

INSTITUTE OF PHYSICS, BHUBANESWAR

TENDER DOCUMENTS FOR ROUND THE CLOCK
OPERATION AND MAINTENANCE OF THE AIR
CONDITIONING SYSTEM.

(The tender document contains 26 pages including this page)



INSTITUTE OF PHYSICS
PO.SAINIK SCHOOL, SACHVALAYA MARG
BHUBANESWAR - 751005
ORISSA
(AN AUTONOMOUS RESEARCH INSTITUTE UNDER DEPARTMENT OF ATOMIC
ENERGY GOVERNMENT OF INDIA)

TENDER NOTICE

NO: IP/AC-Electrical/002-2007-08

Sealed tenders are invited by the “Director”, Institute of Physics, Bhubaneswar-751005, Orissa, comprising of technical and financial bid separately, from registered firms having adequate experience on maintenance and operation of central AC systems as well as room air conditioners initially for a period of one year which is likely to be extended further depending on the quality of service rendered. The firm should have its own service center at Bhubaneswar/ Cuttack and adequate technically qualified staff for the following:

“Annual Round the clock operation and maintenance contract of (1). Central AC Plant 2 x 80TR capacity, (2). Central AC Plant 2x 40TR capacity, (3). Chilled Water Plant 2 x 10TR capacity and Annual Maintenance contract of (1) Packaged AC system 2 x 40TR capacity (2). Window and Split Air Conditioners installed in Laboratories, Guest House, Offices Hostel, etc. inside Institute of Physics campus, Bhubaneswar.

Total Estimated cost: Rs.9/- Lakhs per annum (Rupees Nine Lakhs per annum)

EMD: Rs.22500.00 (Rupees Twenty Two Thousand Five Hundred only)

Cost of tender paper: Rs.500.00 (Rupees Five Hundred only) (Non refundable)

Tender is open for the period from: 25.11.2007 To: 10.12.2007

Last date and time of submission of the tender: 10.12.2007, 3PM

Date and time for opening of tender (Technical bid): 11.12.2007, 3PM

Date and time for opening of tender (Price bid – Annexure-I): After evaluation of technical bid it will be intimated to the technically successful bidders.

Place of opening of tender: Institute of Physics, Bhubaneswar, Library conference hall.

No tender document can be purchased by post.

Tender Document can be purchased from Institute of Physics, cash counter from 11Am to 1PM on payment of Rs.500.00 in cash on any working days from 25.11.2007 to 10.12.2007.

Contractor should have experience and should have executed similar job of minimum Rs.4 lakhs per annum.

Full form of Tender Document is available at website www.iopb.res.in Bidders may down load the Tender Documents and submit their bids as per the procedure mentioned in the tender document accompanied by a DD of Rs.500.00 (Non refundable) favoring “Institute of Physics” payable at “Bhubaneswar” apart from the DD towards EMD.

DIRECTOR
INSTITUTE OF PHYSICS
BHUBANESWAR

INSTITUTE OF PHYSICS
SACHIVALAYA MARG
BHUBANESWAR – 751005
ORISSA

NOTICE INVITING TENDER NO. IP/AC-Electrical/002 - 2007-08

TECHNICAL BID

Name of the work: - Round the clock operation and maintenance of (1). Central Air Conditioning Plant, 2 x 80 TR capacity, BATLIBOI make, year of commissioning -1995, (2). Central Air Conditioning Plant, 2 x 40 TR capacity, UTILITY make, year of commissioning - 1991, (3). Chilled water plant, 2 x10TR capacity, UTILITY make, year of commissioning – 1991, (4). Maintenance of Window and Split Air conditioners installed in laboratories, Guest House, Hostel etc inside Institute of Physics campus, Bhubaneswar.

& (5) – Maintenance of 2 x 40TR packaged chiller units (each unit consists of 4 numbers of 10 TR Scroll compressors), TRANE make, year of commissioning 2004. This is an optional item and addition of this in AMC will be considered during the evaluation of tender, hence price for this is to be quoted separately.

Estimated Value	: Rs.9/- lakhs per annum
Earnest Money	: Rs.22500/- in shape of D.D. drawn in favor of Institute of Physics, payable at Bhubaneswar.
Cost of tender paper	: Rs.500.00 (Non refundable) shape of D.D. drawn in favor of Institute of Physics, payable at Bhubaneswar.
Tender is open for the period	: From 25.11.2007 to 10.12.2007
Last date and Time of submission of tender	: 10.12.2007, 3PM
Date & Time for opening of tender (Technical bid)	: 11.12.2007
Date and time for opening of tender (Price bid – Annexure-I)	: After evaluation of technical bid it will be intimated to the technically successful bidders.
Address for submission of tender	: DIRECTOR INSTITUTE OF PHYSICS BHUBANSWAR – 751005 ORISSA.
Place of opening of tender	: Institute of Physics, Library conference hall.

GENERAL CONDITIONS OF TENDER:

