



राष्ट्रीय विज्ञान शिक्षा एवं अनुसंधान संस्थान, भुवनेश्वर  
(परमाणु उर्जा विभाग, भारत सरकार का एक स्वयं शासित संस्थान)  
**NATIONAL INSTITUTE OF SCIENCE EDUCATION AND RESEARCH, BHUBANESWAR**  
(AN AUTONOMOUS INSTITUTE UNDER DEPT. OF ATOMIC ENERGY, GOVT. OF INDIA)

**Name of Work: -“Comprehensive Annual Maintenance Contract (AMC) of 1350TR low side of HVAC system, Non-comprehensive AMC of 4 no’s chiller make- Kirloskar (each 450TR) and Non-comprehensive AMC of VRF system make- Daikin (312 HP) for initial period of 1 Year at NISER, Jatni Campus**

**NIT No. & Date:-NISER/IWD-MECH./AMC/AC/2017/062  
Dt.22.03.2017**

**Estimated cost of tender: - ₹: 30, 00,000.00 /-**

**AMC Period: Initially for a Period of One Year. Extendable to further period of one year on successful and satisfactorily completion of 1<sup>st</sup> year.**

This tender documents contains 35 (Thirty Five) pages.  
[Including this page]

## NAME OF THE WORK

**“Comprehensive Annual Maintenance Contract (AMC) of 1350TR low side of HVAC system, Non-comprehensive AMC of 4 no’s chiller make -Kirloskar (each 450TR) and Non-comprehensive AMC of VRF system make Daikin (312 HP) for initial period of 1 Year at NISER, Jatni Campus”**

## FIRST PART TECHNICAL BID

### NOTE

The tenderer should enclose the following documents along with the Technical Bid otherwise tender will be summarily rejected.

- 1) a) Self attested copy of works completed during the last five years from Govt./Semi Govt. organization not below the rank of E.E as per NIT.
  - b) Self attested copy of valid Registration Certificate.
  - c) Self attested copy of PAN card.
  - d) Self attested copy of VAT clearance certificate.
  - e) The cost of tender paper for the bidders who submit the downloaded tender document and EMD amount in separate D.D’s as per NIT.
- 2) Contractors shall enclose the above documents (self-attested) along with technical bid. Any conditional/ changed or altered bids are liable for rejection. The bidders shall sign all the pages of technical bid i.e. NIT, Architectural Drawing (if any), as acceptance of the terms and conditions.
- 3) Incomplete/Partial bid or bid not submitted in prescribed format will be rejected. Bids not submitted/received within stipulated date/time as per NIT will not be accepted.

## TENDER DOCUMENTS

File No. NISER/IWD-MECH./AMC/AC/ 2017/062

Dated: 22.03.2017

**Name of Work: -“Comprehensive Annual Maintenance Contract (AMC) of 1350TR low side of HVAC system, Non-comprehensive AMC of 4 no’s chiller make Kirloskar (each 450TR) and Non-comprehensive AMC of VRF system make Daikin (312 HP) for initial period of 1 Year at NISER, Jatni Campus**

### I N D E X

Sl. No.	Particulars	Page No.	Remarks
1.	Notice Inviting Tender and General Term and Condition for works.	1- 9	First part i.e. Tech. Bid
2.	Detailed list of completed works by the Contractor	10	-Do-
3.	Detail credential of the Contractor	11	-Do-
4.	Scope of Work	12-31	
5	Bill of Quantity	32	Second part i.e.Financial Bid
6.	Summary Sheet	33	-Do-
7.	Abstract of cost	34	-Do-
8.	Technical Specifications and other conditions of work	35	

NOTE: The tenderer should confirm before submission of the bid that they are in possession of all the above papers. All the documents issued are to be submitted along with the bid, duly signed by the tenderer while submitting the bid, as acceptance of the terms and conditions of NIT.

TENDER ISSUED TO:

M/s. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Telephone No. \_\_\_\_\_

**REGISTRAR  
NISER**

**NOTICE INVITING TENDER**

Director of NISER invites sealed tender on two bid system (Technical Bid and Financial Bid) for the following work:-

**NIT No. : - NISER/IWD-MECH./AMC/AC/ 2017/062, Dated. 22.03.2017**

**Name of the work: - “Comprehensive Annual Maintenance Contract (AMC) of 1350TR low side of HVAC system, Non-comprehensive AMC of 4 no’s chiller make -Kirloskar (each 450TR) and Non-comprehensive AMC of VRF system make -Daikin (312 HP) for initial period of 1 Year at NISER, Jatni Campus**

Estimated Cost	:	Rs. 30, 00,000/-
Earnest Money	:	Rs. 60,000/-
AMC Period	:	1 Year.
Cost of tender (non-refundable)	:	Rs.500/- (Rupees Five hundred only)

Last date of receipt of tender: **12th April 2017 up to 3.30 p.m.**

**REGISTRAR  
NISER**



**राष्ट्रीय विज्ञान शिक्षा एवं अनुसंधान संस्थान, भुवनेश्वर**  
(परमाणु उर्जा विभाग, भारत सरकार का एक स्वयं शासित संस्थान)  
**NATIONAL INSTITUTE OF SCIENCE EDUCATION AND RESEARCH, BHUBANESWAR**  
(AN AUTONOMOUS INSTITUTE UNDER DEPT. OF ATOMIC ENERGY, GOVT. OF INDIA)

**Tender Notice**

Director of NISER hereby invites sealed tender in two parts for the following work from experienced, reputed and capable **Original Equipment Manufacturers (OEM) or their authorized Service provider or the agency, who has installed and commissioned the system in NISER, Jatni campus**. The eligible contractors may submit their bid along with supporting documents of fulfilling the above conditions otherwise the bids bear the risk of not being considered. The eligible contractors are also required to submit the self-attested copies of PAN Card, Registration and VAT certificate, License, etc. as mentioned in the NIT.

In support of fulfilling all the essential conditions mentioned in the previous Para the contractor shall submit the past details, mentioning the name of work, estimated cost, tendered amount, gross value of work done, date of commencement as per agreement & actual date of completion as per agreement along with schedule of quantities executed and any penalty levied due to delay in executing the work from an officer not below the rank of Executive Engineer (Electrical).

Name of Work	Estimated Cost ₹	Earnest Money ₹	Duration of AMC
Comprehensive Annual Maintenance Contract (AMC) of 1350TR low side of HVAC system, Non-comprehensive AMC of 4 no's chiller make -Kirloskar (each 450TR) and Non-comprehensive AMC of VRF system make -Daikin (312 HP) for initial period of 1 Year at NISER, Jatni Campus NIT No. NISER/IWD-MECH./AMC/AC/ 2017/062, Dt. 22.03.2017	30,00,000.00	60,000 /-	01 Year

The tender document can be down loaded from the Institute's website <http://www.NISER.ac.in>. & submitted along with tender cost of ₹500.00 & EMD of ₹60,000/-, separately in the form of A/C payee DD/ Banker's cheque drawn on any scheduled Bank, in favor of Finance Officer of NISER.

The tender documents are to be submitted in two parts in separate sealed cover. The documents in support of eligibility criteria of the contractor, Technical bid, tender cost and EMD are to be submitted in a sealed cover super scribing as Technical Bid (first part). The second part with scheduled items of work & price quoted are to be submitted in a separate sealed envelope super scribing as Financial Bid. Both the envelopes are to be put together in another envelope and the same should mention the name of work, address of contractor and date of opening. Bids complete in all respects will be accepted up to **3.30 PM on 12th April 2017** and **technical bid will be opened at 4.00 PM on 12th April 2017**. Result of the Technical bid will be published on [www.niser.ac.in](http://www.niser.ac.in) website in Tender Result tab (<http://www.NISER.ac.in/content/technical-recommendations-tender-results>).

