC Clause 10)

- 6.1 Delivery of the goods should be made within a maximum of <u>12 weeks from</u> <u>the date of placement of purchase order</u>. Within 24 hours of shipment, the supplier shall notify the purchaser and the insurance company by cable/telex/fax/e mail the full details of the shipment including contract number, railway receipt number/ AWB etc and date, description of goods, quantity, name of the consignee, invoice etc. The supplier shall mail the following documents to the purchaser with a copy to the insurance company:
 - 4 Copies of the Supplier invoice showing contract number, goods' description, quantity, unit price, total amount;
 - (ii) Acknowledgment of receipt of goods from the consignee(s) by the transporter;
 - (iii) Insurance Certificate if applicable;
 - (iv) Manufacturer's/Supplier's warranty certificate;
 - (v) Inspection Certificate issued by the nominated inspection agency, if any, and the Supplier's factory inspection report;
 - (vi) Certificate of Origin; and
 - (vii) Two copies of the packing list identifying the contents of each package.
- 6.2 The above documents should be received by the Purchaser before arrival of the Goods (except where the Goods have been delivered directly to the Consignee with all documents) and, if not received, the Supplier will be responsible for any consequent expenses.

7 Insurance (GCC Clause 11)

7.1 For delivery of goods at the purchaser's premises, the insurance shall be obtained by the Supplier for an amount equal to 110% of the value of the goods from "warehouse to warehouse" (final destinations) on "All Risks" basis including War Risks and Strikes. The insurance shall be valid for a period of not less than 3 months after installation and commissioning. *However, in case of orders placed on FOB/FCA basis, the purchaser shall*

arrange Insurance.

- 8 **Incidental services (GCC clause 13)** The incidental services also include:
- 8.1 Furnishing of 01 set of detailed operations & maintenance manual.
- 9 Warranty (GCC Clause 15)
- 9.1 Warranty period shall be 12 months from date of acceptance of Goods. The Supplier shall, in addition, comply with the performance and/or consumption guarantees specified under the contract. If for reasons attributable to the Supplier, these guarantees are not attained in whole or in part, the Supplier shall at its discretion make such changes, modifications, and/or additions to the Goods or any part thereof as may be necessary in order to attain the contractual guarantees specified in the Contract at its own cost and expense and to carry out further performance tests. **The warranty should be comprehensive on site.**
- 9.2 If a different period of warranty has been specified in the 'Technical Specifications' Chapter then the period mentioned in Clause 9.1 above shall stand modified to that extent.

10 **Payment (GCC Clause 16)**

- 10.1 In case of imports, 100% payment shall be made by the Purchaser through Letter of credit out of which 90% shall be paid on submission of despatch documents and balance after satisfactory installation, commissioning and acceptance of the equipment at the designated location of Bose Institute in good condition and to the entire satisfaction of the Purchaser and submission of Performance Bank Guarantee.
- 10.2 Agency commission, if any shall be paid in Indian Rupees after satisfactory installation & commissioning of the goods at the destination at the exchange rate prevailing on the date of negotiation of LC documents, subject to DGS&D registration for restricted items. Tax at source deduction is applicable to the Agency Commission paid to the Indian Agent as per the prevailing rates and rules.

11 Penalty Clause (GCC Clause 23)

- 11.1 For delays: GCC Clause 23.1 -- The applicable rate is 0.5% per week and the maximum deduction is 5% of the contract price.
- 12 **Resolution of Disputes (Clause 27):** Add as GCC Clause 27.3 the following:
- 12.1 The dispute resolution mechanism to be applied pursuant to GCC Clause 27 shall be as follows:
 - (i) In case of Dispute or difference arising between the Purchaser and a domestic supplier relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled in accordance with the Indian Arbitration & Conciliation Act, 1996, the rules there under and any statutory modifications or re-enactments thereof shall apply to the arbitration proceedings. The dispute shall be referred to the Secretary, Department of Science & technology, Government of India for appointment of an Arbitrator. The award of the arbitrator so appointed shall be final, conclusive and binding on all parties to this order.
 - (ii) In the case of a dispute between the purchaser and a Foreign Supplier, the dispute shall be settled by arbitration in accordance with provision of sub-clause (i) above. But if this is not acceptable to the supplier then the dispute shall be settled in accordance with the provisions of UNCITRAL (United Nations Commission on International Trade Law) Arbitration Rules.