1. **Submission of Tender:** Tenders should be submitted in sealed envelopes in two parts separately, i.e. "Technical bid" and "Price bid". Both the parts should be further sealed in an envelope super-scribing Tender no. & name of work, due date for opening, bidder's name and address. The tender duly filled in & signed on each page, accepting the terms and conditions, may be sent to above mentioned address either by post or hand delivered in **tender box kept in the office of the Director, after ensuring that due entries are made in the tender register kept at the counter. It should not be handed over to any employee of the Institute. No tender shall be accepted later than the time schedule specified above. Institute will not be responsible for delay in transit if sent by post.**
2. **Technical Bid :** In this bid, the bidder should submit his company profile, organizational setup, credentials, list of plant, machinery & tools in his possession, copies of work orders successfully executed during last three years and earnest money draft. No deviations in respect of tender conditions are acceptable. **The bidder is required to attach entire tender conditions including the annexure II to VII (except annexure -I for the price bid) duly signed & stamped on each page as a token of acceptance to the tender conditions with this bid.** The following specific conditions/ documents are essential for pre-qualification:
 - 1) Earnest Money Deposit
 - 2) Receipt of the cash deposit for the cost of tender paper/ DD towards the same.
 - 3) Copies of work orders executed successfully for "Round the clock" O & M of AC plant at least 80TR capacity during the last 3 years.
 - 4) Entire tender conditions and all annexure (except price bid) duly signed & stamped by the bidder.
 - 5) Any technical deviations / suggestions should be attached.
 - 6) Additional documents required for prequalification.
 - 7) Copy of ESI & PF registration certificate.
 - 8) Copy of TIN under VAT & PAN under IT act.
 - 9) Copy of service tax registration certificate.
 - 10) At least one single work order of round the clock operation and maintenance of AC plant for a value more than 4 lakhs and at least 80TR capacity executed from a Government organization/ Autonomous Body/ PSU/ Pvt. Ltd. Company.
 - 11) Satisfactory work completion certificate from at least one client with contract details.
3. **Price Bid:** In this bid the bidder is required to quote his rates/ prices for the works mentioned in the scope of work & technical specifications. The rates/ price should be inclusive of all material cost, labor, services, charges for the plant/ machinery/ tools & tackles required for work, freight, insurance, octroi, Govt. duties, taxes, levies up to IOP site basis. No charges towards quantity variation, escalation, site difficulties, other hidden cost even though they may not have been explicitly mentioned in the scope and schedule of works shall be payable extra or separately. It is mandatory on bidder to quote all items rate as asked for in the BOQ/ Price schedule. Failure to adhere to this condition will lead to rejection of tender. The bidders should quote unconditional rates, neatly written without any overwriting/ white fluid/ erasing and duly signed & stamped at all pages.
4. **Earnest Money:** An earnest money of Rs.22500.00 has to be enclosed along with the technical bid. The EMD shall be only in the form of Bank Draft in favor of Institute of Physics, payable at Bhubaneswar. No Cheques/ cash shall be accepted. EMD of technically disqualified bidders will be returned within 30 days from the date of evaluation of the technical bids. Refund of EMD to the bidders except the lowest 4 (four) bidders shall be made within 15 days from the date of opening of price bid. Refund of EMD of the L2, L3, & L4 bidders shall be made after award of work and site

- mobilization by the successful bidder. EMD of successful bidder will be retained by IOP during pendency of the contract & shall be adjusted towards security deposit. No interest shall be given on such EMD
5. **Validity of Tender:** Tender shall be valid for our acceptance without any change in rates and tender conditions for a period of 90days from the date of opening of bid.
 6. **Escalation:** No escalation over and above items' rates quoted by the bidder shall be paid during the execution of contract.
 7. **Extra Items:** During the execution of the work, the contractor may require executing certain additional/ extra items in order to complete the job/works beyond the BOQ for which no rates are available. The payment for such extra/ deviated items shall be paid as per rate approved on the basis of analysis. The cost component for rate analysis shall be (1) cost of material (2) cost of direct labor (3) contractor over heads & profit 10%. Before execution of work, the rate analysis may be forwarded to Director, IOP duly certified by the IOP engineer in charge for approval of the Director, IOP.
 8. **Scope of Work:** Detailed scope of work, terms and conditions, specifications etc. are enclosed with this tender documents as per Annexure I, II, III, IV,V, VI, VII.
 9. **Local office & Workshop:** The contractor should have their local office and workshop stationed at Bhubaneswar. Details of the same have to be furnished along with the tender.
 10. **Deviations:** No deviation from the stipulated terms and conditions will be allowed. Tenders should be unconditional.
 11. **Site Conditions:** Contractor shall acquaint himself fully with the site conditions and the working environment of IOP before quoting his rates. No compensation on account of any site difficulties will be entertained, at a later date, after award of the works. The plant & machinery will be handed over to the contractor on "As is where is" basis and the entire liability of smooth operation & maintenance of the system will be taken up by the successful bidder.
 12. **Correspondence:** All the correspondence in respect of tender/ contractual obligation shall be made to "Director, Institute of Physics, Schivalaya Marg, Bhubaneswar-751005"
 13. **Terms of Payment:** The payment shall be made on submission of monthly bills (format to be approved by the Institute) by the contractor after due certification by the IOP person responsible for supervision of the work. The monthly bill of the contractor should accompany with copies of wage bills, copy of challan in support of PF & ESI of the previous month in respect of the employees deployed at IOP. Income Tax & Works Contract Tax shall be deducted at source and deposited as per rule.
 14. **Security deposit:** Security deposit @ 10% of the running bill value will be deducted from the running bills and will be released after completion of the works and site clearance by the contractor. No interest will be paid on such security deposit. The contractor may opt to furnish the security deposit equivalent to 10% of the contract value in shape of the Bank Guarantee valid up to the end of three (3) months from the date of expiry of the contractual period.
 15. **Labour Laws:** The contractor will abide by the rules and regulations related to labour laws, accident, workmen compensation act, workman insurance, ESI, PF, etc. This will be the sole responsibility of the contractor. Institute of Physics, Bhubaneswar-751005 will not be a party at any stage in any of the disputes relating to the above. In case any liability arises due to non-conformance by the contractor, under no circumstances IOP will be liable for the same. The contractor should submit the copy of the annual PF return form 6AR in respect of each financial year during the period of contract as per PF Act and also copy of the half yearly ESI return form, to the Institute to support the deposit of contribution in respect of employees deployed by the contractor in IOP site.
 16. **Rules governing the Contractor's employees working in the IOP Premises:** The contractor's employees working inside the IOP campus will abide by the rules &