Director of NISER, reserves the right to accept/reject any/all tenders without assigning any reason whatsoever. Part or incomplete tenders will be summarily rejected. No further correspondences whatsoever shall be entertained in this regard. Canvassing in any manner shall result in rejection of the tender.

Any dispute arising out of this shall subject to Bhubaneswar jurisdiction only.

**REGISTRAR  
NISER**

**General Terms and Conditions:**

1. Sealed tenders are hereby invited for the work of “**Comprehensive Annual Maintenance Contract (AMC) of 1350TR low side of HVAC system, Non-comprehensive AMC of 4 no’s chiller make- Kirloskar (each 450TR) and Non-comprehensive AMC of system make -DAIKIN VRF (312 HP) for initial period of 1 Year at NISER, Jatni Campus**” from experienced, reputed and capable Original Equipment Manufacturers (OEM) or their authorized Service provider or the agency who has installed and commissioned the system in NISER campus.
2. The eligible contractors may submit their bid along with supporting documents of fulfilling the above conditions otherwise their bids bear the risk of not being considered. The eligible contractors are also required to submit the self-attested copies of PAN card, registration and VAT certificate.
3. In support of fulfilling all the essential conditions mentioned in the previous Para the contractor shall submit the details of the past work, mentioning the name of work, estimated cost, tendered amount, gross value of work done, date of commencement as per agreement & actual date of completion as per agreement along with schedule of quantities executed and any penalty levied due to delay in executing the work from an officer not below the rank of Executive Engineer (Mechanical).
4. Initial AMC Period will be **1 Year** and extendable to further period of one year on successful and satisfactorily completion of 1st year.
5. The tender documents can be made available at the office of SO-D (Elect.) on written request along with the tender cost through DD. No cash will be accepted towards tender cost.
6. Tenders should be submitted in the prescribed format (Non-transferable), which may be down loaded from NISER website: [www.NISER .ac.in](http://www.NISER.ac.in), or collected from the office of the SO-D (Elect.) by depositing the tender cost of **₹500/- (Rupees Five hundred only)** through A/c payee DD or pay order from any scheduled bank drawn in favor of the Finance Officer of NISER . In case of downloaded tenders, the cost of tender document shall be submitted along with the technical bid. Please note that tender documents are not transferable.
7. Tender documents are to be submitted in **two parts** in separate sealed covers. **The First part** shall consist of **the technical Bid** including the cost of tender (if downloaded), EMD and the documents in support of eligibility criteria. **The second part** shall contain the **financial bid** showing the detail schedule of work & to be sealed in a separate envelope super scribing the name of work, address of contractor and date of opening. Tenders complete in all respects, will be accepted up to **3.30 PM on 12th April 2017**. The technical bid shall be opened at **4.00 PM on 12th April 2017**. Please note, that bids submitted without tender cost (if downloaded) and EMD are summarily being rejected.
8. Tenders should be dropped in the Tender Box before the closing date and time indicated above or should be send by regd. /speed post to **Scientific Officer-D (Elect.), Library Building of NISER at Jatni Campus, Bhipur, Dist: Khurda, Pin-752050** to ensure that

the same reaches before the date and time indicated above. Late or delayed tenders are liable for rejection.

9. The Earnest Money amounting to **₹60,000.00 (Rupees Sixty Thousand only)** as demand draft or pay order from any scheduled Bank and drawn in favor of the Finance Officer of NISER should be deposited along with the tender documents in first part (Technical bid ). Tender received without earnest money will be invalid and rejected.
10. Director of NISER does not bind himself to accept the lowest or any tender and reserves the right to accept the tender either in whole or in part. The decision of the Director shall be final in this regard.
11. Canvassing in any manner or form will lead to rejection of the Bid.
12. The tenderer shall not be permitted to bid for works in any unit of DAE where any of his/her relatives are employed. He shall also intimate the names of any such persons who are working with him in any capacity or subsequently employed by him and whose relatives are working in DAE or its units.

**NOTE:**

A person shall be deemed to be a relative of another if, (a) they are members of a Hindu undivided family; or (b) they are husband and wife; or (c) the one is related to the other in the following manner : Father, Mother (including step mother), Son (including step son), Son's wife, Daughter (including step daughter), Father's father, Son's son, Son's wife, Son's daughter, Son's daughter's husband, Daughter's husband, Daughter's son, Daughter's son's wife, Daughter's daughter, Daughter's husband, Brother (including step brother), Brother's wife, Sister (including step sister), Sister's husband.

13. The Bid shall remain valid for a minimum period of 90 days from the date of opening of the tender for the purpose of acceptance and award of work. Validity beyond 90 days from the date of opening shall be by mutual consent.
14. The tenderer shall quote the rates both in figures as well as words. The cost of individual items shall also be worked out and mentioned in the financial bid (both in figures and words). On check if there are differences between the rates quoted by the tenderer in words and in figures or in the amount worked out by him, the following procedure shall be followed
  - a) When there is a difference between the rates in figures and in words, the rates, which correspond to the amounts worked out by the bidder for individual items, shall be reckoned.
  - b) In case, the amount of an individual item is not mentioned by the bidder or it does not correspond with the rate written either in figures or in words, the rate quoted by the bidder in words shall be reckoned.
  - c) In case the rate quoted by the bidder, both in figures and in words tallies but the amount is not worked out correctly, the total rate quoted by the bidder shall be taken as correct.

- d) The tenderer should see and obtain the drawings. In case of any queries, necessary clarifications may please be sought from the office of the Scientific Officer-D (Electrical) in Library building. No claim whatsoever will be entertained in this regard for any alleged ignorance, thereof.
15. Before tendering, the tenderer shall inspect the site to fully acquaint himself about the condition in regard to accessibility to site, nature and extent of ground, working condition of site and locality including stacking of materials, conditions affecting accommodations and movement of labor, etc., which are required for satisfactory execution of the work. No ignorance of the same, whatsoever shall be entertained under any circumstances.
  16. EMD is liable to be forfeited if the contractor fails to commence the work as per award letter.
  17. Except writing rates and amount, the tenderer should not write any conditions or make any changes, additions, alterations and modifications in the printed tender form. The tenderer who are desirous to offer rebate the same should be brought out separately in the covering letter and submit along with the financial bid.
  18. **Bank Guarantee:** - The agency will have to deposit the Performance bank Guarantee (PG) @ **5% of the work order value** within 15 days from issues of the work order and the same will be released after successful completion of the AMC & submission of final bill.
  19. Stores to be issued: - No material shall be issued by the Institute. The responsibility for arranging all materials from approved manufacturer as per award letter lies with the contractor.
  20. There will be deduction of VAT/IT from every quarterly bill and also from the final bill of the contractor at the rate prescribed by govt. of India from time to time.
  21. The successful bidder will be required to submit the names, qualifications and experiences of the supervising staff to be deployed for execution of the work. In case of any changes occurring during the course of execution of the said work, the same shall also be intimated by the bidder to the institute.
  22. The tenderer should also submit the detail list of tools and plants/ machineries/ equipment, etc. that he proposes to place at the site of work.
  23. The Contractor shall have to make his own arrangements for storage of materials required for execution of the work and NISER in any manner shall be held responsible for the storage and safe custody of the said materials at work site.
  24. Before commencement of the work, the contractor has to submit the list of tools and plants brought to the site of work. No items other than the list submitted will be allowed to be taken out from the work site.
  25. All the mandatory testing charges will be borne by the contractor.



