

**NATIONAL CENTRE FOR ANTARCTIC & OCEAN RESEARCH**

Headland Sada, Vasco-da-Gama, Goa – 403 804

**NOTICE INVITING TENDER**

Tender No: NCAOR/EST/EE/03/13-14

The Director, NCAOR, Goa invites sealed tender in one (single) cover system for the below mentioned work from registered contractors of Government/PSU/Reputed Organizations & should have carried out HVAC maintenance work valuing minimum of Rs.4.00 lakh in a single contract for one year during last five years.

Description of work	Tender Cost	EMD
Annual Operation and Comprehensive Maintenance Contract of HVAC, Cold room & Clean room of Ice Core Laboratory at NCAOR.	1000/-	50,000/-

The tender document & other details may be obtained from the Estate Division, NCAOR on all working days between 10.00 hrs to 16.00 hrs on or before 26.11.2013 by a written request along with the tender cost in form of DD drawn in favour of NCAOR, Vasco-da-Gama. Tender document can also be down loaded from NCAOR Website [www.ncaor.gov.in](http://www.ncaor.gov.in) and submitted along with the cost of tender document in form of DD drawn in favour of NCAOR, Vasco-da-Gama. Tender duly completed in all respect should be dropped in the tender box kept in the office of Estate Section on or before 27.11.2013, 11.00 hrs. Date of opening of tender is 27.11.2013 at 11.30 hrs. in presence of the tenderers, if any.

**DIRECTOR**

**NATIONAL CENTRE FOR ANTARCTIC & OCEAN RESEARCH**

(An Autonomous Society under the Ministry of Earth Science)

HEADLAND SADA, VASCO-DA-GAMA, GOA – 403 804

**Tender Document for Annual Operation and Comprehensive Maintenance Contract of HVAC, Cold room & Clean room of Ice Core Laboratory at NCAOR**

Tender No.: NCAOR/ EST/EE/03/13-14

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**ANNEXURE - I**

**TENDER TERMS AND CONDITIONS**

1. The Director, NCAOR, Goa invites sealed tenders in one cover system (Technical & price bid) for the below mentioned work from registered contractors of Government/PSU/Reputed Organizations & should have carried out HVAC maintenance work valuing minimum of Rs.4.00 lakh in a single contract for one year during last five years.
2. The Contract period is initially for ONE YEAR extendable on yearly basis for a further period of Two Years on the same Rates, Terms & Conditions of the agreement based on the satisfactory performance assessed by NCAOR. **THE CONTRACT SHALL START W.E.F 01.01.2014.**
3. Tenders may be obtained from the office of **Estate Section, NCAOR** during office hours between 10.00 hrs. to 16.00 hrs, on a written request, on payment of **Rs. 1000/-** by Demand Draft drawn in favour of NCAOR, payable at Vasco-da-Gama, Goa, on or before 26.11.2013. Those who are submitting tender by downloading from the web site should invariably enclose DD for Rs.1000/- as cost of tender document, drawn in favour of NCAOR, payable at Vasco-Da-Gama, Goa.
4. Entire tender document (signed and stamped on all pages) should be submitted in a sealed cover, super scribed with the name of the work, date and time of opening. **Tenders will be received upto 11.00 a.m. on 27.11.2013 and will be opened at 11.30 a.m. on the same day.** Tenders should be dropped in the tender box kept in the Estate Section before the closing date and time indicated. In case Tenders are sent by post/courier it should be addressed to **The Director, NCAOR, Goa.** Tenderers are to ensure that they post the tender well in advance so as to reach before the closing time and date. NCAOR will not be responsible for any transitional delay. If the Tender Opening day happens to be a holiday then tenders will be opened on the next working day on the same time..
5. The Earnest Money Deposit (EMD) for **Rs. 50,000/- (Rupees Fifty Thousand only)** in the form of a Demand Draft from a schedule bank, drawn in favour of **NCAOR, payable at Vasco-Da-Gama, Goa** should be enclosed with the tender documents. **Tender received without EMD will be rejected outright.**
6. The successful bidder should have to deposit 10% of awarded contract value as SECURITY DEPOSIT. The security Deposit will be refunded on completion of the contract period. In the event of contractor fails to comply the terms and conditions of the awarded contract during the contract period, the Security Deposit will be forfeited. The EMD amount of Rs. 50,000/- would be converted as Security Deposit and balance amount of required Security Deposit should be submitted within 8 days of award of contract by DD drawn on NCAOR payable at Vasco-da-Gama.
7. It is mandatory to quote all items of the price bid. If all items are not quoted then tender is liable for rejection.
8. NCAOR does not bind to accept the lowest or any tender and reserves the right of accepting the whole or any part of the tender and the tenderer shall be bound to perform the same at the rates quoted.
9. Tender submitted shall remain valid for 90 days from the date of opening for the purpose of acceptance and award of work. The extension of validity beyond 90 days from the date of opening shall be by mutual consent.

10. The Tenderer shall quote rates both in figures and words against each items. Correction, cutting, omission, overwriting should be avoided. However even if any correction made, it should be endorsed with signature. Use of correction fluid is not allowed & should be strictly avoided.

On checking if there are differences noticed between the rates quoted by the tenderer in words and figures or in the amount worked out by him, the following procedure will be followed:

(a) If there is a difference between the amount of rate in figure and in words of an item, and the total amount is worked out, then the rate which corresponds to the amount worked by the bidder shall be taken as correct. (b) If the bidder has not worked out the amount of an item, or the same does not correspond with the rates written either in figures or in words, then the rate quoted by him in words shall be taken as correct. (c) If the rate quoted by the bidder in figures and in words tallies, but the amount is not worked out correctly, the rate quoted by the bidder shall be taken as correct and not the amount.

