



Ref.No.NB(ND)Const.3/  
2008

/2008-09

Date: 22 May

M/s -----

**For contractors empaneled for fire fighting services with NABARD,  
New Delhi only**

Dear Sir

**Tender for Annual Maintenance Contract (AMC) of Fire Protection  
System at 24, NABARD, Rajendra Place, New Delhi-110008 for the  
period 15.6.2008 to 31.3.2010**

Please find enclosed herewith the blank non-transferable tender documents on the above subject. The last date of submission of completed tender documents is 05/6/2008 by 2.30 PM.

Please note that the completed tender documents alongwith EMD Rs.7500/- in form of DD in favour of "NABARD, New Delhi" are to be submitted in a sealed envelope superscribing the envelope with "Tender for AMC for fire protection system" at 24, Rajendra Place, New Delhi in the tender box kept at Premises Section, 1st floor at the following address:

General Manager, NABARD  
24, Rajendra Place , New Delhi-110008.  
Tel: 25823731

All tenderers are requested to submit their valid ESI/PF registration copies alongwith their tender documents, failing which the tender is liable to be disqualified.

The tenderers are requested to carefully go through all our tender conditions and quote their bids strictly in compliance with our tender conditions. Please also note that the Bank reserves the right to reject any or every tender without assigning any reasons whatsoever.

Yours faithfully,

(M S Raghava)  
Asstt. General Manager

Encl: as above

**FORM OF TENDER**  
**For Fire Fighting System Maintenance**

Place : New Delhi

Date: 22 May 2008

The General Manager  
National Bank for Agriculture  
and Rural Development  
Premises Department  
24, Rajendra Place  
**New Delhi-110018.**

Dear Sir,

Having examined the scope of work, general/special conditions and entire tender document relating to the works specified in the memorandum hereinafter set out and having visited and examined the site of works specified in the said memorandum and having acquired the requisite information relating thereto as affecting the quotation/tender, I/We hereby offer to execute the work specified in memorandum at your premises in accordance with the rates mentioned in the attached schedule of monthly charges in all respects with the specification and instructions in writing and with such materials as are provided for in all other respects in accordance with such conditions so far as they are applicable.

**MEMORANDUM**

Description of work	Maintenance of fire fighting system installed at Regional Office building at 24, Rajendra Place, New Delhi.
Contract period	15.6.2008 to 31.3.2010
EMD	Rs.7500/- (Rupees seven thousand five hundred only) in the form of DD, drawn in favour of "National Bank for Agriculture and Rural Development, New Delhi".
Last date of submission of tender	by 2.30 pm on 05.06.08
Place of submission	Tender box placed in Premises Section, Grond floor, Nabard Tower, 24 Rajendra Place, New Delhi

2. Should this tender be accepted. I/ We hereby agree to abide by and fulfill the terms and provisions of the said conditions of the Annual Contract Agreement annexed thereto so far as they may be applicable.

3. Our Bankers are:



1 .....

2 .....

4. Address of the firm

Tele no. ....

Fax .....

MobileNo. ....

5. The names of the partners of

1. ....

our firms are

2. ....

3. ....

6. Name of the partner of the  
Firm authorised to sign

1. ....

2.

.....  
Name of the persons with  
Power of Attorney to sign the  
Contract

1. ....

2. ....

Yours faithfully

(Signature and seal of the Contractor)

Signature and address of witnesses

## **GENERAL TERMS AND CONDITIONS**

1. Tender should be submitted only in the prescribed tender schedule forms supplied by the Bank.
2. The tenderer should study all the tender documents carefully and understand the conditions before quoting. If there are any doubts, he should obtain clarification, but this shall not be a justification for late submission of opening date/time of the tenders.
3. The tenderer should visit the site and acquaint himself with site conditions, availability of water, electricity etc. Since these are to be provided/arranged by the tenderer (unless otherwise specified) at his cost.
4. The tenderer should quote for all items in the tender schedule. The rates should be expressed both in figures and in words; where discrepancy exists between the two, the rates expressed in words will prevail. Similarly, if there is any discrepancy between the unit rate and the amount, the unit rate will prevail.
5. The rate should be quoted in the same units as mentioned in tender schedule.
6. All entries in the Tender Documents should be in ink/typed. Corrections, if any, should be attested by full signature of the Tenderer.
7. Every page of the tender documents shall be signed by the tenderer or his authorised representative.

### **RATES:**

8. The rates quoted should be exclusive of all material, electricity, power equipment, tools/tackles, centering, shoring, lifts, leads, scaffolding, excise/ customs/octroi duties, sales tax etc. All materials except T & P are to be supplied by the Bank unless otherwise stated.
9. The rates quoted shall be valid for a period of three months from the date of opening of tender. Once the tender is accepted, the rates quoted shall be firm till the entire work is completed in all respects.