- regulations of the Institute. Any damage to the IOP property due to mishandling, carelessness on the contractor's or his workman's part will be recoverable from the contractor's bills.
17. **Rights reserved by IOP:** Institute of Physics reserves the right to reject any or all the tenders in full or in part without assigning any reasons whatsoever, and the decision of the Institute in this regard will be binding on all the bidders. Tenders not complying any of the provisions stated in this tender document are liable to be rejected. **Director, IOP reserves the right to accept or reject any tender, either in full or part, without assigning any reasons thereof and does not bind himself to accept the lowest tender.**
 18. **Liquidated damages:** In case the work is delayed beyond the specified completion period for reasons attributable to the contractor, deductions on account of Liquidated damages @ 0.5% of the contract value per week will be deducted subject to a maximum of 5% of the total incomplete works. In such case incomplete work shall be worked out by deducting value of works actually executed from total work order value. However in case the works are delayed beyond the scheduled completion / contract period, IOP reserves the right to get the work done by any other contractor at risk and cost of the contractor and amount to that effect will be deducted from his bills/ dues.
 19. **Work supervision at IOP site:** Contractor should depute a qualified supervisor dedicated for this site, who will co-ordinate work execution activities and interact with the IOP representative responsible for supervision of work.
 20. **Gate pass for contractor staff:** All persons deployed by the contractor at IOP site will have to carry valid gate passes, which will be only issued after submission of their bio-data in desired format. Any negligence/ offence on their part will attract immediate removal from site.
 21. **Tools & other required materials:** The contractor will provide necessary materials, tools, equipments, measuring instruments and working consumables etc. needed for execution of the works. Safe custody of all such material will be contractor's sole responsibility. No extra charges will be paid for the same.
 22. **Watch and Ward of IOP equipments:** Watch and ward of all materials till the system is taken over by IOP shall be sole responsibility of the contractor and pilferage etc. shall be entirely to his account.
 23. **ESI/ Insurance:** All the persons deployed by the contractor at IOP will have to be covered under ESI/ Insurance against any personal accident and IOP will not be liable for payment of any compensation on that account. The copies of the valid insurance cards of the employees, issued by the ESI/ Insurance authority should be submitted to IOP at the time of their deployment.
 24. **Light arrangements at IOP site:** Suitable lighting arrangements will have to be arranged by the contractor at his own cost. However IOP will provide for power/ light points at nearest available point at the place of work.
 25. **Norms for the Work at IOP site:** The work shall be carried out as per the norms set by the manufacturer of the respective equipment, specification and specific instructions as may be issued by the IOP engineer responsible for work from time to time. During execution of work, the contractor should follow all the standard norms of safety measures/ precautions to avoid accidents/ damages to man machines and buildings. On non-adherence of this clause, suitable fines as decided by the IOP shall be imposed.
 26. **Entry and exit of materials from IOP campus:** Materials belonging to the contractor whether consumable or non consumable should be brought inside the IOP campus with proper entry at the main gate and any material to be taken out with proper gate pass issued by the Institute.

27. **Water and Electricity for O & M work at IOP:** IOP will provide free water and electricity during O & M work at IOP, at one point. The contractor has to make his own arrangements for installation of power and water from that point as per his requirements.
28. **Statutory condition:** Tender once submitted will remain with the Institute and will never be returned to the bidders. The bids will be IOP property.
29. **Termination of the contract:** The Director, IOP reserves the right to terminate the contract on account of poor workmanship, failure to mobilize site, non-compliance of set norms/ specifications for the works, delay in progress of work, violation of any contract provisions by the contractor. In such cases the contractor is liable to pay liquidated damages amounting to one-month contract fees held with IOP in the form of BG along with the EMD amount held as security deposit with IOP.
30. **Dispute:** Any dispute arising out of this contract will be subjected to jurisdiction of Bhubaneswar.

Accepted

(Seal and Signature of the bidder)

Note: Entire Tender Document along with the Annexure-II to VII is to be duly signed and stamped on each page by the bidder is to be attached with “Technical bid” and “Price Bid” separately sealed in two envelopes is to be submitted by keeping in a single envelope.

ANNEXURE-1**PRICE BID**

(THIS IS THE ONLY DOCUMENT TO BE SUBMITTED IN PRICE BID ENVELOPE OF BID)

The tender will be evaluated based on the rates quoted for operation and maintenance (as mentioned against each item) charges for three years for all the options mentioned below on lowest basis. However the successful lowest bidder will have to agree to the lowest rates for any of the options quoted by any other technically qualified bidder.

Sl. No.	Description of the item	Rate in Rupees per Month First year	Rate in Rupees per Month Second year (If extended in continuation with first year)	Rate in Rupees per Month Third year (If extended in continuation with first and second year)
1	Annual round the clock Operation and Maintenance contract for the following items confirming to the terms and conditions mentioned in the technical bid and Annexure II, III, IV, V, VI & VII. 1). 2 x 40TR Central AC plant 2). 2 x 10TR Chilled water/ Process water plant 3). 2 x 80TR Central AC plant.			
2.	Annual Maintenance contract for the following items confirming to the terms and conditions mentioned in the Technical bid and Annexure- II, III, IV, V, VI & VII. 1). 2 x 40TR Packaged AC systems			
3.	<u>Option- 1 (Window & Split AC)</u> Annual Maintenance contract for the following items confirming to the terms and conditions mentioned in the Technical bid and Annexure- II, III, IV, V, VI & VII. 1. 1.5TR Window AC – 59 no.s 2. 1.5TR Split AC – 15 no.s 3. 2TR Split AC – 30 no.s 4. 3TR Multi Split AC – 13 no.s			
4	<u>Option- 2 (Window & Split AC)</u> Annual Maintenance contract for the following items confirming to the terms and conditions mentioned in the Technical bid and Annexure- II, III, IV, V, VI & VII. 1. 1.5TR Window AC – 40 no.s 2. 1.5TR Split AC – 14 no.s 3. 2TR Split AC – 26 no.s 4. 3TR Multi Split AC – 07 no.s			

5.	<p><u>Option- 3 (Window & Split AC)</u> Annual Maintenance contract for the following items confirming to the terms and conditions mentioned in the Technical bid and Annexure- II, III, IV, V, VI & VII.</p> <p>1. 1.5TR Window AC – 57no.s 2. 1.5TR Split AC – 21 no.s 3. 2TR Split AC – 36 no.s 4. 3TR Multi Split AC – 07 no.s</p>			
6.	<p>In addition to the above if any additional unit will be included in the AMC for the Window and Split AC, Price towards each additional unit: Window AC – 1TR, 1.5TR, 2TR</p>			
7.	<p>In addition to the above if any additional unit will be included in the AMC for the Window and Split AC, Price towards each additional unit: Split AC – 1TR, 1.5TR, 2TR, 3TR</p>			

Terms and Conditions:

1. Both the pages of price bid have to be filled, signed with seal by the bidder and to be submitted in the part (B) envelope of the bid.
2. Both the pages of price bid is to be filled up without any cutting/ overwriting/ inking/ erasing/ white fluid etc.
3. Institute of Physics reserves the right to choose any one of the 3 options mentioned for the window and split AC units and the contract will be awarded only for one option at a time. The option will be changed to any other option during the contract period as per requirement and accordingly payment will be made.
4. The item no.2 mentioned above i.e. for the AMC of 2 x 40TR packaged AC system is an optional item and Institute of Physics reserves the right to add it in the total contract.
5. Institute of Physics reserves the right to reject the tender paper of the bidder who has not quoted for all the options mentioned here.
6. Contract will be awarded to the successful bidder for item no.1 + any one option from item 3, 4, 5 + if considered by the Institute during evaluation of the tenders item no.2.

