

# NOTICE INVITING TENDER

**No. TC/FFS/01/2018-19**

**Name of Work:**      **Operation & Maintenance of Wet Riser, Sprinkler System and Automatic Fire Alarm System in Trauma Centre, IMS, Banaras Hindu University.**

1.      Estimated cost:                      19, 58,160.00/-
2.      Earnest Money:                      39,164.00/-
3.      Performance Guarantee: 5% of the Tendered Value
4.      Time Allowed:                          12 Months

Certified that this NIT contains    pages marked as 1 to 26

**Professor In charge**  
Trauma Centre, IMS,  
BHU, Varanasi.

# **INDEX**

**Name of Work: - Operation & Maintenance of Wet Riser, Sprinkler System and Automatic Fire Alarm System in Trauma Centre, IMS, BHU.**

<b>S. No.</b>	<b>Title</b>	<b>Page Nos.</b>
1.	Notice Inviting Tender	1
2.	Index	2
3.	Press Notice	3-6
4.	Form – 6	7-10
5.	Form – 8	11-18
6.	GENERAL CONDITIONS	19-20
7.	SCOPE OF WORK & SPECIFICATIONS	21-25
8.	SCHEDULE OF WORK	26

**Professor In charge**  
Trauma Centre IMS  
, BHU, Varanasi.

**INFORMATION AND INSTRUCTIONS FOR CONTRACTORS FOR e-TENDERING FORMING PART OF NIT AND TO BE POSTED ON WEBSITE**

The **Professor In charge, Trauma Centre, IMS, BHU** invites the online percentage rate/Item rate Bids from approved and eligible contractors of UWD/EWSS and those of appropriate list of C.P.W.D., M.E.S., Railways, Telecom (BSNL) and other central govt. agencies for the following works:

S.NO.	NIT No.	Name of work and location	Estimated cost put to tender	Earnest Money	Period of Completion	Last date & time of Submission of bids	Time & date of opening of bid.
1	2	3	4	5	6	7	8
	<b>TC/FFS/01/2018-19</b>	<b>Operation &amp; Maintenance of Wet Riser, Sprinkler System and Automatic Fire Alarm System in Trauma Centre, IMS, BHU</b>	19,58,160.00/-	39,164.00/-	<b>12 Months</b>	<b>12-02-2019 (16:00 Hrs)</b>	<b>13/02/2019 (16:00 Hrs)</b>

1. The tender document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen from website [www.eprocure.gov.in](http://www.eprocure.gov.in) or [www.bhu.ac.in](http://www.bhu.ac.in) free of cost.
2. Agreement shall be drawn with the successful bidder on prescribed Format.
3. The time allowed for carrying out the work will be 12 months from the date of start as defined in schedule 'F' or from the first date of handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the tender documents.
4. The site for the work is available for start of the work.
5. After submission of the tender the bidder can re-submit revised tender any number of times but before deadline time and date of submission of tender as notified.
6. While submitting the revised bid, bidder can revise the rate, but before last time and date of submission of tender as notified.

7. a) Earnest Money of **Rs. 39,164.00/-** can be paid in the form of Banker's cheque/ Demand Draft / Fixed Deposit Receipt (**drawn in favor of Registrar, Banaras Hindu University, Varanasi, payable at Varanasi**) of any Scheduled Bank ,the same shall be scanned and uploaded to the e-tendering website within the period of tender submission.

**b) e-Tender processing fees – 500/-** can be paid in the form of Banker's cheque/Demand Draft **drawn in favor Registrar, Banaras Hindu University, Varanasi, payable at Varanasi.**

Tender fees & Eligibility criteria document like work experience, financial turn over certificate, Solvency certificate and any other documents mentioned in relevant clauses, shall be placed in single sealed envelope superscripted as (Cover1- "Eligibility criteria document") with name of work and due date of opening of the tender mentioned thereon.

e-Tender processing fees & and EMD document shall be scanned and uploaded to the e-tendering website within the period of tender submission and certified copy in original shall be placed in single sealed envelope superscripted as (Cover2- "Tender fees & EMD") with name of work and due date of opening of the tender mentioned thereon.").