### **ACCEPTANCE OF TENDER:**

10. Incomplete conditional tender or those received late and/or not conforming to the terms and conditions in the tender documents, will be rejected.
11. The Bank reserves the right to reject any or every tender without assigning any reason.

#### **EXECUTION OF AGREEMENT:**

12. The successful tenderer shall, within 15 days of the Bank's communication to him of the acceptance of his tender, execute a formal agreement with the Bank on the Bank's format.
13. All materials required for the maintenance of work (if supplied by contractor) should conform to the standard specification and approved by the Engineer before actually put to use. Work without approval shall be entirely at the risk and cost of the contractor.
14. The responsibility for the safety, security, accounting of the materials and equipment brought or installed by the successful tenderer or handed over to him by the Bank for completion of the work will remain with him till the acceptance of the work.
15. In the event of the successful tenderer failing to mobilize the work within the stipulated time, the Bank shall have the right to employ any other agency.

#### **MODE OF PAYMENT:**

16. Payment shall be subjected to deduction of income tax at source as may be applicable from time on monthly basis.
17. The successful tenderer shall not sublet or assign any part of the work to another party without the prior written consent of the Bank in any event the successful tenderer will be responsible for the work so sublet or assigned.
18. The contractor undertakes to ensure due and complete compliance with all laws, regulations, rules, etc. whether of the Central Government or the State Government or of any other competent authority applicable to the workmen employed or whose services are otherwise availed of by the Contractor, whether in connection with the work at the site or otherwise. The employer shall have the right to inspect the records maintained by the Contractor concerning such workman from time to time and the Contractor shall, whenever required by the Employer, procure such records as the Employer may call upon the Contractor to produce for the Employer's inspection in order to ascertain whether or not the requirements of all such laws, regulations, rules, etc. have been complied with by the contractor. In the such inspection or otherwise, the Employer shall have the right to require the contractor to effect such compliance within such time as the Employer may prescribe in that behalf and in the event of the Contractor failing to effect such compliance within the time prescribed by the Employer then

Employer shall without prejudice to his rights be entitled to withhold from the amount payable to the Contractor any amount payable to the workmen under any such laws, regulations or rules and to make payment thereof to the workmen. The Employer shall also have in that event the right to terminate the contract with immediate effect and to exercise powers reserved to the Employer under the contract as a result of termination.

- 19. Service tax on prevailing rate shall be paid by the Bank over and above the accepted tender rates.
- 20. Contract will be terminated on one month's notice if work is found unsatisfactory.

(Signature, Name & Seal of the Contractors)

I/We have read carefully the above terms & Conditions of Tender and agree to abide by the same.

Signature of the contractor  
(or his authorised representative)

Date:

Name/Seal of Contractor

Address:

.....  
.....  
.....

**SCOPE OF WORK /TERMS AND CONDITIONS FOR ANNUAL  
MAINTENANCE CONTRACT (AMC) OF FIRE FIGHTING SYSTEM  
AT NABARD TOWER, 24, RAJENDRA PLACE, NEW DELHI**

The scope of work is as under:

**1. WORK DETAILS**

The successful tenderer shall be looking after and providing services for the annual maintenance contract of fire fighting system at our Regional Office situated at Plot No.24, Rajendra Place, New Delhi.

The contractor is required to provide one supervisor during office working hours (9.30 am to 5.30 pm) and three experienced fire personnel on 8 hour shift duty for manning the fire control room 24 hours. The person should be adequately trained in all aspects of firefighting and fight fire using all fire fighting system provided in our building, in case of an emergency. The fire personnel will have to perform duties as per the existing/proposed fire evacuation plans.

**2. BUILDING DETAILS**

Plot Area	:	564 sq. Mt.
No.of floors	:	Ground plus Nine
Fire Protection System	:	Hydrant System, Sprinkler System, Fire Alarm System, CO <sub>2</sub> flooding System and Extinguishers.

**3(A). EQUIPMENTS/ SYSTEMS COVERED UNDER THE SCOPE OF WORKS:**

Complete fire fighting, fire protection, fire extinguishing and fire alarm system are included in the scope of work. Brief description of the equipments/ systems covered under the scope of work are as under:

**3(A).1 HYDRANT SYSTEM**

The hydrant system comprises of following:

Electrically driven pump sets (2 + 2) with the capacity of 100 & 20 HP respectively, required accessories including NRVs, Sluice, Valves, Electrical Panels in lift room on

terrace, allied instrumentation & controls like pressure switches, pressure gauges, Air release valves, etc.