- (iii) The venue of the arbitration shall be the place from where the Purchase Order is issued.
- 13 Applicable Law (GCC Clause 29) Add as Clause 29.1 of the GCC the following :
- 13.1 The place of jurisdiction would be Kolkata (West Bengal) INDIA
- 14 Notices (GCC Clause 30)
- 14.1 For the purpose of all notices, the following shall be the address of the Purchaser and Supplier.
 - (i) *Purchaser:* The Director, Bose Institute, P-1/12, CIT Scheme-VII/M,
 - Kolkata 700054 (West Bengal) INDIA.
 - (ii) *Supplier:* (To be filled in by the supplier)

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15 **Progress of Supply**

- 15.1 Supplier shall regularly intimate progress of supply, in writing, to the Purchaser as under:
 - (i) Quantity offered for inspection and date;
 - (ii) Quantity accepted/rejected by inspecting agency and date;
 - (iii) Quantity dispatched/delivered to consignees and date;
 - (iv) Quantity where incidental services have been satisfactorily completed with date;
 - (v) Quantity where rectification/repair/replacement effected/completed on receipt of any communication from consignee/Purchaser with date;
 - (vi) Date of completion of entire Contract including incidental services, if any; and
 - (vii) Date of receipt of entire payments under the Contract (In case of stage-wise inspection, details required may also be specified).

16 **Right to Use Defective Goods**

16.1 If after delivery, acceptance and installation and within the guarantee and warranty period, the operation or use of the goods proves to be unsatisfactory, the Purchaser shall have the right to continue to operate or use such goods until rectifications of defects, errors or omissions by repair or by partial or complete replacement is made without interfering with the Purchaser's operation.

17Supplier Integrity

17.1 The Supplier is responsible for and obliged to conduct all contracted activities in accordance with the Contract using state of the art methods and economic principles and exercising all means available to achieve the performance specified in the contract.

18 Training

18.1 The Supplier is required to train the designated Purchaser's technical and end user personnel to enable them to effectively operate the total equipment.

CHAPTER – V: BID FORM

(to be submitted on the official letterhead of the bidder)

The Director, Bose Institute, P-1/12, CIT Scheme-VII/M, Kolkata – 700054 (W.B.) India

Sir,

Having examined the bidding documents the receipt of which is hereby duly acknowledged, I/We agree to furnish required supplies/services in conformity with the Techno-Commercial Bid or such portions thereof at the prices given in the Price Bid on receipt of order for the same.

I/We agree to hold this offer open until ______ and to supply, install and commission the equipment and complete the whole of the work and hand over to the purchaser within the period of ______ weeks, from the date of receipt of intimation from you regarding acceptance of this tender/receipt of supply order.

I/We agree to submit the bank guarantee as specified in SCC in the form prescribed by your goodself for the due performance of the contract, if our bid is accepted.

I/We understand that you are not bound to accept the lowest or any bid you may receive.

) Signature of Bidder

(

With Office Stamp

Name & Address

Telephone No.:

FAX No.:

E-mail address:

Name & Designation of the Contact Person:

CHAPTER - VI: TECHNO-COMMERCIAL BID FORM

1.	Tender reference No :
2.	Due date of bid submission
3.	Name and address of Bidder:
4.	Main Item Model No.:
5.	Life Expectancy of the Equipment (in Years):
6.	Warranty Period (in Years):
7.	Delivery Period of the Equipment:
8.	Details of Bank Guarantee enclosed as Bid Security:
	(i) Name of the Bank:
	(ii) Branch:
	(iii) Address with Phone, FAX & E-mail Nos.:
	(iv) Amount Rs.
	(v) Valid Upto:
9.	(v) Valid Upto:Country of the Origin of the Equipment:
9. 10.	

