

REGIONAL CANCER CENTRE  
MEDICAL COLLEGE CAMPUS  
THIRUVANANTHAPURAM-695 011  
KERALA STATE

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### **NOTICE INVITING e-TENDER**

Online tender is invited in two bid systems through Government of Kerala website [www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in) for Comprehensive Maintenance Contract of Low side HVAC centralized system, CMC for Split AC's, Multi split AC's packaged AC unit, Window AC etc installed in Regional Cancer Centre, Thiruvananthapuram for the year 2017-18.

Tender Number	:	58/RCC/2016-17/P3
Bid submission closing date	:	15/02/2017, 5.00 PM
Technical Bid opening date	:	20/02/2017, 2.00 PM
Tender fee	:	Rs.2300/- Tax @ 5% (Rs.2415/-)
Date up to which the rates are to be firm	:	up to 31/03/2018
EMD amount	:	Total EMD amount payable Rs. 37,500/-

#### **I. TWO BID TENDER SYSTEM**

- |               |                         |
|---------------|-------------------------|
| a) Bid type 1 | Technical bid in .pdf   |
| b) Bid type 2 | Price Bid (BOQ) in .xls |

#### **II. TENDER COST & EARNEST MONEY DEPOSIT (EMD)**

The bidder should remit the tender cost of Rs. 2415/- and EMD amount of Rs. 37,500/- in one single transaction by online mode. EMD is refundable after successful completion of the contract.

Earnest Money Deposit (EMD) is exempted in the following cases. If the tenderer comes in any of the following category, they should upload the scanned copy of the relevant certificate counter signed by the tenderer in technical bid for EMD exemption.

- Firms who are registered with the Stores Purchase Department or the Directorate General of Supplies and Disposals, New Delhi are exempted from furnishing EMD for tenders in respect of stores by which they have registered as suppliers of stores.
- Micro and small enterprises and Industrial Co-operatives within the Kerala State which are certified as such by the Director of Industries and Commerce or by the General Manager, District Industries Centre are exempted in respect of certified items from furnishing EMD in support of tenders.

- (c) The Khadi and Village Industries Co-operative Societies and the Institutions registered under the Travancore Cochin Literary, Scientific and Charitable Societies Registration Act, 1955 within Kerala State which are certified as such by the Secretary, Kerala Khadi and Village Industries Board are exempted from furnishing EMD in support of tenders.
- (d) Micro, Small & Medium enterprises registered with the National Small Industries Corporation Limited, New Delhi and in respect of which competency certificates are issued by the Corporation will be exempted from payment of EMD.
- (e) Government Institutions/Kerala State Public Sector Undertakings which manufacture and supply stores are exempted from furnishing EMD.
- (f) Kerala State Small Industries Development Corporation Ltd when it participates in tender on behalf of Small Scale Units will be exempted from furnishing EMD.

### III. TECHNICAL QUERIES OF e- TENDERING

The tender details and documents can be viewed & downloaded by login into [www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in).

For participating in the e-tender, the bidder should have a Digital Signature Certificate (DSC). Any technical queries regarding e-tender submission, please contact the e-tender help desk.

24x7 Help Desk : Toll Free No.1800 233 7315

Help Desk, e procurement system, Govt of Kerala, Thiruvananthapuram

Phone: 91 471 2577088, 2577188, 2577388

Help Desk, e procurement system, 18C, ITES Habitat Centre, JNI Stadium, Kaloor, Cochin-17

Phone: 91 484 2336006, 2332262

### IV. DOCUMENTS REQUIRED ALONG WITH THE TECHNICAL BID IN .pdf

The following documents should be uploaded in the technical bid :-

- 1) Tender document duly sealed and signed by the tenderer
- 2) Scanned copy of agreement in Kerala Stamp Paper worth Rs.200/- duly filled, sealed and signed in each page by the authorized person (format enclosed)
- 3) Documents for EMD exemption, if applicable
- 4) Certificate of minimum 5 years experience in similar work of Service/Maintenance of tendered AC units to Various Organizations.
- 5) Authorisation letter/reputation from the original Company

**Statement of the quoted items as per the following format**

1	2	3	4	5
Your Sl.No	RCC Sl.No	Detailed Name of item	Qty	Details of service to be provided based on the work schedule for all listed items

### V. MANUAL DOCUMENTS

Original agreement in Kerala Stamp Paper worth Rs.200 to be submitted to the Director, Regional Cancer Centre, Trivandrum within 3 days from the date of technical bid opening.

## VI. PRICE BID (BOQ IN .xls)

Price bid (BOQ) is in xls form which is given in the online tender. BOQ will accept only the numerical values. Price bid should contain the value of CMC for all listed items.