One no. under ground covered water reservoirs have been provided for hydrant systems with the capacity 2.0 lakh litres and overhead fire water tanks have been provided with capacity of 50,000 litres, therefore total capacity is 2.5 lakh litres. Water inflow to the reservoirs is from Borewell within the premises. During normal condition, the network is kept pressurized at approximately 5 KG /CM<sup>2</sup> at all times. Contractor has to maintain the required hydrant pressure all the time.

The hydrant pipes distribution network includes the following:

1. Down comer with hydrant valves on all floors (4" dia)
2. Yard Hydrant

### **3(A).2 ALARM SYSTEM**

The system comprises of 1 fire alarm control panel each on ground floor of all 5 blocks. The panel is equipped with audio visual annunciation system with and manual call points and hooter on every floor of all blocks.

A fire horn of 1 km range is also provided for evacuation purposes in the security cabin, in the event of fire.

### **3(A).3 EXTINGUISHERS / FIRE BUCKETS**

Portable fire extinguishers to combat small fire in the initial/ inceptient stage have been provided at various locations inside / outside the building. The approximate quantity of various types of fire extinguishers is as under:

- |    |   |   |         |
|----|---|---|---------|
| 1. | Water CO2 type fire extinguishers 9 ltr. Capacity   | : | 40 nos. |
| 2. | CO2 type 4.5 kg. Capacity                           | : | 06 nos. |
| 3. | 5 Kg. ABC fire extinguisher                         | : | 40 nos. |
| 4. | Dry Chemical powder type ISI Marked 10 kg. Capacity | : | 06 nos. |
| 5. | Fire buckets  | : | 12 nos. |

### **4. MANPOWER DEPLOYMENT FOR THE PURPOSE OF THIS CONTRACT**

The successful tenderer shall deploy one Supervisor and three qualified Fireman-cum-Fire Attendent/technician for the above mentioned work. The manpower for the purpose

of this contract shall be deployed on 8 hour duty without break. The substitute for weekly off days/ leave shall be provided by the contractor without any extra cost.

The manpower deployed should be well conversant with fire fighting, fire alarm system, fire-extinguishing system, fire hydrant system and should have previous experience for such type of job. Further, the persons deployed by the contractor should have proper knowledge of the fire fighting system, layout of water piping, water flows, LPG pipes, fire protection system, fire alarm system, fire-extinguishing system, fire hydrant system. Contractor and his staff after taking charge of the system should immediately make themselves aware of the emergency escapes, formulate a fire evacuation plan, fire fighting plans and understand the electrical distribution and other safeties for various equipments etc. successful contractor should be able to monitor the system, detect and locate the faults in a logical way and rectify / repair the fault without loss of time.

- 4.1 In case Bank feels that any or all the persons deployed at Bank are not suitable for carrying out the job then the same is to be replaced immediately. In case the person deployed is on leave a suitable replacement shall be given at the cost of the successful tenderer. In case no suitable replacement is provided the deduction will be made from the payment to the successful tenderer as per details given in the payment terms mentioned in this scope of work / terms and conditions. In case of frequent absenteeism / change of manpower, the successful tenderer will be warned once and later on the contract will be terminated after one month's notice.
- 4.2 The persons deployed shall be well aware of the hazards of fire, LPG, gases, water at pressure and electricity and necessary precautions he has to take while on job. He has to be safety conscious all the time and shall not take any chance to work on LIVE LINE / CIRCUIT under any circumstances. The persons deployed must have sufficient knowledge about the first-aid requirements when somebody gets burns, electrical shock. He must know all steps of shock treatment. He must be well conversant with the ways and means to fight all type of fire and should be able to use the fire fighting extinguishers and other equipments as and when required.
- 4.3 Contractor has to assist in carrying out any other work such as refilling of cylinders etc. Contractor has to monitor and supervise the preventive/ breakdown and any other work being carried out for fire fighting system by any other agency and keep the record and follow-up for the same, in case of breakdown or malfunctioning of any of the system / equipment, the matter is to be immediately conveyed to Bank and corrective action / work has to be carried out as advised. The manpowers deployed should follow the laid down procedure step by step for trouble free operation.
- 4.4 The manpower deployed should go round the system installations, while on duty, observe for any abnormality in the running / working of lives as well as stand still



- equipment, not it and subsequently rectify the same. However, in case of fire / smoke is visible from any equipment or any cable joint / termination, the person deployed shall first isolate the circuit and if required use appropriate fire extinguisher to stop / quench the fire and inform the officer-in-charge of the Bank.
- 4.5 The person deployed should follow the instructions given by the concerned officer-in-charge of Bank. Contractor has to carry out any other work assigned by officer-in-charge of Bank.
- 4.6 **RECORDS:** Successful tenderer shall keep daily record of installed equipments. Inventory / materials and house keeping of items/ equipments and store, successful tenderer shall ensure that daily log report of all the works / jobs carried out and the performance / inspection reports by the persons deployed for the purpose of this contract is maintained at office premises of the Bank. This daily log report should be checked and counter signed by the successful tenderer on a monthly basis and produces before the officer-in-charge of the Bank, whenever asked to do so. A monthly report of all the works / jobs carried out (preventive and breakdown maintenance jobs carried out ) during the month should accompany the monthly bill Bills without this monthly report will not be entertained. The stationary required for maintaining these work records (inventory and log reports ) will be provided by the Bank.

