

TENDER

FOR

**SUPPLY INSTALLATION TESTING AND
COMMISSIONING OF FIRE FIGHTING SYSTEM AT
HLL CORPORATE OFFICE, POOJAPURA**

**PART-I
TECHNICAL BID**

**TENDER NO. HLL/ID / 15/25
AUGUST 2015**



**INFRASTRUCTURE DEVELOPMENT DIVISION
ADARSH, TC 6/1718, VETTAMUKKU, THIRUMALA P.O.
THIRUVANANTHAPURAM - 695006
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DISCLAIMER

HLL Lifecare Limited (HLL) has prepared this document to give interested parties background information on the Project. While HLL Lifecare Limited have taken due care in the preparation of the information contained herein and believe it to be accurate, neither Government of India nor HLL Lifecare Limited any of its authorities or agencies nor any of their respective officers, employees, agents or advisors gives any warranty or make any representations, express or implied as to the completeness or accuracy of the information contained in this document or any information which may be provided in association with it.

The information is not intended to be exhaustive. Interested parties are required to make their own enquiries and respondents to confirm, in writing, that they have done so and they did not rely solely on the information given herein. The information is provided on the basis that it is non – binding on HLL Lifecare Limited, any of its authorities or agencies or any of their respective officers, employees, agents or advisors.

HLL reserves the right not to proceed with the Project or to change the configuration of the Project, to alter the time table reflected in this document or to change the process or procedure to be applied. It also reserves the right to decline to discuss the matter further with any party expressing interest.

No reimbursement of cost of any type will be paid to persons or entities applying to the tender.

SCHEDULE FOR SUBMISSION OF BIDS

EVENT	DATE
Starting date of sale of documents	20.082015
Last date of sale of documents	04.09.2015
Date of pre bid meeting	01.09.2015 at 11.15 am at HLL ID Office,Vettamukku
Last date and time for submission of completed Tender	07.09.2015 at 11:00 am
Date and time for Opening of Technical Bid	07.09.2015 at 11.30am

The Tender documents containing the Technical Bid, Notice Inviting Tender, General Conditions of Contract, Bill of quantities & drawings can be downloaded from the web site www.lifecarehll.com or Central Public Procurement Portal and the cost of tender document of Rs. 1575/- in DD taken in favour of HLL Lifecare Limited payable at Thiruvananthapuram shall be submitted along with the tender.

The completed Tender should be submitted before the due date and time of submission at the following address.

Deputy Vice President (Technical)
HLL Lifecare Limited,
Infrastructure Development Division,
“Adarsh”, T.C 6/1718(1),
Vettamukku, Thirumala PO,
Thiruvananthapuram- 695 006
Phone- 0471 - 2365872 /73
Fax - 0471 2368144

HLL LIFECARE LIMITED
(A GOVT. OF INDIA ENTERPRISE)

NOTICE INVITING TENDER

Tender No. HLL/ID/15/25

Dated 19.08.2015

HLL Lifecare Limited invites Item Rate Tenders from eligible contractors/firms for the following work:

Name of work & Location	Estimated cost (Rs.)	Completion period	Date of issue of tender documents	Date of Opening of Tender
Supply Installation and Testing and Commissioning of Fire Fighting System at HLL Corporate office, Poojapura	Rs 48,17,360/-	3 months	20.08.2015	07.09.2015 at 11:30 am

The tender documents can be downloaded from the HLL web site www.lifecarehll.com or Central Public Procurement Portal and the cost of tender document of **Rs.1575/-** taken in favour of HLL Lifecare Limited payable at Thiruvananthapuram shall be submitted along with the tender.

Deputy Vice President (Technical)

DEFINITIONS

1. **“APPLICANT”** means a reputed Indian firm having the required experience that has purchased the tender document and applied for the same.
2. **“BID”** means the Tender document submitted by an Applicant interested in the Project in the prescribed format.
3. **“Project”** shall mean **“Supply Installation Testing and Commissioning of Fire Fighting System at HLL Corporate office, Poojapura.”**
4. **“Site”** shall mean the place where the works under the Project are to be carried out and the details of which are provided in this document.
5. **“Bid Security/ Earnest Money”** shall mean the amount to be deposited by the Tenderer with the Tender.
6. **“Bid Validity”** shall mean the period for which the Bids shall remain valid.
7. **“Bidder”** shall mean the party participating in the Tendering process pursuant to and in accordance with the terms of this document.
8. **“Contract Agreement”** shall mean the agreement to be signed between the Successful Tenderer and the competent authority of HLL.
9. **“Contract Price”** shall mean the financial bid of the Successful Tenderer as accepted by the Client.
10. **“Client/ Owner/ Employer”** shall mean HLL Lifecare Limited
11. **“YEAR”** means “Financial Year” unless stated otherwise

SECTION I

NOTICE INVITING TENDER

1. HLL Lifecare Limited invites tender from contractors for the work of **Supply Installation Testing and Commissioning of Fire Fighting System at HLL Corporate office, Poojapura**
2. The work is estimated to cost **Rs 48, 17,360/-** .This estimate however, is given merely as a rough guide.
3. Agreement shall be drawn with the successful tenderer and all the volumes of the tender document shall form part of the contract.
4. The time allowed for carrying out the work will be 4 months from the date of letter of acceptance or from the first day of handing over the site, whichever is later, in accordance with the phasing, if any, indicated in the tender documents.
5. The site for the work is available.
6. Tender documents can be downloaded from the HLL web site www.lifecarehll.com or Central Public Procurement Portal and the cost of tender document of **Rs.1575/-** taken in favour of HLL Lifecare Limited payable at Thiruvananthapuram shall be submitted along with the tender .
7. Tenders, **which should be placed in sealed envelopes, as prescribed in Para 11 of Section II (Information & Instructions to Tenderers)**, will be **received by the Deputy Vice President (Technical), HLL Lifecare Limited, Thiruvananthapuram** upto 07.09.2015 at 11:00 am. The Technical Bid will be opened by him or his authorized representative in his office the same day at 11:30 am.
8. Earnest Money of Rs 96,347/- should be placed in a separate sealed cover marked "Earnest Money" shall be submitted along with the tenders in the form of a Demand Draft/FDR/Bank Guarantee of a scheduled bank issued in favour of HLL Lifecare Limited, Thiruvananthapuram.
9. The contractor shall be required to deposit an amount equal to 5% of the tendered value of the work as performance guarantee in the form of an irrevocable guarantee bond of any scheduled bank or State Bank of India in the prescribed form within 20 days of issue of letter of acceptance.
10. The scope of the work is **Supply Installation Testing and Commissioning of Fire Fighting System at HLL Corporate office, Poojapura**

Tenderers are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their tenders as to the nature of the site, the means of access

to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their tender. A tenderer shall be deemed to have full knowledge of the site whether he inspects or not and no extra charges consequent on any misunderstanding or otherwise shall be allowed. The tenderer shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water, electricity, access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a tender implies that the tenderer has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done, local conditions and other factors having a bearing on the execution of the work.

