

TENDER DOCUMENT

Name of work: S.I.T.C. of Automatic Fire Detection and Suppression System for Electrical Block Panel at New Lab Block at NIPGR Campus, New Delhi.

CLIENT: DIRECTOR, NIPGR
NEW DELHI

COST OF TENDER DOCUMENT:- Rs. 500/-

TENDER DOCUMENTS

Name of work: S.I.T.C. of Automatic Fire Detection and Suppression System for Electrical Block Panel at New Lab Block at NIPGR Campus, New Delhi.

Owner : Director, NIPGR, New Delhi.

Tender Issued to : _____

**Place for submission/
Place opening of tender document:**

NIPGR Campus,
Aruna Asaf Ali Marg,
New Delhi-110067

**Consultant Engineer
NIPGR, New Delhi**

Last date for sale of tenders: 18.09.2015 up to 16:00 hrs.
Date/Time of submission : 21.09.2015 before 14.30 hrs.
Date/Time of opening : 21.09.2015 at 15.00 hrs.

**Consultant Engineer
NIPGR, New Delhi.**

TENDER FORM

To

**The Consultant Engineer
NIPGR, New Delhi.**

Dear Sir,

I/We have read and examined the following Tender Documents relating to the **"Name of work: S.I.T.C. of Automatic Fire Detection and Suppression System for Electrical Block Panel at New Lab Block at NIPGR Campus, New Delhi."**

- Tender Form
- Tender Notice
- General Conditions
- Instructions to Bidders
- General Information
- Memorandum
- General Conditions of contract agreement
- Special Terms & Conditions of Contract
- General Site rules, procedures and precautions
- Schedule of work
- Terms & conditions.

I/We hereby offer to execute the work complete in all respects specified in the under written Memorandum within the time specified therein or during the allowed extended time at the rates specified in the bill of Quantities and in accordance, with the specifications, designs, drawings and instructions in writing referred to in the conditions of tender.

(Seal & Signature of Contractor)

NATIONAL INSTITUTE OF PLANT GENOME RESEARCH
(Department of Biotechnology, Ministry of Science and Technology, Govt. of India)
Aruna Asaf Ali Marg, New Delhi-110067
Phone: 011-26735161, 26735138 Fax: 011-26741658
Website: www.nipgr.ac.in

TENDER NOTICE

File No.: NIPGR/Engg./6/1(3)(F.F.)/2015-16/

Dated: 02.09.2015

Sealed item rate Tenders are invited in two bid system on behalf of the Director, NIPGR, New Delhi from approved and eligible Contractors of CPWD/Central Govt/State Govt./ Govt. Autonomous Bodies, and reputed organizations so as to reach this office up to 2.30 P.M. on or before 21.09.2015 for the following work:

Name of Work: S.I.T.C. of Automatic Fire Detection and Suppression System for Electrical Block Panel at New Lab Block at NIPGR Campus, New Delhi.

Sl. No.	Estimated Cost	EMD (In ₹)	Time for Completion	Last date & time for sale of Tender Documents	Last date & Time of receipt of Tender	Date & time of opening of tenders
1.	2.	3.	4.	5.	6.	7.
1.	₹ 2.14 lakhs	₹ 4,300.00	30 days	18.09.2015 16.00 Hrs.	21.09.2015 14.30 Hrs.	21.09.2015 15.00 Hrs.

Tender document can be obtained up to 16.00 Hrs. on all working days on payment of ₹ 500.00 (₹ Five hundred only) in cash (Non-refundable) towards the cost of tender. The earnest money shall be in the form of Demand Draft of a Scheduled Bank issued in favour of the **Director, NIPGR, New Delhi**.

The tender document can also be downloaded from our website www.nipgr.ac.in and CPP Portal. The tender document downloaded from website must be accompanied with ₹ 500.00 (₹ Five hundred only) in the form of Demand draft in favour of the "**Director, NIPGR, New Delhi**" towards the cost of tender document, otherwise the tender will not be considered.

The earnest money shall be in the form of separate Demand Draft of a Scheduled Bank issued in favour of the **Director, NIPGR, New Delhi**.

The tenders will be accepted in respect of those contractors having successfully completed three similar works each costing not less than ₹ 0.86 lakhs or two similar works each costing not less than ₹ 1.07 lakhs or single similar work of costing not less than ₹ 1.72 lakhs during the last three years ending Aug. 31, 2015. Similar works means "SITC of Automatic Fire Detection and Suppression System in Govt. organizations, Govt. Autonomous organizations, PSUs and reputed organizations.

Intending tenderers must enclose self-attested copies of Completion Certificate of having completed the work satisfactorily issued by an appropriate competent authority and financial turnover certificate along with the tender.

The Director, NIPGR, reserves the right to accept or reject all or any of the tender without assigning any reasons thereof.

Consultant Engineer
NIPGR, New Delhi

GENERAL CONDITIONS

1. Sealed tenders on item rate basis are hereby invited from the contractors associated with similar type of works for the work of **"SUB.: S.I.T.C. of Automatic Fire Detection and Suppression System for Electrical Block Panel at New Lab Block at NIPGR Campus, New Delhi."**

The tender document consists of Tender form, Notice inviting tender, Instructions to bidders, General Information, Schedule of quantity, General Conditions of contract Agreement, technical specification, Bill of quantities etc. which can be had at a cost of Rs. 500.00 (Rs. Five hundred only) from the office of Consultant Engineer, NIPGR, Aruna Asaf Ali Marg, New Delhi. Purchase of tender document is obligatory on the part of the tenderers & bid in no other form will be accepted.

2. The tender documents shall be placed in sealed cover as mentioned in Procedure of Submission of tender and addressed to the Consultant Engineer, NIPGR Campus, New Delhi. The tender shall be received by the Consultant Engineer, NIPGR Campus, New Delhi before 14.30 hrs. on 21.09.2015 and shall be opened on the same day at 15.00 hrs. in presence of the tenderers or their authorized representatives who may like to be present. Any envelope received after the said date and time shall not be entertained under any circumstances and no consideration what so-ever shall be given to anything that might be contained in any such envelope.
3. The time allowed for the completion of work is 30 days to be reckoned from the 10th day after the date of written order to commence the work.
4. Every tender shall be accompanied by earnest money for ₹ 4,300.00 (₹ Four thousand three hundred only) in the form of demand draft drawn in favour of the Director, NIPGR payable at New Delhi. Any tender not accompanied by such earnest money will be rejected straight away.
5. The contractor will submit his tender after examining the tender documents, scope of work, specifications, clauses, additional terms of contract agreement, special terms & conditions, bill of quantities etc.
6. The offer shall remain valid for 180 days from the date of opening of Tender. The value of tender can be increased or decreased and any item can be added, deleted, withdrawn or substituted without any notice as per the requirements of NIPGR without assigning any reason.
7. If a tenderer whose tender is accepted fails to undertake the work as per terms of the contract within 10 days to be reckoned from the date of issue of allotment letter, the earnest Money deposited will be forfeited.
8. NIPGR does not bind itself to accept the lowest or any tender and reserves the right to reject any or all tenders without assigning any reason.
9. NIPGR will not pay any expense, whatsoever incurred by tenderer for the preparation and submission of tenders.
10. This notice inviting tender, will form part of the contract agreement to be executed by the successful tenderer with the NIPGR
11. The successful tenderer shall have to sign the contract agreement within 10 days of the allotment of work.

