



KENDRIYA VIHAR II APARTMENT OWNER'S ASSOCIATION
169, BADRA NORTH, SHAKTIGARH, BIRATI, KOLKATA – 700051

Email: contact.kv2k@gmail.com

Website: www.kendriyaviharphase2kolkata.org

TENDER REF. NO: KV2K/TECH/CAP/2020-21/FIRE

DATED: 28/02/2021

NOTICE INVITING TENDER (NIT) FOR
**“Supply, Installation and Restoration of Fire Fighting Equipment
and
AMC of Fire Protection System”**

KENDRIYA VIHAR II APARTMENT OWNER'S ASSOCIATION (KVIAOA)



KENDRIYA VIHAR II APARTMENT OWNER'S ASSOCIATION, KOLKATA

1.	Tender Reference No.	:	KV2K/TECH/CAP/2020-21/FIRE
2.	Name of work	:	Supply, Installation and Restoration of Fire Fighting Equipment and AMC of Fire Protection System of KV II, Kolkata
3.	Estimated Cost	:	Rs. 7,00,000/- (Excluding GST)
4.	EMD Amount	:	Rs. 14,000/- in the form of Demand Draft / Bank Guarantee.
5.	Time for execution	:	1 month for reinstatement and thereafter Annually
6.	Tender Fee	:	Rs. 100/- Non- Refundable.
7.	Uploading Date in Website	:	28 th February 2021 from 9:00hrs
8.	Bid Document Download Start Date	:	28 th February 2021 from 9:30hrs
9.	Site Visit followed by pre bid meeting with vendors	:	6 th March 2021 between 11:00hrs – 13:00hrs
10.	Bid Submission Start Date	:	6 th March 2021 from 09:30hrs
11.	Bid Submission End Date	:	12 th March 2021 up to 17:00hrs
12.	Bid Opening (Envelop-I i.e. Technical Bid)	:	13 th March 2021 at 11:00hrs
13.	Bid Opening (Envelope- II i.e. Price Bid of technically qualified vendors). Intending tenderers can attend during opening of bid	:	14 th March 2021 at 11:00hrs

Note: Open tender notice will be available on newspaper.



NOTICE INVITING TENDER

KENDRIYA VIHAR II APARTMENT OWNER'S ASSOCIATION

KENDRIYA VIHAR PHASE - II

169, BADRA NORTH, SHAKTIGARH, BIRATI, KOLKATA – 700051.

NAME OF WORK: "Supply, Installation and Restoration of Fire Fighting Equipment and AMC of Fire Protection System"

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KENDRIYA VIHAR II APARTMENT OWNER'S ASSOCIATION
KENDRIYA VIHAR PHASE - II
169, BADRA NORTH, SHAKTIGARH, BIRATI, KOLKATA – 700051.
NOTICE INVITING TENDER (2 Envelope Open Tender)
(Tender Ref. No.: KV2K/TECH/CAP/2020-21/FIRE)

1. Tenders are invited on behalf of The President, Kendriya Vihar II Apartment Owners' Association, from the eligible contractors / agency for the work of **"Supply, Installation and Restoration of Fire Fighting Equipment and AMC of Fire Protection System of KV II, Kolkata"**.

E-mail: contact.kv2k@gmail.com

Tender processing fee of Rs. 100/- in the form of DD (non-refundable) will be required to be submitted at the time of submission of sealed tender in separate envelope mentioning at the top right corner. The original sealed document should reach by post / courier / dropped in person in the box available at AOA office, 1st floor of the Community Centre, Kendriya Vihar Phase-II, Kolkata by the date as specified in the Critical Data Sheet of Tender Document. The bidder must carefully read all the terms, conditions and specifications before filling up the tender and quotation. The prospective bidders are advised to make a detailed survey of the site, so that they quote the rates taking all factors into consideration.

2. Quotation in sealed cover super scribed **"Quotation for Supply, Installation and Restoration of Fire Fighting Equipment And AMC of Fire Protection System of KV II, Kolkata"** in two envelopes containing Technical and Financial bids separately should be submitted by Speed Post / Registered Post / in person, to The President, Kendriya Vihar II Apartment Owner's Association (KVIAOA) at the address given below

Kendriya Vihar Phase-II,
Community Center (1st Floor)
169, Badra North, Shaktigarh, Birati,
Kolkata-700051

3. Following 2 envelopes shall be submitted by the tenderer as per the following schedule:

CRITICAL DATA SHEET

Sl. No.	Description	Date
1	Uploading Date in Website	28 th February 2021 from 9:00hrs
2	Bid Document Download Start Date	28 th February 2021 from 9:30hrs
3	Site Visit followed by pre bid meeting with vendors	6 th March 2021 between 11:00hrs – 13:30hrs
4	Bid Submission Start Date	6 th March 2021 from 09:30hrs
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6	Bid Opening (Envelope-I i.e. Technical Bid)	13 th March 2021 at 11:00hrs
7	Bid Opening (Envelope- II i.e. Price Bid of technically qualified vendors). Intending tenderers can attend during opening of bid	14 th March 2021 at 11:00hrs
8	Tender Fee	Rs. 100/- Non- Refundable.
9	EMD	Rs. 14,000/- in the form of Demand Draft / Bank Guarantee.

Envelope – I: Tender fee, EMD, Credentials etc. other than duly filled and signed tender booklet. This envelope should contain the following:

- I. Tender Fee in the form of DD amounting Rs. 100/- in an envelope.
- II. Self-attested Photocopy of Permanent Account Number (PAN) and GST Registration Number.
- III. Tenderer should deploy sufficient resource and machinery as per the requirement of work in consultation with Site-in-charge (SIC) to achieve the milestones/target and overall completion within the time period. Tenderer shall submit scanned copy of Undertaking on Company Letter Head stating the list of machineries to be used in the work.
- IV. Credentials showing experience of execution of similar works in the last five years along with performance certificate, proof of final payment released by the user.
- V. Audited Abridged Balance Sheet along with Profit and Loss Account Statement of the tenderer during preceding three financial years ending on 31/03/2020.
- VI. Duly signed complete tender document after downloading from the website.
- VII. Rs. 14,000/- in the form of DD as EMD.
- VIII. Self-attested Photocopy of valid trade license and professional license as applicable.
- IX. Copy of Partnership Deed, Company Deed/Article of Association (as may be applicable)

Qualifying requirements of contractors / tenderers containing the following: -

- i. Should have satisfactorily completed Similar scope of work in contract(s), **however pre-determined phasing of the work will be accepted) three works, each of Rs. 1,00,000.00 (including all taxes / GST) or two works, each of Rs. 2,00,000.00 (including all taxes / GST) or one work of Rs. 3,00,000.00 (including all taxes / GST)** in single contract of similar nature of work ending on **last date of submission of bid as mentioned i.e. Annual Maintenance & Service Contract for Fire Fighting System at any Govt. Department / PSU / Municipal Authority/ WBAOA registered society /any other similar establishments.**
- ii. Client certificate for experience should show the nature of work done, the value of work, date of start, date of completion as per agreement, actual date of completion and satisfactory completion of work. Should have annualized average financial turnover more than **Rs. 10,00,000/-** against works executed during last three years ending 31st March of the previous financial year. As a proof, copy of Abridged Balance Sheet along with Profit and Loss Account Statement of the tenderer should be submitted along with the application. Tenderers showing continuous losses during the last three years in the balance sheet shall be summarily rejected.