## VII. SELECTION CRITERIA

This tender is invited in two bid system. The first part is known as “Technical bid” and the second part “Price Bid (BOQ)”. The technical bid should contain the technical details and the price bid (BOQ) contains the CMC amount of all the listed items. The technical bids will be opened in the first instance at the prescribed date and time and the same will be scrutinized and evaluated by the competent committee/authority with reference to parameters prescribed in the tender document and offers received from the tenderers. Thereafter, the price bids of only those vendors who were technically qualified by RCC will be opened for further scrutiny, evaluation and price ranking. The lowest price quoted for all items together will be considered for selection.

## VIII. LIST OF ITEMS

<b>Block A, AHUs &amp; FCUs</b>					
<b>Sl.No</b>	<b>Description</b>	<b>Quantity</b>	<b>Location</b>	<b>Make</b>	<b>Tonnage</b>
1	CH AHU	01 No	MO Ward 4th flr	BLUE STAR	25 Tr
2	CH AHU	01 No	RIA Lab 4th flr	BLUE STAR	15 Tr
3	CH AHU	01 No	OT Recovery 3rd flr	BLUE STAR	30 Tr
4	CH AHU with VFD & Heaters	02 Nos	OT E&F	VTS	50 Tr
5	CH AHU	01 No	Blood Bank 2nd flr	BLUE STAR	50 Tr
6	CH AHU	01 No	OP 2nd flr	BLUE STAR	50 Tr
7	CH AHU	01 No	Imageology 1st flr	BLUE STAR	50 Tr
8	CH AHU	01 No	CT MRI 1st flr	ZECO	50 Tr
9	CH AHU	01 No	Directors Office	BLUE STAR	44 Tr
10	CH AHU	02 No	Cytopathology	BLUE STAR	15 Tr
11	CH FCU	03 Nos	Cytopathology	BLUE STAR	02 Tr
12	CH AHU	01Nos	Computer Division		15 TR
13	CH AHU	01Nos	Extended Area	BLUE STAR	15 TR

<b>BLOCK B, AHU's &amp; FCU's</b>					
1	CH AHU	02 No	Conference Hall 7th flr	BLUE STAR	15 Tr
2	CH AHU	01 No	Research 7th flr	NA	20 Tr
3	CH FCU	04 Nos	Research 7th flr	NA	02 Tr
4	CH AHU	01 No	Library 6th flr	NA	20 Tr
7	CH AHU	01 No	BMT 4th flr	ZECO	16 Tr
8	CH AHU	02 Nos	BMT 4th flr, clean room	ZECO	03 Tr

9	CH AHU	01 No	Theator Recovery ICU 3rd flr	NA	15 Tr
10	CH AHU	01 No	Old Theator A&B 3rd flr	NA	15 Tr
11	CH AHU	01 No	Old Theator C&D 3rd flr	NA	20 Tr
12	CH AHU	01 No	Theator staff room 3rd flr	NA	20 Tr
13	CH AHU	01 No	Endoscopy 2nd flr	BLUE STAR	25 Tr
14	CH AHU	01 No	Head & Neck OP 2nd flr	BLUE STAR	25 Tr
15	CH AHU	01 Nos	MO OP 2nd flr	BLUE STAR	25 Tr
16	CH AHU	01 No	Clinical lab 2nd flr	NA	15 Tr
17	CH AHU	01 No	Radiation physics project office 1st flr	NA	15 Tr
18	CH AHU	01 No	Pediatic ICU 1st flr	NA	15 Tr
19	CH AHU	01 No	Admistration Office ground flr	NA	30 Tr

### Block C, AHUs & FCUs

1	CH AHU	01 No	Celetron theator 1st flr	BLUE STAR	15 Tr
2	CH AHU	02 No	Ground flr Radiotherapy	BLUE STAR	40 Tr
3	CH FCU	15 Nos	3rd flr	BLUE STAR	02 Tr

### Block D, AHUs & FCUs

1	CH AHU	01 No	New varian Radiation	BLUE STAR	30 Tr
2	DX PAC	01 No	New varian Radiation PAC	BLUE STAR	16.5 Tr
3	DX PAC	01 No	New varian Radiation	BLUE STAR	11 Tr
4	CH FCU	05 No	All flrs	BLUE STAR	02 Tr

## Annexure - 2

### Machine Details RCC, Trivandrum - 2015

#### PART A

Sl.No	Location	Product	Make	Tonnage	Unit Nos.	Remarks
1	Community Oncology	Split A/C	Voltas	1.5	1	
2	Ultra Sound Room	Split A/C	Votas	1.5	1	
3	Gamma Camera (Machine Room)	Split A/C	Blue Star -2 Nos & Pioneer 2 Nos	1.5	4	
4	Surgery ICU Level 4 A-block Old OT	Split A/C	Voltas	1.5	2	