**Consultant Engineer
NIPGR, New Delhi**

Contractor

INSTRUCTIONS TO BIDDERS

1. GENERAL INSTRUCTIONS:

The works referred here-in shall cover the entire scope of the proposal which includes supplying of material and resurfacing of road work and construction of parking area road including the successful completion and the tests which the NIPGR desires to get carried out. The "Owner" where appearing in these documents shall mean Director, NIPGR,

2. PROCEDURE FOR SUBMISSION OF TENDERS:

The following procedure shall be adopted for submission and opening of tenders. The sealed envelope SUPERSCRIBED Tender for: **SUB.: S.I.T.C. of Automatic Fire Detection and Suppression System for Electrical Block Panel at New Lab Block at NIPGR Campus, New Delhi**

ENVELOPE NO.- 1

This envelope shall contain only the earnest money deposit & technical bid and will be opened first.

ENVELOPE NO.- 2

This sealed envelope shall contain the financial bid of the contractor as per bill of quantities. This envelope shall be opened only after the EMD contained in envelope No.1 & technical bid is found in order as per the requirements of NIPGR. The date of opening of price bid shall be intimated later on.

The sealed cover containing envelope 1 & 2 shall be opened on the prescribed date and time in the presence of tenderers or their authorized representatives who may wish to be present.

3. TENDERERS TO STUDY ENTIRE TENDER DOCUMENT CAREFULLY:

Submission of a tender by a tenderer implies that he has read all the stipulations contained in this tender document and has acquainted himself of the nature, scope and specifications of the works to be followed.

4. TENDERER TO SUBMIT THE ENTIRE TENDER DOCUMENT:

The tenderer shall submit all documents issued to him for the purpose of this tender after duly filling the same in all respects. Tenders which are found to be vague or incomplete shall be rejected summarily.

5. TENDERERS TO QUOTE FOR ALL ITEMS:

The tenderer shall quote his rates in words and figures with reference to each item and must enter for all the items shown in the attached Bill of quantities. Incomplete offer shall be liable for rejection. In case there is a discrepancy in "words" and "figures", the rate in words will be taken as correct for evaluation of tender. All quantities should be calculated as per percentage given by the contractor and total should be given of every sub head and grand total should also be given of all heads.

6. VALIDITY PERIOD OF OFFERS:

The rates quoted in the tender shall hold good for 180 days from the date of opening of the tender. The validity period shall be extendable with the mutual consent of both the parties. No tenderer can withdraw/or modify his tender or revoke the same within the said period of 180 days. If a tenderer on his own withdraws or revokes the tender or revises or alters or modifies the tender for any item or condition within a period of aforesaid 180 days his earnest money deposit shall stand forfeited.

7. TENDERER TO SIGN ALL PAGES:

The tenderer shall stamp and sign at the bottom right hand corner of every page of the tender documents in token of acceptance of tender conditions and for the purpose of identification.

8. ERASURES AND ALTERATIONS:

Tenders containing erasures and alterations of the tender documents are liable to be rejected unless these are authenticated by the person signing the Tender Documents.

9. TENDERER TO SATISFY HIMSELF OF SITE CONDITIONS:

Tenderers are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their tender regarding nature of the site conditions, the means of access of the site, the accommodation they may require and in general obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their tender in any manner. A tenderer shall be deemed to have full knowledge of the site, whether he inspects it or not and no compensation or otherwise of any charges incurred or to be incurred consequent on any misunderstanding or otherwise shall be admissible.

10. EARNEST MONEY:

The tender shall be accompanied by earnest money of ₹ 4,300.00 (₹ Four thousand three hundred only) in the form of Demand Draft only drawn in favour of the Director, NIPGR payable at New Delhi. Earnest money of the unsuccessful bidder(s) shall be refunded after expiry of the validity period of the tenders/allotment of works whichever is earlier.

11. TENDERER TO QUOTE BOTH IN FIGURES AND WORDS:

All tenderers shall quote the rate in figures as well as in words, the amount of each item shall be worked out and the requisite total given. Special care shall be taken to write percentage in figures and words, and the amount in figures only in such a way that interpolation is not possible. The total amount shall be written both in figures and in words.

12. TENDER LIABLE TO REJECTION:

Tenders which do not fulfill all or any of the conditions laid down in this notice, or contain conditions not covered and / or not contemplated by the Conditions of contract and/or expressly prohibited therein or stipulate additional/alternative conditions shall be liable to be rejected and his earnest money will be forfeited.

Tenders shall also be liable for rejection on any of the following grounds :-

- i) Tenders submitted late
- ii) Tenders containing remarks uncalled for.
- iii) Conditional tenders
- iv) Tenders not submitted on prescribed Performa.
- v) Telegraphic tenders.

13. CORRESPONDENCE:

Tenderers must mention their postal & Email address and telephone number(s) of the Chief Executive/authorized agent or attorney in the tender. The tender submitted by the tenderer will be rejected if he or his agent cannot be contacted on the last known address or on the intimated telephone number(s) after reasonable search in which event earnest money may be forfeited by the NIPGR.

14. NIPGR NOT TO ASSIGN ANY REASON FOR REJECTION OF TENDER:

NIPGR hold absolute discretion to accept or reject the lowest or any other tender without assigning any reason. No claim on this account shall be entertained.

15.AMENDMENT IN TENDER DOCUMENTS:

NIPGR reserves the right to revise or amend the Bid Documents upto the date prior to the date notified for opening of the tenders and also the right to postpone the date of submission and opening of tenders without assigning any reason, whatsoever.