## **5.0 TOOLS, EQUIPMENTS AND UNIFORM**

- (a) Successful tenderer shall make available at site the following bare minimum tools and tackles all the time (Note : these tools and tackles should be available at site all the time whether these are required at site or not):-
- (i) Line tester one each for one person deployed
  - (ii) Pliers of required size and types
  - (iii) Hammer one no
  - (iv) Screw Driver Set
  - (v) Spanner-set
  - (vi) Pipe Wrench
  - (vii) Safety equipment's as per the requirements
  - (viii) Rope - 50 mts.
- (b) Successful tenderer shall make available at site any tools and tackles including safety equipment's required to work with electricity, fire, refrigerant, gases under pressure, places at any height, depth, above false ceiling and in ducts and electrical safety equipment's and safety belts, helmets, shoes, rain / water protection equipment's etc. which may be required for the purpose of any job at no additional charge.



- (c) The tenderer will provide uniform (pant, shirt) and one set of shoes to the person deployed by him for contract period. The Bank will not be responsible for maintenance of the uniforms. The persons deployed are required to be in uniform while they are on duty.

5.1 Bank will provide the following in respect of this contract:

- (a) Supply of main LT Panel fuses, main LT panel indication lamps, bulbs, tubes, starters, lubricating oil, grease, battery water, cleansing agents, dhoties, cotton and jute cleaning cloth, petroleum jelly, carbon tetra chloride, emery paper, insulation tape, washers, lugs, or any consumable or part, spares not mentioned above but required for the job. However, the contractor has to keep a minimum inventory and record of supply and use of such items.
- (b) Water and electricity for carrying out activities for this contract.
- (c) Bank will provide chair and table for the use by persons deployed under this contract any place inside the building / basement as deemed suitable. The same may be changed by Bank as per their convenience.

5.2 **Scope of work excludes the following:**

Kindly note that following is not included in the scope of work of this contract:

- (i) Supply of components & parts of electrical LT panels, motors and starters.
- (ii) Pipe welding/ pipe replacement
- (iii) Refilling of fire extinguishers for annual servicing or used during the demonstration of training.

The major components heat and smoke detectors, response indicators, hooters, manual call points, cables etc if required to be replaced shall be provided by the Bank.

**A. SPECIAL CONDITIONS OF THE CONTRACT**

- (a) The successful tenderer will accept full and exclusive responsibility for wages, PF, bonus, medical, leave, etc. and any other obligation referred to under the law now and hereafter imposed by State Government / Local Bodies for the person(s) deployed by the tenderer. The successful tenderer should accept full and exclusive responsibility of insurance of the persons deployed by him.
- (b) Bank will have no liability whatsoever concerning the persons deployed by the tenderer for the purpose. The successful tenderer shall keep the corporation



- indemnified against all losses or damages or liability arising out of or imposed in the course of employment of person(s) by him.
- (c) The successful tenderer shall make regular and full payment of wages, salaries, PF and any other payment due to his employee(s) and furnish necessary proof.
  - (d) If applicable the successful tenderer shall obtain the necessary labor license from the Licensing Authority under the Contract Labor (R & A) Act and Contract Rules framed thereunder and produce the same to the authorized representative of Bank, whenever asked to do so.
  - (e) The successful tenderer shall comply with all Acts, Laws under Contract Labor (R & A) Act 1970 and PEF & EIS Act, Payments to Wages Act, Minimum Wages Act or other statutory rules regulations with their latest amendments, by-laws applicable or which might become applicable with regard to the performance of work included herein or touching this contract from time to time and take such necessary steps as may be deemed necessary in this regard. The successful tenderer shall keep Bank indemnified against all penalties , claims and liabilities of every kind for any violation of such Acts, Laws or Regulations etc. by him/ her, his / her agent or his / her staff.
  - (f) If at any time during the period of the contract, it is observed by the Bank or by its authorized representatives that the services rendered by the tenderer's personnel are not to the satisfaction of the Bank or any terms of the contract are violated, the Bank reserves the right to terminate the contract with one month notice.
  - (g) It shall be entirely the responsibility of the successful tenderer to ensure that no unlawful act is done by his person(s) while on duty.
  - (h) In case of loss of the Bank's property due to the negligence of carelessness of the person(s) deployed by the successful tenderer, he will be responsible and shall make good the same.
  - (I) The successful tenderer shall be solely responsible for settling /resolving any dispute / claim of his/her personnel during the contract. No liability shall accrue to the Bank under the circumstances even after expiry of the contract.
  - (j) The contractor shall indemnify Bank against any payments to be made under and for observance of the above mentioned various laws and rules. The contractor shall make payments to the labour, deployed at Bank by 07th of each month, the wages and salary for the previous month at our office. The contractor shall pay to labour, deployed at RO Premises wages not less than the minimum wages as applicable or revised from time to time. In the event of there being any increase of workmen's compensation under any law or any additional payment or new liability under the labour laws being imposed on the contractor at any time, the