11. **Before submission of tender, the bidder should inspect the site to acquaint himself about the condition in regard to accessibility of site, nature and extent of ground, working condition of site and locality including stacking of materials, installations of tools and plants (T&P) etc., conditions affecting accommodations and movement of labour etc. required for the satisfactory execution of work contract. No claim whatsoever on such account shall be entertained by NCAOR under any circumstances. Site Visit form (Annexure –VIII) should be filled, signed & enclosed with the tender.**
12. Except writing rates and amount, the tenderer should not write any conditions or make any changes, additions, alterations and modifications in the Price Schedule of tender. Tenders with conditional prices will not be considered.
13. Rates should be inclusive of statutory benefit ESI, PF, etc. as applicable from time to time.
14. To assist the process of examination, evaluation and comparison NCAOR may ask the bidder individually for clarification if so required.
15. In the event of any tenderer withdrawing/modifying his tender during the validity of tender, EMD of such bidders will be forfeited.
16. Successful bidder should commence the work as within 15 days from the date of issuance of Work Order, failure of which the Earnest money will be forfeited.
17. Director, NCAOR reserves the right to accept or reject any or all quotations/tenders in full or part, or the right to, not to accept lowest offer, without assigning any reasons thereof, whatsoever. In case of any dispute, Director, NCAOR decision in the matter shall be final and legally binding on the tenderer / contractor.

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## ANNEXURE – II

### SCOPE OF WORK

#### **Comprehensive Annual Maintenance of HVAC, Walk -in –freezer room with refrigeration equipment, Clean room, Air Shower and related installations at NCAOR**

1. Continuous Operation and Comprehensive Maintenance of ice core lab (Walk-in-Freezer rooms maintained at  $-20^{\circ}\text{C}$  x 2,  $-15^{\circ}\text{C}$  &  $-5^{\circ}\text{C}$ ) & associated clean room, HVAC, etc.
2. The Walk-in-Freezer room will be housing highly critical ice samples from Antarctica and will have to be operated continuously on a 24x7 basis.
3. The HVAC and clean room systems need to be operated on all days for at least 12 hrs per day, or as per the requirement of the research work at the labs on recommendation from P.D.Labs.
4. The comprehensive AMC will be carried out systematically. The Class 100 Clean Room Temp. should be maintained at  $24^{\circ}\text{C}$  (+/-  $1^{\circ}\text{C}$ ) and accordingly the activity chart as per schedule enclosed should be maintained by the contractor through his/her agency for the entire satisfaction of NCAOR. The AMC activity charts should be produced on demand as well to be submitted along with the monthly bill.
5. Maintenance register and all log books consisting of, (Room temperature of all the rooms/Cold room & HVAC Log book voltage/ampere of machine etc.), and submit weekly report.
6. Air filter for all the machines to be cleaned regularly at certain intervals for the better cooling system and to avoid low pressure tripping relay.
- 7. Any fault in the system, should be repaired immediately and to be reported to Electrical Engineer or Estate In-Charge / P.D.Labs NCAOR immediately.**
8. Only qualified and authorized operator/technicians may be allowed to operate and maintain the system.
- 9. Repair the system immediately and replace the unserviceable electrical/mechanical parts with new one as per the requirement. The contractor/agency should maintain stock of all essential parts, components, spares & consumables for safe maintenance.**
10. If there is any fault in the electrical cable lines/wiring of the control pannels or any other electrical/mechanical problems, the party shall attend and replace the same immediately.
11. The electrical faults at sub-distribution panel for HVAC plant and cold rooms should be attended and rectified by the contractor immediately. The failed panel parts should be replaced by the contractor.
12. The comprehensive AMC contract is 24 hours a day, 7 days a week and year round.
13. All stand by equipments to be operated as per mutually agreed programme.
14. Proper housekeeping of all areas which are under the contract. Maintenance of the corridors and clean room.
15. The clean room HEPA filters should be maintained in such a way that the class 100 room complies to its certification.

**ANNEXURE – III**

**TERMS & CONDITIONS FOR OPERATION & MAINTENANCE**

- 1) The cold room or walk-in-freezer room in NCAOR is made to preserve precious samples from Antarctic & Arctic region for the purpose of research. Therefore, its smooth & non-stop functioning on 24 x 7 throughout the year is an important aspect of this contract.
- 2) The contract is comprehensive including all labour and all major- minor electrical & mechanical parts, consumables, ware & tare items, coils, relays, gas filling, lubricants etc. but it is excluding new Compressors & Hepa Filters. However, in case if any compressor fails, the contractor will have to immediately arrange a temporary standby compressor of the same capacity at his own cost till the original one gets repaired by him or purchase of new Compressor by NCAOR if the original one is beyond repairs, as certified by the NCAOR Engineer .
- 3) The contract is initially for a period of one year, which is extendable up to next 2 years on yearly basis depending upon the performance of the contractor, on the same rates and terms and conditions.
- 4) All welfare measures of the contractor's personnel will have to be borne by the contractor only.
- 5) The NCAOR will not provide any accommodation and transportation facilities to contractor's persons.
- 6) Any lapse of the duty from the part of operation & maintenance as well as any damage of official equipment will be taken very seriously and the loss will be made good by the contractor. **AND** in the event of any loss, damage, theft or encroachment of the NCAOR property, due to negligence of the work / duty etc. the agency shall indemnify the NCAOR and reimburse the actual loss so caused.
- 7) The contractor shall be responsible for compliance with the provision of the Contract Labour Act including Contract Labour Registration and Abolition Act, 1970, the Indian Contract Act : The Industrial Disputes Act 1947 : The payment of wages Act : The minimum wages Act etc.
- 8) The contractor shall be deemed to have satisfied himself before entering into the contract as to the correctness and sufficiency of his offer for the work and of the rates and prices quoted in the schedule of works. These rates and prices shall cover all his obligations under the contract and all matters and things necessary for proper completion and maintenance of work.
- 9) The contractor at his own cost should arrange the sitting arrangement for the staff engaged by him. The space, water, electricity shall be made available by NCAOR at free of cost.
- 10) The Contractor has to keep all the equipment neat and clean at site to avoid any accident or fire hazards.
- 11) All operation and maintenance work should be documented as per ISO standards. All data loggers and instruments like temperature sensors, airflow meters, etc should be calibrated at every 6 months and data log should be maintained.
- 12) The contractor should have round the clock contact telephone numbers of its responsible persons. In case of any emergency, contractor and authorized engineer/supervisor should

make themselves available at site on a short notice and make all efforts to make the situation normal at the earliest, by taking all possible precautionary measures.