16. REFERENCE IN TENDER DOCUMENTS:

Director, NIPGR, shall be referred as "Owner" in all the documents of Tender documents/contract agreement.

17. CONSULTANT ENGINEER

Where ever the word "Consultant Engineer" occurs it shall mean the authorized Engineer appointed by the NIPGR for the superintendence of the execution of works.

**Consultant Engineer
NIPGR, New Delhi**

Seal & Sign of Contractor

GENERAL INFORMATION

- | | | |
|----|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Accepting Authority | Director,
NIPGR, New Delhi. |
| 2 | Reference Book | i) CPWD specifications(Latest
as on date of tender)
ii)B.I.S. specifications(latest edition) |
| 3 | Earnest money | ₹ 4,300.00 (₹ Four thousand three hundred only) to be
furnished with the tender in the form of the demand draft
(No interest is payable on security deposit) |
| 4 | Security deposit | The security deposit will be collected by deductions from
the running bills of the contractors at the rate mentioned
below and the earnest money, if deposited at the time of
tender, will be treated as part of security deposit.
Performance security may be accepted as Bank
Guarantee/DD of Scheduled Banks and State Bank of
India. A sum @ 10% of the gross amount of the bill
shall be deducted from each running bill of the contractor
till the sum along with the sum already deposited as
earnest money, will amount to Security Deposit of 5% of
the tendered value of the work. In addition, the
contractor shall be required to deposit an amount equal
to 5% of the tendered value of the contract as
Performance Security within the period prescribed for
commencement of work in the letter of award issued to
him. |
| 5 | Authority competent to grant
extension of time | Director, NIPGR or authorized person by Director,
NIPGR |
| 6 | Tools & plants | To be arranged by contractor |
| 7 | Schedule of Minimum wages | As per notification issued by CPWD. / Delhi Govt. |
| 8 | Authority competent to
reduce the compensation
amount | Director ,NIPGR |
| 9 | Defect Liability Period | One year from the date of acceptance of completion by
the NIPGR. |
| 10 | Release Security Deposit | The performance security shall be refunded to the
contractor on completion of the work and recording of
completion certificate by Institute and the security deposit
of 5%of work done shall be released after defect liability
period. The E.M.D. / Security Deposit will be forfeited in
the event of non-compliance of any of the condition of
the tender documents. |
| 11 | Periodicity of submission
of interim Bills | After completion of work. |
| 12 | Authority Competent to
Appoint Arbitrator | Director, NIPGR, New Delhi |

Seal & Sign. of Contractor

Consultant Engineer

MEMORANDUM

- a) Name of work S.I.T.C. of Automatic Fire Detection and Suppression System for Electrical Block Panel at New Lab Block at NIPGR Campus, New Delhi.
- b) Estimated cost ₹ 2,14,400.00.
- c) Earnest money ₹ 4,300.00 (₹ Four thousand three hundred only) in the form of Demand Draft in favour of Director NIPGR payable at New Delhi. (No interest is payable on earnest money).
- d) Time allowed for the completion of work (to be reckoned from 10th day after the date of issue of written order to commence work) 30 days

Place
Date:

(Seal & Signature of Contractor)

GENERAL CONDITIONS OF CONTRACT AGREEMENT

SECURITY DEPOSIT

1. The person/persons whose tender may be accepted (herein after called the contractor) shall permit NIPGR at the time of making any payment to him for works done under the contract to deduct such sum as will amount to 10 % of all moneys so payable to be held by the NIPGR, by way of security deposit. Earnest money shall also be adjustable towards this security deposit. All compensation or other sums of money payable by the contractor to NIPGR under terms of this contract may be deducted from his security deposit or from any account what so ever, and in the event of his security deposit being reduced by reason of any such deduction, the contractor shall within 10 days thereafter make good in cash any sum or sums which may have been deducted from his security deposit or any part thereof.

COMPENSATION CLAUSE

2.1 The time allowed for carrying out the work as entered in the tender shall be strictly observed by the contractor, and shall be reckoned from the 10th day of the date on which the order to commence the work is given to the contractor within ten days of award of work the contractor shall prepare and submit a schedule for work execution in the form of a bar chart/CPM network and submit the same for approval of the NIPGR. The work on the contract shall be executed according to the approved schedule as aforesaid and shall throughout the stipulated period of the contract be proceeded with all due diligence (time being deemed to be the essence of the contract on the part of the contractor) and the contractor shall pay as compensation an amount equal to one percent or such smaller amount as NIPGR may decide on the value of work as per contract, for every week that the work remains uncommenced or unfinished after the dates mutually agreed upon by the parties. Further to ensure good progress during the execution of the work, the contractor shall be bound in all cases in which the time allowed for any work exceeds one month to complete one fourth of the whole of the work before one fourth of the whole time allowed under the contract has elapsed, one half of work before one half of such time has elapsed and three fourth of the work before three fourth of such time has elapsed. In the event of the contractor failing to comply with this condition he shall be liable to pay as compensation an amount equal to one percent or such smaller amount as the NIPGR, may decide of the value of balance work for everyday that the due quantity of work remains incomplete. Provided always that the entire amount of compensation to be paid under the provisions of this clause shall not exceed ten percent of the awarded cost of work as shown in the tender. The Director, NIPGR, on a representation from the Contractor, is however, empowered to reduce the amount of compensation and his decision in writing shall be final.

2.2 In any case under which any clause or clause of this contract the contractor shall have rendered himself liable to pay compensation to NIPGR. The NIPGR shall have power to adopt any of the following courses as he may deem best suited in the interest of the NIPGR.

a) To rescind the contract (of which rescission notice in writing to the contractor under the hand of NIPGR shall be conclusive evidence), and in which case the security deposit of the contractor shall stand forfeited, and be absolutely at the disposal of NIPGR.

b) To employ labour to be paid by NIPGR and to supply materials to carry out the work or any part of the work debiting the contractor with the cost of the labour and the price of the materials (of the amount of which cost and price a certificate of NIPGR shall be final and conclusive against the contractor) and crediting him with the value of the work done, in all respect in the manner and at the same rates as if it had been carried out by the contractor under the terms of his contract. The certificate of NIPGR as to the value of the work done shall be final and conclusive against the contractor.

c) To measure up the work of the contractor, and to take such part thereof as shall be unexecuted out of his hands and to give to a other contractor to complete, in which case any

expenses which may incurred in excess of the sum which would have been paid to the original contractor if the whole work had been executed by him (of the amount of which excess the certificate in writing of NIPGR shall be final and conclusive) shall be borne and paid by the original contractor and may be deducted from any money due to him by the Consultant Engineer, under this contract or otherwise from his security deposit or sale proceeds of the materials and tools and plants of the contractor lying at site.