Sl. No	Brief description of stores	Qty offered	Unit price	9	Total co	ost
(i)	FOR/ FCA/ FOB Value of the equipment	1				
(ii)	Price of the Spares	Applicat	ole 🗌	Not	Applicable	
(iii)	Discount, if any	Applicat	ole 🗌	Not	Applicable	
(iv)	Excise Duty	Applicat	ole 🗌	Not	Applicable	
(v)	Customs Duty	Applicat	ole 🗌	Not	Applicable	
(vi)	Sales Tax/ Vat	Applicat	ole 🗌	Not	Applicable	
(vii)	CST	Applicat	ole 🗌	Not	Applicable	
(viii)	Other Taxes, if any	Applicat	ole 🗌	Not	Applicable	
(ix)	Additional warranty charges per year beyond the period mentioned at 6 above in Techno-commercial bid Form	Applicat	ole 🗌	Not	Applicable	
(x)	Installation/ Commissioning Charges	Applicat	ole 🗌	Not	Applicable	
(xi)	Training Charges	Applicat	ole 🗌	Not	Applicable	
(xii)	Documentation Charges	Applicat	ole 🗌	Not	Applicable	
(xiii)	Agency Commission	Applicat	ole 🗌	Not	Applicable	
(xiv)	Freight	Applicat	ole 🗌	Not	Applicable	
(xv)	Insurance	Applicat	ole 🗌	Not	Applicable	
(xvi)	Other charges, if any	Applicat	ole 🗌	Not	Applicable	
(xvii)		Total CII	F, Kolkata V	alue		
(xviii)	TO BE FILLED IN FINANCIAL / PRICE B		Л			

- 12. Whether agreeing to all the terms and conditions including payment terms as mentioned in the bidding documents:
- 13. Port of Shipment:
- 14. Approximate Shipment Weight (chargeable weight) in Kg. of the packed consignment:
- 15. Approximate Dimensions/ Volume of the packed consignment:

Note :(1) Adhering to the format given above is a pre-requisite for considering your bid.

- (2) All columns must be filled up.
- (3) Separate list should be attached where required in the same format giving details of each item.
- (4) Please indicate applicability.

I/we certify that I/We have completely read and understood and agree to all the terms & conditions given in ITB, GCC & SCC.

() Signature of Bidder

With Office Stamp

Name & Address

CHAPTER - VII: FINANCIAL/ PRICE BID FORM

1.	Tender reference No :
2.	Due date of bid:
3.	Name and address of Bidder:
4.	Main Item Model No.:
5.	Life Expectancy of the Equipment (in Years):
6.	Warranty Period (in Years):
7.	Delivery Period of the Equipment:
8.	Details of Bank Guarantee enclosed as EMD:
	(i) Name of the Bank:
	(ii) Branch:
	(iii) Address with Phone & FAX, E-mail Nos.:
	(iv) Amount Rs.
	(v) Valid Upto:
9.	Country of the Origin of the Equipment:
10.	Bid Currency:

Sl. No	Brief description of stores	Qty offered	Unit price	Total cos
(i)	FOR/ FCA/ FOB Value of the equipment	1		
(ii)	Price of the Spares, if applicable			
(iii)	Discount, if any			
(iv)	Excise Duty			
(v)	Customs Duty			
(vi)	Sales Tax/ Vat			
(vii)	CST			
(viii)	Other Taxes, if any			
(ix)	Additional warranty charges per year beyond the period mentioned at 6 above in techno commercial bid form			
(x)	Installation/Commissioning Charges			
(xi)	Training charges, if any			
(xii)	Documentation Charges, if any			
(xiii)	Agency Commission, if any			
(xiv)	Freight			
(xv)	Insurance			
(xvi)	Other charges, if any			
(xvii)		Total C	IF, Kolkata Value	
(xviii)	Total CIF, Kolkata Value (in words):			

- Whether agreeing to all the terms and conditions including payment terms as mentioned in the 12. bidding documents:
- 13. Port of Shipment:
- 14. Approximate Shipment Weight (chargeable weight) in Kg. of the packed consignment:
- 15. Approximate Dimensions/ Volume of the packed consignment:
- Note : (1) Adhering to the format given above is a pre-requisite for considering your bid.
 - (2) Separate list should be attached where required in the same format giving details of each item and cost.
 - (3) Agency Commission, if any will be paid in Indian Rupees Only.