Conditions of contract/Technical bid and Eligibility criteria document like copy of Completion/performance certificate of work experience issued by competent authority like government/semi government/PSU otherwise for private projects bidder's have to submit TDS certificate's with respect to the projects they have claimed, Audited Balance Sheet for the last three financial years duly certified by the C.A, Bank Solvency Certificate an equivalent to 40% of the total estimated cost of the Project as mentioned above, Affidavit and other documents mentioned in the PQ Document shall be scanned and uploaded to the e-tendering website within the period of tender submission and certified copy of each shall be placed in single sealed envelope superscripted as (Cover 1- "Eligibility criteria document") with name of work and due date of opening of the tender mentioned thereon.

**Both the envelopes shall be placed in another envelope with due mention of Name of work, date & time of opening of tenders and to be submitted in the office of Professor In-Charge, Trauma Centre, IMS, BHU, Varanasi on or before 16:00 Hrs 12/02/2019. The documents submitted shall be opened at 16:00 Hrs on 13/02/2019-**

**Online Bid Documents submitted by intending bidders shall be opened only of those bidders, whose Earnest Money deposit, tender processing fees and other documents placed in the envelope are found in order.**

8. The bid submitted shall become invalid and cost of bid & e-Tender processing fee shall not be refunded if:
- (i) The bidder is found ineligible.
  - (ii) The bidder does not upload all the documents (including G.S.T.

registration/ VAT registration/ Sales Tax registration) as stipulated in the bid document.

(iii) If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted physically in the office of tender opening authority.

9. Criteria of eligibility for submission of bid documents:

- a. Should have satisfactorily completed Three similar works each of value not less than 7.83 Lacs or Two similar works each of value not less than 11.74 Lacs or One similar work of value not less than 15.66 Lacs during last seven years ending 31<sup>st</sup> Mar.- 2019.

**Explanation:-**

The value of executed works shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum; calculated from the date of completion to last date of receipt of applications for tenders.

Similar work means “**Operation and Maintenance of Fire Protection System or other system having Centrifugal Pumps, Diesel Engine and Electric Control Panel etc.**”

- (c) Should have had average annual financial turnover of 5.87 Lacs of the estimated cost on Construction works during the last three preceding financial years ending 31<sup>st</sup> March, 2019, duly audited by a Chartered Accountant (**Scanned copy of certificate from CA to be uploaded**). The year in which no turnover is shown would also be considered for working out the average.
- (d) Should not have incurred any loss in more than three years during the last five years ending 31<sup>st</sup> March, 2019.
- (e) Should have a solvency certificate of 7.83 Lacs of the estimated cost issued by Bank during the last six months.

**(Scanned copy of original solvency certificate to be uploaded).**

***List of Documents to be scanned and uploaded within the time of submission of tender on Website:***

- I. All supporting documents substantiating claim for qualification to participate in the bidding.
- II. Copies of original documents defining the constitution or legal status, written power of attorney of the signatory.
- III. Registration with Govt. /Semi Government Organizations, if any.
- IV. Qualifications and experience of key site management, technical personnel proposed for the Contract.
- V. Audited Balance sheet for the last three preceding years ending 31<sup>st</sup> march 2019.
- VI. Solvency certificate from the bankers. Copy of PAN, Registration Certificate of VAT etc.
- VII. Copy of G.S.T. (Goods & Services Tax) registration certificate.
- VIII. Details of Electrical work completed during last five years.
- IX. Information regarding any litigation or arbitration resulting from contracts executed by the Bidder in the last five years.
- X. *Any other Document as specified in the press notice*

**Professor In charge  
Trauma Centre, IMS, BHU,  
Varanasi.**

**Banaras Hindu University  
Institute of Medical Sciences  
Trauma Centre & Super Specialty Hospital**

The Professor In charge, Trauma Centre, IMS, BHU invites the online percentage rate/Item rate Bids from approved and eligible contractors of UWD,EWSS and those of appropriate list of C.P.W.D., M.E.S., Railways, Telecom (BSNL) and other central govt. agencies for the following works:

**Operation & Maintenance of Wet Riser, Sprinkler System and Automatic Fire Alarm System in Trauma Centre, IMS, BHU**

- 1 The work is estimated to cost 19,58,160.00 This estimate, however, is given merely as a rough guide.
- 2 The authority competent to approve NIT for the combined cost and belonging to the major discipline will consolidate NITs for calling the tenders.
- 3 Agreement shall be drawn with the successful tenderer on prescribed Form No. 8 (or other Standard Form as mentioned) which is available as a Govt. of India Publication. Tenderer shall quote his rates as per various terms and conditions of the said form which will form part of the agreement.
- 4 The time allowed for carrying out the work will be **12 Months** from the date of start as defined in schedule 'F' or from the first date of handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the tender documents.
- 5 The site shall be made available in parts as per progress of civil work.  
  