In the event of any of the above courses being adopted by NIPGR, the contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any material entered in to any agreement or made any advance on account thereof or with a view to the execution of the work or the performance of the contract. And in case the contract is rescinded under the aforesaid provisions, the contractor shall not be entitled to recover or be paid any sum for any work thereof or actually performed under this contract unless and until NIPGR has certified in writing the performance of such work and the value payable in respect thereof, and the contractor shall only be entitled to be paid for the value so certified.

2.3 In any case in which any of the powers conferred upon the Consultant Engineer, NIPGR by clause 3 thereof shall have become exercisable and the same shall not be exercised, the non-exercise thereof shall not constitute a waiver of any of the conditions thereof and such powers shall notwithstanding be exercisable in the event of any future case of default by the contractor for which by any clause or clauses thereof he is declared liable to pay compensation amounting to the whole of his security deposit and the liability of the contractor for past and future compensation shall remain unaffected.

In the event of NIPGR putting force either of the powers (a) or (c) vested to him under the preceding clause he may, if he so desire, take possession of all or any tools, plants, materials and stores in or upon the works, or the site thereof or belonging to the contractor or procured by him and intended to be used for the execution of the work any part thereof, paying or allowing for the same in account at the contract rates, or in case of these not being applicable at current market rates to be certified by the NIPGR whose certificate hereof shall be final, otherwise Consultant Engineer, NIPGR by notice in writing to the contractor or his authorized agent require him to remove such tools, plants, materials or stores from the premises within a time to be specified in such notice: and in the event of the contractor failing to comply with any such requisition, the NIPGR or his authorized representative may remove them at the contractor's expenses to sell them by auction or private sale on account of the contractor and at his risk in all respects and the certificate of NIPGR as to the expense or any such removal and the amount of the proceeds and expense of any such sale shall be final and conclusive against the contractor.

2.4 All sums payable by way of the compensation under any of these conditions shall be considered as reasonable compensation to be applied to the use of NIPGR without reference to the actual loss or damage sustained and whether or not any damage shall have been sustained.

TIME EXTENSION

3.1 If the contractor shall desire an extension of the time limit for completion of the work on the grounds of his having been unavoidably hindered in its execution or on any other ground he shall apply in writing to the NIPGR within 5 days of the date of the hindrance on account of which he desires such extensions as aforesaid but before the expiry of time limit and the NIPGR, if in his opinion (which shall be final) reasonable grounds as shown thereof, authorized such extension of time if any, as may, in his opinion be necessary or proper.

COMPLETION OF WORK

4.1 Without prejudice to the rights of NIPGR under any clause hereinafter contained on completion of the work, the contractor shall be furnished with a certificate by the NIPGR or his representative of such completion, but no such certificate shall be given nor shall the work be considered to be complete until the contractor shall have removed from the premises on

which the work has been executed, all scaffolding, surplus materials and rubbish, and cleaning off the dirt from all doors, walls, floors, or any other parts of buildings said to have been completed, and the measurements in the said certificate shall be binding and conclusive against the contractor, if the contractor shall fail to comply with the requirements of this clause as to the removal of scaffolding, surplus materials, and rubbish and cleaning off dirt on or before the date fixed for the completion of the work, Consultant Engineer, NIPGR may at the expense of the contractor have removed such scaffolding, surplus materials and rubbish and dispose of the same as he thinks fit and clean off such dirt as aforesaid and the contractor shall forth with pay the amount of all expenses so incurred, and shall have no claim in respect of any such scaffolding or surplus materials as aforesaid except for any such sale proceeds actually realized by the sale thereof.

ADDITIONS/ALTERATIONS

5.1 The NIPGR shall have power to make any alterations or omissions or additions or substitutions in the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work, and the contractor shall be bound to carry out the work in accordance with any instructions which may be given to him in writing signed by the Institute and such alterations, additions or substitutions shall not invalidate the contract and any altered, additional or substituted work which the contractor may be directed to carry out in the manner above specified as part of the work shall be carried out by the contractor on same conditions in all respects on which he agreed to do the main work. The time for the completion of the work shall be extended in the proportion that the altered additional or substituted work has to the main work at the sole discretion of the NIPGR and his decision in this regard shall be final and binding on the contractor.

The rates for the additional, altered or substituted work under this clause shall be worked out in accordance with the following provisions in their respective order:

- i) If the rates for the additional, altered or substituted work are specified in the contract for the main work, the contractor is bound to carry out the additional, altered or substituted work at the same rates as are specified in the contract for the main work.
- ii) In case the rates for such items do not exist in the main contract but are available in the CPWD Schedule of rates, the same shall be derived on the basis of the percentage above/below the approved contract cost to the estimated cost for the work put to tender.
- iii) In the event, there is no similar class of work specified in clause(i) & (ii) above, the contractor shall work out a rate for each item on the basis of the prevalent market rates and submit the same together with the detailed analysis to the NIPGR within a period of 7 days from the day that the order for the relevant items are issued by the Consultant Engineer, NIPGR. The market rates of material & labour shall be as finally determined by the NIPGR. Contractor's profit shall be admissible @10% on the cost of material & labour. In case there is a difference between the rates quoted by the contractor and the rates found unacceptable by the NIPGR, the latter shall within a fortnight of submission, conduct necessary negotiations with the contractor to arrive at a mutually agreeable rate. The NIPGR, reserves to himself the right to cancel his order to carry out such work and arrange to carry it out in such manner as he may deem fit. But under no circumstances the contractor shall suspend the work on the plea of non settlement of rates for items falling under the clause.

ARBITRATION

6A.1 Except where otherwise provided in the contract all questions and disputes relating to the meaning of the specifications, designs, drawings and instructions here in before mentioned and as to the quality of workmanship or materials used on the work or as to any other question, claim, right, matter or thing whatsoever, in any arising out of or relating to the contract, designs, drawings, specifications, estimates, instructions, orders or these conditions or otherwise concerning the works, or the execution or failure to execute the same whether arising during the progress of the work or after the completion or abandonment thereof shall be referred to the sole arbitration of the person selected from out of a panel of names to be supplied upon a request in writing by party invoking the arbitration by the Director, NIPGR, at

the time of the dispute. It will be no objection to any such appointment that the arbitrator so appointed was associated with the work and that he had to deal with the matters to which the contract relates and that in the course of his duties in association with the, NIPGR, he had expressed views on all or any of the matters in dispute or difference. The arbitrator to whom the matter is originally referred being unable to act for any reason, the Director shall appoint another person to act as arbitrator in accordance with the terms of the contract. Such person shall be entitled to proceed with the reference from the stage at which it was left by his predecessor. It is also a term of this contract that no person other than a person appointed by the Director as aforesaid shall act as arbitrator. In all cases where the amount of the claim in dispute is Rs. 50,000/- (Rs. Fifty thousand only) or above, the arbitrator shall give reasons for the award.