additional expenditure incurred by the contractor shall be borne by the contractor and no claim will be entertained by Bank on any account.

- (k) The Contractor shall not sub-contract the whole or any part of this contract to another person / vendor.
- (l) All works shall be carried out in accordance with the provisions of the Statutory Acts and laws and Bureau of Indian Standards regarding fire fighting system, Indian Electricity Act, Local laws and by-laws as amended upto-date. Contractor shall be solely responsible for following and adhering to the proper fire and safety precautions while carrying out any job.
- (m) During the tenure of the contract the contract agency has to coordinate the work with other agencies working inside or outside. Also in case of emergency or major problems, the contractor has to provide complete support and assistance to any other agency or for jobs of Electrical maintenance, lifts, LPG system, display sign board, DG set and electrical sub-station, interior and sanitary contracts, etc.

#### **B. PERIOD OF CONTRACT**

- (a) The period of contract will be two years from the date of award of the contract.
- (b) The contract may be extended for a period of one year on same rates and terms and conditions if the same is mutually agreeable. However, Bank has the right to award the said job for further periods to any other party at any rates as deemed fit and the decision of the Bank will be final in this regard.
- (c) The contractor shall deploy his manpower three days in advance from the date of start of the contract to acquaint himself / his staff with the complete work / fire alarm system / fire hydrant system layout and schematics at no extra cost to Bank and take charge of complete system and inventory.
- (d) The contractor shall deploy his manpower for three days after the date of expiry of the contract to enable the incoming contractor and his staff to acquaint with the complete work and schematics at no extra cost to Bank. Also the contractor will hand-over the items covered in scope of work in working order and the details of inventory of Bank's incoming contractor as advised by the Bank.

#### **C. RESOLVING DISPUTES**

For all disputes relating to this contract, Arbitration Conciliation Act will be applicable.

#### **D. RATES AND PRICES**

The rates will be firm and all-inclusive (taxes, duties, etc.) inclusive of service tax for the entire period of the contract. The payment will be released based on

the actual quantum of the work carried out. No additional charges on account of transportation of men and material, lunch, tea, conveyance will be given.

#### **E. PAYMENTS TERMS**

The successful tenderer will raise the bill on monthly basis. The Bank will be deducting the mandatory deductions i.e. taxes etc. from the payments due to the contractor.

#### **PENALTY CLAUSE**

- (a) In case of absence of any person deployed for the purpose of this contract, if no suitable replacement is provided then deduction will be made from the payment to the successful tenderer @ 175.00 per man day.
- (b) Non-attendance or non-rectification of the faults coming under the scope of work and terms and conditions of the contract will entitle Bank to get the job done from any other vendor at the risk and cost of the successful tenderer. The decision of the Engineer of the Bank in this regard will be final and binding on the contractor.
- (c) In case of non-compliance of contract obligations and also in case of any damages, breakage and loss or theft to the building, fittings, assets and equipments attributable to staff or labour deployed by the contractor, the contractor will be responsible for repairing / replacing the same at his cost failing which the actual cost incurred towards repair / replacement with suitable penalty shall be imposed on the contractor by the Bank.
- (d) In the event of any accident / damage etc caused due to negligence of staff deployed will be debited to the inefficiency of the contractor and he has to make good the loss.

#### **DECLARATION BY THE CONTRACTORS**

I have read and understood all the instructions/conditions given above and I have taken into account the above instructions/conditions while quoting the rates.