Self-certified copy of all the Documents of Envelope-I mentioned above shall be submitted in along with Tender fee and EMD DD as required in favour of Kendriya Vihar II Apartment Owner's Association on or before date & time mentioned in **CRITICAL DATA SHEET**. The tenderer, whose Tender processing fee and DD against EMD are not reached by post / courier / given in person to the concerned official or tender box of Kendriya Vihar Phase II, Kolkata by the date & time mentioned in critical data sheet, then their tenders will be liable to be rejected. Any postal delay will not be entertained.

EMD of the value of **Rs. 14,000.00** shall be accepted in the form of Demand Draft only from a Nationalized bank in favour of Kendriya Vihar II Apartment Owner's Association, payable at Kolkata.

The tenderer should have Bank & Account details for preparation of Bank Guarantee are as follows:

Account Name: Kendriya Vihar II Apartment Owner's Association
Name of Bank & Branch: UCO Bank, Salt Lake City, DD Block Branch
IFSC Code: UCBA0001870
Account Type: Current
Account No: 18700210001691

Successful tenderer should submit an amount of @10% of the work order value within 15 days from the date of award of the work in the form of Demand Draft of any nationalized bank in favour of Kendriya Vihar II Apartment Owner's Association, payable at Kolkata.

Refund of EMD:

The refund of EMD of Unsuccessful tenderers will be returned only on receipt of request letter from the concerned vendor.

Envelope – II: The Financial Bids contents should be as below: -

All rates shall be quoted in the Bill of Materials as per the format mentioned in Annexure - II. The tenderer has to fill up the rate of individual items in figures as well as words. The amount column to be filled up in figures and words only. The final amount to be mentioned in figures and in words followed by signature with date and stamp.

4. Bid Submission: -

- i. The tender fee, EMD DD, acceptance of tender conditions duly signed & stamped, and all the documents as mentioned in Page 6 under **Envelope – I** para to be put in a separate sealed envelope. At the top of the envelope "Envelope – I", the Tender Ref. No. and Name of work should be clearly mentioned.
- ii. The duly filled up and signed bill of materials (after downloading from the website) as per para **Envelope – II** mentioned above should be put in a separate sealed envelope. At the top of the envelope "Envelope – II", the Tender Ref. No. and Name of work should be clearly mentioned.
- iii. Both sealed Envelope – I and sealed Envelope – II should be put in a separate suitable size sealed envelope mentioning the Tender Ref No. and Name of work should be clearly mentioned.
- iv. The final sealed envelope should be deposited / dropped in the tender dropping box available at the main gate by person or post or messenger within the specified date and time. No receipt will be issued in this regard.

5. Tenders liable for Rejection: -

- i. Bids received by Post, by Courier Service or in person, "after the specified time" will not be considered.
- ii. Bids are not complete or not in statutory format.
- iii. Any cutting / overwriting in the Technical / Financial Bid.
- iv. Bids received in covers not sealed.
- v. Technical bid without tender fee or EMD.
- vi. All items & services mentioned in Annexure – II of the tender specification is not covered.
- vii. Copy of ITR for last 3 financial years.
- viii. GST return for last financial years.
- ix. Copy of PAN & TIN
- x. The President, AOA, Kendriya Vihar Phase-II reserves the right to reject any or all bids without assigning any reasons whatsoever.

6. Negotiation may be carried out with the L1 bidder prior to issue of purchase/work order.

**President,
Kendriya Vihar II Apartment Owner's Association
Kolkata - 700051**

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UNCONDITIONAL ACCEPTANCE LETTER

(TO BE SUBMITTED IN "ENVELOPE- I")

To,
President,
KVIAOA, Kendriya Vihar Phase-II,
Kolkata – 700051

Name of work: Supply, Installation and Restoration of Fire Fighting Equipment and AMC of Fire Protection System

ACCEPTANCE OF TENDER CONDITIONS

1. The tender documents for the above work have been provided to me / us by KVIAOA, Kendriya Vihar Phase-II, Kolkata and I / We hereby certify that I / We have inspected the site and read the entire terms and conditions of the tender documents which shall form part of the contract agreement and I / We shall abide by the conditions / clauses contained therein.
2. I / We hereby unconditionally accept the tender conditions of tender documents in its entirety for the above work.
3. I / We are unconditionally accepting that it is not permissible to put any remark(s) / condition(s) (except unconditional rebate on quoted rate if any) in / along with the tender document and the same has been followed in the present case. In case, this provisions of the tender if found violated after opening of tender, I / We agree that the tender shall be rejected and tender calling authority shall without prejudice to any other right or remedy be at liberty to forfeit the 10% of earnest money.
4. I / We declare that I / we have not paid and will not pay any bribe to the board of managers, Kendriya Vihar II Apartment Owner's Association, Kolkata for awarding this contract at any stage during its execution or at the time of payment of bills.
5. The required earnest money as specified in tender document for this work has been submitted along with the tender fee.

Thanking you,

Yours faithfully

SIGNATURE OF THE TENDERER
WITH COMPANY SEAL

Place:

Date:

CONDITIONS OF CONTRACT

Kendriya Vihar II Apartment Owner's Association

KENDRIYA VIHAR PHASE-II, KOLKATA

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A) GENERAL CONDITIONS OF THE CONTRACT

1. The work is to be carried out as required as per schedule of quantity, specifications & conditions of contract maintaining safety and security rules.
2. All terms & conditions, work details etc. as mentioned in the tender documents should be followed.
3. Contractor must submit with the tender a list of similar jobs carried out by him as required along with the name of works, name and address of clients, year of execution, capacity of plant and value of work.
4. KVIAOA, KOLKATA may visit the facility of bidder before commencement of the work.
5. Every worker should be employed after providing them a suitable safety shoe. Safety shoe should be as per IS15298 (Part 2):2002 Clause 6 or equivalent standards.
6. "Contractee" has reserve the right to terminate the contract at any stage during the contract period due to the noncompliance of the terms and conditions mentioned in the work order. Here "Contractee" means the competent authority who signed the "Work Order". In case of any lapse in complying with the conditions of contract/failure in executing the work as per terms and specifications, on contractor's part, KVIAOA, KOLKATA will have the right to impose penalty on contractor as per rules and/or cancel the work contract with forfeiture of Earnest Money/amount of Security Deposit, without assigning any reason thereof.
7. Non-deployment of competent / staff / engineer service / and undue unjustified delays in rectification of any faults noticed and unsatisfactory maintenance of the complete fire system shall be treated as breach of the contract. In such situations, KVIAOA, KOLKATA may consider imposing penalty or deduction of money (at the double of schedule rate) from the payment to be made to the firm. The decision of KVIAOA, KOLKATA in this regard shall be final and binding on the part of contractor.
8. Working personnel under the contract will not be entitled for any medical facility from KVIAOA, KOLKATA except the first aid which is provided only during working days between 9:00AM to 5:30PM.
9. There should be a supervisor other than workmen present at the KV-2, KOLKATA during the working hours on working days and also on holidays in case required to communicate with KV-2 Supervisor/ Office Admin for the respective work, Security Section as and when needed in connection with the work. Supervisor is to submit the details of identity proof and address proof including details of himself to the KVIAOA, KOLKATA before the commencement of work.
10. The Successful bidder whose tender is accepted will be required to obtain Police Verification Certificate (PVC) issued by Special Branch of Police at his own cost for all his workmen i.e. Engineers, Supervisors and Labourer's to work inside KV-2, KOLKATA and should quote accordingly. The PVC will be valid for three years. In case of receipt of any adverse charter and antecedent remarks / notification against the Contractor/Company/ firm/proprietor and/or his contract personnel, consequent to the security vetting, KV-2, KOLKATA reserves absolute right to terminate the contract forthwith without assigning reason/ show cause notice. Under the circumstance the Contractor will have no right to claim good any losses/liability that may be incurred as consequence to the above action initiated by KV-2, KOLKATA. KV-2, KOLKATA also reserves the right to forfeit in part/full performance security and/ or security deposit in possession of the KVIAOA for failure on the part of the contractor to abide/adhere to the Security instruction issued by competent authority / KV-2, KOLKATA from time to time.
11. Contractor shall be responsible for any loss/damage of property or equipment etc. by their employees. In case of a fatal or disabling injury accident to any person due to lapses by the Contractor. KV-2, KOLKATA shall have the right to impose appropriate financial penalty on the contractor and recover the same from payments due to the contractor for suitably compensating