The tender document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen from website [www.eprocure.gov.in](http://www.eprocure.gov.in) or [www.bhu.ac.in](http://www.bhu.ac.in) free of cost.
- 6 After submission of the bid the contractor can re-submit revised bid any number of times but before last time and date of submission of tender as notified.
- 7 While submitting the revised bid, contractor can revise the rate of one or more item(s) any number of time (he need not re-enter rate of all the items) but before last time and date of submission of tender as notified.

- 8 When tenders are invited in two/ three stage system and if it is desired to submit revised financial bid then it shall be mandatory to submit revised financial bid. If not submitted then the tender submitted earlier shall become invalid. The bid submitted shall be opened at **16:00 Hrs on 13.02.2019**
- 9 The bidder whose bid is accepted will be required to furnish performance bank guarantee of 5% (Five Percent) of the tendered amount within the 15 days of issue of letter of acceptance. This guarantee shall be in the form of Demand Draft of any scheduled bank or Fixed Deposit Receipts or Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the prescribed form. In case the bidder fails to deposit the said performance guarantee within the period as indicated, the Earnest Money deposited by the bidder shall be forfeited automatically without any notice to the bidder.
- 10 Intending bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their tenders as to the nature of the ground and sub-soil (so far as is practicable), the form and 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 bidder shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charge consequent upon any misunderstanding or otherwise shall be allowed. The bidder 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 by a bidder implies that he 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 and of conditions and rates at which stores, tools and plant, etc. will be issued to him by the university and local conditions and other factors having a bearing on the execution of the work. Cost of site visit shall be borne by the bidder.
- 11 The competent authority on behalf of the University 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 the assignment of 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 bidder shall be summarily rejected.
- 12 Canvassing whether directly or indirectly, in connection with bidders is strictly prohibited and the tenders submitted by the bidders who resort to canvassing will be liable to rejection.
- 13 The competent authority on behalf of University reserves to himself the right of accepting the whole or any part of the bid and the bidders shall be bound to perform the same at the rate quoted.
- 14 The bidder shall not be permitted to tender for works in the University, if his near relative is posted as an officer in any capacity between the grades of Professor In-Charge, Superintending Engineer and Junior Engineer (both inclusive).. Any breach of this condition by the bidder would render him liable to



be removed from the tendering process.

- 15 The tender for the works shall remain open for acceptance for a period of **One Eighty Days (180 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, whichever is earlier, or makes any modifications in the terms and conditions of the tender which are not acceptable to the Trauma Centre, IMS, then the University shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money as aforesaid. Further the tenderer shall not be allowed to participate in the retendering process of the work.
- 16 The notice inviting bid shall form part of the contract document. The successful bidder, on acceptance of his bid by the Accepting Authority, have to sign the contract consisting of "The Notice Inviting bid, all the documents including Special Conditions, General Specifications/Particular Specifications and drawings, if any, forming part of the bid as uploaded at the time of invitation of bid and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto. Within 15 days from the stipulated date of start of the work.
- a) The Notice Inviting Tender, all the documents including additional conditions, specifications and drawings, if any, forming part of the tender as uploaded at the time of invitation of tender and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.
  - b) Standard Form 8 or other Standard C.P.W.D. Form as mentioned
17. In case any discrepancy is noticed between the documents as uploaded at the time of submission of the bid online and hard copies as submitted physically in the office of Professor In-Charge, Trauma Centre, IMS, BHU, then the bid submitted shall become invalid and the University shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money as aforesaid. Further the tenderer shall not be allowed to participate in the retendering process of the work.
18. The bidder shall liaison to obtain **No Objection Certificate** once in a year or for the period of contract from the Chief Fire Officer Varanasi or any other competent authority for the tendered work.
19. **PAYMENT OF WAGES**
- (i) Wages due to every worker shall be paid to him direct by contract through **Bank or ECS or online transfer to his bank account.**
  - (ii) All wages shall be paid **through Bank or ECS or online transfer.**
  - (iii) It shall be the duty of the contractor to ensure the disbursement of wages **through Bank account or labour.**
  - (iv) The contractor shall obtain from the Junior Engineer of any other authorized representative of the Engineer-in-Charge as the case may be, a certificate under his signature at the end of the entries in the "register of Wages" or the "Wage cum-Muster Roll" as the case may be in the following form : -

Certified that the amount shown in column No..... has been paid to the workman concerned **through bank account of labour** on ..... At .....