5	RIA Lab	Split A/C	Voltas	1.5	1	
6	Pharmacy	Split A/C	Voltas	1.5	1	
7	Telephone Exchange	Window	Voltas	1.5	1	
8	Pharmacy Cold Room	Cold room	Blue Star	Cold room	3	
9	Research Cold Room	Cold room	Blue Star	Cold room	3	
11	TPS Room	Split A/C	Voltas	1.5	1	
12	HDR Room	Split A/C	Voltas	1.5	1	
13	Ultra Sound Abdomen Room	Split A/C	Voltas	1.5	1	
15	MRI & CT Scan	Package A/C	Bluestarg Voltas	8.75	3	
17	E Clinic OP	Split A/C	Blue Star	1.5	1	
18	Tele Medicine room	Split A/C	Voltas	1	1	
19	Minor OT 2 nd Floor	Split A/C	Voltas	2	1	
20	Elekta Precise Console Room	Split A/C	Voltas	1.5	1	
21	C T Simulator Console Room	Split A/C	Voltas	2	1	
22	C T Simulator Machine Room	Split A/C	Voltas	1	1	
23	Cold Room Pathology	Cold room	Blue Star	2	1	
24	Fish Lab	Split A/C	Voltas	1.5	1	
25	Molecular Pathology Lab	Window A/C	Voltas	1.5	1	
26	Old Radiation Physics Conference Hall	Split A/C	Blue Star	1	2	
27	New Ultra Sound Report Room No.5	Split A/C	Voltas	1.5	1	
28	Doctors Duty Room	Split A/C	Blue Star	1	1	
30	Morphine Manufacturing Room	Split A/C	Voltas	1.5	1	
31	Morphine Manufacturing Room	Split A/C	Voltas	1	1	
32	Morphine Manufacturing Room	Window A/C	Voltas	1.5	2	
33	Tumour Registry	Split A/C	Blue Star	2	1	
34	Theatre HOD Room	Split A/C	Voltas	1	1	
35	BMT	Ductable Split A/C	Blue Star	8.75	2	

<b>PART B</b>						
<b>Sl.No</b>	<b>Location</b>	<b>Product</b>	<b>Make</b>	<b>Tonnage</b>	<b>Unit Nos.</b>	<b>Remarks</b>
1	Community Oncology	Split AC	Voltas	1.5	1	
2	Blood Irradiator Room	Split AC	Blue Star	1.5	1	
3	MRI Instrument Room	Split AC	Votas	1.5	1	

4	Microbiology Room	Split AC	Blue Star	1.5	1	
5	Microbiology Room	Split AC	Voltas	1.5	1	
6	MRI AHU Side Doctors Room	Split AC	Voltas	1.5	1	
7	Duty Doctors Room (Old Surgery) Coffee	Split AC	Voltas	1.5	1	
8	Radiation Machine Room (Varian) Operator Room D Block	Split AC	Blue Star	1.5	2	
9	Server room (Varian) D Block	Split AC	Voltas	2	1	
10	Clinical Lab	Split AC	Blue Star	3	1	
11	Clinical lab	Split AC	Blue Star	2	2	
12	Pharmacy	Split AC	Blue Star	2	1	
13	Micro Biology (Old X-ray imageology)	Split AC	Voltas	1.5	1	
14	Surgery ICU (New Block)	Split AC	Voltas	1.5	2	
15	Anesthesia Doctor Room	Split AC	Voltas	1	1	
16	Iodine Ward	Split AC	Voltas	1.5	2	
17	Sisters Room (Pediatrics)	Split AC	Voltas	1.5	1	
18	Director's Office	Split AC	Blue Star	1.5	1	
19	X-Ray Film Processing Room	Split AC	Voltas	2	1	
20	Prone Biopsy Room	Split AC	Voltas	1.5	1	
21	5th floor Payward (601)	Split AC	LG	1.5	1	
22	Surgery Project Room	Split AC & Timer	Voltas	1.5	2	
23	Pathology	Split AC	Voltas	1.5	2	
24	Dr. Geetha	Split AC	Voltas	1.5	1	
25	Dr. Sivananthan	Split AC	Voltas	1.5	1	
26	Medical Oncology Office	Split AC	Blue Star	1	1	
27	Dr. Jayaprakash.P.G Room	Window AC	Voltas	0.75	1	
28	PACS Room	Split AC	Blue Star	1.5	3	
29	PACS	Split AC	Blue Star	2.5	1	
30	Nuclear Medicine Counter Room - 18	Window AC	Voltas	1.5	1	
31	CT Scan Machine Room	Split AC	Voltas	2	1	
32	MRI Instrument Room	Split AC	Blue Star	1.5	1	
33	Server Room (D Block)	Split AC	Voltas	1.5	1	
34	C T UPS Room Paywad	Split AC	Blue Star	1.5	1	
35	Electa Cynergy Machine Room	Ductable Split AC	Carrier	5	1	
36	Dr. Sajeeth Project Room	Window AC	Voltas	1.5	1	
37	Dr.Prakash	Split AC	Blue Star	1.5	1	
38	Room B6-15	Split AC	Voltas	1	1	
39	Room B6-12	Window AC	Blue Star	1.5	1	
40	CSSD	Split AC	Voltas	2	1	