the victim or his/her dependents. Before imposing the penalty, appropriate enquiry shall be held by KV-2, KOLKATA

12. For Scope-I, II, III, IV & V one work order will be issued and after successful completion of that work order and receiving certification from KVIAOA, Kolkata, another work order will be issued for Scope-VI: Comprehensive AMC of complete fire protection system. Vendor shall submit bills separately against each work order.

13. **PERFORMANCE GUARANTEE / SECURITY DEPOSIT:** The contractor shall be required to deposit an amount equal to 10% of the total tendered value of the contract as Performance Guarantee before commencement of the work but not later than stipulated date of commencement.

The contractor on receipt of the each Work Order (2 No.s) will submit Security Deposit @ 10% of the work order value either by demand draft /pay order/Banker's cheque drawn or issued in favour of "**KENDRIYA VIHAR II APARTMENT OWNER'S ASSOCIATION**" covering the entire period of contract and/or will be recovered from the bill. The Security Deposit will be refunded after 6 months from the date of completion of the contract subject to recovery, if any. However, no interest will be paid on the Security Deposit.

14. **Completion time:** For Scope-I, II, III, IV & V as per the work order to be completed within **one month** from the date of issue of the work order.

The Comprehensive annual maintenance contract (Scope-VI) as per the work order to be completed by **one (01) year period** from the date of issue of work order which may be extended for further one year.

15. **Payment terms:** For Scope-I, II, III, IV & V payment will be made as applicable on completion of the work order and on the certification by KVIAOA, KOLKATA.

For Scope-VI: Comprehensive AMC of complete fire protection system, payment will be made as applicable on completion of every three-calendar month and on certification by KVIAOA, KOLKATA.

Payment will be made based on the actual work carried out as per the schedule of quantity, rates offered in the tender after completion of schedule servicing. **In case of elapse / failure by the contractor to complete schedule servicing, within the stipulated time, the remaining work will be carried out by separate agency without any consent of the contractor, the final payment will be made on deduction of the same amount in addition to other terms and condition of the contract, as applicable. GST as applicable for this work must be mentioned in the quotation.** Price quoted is inclusive of GST and no extra payment over and above the quoted price will be paid.

16. **Guarantee:** Entire work will be guaranteed for the period of 6 months after completion of each work order. 10% of the work order value as a Security deposit will be retained for this period and will be refunded to the contractor after completion of Guarantee period. Performance guarantee and EMD shall be refunded on completion of the total work.

17. Bidder should submit the following documents along with tender :- (i) PAN (ii) Latest Professional Tax Challan Copy (iii) Copy of Trade License & Professional License (iv) Copy of Partnership Deed, Company Deed/Article of Association (as may be applicable) (v) GST Number, (vi) Letter of Authority and any other documents.

B) Technical Specifications:

1.0 Introduction

Kendriya Vihar-II, Kolkata is a residential complex, developed by Central Government Employees Welfare Housing Organization (CGEWHO) on about 10 acres of land situated beside Belghoria

expressway, Shaktigarh, Birati, Kolkata-700051. The complex has total 20 blocks (Ground+ 6-storeyed) of 4 different residential units [1(A), 2(B),3(C)& 4(D) BHK] and a 3-storeyed Community Centre.

The fire protection system of Kendriya Vihar-II (KV-2), Kolkata was constructed 5 years back and comprises of following elements:

A) Fire detection & alarm system:

- Smoke detectors (Para-3.5)
- Fire alarm devices (Para-3.5)

B) Fire mitigation system:

- Portable fire extinguishers (Para-3.4)
- Fire hydrant system (Para-3.1, 3.2, 3.3) of this campus is operated in semi-auto mode.

2.0 Scope

I. Restoration of Fire detection & alarm system

The bidder should physically inspect the entire fire detection & alarm system which has to be repaired or replaced to make an assessment of the charges and consumption of consumables/spares etc., before quoting their rates. As per the inspection on 2019 - B3, C2, D4 block Panels and D9 block MCP are not functioning properly. After restoration work all the Fire detection & alarm components and full system should work satisfactorily.

II. Refilling of Potable fire extinguishers

The bidders shall inspect physically all the fire extinguishers within the entire campus for refilling and testing of them to make an assessment of the charges, before quoting their rates.

III. Supply and installation Hose Box:

The successful bidder has to supply and install three hose boxes at the boundary wall near the hydrant valve as per the following specification:

- a) Type: Double door with locking arrangement with front glass and key
- b) Size: 750 mm x 600 mm X 250 mm for accommodating 2 Nos. of 15-meter hose conforming to IS 636 Type A, IS marked and one branch pipe conforming to IS 903 and IS marked.
- c) Material: Aluminium Sheet or FRP
- d) Coating: PO Red Epoxy coated.
- e) Quantity: 3 Nos.

IV. Supply and installation of new fire extinguisher:

The successful bidder has to supply and install new Dry powder type (**ABC stored Pressure**) fire extinguisher in 4 Nos. at Community Centre, 120 Nos. at 1st to 6th Floor of each 20 blocks and 1 no. at UGR-1. Fire extinguishers of 6 kg capacity fully charged and pressurized with N2 gas shall be installed (Wall Mounted on Bracket) in different floors of Community Centre, residential buildings and UGR-1 of the complex. The extinguishers shall be manufactured conforming to IS Specification 13849 or 15683 or equivalent. bearing ISI marked and duly certified. The extinguishers shall be filled with ABC type Dry Chemical Powder, manufactured conforming to IS specification 14609

- a) Type: DCP **ABC**
- b) Capacity: 6 kg
- c) Test Pressure: Minimum 35 kgf/cm²

- d) Discharge Time: 20 s (85% of rated capacity)
- e) Bulk range: not less than 4 m
- f) I.S. specification: 13849 or 15683 or equivalent
- g) Quantity: 125 Nos.