- 13) To facilitate the proper and smooth functioning of the comprehensive AMC, the contractor should have a local office in Goa, with competent technical/service personnel. All repair should be made at the NCAOR premises as much as possible. In case any parts has to be taken outside NCAOR for repair, then the same should be taken by a written request and issue of necessary gate pass The agency shall replace/return the parts within two working days. Any delay in conducting maintenance/repair/replacement of critical component of HVAC/Freezer Room/Clean Room which leads to malfunctioning/stoppage of any of the facilities would be dealt seriously & treated as break-down of the entire system and the entire loss incurred due to this will be recovered from the contractor and decision of NCAOR authorities will be final in such matters.
- 14) The trained persons should be placed round the clock at site who could take initial steps under emergency situation.
- 15) A complaint book shall be kept up to date at site (separate for each component of work) by the contractor and the same shall be made available for checking and verification.
- 16) The contractor shall visit and inspect and also depute competent person to supervise above detailed maintenance day to day work by employing,
  - a) ONE no. of Qualified Diploma Holder (3 years course) Engineer as Supervisor having minimum 3 years experience in HVAC maintenance, for 8 hours duty during office hours (on all days except on Sundays)
  - b) THREE nos. of Qualified ITI Technicians with 3 years of experience in HVAC/AHU maintenance (each one on shift basis for 8 hrs duty for 24 hrs.)
  - c) THREE nos. of Qualified ITI Technicians having minimum 1 years experience in HVAC/AHU/Electrical maintenance (each one on shift basis for 8 hrs duty for 24 hrs).
- 17) NCAOR will not be responsible for death/ injury/accident/damage/risk to the said engaged staff by the Agency which may arise out of and in the course of their duties in the NCAOR nor shall NCAOR be liable to pay any damage or compensation to such person or persons or their next of kin and the agency shall be wholly responsible of make good and effect such damage or compensation. In this regard contractor will be wholly responsible, if any injury/death of his person on duty.
- 18) The staff appointed by the contractor shall be under the direct and exclusive control and the supervision of the contractor. However, such staff should comply with the direction and instructions issued by the Estate In-Charge /P.D.Lab or an officer appointed by the Director, NCAOR. The staff also deployed shall be specifically for the work of NCAOR and shall not be allowed to take any other work, contract or sub-contract during this period/contract.
- 19) The Contractor shall have all necessary equipments at its own expenses necessary for operation & maintenance and also safeguarding the NCAOR premises. At any point of time, it shall not be the responsibility of the NCAOR to bear these expenses.
- 20) The NCAOR shall have the exclusive right to terminate the services of any person appointed by the contractor if found unsatisfactory and ask the contractor to provide other substitute qualified person. The decision of NCAOR in this regard shall be final and binding on the Contractor at any point of time. The duty roaster for a month with the names of the Contractor staff shall be provided by the Contractor to the NCAOR one-week in advance.

- 21) Contractor should provide Photo Identity Cards to all their employees. The contractor at the time of appointing the different personnel and at the time of changing the personnel shall provide to NCAOR, personnel bio-data in respect of each of such personnel duly signed by the Proprietor of the Contractor in a format duly approved by NCAOR.
- 22) The Contractor shall provide proper all safety gadgets like shock/heat resistant Hand Gloves, Safety shoes, Raincoats, Torches etc. to the each staff. engaged by him during Operation and Maintenance services at site.
- 23) The contractor's staff should attend their duties in pre-approved uniform code. The contractor should provide them sufficient pair of uniforms & safety shoes at his own cost. The material of uniform is generally natural cotton.
- 24) If at any course of time, any personnel of the contractor found absent from the duty, the payment of the respective personnel will be deducted on pro-rata basis of the quoted rate. In the unforeseen case of non performance or performance below par, the contractor/agency would be heavily fined as decided by NCAOR authorities. Any such decisions would be binding on the agency/contractor The Agency shall carry out the said work of providing Maintenance service and Operation measures and maintaining checking of the NCAOR said work round the clock including weekly off days and holidays, diligently and to the satisfaction of the NCAOR.

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ANNEXURE – IV

**Standard Terms and Conditions of the Contract**

1. **INTERPRETATION:**

- a. In construing these conditions the Specifications , the Schedule of Quantities, additional Conditions and Agreement, the following words shall have the meanings herein assigned to them except where the subject or context otherwise requires.
- b. This contract shall comprise of the Articles of Agreement, General Conditions of Contract, Additional Conditions, Scope of Work, the Schedule of Quantities , Specifications, drawings , letter of acceptance of tender and other documents mentioned in the contents sheet attached hereto and including those to which only reference is made herein.

**WORK OR WORKS:** shall mean all work or works defined in schedule of quantities. Specifications and such other work or works as the contractor may be entrusted with for carrying out under this contract.

**EMPLOYER:** shall mean the Director, NCAOR (National Centre for Antarctic & Ocean Research) or any Officer authorized by the Director for the purpose.

**ENGINEER:** shall mean the Engineer designated by the Employer to superintend and perform other duties as indicated in the contract.

**CONTRACTOR:** shall mean the individual or Firm or Company , whether incorporated or not, undertaking the work and shall include the legal personal representative or such individual or the persons composing such Firm or Company or the successors of such Firm or Company and the permitted assignees of such individual or Firm or Firms or Company. The Contractor is also called Party or Agency.