41	Morphin Manufacturing Room	Window AC	Voltas	1.5	1	
42	Payward Date Issue Room	Split AC	Voltas	1.5	1	
43	Doctor's Cofee Room	Split AC	Voltas	1.5	1	
44	Pathology Lab	Split AC	Voltas	2	1	
45	Mamogram Room	Split A/C	Blue Star	1.5	1	
46	Dr. Beela (Project Room)	Split A/C	Blue Star	1	1	
47	Elekta	Ductable Split A/C	Blue Star	5.5	2	
48	CT Machine Room	Split A/C	Blue Star	1.5	2	
49	C T Operators Room	Split A/C	Blue Star	1.5	1	
50	Varian Machine Room	Split A/C	Blue Star	5.5	2	
51	New Radiation Physics	Split A/C	V-Star	2	1	
52	General Ward HDU	Split A/C	Blue Star	2	1	
53	New Radiation Physics	Split A/C	V-Star	2	1	

### TERMS & CONDITIONS

1. The maintenance service contract shall be in force for an initial period of up to 31/03/2018 which may be extended further up to four years based on the satisfactory performance of the contractor keeping other terms and conditions same. The contract can be terminated by either party by issuing **two months** advance notice in writing.
2. Before bidding, the bidder shall inspect the site to fully 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, tackles & plant etc., conditions affecting accommodation and movement of labour etc., required for the satisfactory execution of the work contract. No claim whatsoever on such account shall be entertained by the Client under any circumstances.
3. The contractor shall comply with all the provisions of the Minimum Wages Act, 1948, Contract Labour (Regulation and abolition) Act, 1970 and rules framed thereunder, and other labour laws affecting contract labour that may be brought into force time to time.
4. The contractor should maintain in the prescribed format wage-cum-muster roll which should be produced upon request of Client.
5. The contractor shall make good all the damages caused to the machinery due to negligent act of contractor within stipulated period decided by the Client.
6. All necessary tools and tackles should be provided by the contractor to his staff at his own cost. The contractor shall either have in possession or shall arrange the required tools, testing/calibration equipment etc. with the technicians.
7. The surrounding areas and the machinery will be kept neat & clean. Cleaning agents such soap, detergent, cotton waste etc. will be provided by the contractor free of cost.
8. All the waste material like filters, used oil, grease & other component etc. generated as a result of maintenance by the contractor will be immediately disposed of by the contractor in compliance with the local Pollution Control Board norms.
9. The rate shall be firm for the entire duration of the contract.
10. Under the all-inclusive maintenance service contract, the contractor shall maintain all air-conditioner units as indicated in Annexure-1 in good working condition throughout the period of contract. For this purpose, the contractor shall have full-fledged workshop with all servicing facilities and also adequately manned. The workshop shall be

equipped with all essential spare parts for all the categories of equipment listed in Annexure – 1 & Annexure – 2. The cost of all replacement of spares such as compressors, fan motors, condensers, filling of refrigerant, repairs etc., shall be responsibility of the contractor at his own cost and maintenance should be borne by the contractor.

11. The contractor shall make his own gas filling, brazing, and welding arrangements in the place of workshop at his own risk.
12. Sufficient stock of spare parts for all kinds of machines shall be kept in his stores. The contractor shall ensure that no machine is idle due to non-availability of spare parts.
13. Sufficient stock of refrigerant gas shall be kept at site. At least 10Kgs of R-22/R-410A refrigerant gas shall be always available at site.
14. In case due to some reason, if any particular machine is likely to be under breakdown for more than one day, the contractor shall replace the machine by a service unit at his own cost.
15. The contractor shall deploy a minimum of two experienced mechanics with sufficient labour force at site to attend the day-to-day breakdowns and regular service and the staff shall be available at site from 8:00 hours to 17:00 hours on all working days.
16. The contractor shall maintain all the machines in good working condition throughout the contract period and they will be handed over to the Client in working condition on the eve of the expiry of the contract period.
17. The contractor shall not do any private jobs in client premises.
18. The maintenance of the machine shall be done according to the preventive maintenance schedule chart as provided by the client.
19. The contractor shall maintain the register in which he will get the signature from the users after attending the complaints and the same will be countersigned by the Head of the Engineering Division, RCC.
20. Contractor shall be called to attend to complaints during any time and on holidays in some very special cases without any extra charges.
21. Normal code of ethics and discipline has to be followed by the contractor's labourer while working at site.
22. Normal working hours followed by the client will have to be adhered to by the contractor except under special circumstances where prior permission of the Head of the Engineering Division has to be obtained.
23. In case of shifting of air-conditioner units, the contractor shall arrange all the materials including labour for satisfactory reinstallation, testing and commissioning without any extra cost whatsoever.
24. The contractor shall be responsible for adherence to all labour laws & Apprentice Act, building and other construction workers (Regulation of employment and condition of service) Act 1996 and the building and other construction workers welfare cess Act 1996 as per latest amendment.
25. Any act of indiscipline/misconduct/theft/pilferage on the part of any employee engaged by the contractor resulting in any loss to the client will be viewed seriously and the client will have the right to levy damages or fine and/or even terminate the contract forthwith.
26. The contractor should not at any time do, cause or permit any nuisance on the site/do anything which shall cause unnecessary disturbances or inconvenience to the patients/visitors at the site or near the site of work.
27. The contractor shall not directly or indirectly transfer, assign or sublet the contract or any part of it.