11. HLL does not bind itself to accept the lowest or any other tender and reserves to itself the authority to reject any or all the tenders received without assigning any reason. All tenders in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the tenderer, shall be summarily rejected.
12. Canvassing whether directly or indirectly, in connection with tenders is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be liable for rejection.
13. HLL reserves the right of accepting the whole or any part of the tender and the tenderer shall be bound to perform the same at the rates quoted.

The firm or contractor shall not be permitted to tender for work in case his near relative (s) (directly recruited or on deputation in HLL) is/are posted in any capacity either non-executive or executive employee. The contractor shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relative to any executive employee/ gazetted officer in HLL or in the Ministry of Health and Family Welfare.

14. No Engineer of Gazetted rank or other Gazetted Officer employed in engineering or administrative duties in an Engineering Department of the Government of India/State Government or PSU's is allowed to work as a contractor for a period of two years after his retirement from Govt. service, without previous permission of the Govt. of India or HLL in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found any time to be such a person who had not obtained the permission of the Govt. of India/State Government or PSU's as aforesaid before submission of the tender or engagement in the contractor's service.
15. The tender for the work shall remain open for acceptance for a period of 120 **days** from the date of opening of financial bid. If any tenderer withdraws his tender before the said period or issue of letter of acceptance/intent, whichever is earlier, or, makes any modifications in the terms and conditions of the tender which are not acceptable to the HLL, then the HLL shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money as aforesaid.
16. This Notice Inviting Tender shall form a part of the Contract Document. In accordance with clause 1 of the contract, the letter of acceptance shall be issued in favour of the successful Tenderer/Contractor. The contract shall be deemed to have come into effect on issue of communication of acceptance of the tender. On such communication of acceptance, the

successful Tenderer/Contractor shall, within 20 days from such date, formally sign the agreement consisting of: -

The Notice Inviting Tender, all the documents including additional conditions, specifications and drawings, forming part of the tender, and, as issued at the time of invitation of tender and acceptance thereof together with any correspondence leading thereto.

Agreement signed on non-judicial stamp paper as per Proforma annexed to the tender document.

Deputy Vice President (Technical)
HLL Lifecare Limited

SECTION II

INFORMATION & INSTRUCTIONS FOR APPLICANTS

1.0 GENERAL:

- 1.1 Letter of transmittal and forms for Technical Evaluation are given in Section III.
- 1.2 All information called for in the enclosed forms should be furnished against the relevant columns in the forms. If for any reason, information is furnished on a separate sheet, this fact should be mentioned against the relevant column. Even if no information is to be provided in a column, a "nil" or "no such case" entry should be made in that column. If any particulars/query is not applicable in case of the applicant, it should be stated as "not applicable". The applicants are cautioned that not giving complete information called for in the application forms or not giving it in clear terms or making any change in the prescribed forms or deliberately suppressing the information may result in the applicant being summarily disqualified. Applications made by telegram or telex and those received late will not be entertained.
- 1.3 The application should be neatly type-written in English. The applicant should sign each page of the application.
- 1.4 Overwriting should be avoided. Correction, if any, should be made by neatly crossing out, initialing, dating and rewriting. Pages of the qualification document are numbered. Additional sheets, if any added by the contractor, should also be numbered by him. They should be submitted as a package with signed letter of transmittal.
- 1.5 References, information and certificates from the respective clients certifying suitability, technical know how or capability of the applicant should be signed by an officer not below the rank of Executive Engineer or equivalent.
- 1.6 The applicant may furnish any additional information, which he thinks is necessary to establish his capabilities to successfully complete the envisaged work. He is, however, advised not to furnish superfluous information. No information shall be entertained after submission of pre-qualification document unless it is called for by the Employer.

- 1.7 Any information furnished by the applicant found to be incorrect either immediately or at a later date, would render him liable to be debarred from tendering/taking up of work for HLL Lifecare Limited.
- 1.8 Prospective applicants may request clarification regarding the Tender document on before the date specified in the "**SCHEDULE FOR SUBMISSION OF APPLICATION**". Any clarification given by the Employer will be posted in the web sites of HLL. No request for clarification will be considered after.
- 1.9 Joint Venture firms are not allowed to participate in the tender.

2.0 METHOD OF APPLICATION:

- 2.1 If the applicant is an individual, the applicant shall affix his signature above his name type written in full along with his current address.
- 2.2 If the applicant is a proprietary firm, the application shall be signed by the proprietor above his name type written in full along with the full name of his firm and its current address.
- 2.3 If the applicant is a firm in partnership, the application shall be signed by all the partners of the firm above their full type-written names and current addresses or alternatively by a partner holding power of attorney for the firm. In the latter case a certified copy of the power of attorney should accompany the application. In both cases a certified copy of the partnership deed and current address of all the partners of the firm should accompany the application.
- 2.4 If the applicant is a limited company or a corporation, the application shall be signed by a duly authorized person holding power of attorney for signing the application accompanied by a copy of the power of attorney. The applicant should also furnish a copy of the Memorandum of Articles of Association duly attested by a Public Notary.

3.0 FINAL DECISION MAKING AUTHORITY

The employer reserves the right to accept or reject any application and to annul the qualification process and reject all application at any time, without assigning any reason or incurring any liability to the applicants.

4.0 PARTICULARS PROVISIONAL

The particulars of the work given in Section I are provisional. They are liable to change and must be considered only as advance information to assist the applicant.

5.0 SITE VISIT

The applicant is advised to visit the site of work, at his own cost, and examine it and its surroundings by himself, collect all information that he considers necessary for proper assessment of the prospective assignment.

6.0 TENDER DOCUMENTS

6.1 The tender documents consisting of the following three parts documents

1. Part-I- Technical Bid
2. Part-II – General Conditions of Contract
3. Part-III- Price Bid & Drawings

6.2 The tenderer is expected to examine carefully all the contents of the tender documents including instructions, conditions, forms, terms etc. and take them fully into account before submitting the offer. Failure to comply with the requirements as detailed in these documents shall be at the tenderers own risk.

7.0 SUBMISSION OF THE TENDER DOCUMENTS

The tender document shall be submitted in two parts

1. Part- I- Technical Bid+ Part-II GCC
2. Part-III- Price Bid

7.1 Part –I Technical Bid shall consisting of the following,

a. Earnest Money Deposit

Earnest Money Deposit, as detailed in clause 8 of NIT in original, placed in a separate sealed envelope and duly marked "Earnest Money Deposit".

b. Power of Attorney

Attested copy of Power of Attorney (in favour of the authorized signatory of the tenderer) to submit the tender.

c. Signed copies of Technical Bid, General Conditions of Contract & Special conditions of contract, Technical specifications & Drawings.

d. Letter of transmittal

The applicant should submit the letter of transmittal attached with this document.

e. Financial information

Applicant should furnish the Annual financial statement for the last five years (in Form "A")

f. Experience in works/ similar works

Applicant should furnish the following:

- A. List of all works of similar class successfully completed during the last seven years (in Form "B").
- B. List of the projects under execution or awarded (in Form "C").
- C. Particulars of completed works and performance of the applicant duly authenticated/certified by an officer not below the rank of Executive Engineer or equivalent should be furnished separately for each work completed or in progress (in Form "D").

g. Organization information

Applicant is required to submit the following information in respect of his organization (in Forms "E" & "F").