I/we certify that I/We have completely read and understood and agree to all the terms & conditions given in ITB, GCC & SCC.

> () Signature of Bidder With Office Stamp Name & Address

Station:

CHAPTER – VIII: BID SECURITY FORM

(To be executed by a <u>scheduled Bank in India</u> on non-judicial stamp paper)

To The Director, Bose Institute, P-1/12, CIT Scheme-VII/M, Kolkata – 700054 (W.B.) India

Dear Sir,

Whereas	(Name and address	of Bidder) (herein	nafter called "a	the Bidder") in response to
your Tender Notification	No	dated	is submittin	g its bid for the supply of
(Nan	ie and/or description	n of the goods) (H	ereinafter calle	ed "the Bid").

KNOW ALL PEOPLE by these presents that WE (Name of bank) of (Name of
country), having our registered office at (Address of bank) (Hereinafter called "the Bank"),
are bound unto Director, Bose Institute, Kolkata, INDIA (Hereinafter called "the Purchaser") for the
sum of (Amount of the Guarantee in Words and Figures) for
which payment well and truly to be made to the said Purchaser, the Bank binds itself, its successors, and
assigns by these presents. Sealed with the Common Seal of the said Bank this day of

200 _____.

Date:

Place:

THE CONDITIONS of this obligation are:

- 1. If the Bidder withdraws its Bid during the period of bid validity specified by the Bidder on the Bid Form; or
- 2. If the Bidder, having been notified of the acceptance of its bid by the Purchaser during the period of bid validity:
- 1. Fails or refuses to execute the Contract Form if required; or
- 2. Fails or refuses to furnish the performance security, in accordance with the Instruction to Bidders.
- 3. This guarantee is valid up to(six months from date).
 - We undertake to pay the Purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser will note that the amount claimed by it is due to it, owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including forty-five (45) days after the period of the bid validity, and any demand in respect thereof should reach the Bank not later than the above date.

	Signature
	Seal of Bankers
	(Complete Address/Contact Details with Tel./Fax/email etc)
Witness:	

1.

2.

CHAPTER - IX: MANUFACTURERS' AUTHORIZATION FORM

No.

Dated

The Director, Bose Institute, P-1/12, CIT Scheme-VII/M, Kolkata – 700054 (W.B.) India

Dear Sir:

No company or firm or individual other than M/s. ______ is authorized to bid, and conclude the contract in regard to this business.

I/We hereby extend our full guarantee and warranty as per Clause 15 of the General Conditions of Contract and Clause of the Special Conditions of Contract for the goods and services offered by the above firm.

Yours faithfully,

(Name)

(Name of manufacturers)

Note: This letter of authority should be on the <u>letterhead of the manufacturer</u> and should be signed by a person competent and having the power of attorney to bind the manufacturer. It should be included by the Bidder in its techno-commercial unpriced bid.

CHAPTER – X: PERFORMANCE SECURITY FORM

(To be executed by a scheduled Bank in India on non-judicial stamp paper)

To The Director, Bose Institute, P-1/12, CIT Scheme-VII/M, Kolkata – 700054 (W.B.) India