26. Cost escalation in any manner whatsoever, will not be accepted for the said work, where in the stipulated period of AMC is 1 Year.
27. The work will be executed as per CPWD guidelines and DAE works procedure under the supervision of Engineer-In-charge of NISER.
28. The tenderer shall show all the original documents which he/she has furnished in the tender within seven working days after opening of technical bid, else otherwise financial bid of the tenderer will not be considered.

**REGISTRAR  
NISER**



**DETAIL CREDENTIALS OF THE CONTRACTOR**

Contractors shall fill this form and enclose it with the original copy of tender (Technical Bid)

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

Firm of the Contractor \_\_\_\_\_

Telephone No. (Official) \_\_\_\_\_

Office Address \_\_\_\_\_

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

Is the firm limited? : Yes/No.

Give name and address of partners:

Name (s)	Address (s)
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(a)

(b)

(c)

Partnership deed

(Please enclose self attested copy with the bid)

Name of Bankers

M/s. \_\_\_\_\_

Power of Attorney

Please enclose attested copy/original Power of Attorney in case of firm

**NAME AND ADDRESS OF PERSON HOLDING POWER OF ATTORNEY**

Name \_\_\_\_\_

Address \_\_\_\_\_

Specimen signature, of persons holding Power of Attorney.

Registration particulars:-

1. Registered with:
2. Registration No.:
3. Financial limit up to which registered:
4. Trade for which registered:
5. Details of BUILDING (if any):
6. Details of Furniture (if any):
7. Details of Electrification(if any):
8. Details of Sanitary Installation (if any):
9. Details of Earthwork (if any):
10. Supply of materials:

## Scope of Works

The contractor shall have to take up both preventive as well as break down maintenance jobs. The Engineer-in charge will give instructions regarding jobs to be carried out as and when requirement arises at the site. The Contractor shall have to carry out the jobs in consultation with Engineer-in-charge and have to be completed in all respect to the entire satisfaction of Engineer-in-charge, such as “Scheduled checking/servicing/overhauling of the machines as per instructions of Engineer and maintenance schedules indicated in this tender document or recommended by manufacturers of the machine as the case may be & attending the faults in the machines wherever these go out of order or work inefficiently”.

### **A. Scope of work of Non-comprehensive AMC of Water Cooled Chillers make-Kirlosker (4X450TR)**

The scope of work includes repair/ overhauling of all the parts of the machines, which become defective, inefficient or get damaged during working. The decision of competent authority regarding repair/overhauling of any part of the machine will be final and binding on the contractor. **All the damaged spare parts, consumables and non-consumables will be replaced if required with genuine parts of original manufacturer or approved make and quality after approved from concerned authority on extra payment basis.** Repairing/ leakage attend of any unit is to be done by the contractor. If service of Helper or unskilled worker is required for above job, it is in the scope of the contractor. The details of items under this scope of work is indicated at page no.23

#### PREVENTIVE MAINTENANCE SCHEDULE

Chillers		
1	Weekly.	Check DELTA Temp. for condenser fouling
2	Weekly.	Verify proper water treatment
3	Weekly.	Check oil return system
4	Weekly.	Inspection of starter
5	Monthly	Check oil heater operation
6	Monthly	Refrigerant leak check
7	Monthly	Check oil pump discharge pressure
8	Monthly	Clean all sensors
9	Monthly	Measure oil filter pressure drop
10	Monthly	Measure and log the sub cooling and superheat
11	Quarterly	Verify proper operation/setting/calibration of safety controls
12	Quarterly	Check & tighten all electrical connections
13	Quarterly	Clean & water strainers in both chilled & condenser line
14	Yearly	Replace oil filter & oil return filter, if required
15	Yearly	Clean or back flush heat exchanger of SS starter
16	Yearly	Replace coolant after cleaning heat exchanger
17	Yearly	Perform de-scaling of condensers
18	Yearly	High pressure cut off
19	Yearly	Low pressure cut off

20	Yearly	Low oil pressure switch
21	Yearly	Oil pump timers
22	Yearly	Flow switches
23	Yearly	Pump interlocks
24	Yearly	System monitor timer
25	Yearly	System freeze stats
26	Yearly	Vane closing switches
27	Yearly	Temperature control stats
28	Yearly	Motor load limit controls
29	Yearly	Megger motor winding
30	Yearly	Compressor oil analysis

**NOTE:**

1. All the equipments/installations shall always be kept in good and trouble free operating conditions. All the required record for break-downs/repairs and maintenance etc. shall be maintained in the form of history books and logbooks etc. as per directions.
2. The items mentioned above and description of work is just indicative. However, the contractor has to repair / replace items which are absolutely required for operation & maintenance of equipments in working condition under their scope, beyond they may obtained necessary approval from competent authority of NISER before repairing to make good to service the equipments.
3. All Genuine spare parts of original manufacturer or approved make & quality should be made available with the party. The contractor has to keep sufficient quantity of consumables in stock depending on the actual requirement. The tenderer is required to use genuine spare parts only and to be procured from original manufacturer or authorized distributor. Proof of the procurement to be submitted before fixing the item.

**B. Scope of work for Comprehensive AMC of Low side in HVAC system (1350 TR)**

The scope of work includes repair/ replacement/ overhauling of all the parts of the machines, which become defective, inefficient or get damaged during working. The decision of competent authority regarding repair/ replacement/ overhauling of any part of the machine will be final and binding on the contractor. All the consumable and non-consumable required for equipment listed in schedule of quantities (List of equipment HVAC system) shall be obeyed by the contractor during execution of the contract period. Repairing/ leakage attend of any unit is to be done by the contractor. Manpower, material (consumable & non-consumable), tools and tackles etc. required are in the scope of the contractor. If service of Helper or unskilled worker is required for above job, it is in the scope of the contractor.

The contractor has to carry out the break down job on call whenever required at site and except the break down job the following list of preventive jobs are to be carried out as per the time period mentioned. Successful bidder will submit Performa for recording the following minimum work schedule/parameters and show to the employer for approval to ensure proper accomplishment of these tasks. The details of items under this scope of work is indicated at page no.23,24, 25

### PREVENTIVE MAINTENANCE SCHEDULE

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

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

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



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

Note:

1. The items mentioned above and descriptions of work are just indicative. However, the contractor has to repair / replace items which are absolutely required for operation & maintenance of equipments in working condition under their scope, beyond they may obtained necessary approval from competent authority of NISER before repairing to make good to service the equipments.
2. **All the damaged spare parts, consumables and non-consumables will be replaced if required with genuine parts of original manufacturer or approved make and quality.**

**C. Scope of work for Non-comprehensive AMC of VRF system make- Daikin (312 HP)**

The scope of work as mentioned below are the minimum expected from the firm / agency / contractor apart from break down maintenance and any other work required for maintenance in proper way as per the operation & maintenance manuals of respective equipment and as per good engineering practices will be required to be done under this scope of work. Successful bidder will make Performa for recording the following minimum work schedule/parameters and show to the employer to ensure proper accomplishment of these tasks. **All the damaged spare parts, consumables and non-consumables will be replaced if required with genuine parts of original manufacturer or approved make and quality after approved from concerned authority on extra payment basis.** The details of items under this scope of work is indicated at page no. 25 .