**SITE:** shall mean the site of the contract works including any buildings and erections thereon and any other land adjoining thereto (inclusive) as aforesaid allotted by the Employer or the Engineer for the contractor's use.

2. **CONTRACTOR TO PROVIDE EVERYTHING NECESSARY**

- a. The contractor shall provide at his own cost all materials, (except such materials, if any as may in accordance with the contract, be supplied by the Employer). Plants , tools , appliances, implements, ladders, scaffolding, temporary works etc. requisite for the proper execution of the work whether original, altered or substituted and whether included in the specifications or other documents forming part of the contract or which may be necessary for the purpose of satisfying or complying to the requirements of Engineer, as to any manner as to which under these conditions he is entitled to be satisfied together with carriage therefore to and from the work. The contractor shall also supply without charge the requisite number of persons with means and materials necessary for the purpose of setting out works and counting, weighing and assisting in the measurement or examination at any time and from time to time of the work or materials. Failing his so doing, the same may be provided by the Engineer at the expense of the contractor and the expenses may be deducted from any money due to the contractor under the contract and /or from his Security Deposit.
- b. The Contractor should personally supervise each work till completion or may appoint a qualified Supervisor, pre-approved by the Engineer till the completion of work. No separate supervision charges will be paid.

- c. NCAOR shall provide requisite quantity of water, electricity for carrying out the work free of cost, subject to availability in the NCAOR campus.
- d. The Employer on no account shall be responsible for the expenses incurred by the contractor for anything hired, which the contractor needs to complete the ordered work.

**3. DUTIES & TAXES :**

Rates quoted by the contractor shall include all duties, octroi, toll tax, levies, royalties and all other taxes in respect of this contract. VAT & Service Tax as applicable to be stated specifically in the prescribed columns of the price bid. In absence of any such stipulation, it will be presumed that rates quoted are inclusive of VAT & Service Tax and the Employer shall not entertain any claim whatsoever in this respect.

**4. MODE OF PAYMENT**

Bills for payment will be processed on monthly basis. Payment will be released within three weeks from the receipt of bill in duplicate, after completion of satisfactory work duly certified by PD-Labs & Estate-in-charge. Tax Deducted at Source and any other taxes as applicable will be deducted from the bills.

**5. TESTING OF MATERIALS**

The contractor shall provide assistance, instruments, materials, labour and any other arrangement normally required for testing, checking of materials and workmanship as stipulated in the specifications and by statutory authority at his own cost. The Employer has the right to appoint the testing authorities. The contractor shall pay for the cost of test samples, its packing, transportation including testing fees. Failing his so doing the same shall be provided by the Engineer at the expense of the contractor and the expenses may be deducted from any money due to the contractor under the contract and/or from the Security Deposit or proceeds thereof or of a sufficient portion thereof.

**6. CONTRACTOR'S ENGINEERS/FOREMAN & WORKMEN**

- a. The contractor shall give all necessary personal superintendence during the execution of the work and as long thereafter as the Engineer may consider necessary until the expiration of the Defects Liability Period. The contractor shall employ competent Site-Engineer/Foreman as per CPWD norms and as approved by the Engineer whose qualification must conform to the requirement specified by the Engineer who shall be constantly in attendance of the work while the men are at work. Any directions, explanations, instructions or notices given by the Engineer to such Site-Engineer or Foreman or any other authorized agent shall be held to be given to the contractor.
- b. The contractor shall on the request of the Engineer immediately dismiss from the works any person employed thereon who may in the opinion of the Engineer be unsuitable or incompetent or who may in the opinion of the Employer misconduct himself.

**7. ACCESS**

- a. The Engineer and the Employer or its representative shall at all reasonable time have free access to the works and /or workshops, factories or other places the materials are being prepared or constructed for the contract and also to any place where the materials are lying or from which they are being obtained and the contractor shall give every facility to them for inspection. Except the representatives of statutory authorities and those mentioned above no other person shall be allowed on the works at any time without the permission of the Engineer.
- b. If any work is to be done at a place other than the site of works, contractor shall obtain written permission of the Engineer.

**8. VALUATION & PRICE FOR VARIATION**

- a. The Engineer with the approval of the Employer shall have power to make any alterations/omissions/additions and /or substitutions from the original specifications, drawings, designs and written instructions and such alterations, omissions, additions, substitutions shall not invalidate the contract and any altered , additional , or substituted work which the contractor may be directed to do, in the manner specified above as part of the work shall be carried out by the contractor on the same conditions in all respects on which he agreed to do the main work. The rates for such altered additional or substituted work under this clause shall be worked out in accordance with the following provisions in their respective order.
- b. If the rates for the altered, additional, or substituted work are specified in the contract for the work the contractor is bound to carry out the altered additional, or substituted work at the same rates as are specified in the contract for the work.
- c. If the rates for the altered, additional or substituted work are not specifically provided in the contract for the work the rates will be derived from the rates for a similar class of work as are specified in the contract for the work.
- d. Under no circumstances the contractor shall suspend the work on the plea of non-settlement of rates of items falling under the clause.

**9. FAULTY MATERIALS, WORKMANSHIP & DEFECTS AFTER COMPLETION**

- a. The Engineer shall have powers to require the removal from the site of all materials and work , which in his opinion are not in accordance with specifications and in case of default , the Engineer shall be at liberty to employ other persons to remove the same without being answerable or accountable for any loss or damage that may happen or arise to such materials to be substituted thereof and in case of default the Engineer may cause the same to be supplied and all costs which may attend such removal and/or substitution are to be borne by the contractor.
- b. If it shall appear to the Engineer or to the Estate In-Charge that any work has been executed with unsound imperfect or unskillful workmanship or with materials of any inferior description or that any materials or articles provided by him for the execution of the work are unsound or of a quality inferior to that contracted for or otherwise not in accordance with the contract any defects , shrinkage or other faults which may appear within the defects liability period of Six months from the date of completion arising in the opinion of the Engineer, the contractor shall on demand in writing which shall be made within six months of the completion of the work from the Engineer specifying the work, materials , articles defects or other faults complained of notwithstanding that the same may have been passed, certified and paid for forthwith rectify or remove and reconstruct the work so specified in whole or in part as the case may require or as the case may be removed the materials or articles so specified and provide other proper and suitable materials or articles at his own cost. In case of any such failure, the Engineer may rectify or remove or re-execute the work or remove and replace with others, the material or articles complained of as the case may be at the risk and cost in all respects of the contractor.
- c. In lieu of rectifying the work not done in accordance with the contract, the Employer may, allow such work to remain, and in that case make allowance for the difference in value, together with such further reduction as in his opinion may be reasonable.
- d. Provided always that nothing in this clause shall relieve the contractor from his liability to execute the works in all respects in accordance with the terms and conditions of this contract, or from his liability to make good all defects.