Subject as aforesaid the provisions of Arbitration and Cancellation Act 1996 or any statutory modifications or reenactment thereof and the rules framed thereunder and for the time being in force shall apply to the arbitration proceeding under this clause.

It is also a term of the contract that while invoking arbitration the party invoking arbitration shall specify the dispute or disputes to be referred to arbitration under this Clause together with the amount or amounts claimed in respect of each such dispute.

It is also a term of the contract that if a party does not make any demand for arbitration in respect of any claim(s) in writing within 180 days of receiving the intimation from the Consultant Engineer that the bill is ready for payment, the claim if any, shall be deemed to have been waived and absolutely barred and the owner shall be discharged and released of all liabilities under the contract in respect of these claims.

The Arbitrator should be of the rank of retired / working Chief Engineer (CPWD) or (B & R) Delhi or equivalent post. The contractor will be entitled to file only those claims for arbitration which had already been raised before the NIPGR and rejected by him time to time during the execution of work.

CARRYING OUT OF WORK

6A.2 All the work shall be carried out in accordance with CPWD specifications prevalent as on date of tender & strictly as per the specifications given in the tender to the total satisfaction of the NIPGR. In the case of an item for which specification are not available in the said specifications relevant BIS specifications applicable as on the date of tenders shall be followed.

QUALITY CONTROL OF MATERIAL

7.1 If it shall appear to the Director, NIPGR that any work has been executed with unsound, imperfect, or unskillful workmanship or with materials or articles provided by him for the execution of the work are unsound, or of a quality inferior to that contracted for or otherwise not in accordance with contract, the contractor shall on demand in writing from the NIPGR specifying the work materials or articles complained of not with standing that the same may have been inadvertently passed, certified and paid for forthwith rectify, or remove & reconstruct the work so specified in whole or in part, as the case may require, or as the case may remove the materials or articles so specified and provide other proper and suitable material or articles at his own charge and cost and in the event of his failing to do so within a period to be specified by NIPGR in his demand as aforesaid then the contractor shall be liable to pay compensation at the rate of 1% on the contract agreement of work for everyday not exceeding 10 days, while his failure to do so shall continue and in the case of any such failure the NIPGR may rectify or remove, and re-execute the work or replace with other, materials or articles complained of as the case may be at the risk and expense in all respects of the contractor.

INSPECTION OF WORK

8.1 All work under or in course of execution or executed in pursuance of the contract shall at all times be open to the inspection and supervision of Consultant Engineer, NIPGR or his subordinate in-charge of the work and the contractor shall at all times, during the usual working hours and at all other times at which reasonable notice of the intention of the Consultant Engineer

to visit the works shall have been given to the contractor, either himself be present to receive order and instructions or have a responsible agent duly accredited in writing present for that purpose. Orders given to the contractor's agent shall be considered to have the same force as if they had been given to the contractor himself.

8.2 The contractor shall give not less than 5 days notice in writing to NIPGR of the work before covering up or otherwise placing beyond the reach of measurement any work in order that the same may be measured and correct dimensions thereof be taken before the same is so covered up or placed beyond the reach of measurement and any work without the consent in writing of NIPGR or placed beyond the reach of measurement without such notice having been given to or consent obtained, the same shall be uncovered at the contractor's expense or in default thereof, no payment or allowance shall be made for such work of the materials with which the same was executed.

8.3 The work during its progress shall from time to time inspected by the Architects or their structural & other consultants on behalf of NIPGR and the contractor shall extend all co-operation to the consultants inspecting the work.

INSURANCE

9.1. The following insurance cover is to be provided by the contractor in the joint names of the employer and the contractor for the period from the start date to the end of the Defects liability period.

a) cover against damage to other people's property caused by the contractor's acts or omission;

b) cover against death or injury caused by the contractor's acts or omission to:

i) anyone authorized to be on the site;

ii) third parties who are not on the site;

c) cover against damage to the Works and materials during construction.

9.2 Policies and certificates for insurance are to be produced by the contractor to the for approval before the start date given in the contract and subsequently as the may require.

9.3 If the contractor does not produce any of the policies and certificates required, the employer may effect the insurance for which the contractor should have produced the policies and certificates and recover the premiums it has paid from payments otherwise due to the contractor or, if no payment is due, the payment of the premiums shall be a debt due.

9.4 Alterations to the terms of an insurance may be made either with the approval of the or as a result of general changes imposed by the insurance company with which the insurance policy is effected.

9.5 Both parties are to comply with any conditions of the insurance policies.

10. No Escalation shall be paid.

11. Quoted rates for all items shall be firm, fixed & binding on the contractor irrespective of any variations of quantities of individual items stated.

Contractor

**Consultant Engineer
NIPGR, New Delhi**

SPECIAL TERMS AND CONDITIONS OF CONTRACT

1. SPECIFICATIONS:

If specifications for an item of work are not covered by the CPWD Specifications/B.I.S. Specifications prevailing as on date of tender, the same shall be decided by the Architect and shall be binding on the contractor.

The Director shall have the power to insist upon the contractor to purchase and use such materials of particular approved make which may in his opinion be necessary for proper and reasonable compliance with the specifications and execution of work.

In the event of any variation/discrepancy in the drawings, specification and tender documents the decision of the architect shall be final binding and conclusive on the contractor.

a) As required by NIPGR, the contractor shall provide all facilities at site or at manufacturer's works or an approved laboratory for testing of materials and/or workmanship. All the expenditure in respect of this shall be borne by the contractor wherever applicable. The contractor shall, when required to do so by NIPGR submit manufacturer's certificate that the materials have been tested in accordance with requirements of the specifications.

b) Neither the omission by NIPGR to test the materials nor the production of manufacturer's certificate etc., as aforesaid shall affect the right of the Consultant Engineer to reject after delivery the materials found not in accordance with the specifications.