### **VRF System (312 HP) of make- Daikin**

1. Attending complaints of systems which include routine as well as breakdown maintenance of all the system.
2. Vendor shall supply minimum following consumables & general spares / items for smooth operation of the system on chargeable basis after certified by concerned authority
  - a) Refrigerant Gas
  - b) Lubricating oil for compressor systems
  - c) Packing / Couplings / gaskets / insulation material / other general spares.
  - d) All electrical spares e.g. Fuses / Relays, contactors, Condensers etc.
  - e) Indoor units Filter /Belts / Bearings / Valves / Other spares etc.
3. All tools & tackles, manpower, transportation and other resources required for executing the job shall be in the scope of the contractor. No extra charges will be paid by the authority regarding tools & tackles, manpower, transportation etc.
4. Spares of compressor, control panel card, Software etc. which may be required during maintenance of the all the system will have to be supplied by the contractor as per instruction of the Authority/concerned engineer.
5. The Vendor has to maintain a maintenance register during each visit mentioning what kind of job has been done during that visit. Contractor also has to provide maintenance report.
6. The vendor shall depute a single person who will control this Annual maintenance work, so that authority can contact him for any kinds of problem of the all system.
7. The unit rates quoted should be kept firm and valid during the entire period of contract and no escalation shall be permissible for any reason whatsoever after award of contract.
8. The rates quoted by Vendor shall include all liabilities such as supervision, wages, overtime, leave, bonus, increment, retrenchment compensation, insurance and all other statutory payments, including providing of tools and tackles under contractor's scope of supply, overheads, profits etc. for which no extra payment whatsoever will be made by INFLIBNET.

### **Monthly Maintenance:-**

1. Maintenance of all filters, fans, diffusers, cooling coils, Refrigerant Gas make up etc.
2. Tightening of belts, foundation bolts of equipment, alignment of belt pulleys and couplings.
3. Examining indoor/outdoor units & operating linkage for smoothness.
4. To check the gland /seal, coupling of units.
5. To check the safety controls mechanical, Electrical/ Electronics and inter-locking of the various equipments.
6. To check all piping/insulation/proper positioning/damage and rectifying the same where ever required.
7. Inspect/check entire line for leakage and rectification of leakage, if any.

8. To check and lubricant (if required) the bearing of the fans/motors and keep the proper record.
9. To check the foundation bolts of the units/motors and to take the necessary action if required.
10. Check the quantity of Air flow from various out lets in each room/ Area as per drawings and do adjustment of dampers etc as and when required.
11. Check the performance of equipment of VRF plant for proper functioning.
12. Any other job required to be attended during course of Checking and to keep the plant in perfectly working conditions.

**Quarterly Maintenance:**

1. Checking / setting / rectification of all safety and automatic controls.
2. Complete Overhauling of indoor/outdoor units, FCU, Fans.
3. Maintenance of Fresh Air & Exhaust Air Fans and their Balancing, if required. Observe the operation of all the dampers and make necessary adjustment in linkage and blade orientation for proper operation.
4. Functional checks & calibration of all switches, thermostats, humidistat and other instruments rectification of the same if required.
5. Any other job required to be attended during course of checking / as per OEM and to keep the plant in perfectly working conditions.
6. Maintenance of all Electrical equipment Feeders, Panels, Bus Bars, Cubicles, Motors, Heaters, Circuit Breakers, Power Points, etc. pertaining to HVAC as per standard electrical maintenance practice and as directed by concerned maintenance engineer. The maintenance and repairing of motors, Software re installation (if required) etc. are also within the Vendor's scope of work.
7. The gas charging in VRF system will be executed by vendor, whenever required.

**NOTE:**

1. All the equipments/installations shall always be kept in good and trouble free operating conditions. All the required record for break-downs/repairs and maintenance etc. shall be maintained in the form of history books and logbooks etc. as per directions.
2. All the maintenance works shall be carried out in accordance with the manufacturer's specifications and instructions of the concerned engineer.
3. The items mentioned above and description of work is just indicative. However, the contractor has to repair / replace items which are absolutely required for operation & maintenance of equipments in working condition under their scope, beyond they may obtained necessary approval from competent authority of NISER before repairing to make good to service the equipments.

**CONTRACT PERIOD:**

- a) The successful bidder will be awarded the work for **1 year**. Contractor shall commence the work as per date specified in the Letter of award which will be the effective date of start of 12 months contract period. If the Contractor commits default in commencing the work as per issuance of written orders to commence the work, NISER shall, without prejudice to any other right or remedy available in law, be at liberty to deduct the AMC charges proportionally.
  - b) The successful bidder must familiarize himself fully with the installations and corresponding arrangements in the buildings (at no extra cost to NISER) before signing the AMC agreement.
  - c) NISER reserves the right to rescind the contract agreement at any time by giving 15 days-notice if the services of the contractor are not found satisfactory or not up to the standards OR at any stage, if it is found that bidder has secured the contract through fraudulent means, documents, information based on which the bid of the successful bidder has been accepted or non-fulfillment of any other obligation on the part of the contractor as per provision of tender/contract. The decision of NISER in respect of above will be final in this regard.
1. The contractor shall attend to any maintenance problems and rectify the defects within the time limit set against different classification of rectification work as stipulated below:
    - a) Minor/Medium rectification works- within 24 hours of notification to the contractor by NISER such as, but not limited to,
      - i. Repair / replacement of switches sockets plugs misc. electrical / mechanical faults, misc. repair/rectification works including cleaning of contacts, contact points, earthing points & filters etc.
      - ii. Replacement of eyelets, socket, lugs & gaskets etc. in panels or motors.
    - b) Major rectification works/capital repair- within 72 hours of notification to the contractor by NISER such as but not limited to Compressor, and replacement of certain non-stocked spare parts (not locally available in BHUBANESWAR etc.) which require the justification for 72 hours work schedule.
  2. However, in case of any doubt in classification of rectification work, contractor can give technical justification and ask for extra time for approval of Engineer in charge who will have power to grant such extra time/change the classification of rectification work depending upon the correct technical justification and a reasonability of time scheduling for such extension/change of classification of a particular rectification work.
  3. In case of un-serviceability / dysfunction of the equipment for a longer period, penalty as detailed below shall also be imposed on the contractor and the amount will be recovered from their respective monthly bills.
  - 4.

Sl. No.	Period	Penalty	Remarks
1	4to 7 consecutive	@ 25% of respective	In case the period is repeated

	days in a plant	monthly bill	in the same month, penalty will be worked out on pro-rata basis.
2	8 to 15 consecutive days in a plant	@ 50% of respective monthly bill	
3	More than 15 days	@ 100% of respective monthly bill	

If standby machine also remains out of order or under breakdown above penalty shall also be levied.

NOTE: In exceptional cases, competent authority of NISER may consider to extend the time limit mentioned above. The decision of competent authority shall be final and binding on the contractor in respect of category of rectification of defects. However, all complaints will be attended promptly and the time limit set for each category is the maximum time limit.

5. A snag list of the installations covered in the present scope of work shall be prepared jointly by successful bidders & NISER so as to complete the defect-rectification work well before the actual contract period is over. However, nothing shall be paid extra for preparation of snag list and preparation of snag list will not be considered as date of start. In case contractor is asked in writing to arrange rectification of any defect at the time of accepting the work order of AMC, the cost of rectification shall be reimbursed to him on actual basis.

**Note:-**

- i. Any damage to the installations during the period of contract will be made good by the contractor without any extra cost to. Further, contractor would also indemnify NISER for the damages caused due to negligence in imparting the services.
- ii. Successful bidder shall submit copy of agreements with specialized agencies/associates of repute duly approved by NISER including with OEMs agencies at the time of start of work.

