

**INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH
THIRUVANANTHAPURAM (IISER TVM)**

(An Autonomous Institute under MHRD, Govt. of India)



TENDER DOCUMENT

**ADDITIONAL CONDITIONS AND SCOPE
OF WORK (VOL - II)**

NIT No: IISERTVM/EO/E&M/101-W/05/2021-22 dated:
02-07-2021

Name of work: Comprehensive Annual Maintenance Contract
for Water Purifiers in IISERTVM campus,
Thiruvananthapuram

GENERAL

1. The work shall be carried out as per the Kerala Fire and Rescue Service Specifications and Codes of Practice will apply to the equipment and the work covered by the scope of this contract.

SCOPE OF WORK

1. The work shall be carried out the as per the guidelines issued by Kerala State Fire and Rescue Department.
2. Maintenance of Fire Fighting, Fire Alarm & Fire detection system in the areas under this contract - the maintenance agency (contractor / firm) shall be solely responsible to keep the system serviceable at all the time.
3. The firm shall engage trained and experienced technical staff and helpers for routine Maintenance. Also, minimum one technical person should be available at site every day.
4. The firm shall take over the Fire Alarm and Fire Fighting system on as is where basis. And immediately check the entire system and submit its first report. Any discrepancy/fault in the systems shall be brought to the notice of the engineer-in-charge. If the firms fail to submit its first testing / discrepancy report of the system it will be presumed that the firm have taken over the entire fire system in healthy condition and same shall be handed over to the department in healthy condition. The last report shall also be submitted by the firm at the time of handing over of the system..
5. The firm must ensure that the entire fire-detection & alarm system, public address system and fire-fighting system are kept healthy, fully operational and functional at all times. Any discrepancy/fault in the systems shall be immediately attended by the firm and the same shall also be brought to the notice of the engineer-in-charge or his authorized representative. In case, full system can't be kept functional for unavoidable reason, as much as possible, the installation shall be retained functional by isolating the defective section.
6. In case of fire if the system does not operate the firm shall be fully responsible for the damage caused due to the fire and the firm shall be liable to pay the compensation to a maximum amount not exceeding the total contract value.
7. The firm will maintain the logbook for maintenance as detailed below.
 - a) After each maintenance/Testing the test detailed to be entered in the maintenance register with dates and result achieved.
 - b) After carrying out each test, the entry in the register to be got counter signed from the department engineer/authorized person. Without prior approval, no fitting/material will be removed for repairs;
8. Logbooks shall be provided by the firm for recording the healthiness and routine checking/ maintenance of the fire protection systems.
9. Checking and maintenance of batteries for FA, FD and FF systems shall be done at no extra cost including replacement of thimbles, acid, battery-water, gel/grease and battery terminals whenever required .
10. Sign writing on each device shall be maintained by the firm.
11. Repairing of Main fire alarm panel and Local control panels by the contractors are under the scope of the contract.
12. Maintenance of the DG set as per manufacturer maintenance schedule or six monthly basic service check-up, whichever is earlier has to be done by the contractor . Payment shall be made on submission of original invoices.

13. Gland dori, grease etc for pump sets shall be provided by the firm whenever required without any extra charges .
14. Cleaning material such as old dhoties, cotton waste, surf/vim etc shall be provided by the firm whenever required without any extra charges
15. All the cables/wiring from main control panel to local control panels and up to detectors of each zone shall be maintained by the firm. Wiring break in any circuit shall immediately be repaired by the firm without any extra cost.
16. The broad objective of the maintenance services for electro - mechanical equipment's would be ensure that the equipment of IISER campus are always kept functional and maintained to achieve optimum life and safety. To ensure safety of the premises and personnel, required measures are taken and consistently maintained for efficient operations.
17. The firm shall maintain each fire zone.
18. Maintaining liaison with security department in case of fire, test being conducted to check the operation/readiness of the system shall be contractor's responsibility.
19. The servicing of the system shall be done smoothly including fire detector system and random checking and heat detectors periodically by heat and smoke.
20. 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 operation and maintenance in proper way as per the operation and maintenance manuals of respective equipment and as per good engineering practices will be required to be done under this scope of work. Successful bidder will make Proforma for recording the following minimum work schedule/parameters and show to the employer to ensure proper accomplishment of these tasks.