2. WORK AND WORKMANSHIP:

To determine the acceptable standard or workmanship, the NIPGR may order the contractor to execute certain portions of works and services and the like under the close supervision of Consultant Engineer, NIPGR. On approval, these items shall be labeled as guiding samples and works executed to conform to these samples.

3. Testing of Material

a) As required by the NIPGR, the contractor shall provide all facilities at site or at manufacturer's work or an approved laboratory for testing of materials and / or workmanship. All the expenditure in respect of this shall be borne by the contractor unless specified otherwise in the contract. The contractor shall when required to do so by the NIPGR, submit that the materials have been tested in accordance with requirements of the specifications.

b) Neither the omission by the NIPGR to test the materials nor the production of manufacture(s) certificate etc. as aforesaid shall affect the right of the NIPGR to reject, after delivery the materials found not in accordance with the specifications.

4. The contractor shall prepare shop drawings of each discipline & get it approved from the Architect before the commencement of work. The contractor shall submit fabrication drawing in triplicate for obtaining preliminary approval of the Consultant Engineer for all design drawings. One copy of this drawings duly corrected and signed wherever necessary by Architect will be returned to the contractor for preparing and resubmitting drawings after incorporating the said corrections again in triplicate for final approval. Along with the completion and approval of fabrication drawing, the contractor shall also submit the materials list, for checking and approval to the Architect. No drawing shall be approved finally without material list. Once the drawing is finally approved, no request for any alternative section will be entertained. The contractor shall also submit to Architect 8 prints of all approved drawings. The contractor shall also submit 4 copies of design calculations for the designs of joints. All joints shall be designed for full strength of members, unless otherwise specified. Approval of fabrication drawings however will not absolve the contractor of his responsibility for the safety and correctness of the fabrication.

5. CONTRACTOR TO BE LIABLE FOR ALL TAXES ETC.

The rates specified in the tender shall be inclusive of sales taxes, service tax, toll, Customs fees, octroi, royalty etc. or any other taxes. However if any fresh taxes are imposed by State/Central/Statutory bodies during the currency of contract, the same shall be borne by NIPGR.

6. FORCE MAJEURE:

The right of the contractor to proceed with the work shall not be terminated because of any delay in the completion of the work due to unforeseeable causes beyond the control and without the fault or negligence of the contractor, including not limited to acts of God, or of the public enemy, restraints of a sovereign state, firms, floods, unusually severe weather.

7. APPROVAL OF SAMPLES

Before undertaking fabrication of item or any item of work for use in work the contractor shall arrange and manufacture at his own cost the relevant samples which shall be approved by Consultant Engineer. These samples will be sealed by the Consultant Engineer in the presence of the contractor, if he so desires and shall remain in the custody of the Consultant Engineer for reference and comparison till the completion of work.

8. JURISDICTION:

Not with standing any other courts having jurisdiction to decide the questions forming subject matter of a suit any and all actions and proceedings arising out of or relative to this contract (including any arbitration in terms thereof) shall lie only in the court of competent Civil jurisdiction in this behalf at New Delhi., where this contract is to be signed on behalf of Consultant Engineer, NIPGR and only the said court shall have jurisdiction to try any such actions and/or proceedings to the exclusion of all other courts.

9. SCOPE OF WORK:

The scope of work is as per enclosed preliminary drawings. The contractor should note that during the preparation of detailed working drawings, according to which the contractor has to execute the work covered under this contract, may undergo changes. The scope drawings for the entire work are not enclosed, but only a few indicating the probable nature of construction are attached. The scope of work is thus not limited only to the drawings attached.

10. CONTRACTOR'S RESPONSIBILITY FOR THE MANNER OF EXECUTION OF WORKS

The contractor shall be solely responsible for the manner and the method of executing the work. The work shall be subject to the approval of Consultant Engineer from time to time for purposes of determination of the question whether the work is executed by the contractor in accordance with the contract.

11. NO WORK SHALL BE UNDERTAKEN WITHOUT APPROVED WORKING DRAWINGS:

No work shall be undertaken at site by the contractor until detailed approved working drawings marked "Good" for execution/construction is issued by the Institute. Any work done without the aforesaid working drawing shall be at the contractor's own risk and costs.

12. SUBMISSION OF BILLS:

Contractor is to submit the bills and record of measurements in triplicate after completion of work.

13. ACTION AND COMPENSATION PAYABLE IN CASE OF BAD WORK:

If it shall appear to NIPGR or his representatives, that any work has been executed with unsound, imperfect or unskillful workmanship or with materials of any inferior description or that any materials or articles provided by him for the execution of the work are unsound or of a quality inferior to the contracted for, or otherwise not in accordance with the contract CPWD specifications/B.I.S. specifications the contractor shall on demand in writing from the

Architect specifying the work materials, articles complained or not with-standing that the same have been inadvertently passed, certified and paid for, forthwith rectify or remove and reconstruct the work so specified in whole or in part as the case may require, or as the case, remove the materials or articles so specified and provide other and suitable materials or articles so specified at his own cost and in the event of his failing to do so within a period to be specified by the architect in his demand aforesaid, then the contractor shall be liable to pay compensation at the rate of one percent on the amount of the estimate for every day not exceeding ten days while his failure to do so that continue and in the case of any such failure NIPGR may rectify or remove, and re-execute the work or remove and replace with other materials or articles complained of, as the case may be at risk and expenses in all respects of the contractor.

14. The works shall be inspected by the Consultant Engineer, NIPGR or the Engineer-Incharge of work. The contractor shall extend full co-operation and render all necessary facilities for inspection of the work to the inspecting authority without any additional cost to NIPGR. It must be noted that any observations/ comments/ recommendations of the said Technical consultants shall be binding on the contractor.

15. It shall always prevail, unless otherwise specifically stated, that the entire provisions of Tender document been opened upon and accepted for compliance by the contractor without any reservation.

Contractor

**Consultant Engineer
NIPGR, New Delhi**

GENERAL SITE RULES, PROCEDURES AND PRECAUTIONS

1 SITE WORKING RULES AND REGULATIONS

a) The contractor shall furnish NIPGR the Power of Attorney name and signature of his authorized representative who will be in-charge of the execution of the works at site. The contractor shall also furnish the list of technically qualified persons employed by him for execution of the works. Daily reports of number of men employed by crafts and weekly reports of progress achieved, expected date of completion of the works and any actual or potential delays stating the reasons thereof shall be furnished by the contractor.

b) Save as otherwise specifically provided in this Agreement the rates and prices herein, unless otherwise stipulated elsewhere in this Agreement, include all the costs, expenses and outlays of the contractor for executing the works and fulfilling all the obligations of the Contractor under this agreement.