**Date:** \_\_\_\_\_ **Signature:** \_\_\_\_\_

**Place:** \_\_\_\_\_ **Name & Address:** \_\_\_\_\_

**Seal of the Contractor:** \_\_\_\_\_

## MAINTENANCE SCHEDULE

### A. FIRE EXTINGUISHERS

#### a) Water type (Gas Pressure) extinguisher

- |            |   |
|------------|---|
| Routine    | i) Clean the body.<br>ii) clean and polish brass parts with metal polish.<br>iii) Check nozzle and vent holes in the cap.<br>iv) Clean spring loaded piercer.   |
| Quarterly  | i) Ensure that sealing disc is intact.<br>ii) Check piercing mechanism for its proper working.<br>iii) Replace the cartridge if there is a loss of more than 10% of its Contents.<br>iv) Check the nozzle and clean it, if clogged.<br>v) Remove the water, clean the body internally and refill it with clean fresh water. |
| Biannually | i) The extinguishers shall be subjected to Pressure Test. The Extinguishers shall be subjected to a gradually increased Pressure of 17.5 kg/cm <sup>2</sup> and it shall withstand this pressure for 2 <sup>1/2</sup> minutes.  |

#### b) Foam extinguisher

- |            |  |
|------------|--|
| Routine    | i) Same as in case of Water type extinguisher.   |
| Quarterly  | i) Check vent holes in the cap and clean them, if clogged.<br>ii) Check washer inside the cap and replace it, if necessary.<br>iii) Check the plunger/disc and plunger rod.<br>iv) Stir the solution with separate sticks and top up the solution if The levels are below the marks by adding fresh water.<br>v) Clean and polish the body with wax polish.                              |
| Annually   | i) All the extinguishers which have not been operated during any emergency shall be operated once in a year. If any of these Extinguishers are found to be leaking, all the remaining Extinguishers shall be subjected to Pressure Test without Going in for the Discharge Test. During the Discharge Test, The jet shall project to a minimum distance of 8 mts.for atleast 30 seconds. |
| Biannually | i) All the extinguishers shall be subjected to Pressure Test. The  |

Extinguishers shall be subjected to a gradually increased Pressure of 17.5 kgs/cm<sup>2</sup> and it shall withstand this pressure for 2<sup>1/2</sup> minutes.

c) **Dry chemical powder extinguisher**

- |          |  |
|----------|--|
| Routine  | <ul style="list-style-type: none"> <li>i) Same as in case of Water type extinguisher.</li> <li>ii) Check and lightly grease the threads in the cap.</li> <li>iii) Check vent holes and clean them, if necessary.</li> <li>iv) Check the nozzle for clogging.</li> <li>v) Check the rubber hose if provided and apply French chalk powder externally.</li> <li>vi) Check the washer in the cap.</li> <li>vii) Check and weigh the cartridge. If the weight is reduced by More than 10%, the cartridge shall be replaced.</li> <li>viii) Check the powder for caking for granulation.</li> <li>ix) Clean and polish the body with wax polish.</li> </ul>   |
| Annually | <ul style="list-style-type: none"> <li>i) 20% of the extinguishers which have not been operated during Any emergency shall be put under Discharge Test once in a Year. If any of these extinguishers are found to be leaking, all the remaining extinguishers shall be subjected to Pressure Test. The extinguishers with, rusted body shall be subjected to the Pressure Test, without going in for the Discharge Test. During the Discharge Test, a 2 kgs. capacity extinguisher shall expel 80% of its contents within 10 to 15 secs. and the jet shall project to a distance of 3 to 4.5 mts. and a 10 kgs capacity extinguisher shall expel 80% of its contents within 23 to 30 secs. and the jet shall project to a distance of 5 to 7.5 mts.</li> </ul> |

All the extinguisher bodies to be subjected to a gradually increased pressure of 31.5 kgs./cm<sup>2</sup> upto 2<sup>1/2</sup> minutes once in five years.

d) **Carbon Dioxide Extinguisher**

- |           |   |
|-----------|---|
| Routine   | <ul style="list-style-type: none"> <li>i) Clean the body, horn and wheel locking pin.</li> </ul>  |
| Quarterly | <ul style="list-style-type: none"> <li>i) Weigh the extinguisher. If the weight of the contents is reduced by more than 10%, it shall be sent for recharging. <ul style="list-style-type: none"> <li>ii) Clean and polish the body with wax polish.</li> <li>iii) Check tube, horn, joints, locking pins. Apply French chalk powder for the tube externally.</li> </ul> </li> </ul> |

Whenever the extinguisher is sent for recharging, it shall be ensured that the same is Pressure Tested by the gas

recharging company by subjecting it to a pressure upto 210 kgs./cm<sup>2</sup>.