#### 10. WORKS TO BE OPEN FOR INSPECTION

- a. All work under or in course of execution or executed in pursuance of the contract shall at all times be open to the inspection and supervision of the Engineer and the contractor shall at all times during the usual working hours, and at all other times at which reasonable notice of the intention of the Engineer to visit the works shall have been given to the contractor, either himself be present to receive order and instruction or have a responsible agent duly accredited in writing present for that purpose.
- b. The contractor shall give not less than seven days notice in writing to the Engineer before covering up or otherwise placing beyond the reach of measurement any work in order that the same may be measured and correct dimensions thereof be taken before the same is so covered up or placed beyond the reach of measurement and shall not cover up and place beyond the reach of measurement, any work without the consent in writing of the Engineer and the Engineer shall within the aforesaid period of seven days inspect the work , and if any work shall be covered up or placed beyond the reach of measurement without such which the same was executed.

#### 11. INDEMNIFYING AGAINST DAMAGES TO PERSONS, PROPERTY & STATUTES

The contractor shall take all precautions to avoid all accidents by exhibiting necessary caution boards day and night, speed limit boards, red flags, red lights and providing barriers. He shall be responsible for all damages and accidents caused due to negligence on his part. No hindrance shall be caused to traffic during the execution of work.

- a. The contractor shall be responsible for all injury to persons, animals or things and for all damage whether such injury or damage arises from carelessness or accident in any way connected therewith. This clause shall be held to include interalia any damage due to causes as aforesaid to work, building(whether immediately adjacent or otherwise) and to roads, streets, footpaths, bridges or ways as well as all damage caused to the buildings and works forming the subject of this contract by inclemency of weather. The contractor indemnifies the Employer and holds him harmless in respect of all expenses arising from such injury or damages as aforesaid and also in respect of any award of compensation or damage consequent.
- b. The contractor shall reinstate all damage of every sort mentioned in this clause so as to deliver the whole of the contracted works complete and perfect in every respect and so as to make good and otherwise satisfy all claims for damage as foresaid to the property of third Parties.
- c. The contractor also indemnifies the Employer against all claim which may be made upon the Employer for acts during the currency of this contract by any employee or representative of an employee of the contractor or any sub-contractors, employed by him for any injury to or loss of life of such employees or for compensation payable under any law for the time being in force to any workmen or to the representative of any deceased or incapacitated workmen.
- d. The Employer shall be at liberty and is hereby empowered to deduct the amount of any damages compensation costs charges and /or expenses arising or occurring from or in respect of any such claim and/or damages as aforesaid from any sum or sums due or to become due to the contractor or security deposit.
- e. The contractor shall indemnify the Employer against any action claim or proceedings relating to infringement or use of any patent or design or any alleged patent or design rights and shall pay any royalties which may be payable in respect of any article or part thereof included in the contract. In the event of any claims made under or action brought against the Employer in respect of any such matters as aforesaid the contractor shall be immediately notified thereof

and the contractor shall be at liberty at his own expense to settle any dispute or to conduct any litigation that may arise there from provided that the contractor shall not be liable to indemnify the Employer if the infringement of the : patent or design of any alleged patent or design right is the direct result of an order passed by the said Employer or his authorized representative .

## 12. IN CASE OF DEATH OF CONTRACTOR

Without prejudice to any of the rights or remedies under this contract, if the contractor dies the Employer shall have the option of terminating the contract without compensation to the contractor.

## 13. SUB. CONTRACTORS

The Employer reserves the right to use the premises and any portion of the site for the execution of any work not included in the contract. The contractor is to afford all reasonable facilities to all sub-contractors, specialists, merchants, tradesmen and others who may at any time be appointed by the Employer for executing any work or supplying any goods relating to the constructions, servicing, equipping or furnishing of the work under this contract.

## 14. COMPLIANCE TO LABOUR LAWS

The contractor shall submit a valid license under the contract labour (R&A) act 1970 and the contract labour (Regulation & Abolition) Central Rules 1971 before the commencement of work and continue to have valid license during the currency of the contract.

The contractor shall comply with all the provisions of the Minimum Wages Act, 1948. Contract Labour (Regulation and Abolition) Act, 1970 and rules and orders framed there under and other labour laws affecting contract labour and the rules and orders framed there under that may be in force or brought into force from time to time. NCAOR will not take any responsibilities towards any injury or compensation etc.

The contractor shall engage his own labour as per requirement of the tender and shall abide/comply by all the labour rules or any other laws/acts, which may be applicable, enforced from time to time.

### **Contract labour (Regulation and Abolition) Act 1970**

- a. Payment of wages Act 1956
- b. Employment of children's Act 1923
- c. Minimum wages Act
- d. Employee provident Fund Act 1952 and scheme made under said Act
- e. Obtain required licenses/clearances etc. from Asst. Labour Commissioner,

municipality and other local agencies/bodies at his own cost, wherever necessary.

**SAFETY:** Contractor shall be fully responsible for the safety of equipment and safety of personnel involved with contract.