V. Supply and installation Glow in Dark Signs (EXIT SIGN):

The successful bidder has to supply and install of Photoluminescent Signs for fire "EXIT" and Fire Door "FLOOR: 1/2/3/4/5/6" at each floor of 20 blocks and community centre as per following specification:

- a) Size: 8x4 inch (for "EXIT") and 12x4 inch (for "FLOOR: 1/2/3/4/5/6")
- b) Material: Vinyl (Thickness 3mm)
- c) Standard: UL 924 or equivalent

The glow letters should be fully legible for 90 minutes after the failure of normal lighting and have a visibility rating of 30 feet

- d) Quantity: 125 Nos. (for "EXIT") and
240 Nos.(for "FLOOR: 1/2/3/4/5/6" each type 40 Nos.)
4 Nos. (for "FLOOR: 1/2" each type 2 Nos.)

VI. Comprehensive AMC of complete fire protection system

After successful completion of above scope of works Sl. No. I, II, III, IV & V and receiving certification from KVIAOA, Kolkata, the comprehensive AMC of entire fire protection system of KV-2, Kolkata will be started.

Operations and maintenance of the fire protection system is to be done on regular basis to maintain the system in healthy condition. Regular operation / functional test of fire hydrant system is done on regular basis. Contractor shall be liable to undertake any emergency maintenance & refilling as and when required and called for the same.

Maintenance, servicing and recharging shall be performed by trained persons having available the appropriate servicing manual(s), the proper types of tools, recharge materials, lubricants and manufacturer's recommended replacement parts or parts specifically listed for use in the fire extinguishers, fire hydrants, fire pumps and fire detection & fire Alarm System.

The annual maintenance contract is for smooth functioning of the entire systems which includes regular servicing (monthly, quarterly, half yearly & annually), necessary preventive checking, performance testing and attending breakdown maintenance within 24 hrs. This is Comprehensive AMC and necessary consumables & genuine spares as recommended by the OEM shall be provided by the bidder.

The Contractor shall also prepare a **Preventive Maintenance Schedule** of all the systems in compliance with the relevant Indian standards/codes, manufacturers' recommendations and consultation with KVIAOA, KOLKATA. **Complete schedule with detail scope and frequency for each item is mentioned in Annexure-A.** Brief schedule may be modified to improve further. The Contractor shall also maintain **Fire Fighting system history card** giving full details of equipment and frequency of check and overhaul. Record of all maintenance checks, data, etc. shall be maintained by the contractor in a logbook (duly endorsed by the KVIAOA, KOLKATA) and shall be produced when demanded. The Contractor should follow and carry out maintenance as briefed below guidelines and should maintain inventory of

sufficient quantity of **spares & consumables (Para-5)** in order to keep the system healthy for smooth operation of fire protection system of the campuses.

The Contractor shall ensure Fire Protection System works within the specified limits (as per standard) at all the times. The Contractor shall carry out regular maintenance and testing of Pumps, Motors, Detectors, Panels and other equipment and connected accessories. Monitoring of Fire Panels, Pumps and electrical parameters and full hydrant system including all the valves & fittings should be checked at regular intervals. Attending to general complaints related to Fire Protection system and **replacement of unserviceable items** under the scope of the contractor.

The works for AMC involve maintenance activities and tests as per schedule specified in **Annexure-A: Schedule maintenance**, in addition to attending any breakdown and to ensure smooth functioning of the systems. Annual servicing of diesel engine by **manufactures authorised agent** is preferable. Contractor has to keep sufficient spares and consumables to minimise the maintenance time. Necessary all tools, gauges, instruments, etc. required for maintenance activities shall require to be maintained by the contractor. Contractor is responsible to execute the job to the satisfaction of the KVIAOA, KOLKATA.

The contractor shall be responsible not only for his own men and material but also for the security of the equipment/ materials of the client. The cost of repair/replacement of equipment damage due to mishandling by the worker of the contractor will be deducted from the contractor's bill after due assessment by the competent authority and such assessment will be final and binding on the contractor.

VII. Fire training to the site supervisor, security persons and residents:

The contractor has to conduct basic fire-fighting training and fire drill covering the following topics quarterly in a year among 50 or more participants:

- Classification of fire
- Firefighting methods
- Possible fire risk in residences
- Fire Protection systems
- Activity in case of fire
- Type of fire extinguishers and their use
- Fire drill using extinguishers
- Drill on fire hydrant system operation
- Evacuation drill

Team for the above drills should not exceed 20 participants at a time.

3.0 Specification of Equipment:

The bidders are requested to inspect physically all the listed items below, before quoting their rates.

3.1 List of pumps in UGR-1 of KV-2, KOLKATA:

Sl. No	Type of pump	Make	Driver and Rated HP	Uses
1.0	Electric Motor Driven Centrifugal Pump	KBL	Electric Motor and 100 hp	Average 30 minutes/week
2.0	Diesel Engine Driven Centrifugal Pump	KBL	Diesel Engine 77.3 kW	-do-
3.0	Jockey pump	KBL	Electric Motor and 4 kW	-do-

3.2 List of Diesel Engine in UGR-1 of KV-2, KOLKATA:

Sl. No	Location	Make	Rated Power	RPM	Model No
1.0	UGR-1, KV-2, KOLKATA	Kirloskar Oil Engines Ltd.	77.3 kW	1500	4R1040TA

3.3 List of all Valves, Fire Brigade Connections & Pressure Gauge etc. in Fire Hydrant System of KV-2, KOLKATA:

Sl. No.	Name of the Equipment	KV-2, KOLKATA (Approx. Numbers)
1	Hydrant Valve	17
2	Riser Landing Valve	120
3	Gate Valve	4
4	Non-Returnable Valve	1
5	PIT NRV	1
6	Butterfly Valve	6
7	Hose Reel (Riser line)	120
8	Air Release Valve	20
9	Isolation Valve	1
10	Fire Brigade connection.	1
11	Pressure switch	3
12	Hose Box with two Hose and one branch pipe	137
13	Pressure gauge	24

3.4 List of Fire Extinguisher of KV-2, KOLKATA

Sl. No.	Name of the Equipment	Numbers	Make
1	DCP ABC Type (6 kg)	20+ 125 (See Scope-III)	Fire Shield (20 nos.)
2	Carbon di Oxide	01	Fire Shield

3.5 List of Fire detection system of KV-2, KOLKATA

Sl. No.	Name of the Equipment	Numbers	Make	Model No.
1	Fire alarm	120	Agni	AD – 501 SOUNDER (MS)
2	Panel (8 Zone)	20	Agni	Oriel Series
3	MCP	140	Agni	
4	Smoke detector	120	Agni	QS-300-RB