28. The contractor should submit detailed general duty chart of proposed staff to be deployed one week in advance before start of every month and schedule of detailed works to be carried out.
29. The contractor should submit list of spare parts required to carry out repairs and maintenance works well in advance to the client, which the contractor has to arrange for the said jobs.
30. The contractor shall be responsible for any periodic statutory inspection to be carried out on the equipment and necessary tests, reports, and certificate rectification of defects as pointed during such inspection etc.
31. The contractor should follow all safety norms and provide necessary safety equipment at their own cost. In case of any accident during the testing/maintenance of the equipment leading to injuries/damages to human beings, equipment and/or loss of life, the contractor shall be fully responsible for settling all claims and indemnify the client against any claims arising out of such accidents. Consequent damages to other systems will however be recoverable from the contractor.
32. The payment will be made as per relevant conditions of contract of this tender after making statutory deduction.
33. If performance is not found satisfactory, quarterly payment will be forfeited and if unsatisfactory performance continues, then contract is liable to be terminated.

### **SCOPE OF WORK**

The scope of work specified are the minimum expected from the contractor apart from breakdown maintenance and any other work required for all inclusive comprehensive maintenance in proper way as per the operation and maintenance manuals of respective equipment and as per good engineering practices will be required to be done under this scope of work. Successful contractor will submit proforma for recording the work schedule/parameters and show to the Client for approval to ensure proper accomplishment of these tasks.

The contractor has to ensure that all the installations and accessories provided for different installations are in their proper positions, levels, directions etc.

The contractor should have their maintenance people accessible either by person or by phone during or after office hours and if called for to attend to work of repairing, rectification or servicing or as required for the smooth functioning of HVAC systems.

Routine and preventive maintenance of all systems shall be planned and carried out as per guidelines given in the respective technical documents and manufacturer's specifications. As part of preventive maintenance, anti-rust painting to arrest corrosion, cleaning, greasing etc are to be carried out periodically. Deformation/inclination of all rails should be periodically checked and corrected. The periodical calibration of all gauges and instruments installed in the facilities is within the scope of the contract. The Contractor shall liaise and coordinate with the original suppliers of each system or with their authorized agents for periodic servicing. If necessary, experts will be brought to site for fault identification and rectification. All costs will be borne by the Contractor.

### **AIR CONDITIONER UNITS (MONTHLY PREVENTIVE MAINTENANCE)**

1. Inspection of AC units and check for any abnormality in operation.
2. Removing of air filters, cleaning and reinstallation of same on AC units.
3. Check the pressure of refrigerant and if found less than normal, carryout the leak test and refill the refrigerant after rectification.
4. Check the refrigeration system, motor, compressor, and starters for performance and ensuring the overall healthy condition of units.
5. Check the wiring of blower, condenser fan, compressor for any abnormality and other electrical connection abnormalities.
6. Check the working of electrical panel equipment like contactor, overload relay, etc. If any abnormality found, then rectify the same.
7. Check all drain points to ensure proper draining. In case of obstruction, rectify the same.
8. General cleaning and brushing of the unit.
9. Check for abnormal sound from the bearing of compressor, condenser & blower motor.
10. Measurement of room temperature through sling thermometer.

### **QUARTERLY SCHEDULE FOR AC UNITS (IN ADDITION TO ABOVE)**

1. Cleaning of condenser coils with approved chemical.
2. Evaporator/cooling coil cleaning.
3. Check the working of voltage stabilizer and check the level of insulating oil and maintain it.
4. Check the thermal insulation for damages and bursting will be attended.
5. Measurement of total current drawn (Amp).
6. Measurement of current drawn (Amp) for compressor, condenser and blower motor.
7. Measurement of back pressure (PSI) and head pressure.
8. Insulation of refrigerant piping's & ducts and replace with nitrile rubber if found defective.
9. General cleaning of the unit.
10. Replacement of filters if found defective.
11. Oiling of fan motor.
12. Water washing.

### **HALF YEARLY SCHEDULE FOR AC UNITS (IN ADDITION TO ABOVE)**

1. Cleaning and washing of condenser coil with approved non-damaging chemical.
2. Cleaning of evaporator coils with approved cleaning agent.
3. Proper cleaning of contactors, relays, timers, and connectors inside the electrical panel.
4. Check and attend to the complete wiring system of AC unit (Indoor & Outdoor unit) for any loose contact, insulation puncture and terminal looseness. If overheating of wiring is observed, it should be rectified.