Dear Sir,

Sub: Your Contract No. ------for

- 2. In accordance with the terms of said contract, the contractor has undertaken to produce a bank guarantee for Rs. ______ (Rupees _______ only) being 10 % of the total value of the said stores supplied to you, for the due fulfilment of its obligations to you for due performance as per the contract during warranty period.
- 3. In consideration thereof, we hereby expressly, irrevocably and unconditionally undertake and guarantee as principal obligator on behalf of the contractor that in the event you submit a written demand to us that the contractor has not performed according to the contractual obligations included in the said contract, we will pay you on written demand, without demur and without reference to the contractor any sum up to a maximum amount of Rs ______ (Rupees ______ only).Your demand shall be conclusive evidence to us that such payment is due under the terms of the said contract. Payment by us to you will be made within thirty (30) days from receipt of your request making reference to this guarantee and on demand.
- 4. This guarantee shall not be revoked without your express consent and shall not be affected by your granting any indulgence to the contractor, which shall include but not be limited to postponement from time to time of the exercise of any powers vested in you or any right which you may have against the contractor and to exercise the same in any manner at any time and either to forbear or to enforce any covenant contained or implied in the said contract or any other course or remedy or security available to you, and our Bank shall not be released from its obligations under this guarantee by your exercising any of your rights with reference to matters aforesaid or any of them or by reason of any other act or forbearance or other acts of omission or commission on your part or any other indulgence shown by you or by any other matter or thing whatsoever which under law would, but for this provision, have the effect of relieving our Bank from its obligation under this guarantee.

- 6. Unless a demand or claim under this guarantee is made on us in writing on or before the aforesaid expiry date as provided above or unless this guarantee is extended by us all your rights under this guarantee shall be proscribed and we shall be discharged from the liabilities hereunder.
- 7. This guarantee shall not be affected by any change in the constitution of our Bank or of the contractor or for any other reason whatsoever.

Date:

Signature.....

Place:

Seal of Bankers

(Complete Address/Contact Details with Tel./Fax/email etc)

Witness:

1.

2.

CHAPTER – XI: BIDDER'S PERFORMANCE STATEMENT FORM (For a Period of Last 3 Years)

Name of the Firm.....

Order placed by (full address with Tel. No., Fax No. & e- mail address of purchaser)	Date	Description and quantity of ordered equipment	Date of completion of delivery as per Contract/ Actual	Remarks indicating reasons for late delivery, if any	Has the equipment been installed satisfactory? (Attach a certificate from the purchaser/ Consignee)

Place :

Signature :

Date :

Office stamp

CHAPTER XII: SERVICE SUPPORT DETAILS FORM

S1.	Nature of	List of similar type	Address,	Value of minimum
No.	training	equipments serviced in the	Telephone Nos.,	stock of consumable
	imparted	past 3 years	Fax and e mail	spares held at all
			address of the firm	times.
			located in Kolkata, if any	

Signature and Seal of the manufacturer/Bidder.....

Place :

CHAPTER XIII: QUALIFICATION REQUIREMENTS

- 1. The Bidder should be a manufacturer or their dealer or Indian agents of foreign principals specifically authorised by the manufacturer to quote on their behalf for this tender as per manufacturer authorisation form.
- 2. The Bidder must have designed, manufactured, tested and supplied the equipment(s) similar to the type specified in the "Technical Specification" to at least one organisation in India. Such equipments must be of the most recent series/models incorporating the latest improvements in design. The models should be in successful operation as on date of Bid opening.
- 3. The Indian Agents of foreign manufacturers/ suppliers quoting directly on behalf of their principals for items appearing in the restricted list of the current Foreign Trade Policy must be registered with DGS&D. One Indian Agent cannot represent two different foreign principals for the same item in one tender.
- 4. Details of service support facilities that would be provided after the warranty period should be submitted in the Service Support Details Form.
- 5. That, in the case of a Bidder not doing business in India, the Bidder is/or will be (if successful) represented by an Agent in India who shall be equipped and able to carry out the Supplier's maintenance, repairs and spare parts, stocking obligations prescribed by the conditions of the contract. The bidder must have an office in Kolkata, INDIA.
- 6. That the Bidder will assume total responsibility for the fault-free operation of equipment, application software, if any, and maintenance during the warranty period and provide necessary maintenance services during life expectancy of the equipment, if required.
- 7. Bidders who meet the criteria given above are subject to be disqualified, if they have made untrue or false representation in the forms, statements and attachments submitted in proof of the qualification requirements or have a record of poor performance, not properly completing the contract, inordinate delays in completion or financial failure, etc.
- 8. Any additional bid participation criteria / eligibility conditions etc. mentioned in the Technical Specifications sheet will also form part of the Qualification Requirements along with those mentioned in this chapter.