- A. Name & Postal Address, Telephone & Fax Number etc.
- B. Copies of original documents defining the legal status, place or Registration and principal places of business:
- C. Names & Title of Directors and Officers to be concerned with the work, with designation of individuals authorized to act for the organization.
- D. Information on any litigation in which the applicant was involved during the last five years, including any current litigation.
- E. Authorization for employer to seek detailed references.
- F. Number of Technical & Administrative Employees in parent company, subsidiary company and how these would be involved in this work (in Form "F").

h. Construction plant & equipment

Applicant should furnish the list of construction plant and equipment including steel shuttering, centering and scaffolding likely to be used in carrying out the work. (in Form "G"). Details of any other plant & equipment required for the work (not included in Form F and available with the applicant may also be indicated.

7.2 Part –II Price Bid shall consisting of the following

- a. Completed Price bid

8.0 ELIGIBILITY CRITERIA FOR QUALIFICATION

1. Bidders who has been provisionally enlisted with HITES as per letter No: HLL/ID/15/01 dated 28.07.2015 in Category VIII -Fire Fighting works in any class will be eligible to bid.

2. Those bidders who are not enlisted as above shall produce the credentials to prove their eligibility as follows:

- a) The applicant should have an establishment in Kerala.
- b) The applicant should be a registered contractor of Central/State Government dept OR Central/State Autonomous Body OR Central/State PSUs or a standing contractor of HLL Lifecare Limited.
- c) The applicant shall have the eligibility criteria and experience as follows.

Experience in similar work during last 5 years ending last day of the month of March 2015
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Three similar works of value 40% or more of the estimated cost of work
--

Or

Two similar works of value 60% or more of the estimated cost of work
--

Or

One similar work of value 80% or more of the estimated cost of work

Similar work shall mean SITC of Fire Fighting and its allied works

The applicant should submit successful completion certificates for the above works. The certificate issued by Client should contain date of start, date of completion, value on completion etc.

‘Cost of work’ shall mean gross value of the completed work including the cost of materials supplied by the Employer/ Client, but excluding those supplied free of cost. This should be certified by an officer not below the rank of Executive Engineer / Project Manager or equivalent.

- e) The applicant should have had average annual financial turnover of Rs 48 Lakhs on Similar works during the last three years ending 31st March 2015. The documentary evidence duly audited and certified by a Chartered Accountant must be furnished along with the application. The year in which no turnover is shown would also be considered for working out the average.

f) The applicant should not have incurred any loss in more than two years during the immediate last five consecutive financial years ending 31st March 2015, duly certified by the Chartered Accountant.

g) The firms should be registered with Income Tax and Service Tax Authorities and copies of PAN and Service Tax Registration have to be submitted along with application.

h) The applicant should have sufficient number of Technical and Administrative employees as per clause 36(i) of General Conditions of contract for the proper execution of the contract. The applicant should submit a list of these employees .

9.0 EVALUATION OF TECHNICAL BID

9.1 The applicants will be evaluated in the following manner:

i. The initial criteria prescribed above in respect of experience of similar class of works completed, and financial turn over etc. will first be scrutinized and the applicant's eligibility for qualification for the work be determined.

HLL, however, reserves the right to restrict the list of qualified bidders to any number deemed suitable by it.

b. Even though an applicant may satisfy the above requirements, he would be liable for disqualification if he has:

- A. Made misleading or false representation or deliberately suppressed the information in the forms, statements and enclosures required in the pre-qualification document,
- B. Record of poor performance such as abandoning work, not properly completing the contract, or financial failures/ weaknesses etc.
- C. If the applicant, or any constituent partner in case of partnership firm, has been debarred/black listed or terminated for poor performance by any organization at any time or ever been convicted by a court of law , their application will be summarily rejected.

9.2 All tenderers who qualified based on Technical Bid evaluation shall be informed and their price bids shall be opened on the date and time informed by HLL. The price bids of the unsuccessful bidders shall be returned unopened.

10. SIGNING OF THE APPLICATION AND NUMBER OF COPIES

10.1 The tenderer shall prepare one original set of the document. The tender documents (Part I- Technical bid & Part II- Price Bid) shall be stamped and signed on all pages by

the person duly authorized to sign on behalf of the Applicant. The power of attorney on a stamp paper authorizing the person to sign and act on behalf of the firm, duly notarized should be submitted.

- 10.2 The completed tender shall be without alteration, overwriting, interlineations or erasures except those to accord with instructions issued by HLL or as necessary to correct errors made by the tenderer. All amendments/ corrections shall be initialled by the person/ persons signing the tender.
- 10.3 An authorized representative shall have the authority to conduct all Business and incur liabilities related thereto for and on behalf of the Applicant, during the process and thereafter.

11.0 SEALING AND MARKING OF APPLICATIONS

- 11.1 The Technical and Price bids shall be sealed in two separate envelopes, superscribed as PART-I Technical bid and PART-II Price Bid respectively. The two covers shall be sealed in a single large envelope and submitted on or before the last date and time for submission of the application. The envelopes shall be titled "***TENDER FOR Supply Installation Testing and Commissioning of Fire Fighting system at HLL Corporate office, Poojapura***" and clearly marked in English with name of the Applicant.
- 11.2 No responsibility will be accepted by the HLL for the misplacement or Premature opening of a tender, not sealed or marked as per aforesaid instructions.

12 DEADLINE AND ADDRESS FOR SUBMISSION OF APPLICATIONS

- 12.1 Applications shall be submitted to HLL Lifecare Ltd., by hand or through registered post or courier service at the address given below and not later than **11.30 am on 07.09.2015**. In respect of Applications received by post or courier, HLL shall not assume any responsibility for any delayed delivery. Documents submitted in connection with this tender will be treated confidential.
- 12.2 The Application should be addressed to

**Deputy Vice President (Technical)
HLL Lifecare Limited,
Infrastructure Development Division,
"Adarsh", T.C 6/1718(1),
Vettamukku, Thirumala PO,
Thiruvananthapuram - 695 006.
Phone - 0471 2365872/73
Fax - 0471 2368144**

12.3 HLL may, at its discretion, extend the deadline for the submission of Tender, in which case all rights and obligations of HLL and the Applicants subject to the previous deadline shall thereafter be subject to the deadline as extended.

13.0 LATE APPLICATIONS

Application received after the dead line of submission of tender document shall not be considered or opened under any circumstances and such tender documents will be returned in unopened condition.

14.0 VALIDITY OF APPLICATIONS

Application shall be valid for a period of 120 days from the date of opening of price bid. HLL retain the right that in exceptional circumstances at its own discretion, it may ask the applicants to extend the validity of their application for a specified period. The Applicant not submitting the letter of extension of the validity period at that time shall not be further considered.

15.0 AMENDMENT OF TENDER DOCUMENTS

15.1 At any time prior to the deadline for submission of Applications, HLL either on its own or on request of the Applicant, may amend the Tender Documents by issuing addenda.

15.2 An addendum issued shall be part of the Tender Documents and shall be posted at the website of HLL as per the date specified in Schedule for submission of tender. The applicants are advised to check the websites specified above after the last date of issue of addendum and download the addendum issued, if any.