SIGNATURE OF THE BIDDER

NAME

DATE

SEAL

ANNEXURE-II

Scope of Work:

The following scope of work is only indicative of minimum requirement and contractor is strongly advised to use his own judgment in evaluating the quantum of work involved in round the clock operation and maintenance of central air conditioning plant, process water plant, window AC, Split AC and all other accessories of these systems etc. The bidder is advised to understand the criticality of the application and the importance of maintaining more than 95% uptime of the systems. The contractor may physically verify the site and plant conditions with prior permission before quoting for the contract.

1. To operate and maintain 2x80 TR, 2x40TR and 2x10TR central AC and process water plant with all equipments (including low side equipments) as per Annexure-III, round the clock throughout the year (365 days of the year).
2. To carry out the maintenance of 2X40 TR packaged chiller units of central AC systems of Auditorium including the low side equipments. Details of the system are mentioned in Annexure-III.
3. To check and clean all AHU's, AHU blowers, AHU blower motors and adjust/ replace belt, belt tensions, if necessary to grease the blower motors and pillow blocks once in a fortnight or as per the decision engineer-in-charge, IOP. Balancing of the blowers has to be carried out if required.
4. To check the refrigerant system for leakage of refrigerant and topping up of the same after rectification of the leakage once in a fortnight or as per the decision of engineer-in-charge, IOP.
5. To check/ clean with CRC/ tighten all electrical controls monthly. The heated terminations if required to be replaced with new ones with proper size and by using appropriate size crimping tool once in a month or as required by engineer-in-charge, IOP.
6. To check the performance and if required to replace all the safety devices. This is required to be carried out once in three months or as per the site requirement.
7. To check and clean water system once in a month.
8. To check and clean AHU coils, filters, supply/ return ducts/ grills/ diffusers, dehumidifier coils and filters, fresh air filters etc. once in a month or as per the decision of engineer in charge IOP.
9. To tighten foundation bolts and adjust drive belt tensions as and when required.
10. To check and rectify rotary equipment alignment once in three months (by use of three dial gauges and to an accuracy of 0.05mm on both the axial and radial readings).
11. To check/ grease/ lubricate and if required to replace bearings in all rotating machines like motors, pumps, blowers, compressors etc. Varnishing to be done once in three months or as per site requirement.
12. Repair and maintenance of mechanical equipments such as compressors, pump sets, AHU blowers, motor drives, including minor and major overhauling.

13. To check electrical circuits and rectify the problems if any in the same as and when necessary. To clean, tighten electrical contact points once in a month. To replace electrical contacts and other items in the MCC's as and when necessary.
14. To tighten all the fasteners of the bus-bars as and when necessary. Also to replace the heated up contacts and replace cabling/ wiring as and when necessary.
15. To de-scale condensers, valves, chillers and water line pipes once in three months or as per requirements.
16. To check and top up/ replace oil of the compressor crankcase.
17. To operate and maintain the 40TR central AC plant as and when required to maintain and control a temperature of 18 to 22 degree Celsius round the year or as decided by the engineer in charge, IOP. The extreme critical requirement for IBL, i.e. for 40TR AC plant is to maintain low humidity levels i.e. less than 28%+/- 5% which is to be maintained. In process water plant i.e.10TR plant the secondary chiller temperature is to be maintained within 10 to 15 Degree Celsius. The 80TR AC plant is to be maintained and operated to maintain a temperature of 20 to 24 Degree Celsius.
18. To check the compressors for refrigerant gas pressure, oil level, vibration, sound and other parameters regularly on each day. If the required temperature is not achieved or any other problems observed in the compressor, same has to be checked thoroughly. If required the compressor has to be dismantled completely for necessary maintenance, rectification of the problem and / or replacement of the spares.
19. The equipments which have the standby ones have to be operated on rotational basis, at a span of maximum 24 hours.
20. To carry out the maintenance of 2X 40TR packaged chiller units of central AC for Auditorium to maintain a temperature of 20 to 24 Degree Celsius.
21. To monitor, ensure and maintain the adequate water level in the makeup water tanks of all the AC plants and process water plant.
22. To clean/ flush cooling tower basin as and when required.
23. To operate and maintain all the cooling towers including the standby cooling towers in good shape and condition. The water wastage, leaking and maintenance of louver plates to be checked once in fortnight.
24. To check/ if required to replace the heaters in the AHU ducts and dehumidifier.
25. To check the desiccant level in the dehumidifier. To top up the same and replace the same if required.
26. To check daily the cassette units (with chilled water circulation from 80TR plant) provided in the ground floor of new office extension building for any type of water leakage or any other problems. Same has to be attended with immediate effect. Complete overhauling of the same units has to be taken up during the major preventive maintenance period.
27. To properly clean all machineries daily.
28. To paint the piping, supports, hangers and equipments as and when required.
29. To plug the leakages in the FRP basin of the cooling tower.
30. To replace the axial fan blade assembly/ motor of the cooling towers. In the process the blade angles have to be finely adjusted, using four-inch precision level.

31. The cooling tower periphery area must be cleaned and maintained. The removal of mush and leaked water is to be carried out as and when required.
32. To arrange for a well equipped first aid box and maintain it in a healthy condition to take care of all first aid eventualities.
33. To attend to M.S. /S.S. pipe leakages by welding.
34. To keep the adequate spares for the window and split unit AC systems. All the problems in connection to the same have to be attended with immediate effect. The window and split unit AC systems have to be maintained in a healthy condition so that the same units have to run smoothly without any type of abnormal vibration and sound.
35. Preventive maintenance of the window, split and multi slit AC units has to be taken up at least at a span of 6 months or as required by the individual units.
36. For the above scope of work IOP will provide only the following free of charges to the contractor: (A) Free water and electricity for operation of the plant, (B) Spares required for maintaining the plant that are going permanently into the installation.
37. IOP will not pay any additional charges for machining jobs/ shaft alignment/ repairs, required for condensers, compressor, chiller, AHU systems etc and coil rewinding for any motor burn. The AMC is inclusive of all spares and consumables for the above maintenance work. In certain circumstances the contractor may be asked with written order to procure spare parts not covered within the scope, which will be reimbursed by IOP on production of copy of original invoice raised in favor of Institute of Physics + 10% towards handling charges.
38. To paint all the 2x80TR, 2x40TR central AC plants, 2x10TR chilled water plant, 2x 40TR packaged chiller unit, machineries and pipe lines, electrical panel, with approved color and shade at least once in a year. To paint the window AC units and split out door units (including the compressor, fan motor and base plate) with approved color and shade preferable during winter season.
39. The contractor shall carry out the major preventive maintenance of all the 2x80TR, 2x40TR central AC plants, 2x10TR chilled water plant, 2x 40TR packaged chiller unit machinery and their ancillary equipments, pipe lines, electrical panels etc once in the winter season to avoid any break down during the peak season (Summer). The contractor also required to carry out major preventive maintenance of all windows and split unit AC units once in the winter season to avoid any break down during the peak season (summer).
40. During the major preventive maintenance the AHU of all the systems has to be cleaned properly. ALL the filters have to be cleaned properly by water and after drying the same it has to be fixed back. The duct lines of all the AHU systems also have to be checked and cleaned during the preventive maintenance.
41. Compressor oil is required to be replaced at least once in each year and preferably during the major preventive maintenance period and / or else as per the site requirement.
42. To check all the MS/ SS pipe lines valves connected in the water lines at least once in a week for their proper operation. Necessary rectification/ maintenance of the same have to be carried out if any type of abnormalities observed in the same.