4.0 Maintenance Records and Regulations:

1. The system shall be maintained in working condition all the time until completion of contract. The firm will hand over to KVIAOA, KOLKATA the total system in fully functional condition at the end of completion of contract.
2. While conducting daily/monthly/quarterly/HALFYEARLY/ANNUAL maintenance of fire pumps, valves, pressure gauges and fire equipment, the KVIAOA, KOLKATA shall endorse the maintenance report that the maintenance work has been concluded satisfactorily.
3. The Contractor shall maintain adequate stock of frequently required spares/ consumables like all types of gland packing/mechanical seals, Gasket and Nuts & Bolts, lubricants, gaskets, O-rings, filters, etc. for rectification works so as to ensure that the faults are rectified immediately without any down-time. It shall be the responsibility of the Contractor to provide special tools, always in readiness, so that break downs are attended immediately on their occurrence. All routine, preventive maintenance, overhauling, breakdown maintenance etc. are included in the 'Scope of Work'.
4. Without taking prior approval from the Supervisor and/or KVIAOA, KOLKATA, no fittings / materials will be removed for the purpose of repairs. It will be the contractor's responsibility to provide alternative serviced temporary arrangements for such items removed during the period of repair. The item will be repaired and into position so as ensure that the systems remains fully functional all the time.
5. The Contractor shall ensure that in emergency cases the reported fault/support request is to be attended promptly and in any case within six hours from the reporting time and rectification thereof and defects/faults of general or not of serious nature have to be ensured within 24 hours of the reporting and until such period standby equipment shall be provided by the Contractor on immediate basis to ensure smooth functioning of the system/equipment.
6. All systems/equipment shall be operated as per mutually agreed programs. The Contractor shall maintain proper entry and upkeep of relevant logbooks/registers as per statutory obligations in physical and shall also maintain complaints register, and work done/carried out reports to the satisfaction of KVIAOA, KOLKATA.
7. All the systems/equipment shall be operated and maintained by the selected Contractor. Due to any wrong operation or improper maintenance of any equipment, if any breakdown occurs in the system(s) or damage to the machineries, the Contractor has to repair/replace the damage equipment(s) for smooth operation of the systems.
8. The Contractor/Vendor shall be responsible for any injuries to the work or workmen, to persons, animals or things and for all damages to the structural and / or decorative part of property which may arise from the maintenance/servicing of fire hydrant & sprinkler system of said building
9. The Contractor shall be responsible to carry out any specific work/installation of additional equipment/accessories/up-gradation/modernization /replacement, as per requirement, which is not covered under the contract, on competitive prevailing market rates after taking prior approval from KVIAOA, KOLKATA. Payment will be made separately on submission of bills for the said work.

10. The Contractor shall maintain the history card/maintenance records and logbooks endorsed by KVIAOA, KOLKATA, during the contract period.
11. The Schedule of preventive maintenance for all equipment will be prepared in advance by the contractor, in consultation with KVIAOA, KOLKATA. Necessary records of the services/work carried out will be maintained and the same has to be countersigned by the KVIAOA, KOLKATA. Separate pages shall be maintained for each equipment, clearly mentioning the data measured, spares and consumable used, job done, date, mechanic name, etc.
12. The bidder should physically inspect the entire systems which are to be covered under contract and also to make an assessment of the average consumption of consumables/spares etc., before quoting their rates.
13. Shutdowns: No routine shut down shall be permitted during weekdays. The Contractor shall be at liberty to carry out maintenance on holidays with prior permission of KVIAOA, KOLKATA.
14. In case of any damage/injury to KVIAOA, KOLKATA's people/tenants/premises/property/assets/installations due to negligence of his workers for which Contractor is accountable, the Contractor will be liable to pay the compensation to KVIAOA, KOLKATA.
15. Replacement of all parts and spare such as gasket, oil grease & gland packing, polish paper, distilled water for battery terminals, cotton cloth and all types of washers of valves & pipe but other than major assemblies, are to be done at no extra cost as and when required.
16. All maintenance work should be done as per BIS 3844/1989 and 15105/2002
17. The check list and test requirements mentioned in the tender documents are of general nature and indicative only. In case specific checks and additional tests, under the overall guidelines of WBF&ES are considered necessary for efficient working of the equipment system towards ensuring its functioning all the time, whether included in the tender specification / bill of quantities or not will be brought out at tendering stage itself. No claim whatsoever shall be entertained for such reasons.

5.0 Specification of works and spares:

All materials to be used for repair and replacement of parts shall be from the approved list and of ISI make.

1. **Gasket/Packing/Orings/Seals:** Nitrile rubber O ring/Nitrile rubber seals with spring for pumps shall be used unless otherwise specified by the manufacturer. Nitrile rubber/synthetic rubber/compressed asbestos/paper gasket as used earlier shall be used unless specially recommended by the manufacturer.
2. **Spare bearing:** Standard SKF or equivalent bearing shall be used unless otherwise specified by the manufacturer for particular equipment.
3. **Fastener:** All fasteners to be inspected for any damage, to be cleaned and lubricated at regular interval and replaced if required at no extra cost.
4. **Engine Oil for diesel engine:** SAE 15W 40 Grade with API CI4 classification
5. **Gland packing/Mechanical Seal:** Self lubricated asbestos packing (Champion style graphited cotton grease packing) of suitable sizes (like 8mm, 12 mm, etc.) shall be used where pump gland packing are used. Mechanical seal as recommended by the manufacturer shall be used.
6. **Grease for Bearing and other greasing points:** All grease points to be cleaned and shall be greased with SERVOGEM 2 or 3 or HP Lithon 3 with grease gun, excess to be wiped off. Grease lubricated bearings to be removed, cleaned and greased during schedule servicing.
7. **Instruments:** All instruments (Pr. Switches, Pr. Gauges, level transmitter, etc.) shall be recalibrated yearly. If not function properly, to be replaced with the same brand as installed. In case same

brand is not available in the market, equivalent make can be used with prior approval of KVIAOA, KOLKATA.