**Consultant Engineer
NIPGR, New Delhi**

Contractor

SCHDULE OF WORK

ITEM NO.	DESCRIPTION OF ITEM	QTY.	UNIT	RATE	AMOUNT
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Attached at pages _____

Should this tender be accepted, in whole or in part I/We hereby agree to abide by and fulfill all the terms & provisions of the conditions of tender as applicable or in default there of a sum of ₹ 4,300.00 (₹ Four thousand three hundred only) deposited by me/us as earnest money in favour of NIPGR, New Delhi., shall stand absolutely forfeited to NIPGR.

I/We agree:

- (i) that should I/We fail to commence the work specified in the above mentioned Memorandum the NIPGR without prejudice to any other right or remedy shall be at liberty to forfeit the earnest money. Otherwise the said earnest money shall be retained and adjusted towards security deposit mentioned in the above Memorandum
- (ii) to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to therein.

The names and postal addresses and contract phone nos. of our representative(s) authorized to deal with this tender are:

1)

2)

3)

Dated the _____ day of _____ 2015

Signature of Tenderer

Schedule of Quantity					
SUB.: Supply, Installation, Testing and Commissioning of Automatic Fire Detection and Suppression System for Electrical Block Panel at New Lab Block in NIPGR, New Delhi.					
SI No.	Particulars	Description	Qty	Unit	Rate Per Unit
1	Supply of 2 Kg Automatic Direct Low Pressure Fire Suppression Extinguisher and Valve.	Extinguishant :- Clean Agent NAF S 125 / HFC 125 /HFC 236 /HCFC 123 zero ODP Fire Suppression Extinguisher Can : Stored Pressure Type, fitted with Pressure Gauge, Hydraulic Pressure Tested to 35 bars, operating pressure 15 bar. Applicable on class A, B, C and electrically started fires. Valve : Direct Low Pressure with Integrated ball valve to minimize leakages, Integrated position monitoring of valve for open / close position of valve using potential free switch contact. Special key for locking valve position to avoid accidental closure, Operating pressure 15 bar tested upto 35 bars, 2 Tube connections and assembly	1	Each	
2	Pressure Switch	Supply of Pressure Switch to monitor Pressure in the tube, switch point 11 Bars.	1	Each	
3	Heat Sensing Tube for automatic fire detection and suppression System	Supply of Heat Sensing tube for automatic fire detection and suppression system made by special modified Polyamide (PA), Color Black or Red, High grade HR quality, UV Stabilized, Inner diameter 4mm, Outer Diameter 6 MM, Melting Point approx. 220 degrees Celsius when heating up with 10 K/minute, Steady load tested upto max. 80° C. The lowest operating temperature is stipulated at minus 40°C. Service Pressure 15 Bar, Burst Pressure at 20 Deg C approx 120 Bars, Release Temperature : Rapid heat increase in temperature at 15 bars pressure approx 150 Deg to 180 Deg C (Without Flame)	37	Rmtr.	
4	End of Line Adapter	Supply of End of Line adapter for Pressure gauge fitting for Automatic fire detection and suppression tube used for fitting at the end of the tube for pressurizing and re pressurizing the tube. Fitting made by brass (plated / unplated), Stainless steel, Elastomeric Sealings, Copper Nickel plated, Temperature range TS -20 Deg C till + 60 Deg C, Maximum working pressure 25 Bars, made as per PED (Pressure Equipment Directive)	1	Each	
5	End of Line Plug	Supply of End of Line Plug for Automatic fire detection and suppression tube used for fitting at the tube end to terminate the point. Fitting made by brass nickel plated material with Elastomeric sealings, Temperature range TS -20 Deg C till + 60 Deg C, Maximum working pressure 25 Bars, made as per PED (Pressure Equipment Directive)	3	Each	

Not to be filled

SI No.	Particulars	Description	Qty	Unit	Rate Per Unit	Amount (₹)
6	T-Connection	Supply of T Connection, Brass, Nickle plated, for 4x6 mm Sensor Tube, quick and easy disassembly using special tool, working pressure 15 bars at 15 Deg Temperature, temperature range-40 Deg C till + 80 Deg C, Elastometric Sealings, External Diameter tube 6mm.	2	Each		Not to be filled
7	Fire Audio Visual Alarm Panel	Supply of fire audio visual alarm Panel with monitoring LED's, with SMF Battery Backup, Complete with electronic conventional sounder with adapter for both internal and external use, including connection with suitable size of wire of panel and sonder and other accessories.	1	Each		
8	Installation & Commissioning Charges	Installation, testing & Commissioning includes complete setup of the system, Installation of Cylinders, response panel on specially designed brackets, Laying of sensor tubes using tube attachments and Cable ties, fixing end of line plugs and end of line adapters, pressurizing tube @ 15 Bars using Nitrogen pressurizing agent. Supply of all Sundry items shall also be part of Installation.	1	Job		
		Total Amount				
[Amount in Words:.....]						
						Seal & Sign of Contractor
सलाहकार अभियंता						

TERMS & CONDITIONS

Name of Work: Supply, Installation, Testing and Commissioning of Automatic Fire Detection and Suppression System for Electrical Block Panel at New Lab Block in NIPGR, New Delhi.

1. The site of the work is at NIPGR Campus, Aruna Asaf Ali Marg, New Delhi-110067.
2. The tenderer must visit the site before quoting the rates and make him acquainted with the panel location at site. The Institute shall entertain no extra claim later on.
3. The rates are inclusive of Transportation/travelling, lodging/boarding, loading, unloading & handling of portable fire extinguishers and nothing extra will be paid.
4. The rates shall be valid for one year and nothing extra will be paid.
5. The rates shall be inclusive of VAT, service tax, Octroi, etc., and nothing extra will be paid.
6. The payment shall be made after completion of work; no advance payments will be made.
7. The work must be completed within **30 days** after the date of issue of work order. In case the work is not completed within stipulated period, a compensation ₹1000.00 (₹ One thousand only) per day subject to maximum of 10% of the work order amount shall be levied.
8. A tender must be accompanied with EMD amounting to ₹ 4300.00 (₹ Four Thousand & Three Hundred Only). The EMD shall be in the form of demand draft of scheduled banks, drawn in favor of "**Director, NIPGR**" **New Delhi**. The EMD should be enclosed in separate envelope duly marked EMD, which shall be open first. **Without EMD, quotation will not be accepted.**
9. All papers attached with this tender should be signed by tenderer & verified with original. The quotation shall be submitted in prescribed format issued by the department.
10. **Work Experience:** - Firms dealing in fire fighting system work who have completed similar work (SITC of Automatic Fire Detection and Suppression System) costing not less than ₹ 1.72 Lakhs OR two similar work each cost not less than ₹ 1.07 Lakh OR three similar works each costing not less than ₹ 0.86 Lakhs in Govt. organizations, Govt. Autonomous organizations, PSUs and Reputed organizations during the last three years ending August 31, 2015. The agency shall submit copies of completion certificate and financial turnover certificate along with the quotation.
11. Security Deposit @ 10% will be deducted from the bill, the EMD shall however be adjusted against the Security Deposit.
12. **The EMD/SD will be forfeited in the event of violation of any work related conditions of the tender document.**
13. The warranty of the fire fighting system shall be for one year and extinguishers contents should be as per refilling schedule for fire extinguishers mentioned in Code of Practice (Fourth Revision). ICS 13.220.10
14. The following makes of material shall be acceptable:-