CHAPTER – XIV: TECHNCAL COMPLIANCE STATEMENT FORM

An item-by-item commentary on the Purchaser's Technical Specifications demonstrating substantial responsiveness of the goods and services to those specifications or a statement of deviations and exceptions to the provisions of the Technical Specifications.

ITEM N	TEM NAME					
S.No.	Tender Specifications		Bidder's Specifications	Deviation/ Remarks, if any		
			-			

(Technical literature/brochures/manuals should be attached along with this format)

Please note:

- 1. Compliance/Deviation statement comparing the specifications of the quoted model to the required specifications. This statement should also give the page number(s) of the technical literature where the relevant specification is mentioned.
- 2. Bids must have supporting documents (technical literature or copies of relevant pages from the service manual or factory test data) for all the points noted above, failure regarding which may result in rejection of bid.
- 3. In case the bidder furnishes wrong or false information wilfully in the technical compliance chart, such action shall be viewed strictly and the bidders may be blacklisted.

Signature and Seal of the manufacturer/Bidder.....

Place : Date :

CHAPTER - XV: CONTRACT FORM

THISAGREEMENTmadethe.....dayof......200....betweenDirector,BoseInstitute,Kolkata(WB) India (hereinafter called "the Purchaser") of the one part and(Name ofSupplier with full address) (hereinafter called "the Supplier") of the other part:

WHEREAS the Purchaser invited bids under Tender Notice No. ------- dated ------for certain Goods and ancillary services, brief description of which are given below, and has accepted a bid by the Supplier for the supply of those goods and services in for a sum of (*Contract Price in Words and Figures*) (hereinafter called "the Contract Price").

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to the Bidding Documents.

- **2.** The following documents shall be deemed to form and be read and construed as an integral part of this Agreement, viz:
- (a) the Bid Form, Techno-Commercial Bid Form and the Financial/ Price Bid Form submitted by the Bidder;
- (b) the Technical Specifications;
- (c) the General Conditions of Contract;
- (d) the Special Conditions of Contract; and
- (e) the Purchaser's Notification of Award/Purchase Order.

3. In consideration of the payments to be made by the Purchaser to the Supplier as hereinafter mentioned, the Supplier hereby covenants with the Purchaser to provide the goods and services and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the goods and services and remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

Brief particulars of the goods and services which shall be supplied/provided by the Supplier are as under:

BRIEF ITEM DESCRIPTION & QTY.		AMOUNT
	EXW/FOI	3/FCA/CIF/CIP
Payment Terms		
Delivery Schedule		
Agency Commission [TO BE PAID IN EQUIVALENT	'INR]	

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with their respective laws the day and year first above written.

Signed, Sealed and Delivered by the

Said.....(For the Purchaser)

In the presence of

Signed, Sealed and Delivered by the

Said.....(For the Supplier)

In the presence of

CHAPTER - XVI: DETAILED TECHNICAL SPECIFICATIONS

ltem - I

TECHNICAL SPECIFICATION FOR OC/EC ANALYSER

The OC/EC Field Analyzer must have the following features:

1. General Specification:

- a) The analyzer should be Field-Deployable with laser-based pyrolysis correction.
- b) The system should be able to determine EC by optical means that serves as a check of quality.
- c) The analyzer should have compatibility with accepted NIOSH (National Institute for Occupational Safety and Health) 5040 methods.

2. Measurement

- a) The analyzer should measure OC and EC with the detection limit of 500 ng C/m^3 .
- b) The detection limit for the measurement EC by optical means should be 200 ng C/m^3 .
- c) The measurement should be semi-continuous i.e. the temporal resolution of the measurement should be at least 30 minutes 1 Hour.
- d) The analyzer should collect aerosols with the standard flow rate of 8-9 lpm and should be software controlled.
- e) The analyzer should operate under the atmospheric pressure range of 750 (high altitude) -1013 (sea-level) mb.
- f) The analyzer should operate under the temperature range of -5 $^{\circ}C$ to 40 $^{\circ}C$.