8. **Valves:** Contractor should maintain adequate spare valves (gate valve, sluice valve, air release valve, foot valve, vent valve, landing valves, ball valve, safety valve, etc.) so that defective valve can be replaced immediately, and defective valve can be serviced and kept ready for future replacement after testing of its performance. Relief valve shall be calibrated for its rated discharge pressure annually.
9. **Spares for Diesel Engine:** All genuine spares or manufactures recommended spares shall be used. Servicing by manufacturers authorised agent shall be preferable.
10. **Emission Standard:** Engine emission shall be within the limit specified by WBPCB and necessary certificate to be obtained as per regulation.
11. **Coupling alignment:** All gearbox / motor couplings to be aligned within 0.10 mm for offset and within 0.10 mm at coupling OD for angular misalignment. After checking of the alignment to the complete satisfaction of KVIAOA, KOLKATA, coupling guard shall be installed.
12. **Pump performance:** All pumps shall be tested for its performance at shut off, duty point and at 150% capacity. Pump should have smooth performance without any cavitation, abnormal sound, vibration and hunting. Sound level, vibration, flow, pressure, etc shall be measured after overhauling and shall be compared with earlier data. Pump shall confirm its rated performance and ensure smooth delivery.
13. **Motor Performance:** Motor shall be tested for (1)Vibration of the motor housing and shaft, (2) Shaft radial run-out and axial play, (3) Component temperature, (4) Excitation current and voltage (measure the current and voltage applied to a motor to form the instantaneous power $P=I*V$), pull in current (5) Position and speed, (6) Torque, (7) Winding Conditions, etc to be recorded in a log book and smooth running of the motor to be ensured. Any deviation from standard shall be corrected.
14. **Consumables and spares:** Necessary all consumables like emery papers, cloths, kerosene, flashing oils, gear oil, engine oil, grease, fasteners, seals, gaskets, packing, etc shall be supplied by the contractor and should maintain adequate stock. All materials required for maintenance work and testing purpose shall be borne by the contractor including replacement of defective parts. Defective spray nozzles/ pendants shall be replaced by the contractor at no extra cost.
15. **Performance of System:** Operation of complete Fire Hydrant System shall be smooth and after every servicing, performance shall be checked.
16. **Inspection:** All materials, workmanship and maintenance activities shall be subject to the continuous inspection and approval of KVIAOA, KOLKATA. Upon completion of whole work, a final inspection will be made by the KVIAOA, KOLKATA. All consumables materials brought to site by the contractors for application, shall be directly procured from approved manufacturer as per IS standards.
17. **Acceptance criteria:** The acceptance of whole work is based on its satisfactory and safe completion as per the KVIAOA, KOLKATA. The tools, equipment, material used for the work should be the best available in the market. All tools and tackles shall be supplied by the contractor. Contractor should have all necessary special tools for servicing. All the instruments should be in working condition and calibration / test reports shall be produced. All the schedule maintenance shall be carried out as mentioned. No payment shall be made for any part of the work schedule which has not been carried out due to any reason.

Annexure-A

1.0 Schedule Maintenance

1.1 Monthly Inspection and Maintenance:

A. General

- i. Complete Fire Hydrant system flange bolts torquing.
- ii. All Hose reel connections, etc. shall be checked for operation.
- iii. Auto start of Diesel Pump, jokey pump, main electrical pump, auto stop of jokey pump, main pump shall be checked.
- iv. Test run of booster pump and note down the discharge pressure.
- v. Functional test of Valves & NRV's etc.
- vi. Fictional test of Fire Alarm.
- vii. Drain the holdup tank to clear the sediments and close.
- viii. Cleaning of all electrical Panels, Pumps, Alarms, Valves & NRV's etc. and confirming the proper functioning of the system.
- ix. Checking of internal wiring of panel, indication lamp, fire alarm, etc. The Contractor should report defects, if any, in fire-fighting system, connected equipment, accessories immediately to KVIAOA, KOLKATA and get it rectified immediately.

B. Hydrants & Landing Valves

- i. The valve spindles will be checked and any signs of excessive wear including leaking in the gland will be rectified. The wheel, etc. shall be maintained in good condition.
- ii. Every Hydrant valve will be oiled & greased thoroughly. The adopter, landing valves, etc. shall be cleaned, nozzle shall be checked for any damage.
- iii. Checking of nozzle washer/gasket. Check the cap and chain.

C. Other Valves

- i. Every valve stem shall be oiled & greased thoroughly including flange/gland bolts & nuts.
- ii. Cleaning of valve body and apply light oil for rust prevention.
- iii. Check full open/close of the valve.

D. Centrifugal Pumps (Fire Pump, Jockey Pump, etc.)

- i. Adjust gland packing. Check the seal chamber and stuffing box for leaks. Ensure that there are no leaks from the mechanical seal. Adjust or replace the packing in the stuffing box if excessive leakage noticed. Ensure the flow through seal cooling line.
- ii. Check the level and condition of the oil through the sight glass on the bearing frame and make up oil level in bearing case.
- iii. Clean bearing bracket for any oil, if found. Check oil drain plug.
- iv. Check for unusual noise, cavitation, vibration, and bearing temperatures.
- v. Inspect suction and discharge flanges for any leak.
- vi. Check coupling bolts and alignment of coupling (Feeler gauge). Check coupling guard mounting.
- vii. Manually operate the suction and discharge valve in pump off condition, grease the stem, etc.
- viii. Clean pump suction strainer
- ix. Note down the suction and discharge pressure.

E. Diesel Engine

- i. Clean all exterior part of the engine
- ii. Check the condition of crank case oil for any sludge formation, viscosity, emulsification, contamination, dilution, etc and take corrective action.
- iii. Clean cylinder head, tappet cover, crank case, etc and check for any leakage.
- iv. Check belt tension.
- v. Check fuel supply line for any obstruction (ensure free flow) and for any leakage in the system. Check Nozzle overflow line for any leakage.
- vi. Clean and grease battery terminal, check starter end also. Check battery water level and make up if required.
- vii. Clean Air Filter, dustpan, etc.

F. Fire detection system (Smoke detectors, Fire alarms, Panels etc) :

- i. Check smoke alarms are securely fastened to the wall or ceiling in place.
- ii. Check smoke alarms show no evidence of physical damage, paint application or excessive grease, dirt accumulations and unobstructed.
- iii. Ventilation holes on smoke alarms must be cleaned in accordance with manufacturer's instructions.
- iv. Check the Fire alarm systems monitored for alarm, supervisory, and trouble signals Verify a system normal condition
- v. Check the Fuses, LEDs/Lamps
- vi. Check the Primary and redundant Power Supply
- vii. Check for any trouble signal

G. Fire Extinguisher (DCP ABC Type, Carbon di Oxide):

- i. Check the availability of extinguisher at location in designated place;
- ii. Check for No obstruction to access or visibility;
- iii. Check Operating instructions on nameplate legible and facing outward;
- iv. Check and ensure that Safety seals and tamper indicators not broken or missing;
- v. Ensure Fullness of the extinguisher determined by weighing (For CO2 extinguisher)
- vi. Examination for obvious physical damage, corrosion, leakage, or clogged nozzle;
- vii. Check the Pressure gauge reading or indicator in the operable range or position (For DCP Stored Pressure Type)
- viii. Remove the hose and check the threads, inspect the hose for cracks or splits, and inspect the condition of the discharge horn
- ix. Clean the extinguisher
- x. Check the condition of the hose/horn retention band at the side of the extinguisher

1.2 Quarterly Maintenance:

In addition to all Monthly maintenance schedule of all the system / equipment's, following jobs/checks to be carried out.

A. General

- i. Cleaning of Fire Hydrant header, check for any corrosion, rusting etc (same should be cleaned and painted).
- ii. Greasing of flange bolts.
- iii. Cleaning of all valve pits and covers.

B. Hydrants & Landing Valves & Internal Hose Box First Aid hose reels

- i. Greasing of hydrant valve spindle and check for any wear or damages.
- ii. Check the cam tooth. Adjust the spring force.
- iii. Check the gland nut and adjust.
- iv. Hydrants shall be tested with hose and branch pipe. The jet shall be operated for at least 2 minutes. Hose shall be dried, properly rolled before keeping back in hose boxes.
- v. First Aid Hose Reel shall be extended to full length and water discharged for 120 seconds. The pipe shall be rolled back uniformly, line by line.
- vi. Internal Hose Cabinet shutters (including glass) shall be cleaned. Dust and dirt within cabinet shall be removed

C. Other Valves

- i. Check and adjust the gland.
- ii. Check the mounting of wheel and tighten the nut, if required.