SPECTRUM OF SERVICES:

1. Fire Equipment for which Maintenance Services are needed are detailed at Annexure- 1&2. However, this list is only indicative and under each item, any other services, which may be relevant and necessary, shall be provided by the contractor. Bidder would assess the actual quantum of work by visiting the site and bid accordingly. The contractor, apart from executing the scope of services detailed hereunder shall also arrange required clearances, licenses renewal / sanctions etc. on behalf of IISER-TVM from various Govt. departments. However, Govt. fee if any shall be borne by IISER-TVM.
2. Fire alarm, detection & firefighting system: All the electro mechanical services of the campus are to be maintained as per the requirement of IISER-TVM. The requirement will broadly be to keep the equipment in good and efficient working condition at all the time, follow the preventive and periodical maintenance schedule & procedures as listed in the manuals / literature of the OEM, ensure safety of the equipment and personnel using it.
3. The contractor shall attend to any maintenance problems and rectify the defects.
 - a) In case the contractor fails to rectify the defect(s) after handing over assets installed in IISER-TVM in time limit IISER-TVM reserves the right to get the defect(s) rectified at risk and cost of the contractor without further notice from the quarterly bills of the contractor.

- b) In case of unserviceability / dysfunction of the equipment for a period of 48 hrs, during the course of contract, penalty shall also be imposed on the contractor and the amount will be recovered from their respective bills.
- c) Maintenance of Fire Fighting, Fire Alarm & Fire detection system in the areas under this contract – the maintenance agency (contractor / firm) shall be solely responsible to keep the system serviceable at all the time. The maintenance shall include servicing of all the equipment associated with the systems.
- d) The Agency will promptly inform IISER TVM as soon as occurrence of any major defect in these systems so that the latter can take advance action towards its rectification and procurement of any material required for that purpose
- e) After each maintenance / testing, the details will be entered in the log book (maintenance) register along with the testing date and results achieved. The entry in the register will be countersigned by the Departmental Engineer.
- f) The system shall be maintained in working condition all the time until completion of Contract.
- g) In case of incident of fire, the contractors available on duty, will ensure adequate operation of system firefighting immediately and will also simultaneously inform Local Fire Office / Hospital Authority/ Maintenance staff of IISER TVM / Security for vacating the area under fire.
- h) A snag list of the installations covered in the present scope of work shall be prepared jointly by successful bidders & IISER-TVM so as to complete the defect-rectification work well before the actual contract period is over.
- i) 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.
- j) Any damage to the installations during the currency of contract will be made good by the contractor without extra cost to IISER-TVM. Further, contractor would also indemnify IISER-TVM for the damages caused due to negligence in imparting the services.

FREQUENCY OF MAINTENANCE

1. The bidder shall carry out the routine maintenance services at the frequency detailed in maintenance schedule of Kerala Fire and Rescue service & as per guide line of OEM maintenance manual, preferably 1st week of every 3 months. However, Agency has to attend the break- down service as and when required. The frequency may be increased depending up on requirement at site. As a whole, it is to ensure that the equipment are well maintained at all the time. The work will be carried out at suitable timings to ensure that IISER-TVM work is not disturbed.
2. Note-1: The date of servicing carried out and next due date of servicing in respect of systems shall be neatly painted on assets in small fonts for effective monitoring as per direction of Engineer-in-charge.

ADDITIONAL CONDITIONS OF AMC WORK

1. Maintenance of Fire Fighting, Fire Alarm/detection system & associated PA System, in the areas under this contract - the maintenance agency (contractor / firm) shall be solely responsible to keep the system serviceable at all the time. The maintenance shall include servicing of all the equipment associated with the systems. Cost of consumables etc. shall be included in the quoted rates.
2. The cost of major or special repair or overhauling of any equipment such as Fire pumps, motors, fire alarm panels, batteries & hooters including winding of motor is not covered in the scope of this work. However, preventive & routine maintenance including servicing, minor rectification will be the responsibility of the agency. All material will be provided to the agency by IISER-TVM for such rectification free of cost except some minor material such as MCP Break glass, Petroleum Jelly, straw, lubricants, tools & tackles, nuts & bolts, distilled water, cleaning materials (soda & waste cloths etc.), log books & Stationaries, fuse, rubber packing, threads, clamps, resistors, diodes etc. which are in the scope of this work. Nothing extra shall be paid on account of consumables and small tools & plants required for the work.
3. The agency will promptly inform IISER-TVM engineer in charge as soon as occurrence of any Major defect in these systems is noticed, so that the latter can take advance action towards its rectification and procurement of any material required for that purpose. Labour for the rectification will be provided by the agency in his quoted rates.
4. The Firm/ contractor will engage trained and experienced technical staff and helpers, for undertaking maintenance services / jobs.
5. The firm / Contractor will maintain the logbook for maintenance as described below.
 - a) After completion of maintenance, the test details to be entered in the maintenance register with dates and result achieved.
 - b) After carrying out each test, the entry in the register to be got counter signed from the IISER-TVM Engineer. Without prior approval, no fitting / material will be removed for repairs, the item is repaired and put back in to position so that the system remains fully functional all the time.
6. The contractor will conduct periodical Half-yearly fire drill at site including imparting training to the staff in the use of fire Extinguishers etc.
7. The servicing & checking of fire detection system & PA system also shall be done quarterly.
8. The system shall be kept in working condition till completion of the contract. The firm will arrange handing over of the total system in full functional condition on completion of the contract.
9. In case of Emergency, The Firm shall give full support for mitigation of fire accident at no extra payment.
10. The servicing of major equipment like fire pumps, jockey pumps, pressure regulators & main fire alarm panels, all the valves, valve handles, smoke detectors, manual call points, hooters, fire control cable etc. shall be checked and greased quarterly.
11. Contractor would be bound to execute such additional item/ items, which may be essential & necessary (even though not listed in schedule of work) for the effective execution of the work. Rates for such extra items of work shall be rationally analysed / derived & would be binding on the contractor.