3. Detection and Oven System

- a) The detection should be based on NDIR technique for Carbon by pyrolysis method.
- b) The optical detection of EC should be based on the attenuation of Red laser (wavelength of around 660 nm).
- c) The analyzer should have Quartz Sample Oven and separate integrated oxidizer bed
- d) The analyzer system should have requisite valve/ flow sensor components
- e) The analyzer should have parallel plate denuder

4. Software

Software for instrument operation/control/data acquisition; software for calculation of results Controlling PC/ laptop computer with most recent windows based operating system

5. Power requirement

The system should operate under 230 V AC, 50-60 Hz power.

6. Other supporting parts

The analyzer system should include the following parts:

- (a) Two (02) Heater coils (for heated zone area)
- (b) One (01) Front oven quartz tube inserts
- (C) Two (02) sets of Filters for parallel plate denuder
- (d) 100 feet long pre-cleaned copper tubing for carrier gas lines
- (e) Operational gases: i) UHP grade of helium (99.99 % or better) with one (01) cylinder.
- ii) Helium with 10 % oxygen balance (oxygen should be of UHP grade) with one (01)
- cylinder iii) Helium with 5 % methane balance (methane should of UHP grade) with one (01) cylinder.
- (f) One (01) two stage regulator with high purity, stainless steel diaphragm.
- (g) One (01) gas cylinder regulator fitting to connect copper tubing for carrier gas lines.
- (h) 100 feet carrier gas tubing from cylinder to instrument.
- (i) One (01) oxygen trap for Helium carrier.

7. Installation and Training

Installation and training program should be made at Bose Institute, Darjeeling, India by the manufacturers/authorised distributors.

- 8. Warranty: Three years from the date of installation.
- 9. Delivery: The instrument should be delivered at Bose Institute, Kolkata, India.

TECHNICAL SPECIFICATION FOR MOUDI IMPACTOR

Technical Specification for Micro-Orifice Uniform Deposition Impactors (MOUDI)

The Impactor should operate for high accuracy aerosol sampling and for collecting sizefractionated particle samples for gravimetric and/or chemical analysis and should be of light weight.

The instrument should have the following features:

1. Size intervals of aerosols to be collected:

(a) The system should collect aerosols for 10 (ten) different size bins.

(b) The minimum size bin (minimum cut-off size) should have the aerosol diameter of less than 100 nm.

(c) The system should collect aerosols of diameter of less than 1 micron for at least five different stages (size bins) i.e. there should be at least five stages below 1 micron and five stages above 1 micron.

(d) The system should collect aerosol of diameter up to 10 microns.

(e) There should be a pre-separator which precisely separate aerosols of more than 10 micron diameter.

2. Rotating stages:

(a) The system should have individual stepper motors embedded in each stage to rotate the collecting substrate for uniform deposition of aerosols.

(b) Each of deposition stage should be operated independently and removed or added as per individual measurement needs.

3. Pump:

(a) The system should have pump with volumetric flow control and with the flow rate of range 25-35 L/min.

(b) The pump should be operated with 220 V AC, 50-60 Hz power.

4. Inter-stage Losses:

(a) There should be minimum inter-stage losses of particles collected.

(b) The system should have more than 5000 micro-orifice nozzles in between stages to reduce jet velocity, pressure drop and particle bounce.

5. Operational Control:

(a) There should be a programmable logic controller (PLC) which control instrument operation.(b) Absolute pressure should be monitored for providing indication for possible clogging of nozzles.

6. Warranty: Three years from the date of installation.

7. Carrying case: The instrument should be provided with a good carrying case (for field work).

8. Installation and training: Installation and training program should be made at Bose Institute, Darjeeling, India.

9. Delivery: The instrument should be delivered at Bose Institute, Kolkata, India.