**1. Responsibility of the contractor at end of the contract period:**

- a) All equipment taken for maintenance during the contract period shall be handed over back to NISER in good working condition.
- b) Any equipment taken outside for repair from NISER Campus shall be handed over in good working condition well before the end date of contract.
- c) Passes issued by NISER to the contractor' employees if any shall be handed over to NISER representative.
- d) In case any equipment not handed over to NISER in good working condition, then NISER would get them repaired/procured on its own from other sources at the risk & cost of the contractor and the cost (along with 20% extra Charge) incurred shall be deducted from any payment due to him/security deposit.

2. All the employees of the contractor shall be in proper neat & clean uniform (including shoes) and will behave courteously, disciplined and professional manner maintaining absolute integrity during their duty / service hour in NISER Campus. The employees of the contractor shall display their photo ID cards duly issued and signed by the contractor while attending to the complaint in NISER Campus.
3. NISER Engineer In-Charge or his nominated officer can carry out any surprise inspection, without any notice and deficiencies in service equipment, spares, manpower or any other position of contract pointed out in inspection register maintained by contractor or through other means shall be made good by contractor failing which risk & cost provisions for deficient service shall be invoked.
4. **MANPOWER DEPLOYMENT:** - Contractor has to deploy at least two manpower one in category of supervisor and other technician of minimum qualification ITI in 'G' shift i.e. 9.00AM to 5.30PM for all supervision throughout the contract period for running & breakdown maintenance of the HVAC system and VRF system including Sundays and holidays if required. The contractor has to plan his jobs so as to ensure satisfactory maintenance as per the instruction of engineer-in-charge.

**OTHER REQUIREMENTS TO BE FULFILLED BY THE BIDDER:**

1. All coordination in respect of legal obligations of NISER for this Contract in terms of any accident/ incident / inspection, Govt. department's viz. Odisha Electricity Board or Other local authority like: Pollution control board, Central Electricity Authority etc. shall be carried out by the contractor. However, contractor will provide / furnish such information to Engineer-in-charge as may be required during investigations.
2. Bidder should in his technical bid provide detail of the manpower and equipment, bidder proposes to be used/ deployed by him/ those to render the Services covered in these Tender documents.
3. Bidder has to provide a list of spares which are to be replaced / required on a regular basis for necessary action at NISER.
4. An undertaking for supply of spares for various assemblies (components) & subassemblies of manufacturer obtaining a clearance from various OEMs shall be submitted.

**LIST OF EQUIPMENT IN HVAC & VRF SYSTEM**

<b>EQUIPMENT LIST OF HVAC SYSTEM(HIGH SIDE)</b>				
<b><u>Sl. No.</u></b>	<b><u>Item description</u></b>	<b><u>size</u></b>	<b><u>make</u></b>	<b><u>nos</u></b>
1	Chiller(one standby)	450tr	kirloskar	4
<b>EQUIPMENT LIST OF HVAC SYSTEM(LOW SIDE)</b>				
<b><u>Sl.No</u></b>	<b><u>Item description</u></b>	<b><u>size</u></b>	<b><u>make</u></b>	<b><u>nos</u></b>
1	2 Way motorized valve	32mm	advance	5
2	2-way motorized valve	40mm	advance	27
3	2-way motorized valve	50mm	advance	40
4	2-way motorized valve	65mm	advance	6
5	2-way motorized valve	80mm	advance	4
6	AHU	5000cfm	Nutech	2
7	AHU	2800cfm	nutech	2
8	AHU	3100cfm	Nutech	1
9	AHU	3800cfm	nutech	1
10	AHU	4200cfm	nutech	1
11	AHU conn. 32mm NB	2500cfm	nutech	2
12	AHU conn. 32mm NB	2850cfm	nutech	1
13	AHU conn. 32mm NB	3200cfm	nutech	1
14	AHU conn. 32mm NB	4250cfm	nutech	17
15	AHU,conn.32mm NB	4300cfm	nutech	1
16	AHU,conn.32mm NB	4600cfm	nutech	1
17	AHU conn. 32mm NB	6300cfm	nutech	2
18	AHU,conn.32mm NB	8400cfm	nutech	2
19	AHU conn. 40mm NB	2800cfm	nutech	1
20	AHU conn.40mm NB	2850cfm	Nutech	1
21	AHU conn.40mm NB	4250cfm	nutech	5
22	AHU conn. 50mm NB	4250cfm	nutech	4
23	AHU conn. 50mm NB	4300cfm	Nutech	6
24	AHU conn. 50mm NB	4600cfm	nutech	8
25	AHU conn. 50mm NB	6300cfm	nutech	8
26	AHU,conn.50mm NB	7500cfm	Nutech	2
27	AHU,conn.50mm NB	8400cfm	nutech	2
28	AHU,conn.65mmNB	5500cfm	nutech	4
29	AHU,conn.80mm NB	9500cfm	advance	4
30	Balancing valve	100mm	advance	8
31	Balancing valve	125mm	advance	4
32	Balancing valve	150mm	advance	2
33	Balancing valve	200mm	advance	4
34	Balancing valve	250mm	advance	7
35	Balancing valve	32mm	advance	4

36	Balancing valve	40mm	advance	29
37	Balancing valve	50mm	advance	52
38	Balancing valve	65mm	advance	10
39	Balancing valve	80mm	advance	14
40	Ball valve	32mm	advance	12
41	Ball valve	40mm	advance	66
42	Butterfly valve	100mm	advance	22
43	Butterfly valve	125mm	advance	16
44	Butterfly valve	150mm	advance	8
45	Butterfly valve	200mm	advance	20
46	Butterfly valve	250mm	advance	38
47	Butterfly valve	300mm	advance	8
48	Butterfly valve	400mm	advance	6
49	Butterfly valve	50mm	advance	102
50	Butterfly valve	65mm	advance	20
51	Butterfly valve	80mm	advance	32
52	Condenser Pump	1800 US GPM	kirloskar	4
53	Cooling tower	540TR		4
54	CS TFA ,conn.80mm NB	9000cfm	nutech	2
55	CS TFA ,conn.80mm NB	9500cfm	nutech	2
56	CS TFA ,conn.32mm NB	2000cfm	nutech	7
57	CS TFA Conn.32mm NB	2100cfm	nutech	4
58	Dual plate check valve	125mm	advance	4
59	Dual plate check valve	150mm	advance	2
60	Dual plate check valve	200mm	advance	4
61	Dual plate check valve	250mm	advance	10
62	FCU	1.5TR	Zeco	208
63	FCU	2.5TR	Zeco	10
64	FCU	2TR	Zeco	61
65	FCU	3TR	Zeco	20
66	Flexible connector	125mm	cori	8
67	Flexible connector	150mm	cori	4
68	Flexible connector	250mm	cori	28
69	flexible rubber Bellow	200mm		16
70	Motorized Butterfly Valve	300mm		8
71	Motorized Butterfly Valve	250mm		4
72	Motorized Butterfly Valve	200mm		4
73	pot strainer	400mm		2
74	Primary Pump	1215 US GPM	kirloskar	4
75	Secondary pump	11kw	grundfos	2
76	Secondary pump	15kw	grundfos	2
77	Secondary pump	18.5kw	grundfos	4
78	Secondary pump	5.5kw	grundfos	2



79	Secondary pump	7.5kw	grundfos	2
87	Y-Strainer	125mm	sant	4
88	Y-Strainer	150mm	sant	2
89	Y-Strainer	200mm	sant	4
90	Y-Strainer	250mm	sant	6
91	Y-Strainer	32mm	advance	5
92	Y-Strainer	40mm	advance	27
93	Y-Strainer	50mm	advance	47
94	Y-Strainer	65mm	advance	6
95	Y-Strainer	80mm	advance	4
96	Cooling tower			04
<b><i>EQUIPMENT LIST OF VRF SYSTEM</i></b>				
1	VRF IDU	6.5TR	DAIKIN	40
2	VRF ODU	10HP	DAIKIN	04
3	VRF ODU	16HP	DAIKIN	08
4	VRF ODU	18 HP	DAIKIN	08

Note:

The items mentioned above are just indicative. However, the contractor has to repair /replace items which are absolutely required for operation & maintenance of equipments in working condition. Repairing / replacing works shall be informed to the authority and same shall be obtained approval prior to commencement of work.