D. Centrifugal Pumps (Fire Pump, Jockey Pump, etc.)

- i. Monitor and record the pump vibration and noise.
- ii. Check free movement of the gland of the stuffing box. Cleaning and oiling of the gland bolts.
- iii. Check the condition of the oil in bearing case for emulsification, cleanliness, viscosity, contamination, etc. Replace if required. If bearings are grease-lubricated, the condition of the grease should be checked and replaced with correct quantity, if necessary
- iv. Note down the bearing temperatures of both pumps and motors after 10-minute running of the pumps.
- v. Grease motor bearing.
- vi. Check and torque pump and motor mounting bolts.
- vii. Check coupling bolts, bushings, keys, etc. alignment of coupling (Dial Gauge) and torquing of coupling bolts.

E. Diesel Engine

- i. Torqueing of engine and pump mounting bolts.
- ii. Clean Crank case breather.
- iii. Clean fuel tanker breather and fuel strainer.
- iv. Check throttle linkage and lubricate.
- v. Check fuel nozzles and fuel pumps pipes for any leakage.
- vi. Clean the radiator from outside, check fan belts, pulley and blade.
- vii. Check water pump flow and hoses.
- viii. Check the condition of coolant and add concentrate if required.
- ix. Clean air cleaner & check connections.
- x. Check battery charging current, specific gravity of battery water & correct if required.

F. Fire Extinguisher (DCP ABC Type, Carbon di Oxide)

- i. Clean the exterior of the extinguisher, polish the painted portion with wax polish, the brass/ gun metal parts with metal polish, chromium plated parts with silver polish and plastic components to be thoroughly washed with soap solution and sun dried.
- ii. Check the nozzle outlet and vent holes as well as the threaded portion of the cap for clogging, and check that plunger is clean and moving freely.
- iii. Ensure that the cap washer is intact and also grease the threads of the cap, etc, and wipe clean.
- iv. Make sure that the extinguisher is in proper condition and is not accidentally discharged.
- v. Check the pressure gauge for correct pressure. Replace the extinguisher if pressure drop is observed

- vi. Examine extinguisher body externally. Damaged or corroded extinguisher should be replaced.
- vii. Weigh the extinguisher to check its contents of the extinguishing media and compare it with mass recorded on the cylinder. In case of loss of more than 10 percent, the extinguisher should be sent for recharging. (For CO2 and Clean Agent Extinguishers only)
- viii. For CO2 extinguishers, examine hose, horn and assembly and clean.
- ix. Examine the extinguisher externally and internally for any corrosion or damage. Damaged and corroded extinguisher should be removed from service. Corroded gas cartridge should also be replaced.
- x. Check the operating mechanism for free movement and piercing mechanism for proper working.
- xi. Clean the hose assembly and check it for any dust/sediment at either shank ends.

1.3 Half Yearly Inspection for Fire Detection and Alarm Systems

In addition to all Monthly inspection of Fire Detection and Alarms Systems following checks/ inspection to be carried out Semi-annually.

- a. Trouble signals supervisory. Verify a system normal condition
- b. Check the alarm communications equipment. Verify location and condition
- c. Check the Manual Call Points for physical condition and healthiness
- d. Check the physical condition of Smoke detectors

1.4 Annual Inspection and Maintenance:

In addition to all monthly quarterly and half yearly maintenance schedule of all the system / equipment's (As applicable), following jobs/checks to be carried out annually.

A. General

- i. Pressure test of Hydrant system
- ii. Calibration of all instruments (pressure gauge, pressure switches, flow meters, control valves, relief valves, level gauges, timer, relay, etc)
- iii. Testing of relief valve
- iv. Overhauling of Air release valve
- v. Check the wirings of control panel, PCBs, relays, battery charger, starter, switches, push buttons, isolators, lamps, hooter, meters, etc and check their functions. Check earthing of the panel and insulation resistance.
- vi. Check the condition of full-length hose, adopters, cams, cleaning of hose boxes, glass panels, nozzles, etc. Hydro test of hoses. Replace the female half coupling washer. Replace the washer of nozzle body. Polishing of nozzle body (branch pipe).
- vii. Hydrostatic pressure testing and functional/operational test of fire extinguishers as per schedule

B. Hydrants & Landing Valves

- i. Replace the gland packing. Check the gland bush.
- ii. Inspect and clean the valve seat and seat washer.
- iii. Greasing of hydrant valve spindle thread.
- iv. Replacement of nozzle washer/gasket.
- v. Hydrants shall be tested with hose and branch pipe. The jet shall be operated for at least 2 minutes.
- vi. First Aid Hose Reel shall be extended to full length and tested with service pressure for at least 120 seconds. The pipe shall be rolled back uniformly, line by line.

- vii. Internal Hose Cabinet shutters (including glass) shall be cleaned. Dust and dirt within cabinet shall be removed
- viii. All the hoses shall be tested for service pressure for at least two minutes. Hose shall be dried, properly rolled before keeping back in hose boxes.

C. Other Valves

- i. Clean and inspect the valve seat and disk and polish. Grease the stem. Replace the gasket and pressure test of the valve.
- ii. Foot valve seat and disc/balls to be cleaned and pressure test for leak tightness.
- iii. Open the door cover, clean and inspect the check valve's seat and disk and polish. Check the hinge and check for play. Replace the gasket and pressure test of the valve.

D. Centrifugal Pumps (Fire Pump, Jockey Pump, etc.)

- i. Flush the bearing oil housing, clean and inspect the bearing (Cleaning and examination of all bearings for flaws developed, if any), replace worn out bearings, replace oil seals, replace the lubricants.
- ii. Inspect the mechanical seal, check for wear and replace if required. In case of gland packing, inspect the shaft sleeve, repair/polish, replace the packing, clean and grease gland follower and bolts.
- iii. Clean the impeller, check for any damage. Check the wear ring clearance. Check the side clearance and end play. Check impeller balancing.
- iv. Inspect the housing inside for any unusual damage signs. Replace the gasket. Check the shaft, key etc. for any damage.
- v. Check the run-out of the shaft and for straightness.
- vi. Calibration of all instruments and flow meters.
- vii. Clean and inspect the motor bearing.
- viii. Check the earthing of the motor.
- ix. Carryout flow test as per the manufacturer's recommendations. Note down the suction and discharge pressure for shut off, 100% flow and 150% flow.

E. Diesel Engine

- i. Check the alignment of Pump and motor.
- ii. Check the valves, clean and adjust the valve clearance/tappet shim. Adjust valve timing.
- iii. Check crank bearings, big end bearings, connecting rod bearing, etc after thorough cleaning. Check crankshaft end clearance.
- iv. Change rocker cover gasket.
- v. Torqueing of manifold nuts/screws.
- vi. Check the piston rings and replace if required. Inspect the cylinder liner for wear, scratches, etc. De-carbonising of cylinder head, replacement of head gasket and torqueing of bolts.
- vii. Servicing and calibration of fuel pump & Injectors.
- viii. Check cam shaft, cam followers, replace all accessories seals, front and rear crankshaft seals.
- ix. Replace air filter. Check the hoses/pipes. Replace if required.
- x. Overhaul the starter motor and battery charger alternator, grease, check gears, bearings, terminals, insulation, etc.
- xi. Check Engine rpm and adjust.
- xii. Check safety controls & alarms.
- xiii. Check Electronic control panel.