### **YEARLY SCHEDULE FOR AC UNITS (IN ADDITION TO ABOVE)**

1. Painting of the inner side of the unit/replacement of casing if necessary.
2. General cleaning of the unit.

Sl.No	Description
<b>Air Handling Units</b>	
1	Check for damage especially to coil and filters.
2	Cleaning of AHU pre-filters
3	Check for air and water leakage
4	Check condensate drain for any blockage, clean if required.
5	Check drain pan for any blockage.
6	Check fan Belt for correct tension and sign of wear and alignment of fan and motor.
7	Inspect coils and clean if required
8	Check functioning of lights and limit switch interlocking & proper illumination
9	Check for bearing of motor and blower
10	Check for tightness of V-belts and pulleys.
11	Check looseness of any bolt in fan casing motor base etc
12	Check for vibration in blower and motors.
13	Check access doors and hinges for easy operation.
14	Check cleanliness of the filters and clean if required.
15	Check the looseness of any bolt in the fan or casing etc.,
16	Check the associated damper flap movement and apply grease for the bearing housing if required.
17	Check running current of the motor.
18	Check/Add grease or lubricate to the Fan shaft bearing, motor bearing blower bearing. if required.
19	Check the alignment of Fan and Motor, If necessary, correct the same.
20	Inspect the condensate drain pane and ensure that it is clean and water is freely flow to the drain.
21	Inspect the coils for cleanliness. If necessary, wash the coil with a low pressure water hose or low pressure air.
22	Observe all dampers for proper operation.
23	Check tightness of electrical connections
24	Check flexible connections spool piece for leakage
25	Check for condition of inlet strainers and clean(if required)
26	Check in motors full load current, fan motor running current and tightness of terminals
27	Check blower shaft, scroll, impeller and bearing.
28	Check/clean cooling coils & fins.
29	Clean interiors and check for corrosion, check tightness of all sections
30	Check anti-vibration mounting & flexible connections
31	Check operation & condition of all electrical connections.
32	Check alignment of drive pulleys, adjust the same if required
33	Combing of fins to be done after coil cleaning (if required)
34	Check all bellows, replace if any crack/water leakage observed
35	Check insulation resistance (Megger) of motor

<b>Fan Coil Units</b>	
1	Check the water leakage
2	Clean air filters.
3	Check drain pan for any blockage.
4	Clean the filter & Y-Strainers, if required.
5	Check the fan belt tension, abnormal noise and rectify if required.
6	Check any water leakage from unit.
7	Inspect the condensate drain pan and ensure that it is clean and water is freely flow.
8	Check the condition of access door hinges for proper fixing.
9	Check the unit is secured.
10	Check the operation of inlet/outlet isolation valve.
11	Check looseness of any bolts in fan casing motor base etc
12	Check associated damper movement and apply grease for bearings.
13	Inspect cooling coil and clean if required.
14	Clean strainers for FCU.
15	Check blower, motor unit etc. Clean lubricate.
16	Check and receive the vibration value and compare with recommended values.
17	Check tightness of electrical connections.
18	Add water and flush condensate drain pan, trap and drain line.
19	Check the condition of inlet strainers and clean if required
20	Check the proper functioning of the 3 way and 2way valve.
21	Check the interconnection, copper piping, canvas and cooling coils.
22	Check full load current of motor.
23	Check the tightness of terminals of motor.
24	Check motor running current.
25	Check blower, motor unit etc clean & lubricate.
26	Check electrical control & connection.
27	Check and clean cooling coil with water, if necessary.
28	Check 2/3-way valve for proper operation.
29	Check insulation resistance (Megger) of motor.
30	Check/clean cooling coils and fins.
<b>Cooling Towers</b>	
1	Check the operating oil level and oil leakage in gear box.
2	Inspect basin for clogging.
3	Check for unusual noise/vibration in fan and fan guard, motor drive shaft and guards gear reducer.
4	Inspect for clogging in eliminator, fills and water basin
5	Check operating and static oil level in gear reducer.
6	Check oil seals of gear reducer.
7	Check oil for water and sludge in gear reducer.
8	Check water level in water basin.
9	Check and adjust float valve if required.