12. Contractor undertaking the job is advised to verify the particulars & satisfy himself towards the conditions etc. of the tenders before filling up the bids.
13. In case of Breakdown, Contractor has to take immediate action for rectification.
14. There will be delay penalty; if system will not be rectified/ necessary suitable action taken within 48Hrs, a penalty of 0.5% of Rate Contract value per day of delay subject to maximum deduction of 10% of the Rate Contract value will be applied.
15. Contractor has to do the cleaning of Smoke / Heat detectors whenever required for good performance.
16. Contractor has to train the staffs/ security personnel that how to operate the fire alarm/ firefighting system in any emergency condition.
17. In case of persistent problem or if required by the Engineer-in-charge, an inspection by an expert in the fire detection system or the concerned OEM shall be carried out for identifying defects and solutions and carrying out the necessary rectification work.
18. Shut down for maintenance shall be taken with prior approval of the department.
19. No equipment should be unmounted and taken out from the Institute without a proper Gate Pass issued by the Engineer In charge.
20. Agency has to observe all the labour rules and regulations in-force.
21. A detailed quarterly maintenance schedule shall be submitted to the EIC.
22. Firm should provide around the clock helpline contact telephone number. In case of an emergency, contractor and authorized engineer/ supervisor shall be made available at site on short notice from Engineer in charge and make all efforts to make the situation normal at the earliest.
23. Maintaining liaison with security department in case of fire, test being conducted to check the operation/readiness of the system shall be contractor's responsibility.
24. **Fire Extinguishers:** The fire extinguishers installed at the IISER-TVM premises to be refilled from the Original manufacturers or their authorized dealers/reputed approved agency before their expiry date and also the proof of refilling of cylinders should be furnished for the same.

WORK TO BE DONE ON EVERY DAY BASIS

SCOPE OF WORK FOR OPERATION & MAINTENANCE OF FIRE FIGHTING SYSTEM AND PROTECTION & DETECTION SYSTEM

1. The scope of work shall cover all routine, preventive and major /special maintenance works as required from time to time for complete Fire Fighting System and Protection & Fire Detection systems/ installations comprising Pump House equipments, Wet Riser & Sprinkler System, Ring Main Piping, Yard & Floor Hydrants and Portable Fire Extinguishers, Fire Detection, Panel Detectors and other related equipments, as and when required etc for Operation & Maintenance of Installations as per details in **Annexure -I**.
2. All the equipment/installation shall always be kept in good and trouble free operating conditions.
3. 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.

4. All the maintenance works shall be carried out in accordance with the manufacturer's specifications/ State Fire bylaws and instructions of IISER TVM.
5. The agency will liaise with Kerala State Fire Services and other statutory authorities required from time to time in connection with Fire Fighting installations and would be responsible for obtaining of Renewal of Fire License from the Fire Authority of Kerala.

TOOLS & PLANTS

All the general & special tools, tackles i/c chain pulley blocks etc., required for proper maintenance and repairs/break down etc, shall be arranged by the contractor at his own cost and issue to the staff deployed by him for this work.

CONSUMABLES

1. The rates shall be all inclusive of establishment as well as consumables as per schedule of work. The contractor is required to assess the probable quantity of all types of consumables likely to be required for keeping all the installations in good working conditions a. Nothing extra shall be.
2. The Engineer in charge may direct the contractor to use consumables of his choice from the listed/approved vendors
3. All consumables shall be arranged by the contractor for which nothing extra shall be payable. Payment for replacement of damaged materials shall be reimbursed on submission of original invoices.
4. Replaced parts/ spares, used brunt oil etc will be property of vendor. It is his responsibility to disposed of immediately.
5. Log book and complaint books, all stationery like registers, sheets, markers, pens and pencils etc. will be supplied by the contractor and no extra payment for these shall be made. Logbook proforma must be approved by Engineer- in- charge, IISER TVM.
6. The contractor should submit schedule of maintenance works well in advance to IISER TVM.
7. Contractor shall be responsible for any periodic statutory inspection to be carried out on the equipment, necessary test reports and certificates, rectification of defects pointed during such inspection etc.
8. Contractors should follow all safety norms and provide necessary safety equipment at their own cost. In case of any accident during the operation / maintenance of the equipment leading to injuries / damages to human beings equipment and / or loss of life, the contractor shall be fully responsible for setting all claims and indemnify IISER TVM against any claims arising out of such accidents. Consequent damages to other systems will however also be recoverable from the contractor.