### **EXECUTION OF WORK**

1. The contractor shall execute the whole and every part of the work in the most professional and workmanlike manner both as regards materials and otherwise in every respect in strict accordance with the agreement, site requirements & instructions of the Engineer-in-Charge. The contractor shall comply with the provisions of the contract and with the care and diligence & execute and maintain the installations and provide all labour and materials, tools and plants in so far as necessary for providing these or as inferred from the contract. The Contractor shall take full responsibility for adequacy, suitability and safety of all the works and methods of maintenance.
2. The contractor is required to obtain approval of Engineer –in-charge in respect of Periodical preventive maintenance schedule for all the assets in the complex under the scope of this contract, within 15 days from the date of letter of award.
3. The contractor is required to submit the copy of the Service report of OEMs or their authorized agency (if any) or agency approved by NISER (as the case may be) after attending defect/preventive maintenance as per schedule of OEMs or the schedule approved by NISER for the installations for maintenance of which OEMs has not been defined in the tender documents.
4. The Engineer-in-Charge shall have power:-
  - a) To make alteration in, omissions from, additions to, or substitutions for the original instructions that may appear to him to be necessary or advisable during the progress of the work, and

- b) To omit a part of the works in case of non- availability of a portion of the site or for any other reasons and the contractor shall be bound to carry out the works in accordance with any instructions given to him in writing by the Engineer-in-Charge and such alterations, omissions, additions or substitutions shall form part of the contract as if originally provided therein and any altered, additional or substituted work which the contractor may be directed to do in the manner specified above as part of the works, shall be carried out by the contractor on the same conditions in all respects including price on which he agreed to do the main work or on assessed rates.
5. Rates for altered or substituted or additional work or extra item shall be determined as follows;
- a) If the rate for altered or substituted item of work is specified in the schedule of quantities; the contractor shall carry out the altered or substituted items at the same rate. In the case of composite tenders, where two or more schedules of quantities may form part of the contract, the applicable rate shall be taken from the schedule of quantities of that particular part in which the deviation is involved, failing that at the lowest applicable rate for the same item of work in the other schedules of quantities.
  - b) If the rate for any altered or substituted item of work is not specified in the schedule of quantities, the rate for that item shall be derived from the rate for the nearest similar item specified therein. In case of composite tenders where two or more schedule of quantities form part of the contract, the rate shall be derived from the nearest similar item in the schedule of quantities of the particular part of works in which the deviation is involved failing that from the lowest of the nearest similar items in other schedule of quantities.
  - c) If the rate for any additional or substituted item of work cannot be determined in the manner specified above, the contractor shall, within 15 days of the date of receipt of the order to carry out the said work, inform the Engineer- in-Charge of the rate which he proposes to claim for such item of work, supported by analysis of the rate claimed, and the Engineer-in-Charge shall, within one month thereafter, after giving due consideration to the rate claimed by the contractor, determine the rate on the basis of market rate(s). In the event of the contractor failing to inform the Engineer-in-Charge within the stipulated period of time, the rate which he proposes to claim, the rate for such item shall be determined by the Engineer-in-Charge on the basis of market rate(s).

**NO COMPENSATION FOR ALTERATION OR RESTRICTIONS OF WORK TO BE CARRIED OUT**

If at any time after the commencement of the work, NISER shall decide to abandon or reduce the scope of the works for any reason whatsoever and hence not require the whole or any part of the works thereof as specified in the tender to be carried out, the Engineer-in-Charge shall give notice in writing of fact to the contractor who shall have no claim to any payment of compensation or otherwise whatsoever, on account of any profit or advantage which he might have derived from the execution of the work in full but which he did not derive in consequence of the full amount of the work not having been carried out, neither shall he have any claim for compensation by reason of any alternations having been made in the original specifications, drawings, designs and instructions which shall involve any curtailment of the work as originally contemplated.

### **CONTRACTORS TO SUPPLY TOOLS & PLANTS ETC.**

The contractor shall provide at his own cost all materials, plant, tools, appliances, implements, ladders, scaffolding and temporary works etc. required for the proper execution of the work, whether original, altered or substituted and whether included in the specification or other documents forming part of the contract or referred to in these conditions or not, or which may be necessary for the purpose of satisfying or complying with the requirements of the Engineer-in-Charge as to any matter as to which under these conditions he is entitled to be satisfied, or which he is entitled to require together with carriage therefore to and from the work. The contractor shall also supply without charge the requisite number of persons with the means and materials, necessary for the purpose of setting out works and counting, weighing and assisting the measurement for 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 in charge at the expense of the contractor and the expenses may be deducted, from any money due to the contractor, under this contract or otherwise and / or from his security deposit or the proceeds of sale thereof, or of a sufficient portions thereof.

While bringing the equipments inside NISER office complex by the contractor, necessary for execution of the work, the contractor shall get them verified through the representative nominated by Engineer-in-charge and security at the time of commencement of the work. Engineer-in-charge and security and contractor shall keep such verified list of above equipments in records. The gate pass shall be issued to the contractor in respect of those equipments which have been verified in the above list, to enable him to take back his equipment after completion of work.

### **RECOVERY OF COMPENSATION PAID TO WORKMAN**

In every case in which by virtue of the provisions sub-section (1) of Section 12 of the Workmen's Compensation Act, 1923, the Employer is obliged to pay compensation to a workman employed by the Contractor, in execution of the works, the Employer will recover from the Contractor the amount of the compensation so paid; and, without prejudice to the rights of the Employer under sub-section (2) of Section 12 of the said Act, the Employer shall be at liberty to recover such amount or any part thereof by deducting it from the security deposit or from any sum due by the Employer to the contractor whether under this contract or otherwise. The Employer shall not be bound to contest any claim made against it under sub-section (1) Section 12 of the said Act, except on the written request of the contractor and upon his giving to the Employer full security for all costs for which the Employer might become liable in consequence of contesting such claim.

### **Ensuring Payment and Amenities to Workers if Contractor fails**

In every case in which by virtue of the provisions of the Contract Labour (Regulation and Abolition) Act, 1970, and of the Contract Labour (Regulation and Abolition) Central Rules, 1971, the Employer is obliged to pay any amounts of wages to a workman employed by the Contractor in execution of the works, or to incur any expenditure in providing welfare and health amenities required to be provided under the above said Act and the rules under Clause 19H, or under the Rules framed by Government from time to time for the protection of health and sanitary arrangements for workers employed by the Employer's Contractors, the Employer will recover from the Contractor the amount of wages so paid or the amount of expenditure so

incurred; and without prejudice to the rights of the Employer under sub-section (2) of Section 20, and sub-section (4) of Section 21, of the Contract Labour (Regulation and Abolition) Act, 1970, the Employer shall be at liberty to recover such amount or any part thereof by deducting it from the security deposit or from any sum due by the Employer to the Contractor whether under this contract or otherwise. The Employer shall not be bound to contest any claim made against it under sub-section (1) of Section 20, sub-section (4) of Section 21, of the said Act, except on the written request of the contractor and upon his giving to the Employer full security for all costs for which the Employer might become liable in contesting such claim.