15. **PENALTY CLAUSE** – For non deployment of Personnel and non performance as per the Agreement: 5 % of the total monthly contract amount would be levied as penalty if full strength of agreed personnel are not present for continuous 03 days in one month.

## 16. RENEWAL/TERMINATION OF THE CONTRACT

1. The contract period is Twelve months extendable on yearly basis for a further period of Two years with the same rate & same terms & conditions of the agreement based on the satisfactory performance assessed by NCAOR.

2. The work performance of the contractors & individuals service providers will be assessed periodically and if the same is found unsatisfactory the contractor should immediately replace the service provider/work force.
3. If the Contractor is found to be not performing satisfactorily during the course of the contract period, or refuses to do any part of the work or becomes bankrupt or knowingly submits a false statement then NCAOR may terminate the contract at any stage after giving due notice.
17. **GUARANTEE:** On the expiry of the contract, all the units/systems covered under AMC should be handed over to NCAOR in good working condition to the satisfaction of NCAOR Authorities. If any fault found at the time of expiry date, the Security Deposit will be forfeited and other recovery will be made from the contractors side, as per actual damages/losses etc.
18. **SETTLEMENT OF DISPUTES** – The decision of the Director, NCAOR shall be final and binding for any dispute whatsoever.
19. **RIGHT TO CANCEL TENDER / WORK ORDER (FORCE MAJEURE):** In case of strike, accident or any other unforeseen conditions causing stoppage of work, NCAOR reserves the right to cancel and / or modify the tender / work order without any liability for any compensation and / or claim or any description.

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**ANNEXURE – V****SCHEDULE OF WORK & PRICE BID**

	Particulars (Labour)	No. of person nel (a)	Amount per person/ per month (b)	Total Monthly Amount (Rs) (c) (a x b = c)	Total <b>YEARLY</b> Amount (Rs) (d) (c x 12 months = d)
01	Monthly rate for Qualified Diploma Holder (3 years course) Engineer as Supervisor having minimum 3 years experience in HVAC/AHU maintenance	01			
<i>Amount per person per month (b) in Words -</i>					
02	Monthly rate for Qualified ITI Technicians with 3 years of experience in HVAC/AHU maintenance	03			
<i>Amount per person per month (b) in Words -</i>					
03	Monthly rate for Qualified ITI Technicians having minimum 1 years experience in HVAC/AHU maintenance	03			
<i>Amount per person per month (b) in Words -</i>					
Taxes if any : %					
Other Charges if any :					
<b>Total :</b>					
<b>Sr. B</b>	Particulars (Material)				<b>YEARLY Amount (Rs)</b>
01	<b>Total Yearly charges</b> for Comprehensive Maintenance as per Tender requirement & activity Charts by repair / replacement of Components, consumables, all spare parts etc. as assessed by the bidder.				
<i>Yearly Amount in words -</i>					
Taxes if any : %					
Other charges if any :					
<b>Total :</b>					
<b>Grand Total A + B</b>				<b>(Rs.)</b>	

\* payment will be made monthly on pro-rata basis

Tender No : NCAOR/EST/EE/03/13-14

Tender Name: Annual Operation and Comprehensive Maintenance Contract of HVAC, Cold room & Clean room  
of Ice Core Laboratory at NCAOR

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**Grand Total (A + B) in figure : (Rs.)** \_\_\_\_\_

**Grand Total (A+B) in words:** \_\_\_\_\_

- 1. Discount offered if any, should be included in the quoted rates & should not be shown separately.*
- 2. Price Evaluation Criteria - Contractor should quote all items given in the price bid. The Lowest Evaluated Bidder (L1) would be arrived from the **Grand Total (A+B)** above.*

**CERTIFICATE:**

I \_\_\_\_\_ on behalf of \_\_\_\_\_

hereby accept all the terms & conditions laid down in the tender

**Name & Signature of the tenderer:**

**with Date & Seal :**



**ANNEXURE – VI**

**PARTICULARS OF THE TENDERER**

*(Tenderer shall fill this form and enclose it with original copy of the tender with his sign)*

Name of the Contractor : \_\_\_\_\_

Firm of Contractor : \_\_\_\_\_

Telephone No. (Office) : \_\_\_\_\_

Telephone No. (Residence) : \_\_\_\_\_

e-mail ID / website : \_\_\_\_\_

Permanent office Address : \_\_\_\_\_

: \_\_\_\_\_

Goa office Address : \_\_\_\_\_

: \_\_\_\_\_

Residential Address : \_\_\_\_\_

\_\_\_\_\_

Mobile No : \_\_\_\_\_

PAN No. of the Firm : \_\_\_\_\_

**REGISTRATION PARTICULARS**

a) Registration with : \_\_\_\_\_

\_\_\_\_\_

b) Registration No. : \_\_\_\_\_

c) Financial limit upto which registered: \_\_\_\_\_

d) Trade for which registered : \_\_\_\_\_

**(Note: Copy of Registration should be attached.)**

**Name:  
& Signature of the Tenderer with Seal**

**ANNEXURE – VII**

**WORK COMPLETION PROFORMA**

Give the details of HVAC/Clean room/Cold room contracts which was/is completed satisfactorily/in progress in the last five years, which are related to this tendered work. Enclose self certified copies of Work Orders /Work Completion Certificates.

Sl. No.	Name of work	Location of Site	Value of work	Date of Completion of work	Name of Organizational Executive under whom work is done

**Name:  
& Signature of the Tenderer with Seal**

**ANNEXURE – VIII**

**SITE VISIT FORM**

I / We have visited NCAOR site on \_(date)\_\_\_\_\_ & assessed the entire HVAC, Cold Room, Clean Room set up/installations etc. thoroughly to my/our satisfaction & ready to undertake the Comprehensive AMC as per the Tender terms & conditions.