15.3 To give Applicants reasonable time to take an addendum into account in preparing their Applications, HLL may, at its discretion, extend the deadline for the submission of Applications.

16.0 WITHDRAWAL OF TENDERS

16.1 No modification or substitution of the submitted application shall be allowed.

16.2 A tenderer may withdraw its Tender after submission, provided that written notice of the withdrawal is received by HLL before the due date for submission of Applications. In case an applicant wants to resubmit his application, he shall submit a fresh application following all the applicable conditions.

16.3 The withdrawal notice shall be prepared in Original only and each page of the notice shall be signed and stamped by authorized signatories. The copy of the notice shall be duly marked "WITHDRAWAL".

17.0 PRICE BID OPENING

The price bid of only the qualified bidders will be opened. Evaluation of the financial offer will be based on price quoted by the contractor. Any subsequent alteration in prices shall not be given any cognizance.

18.0 AWARD CRITERIA

HLL will award, the contract to the tenderer, whose tender has been determined to be subsequently responsive, complete and in accordance with the tender documents, and whose total evaluated price for undertaking the entire project as per the tender documents is the lowest.

19.0 EMPLOYER'S RIGHT TO ACCEPT AND TO REJECT ANY OR ALL TENDERS.

19.1 The employer reserves the right, without being liable for any damages or obligation to inform the applicant, to:

- A. Amend the scope and value of contract to the applicant.
- B. Reject any or all of the applications without assigning any reason.

19.2 Any effort on the part of the applicant or his agent to exercise influence or to pressurize the employer would result in rejection of his application. Canvassing of any kind is strictly prohibited.

20.0 JURISDICTION

All disputes arising shall be subject to the jurisdiction of the appropriate court at Thiruvananthapuram, India and will be governed by the laws of India.

SECTION III
LETTER OF TRANSMITTAL

From:

To
Deputy Vice President (Technical)
HLL Lifecare Limited,
Infrastructure Development Division,
"Adarsh", T.C 6/1718(1),
Vettamukku, Thirumala P.O,
Thiruvananthapuram- 695 006

Subject: Submission of Tender for the work of ***"Supply Installation Testing and Commissioning of Fire Fighting System at HLL Corporate office, Poojapura"***

Sir,

Having examined the details given in the Tender press notice and Qualification documents for the above work, I/we hereby submit the qualification document and other relevant information.

1. I/We hereby certify that all the statements made and information supplied in the enclosed forms A to F and accompanying statements are true and correct.
2. I/We have furnished all information and details necessary for pre-qualification and have no further pertinent information to supply.
3. I/We also authorize HLL Lifecare Limited to approach individuals, employers, firms and corporation to verify out competence and general reputation
4. I/We submit the following certificates in support of our suitability, technical know-how and capability for having successfully completed the following works:

Name of work

Certificate from

Enclosures.

Seal of applicant
Date of submission

Signature(s) of Applicant

FORM 'A'

FINANCIAL INFORMATION

- I. Financial Analysis – Details to be furnished duly supported by figures in balance sheet/profit & loss account for the last five years duly certified by the Chartered Accountant. (Copies to be attached).

A. Gross Annual turn over on construction works.

Years

2011-12	2012-13	2013-14	2014-15

B. Profit/Loss

Years

2011-12	2012-13	2013-14	2014-15

- II. Financial arrangements for carrying out the proposed work.
- III. The following certificates are enclosed:
1. PAN & Service tax registration

Signature of Chartered Accountant with Seal

Signature of Applicant

FORM 'B'

DETAILS OF ALL WORKS OF SIMILAR CLASS COMPLETED DURING THE LAST SEVEN YEARS ENDING LAST DAY OF THE MONTH OF July 2015

Sl. No	Name of work/ project and location	Owner or sponsor	Cost in crores with breakup for components as in para 3, section I	Date of commencement as per contract	Stipulated date of completion	Actual date of completion	Litigation /arbitration pending /inprogress with details*	Name and address /telephone number of officer to whom reference may be made	Remarks
1	2	3	4	5	6	7	8	8	10

* Indicate gross amount claimed and amount awarded by the Arbitrator.

Signature of Applicant

FORM 'C'

PROJECTS UNDER EXECUTION OR AWARDED

Remarks	Name and address /telephone number of officer to whom reference may be made	Litigation /arbitration pending /in progress with details*	Actual date of completion	Stipulated date of completion	Date of commencement as per contract	Cost of work in crores	Owner or sponsoring organization	Name of work/ project and location	Sl.No
10	8	8	7	6	5	4	3	2	1

Signature of Applicant

FORM 'D'

PERFORMANCE REPORT OF WORKS REFERRED TO IN FORM "B" & "C"

1. Name of work /Project & Location.
2. Agreement No.
3. Estimated Cost.
4. Tendered Cost
5. Final Cost on completion of the project :
6. Date of start
7. Date of completion
 - (i) Stipulated date of completion
 - (ii) Actual date of completion
8. Amount of compensation levied for delayed completion, if any
9. Amount of reduced rate items, if any.
10. Performance Report

1) Quality of work	Very Good/Good/Fair/Poor
2) Financial soundness	Very Good/Good/Fair/Poor
3) Technical Proficiency	Very Good/Good/Fair/Poor
4) Resourcefulness	Very Good/Good/Fair/Poor
5) General behavior	Very Good/Good/Fair/Poor

Dated: _____ Executive Engineer or Equivalent

FORM 'E'

STRUCTURE & ORGANIZATION

1. Name & Address of the applicant
2. Telephone No./Fax No.
3. Legal status of the applicant (attach copies of original document the legal status).
 - (a) An individual
 - (b) A proprietary firm
 - (c) A firm in partnership
 - (d) A limited company or Corporation
4. Particulars of registration with various Government bodies (attach attested photocopy).

Organization/Place of registration	Registration No.
1.	
2.	
3.	
5. Names and Titles of Directors & Officers with designation to be concerned with this work.
6. Designation of individuals authorized to act for the organization.
7. Was the applicant ever required to suspend construction for a period of more than six months continuously after you commenced the construction? If so, give the name of the project and reasons of suspension of work.
8. Has the applicant, or any constituent partner in case of partnership firm, ever abandoned the awarded work before its completion? If so, give name of the project and reasons for abandonment.
9. Has the applicant, or any constituent partner in case of partnership firm, even been debarred/black listed for tendering in any organization at any time? If so, give details.
10. Has the applicant, or any constituent partner in case of partnership firm, ever been convicted by a court of law? If so, give details.
11. In which field of Civil Engineering construction the applicant has specialization and interest?
12. Any other information considered necessary by not included above.