• Fire Extinguisher	:	Ceasefire/Minimax/GeTech
• Valve	:	FiWaRec/Rotarex
• Pressure Switch	:	FiWaRec /WIKI/Danfoss/Rotarex
• Tube Attachment	:	ISI
• Heat Sensing Tube	:	Firetech/Rotarex
• End of line adapter/plug/T-connection:		WIKI/Ceasefire/Rotarex/FiWaRec
• Cable/wire	:	Gloster/Skytone/Kalinga/Polycab

15. Security Deposit will be refunded after the completion of defect liability period of 12 months w.e.f. actual completion date.
16. The firm's office establishment should be based in NCR/Delhi.
17. **The contractor shall submit hydraulic test and gas (Clean agent NAF S 125/HFC 125/HFC 236/HCFC-123 zero ODP) authenticity certificate certificates and test marka/stamp for each fire extinguisher.**
18. All the work shall be done as per original manufacturer recommendations/relevant IS code and original spares/material shall be used.
19. The agency shall have to arrange his own tools & plants, skilled & non-skilled manpower, lifting arrangement, testing apparatus etc. required for testing & refilling of portable fire extinguishers and nothing extra will be paid.
20. Agency shall inform to the Institute in advance for taking over the site.
21. The contractor should paste their service slip with their logo on the fire extinguishers and accessories.
22. If there is any leakage from any fire extinguisher, the contractor shall attend the same on the same day and refill the same free of cost.
23. The below standard work shall be redone and nothing extra will be paid.
24. The Institute reserves the right to reject/accept any or all quotation without assigning any reason.
25. The Institute also reserves the right to reduce/ increase the scope of work to a maximum of 50%.
26. In case of any dispute, the decision of the Institute shall be final & binding on the agency.
27. The above work shall be executed by the trained manpower under the supervision of agency's engineer.
28. Any damage to the existing installations during the course of work will be the responsibility of the agency and will be made good to the satisfaction of the Engineer-in-charge and nothing extra will be paid. In case the site clearance and damages are not attended, a recovery amounting to ₹ 5000/- shall be made.
29. Any kind of accident / electrocution caused due to negligence or during the course of normal work etc. shall be responsibility of the agency and nothing extra will be paid.

30. All safety precautions shall be taken so as to avoid any accident or inconvenience to the members of staff. The agency shall coordinate the work with the Institute's time schedule.
31. A copy of the TIN, PAN & Service Tax No. issued by the concerned authority must be enclosed with the quotation.

Seal & Signature of Contractor

Consultant Engineer

FINANCIAL BID

Name of work: S.I.T.C. of Automatic Fire Detection and Suppression System for Electrical Block Panel at New Lab Block at NIPGR Campus, New Delhi.

CLIENT : DIRECTOR NIPGR
NEW DELHI

Schedule of Quantity

SUB.: Supply, Installation, Testing and Commissioning of Automatic Fire Detection and Suppression System for Electrical Block Panel at New Lab Block in NIPGR, New Delhi.

SI No.	Particulars	Description	Qty	Unit	Rate Per Unit	Amount (₹)
1	Supply of 2 Kg Automatic Direct Low Pressure Fire Suppression Extinguisher and Valve.	Extinguishant :- Clean Agent NAF S 125 / HFC 125 /HFC 236 /HCFC 123 zero ODP	1	Each		
		Fire Suppression Extinguisher Can : Stored Pressure Type, fitted with Pressure Gauge, Hydraulic Pressure Tested to 35 bars, operating pressure 15 bar. Applicable on class A, B, C and electrically started fires.				
		Valve : Direct Low Pressure with Integrated ball valve to minimize leakages, Integrated position monitoring of valve for open / close position of valve using potential free switch contact. Special key for locking valve position to avoid accidental closure, Operating pressure 15 bar tested upto 35 bars, 2 Tube connections and assembly				
2	Pressure Switch	Supply of Pressure Switch to monitor Pressure in the tube, switch point 11 Bars.	1	Each		
3	Heat Sensing Tube for automatic fire detection and suppression System	Supply of Heat Sensing tube for automatic fire detection and suppression system made by special modified Polyamide (PA), Color Black or Red, High grade HR quality, UV Stabilized, Inner diameter 4mm, Outer Diameter 6 MM, Melting Point approx. 220 degrees Celsius when heating up with 10 K/minute, Steady load tested upto max. 80° C. The lowest operating temperature is stipulated at minus 40°C. Service Pressure 15 Bar, Burst Pressure at 20 Deg C approx 120 Bars, Release Temperature : Rapid heat increase in temperature at 15 bars pressure approx 150 Deg to 180 Deg C (Without Flame)	37	Rmtr.		
4	End of Line Adapter	Supply of End of Line adapter for Pressure gauge fitting for Automatic fire detection and suppression tube used for fitting at the end of the tube for pressurizing and re pressurizing the tube. Fitting made by brass (plated / unplated), Stainless steel, Elastomeric Sealings, Copper Nickel plated, Temperature range TS -20 Deg C till + 60 Deg C, Maximum working pressure 25 Bars, made as per PED (Pressure Equipment Directive)	1	Each		
5	End of Line Plug	Supply of End of Line Plug for Automatic fire detection and suppression tube used for fitting at the tube end to terminate the point. Fitting made by brass nickel plated material with Elastomeric sealings, Temperature range TS -20 Deg C till + 60 Deg C, Maximum working pressure 25 Bars, made as per PED (Pressure Equipment Directive)	3	Each		