10	Check AMP of motor
11	Check for any leakage in gear reducer, water basin and float valve.
12	Check gear-reducer oil for water and sludge.
13	Inspect eliminator and fills for clogging
14	Check motor winding for over heating
15	General cleaning for inside and outside.
16	Drain cooling tower twice in a month along with condenser pipe line water.
17	Check access door work properly
18	Check the staircase ladder & interior walkway of wooden decay or stell corrosion
19	Check the distribution basin for corrosion, leaks and sediments
20	Check the drift eliminator louvers for scale build up
21	Adjust belts and pulleys for proper tension and alignment
22	Check the fan blades for dirt/scale deposits and condition of fan cylinder
23	Check the mechanical parts of motor supports (cracks)
24	Check the distribution spray nozzles to ensure even distribution of water over the fill
25	Check sludge in gear box
26	Check motor winding for Overheating
27	Clean cooling tower from inside and outside.
28	Check and top up oil in gear box
29	Cleaning of sump and check for any leakage
30	Clean Fan & Fan Guard, motor shaft, gear reducer, eliminator, fills, water basin, float valve, control valves etc.
31	Rebalance of fan & fan guard, driveshaft & guards
32	Check insulation resistance.
33	Clean nozzle & clean if required.
34	Check the water distribution system including the nozzles.
35	Inspect keys, keyways and set screws of fan and fan guard, motor, gear reducers, drive shaft and guards.
36	Inspect the general condition of fan & fan guard, motor, shaft, gear reducer, fills, control valves, structural members, fan cylinder, stairs ladders etc.
37	Tighten loose bolts of fan, fan guard, motor, shaft, gear reducer if any,
38	Check the working of control valve
39	Check completely open and close operation of float valve. Repair as reqd.
40	Clean all nozzles & replace if damaged.
41	Check grease, clean and re-lubricate bearings of motor
42	Tighten loose bolts of FRP, gear box, structure bolt connection and motor.
43	Check and change nozzles, fills if required.
44	Complete cleaning the whole parts of CT (Louvers drift eliminators & fill surface)

<b>PUMPS</b>	
1	Check the cable for heating
2	Check for any leakage from glands or flange joint.
3	Check alignment of pumps , motor & rectify if required
4	Check coupling condition adjust & replace if required
5	Check for any leak in motor and pump connections & rectify if required
6	Check bearings temperature with thermometer or hand test that bearing is not running excessively hot are not running excessively hot.
7	Check for any abnormal noise and vibrations during running (if observed then rectify)
8	Check for leaks in isolation of valves, strainers, and flexible connections.
9	Clean pump exterior
10	Check pumps lubrication as necessary
11	Check & clean pump, strainers & motor casings
12	Check shaft or shaft sleeve for scoring
13	Tight & clean all electrical terminals, electrical connections, conduits, insulation, flexible connection.
14	Check & record motor running current
15	Check & clean all contact surfaces of Circuit breaker, enclosures switches & push buttons
16	Check condition of seals & bearing (Adjust or replace if required)

### **SPECIAL TERMS AND CONDITIONS**

Site Engineer/Supervisor: The contractor's supervisor shall be available at round the clock over phone for receiving instructions from the client. He shall also attend all site meetings and co-ordination meetings and arrange to carry out work smoothly as per the agreed time schedule. Any instruction given to the site supervisor shall be construed as if the same is given to the contractor. The contractor shall provide the technician/mechanics, which have undergone the basic training of all the tools/equipment to handle any emergencies with regard to all inclusive comprehensive maintenance of HVAC systems.

### **LOG BOOKS**

1. A complaint/maintenance register shall be maintained at site.
2. Maintenance jobs carried out should be documented in the maintenance registers and submitted to the client every month.
3. A separate register (or few pages of a register) should be used for AHUs, PACs, Ductable splits, split units etc. in the facility. A cover note with brief details of the work done in that month is to be submitted to the client along with the registers.
4. Complaints registered shall be attended to by the contractor and is to be rectified within 24 hours of registration of a complaint. However in case any major breakdown such as compressor, fan motor, leakage of refrigerant etc., contractor must attend promptly and quickly and complete the same within 48 hours from the receipt of complaints.
5. The client's signature should be obtained in the service report after attending the complaint of the equipment.

### **POWER SUPPLY**

The client shall not guarantee the supply of electricity and no compensation shall be entitled for any damages occurred for due to failure, short circuit of electricity. All temporary power lines and other works laid by the contractor shall conform to the Indian Electricity Act and rules and should be under and subjected to the approval of the concerned officers of Engineering Division of the client.

Contractor shall attend promptly to the complaints received by them from the client and try to rectify the fault within 24hrs from the registration of the complaints. In case the contractor fails to rectify the fault within the stipulated time he should install a standby service unit at no extra cost at the place of breakdown in order to continue the operations.

### **MODE OF PAYMENT**

The payment will be done quarterly after satisfactory completion of quarterly servicing of all the units and certification by the Head of the Engineering wing of RCC.

### **PENALTY CLAUSE**

In case of failure to rectify the repair within the stipulated time of 48 hours, the contractor shall be fined @ Rs. 1000/- per day of the machine which is nonfunctional subject to a maximum of Rs. 7,000/- for split air conditioners. In the case of low side (AHUs), the contractor shall be fined @ Rs. 5000/- per day of the machine subject to a maximum of Rs. 25,000/-. The client may serve a notice to the contractor to this effect. Subsequent notices to the contractor will lead to termination of the contract owing to default of contractor and will be considered as breach of contract. In case of breach of contract, the security deposit will be forfeited & contract may be terminated.