Signature of Applicant

FORM 'F'

DETAILS OF TECHNICAL & ADMINISTRATIVE PERSONNEL TO BE EMPLOYED FOR THE WORK

S. No.	Designation	Number available for this work	Name	Qualification	Professional experience and details of work carried out	Responsibility	Remarks
1	2	3	4	5	6	7	8

Signature of Applicant

Form H
SAP VENDOR CREATION TEMPLATE

Name of Vendor / Supplier		
Address for Communication		
Phone Number		
Type of Organisation		Company / Partnership / Proprietor
PAN Number [attach copies]		
TIN Number [attach copies]		
CST Number [attach copies]		
Service Tax Registration No [attach copies]		
Bank Details		
Name of Bank		
Account Number		
RTGS / NEFT [IFS] Code		
Branch Name & Address		

Name & Signature

LIST OF APPROVED MAKES FOR CHO NEW BUILDING		
SL NO	ITEM	MAKES
A. Fire Protection System		
1	Fire / Sprinkler Main Pump / Jockey	Kirloskar/KSB/Wilo - Mather & Platt
2	Diesel Engine	Cummins/Greaves/KOEL
3	Motor	ABB/Bharat Bijlee/Kirloskar/Siemens
4	G.I. / M.S. Pipes (IS : 1239 / IS : 3589)	Jindal/Prakash/Tata Stee
5	DI / CI / Forged Steel Fittings	Jainsons Industries /VS/SS Fittings/ BM Fittings
6	C.I. (Class L.A.) Pipes	Electro Steel /IISCO/NECO/Kesoram
7	RCC Pipe	K K /Pranali /Local ISI Approved
8	FOOT VALVE	KIRLOSKAR/ NORMEX/KALAPANA
9	NRV	INTERVALVE/ ADVANCE/KARTHAR
10	Fire Hose	CRC/Jayashree/New Age/Padmini/Safeguard
11	HOSE BOX	FRIENDS
12	First Aid Hose Reel	NewAge/Padmini/Safeguard/Minimax/REA DE/MONSHER/NEWAGE
13	Branch Pipe	NewAge/Safeguard/Minimax/ARIHANT/ES SEL
14	Butterfly /Ball Valve	Tyco/Viking/Victaulic/Danfoss/Honeywell/ INTERVALVE/ADVANCE/KARTHAR
15	Sprinkler Heads	Reliable/Tyco/Victaulic/Viking/Newage/ HD/SHARP/
16	Fire Extinguishers(ABC/C O2/M- Foam)	Tyco/Minimax/Safefire/Safeguard/SAFEX/B HARAT/SAFETY FIRST
17	Water Flow Switch	Honeywell /Rapid Control/System Sensor/ Spray Safe
18	Pipe Protection Wrapping	IWL - Pypkote/Rustech - Coatek
19	Pipe clamp & supports	Chilly/Euroclamp/Kanwal

20	Sluice Valves	Indian Valve Company /Kirloskar/Kalpana
21	Check Valve – Wafer Type	Advance/Danfoss/Kirloskar/Honeywell
22	Check Valve – Dual Plate	Advance /Audco/Honeywell
23	Air Release Valve	Arco/OR/RB/Zoloto
24	Mechanical Seal	Burgmann/Sealol
25	Y Strainer	Emerald /Sant/SKS/Zoloto
26	Couplings	Lovejoy
27	Anti-Vibration Mounting & Flexible Connections	Cori/Dunlop/Flexionics/Kanwal Industrial Corporation/Resistoflex
28	DIESEL ENGINE	Cummins, Kirloskar, Catterpillar
29	Pressure Gauge	Emerald /Fiebig/H Guru
30	PRESSURE SWITCH	INDFOSS/ WAREE/ DANFOSS
31	Welding Rods	ADOR/Esab
32	Fastener	Fisher/Hilti
33	Flexible hose for sprinkler	New Age/Tyco
34	Electrical Panel	CPR certified panels
1	MCCB /MCB/RCCB/ELCB	Legrand, Indoasian, Havells
2	SFU / HRC Fuse	L&T/GE/Siemens/Schneiders
3	Ammeter /Voltmeter	AE, Schneider, L&T, Secure
4	Indicating Lamps	Kaycee, Technic, Vaishno, L&T
5	CT/PT	Kappa, AE, Intrans, Resitech
6	Contactora	Siemens, L&T, Schneider, ABB, GE
7	Over load relay	Schneider, L&T, Siemens, ABB
8	Selector Switch	Kaycee, Technic, Vaishno, L&T
9	LT power /Control cable	Finolex, Panasonic, Lapp Kable.

LIST OF APPROVED MAKES		
SL NO	ITEM	MAKES
B. Fire Alarm System		
1	Smoke / Multi criteria/Detectors	SIEMENS/MORLEY/BOSH
2	Heat Detectors	Notifier/Edwards/Honeywell /SiemensMORLEY/BOSH
3	Control Modules / Monitor Modules / Fault Isolators	Notifier/Edwards/Honeywell /Siemens/MORLEY/BOSH
4	LOOP POWERED SOUNDER	Notifier/Edwards/Honeywell /Siemens/MORLEY/BOSH
5	Manual Call Stations / Hooters /Speakers	Notifier/Edwards/Honeywell /Siemens/MORLEY/BOSH
6	Sealed Maintenance free Batteries	National/Polycab/Gloster/RR Kabel/Finolex
7	PVC insulated copper conductor FRLS cable	Exide /GS Batteries /Hitachi

FIRE PROTECTION SYSTEM

SCOPE

The basic system requirement shall be as per National Building Code of India 2005 -Part 4 Type of Building Occupancy-Business Buildings (E)-5)Above 30 m in height.The Tenderer shall be responsible for preparing the drawings and prior to execution the tenderer should get it approved from the client engineer in charge.

CODES AND STANDARDS

NBC: National Building Code 2005, Part 4, Fire and Life Safety

TAC: TAC Protection Manual / 1998 (Guidance only)

& as per the direction given by the local fire force department

Engineering Practices

IS-1239 / IS-3589: Specifications for GI Pipes

IS-778/14846: Specifications for Gun Metal gate, globe, and check Values for water supply.

IS-814: Specifications for covered electrodes for metal arc welding of structural steel. BS-5155: Specifications for C.I. butterfly valve.

IS-1641: Specifications for C.I. screwed fittings.

IS-903: Specifications for Branch pipes (long Pattern)

IS-3844: Code of practice for installation of internal Fire Hydrant in Multi storied building IS-IS 5290: Specifications for hydrant landing valves.

IS-903: Specifications for coupling double male double female instantaneous pattern for firefighting.

IS-1879: Malleable iron fittings (Parts I to X)

IS-4853: Recommended practice for radiographic inspection of fusion welded butt joints in steel pipes.

IS-636:Synthetic, jacketed hose pipes.

IS-1520: Electrically operated multistage / multi outlet pump.

IS : 5 Specification for painting

PUMPING SYSTEM

SI No	Pump Details
1	Hydrant pump Near underground Static Water storage water tank .Fire Pump with minimum pressure of 3.5 kg/cm square at terrace level (electrical of capacity 2850 l/min)
2	Sprinkler pump Near underground Static Water storage water tank .Fire Pump with minimum pressure of 3.5 kg/cm square at terrace level (electrical of capacity 2850 l/min)
3	Stand by pump diesel pump Near underground Static Water storage water tank. Fire Pump with minimum pressure of 3.5 kg/cm square at terrace level of 2850 l/min
4	Jockey pump Near underground Static Water storage water tank. Fire Pump with minimum pressure of 3.5 kg/cm square at terrace level(electrical capacity 180 l/min)

Negative suction arrangement is considered for firefighting pump sets.