43. The SS pumps in 2x10TR chilled water plant has to be checked on daily basis, if any type of abnormalities observed in the same, it has to be attended on urgent basis. These two pumps have to be maintained properly to achieve 99% up time.
44. AHU rooms, Plant rooms, and cooling tower periphery has to be cleaned on daily basis and any type of debris should not be kept in these places, water accumulation in these areas has to be avoided.
45. To check the 2 inch / $\frac{3}{4}$ inch SS/ Brass valves, Flanges, etc provided in the secondary chilled water line connected to different scientific equipments inside the IBL accelerator hall, Beam hall, Low Energy Lab room on weekly basis. If any water leakage or any other problem found in the same line/ valves it has to be attended with immediate effect.

ANNEXURE – III
DETAILS OF THE EQUIPMENTS COVERED UNDER THE SCOPE OF WORK

1. **2x40TR Central AC plant:**
 - 1.1 Compressors, make- Utility, capacity-40TR with condenser, chiller, associated valves, Expansion Valves, controls, refrigerant and water piping, etc, compressor motor capacity – 60HP, make – NGEF. 2 sets
 - 1.2 Condenser water pump set, Mono-block, Make- Beacon, Motor- 7.5HP Star-delta starter, RPM-2900, Current-11A 3sets
 - 1.3 Chilled Water Pump- Mono block, Make- Beacon, Motor- 5HP, Star-delta starter, RPM- 2900, Current – 8A. 3sets
 - 1.4 AHU no.1, For IBL Accelerator, Beam Hall, Console Room, Motor – 15HP, Star-Delta starter, RPM-1460, Motor make- Crompton Greaves. and heaters 1 set
 - 1.5 AHU no.2, For MBE, Low Energy, X-ray, Health Physics Laboratories and office rooms, with heaters Motor – 10HP Star-Delta Starter, RPM-1440, Motor Make- NGEF 1 set
 - 1.6 Cooling Tower no.1, Make- 1868 PS/ Paharpur, Motor- 7.5HP, Motor make- Kirloskar, Current-12A Water Temperature – In-97°F, Out- 90°F. Vertical Forced Draft. 1 set
 - 1.7 Cooling Tower no.2, Make- 3862 PS/ Paharpur, Motor- 7.5HP, Motor make- Crompton Greaves, Current-11.04A, Water Temperature – In-97°F, Out- 90°F. Axial Forced Draft. 1 set
 - 1.8 Associated Electrical panels for the above systems 2 sets
 - 1.9 Thermally insulated MS/SS chilled water pipe lines, Condenser water MS pipe lines, AHU ducts and dampers Water line Valves, safety devices, Makeup water tanks etc. lot

2x80TR Central AC plant:

- | | | |
|-----|---|---------|
| 1. | Compressors, make- Batliboi, capacity-80TR with condenser, chiller, associated valves, Expansion Valves, controls, refrigerant and water piping, etc, compressor motor capacity – 100HP, make – Kirloskar. | 2 sets |
| 1. | Condenser water pump set- 70MQ/hr.30mt head
Motor- 15KW, make-Kirloskar
Star-delta starter, RPM-1450, Current-27.5A | 3 sets |
| 3. | Chiller water pump set- 55MQ/hr, 40mtr.head
Motor- 9.3KW, make-Kirloskar
Star-Delta Starter, RPM-1450, Current -17.5A | 3 sets |
| 4. | AHU- 1 for Library Ground floor, model-AH-12,
Capacity- 24000cfm at 50mm wg, with heaters.
Motor- 15KW (20HP), make-Kirloskar, Current-27.5A | 1 set |
| 5. | AHU- 2 for Library First floor, model-AH-12,
Capacity- 32000cfm at 50mm wg, with heaters,
Motor- 18.3KW (25HP), make-Kirloskar, current- 32A | 1 set |
| 6. | AHU- 3 & 4 for New Office Extension Building First and Second Floor Model- VE/ AHU/ 120/ 05, Capacity- 12000CFM at 50mmwg. With heaters, Motor – 5.5KW, make- Kirloskar, 1440RPM | 2 sets |
| 7. | Four Way Cassette type indoor unit with chilled water circulation system provided in the ground floor of New Office Extension Building, Model no.MKA – 1200 (HRN4), capacity- 36040Btu/h, Input- 240V,50Hz, 0.86A
Weight – 36Kg, air Volume- | 16 sets |
| 8. | Cooling Tower – Axial Forced Draft, make - Paharpur
Location – Library roof top, Capacity – 80TR
Motor – 5.5KW, make- Kirloskar, 1440RPM, 11Amps | 1set |
| 9. | Cooling Tower – Natural Draft, Make- Canara Engg,
Capacity – 200TR, Location – Back side of the Library. | 1 set |
| 10. | Associated Electrical panels for the above systems | 5 sets |
| 11. | Thermally insulated MS/SS chilled water pipe lines,
Condenser water MS pipe lines, AHU ducts and dampers
Water line Valves, safety devices, Makeup water tanks etc. | lot |

2 x 10TR Chilled Water Plant:

1. Compressors, make- Utility, capacity-10TR with condenser, chiller, associated valves, controls, refrigerant and water piping, Expansion Valve, etc, compressor motor capacity – 15HP, make – NGEF, 1460 RPM, 20.6A. 2 sets
2. Condenser water pump set- Monoblock
Motor- 03 HP, make- Beacon- 11/2 DM 6HD162
Star-delta starter, RPM-2850, Current-4.8A 2 sets
4. Chiller water pump set- Monoblock
Motor- 02 HP, make- Beacon- 1 ½ DMD162
Star-Delta Starter, RPM-2850, Current – 3.8A 2 sets
5. S.S. Heat Exchanger/ Secondary Water Chiller
Make – Flowlink 1 set
6. Secondary Chiller Pump (S.S.Pump)
Pump Model & make- 1.5 x 1.8/ Chemflo
Motor – 7.5HP, Frame size & make – AM 132SZ2/ NGEF
RPM – 2875, Amps- 10.5 2 sets
7. The Secondary Chilled water line distributes the chilled Water to different scientific instruments in IBL through Insulated SS pipe line and 07 no.s of 2 inch SS valves, 29 no.s of ¾ inch SS valves & 06 no.s of ¾ inch ball valves. 1 lot
8. Cooling Tower – Natural Draft, Capacity – 10TR,
Location – Back side of the IBL 1 set
9. Associated Electrical panel for the above systems 1 set
10. Thermally insulated MS/ SS chilled water pipe lines, Condenser water MS pipe lines, Water line Valves, safety devices, Makeup water tanks etc. lot

2 x 40 TR Packaged AC Systems:

Institute of Physics reserves the right to include this AC system in the AMC. Hence bidders are requested to quote separately for AMC of this system as asked in the price bid

- | | | |
|----|--|----------------------|
| 1. | Packaged condensing unit, make- TRANE
Model – RAUP-600, capacity – 40TR,
Contains 4 no.s of 10TR scroll compressors,
Strainers, safety devices, Refrigerant gas,
2 condensing coils, 6 no.s of cooling fans,
Electrical circuitry, gas pipe lines, valves, etc. | 2 sets |
| 2. | AHU for Auditorium, Double skinned AHU
Capacity- 35700 cfm at 75mm wg, With heaters,
Expansion Valve, safety devices, gauges, AHU ducts
Dampers, etc. & blower with motor- 18.5KW (25HP),
make-Crompton Greaves, Current- 33A | 2 sets
(one unit) |
| 3. | Associated Electrical panel for the above systems | 1 set |

Window, Split and Multi Split AC systems:

There will be three options for the window, split, multi split AC systems. Institute of physics reserves the right to choose any one of the options at a time to include in the AMC for the same. So bidders are requested to quote for all the three options in their price bid keeping in view the above mentioned fact. These options has been adopted as Institute of Physics is about to replace some of the Window and Split AC in near future and the new AC installed in the same position will be under warranty for a certain period.

Option – 1

- | | | |
|----|---|---------|
| 1. | 1.5 TR Window AC -
(Make- Voltas/ LG/ Carrier/ Blue Star) | 59no.s |
| 2. | 1.5 TR Split AC -
(Make- Voltas/ LG/ Carrier/ Blue Star) | 15 no.s |
| 3. | 2 TR Split AC -
(Make- Voltas/ LG/ Carrier/ Blue Star) | 30 no.s |
| 4. | 3 TR Multi Split AC -
(Make- Voltas/ LG/ Carrier/ Blue Star) | 13 no.s |

Option – 2

- | | | |
|----|---|---------|
| 1. | 1.5 TR Window AC -
(Make- Voltas/ LG/ Carrier/ Blue Star) | 40 no.s |
| 2. | 1.5 TR Split AC -
(Make- Voltas/ LG/ Carrier/ Blue Star) | 14 no.s |
| 3. | 2 TR Split AC -
(Make- Voltas/ LG/ Carrier/ Blue Star) | 26 no.s |
| 4. | 3 TR Multi Split AC -
(Make- Voltas/ LG/ Carrier/ Blue Star) | 07 no.s |

Option - 3

- | | | |
|----|---|---------|
| 1. | 1.5 TR Window AC -
(Make- Voltas/ LG/ Carrier/ Blue Star) | 57 no.s |
| 2. | 1.5 TR Split AC -
(Make- Voltas/ LG/ Carrier/ Blue Star) | 21 no.s |
| 3. | 2 TR Split AC -
(Make- Voltas/ LG/ Carrier/ Blue Star) | 36 no.s |
| 4. | 3 TR Multi Split AC -
(Make- Voltas/ LG/ Carrier/ Blue Star) | 07 no.s |

ANNEXURE – IV**TIME SCHEDULE FOR ATTENDING/ COMPLETION OF PROBLEMS IN THE AC PLANT AND PROCESS WATER PLANT**

Sl. No.	Description of the Item	Time	Remarks
1	General		
1.1	Minor defects Mechanical and Electrical	Same day	
1.2	Major Electrical problems like repair/ maintenance/ replacement of Starter/ SFU/ Control Circuit etc.	1 – 2 days	
2	Compressor Breakdown Problems		
2.1	Changing Reeds	Same Day	
2.2	Replacement of Shaft Seal	One Day	
2.3	Leakage testing, rectification of the same, vaccumising, Gas Charging and putting back to service	Two days	
2.4	If compressor has to be dismantled due to any type of faults, after necessary repair, putting same back into normal operation	Seven days	
2.5	Changing of main compressor motor, realignment, coupling etc.	Four days	
2.6	Replacement of lubrication oil	Same day	
2.7	Replacement of main bearing bushes	Same day	
2.8	Check up of end- play and rectification of the same	Same day	
3	Pump problems		
3.1	Replacement of pump glands	Same day	
3.2	Replacement/ cleaning of suction strainers	Same day	
3.3	Replacement/ repair of coupling	Same day	
3.4	Re-alignment	Same day	
3.5	Replacement of bearing of pumps/ motors	Two days	
3.6	Metal deposition and machining of shaft, sleeve, motor and pump end shields etc. for proper fitting.	Four days	
4	Air Handling Units		
4.1	Replacement of bearings	One day	
4.2	Replacement of V belts	Same day	
4.3	Cleaning of cooling coils by air/ water pressure/ vacuum cleaning procedures.	Same day	
4.4	Cleaning of fresh air filters	Same day	
4.5	Cleaning of micro filters	One day	
4.6	Changing blowers	Same day	
4.7	Metal deposition and machining of the AHU shaft, etc	Three days	
4.8	Repair of cooling coils etc.	Three days	
5	Dehumidifier		
5.1	Replacement of heaters	Same day	
5.2	Changing of dessicant	Same day	