F. Fire detection system (Smoke detectors, Fire alarms, Panels etc.)

In addition to the inspection of systems as mentioned in monthly and semi-annually, following inspection and functional tests shall be carried out for ensuring complete healthiness and workability of the systems.

- i. Check the physical condition of the fire alarm panel. Ensure that all alarm signals are healthy
- ii. Check the cable connections. Verify location and condition
- iii. Conduct test for control equipment and transponders for correct receipt of alarm, supervisory, and trouble signals (inputs); operation of evacuation signals and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for detection of loss of ac power and disconnection of secondary power supply.
- iv. Verify the rating and supervision of Fuses.
- v. Conduct test for Primary (main) power supply Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. Test redundant power supplies separately.
- vi. Check for Ground-fault monitoring circuit to verify the occurrence of ground-fault indication whenever any installation conductor is grounded.
- vii. Check smoke alarms are securely fastened to the wall or ceiling in place.
- viii. Check smoke alarms show no evidence of physical damage, paint application or excessive grease, dirt accumulations and unobstructed.
- ix. Ventilation holes on smoke alarms must be cleaned in accordance with manufacturer's instructions.
- x. Smoke alarm has been vacuumed.
- xi. All the detectors shall be tested for alarm generation.
- xii. Check smoke alarms signal sounds when the smoke alarm is tested using smoke produced from aerosol spray or burning of incense stick/ punk stick/cotton string.
- xiii. Replace smoke alarms for failure to sound alarm during test, frequent false alarm, physical damage, painted exterior case, excessive stains, grease or dirt accumulations, age etc.
- xiv. Verify time delay and alarm response for smoke detector circuits identified as having alarm verification.

G. Fire Extinguisher (DCP ABC Type, Carbon di Oxide)

Over and above the quarterly inspection, all the extinguishers shall be subjected to a more thorough inspection once in a year. The annual inspection should consist of the following procedure:

- i. Determine if the extinguisher is properly hung with the proper manufacturer's hanger
- ii. Examine extinguisher body externally. Damaged or corroded extinguisher should be replaced
- iii. For stored pressure DCP extinguishers, Check the gauge pressure. if the extinguisher shows a loss of pressure of more than 10 percent,
- iv. For CO2 extinguishers, weigh the extinguisher, compare mass against the mass marked on it for fully, charged extinguisher. It should be sent for refilling if the loss is more than 10 percent of mass. Clean and polish externally
- v. Examine hose, horn and assembly and clean.
- vi. Check the condition of the gauge and its compatibility with the extinguisher
- vii. Check the date of manufacture, last hydro test & six-year maintenance date
- viii. Check the valve and shell for damage or corrosion
- ix. Remove the hose and check the threads, inspect the hose for cracks or splits, and inspect the condition of the discharge horn
- x. Check the valve opening for powder or any foreign matter
- xi. Remove the extinguisher seal and locking pin and check the upper and lower handles
- xii. Replace the locking pin and reseal the extinguisher

- xiii. For dry powder extinguishers, fluff the powder by turning the extinguisher
- xiv. Clean the extinguisher
- xv. Check the condition of the hose/horn retention band at the side of the extinguisher
- xvi. Check the extinguishers classification and operating instructions legibility and properly tag the extinguisher
- xvii. Survey the hazard area to verify that the extinguisher classification corresponds with the hazard
- xviii. Check that the extinguisher is visible and unobstructed

H. Fire Extinguisher, Dry Powder Type Stored Pressure

All dry powder extinguishers should be inspected and maintained in accordance with the following.

- i. Examine extinguisher body externally. Damaged or corroded extinguisher should be replaced.
- ii. The dry powder extinguisher should be opened in a dry room and for a minimum possible time to avoid effect to atmospheric moisture on powder.
- iii. Examine and verify that the pressure gauge fitted in is indicating the internal pressure correctly.
- iv. If the extinguisher shows a loss of pressure of more than 10 percent, sent for pressurisation/refilling.
- v. Check the Hydrostatic pressure test due date.

I. Fire Extinguisher, Carbon Dioxide Type

- i. Examine extinguisher body externally. Damaged or corroded extinguisher should be replaced.
- ii. Weigh the extinguisher, compare mass against the mass marked on it for fully, charged extinguisher. It should be sent for refilling if the loss is more than 10 percent of mass. Clean and polish externally.
- iii. Examine hose, horn and assembly and clean. In case of trolley mounted extinguisher, examine the wheel carriage for free movement.
 - iv. Check the Hydrostatic pressure test due date.

Annexure – I

PROFORMA OF TECHNICAL BID FOR QUOTING FOR
Supply, installation and restoration of firefighting Equipment
and AMC of fire protection system of KV-II, Kolkata

Sl. No.	Particulars	To be filled by Bidder
1	Name of Tendering company/Agency (Attach certificates of registration)	
2	Name of Proprietor/Director of company/Firm/Agency	
3	Full Address of Registered office	
	Telephone no: Mobile no: Email : Website:	
4	PAN No (Attach photocopy)	
5	GST Registration No. (Attach photocopy)	
6	Affidavit on non-judicial stamp paper (Rs 10/-) stating that the agency is/ has not been blacklisted by Centre/State Government/ PSU/Society/Trust/ Public Limited Company.	
7	Photocopies of Income tax returns for the last 3 financial years.	
8	EMD of RS 14,000/-; DD in favour of "Kendriya Vihar II Apartment Owner's Association"	
9	Documentary proof (Similar contract from Govt. or reputed institutes) in respect of experience of 5 years in this field.	
10	Stamp & Signature of bidder on each & every pages of tender documents as token of acceptance of terms and conditions laid down to be enclosed.	

N.B: All photocopies should be duly self-attested and stamped.

Signature & Seal of the proprietor of the firm

Date :

Place:

Annexure II

**PROFORMA OF FINANCIAL BID FOR QUOTING RATES RELATED TO
SUPPLY, INSTALLATION AND RESTORATION OF FIRE FIGHTING EQUIPMENT
AND AMC OF FIRE PROTECTION SYSTEM OF KV-II, KOLKATA**

	Scope of Work	Make	Rate	Quantity	Installation and other cost	GST	Warranty	Total Price
I	Restoration of Fire detection & alarm system							
II	Refilling of Potable fire extinguishers							
III	Supply and installation Hose Box							
IV	Supply and installation of new fire extinguisher							
V	Supply and installation Glow in Dark Signs (EXIT SIGN)							
VI	Comprehensive AMC of complete fire protection system							
VII	Fire training to the site supervisor, security persons and residents							

GRAND TOTAL: Rs:_____

IN WORD:_____

SIGNATURE OF THE BIDDER _____

NAME IN BLOCK LETTERS _____

FULL ADDRESS WITH TELEPHONE NUMBERS _____

OFFICIAL STAMP