DESIGN PARAMETERS

- The yard hydrants will be fixed on the stand post at 45 m intervals around the buildings.
- In each floor, in each riser, tapping will be taken for connecting a Single headed hydrant valve and a hose reel drum having 19mm dia rubber hose of 30m long with nozzle at one end.
- Each single headed hydrant valve will be provided with 2 Nos. of 15 m hose and 1 No. of branch pipe.
- Pipes will be laid in ring form around the area protected. Isolating valves will be provided from maintenance point of view as will be provided from maintenance point of view as well as fire service requirements.
- The ring main around the building will be laid 1m below ground level, 2m away, within 15Mtr from the face of the building.
- The wet riser cum down comer system piping will be as per relevant IS standards.
- The hydrant mains will be sized for the entire aggregate pumping capacity considering velocity of 5 m/s.
- Minimum pressure of 3.5 kg/cm² will be ensured at the remotest hydrant point.
- All the hydrants will be used oblique type with the outlet angle towards ground.
- All the outdoor hydrants will be provided with two (2) Nos. RRL hoses (63 mm size

x15m long with couplings) and one (1) no. branch pipe with nozzle (20mm bore).

- At every internal hydrant location, one (1) no. of hose reel arrangement will be provided except for terrace level.
- The system will be automatic in operation.
- The power supply to MCC & control panel of the firewater pumps will be directly from the sub-station without any tapping.

AUTOMATIC SPRINKLER SYSTEM

Automatic sprinkler system shall be provided as per requirements of NBC 2005.

One separate main pump is used for the sprinkler system. Sprinkler system will have installation control valve (Alarm valve), Sprinklers, flow switch, associated piping, etc. The sprinkler riser mains will be charged with water to the system design pressure. The operation system will be automatic through the pressure switches installed in the system. When the sprinkler bulb breaks due to fire breaks-out, the pressure will drop down in the pipe line. The drop in pressure is being sensed by the pressure switch. The pressure switch is connected to the MCC. The MCC will trigger the prime movers to run when it get signal from the pressure switch.

DESIGN PARAMETERS

- At least one number sprinkler is to be provided per 12 sq.m of coverage area.
- One Alarm valve is considered for each sprinkler riser
- Tapping is taken from the sprinkler riser for all the sprinklers at the respective floors.
- Isolating valve is considered at the tap off points, from maintenance point of view.
- One number flow switch is also provided near the tap-off point from the individual vertical riser of each floor to get the fire indication in the main fire panel.
- The Automatic sprinkler system piping will be GI heavy grade as per relevant IS standards.
- The Sprinkler mains will be sized based on the number of sprinklers.

- Minimum pressure of 0.35 bar will be ensured at the remotest sprinkler point.
- The sprinklers used will be of Pendant type with rosette plate.
- One cabin will be housed near the riser to house the spare sprinklers, spanner, first-aid box, etc.
- The system will be automatic in operation.
- The power supply to the MCC & control panel of the firewater pumps will be independent and taken directly from the substation.

PIPE AND FITTINGS

- Pipe for fire fighting will be MS pipe conforming to IS : 1239 / IS : 3589 (Havey grade for wet riser / hydrant system and sprinkler system) including all fittings like bends, elbows, tees anchor fasteners, couplings etc., and will be of reputed make.
- Pipes 150 mm dia and below will conform to IS : 1239. Pipes 200 mm dia and above will be rolled and welded conforming to IS : 3589
- For pipes 40mm dia and below, socket welded joints, will be used and fittings will be of forged steel. For pipes above 40 mm dia, But welded joints will be used.
- Flanges will have appropriate number of holes as per the relevant IS Standard fastened with nuts, bolts and 3mm thick compressed rubber gasket.
- Shock absorbers for absorbing and to sustain water hammering in the fire fighting and supply water pipe line to be provided at regular distance.

PIPE PROTECTION

- All pipes above ground and in exposed locations will be painted with one coat of red oxide primer and two coats of synthetic enamel paint as per IS : 5 (Shade 536).
- All pipes under floors or below ground will be protected against soil corrosion by wrapping and coating material “Pypkote” as per IS:10221.

PIPE SUPPORT

All pipes will be adequately supported from ceiling or walls from existing inserts by structural clamps fabricated from M.S. structural e.g. rods, channels, angles and flats or by using anchor fasteners type as per site conditions. All clamps will be painted with one coat of red oxide and two coats of black enamel paint.

FIRE ALARM CONTROL PANEL (FACP)

- a. The distributed Intelligent Fire Alarm Control Panel (FACP) shall function as fully stand-alone panel as well as providing a communication interface to the central station. FACP shall have its own microprocessor, software and memory and should be listed under UL864 . In the event of failure of the central or communication breakdown between the central station and the FACP, the FACP shall automatically operate on stand-alone mode without sacrificing any functions.
- b. The memory data for panel configuration and operation shall reside in non-volatile memory (EEPROM). Removal of the board shall not cause loss of memory. If such removal can cause loss of memory, then the card containing the memory shall have battery back-up for upto 100 hours on the board itself.
- c. FACPs shall supervise detection circuits and shall generate an alarm in case of abnormal condition.
- d. FACPs shall provide general purpose inputs for monitoring such functions as low battery or AC power failure. FACPs shall provide tamper protection and commendable outputs, which can operate relays or logic level devices. Output commands shall take any of, but not limited to, maintained command, Momentary Command, Alarm Follow, or Alarm latch as required. Any relay in the FACP which is intended to be removable shall be supervised against removal.
- e. Smoke detectors shall be powered using the FACP-based smoke detection circuits. FACPs shall provide for resetting smoke detectors, fault-isolation and sensor loop operation. It shall be possible to mix different fire devices within the same FACP to optimize field wiring.
- f. FACPs shall provide indication for communication with the central console and alarm/trouble conditions in each sensor loops.
- g. FACPs shall provide monitoring and control of one floor or area or for multiple floors or areas. FACPs shall meet the following requirements to assure the integrity and reliability of the system :
 - i. The FACP shall be UL listed independently as a fire alarm control panel.
 - ii. FACP electronics shall be contained in an enclosure made of minimum 16 gauge steel. Access to FACP switches and electronics shall be by key-lock. Usage of no other tools should be required. Visual indicators of FSP status for each zone shall be visible without opening the key-locked cover.