5.3	Attending to minor problems	Same day	
5.4	Attending to major problems	Three days	
5.5	Replacement bed drive springs	Same day	
5.6	Replacement of filters	Same day	
6	Cooling Towers		
6.1	Changing of bearings, fan blades, motors etc.	Two days	
6.2	Cleaning of sump/ cooling tower tray	Same day	
6.3	Changing of nozzles	Same day	
6.4	Change of gear box oil	Same day	
6.5	Re-adjustment of fills/ drift eliminators	Same day	
6.6	Adjustment of fan blade angle	Same day	
6.7	Weather protection of the motor terminals	Same day	
7	Electricals		
7.1	Servicing/ replacement of contactor points	Same day	
7.2	Repair of burnt terminals	Same day	
7.3	Replacement of burnt wirings/ cables etc.	Three days	
7.4	Replacement of contactor/ OL relay/ SFU/ timer/ indicating lamps/ push buttons/ motor terminals/ etc	Three days	
7.5	Preventive maintenance of complete MCC	One day	
7.6	Rewinding of burnt motors	Seven days	
8	Window and Split AC units		
8.1	Minor problems	Same day	
8.2	Replacement/ repair of fans/ blower motors, bearings/ bushes, burnt wirings, thermostats, capacitors, relays, etc	One day	
8.3	Replacement/ repair of compressor	Two days	
8.4	Repair of refrigerant tubing's, coils, copper pipes for gas leakage, etc	One day	
8.5	Gas charging	Same day	
8.6	Repair/ replacement of electronics circuitry	Two days	
8.7	Electrical problems	Same day	
8.8	Complete overhauling of window/ split AC system	Two days	

ANNEXURE – V

Special conditions of this contract:

1. Bank guarantee: On award of work the contractor shall furnish to the Institute a Bank Guarantee equivalent to 10% of the contract value, which should remain valid up to end of three months from the date of expiry of the contract period.
2. The contractor has to ensure the promptness in service and this is basically the essence of the contract. The contractor has to ensure 95% uptime of the system. All endeavors will be made by the contractor to restrict to preventive maintenance and unforeseen out ages will be kept to the minimum.
3. While all efforts will be made to complete the maintenance activities in the normal hours, yet if the situations so warrant that the maintenance has to be done beyond the normal hours, same will be done by the contractor at no cost to IOP and the monthly quoted price will be deemed to cover such costs.
4. Log- Book supplied by the Institute will be maintained by the operator-in-charge in each shift. The readings for the previous day will be got counter signed on the subsequent day by the IOP Engineer-in-charge.
5. The maintenance log book supplied by IOP will be filled by the concerned supervisor of the successful bidder, mentioning the details of the activities carried out during the day and the materials consumed in each maintenance activity. This maintenance logbook will also be countersigned on the subsequent day by the IOP engineer-in-charge.
6. The 40TR, 80TR central AC plants and 10TR process water plants runs/ operated for round the clock 365 days a year. Hence the site working arrangement has to be accordingly arranged by the contractor that operation and maintenance staff has to be available round the clock 365 days a year (including the Sundays and Holidays). Furthermore the maintenance gang has to be so arranged by the contractor that it is geared/ available for breakdown maintenance work 24 hours of the day.
7. Inside room conditions will be maintained as per directions of the Engineer-in-charge, but within design parameters.
8. The plant and equipments will be maintained by operators and mechanics having adequate skills and knowledge. All the operators and technicians appointed by the contractor preferably should have a minimum qualification of ITI in Refrigeration/ Electrical/ Fitter trade/ should have adequate experience in the same field.
9. **The rewinding of burnt motors/ machining jobs of shafts, end shields, etc. has to be carried out at Institute of Physics approved workshops only.**
10. **Contractor has to deploy the man power as per the requirement mentioned in the Annexure-VII attached herewith. All the staff appointed by the contractor for IOP site will be required to attend their duty as per the schedule and sign the attendance register at to be maintained at IOP site on daily basis. It is responsibility of the contractor to depute a substitute man power in case any of the persons deployed at IOP site remains absent. If any**

- position of man power deployed by the contractor is found to be vacant/ not attended, it will be marked as absent for the same day by IOP engineer-in-charge and the salary applicable for that position for that day will be deducted from the monthly bill of the contractor. Recurring of such activities regularly will be treated as violation of the contract and IOP reserves the right to take necessary actions as per rule. Frequent change of man power will not be entertained and appointment and/ or removal of any staff of contractor from IOP site has to be carried out with prior permission of IOP.**
11. **All the spare parts to be replaced at IOP site by the contractor has to be new and of the same specifications & make of the old one or approved equivalent of the same.**
 12. Right of IOP for deduction of payment: The payment shall be made monthly on successful completion of each completed month subject to verification of the invoice by our engineer-in-charge, who may at his discretion effect deductions for non-performance or delayed/ improper work. If the maintenance activities are not carried out as per the response time indicated in annexure-IV, suitable deductions on proportionate basis will be made from contractors' bills and IOP reserves the right to determine the amount in question. It is mandatory for the contractor to submit the employees wage bill and the attendance record along with the bill. The wage payment for all the employees deputed by the contractor will be done in presence of the Engineer-in-charge or his nominee. The attendance record of all the employees deputed on the job will be maintained by the contractor in a register, which will be countersigned by the engineer-in-charge on daily basis. In case of absentees/ deployment of deficient man power to the site/ manpower not as indicated in clause no.10 & annexure-VII, IOP reserves the right to deduct wages from the monthly bills of the contractor at the rate specified in the Minimum Wage Act.
 13. Issue of bid documents does not mean that the bidder is considered pre-qualified.
 14. The contract can be terminated by IOP/ Contractor on written notice of two months.
 15. The contractor will provide all necessary tools, equipments, measuring instruments and minimum stock of working consumables etc. needed for execution of operation and the maintenance work. Safe custody of all such T & P will be the sole responsibility of the contractor.
 16. Watch and ward of all machineries handed over to the contractor for O & M shall be the sole responsibility of the contractor and pilferage etc. if any shall be entirely to his account.
 17. All employees will have to be covered under insurance against any personal accident and IOP will not be liable for payment of any compensation on that account. Before proceeding with the contracted works, the successful bidder will have to satisfy the IOP engineer-in-charge regarding such insurance coverage and documentary evidence to the effect will have to be furnished.
 18. Suitable maintenance lighting arrangements will have to be arranged by the contractor at his own cost. However IOP will provide for power/ light points nearby the central place of work.