**Name & Signature of the Tenderer:**

**Date & Seal :**

**ANNEXURE - IX**

NATIONAL CENTRE FOR ANTARCTIC & OCEAN RESEARCH

HEADLAND SADA, VASCO-DA-GAMA, GOA - 403 804

EMD & Tender Cost details

I / we have enclosed,

1. A crossed DD No..... dated ..... for Rs. 50,000/-

(Rs. Fifty Thousand only) drawn in favour of NCAOR payable at Vasco-da-Gama  
towards EMD.

2. Since Tender Form is downloaded from NCAOR website,

A crossed DD No..... dated ..... for Rs. 1000/-

(Rs. One Thousand Only) drawn in favour of NCAOR payable at Vasco-da-Gama towards  
Tender Cost.

*Name & Signature of the Tenderer with seal :*

Date.....

**ANNEXURE – X**

**List of Equipments at NCAOR –Goa**

1. Cooling Tower (Paharpur) Model 3831
2. Cooling Tower (Paharpur) Model 3842
3. Voltas Chiller Unit 1 With Motor capacity 60HP Make-ABB, Compressor unit of Voltas. Model WCDRO500MNSRPZ
4. Voltas Chiller 2 With Motor capacity 60HP Make-ABB ,Compressor unit of Voltas.Model WCDRO500MNSRPZ
5. Voltas Chiller Unit for Clean Room with Copeland Scroll compressor Model WCDSO36MN600006
6. AHU 4 Saveair 1200 cfm
7. AHU 6 Saveair 2000 cfm
8. AHU 3 Saveair 2750 cfm
9. AHU 5 Saveair 7000 cfm
10. AHU 2 Saveair 12000 cfm
11. AHU 1 Saveair 16000 cfm
12. Pump Motor- 3 HP Make-Kirloskar Monoblock, Model No. KDS -335 (4 nos.)
13. Pump Motor-5 HP Make-Kirloskar Monoblock, Model No. KDS -527 (2 nos.)
14. Pump Motor - 7 HP Make-Kirloskar Monoblock, Model No. KDS -844 (2 nos.)
15. Pump Motor - 2 HP Make-Kirloskar Monoblock, Model No. KDS -225 (2 nos.)
16. Humidifier -Sant Industrial Controls 6KW
17. Hot Water Generator- Type Vertical Capacity 21 KW
18. GM Balancing Valve TAG-A-02000842(20 mm)
19. GM Balancing Valve TAG-A-0200972 (20 mm)
20. GM Balancing Valve TAG-A-0201961 (20 mm)
21. GM Balancing Valve TAG-A-0401373(32 mm)
22. GM Balancing Valve TAG-A-0603243 (50mm)
23. CI Balancing Valve size NB- 100 mm -2 Nos.
24. CI Balancing Valve size NB-125 mm - 2 Nos.
25. GM Balancing Valve size NB -50 mm TAGA 602593
26. GM Balancing Valve size NB- 65 mm TAG -0701393
27. GM Balancing Valve Tag No.A0200642- 20mm
28. Dual plate check valve
29. Dual plate check valve
30. Dual plate check valve
31. Butterfly valve
32. Cold Room - Condensing units(Indoor & outdoor- 8 sets) -5°C , -15 °C & -20°C (2 nos)  
Indoor Units :PASURUAH 67154 (PT. GUNTNER INDONESIA)  
CR-1: Fan type-Z.A. FANFB045-VSK.4C.6L (107123) (2 nos.)  
CR-2: Fan type-EBMFAN S4E350-AA06-34 (2 nos.)  
CR-3 : Fan type-EBMFAN S4E315-AA05-14 (2 nos.)  
CR-4 :Fan type-Z.A. FANFB045-VSK.4C.6L (107123) (2 nos.)  
Outdoor Units : Compressor type-Semi-Hermetic (Make-Bitzer)  
CR-1 : Capacity 4.31 KW (2 nos.)  
CR-2 : Capacity 3.15 KW (2 nos.)  
CR-3 : Capacity 2.14 KW (2 nos.)  
CR-4 : Capacity 4.13 KW (2 nos.)

**ACTIVITY CHART FOR ANNUAL MAINTENANCE OF HVAC AT NCAOR**

Sl. No.	Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
<b>1</b>	<b>Weekly</b>																										
<b>a</b>	<b>Air Handling Unit:</b>																										
	Check filter condition																										
	Clean , wash, renew/replace if required																										
	Check Fan Belt tension , adjust if required																										
	Check the condition of spray nozzles and float valve in air washer																										
	Check condition of drains for free flow																										
	Check condition of resistance in electric pan humidifier																										
	Check conditions of access door hinges and lubricate if necessary																										
<b>b</b>	<b>Lights</b>																										
	Check fittings . Replace fused starters/Chokes bulbs as required and terminals																										
<b>c</b>	<b>Condensing unit</b>																										
	<b>For 30 TR Capacity</b>																										
	Check amperage/Voltage																										
	Check LP and HP Cut cut settings																										
	<b>For 50 TR Capacity</b>																										
	Check amperage/Voltage																										
	Check LP and HP Cut out settings																										

Sl. No.	Description	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
<b>1</b>	<b>Weekly</b>																										
<b>a</b>	<b>Air Handling Unit:</b>																										
	Check filter condition																										
	Clean , wash, renew/replace if required																										
	Check Fan Belt tention , adjust if required																										
	Check the condition of spray nozzles and float valve in air washer																										
	Check condition of drains for free flow																										
	Check condition of resistance in electric pan humidifier																										
	Check conditions of access door hinges and lubricate if necessary																										
<b>b</b>	<b>Lights</b>																										
	Check fittings . Replace fused starters/Chokes bulbs as required and terminals																										
<b>c</b>	<b>Condensing unit</b>																										
	<b>For 30 TR Capacity</b>																										
	Check amperage/Voltage																										
	Check LP and HP Cut cut settings																										
	<b>For 50 TR Capacity</b>																										
	Check amperage/Voltage																										
	Check LP and HP Cut out settings																										