- h. All hardware and software to allow the FACP configuration and operation to be changed shall be provided. Memory data shall be contained in non-volatile memory (EPROM).
- i. Alarm verification with field-adjustable time from 0 to 60 seconds for individual smoke detector shall be provided. During the alarm verification, the panel shall retard the alarm until the end of the period. If the alarm is only a transient smoke alarm, the panel shall automatically reset the alarm. Only a verified alarm shall initiate the alarm sequence for the software zone (Logical Point Group) or point. Final time setting shall be as per approval of the fire authorities. When alarm verification is being performed on a smoke detector, the action shall be printed on the listed printer(s).
- j. Digital numeric display at the FACP shall be provided to indicate point in alarm or trouble. In such systems, means for manually scanning the points in trouble shall be provided and a trouble and alarm LED shall be used to indicate that there are points in alarm/trouble. The alarm/trouble LED shall only extinguish when all alarm/troubles are cleared from the loop.
- k. It shall be possible to command test, reset and alarm silence from both the FACP and the central console.
- l. FACP switches shall allow authorized personnel to accomplish the following, independent of the central console :
 - i. Initiate a general alarm condition.
 - ii. Silence the local audible alarm.
 - iii. It shall be possible to acknowledge (Silence the local FACP audible without silencing the alarm indicating devices (hooters).
 - iv. Reset all zones (Logical Point Group) / points, after all initiating devices have returned to normal.
 - v. Perform a complete operational test of the microprocessor and memory with a visual indication with each board.
 - vi. Test all panel LEDs for proper operation without causing a change in the condition of any zone (Logical Point Group)
 - vii. Walk Test
- m. Software zones/loops shall be circuited and protected by Fault Isolation Modules such that in the event of a zone/loop short-circuit, not more than twenty (20) devices shall be left non-functional.
- n. Intelligent Smoke and thermal sensors shall be located as shown and shall report sensed levels in analog form.
- o. Monitor modules shall be provided to monitor and address contact-type input devices. The monitor module shall be supervised by FACP.
- p. The FACP shall process the true continuous analog signal from the sensors. System using step setting to represent analog signal will not be accepted. The FACP shall be able to set

dual alarms threshold for occupied and unoccupied periods. During unoccupied period, the alarm threshold shall automatically be lowered to facilitate quicker response. In addition, the FACP shall further process all analog values for pre-alarm limits to prompt the operator for early maintenance. If a sensor value increases to an above normal level or a pre-alarm limit for an extended duration, the FACP shall communicate a maintenance pre-alarm.

- i. Any time sensor value transitions beyond the secondary and higher limit value, an alarm initiation and report shall be issued.
- ii. Limits and sensor values shall be displayed, modifiable, and reported in decimal values.
- iii. The FACP shall have Drift Compensation facility to compensate for environment. The FACP shall have the ability to recalibrate Pre-alarm and Alarm limits if required, after comparing each sensor's operating characteristics with the set sensitivity. This should be carried out at least once in every 24 hours. FACP should annunciate trouble conditions when sensor(s) is beyond compensation range (excessively dirty sensor).
- iv. The FACP should be UL listed or EN 54 approved to provide the sensitivity measurement and documentation required by NFPA72E.
- q. FACP shall be backed up with its built in UPS power and shall also be connected to central DG Power available in the building.

r. FACP shall be provided with following features :

Charger Rate Control

Control-by-Time Non-Alarm Module Reporting

Day/Night Sensitivity Periodic Detector Test

Device Blink Control Remote Page

Drift Compensation Trouble Reminder

NFPA 72 Sensitivity Test Verification Counters

System Status Reports Walk Test

Security Monitor Points Maintenance Alert

Alarm Verification System Configuration Report

Printer Interface System Point Report

Event Historical log Programmable Automatic Timed and
Manual Signal Silence

Programmable Manual Signal Control-By-Event with Boolean Logic
Silence Inhibit Timer and Timer Control

- s. FACP shall have real-time clock to prevent loss of time and date in case of failure of power supplies.
- t. The display on FACP shall provide indication for AC Power, System Alarm, System Trouble/ Security Alarm, Display Trouble and Signal Silence.
- u. Minimum two different password levels will be provided to prevent unauthorized System control or programming.
- v. Operator control switches for Signal Silence, lamp Test, Reset, System Test and Acknowledge shall be provided.
- w. Power supply unit of FACP shall have following characters:
 - i. The main power supply shall be 230 VAC \pm 10%, 50 Hz \pm 1% and shall in turn provide all necessary power of the FACP.
 - ii. It shall provide a battery charger for 24 hours for standby power using dual-rate charging technique for fast battery recharge.
 - iii. It shall provide a very low frequency sweep earth fault detect circuit, capable of detecting earth faults on sensitive addressable modules.
 - iv. It shall be power-limiting using Positive Temperature Coefficient (PTC) resistor.
 - v. It shall provide indication for battery voltage and charging current.
- x. For ease of service, all wiring terminal blocks shall be plug-in type and shall have sufficient capacity for 18 to 12 AWG wire termination. Fixed terminal blocks shall not be acceptable.

DETECTORS & ADDRESSABLE DEVICES

GENERAL FEATURES COMMON TO ALL DETECTORS :

- a. Compatibility : All automatic fire detectors shall be inter changeable without requiring different mounting bases or alterations in the signal panel.
- b. Response Spectrum : Combustion gas detectors shall respond to both visible and invisible aerosols; size and colour of the aerosols shall not have a decisive influence on the response of the detector.
- c. Sensitivity: On average 30 mgs of burned material per cu.m. (as measured in a 1cu.m chamber) shall release an alarm sensitivity which shall be adjustable according to the use of the space.
- d. Power Consumption : Each detector shall use the minimum of power, for economic circuits, so that it shall have capacity to connect atleast 150 detectors, 50 modules and 20 fault isolator modules in one loop.

- e. Built-in-response indicator : Each detector shall incorporate indicator “LED” at the detector which shall blink during normal condition and light up on actuation of the detector to locate the detector which is operated. The detector shall not be affected by the failure of the response indicator lamp.
- f. Maintenance : All detectors shall be fitted either with plug-in system or bayonet type connections only, from the maintenance and compatibility point of view.
- g. Construction : The detector shall be vibration and shock proof. When disassembling for cleaning purposes, its components must not be damaged by static over voltage.
- h. Atmospheric and Thermal Disturbance : The detector shall so designed as to be practically immune to environmental criteria such as air currents, humidity, temperature fluctuations, pressure and shall not trigger false alarm, due to the above conditions.
- i. Continuous Operation : An alarm release shall not effect a detector’s functioning. After resetting the alarm, the detector shall resume operation without any readjustment.
- j. Adaptability to ambient conditions : Detectors shall be designed for adaptability to humid locations. No performance deterioration shall be acceptable.

ADDRESSABLE PHOTOELECTRIC SMOKE DETECTORS

Smoke detectors shall be intelligent and addressable devices, and shall connect with two wires to one of the Fire Alarm Control Panel loops. Minimum to 120 intelligent detectors should connect to one loop. The detectors shall use the photoelectric (light-scattering) principal to measure smoke density and shall, on command from the control panel, send data to the panel representing the analog value for smoke density. The detectors shall be ceiling mounted type and shall include a twist-lock base.

The detectors shall provide a test means whereby they will simulate an alarm condition and report that condition to the control panel. Such a test may activated remotely on command from the control panel.

The detectors shall provide address-setting means on the detector head using rotary decimal switches. Systems which use binary jumpers or DIP switches to set the detector address shall not be acceptable. The detectors shall also store an internal identifying code, which the control panel shall use to identify the type of detector. Detectors providing address setting through hand held programmers shall also be accepted.