### **Labour Laws to be complied by the Contractor**

The contractor must comply with provisions of all existing labour laws as indicated below & other laws existing in this regard.

- a) Contract Labour (R&A) Act, 1970
- b) Contract Labour (Regulation and Abolition) Central rules 1971
- c) Child Labour (Prohibition and Regulation) Act, 1986.
- d) Contractor shall comply with the provisions of the Minimum Wages Act, 1948, Industrial Disputes Act, 1947, Maternity Benefits Act, 1961 , or the modifications thereof or any other laws relating thereto and the rules made there under from time to time, i.e.Safety and other welfare measures as per laws of land.

### **SETTLEMENTS OF DISPUTES & ARBITRATION**

In the event of any dispute or difference relating to the interpretation and application of the provisions of the contracts, such disputes or difference shall in the first instance be sought to be resolved amicably by mutual consultation with the Engineer –in- charge or Director, NISER . Failing which they shall be referred by either party to the Civil Modification & Building repair committee (**CMBRC**) of NISER for settlement. The decisions of the CMBRC of NISER shall be final & binding on both parties.

### **CLAUSES OF THE CONDITIONS OF CONTRACT AND MATTERS DEEMED AS "EXCEPTED MATTERS"**

The following shall be treated as "Excepted Matters" for the purpose of arbitration:

1. **Illegal Gratification:-** Any bribe, commission, gift or advantage given, promised or offered by or on behalf of the Contractor or his partner, agent or servant or any one on his or on their behalf to any officer, or employee or NISER or to any person on his or their behalf in the relation to the obtaining of the execution of this or any other contract with NISER , shall, in addition to any criminal liability which he may incur, subject the Contractor to the rescission of the contract under the contract or any other contracts with NISER . The Contractor shall not lend or borrow from or have or enter into any monetary dealings or transactions either directly or indirectly with any employees of NISER and if he shall do so NISER shall be entitled forthwith to rescind the contract and all other contracts with NISER. Any question or dispute as to the commission of any offence or compensation payable to NISER under this clause shall be settled by Director NISER in decision shall be final and conclusive.
  - a) Meaning and intent of specifications and drawings.
  - b) Rates for extra items of works
  - c) Measurement of works

- d) Provisions of Payment of Wages Act
- e) Payment of advances and recovery
- f) Determination of contract
- g) Provisions of Contract Labour/Regulation and Abolition Act 1970
- h) Non- conformance of work

### **INDEMNITY REGARDING DAMAGE TO PERSONS AND PROPERTY**

The Contractor shall, except if and so far as the Contract provides otherwise, indemnify NISER (through indemnity bond on format approved by NISERL/, before commencement of work) against all losses and claims whatsoever in respect of injuries or death to any person, whether NISER or Contractor's employee or a third party, or loss / damage to any property whether of NISER , Contractor or third party, which may arise out of or in consequence of the execution and maintenance of the works related to this contract. This indemnity shall be against all claims proceedings, damages, costs, charges and expenses whatsoever in respect of or in relation thereto.

### **OTHER INDEMNITY**

The contractor shall also indemnify NISER (through Indemnity bond on format approved by NISER , before commencement of work/release of first bill) against any fine/penalty/prosecution levied by any government authority for any violation of environment laws, safety norms, labour laws (like workmen compensation Act etc. in respect of workers engaged by the contractor), PF laws, health laws etc. which may occur in the process of carrying out of this work or at later stage. It will be the contractor's responsibility to ensure that relevant rules & regulations are fulfilled by him.

### **INSURANCE**

The contractor is required to seek Insurance policy against injury or death of his own employees or any third party which may result out of execution of this contract. FM agency is liable to replace /repair NISER property/equipment in the event of fault /damage etc. due to the fault of FM agency. NISER has insured its property. The insurance policy arranged by NISER in this respect may be seen from NISER office for knowing the conditions under which claim can be raised on Insurance Company. Thus, FM agency is required to inform NISER in writing in the event of fault /damage/theft etc. to the property/equipment for the cause other than the fault of FM agency when claim can be raised on the insurance company. FM agency shall pursue on behalf of NISER with the insurance company for realization of the claim to NISER , if so desired by NISER . In case of failure of FM agency to follow the above directives, FM agency shall be solely responsible for losses suffered by NISER in the event of fault /damage etc. to the NISER property.

### **WITH-HOLDING AND LIEN IN RESPECT OF SUMS DUE FROM CONTRACTOR**

1. Whenever any claim or claims for payment of a sum of money arises out of or under the contract or against the contractor, the Engineer-in-Charge or the NISER shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from the security, if any deposited by the contractor and for the purpose aforesaid, the Engineer-in-Charge or the NISER shall be entitled to withhold the security deposit, if

any, furnished as the case may be and also have a lien over the same pending finalization or adjudication of any such claim.

2. NISER shall have the right to cause an audit and technical examination of the works and the final bills of the contractor including all supporting vouchers, abstract, etc., to be made after payment of the final bill and if as a result of such audit and technical examination any sum is found to have been overpaid in respect of any work done by the contractor under the contract or any work claimed to have been done by him under the contract and found not to have been executed, the contractor shall be liable to refund the amount of over-payment and it shall be lawful for NISER to recover the same from him in any manner legally permissible; and if it is found that the contractor was paid less than what was due to him under the contract in respect of any work executed by him under it, the amount of such under payment shall be duly paid by NISER to the contractor, without any interest thereon whatsoever.

### **RATES TO BE INCLUSIVE OF TAXES & LEVIES**

1. Tendered rates must be inclusive of all taxes, duties and levies (excluding service tax), payable under the respective statutes. Applicable Service tax shall be paid in first running bill and subsequent running bills shall be entertained only after producing proof of payment of service tax to the concerned authority for the previous month already paid to the contractor (In case service tax payment to the concerned authority is delayed by the contractor, the payment of penalty, interest or any other charges shall be borne by the contractor). However, pursuant to the Constitution (Forty six Amendment) Act, 1982, if any new tax or increase/decrease in tax (except service tax) or levy is imposed by the statute, after the date of receipt of tenders, and the contractors thereupon necessarily and properly pay such taxes/levies the contractor shall be reimbursed the amount so paid on production of proof of payment, provided such payment, if any is not in the opinion of NISER (whose decision shall be final and binding) attributable to delay in execution of work within the control of the contractor. NISER will have no liability whatsoever on any account to pay any taxes, levies, duties etc. levied by Central / State Govt. pertaining to execution of the work.
2. The contractor shall keep necessary books of accounts and other documents for the purpose of this condition as may be necessary and shall allow inspection of the same by duly Authorized representative of NISER and further shall furnish such other information/document as the Engineer-in-charge may require.
3. The contractor shall, within in a period of 30 days of imposition of any further tax or levy pursuant to the Constitution (Forty six Amendment) Act, 1982 give a written notice thereof to the Engineer-in-charge that the same is given pursuant to this condition, together with all necessary information relating thereto.

### **TERMINATION OF CONTRACT ON DEATH OF CONTRACTOR**

Without prejudice to any of the rights or remedies under this contract if the contractor (in proprietary case) dies, the NISER shall have the option of terminating the contract without compensation to the contractor's successor.