**B) WET/DRY RISER SYSTEM**

- Routine
- i) Check and clean hydrant valves, hose reels, fire shafts and replace missing parts, if any, immediately. Keep the system in working condition at all times.
  - ii) Inspect the system for any leakage with special attention to fittings, valves, pipelines, joints, air-valves and set them right immediately, if required.
  - iii) Check the fuel tank of Diesel engine driven fire pump, if provided.
  - iv) Check the batteries for proper charge, level of electrolyte and good terminal connections.
  - v) Check the level of the water in the static water tank for fire fighting purposes.
- Weekly
- i) Check the automatic working of the pump.
  - ii) Check the gland packings.
  - iii) Check the level of water in the priming tank and replenish it, if required.
- Monthly
- i) Check the automatic operation of the hydrant system.
  - ii) Operate all the hydrant valves and check washers, lugs, couplings, nozzles, etc.
  - iii) Check C.I. Valve gland packings and adjust/replace, if required.
  - iv) Check rubber hoses giving special attention to coupling, washers, lugs and canvas jacket and swivel arrangement of the rubber hose reel.
- Quarterly
- i) Drain the Wet Riser System thoroughly. Set is to the required pressure. Check the air-valves for efficient functioning. Check the operation of various pressure switches by stimulating conditions. Clean all contact areas of pressure switches.
  - ii) Charge the Dry Riser System using both the external sources of water supply. Check for any leakages. Test the automatic air-valves. Drain the entire Dry Riser System by opening the drain valve and keep the system dry and clean.
  - iii) Unroll the hose reels completely. Allow the water to pass through the rubber tubing/canvas hoses. Check for leakage, wash and dry them without subjecting to the direct sunrays. Re-

roll the hose reels properly. French chalk powder to the rubber tubing shall be applied before re-rolling.

- Half-yearly
- i) Check all contacts and termination points of cables on starter and switches and motor side and tighten all loose connections.
  - ii) Check and ensure that all fuses are in good condition and contact surfaces are free from pitting.
  - iii) Megger the electrical system for effective insulation resistance.
  - iv) Check current drawn by motors to ensure that it is not beyond the rated value.
  - v) Check earthing system for its effectiveness.
  - vi) Service all the valves.
  - vii) Inspect suction pipe, intakes and foot-valve to ensure that they are free from obstructions, foreign materials, etc.
  - viii) Clean the static water storage tanks as given in Para 4.10.11.

C) **SPRINKLER SYSTEM**

- Routine
- i) Check main controlling valve, inspect for any leakages in fittings, valves, pipelines, joints, air-valves to get designed water pressure in the system.
  - ii) Check the level of water in the static water tanks to ensure that the tanks are full at all times.
  - iii) Check the reading on pressure gauges with reference to standard reading.
  - iv) Clean and check the piping to ensure that it is free from any damage, corrosion, dust and other foreign materials, etc.
- Weekly
- i) Check flow-alarm device. The small valve controlling the water supply to alarm device shall be in open position.
  - ii) Test the alarm going.
  - iii) Start the pump by opening test valve to ensure dependability of the pump, bearings, stuffing box, suction pipe and strainers.
- Monthly
- i) Clean the sprinkler glass bulbs with spirit.
  - ii) Inspect and service the installation valve.
- Quarterly
- i) Drain the Sprinkler System thoroughly and set it to the required pressure.



- |             |  |
|-------------|--|
| Half-yearly | <ul style="list-style-type: none"><li>i) Inspect suction pipe, intakes and foot-valve to ensure that they are free from obstructions, foreign materials, etc.</li><li>ii) Clean the tank thoroughly.</li></ul> |
| Annually    | <ul style="list-style-type: none"><li>i) Test the system by actuating once of the sprinkler heads.</li><li>ii) Test the gauges on the installation by comparing them with a test gauge.</li></ul>              |

For pressure switches, pumps and other similar gadgets, instructions listed out in the case of Wet Riser System shall apply.



## **1.0**

- 1.1 The scope of work under this head comprises of maintenance of the following in general but not necessarily restricted to these alone, and any other component/equipment needed to complete the system mentioned below shall be deemed to have been included within the scope of work.
- 1.2 Sprinkler System for the complete building - The Sprinkler System shall have one number 150 mm dia Riser and one number 150 mm dia Down Commer.
- 1.3 Fire Hydrant System consisting of a 150 mm dia Riser with Hydrants, RRL Hose, Branch Pipe etc. on all floors.
- 1.4 Pumping System consisting of a Hydrant Pump, a Sprinkler Pump, a Diesel Pump and one Jockey Pump each for Hydrant and Sprinkler Systems.
- 1.5 Ananlogue Addressable Fire Alarm System. This shall be used to communicate alarm signals for Manual Call Box, Flow Switches and Detectors, where located.
- 1.6 Fire Extinguishers.
- 1.7 Exit Signages.
- 1.8 Carbon Dioxide System for Transformer, Metering Room, Fire Trace System for LT & HT Panels.
- 1.9.1 It shall be the responsibility of the contractor to get all works in his scope approved from the Local Fire Service. This shall be without any liability to the Owner.
- 1.9.2 On successful completion of work, the contractor shall prepare as built drawings which have been so approved by the Fire Service incorporating all changes that might have been effected during execution of the work.
- 1.9.3 The contractor shall also bring to the notice of the Consultant any deviations from Local Fire Service/ Building Bye Laws Norms and requirements in the  
  
systems that he shall install as well as architectural features that will affect approval from the Fire Services.
- 1.9.4 No extra charges shall be paid on account of interaction with the Fire Services.