GENERAL PRECAUTIONS FOR DAILY MAINTENANCE TO BE OBSERVED AT EACH LOCATION:

1. The Contractor is to ensure that all the installations and accessories provided for different installations are in their positions, levels, directions etc.
2. The contractors should have their maintenance personnel accessible either by person or by phone during or after office hours and if called for to attend to work for repairing, rectification or servicing or as required for the smooth functioning of

Operation & All Inclusive Comprehensive Maintenance of Fire Fighting System and Protection & Detection System at IISER TVM.

Maintenance Schedule

The following works/ checks are required to be performed on Quarterly basis and record all the activities in the logbook with date and time.

Checks:

- a) Operational readiness of system during mains failure
- b) Check the fire circuit of each zone from the panels
- c) Check whether signals of fire and fault get transmitted from zonal panel to main panel
- d) Performance check of the hooters shall be done along with the performance check of manual call points.
- e) Performance check of the PA System.
- f) Check smoke detectors, if required cleaning shall be carried out with suitable reagents.
- g) Checking of water pressure of the hydrant line & action shall be taken to arrest leakage on urgent basis.
- h) Checking of main control panel of fire pump & alarming system
- i) Check fault circuit of each zone by actually disconnecting wire by removing a detector.
- j) Check fire circuits by facilitating actual smoke to one detector of each zone
- k) Cleaning of all types of detectors with suitable means.
- l) Checking / servicing of major equipment such as Fire pumps, Jockey pumps, pressure gauges, panels including contactors, valves, main alarm panels, auxiliary panels etc.
- m) Greasing of valves, checking of couplings / Impeller
- n) Any other maintenance work as directed by Engineer-in-charge.

Annexure - IV

Schedule of Maintenance

Within one week of award of work the agency shall submit for approval of HLL, the detailed schedule of operation, routine, special and preventive maintenance along-with daily, fortnightly and monthly activities for all works and execute as per directions of the Engineer-in -charge of HLL. However tentative minimum routine & preventive maintenance schedule shall be as under:

Daily

- i) Check water level in U.G Fire Tank
- ii) Check water pressure in sprinkler & yard hydrant ring mains
- iii) Check voltage of incoming electric supply
- iv) Check operation of Jockey Pump
- v) Check level of fuel in diesel storage tank
- vi) Check level of lubricant oil in diesel engine
- vii) Check starting battery voltage
- viii) Check Healthiness of fire detection system

Weekly

- i) Check water leakage in hydrants, if any
- ii) Check and operate yard hydrants
- iii) Check and operate first aid hose reel
- iv) Check automatic operation of main electrical pumps

Monthly

- i) Check automatic operation of diesel engine
- ii) Check air filter of diesel engine
- iii) Check setting of controls
- iv) Cleaning of all hydrants & nozzles
- v) Clean the starting panel
- vi) Tighten glands & replace gland dori if required of all pumps & valves
- vii) Check operation of fire brigade inlet and outlet valves
- viii) Check the conditions of portable Fire extinguishers

Annual

- i) Check all sluice & gate valves and descale
- ii) Grease all the bearing of pumps & motors
- iii) Check connections of all the cables, switches and starters
- iv) Drain water of U.G tank & clean
- v) Replace suction water strainers in U.G tank
- vi) Paint yard hydrant cabinets and exposed pipes, motors & pumps etc.

POWER SUPPLY

IISER TVM shall not guarantee the supply of electricity and no compensation shall be entitled for any damages occurred for due to failure, short circuit of electricity.

RESPONSIBILITY OF IISER TVM

IISER TVM shall hand over all the units indicated to the contractor in good working condition prior to the starting of the contract. Contractor shall attend promptly to the complaints received by him from IISER TVM and try to rectify the fault within 24hrs from the registration of the complaints. However in case any major breakdown such as compressor, fan motor, leakage of refrigerant etc., contractor must attend promptly and quickly and complete the same within 48 hours from the receipt of complaints. In case the contractor fails to rectify the fault within the stipulated time he should install a standby service unit at no extra cost at the place of breakdown in order to continue the operations.

PAYMENT

No advance payment will be made. Payment shall be made on monthly basis on production of inspection and service call report along with your bill. Income tax will be recovered at the prevailing rate from your bill.

ADDITION / DELETION

IISER reserves the right to add or delete any similar fire fighting/detection equipment from the scope during the period of contract.

Note: VENDORS SHALL VISIT THE SITE BEFORE QUOTING.