### **FORCE MAJEURE**

1. Neither Contractor nor Owner (NISER ) shall be considered in default in performance of their obligations if such performance is prevented or delayed by events such as but not limited to war, hostilities, revolution, riots, civil commotion, strikes, lock-outs, conflagrations, epidemics, accidents, fire, storms, floods, droughts, earthquakes or ordinances or any act of God or for any other cause beyond the reasonable control of the party affected or prevented or delayed. However, a notice is required to be given within 30 (thirty) days from the happening of the event with complete details, to the other party to the contract, if it is not possible to serve the notice, within the shortest possible period without delay.
2. As soon as the cause of Force Majeure has been removed the party whose ability to perform its obligations has been affected, shall notify the other of such cessation and the actual delay incurred in such affected activity adducing necessary evidence in support thereof.
3. From the date of occurrence of a case of Force Majeure, obligations of the party affected shall be suspended during the continuance of any inability so caused. With the cause itself and the inability resulting there from having been removed, the agreed time of completion of the respective obligations under this agreement shall stand extended by a period equal to the period of delay occasioned by such events.
4. Should one or both parties be prevented from fulfilling the contractual obligations by a state of Force Majeure lasting to a period of 6 months or more, the two parties shall consult each other to decide regarding the future execution of this agreement.

**PART-II****BILL OF QUANTITIES**

**Name of work: “Comprehensive Annual Maintenance Contract (AMC) of 1350TR low side of HVAC system, Non-comprehensive AMC of 4 no’s chiller make -Kirloskar (each 450TR) and Non-comprehensive AMC of VRF system Make -Daikin (312 HP) for initial period of 1 Year at NISER, Jatni Campus.”**

Sl. No.	Details of Services	Unit	Qty	1 <sup>st</sup> Year		2 <sup>nd</sup> Year	
				Unit Rate (Rs.)	Total Amount (Rs.)	Unit Rate (Rs.)	Total Amount (Rs.)
1	Non-comprehensive AMC of 4 no’s Kirloskar make chiller (each 450TR)	TR	1800				
2	Comprehensive Annual Maintenance Contract (AMC) of 1350TR low side of HVAC system	TR	1350				
3	Non-comprehensive AMC of Daikin make VRF system (312 HP)	HP	312				

(Rupees.....)

No. of Cutting :  
 No. of Corrections :  
 No. of Over writing :

**Signature of tenderer  
 with date & address**

Note: - Bidders are required to quote against each item legibly and arrive at the total cost of work. The summary sheet and abstract of cost should be filled in properly. All pages should be duly signed by the bidder failing which the tender may be rejected.





राष्ट्रीय विज्ञान शिक्षा एवं अनुसंधान संस्थान, भुवनेश्वर  
 (परमाणु उर्जा विभाग, भारत सरकार का एक स्वयं शासित संस्थान)  
**NATIONAL INSTITUTE OF SCIENCE EDUCATION AND RESEARCH, BHUBANESWAR**  
 (AN AUTONOMOUS INSTITUTE UNDER DEPT. OF ATOMIC ENERGY, GOVT. OF INDIA)

**TENDER DOCUMENTS**

(NIT No. - NISER/IWD-MECH./AMC/AC/ 2017/062, Dt.22.03.2017)

**Tender for:** -“Comprehensive Annual Maintenance Contract (AMC) of 1350TR low side of HVAC system, Non-comprehensive AMC of 4 no’s chiller make -Kirloskar (each 450TR) and Non-comprehensive AMC of VRF system make -Daikin (312 HP) for initial period of 1 Year at NISER, Jatni Campus.”

**SUMMARY SHEET**

1. Brought forward from Page No..... Schedule of quantities: Rs.

-----  
 TOTAL

(Rupees \_\_\_\_\_  
 \_\_\_\_\_)

C.O. to Page – ABSTRACT OF COST Rs. \_\_\_\_\_

**SIGNATURE OF THE TENDERER**



**राष्ट्रीय विज्ञान शिक्षा एवं अनुसंधान संस्थान, भुवनेश्वर**  
 (परमाणु उर्जा विभाग, भारत सरकार का एक स्वयं शासित संस्थान)  
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**TENDER DOCUMENTS**

(NIT No. NISER/TWD-MECH./AMC/AC/ 2017/062 , Dt.22.03.2017)

Tender for: -“Comprehensive Annual Maintenance Contract (AMC) of 1350TR low side of HVAC system, Non-comprehensive AMC of 4 no’s Kirloskar make chiller (each 450TR) and Non-comprehensive AMC of Daikin make VRF system (312 HP) for initial period of 1 Year at NISER, Jatni Campus.”

**ABSTRACT OF COST**

TOTAL COST BROUGHT FORWARD FROM PAGE 31

(Rupees \_\_\_\_\_  
 \_\_\_\_\_) only

**SIGNATURE OF THE TENDERER**

## **MEASUREMENT OF WORK AND PAYMENT**

1. Payment to the contractor shall be made by NISER against **Quarterly bills** for the work done against this contract, after submission of monthly/quarterly service report. The contractor is required to submit along with first bill, the copy of AMC entered into with OEMs or their authorized agency (if any) or agency approved by NISER as the case may be. The payment shall be made after deducting any amounts due from the contractor by way of mobilization advance, taxes, security deposit, penalties/ recoveries if any etc. The contractor should ensure that all employees are covered for all social benefits viz PF, EPS, EDLI and ESI.
2. The contractor shall submit proof of recovery and remittance of the same along with the monthly/running bill for the next month. An indemnification covering NISER shall be submitted against any claim during the execution of the contract or later stage under Employees Provident Fund and workmen Compensation Act before release of payment of First bill.
3. For any deficiency or defective service, an amount proportionate to the rates quoted by the contractor as given in his Price Bid shall be deducted from the monthly payment made to the contractor. The decision of Engineer-in-charge/competent authority of NISER shall be final in this regard.
4. Due payment after completion of each month after making any recoveries etc. towards taxes, duties & non- performance as described elsewhere in the bid documents shall be made to the contractor. No payment to the contractor shall be released till the contractor submits the bill for the work done by him. The bills shall be paid monthly. NISER will make all endeavors to release the due payment within 10 days of receipt of certified bill from the contractor.
5. Proportionate payment shall be deducted from the contractor's bill if any work is found to be not done/is incomplete or is unsatisfactory, as adjudged by the Engineer-in-charge. In case of any difference of opinion between the engineer in charge and the contractor, regarding the non-performance or unsatisfactory performance of work, the matter will be referred to the Director, NISER, whose decision on the matter shall be final. NISER may also, at their discretion get such defective/deficiency work done at the risk & cost of the contractor and recover the actual amount spent plus 20% of actual spent amount including all actual NISER establishment charges, from the contractor's bills. Repeated lapses in doing the work satisfactorily shall result in rescinding the contract.
6. The Employer / Director, NISER, may without prejudice to his any other rights or remedy against the contractor in respect of any delay, inferior workmanship, any claims for damages and/or any other provisions of this contract or otherwise, and whether the date for completion has or has not elapsed, by notice in writing absolutely rescind the contract.

### **Payment of final Bill**

1. The final bill shall be submitted by the contractor in the same manner as **quarterly bills** and NISER shall pay it within 60 days, after the final certificate of completion furnished by the Engineer-in-Charge. Further claims shall neither be made by the contractor nor admissible for payment after submission of the final bill and these shall be deemed to have been waived and extinguished.

### **OTHERS**

If, the contractor has to remove/dismantle any old, damaged wiring & fixtures etc. for the purpose of execution of the said work, the same shall be deposited with NISER Stock Yard along with the list of materials under intimate to the concerned Engineer in- Charge. No extra payment will be made by the institute for this purpose.

**SIGNATURE OF THE TENDERER**