## **2.0 HYDRANT SYSTEM DESCRIPTION**

- The Hydrant System shall consist of a Main Electric Pump of 280 LPM at 88 M Head and 100 HP, a Standby Diesel Pump of 2850 LPM at 88 M Head and 20 HP. The System shall be complete with all required accessories including valves, strainers, special fittings, instrumentation, control panels and any other components required to complete the system in all respects. In addition there shall be a Sprinkler Pump and Sprinkler Jockey Pump which shall be exclusively for the said system, the Diesel Pump shall also feed the Sprinkler System.
- 2.2 The building shall have one Riser of 150 mm dia each tapped from the internal Hydrant Header in the Basement. The Riser shall be terminated at the roof level. There shall be two number of single Headed Hydrant on each floor. Each Hydrant Point shall consist of two number of single Headed Hydrants, 4 numbers RRL Hos and two number Fog Nozzle Branch Pipe. Internal Hydrants shall also have swinging type Hose Reels. Orifice Plates shall be provided for hydrants to control the pressure. Pressure Gauges shall be provided at certain floors levels and they shall be tapped directly from the Riser. Each Shaft shall also have a dry drain pipe to discharge any leaking water or for short water bursts within the Shaft for regular maintenance.
  - 2.3 The Hydrant System shall be semi automatic in action and shall be laid covering the entire area externally and all the floors internally with independent piping system for the Sprinkler System, a separate piping system shall be installed.
  - 2.4 The Hydrant and Sprinkler Systems shall be kept pressurized all the times. The Jockey Pumps shall take care of the leakages in the system, pipe line and valve glands.
  - 2.5 the pressure in the Hydrant pipe work shall be kept constant at 8.8 kg. /cm in the event of fire when any of the hydrant valve in the network is opened, the resultant fall in header pressure shall start the Hydrant Pump through pressure switches automatically. In case of further drop in pressure, the Diesel Standby Pump shall start.
  - 2.6 The Hydrant Risers shall be terminated with air release valve at the highest points to release the trapped air in the pipe work.
  - 2.7 The scope of work for internal hydrants covers providing, fixing and joining MS pipe including testing, cutting and threading etc. with heavy class fittings like bends, teas, reducers as required on walls, ceilings, beams, floors with suitable clamps, for installation of various sizes of pipes for wet riser with two number of single headed outlet Hydrant Valve and swinging type Hose Reel System in hose cabinets.



- 2.8 To compensate for slight losses of pressure in the system and to provide an air cushion for counteracting pressure surges / water hammer in the underground pipe work, an air vessel shall be furnished in the pump room near the fire pumps. The air vessel shall be normally partly full of water and the remaining being filled with air which shall be under compression when the system is in normal operation
- 2.9 Externally, the Hydrant shall be tapped from the internal Basement Hydrant Header Fire Brigade Inlet Point shall also be provided.
- 2.10 The Sprinkler System is proposed for the Basement and the complete building above there shall be a separate Sprinkler Pump of 2850 LPM at 88 M Head in the Pump House. Other than that, the Sprinkler System shall also be supported by Diesel Engine and Sprinkler Jockey Pump.
- 2.11 The Sprinkler System shall be fed both from an underground tank mentioned above complete with Pumping System and also from the Overhead Tank of 50,000 litres by Gravity. Piping for both shall be taken to the Installation Control Valve before sprinkler heads are used.
- 2.12 There shall be one number of Installation Control Valves. The Sprinkler installation shall have a set of Installation Control Valve comprising of Main Stop Valve. Alarm Valve Strainer and Water Motor Gong.
- 2.13 For the Sprinkler System, the Building shall have a Riser of 150 mm dia. Tapped on each Floor to feed the Sprinkler System. On each floor, at the tapping from the Sprinkler Riser, there shall be 150 mm dia Butterfly Valve, a Pressure Gauge and a Flow Switch. The Flow Switch shall be connected to the Addressable Fire Alarm System.

### **DECLARATION BY THE CONTRACTORS**

I have read and understood all the instructions/conditions given above and I have taken into account the above instructions/conditions while quoting the rates.

**Date:**

**Signature:**

**Place:**

**Name & Address:**

**Seal of the Contractor:**



**BILL OF QUANTITY**

<b>S. NO</b>	<b>Description of Item</b>	<b>Units</b>	<b>Quantity</b>	<b>Rate Rs.</b>	<b>Amount Rs.</b>
1	Monthly lumpsum charges for attending the work as defined in the Tender Document.	No.	Lumpsum		

Signature of Contractor with Seal