19. All the maintenance activities will be carried out as per the norms set by the manufacturer of respective equipments and specific instructions as may be issued by the Engineer-in-charge from time to time.
20. Manpower deployed by the contractor at IOP site for carrying out O & M works of AC systems is strictly prohibited to be associated with other works.
21. Attention of all the bidders is drawn to that fact that **THIS CONTRACT IS TECHNICAL IN NATURE AND NOT A LABOUR SUPPLY CONTRACT AND THEREFORE MANAGING ALL THE AFFAIRS OF THE PLANT AND THE ASSOCIATED SUB-SYSTEMS IN A RESPONSIBLE AND DEDICATED MANNER WILL BE ENTIRELY THE RESPONSIBILITY OF THE BIDDER, WHO HAS AWARDED WITH THE CONTRACT.**
22. It is mandatory for all the contractor's employees to wear badges with their company name embossed on the same and display it on their shirt pockets at all times during their presence inside the IOP campus.
23. The bidder may note that the contract will be awarded for one year and renewal of the same for further two successive years will be at the sole discretion of the Institute.
24. The successful new bidder should depute two responsible persons two weeks before actually taking over the system to get acquainted with the system without any extra cost to IOP.

ANNEXURE – VI

1. **Chilled water pipe insulation procedure:**

Insulation material shall be resin bonded fiber glass of K-0.035 Kcal/ hr.m.Deg.c. and a thickness of 50mm in pipe section form or thermo cool blocks of suitable size.

Application: The surface to be insulated shall be thoroughly cleaned and allowed to dry. Hot Bitumen of grade 85/ 40 or conforming to IS 702 shall be uniformly applied @ 1.5Kg/Sq.m. on the surface to be insulated. A similar layer shall also be applied on the inside surface to be insulated. A similar layer shall also be applied on the inside surface of the insulation. CPRX compound of STP may also be used instead of bitumen. Insulation sections shall be stuck to the surface with the joints staggered. The adjoining sections shall be tightly pressed together. All the joints shall be sealed with bitumen. Voids will be sealed with suitably cut pieces. A thick vapour seal of hot bitumen at 2.5Kg/sq.m shall be applied on the outer surface of the insulation and allowed to dry. The surface shall then be wrapped with 19mm mesh 24SWG GI wire, butting all the joints and laced down with 22 SWG GI lacing wire 12.5mm sand cement (1:3) plaster shall be applied in two layers, the second layer being brought to a smooth finish. A waterproofing compound shall be added to the cement before its application. Finally it should be painted with the existing colour synthetic enamel paint.

2. **Re-metallising & machining of the AHU blower shaft:**

Scope of work briefly covers dismantling of AHU shaft and pillow block bearings transportation of shaft from IOP to works & back, re-metallising of bearing seats by low temperature/ staggered welding to have a minimum fusion depth of 1.5mm while ensuring the shaft run-out less than 0.02mm, machining and grinding to a surface finish of Rz1.2 micron, assembly of blower/ pillow block bearings/ pulley, alignment of belt drives & commissioning of the same at site.

3. **AHU coil, leak repair/ rectification/ testing:**

There are four numbers of AHU at 40TR and 80TR AC of different capacity installed at IOP site. Scope of work briefly covers transportation of coil from IOP to works and back, leak testing of coil under pneumatic test pressure of 10Kg/cm² in dip tank, rectification of leakages by brazing. Final leak testing/ rectification till no further leak is found. Pressure withstanding test has to be done for minimum of 45 minutes.

ANNEXURE-VII
MAN POWER REQUIREMENT

Sl. No.	Position of Requirement	Category	Working hours required	No. of Requirement	Qualification and Experience
1.	Central AC Plant Operator (To be called in 3 shift basis round the clock to attend the operation & maintenance of the Central AC plant)	Skilled	8 Hours a day	Six per day (365 days a Year)	ITI in Refrigeration/ Electrical with 2 years experience or 10 th with 5 years experience in the field of operation and maintenance of central AC plants
2.	Window and Split AC Mechanics: (To carry out the day – to-day maintenance requirement of window and split AC units)	Skilled	8 Hours a day	Two per day (365 days a year)	ITI in Refrigeration/ Electrical with 4 years experience or 10 th with 7 years experience in the field of maintenance of Window and Split AC systems
3.	Central AC plant Mechanic: (To carry out the day – to-day maintenance requirements of central and packaged AC plants)	Highly Skilled	8 Hours a day	One per day (365 days a year)	ITI in Refrigeration/ Electrical with 6 years experience or 10 th with 12 years experience in the field of operation and maintenance of central AC plants. He should have profound knowledge of the maintenance of Compressors, Pumps, AHU, cooling towers, safety devices, Valves, etc. used in the central/ packaged AC plants
4.	Helper (To assist in all types of maintenance work)	Semi Skilled	8 Hours a day	One per day (365 days a year)	10 th pass with 5 years experience of maintenance of central AC plants, window/ split Ac units in the helper grade
5.	Supervisor (To co-ordinate activities of the contract and carry out all the jobs as per the instructions of EIC of IOP)	Highly Skilled/ Skilled	8 Hours a day	One per day (365 days a year)	Diploma in Refrigeration & AC Engineering with 2years experience/ ITI in Refrigeration/ Electrical trade with 6 years experience

Other requirements (within the contract value and no extra cost will be paid for the same):

1. All the staffs employed by the contractor at IOP site has to follow the instructions issued by the EIC of IOP.
2. Above mentioned requirement is only for the day to day regular maintenance and operation of the AC systems at IOP site and of minimum type. The contractor has to keep additional manpower to supply as per requirement to carry out the necessary maintenance work during break down conditions and major preventive maintenance period, also the contractor required to supply additional manpower to paint the total system once in a year as mentioned in the annexure-II.

3. The contractor is required to meet the EIC/ Chairman AC committee IOP at least once in each month to discuss the details of the plant performance.
4. The supervisor shall be available in all working days between 9 AM to 5.30PM.
5. The supervisor/ contractor has to be present whenever required by the EIC IOP.
6. The contractor shall depute one qualified engineer once in every month to check-up the plant condition and improve the performance of the plant to ensure trouble free running.
7. In case the person deployed by the contractor is not found up to the standard during the execution of the contract, it shall be the responsibility of the contractor to replace the work man within seven days.
8. In case of the requirement the workman with the supervisor will be required to perform round the clock shift duties.
9. The contractor should note that the staff recruited/ appointed for the purpose of work should be of Indian origin and domicile only and should have good moral character and also should not have been in wanted list of criminals.
10. In case any of the persons/ work man wants leave, prior permission of the EIC, IOP, is necessary for the same. The contractor has to arrange alternate team member of equivalent status as suitable to EIC, IOP as a substitute for the same.