Sl. No.	Description	Ist Quarter			II nd Quarter			III rd Quarter			IV Quarter		
		1	2	3	4	5	6	7	8	9	10	11	12
<b>2</b>	<b>Monthly</b>												
<b>a</b>	<b>Valves</b>												
	Check for functioning												
	GM Balancing Valves												
	CI Balancing Valves												
	Dual plate Valve												
	Check plate valve												
	Butterfly Valve												
<b>b</b>	<b>Cooling Tower</b>												
	Cleaning of sumps and cooling tower												
	Checking/ greasing of the cooling tower fan motor bearing												
<b>c</b>	<b>Electrical Control Panels</b>												
	The electrical control panels shall be checked , serviced and maintained for trouble free operation .												
	Check incoming panel and terminals/contactors												
	Individual control panel for AHU- star /Delta Contactors												
	Micro processor Control panel-Check programming/display												
	Electrical panels for Humidifer and termination												
<b>d</b>	<b>Filters</b>												
	Filters shall be cleaned with compressed air. In case HDPE filter water washing only to be done.												



Sl. No.	Description	Ist Quarter			II nd Quarter			III rd Quarter			IV Quarter		
		1	2	3	4	5	6	7	8	9	10	11	12
e	<b>Chiller Units</b>												
	Check operating suction and discharge pressure.												
	Check oil level in the compressor and add oil if required to bring it to the centre of sight glass.												
	Check the proper functioning of TXV by measuring the superheat												
	Check the line voltage and current of compressor.It should be within the design limit permitted. If the current drawn is more than 120% of the specified value, determine the cause and immediately take corrective actions.												
	Check proper functioning of all safety controls-like LP cutout , HP cutout, single phase preventor, water flow switch, anti-freeze thermostat etc.												
	Check the operational of sentronic also by removing the sensor. The LED will turn red immediately and trip the compressor in two minutes. On manually pressing the reset button on the sentronic, the control circuit is reset and after the on-delay timing is completed (either through the motor protection module or additional on delay timer) the compressor should re-start												
	Record all the system operating parameters and the range and differential setting of all operating and safety controls for future reference.												
	Monitor the system operation on operating thermostat for few on-off cycles and ensure that everything is normal, before leaving the site.												

Sl. No.	Description	Ist Quarter			II nd Quarter			III rd Quarter			IV Quarter		
		1	2	3	4	5	6	7	8	9	10	11	12
<b>f</b>	<b>Cold Room</b>												
	Check doors for proper functioning												
	Check heaters on door frame/Switches												
<b>g</b>	<b>Bitzer</b>												
	Check evaporating temperature												
	Check suction gas temperature												
	Check condensing temperature												
	Check difference between condensing temperature and air admission temperature into the condenser												
	Discharge gas temperature												
	Check Oil temperature												
	Check switching frequency												
	Check power consumption of the compressor												
	Check power consumption of the condenser fan(s)												
<b>h</b>	<b>HOT water Generator</b>												
	Check the electrical Panel for any loose connection etc.												
	Change water, if required or top up.												
<b>i</b>	<b>Humidier</b>												
	Check the electrical Panel for any loose connection etc. change /add water as required												
<b>j</b>	<b>AIR Shower</b>												
	Check Door interlock												
	Check door functioning												
	Check Electricals control panel for loose connections if any												
	Clean Pre fitler												
	Check velocity of air flow												

Sl. No.	Description	Ist Quarter			II nd Quarter			III rd Quarter			IV Quarter		
		1	2	3	4	5	6	7	8	9	10	11	12
<b>3</b>	<b>Quarterly</b>												
<b>a</b>	<b>Water Pumps</b>												
	Routine Check up of pumps, glands etc												
	Lubrication of pumps, motors												
	Check electrical switches, gear ,cables etc.												
<b>b</b>	<b>Air Handling Unit</b>												
	Check fan motor runing current												
	Check function controls												
	Check fan and motor bearings												
	Check electric heater battery elements												
	Check circulating pump and motor in air washer												
	Check the condition of inlet strainers												
	Check the conditions of chilled/ hot water , add chemicals if required.												
	Add water and flush condensate drain pan , trap and drain line												
<b>c</b>	<b>Condensing Unit</b>												
	<b>For 30 TR capacity</b>												
	Check for leakage in refrigerent piping												
	Check cable termination												
	<b>For 50 TR Capacity</b>												
	Check for leakage in refrigerent piping												
	Check cable termination												

Sl. No.	Description	Ist Quarter			II nd Quarter			III rd Quarter			IV Quarter		
		1	2	3	4	5	6	7	8	9	10	11	12
4	Yearly												
a	Air Handling Unit												
	Check operation of dampers												
	Check the filter frames for proper sealing												
	Replace synthetic media in panel filters												
	Check the access doors for easy operation and proper locking												

Tender No : NCAOR/EST/EE/03/13-14

Tender Name: Annual Operation and Comprehensive Maintenance Contract of HVAC, Cold room & Clean room of Ice Core Laboratory at NCAOR

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## ANNEXURE-XII

### **INSTRUCTIONS TO THE TENDERERS**

Tenderers are advised to submit tender strictly as per conditions stipulated in the tender document. Please enclose the following with the tender & submit all in a **Single Sealed Cover**.

***Cover (Sealed):***

1. Covering letter from the Tenderer on his own letterhead.
2. Tender fee in the form of DD, if down loaded from NCAOR web site.
3. EMD in the form of DD
4. Price Bid (with signature & stamp on all pages), Annexure – V
5. Duly signed & stamped Annexure – VI, VII, VIII, IX

All above document to be submitted in one sealed envelope (Single BID SYSTEM) superscribing name of the Tender, Tender Number and address to **Director, National Centre for Antarctic & Ocean Research, Headland Sada, Vasco-Da-Gama, Goa & dropped in the tender box kept in the office of Estate Section on or before the date & time mentioned in the tender.**

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**Estate In-Charge**