The detectors shall provide dual alarm and power LEDs. Both LEDs shall flash under normal conditions, indicating that the detector is operational and in regular communication with the control panel. Both LEDs may be placed into steady illumination by the control panel, indicating that an alarm condition has been detected. An output connection shall also be provided in the base to connect an external remote alarm LED.

The detector sensitivity shall be set through the Fire Alarm Control Panel, and shall be adjustable in the field through the field programming of the system. Sensitivity may be automatically adjusted by the panel on a time-of-day basis.

Using software in the FACP, the detectors shall compensate for dust accumulation and other slow environmental changes which may affect their performance. The detectors shall be

listed by UL as meeting the calibrated sensitivity test requirements of NFPA Standard 72.

The area covered by each smoke detector shall be as per NFPA 72 and /or IS-2189.

ADDRESSABLE ADJUSTABLE THERMAL DETECTORS

Thermal detectors shall be intelligent, adjustable and addressable devices, and shall connect with two wires to one of the Fire Alarm Control Panel loops. Minimum 120 intelligent thermal detectors may connect to one loop.

The detectors shall use an electronic detector to measure thermal conditions caused by a fire and shall, on command from the control panel, send data to the panel representing the analog level of such thermal measurements. The detectors shall be ceiling-mounted type and shall include a twist-lock base.

The detectors shall provide a test means whereby they will simulate an alarm condition and report that condition to the control panel. Such a test may be initiated remotely on command from the control panel.

The detectors shall provide address-setting means on the detector head using rotary decimal switches. Systems which use binary jumpers or DIP switches to set the address shall not be acceptable. Detectors providing address setting through hand held programmers shall also be accepted.

The detectors shall provide dual alarm and power LEDs. Both LEDs shall flash under normal conditions. In certain applications, LEDs may be selected to be polled without flashing through system programming. Both LEDs may be placed into steady illumination by the control panel, indicating that an alarm condition has been detected.

An output connection shall be provided in the base to connect an external remote alarm LED.

ADDRESSABLE MULTI CRITERIA DETECTOR

The intelligent multi criteria detector shall be an addressable device that is designed to monitor a minimum of photoelectric and thermal technologies in a single sensing device. The design shall include the ability to adapt to its environment by utilizing a built-in microprocessor to determine its environment and choose the appropriate sensing settings. The detector design shall allow a wide sensitivity window, no less than 1 to 4% per foot obscuration. This detector shall utilize advanced electronics that react to slow smoldering fires and thermal properties all within a single sensing device.

The microprocessor design shall be capable of selecting the appropriate sensitivity levels based on the environment type it is in (office, manufacturing, kitchen etc.) and then have the ability to automatically change the setting as the environment changes (as walls are moved or as the occupancy changes).

The intelligent multi criteria detection device shall include the ability to combine the signal of the thermal sensor with the signal of the photoelectric signal in an effort to react hastily in the event of a fire situation. It shall also include the inherent ability to distinguish between a fire condition and a false alarm condition by examining the characteristics of the thermal and smoke sensing chambers and comparing them to a database of actual fire and deceptive phenomena.

An output connection shall be provided in the base to connect an external remote alarm LED.

Manual Call Point:

- Under normal conditions push button will be in the depressed condition. IN the case of fire when the glass cover is broken, the push button will be released by the spring action and will actuate an alarm at the control panel through its switching contacts. IN addition to this, there will be an LED indicator on the monitor module for visual indication to locate the call point easily.
- The manual stations will be non-code re-settable key type general alarm devices, painted red and suitable for surface or flush mounting. Manual stations will be capable of being interfaced to a monitor module that is addressable. The manual station will have normally open fire alarm and annunciator contacts and these contacts will close on activation. Contacts will remain closed until station is manually reset.

DESIGN PARAMETERS

- fire alarm panel will be located at the ground floor of the building as mentioned above near the main entrance.
- The spacing between detectors will be as per IS : 2189.
- The panel will have a battery (SMF) back up of 48 hrs.
- The fire alarm panel loop will accommodate maximum 125 detectors and 125 devices.
- The number of loop for respective fire alarm panels will be decided as per the number of floors and number of detector devices.
- All the hooters will be loop powered.
- The panel will have provision for interfacing with Building Management System (BMS).

PORTABLE FIRST-AID FIRE EXTINGUISHERS

The portable first-aid fire extinguishers shall be provided for all the buildings as per requirements of NBC 2005.

SYSTEM DESCRIPTION

The extinguishers are used to put-off small fires. The extinguishers will be used in the incipient stage of fire. Fire extinguishers are easy to handle. This is useful to put off the fire in the initial stage itself and thus avoiding major losses.

PHOTOLUMINESCENT SAFETY SIGNGES

Photo luminescent safety signage shall be provided for exits & fire escape route.

DESIGN PARAMETERS

- Photo luminescent signages are provided in the exit staircases, lift lobby, extinguisher location, fire escape hydrant & hose reel, alarm valve and main fire alarm panel, etc.

SYSTEM DESCRIPTION

The photo luminescent safety signage glows in darkness. This will guide the safe escape of occupants even in case of the power supply failure. This can also useful to find the location of the fire fighting appliances in case of emergency even darkness.

STATUTORY AUTHORITIES' TESTS AND INSPECTIONS

The Tenderer shall be responsible for the submission of all necessary forms and drawings to the Statutory Authorities which shall conform to the latest architectural plans submitted to and kept by this Authorities. Tenderer shall be responsible for obtaining the final NOC from Statutory Authorities. Statutory fees will be paid by the contractor as per the GO, Which shall be reimbursed by HLL on producing the actual bill.

FINAL ACCEPTANCE TESTS

Following commissioning and inspection of the entire installation, and prior to issue of the Completion Certificate, the Tenderer shall carry out final inspection from fire and rescue department and obtaining the Final NOC.

Should the results of the acceptance tests show that plant, systems and/or equipment fail to perform to the efficiencies or other performance figures as given in this Specification, the

Tenderer shall adjust, modify and if necessary replace the equipment without further payment in order that the required performance is obtained.

REJECTION OF INSTALLATION

Any item of system or component which fails to comply with the requirements of this Specification in any respect whatsoever at any stage of manufacture, test, and erection or on completion at site may be rejected by the in whole or in part as he considers necessary/appropriate. Adjustment and/or modification work as required by the Architect / Consultant/ Client/ Project Manager so as to comply with the Authority's requirements and the intent of the Specification shall be carried out by the Tenderer at his own expense and to the satisfaction of the Authority/Architect/Consultant.

After works have been accepted, the Tenderer may be required to carry out assist in carrying out additional performance tests as reasonably required by the Architect/Client/ Consultant/ Project Manager.

WARRANTY AND HANDOVER

The Tenderer shall warrant that all plant, materials and equipment supplied and all workmanship performed by him to be free from defects of whatsoever nature before handover to the Owner.

HANDING OVER OF DOCUMENTS

All testing and commissioning shall be done by the Tenderer to the entire satisfaction of the /Client/ Project Manager. And all testing and commissioning documents shall be handed over to the / Client/ Project Manager.

The Tenderer shall also hand over all maintenance and operation manuals, all certificates and all other documentation as per the terms of the contract to the /Client/ Project Manager.