In the event of major breakdown of a machine, the contractor shall attend the same immediately and should be rectified within 48 hours. Repair charges including visit charges of any representative towards repair (if applicable) are to be borne by the contractor. If the breakdown of a machine has continued beyond 7 days, the amount catered for the maintenance of that machine will be deducted from the total bill.

In the event of a compressor failure, the contractor should guarantee that the same would be replaced by the manufacturer or his authorized service agent and certificate or documentary evidence to this effect should be furnished.

After the approval of contract, the successful tenderer shall arrange to submit an agreement in Kerala stamp paper worth Rs.200 and a security deposit of 5 % of the total value of the order for the due fulfillment of the contract within 15 days from the date of supply order. This deposit amount will be refunded only after the expiry of the contract successfully.

Director of RCC reserves the right to accept or reject/cancel all or any tender at his sole discretion without assigning any reason. For legal purposes the cause of action will be deemed to have arisen in Trivandrum jurisdiction.

AGREEMENT

Articles of agreement executed on this the day of .....(date) ..... between the Director, Regional Cancer Centre, Trivandrum (hereinafter referred to as “the Director”) of the one part and -----(H.E. name and address of the tenderer) hereinafter referred to as the “bounden” of the other part.

Whereas in response to the Tender Notification No.58/RCC/16:17/P3 the bounden has submitted the tender to Regional Cancer Centre, Trivandrum for Comprehensive Maintenance Contract for Low side HVAC centralized system, CMC for Split AC’s, Multi split AC’s packaged AC unit, Window AC etc installed in Regional Cancer Centre, Thiruvananthapuram for the year 2017-18 specified therein subject to the terms and conditions contained in the said tender.

Whereas the bounden has also deposited with the Centre a sum of Rs. 37,500/- as earnest money for execution of an agreement undertaking the due fulfillment of the contract in case his tender is accepted by the Centre.

Now these presents witness and it is hereby mutually agreed as follows:

1. In case the tender submitted by the tenderer is accepted by the Centre and the CMC contract for Low side HVAC centralized system, CMC for Split AC’s, Multi split AC’s packaged AC unit, Window AC etc installed in Regional is awarded to him, the tenderer shall, within 15 days of acceptance of his tender, execute an agreement with the Director incorporating all the terms and conditions under which the Centre accepts his tender.

2. In case the tenderer fails to execute the agreement as aforesaid incorporating the terms and conditions governing the contract, the Centre shall have power and authority to recover from the tenderer any loss or damage caused to the Centre by such breach as may be determined by the Centre by appropriating the earnest money deposited by the tenderer and if the earnest money is found to be inadequate, the deficit amount may be recovered from him and his properties movable and immovable in the manner hereinafter contained.

3. All sums found due to the Centre under or by virtue of this agreement shall be recoverable from the tenderer and his properties movable and immovable under the provisions of the Revenue Recovery Act for the time being in force as though such area, areas land revenue and in such other manner as the Centre may deem fit.

4. In witness whereof Director, Regional Cancer Centre, Trivandrum and Shri..... (H.E name, designation and address for and on behalf of the tenderer) have hereunto set their hands the day and year shown against the respective signature.

Signed by Director, Regional Cancer Centre, Trivandrum.....(date)  
in the presence of witness:

- 1.....
- 2.....

Signed by the tenderer, Shri.....(date) in the presence of witness:

- 1.....
- 2.....



**TENDER DOCUMENT**  
**TENDER No.58/RCC/16:17/P3**  
**COMPREHENSIVE MAINTENANCE CONTRACT FOR THE YEAR 2017-2018**

Bid submission closing date 15/02/2017, 5.00 PM  
Technical Bid opening date 20/02/2017, 2.00 PM

Name of Tenderer	:
Address with Tel.No, Fax No & mail ID	:
Signature of Tenderer	:
For Communications:	
Director Regional Cancer Centre Medical College Post Thiruvananthapuram-695 011 Kerala State Ph.0471 2442541/2522219 Fax.No.0471 2447454	

To

Director  
Regional Cancer Centre  
Medical College Post  
Thiruvananthapuram – 695 011  
Kerala State

Sir,

I/we hereby tender to the Comprehensive Maintenance Contract for the Low side HVAC centralized system, CMC for Split AC's, Multi split AC's packaged AC unit, Window AC etc installed in RCC under the annexed general conditions of contract, the whole of the items referred to and described in the attached specification and schedule, or any portion thereof, as may be decided by Regional Cancer Centre, at the rates quoted for all items together in the BOQ. The items will be delivered within the time and at the places specified in the schedule.

I/we are remitting the required amount of Rs ...37,500/-as Earnest Money Deposit (EMD).

Yours faithfully

Place:  
Date :

Signature of the Tenderer  
Name and address of the firm