**Professor In charge  
Trauma Centre, IMS,  
BHU, Varanasi.**

**Banaras Hindu University  
Institute of Medical Sciences  
Trauma Centre & Super Specialty Hospital**

(A) Tender for the work of: **Operation & Maintenance of Wet Riser, Sprinkler System and Automatic Fire Alarm System in Trauma Centre, IMS, BHU**

---

(i) To be submitted by **4:00 P.M. hours on 12.02.2019**  
to the: **Professor In charge, Trauma Centre, IMS, BHU Varanasi**

(ii) To be opened in presence of tenderers who may be present at **4:00 P.M hours on 13.02.2019** in the office of the: **Professor In charge, Trauma Centre IMS, BHU Varanasi Issued to**

**(Contractor)**

**Signature of officer issuing the documents:**

**Designation: Professor In charge, Trauma Centre, IMS,**

**Date of issue:**

**TENDER**

I/We have read and examined the Notice Inviting tender, schedule, A,B,C,D,E & F. Specifications applicable, Drawings & Designs, General Rules and Directions, Conditions of Contract, clauses of contract, Special conditions, Schedule of Rate & other documents and rules referred to in the conditions of contract and all other contents in the tender document for the work.

*I/We hereby tender for the execution of the work specified for the President of India within the time specified in Schedule 'F', viz., schedule of quantities and in accordance in all respects with the specifications, designs, drawings and instructions in writing referred to in Rule-1 of General Rules and Directions and in Clause 11 of the Conditions of contract and with such materials as are provided for, by, and in respects in accordance with, such conditions so far as applicable.*

**We agree to keep the tender open for One Eighty Days (180) days from the date of opening of tender and not to make any modifications in its terms and conditions.**

Earnest Money of **Rs. 39,164.00/-** can be paid in the form of Banker's cheque/ Demand Draft / Fixed Deposit Receipt (**drawn in favor of Registrar, Banaras Hindu University, Varanasi, payable at Varanasi**) of any Scheduled Bank as earnest money. If I/we, fail to furnish the prescribed performance guarantee or fail to

*commence the work within prescribed period I/we agree that the said President of India or his successors in office shall without prejudice to any other right or remedy be at liberty to forfeit the said earnest money absolutely. Further, if I/we fail of commence work as specified, I/we agree that University or his successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said earnest money and the performance guarantee absolutely, otherwise the said earnest money shall be retained by him towards security deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to therein and to carry out such deviations as may be ordered, up to maximum of the percentage mentioned in Schedule 'F' and those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause 12.2 and 12.3 of the tender form.*

*Further, I/We agree that in case of forfeiture of earnest money or both Earnest Money & Performance guarantee as aforesaid, I/We shall be debarred for participation in the re-tendering process of the work.*

*I/We undertake and confirm that eligible similar work(s) has/ have not been got executed through another contractor on back to back basis. Further that, if such a violation comes to the notice of Department, then I/we shall be debarred for tendering in Banaras Hindu University in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee.*

*I/We hereby declare that I/we shall treat the tender documents drawings and other records connected with the work as secret/confidential documents and shall not communicate information derived therefrom to any person other than a person to whom I/we am/are authorized to communicate the same or use the information in any manner prejudicial to the safety of the State.*

*Signature of contractor  
Postal Address*

The above tender (as modified by you as provided in the letters mentioned hereunder) is accepted by me for and on behalf of the President of India for a sum of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_)

*The letters referred to below shall form part of this contract Agreement:-*

- a) \_\_\_\_\_
- b) \_\_\_\_\_
- c) \_\_\_\_\_

*For & on behalf of the President of India*

*Dated* \_\_\_\_\_

*Signature* \_\_\_\_\_  
*Designation* \_\_\_\_\_

**Operative schedules shall be supplied separately to each intending tenderer)**

**SCHEDULE 'A'**

*Schedule of Quantities (as per PWD-3)      As per sheets attached*

**SCHEDULE 'B'**

*Schedule of materials to be issued to the contractor:*

<i>S. No.</i>	<i>Description of item</i>	<i>Quantity</i>	<i>Rates in figures &amp; words at which the material will be charged to the contractor</i>	<i>Place of issue</i>
1	2	3	4	5
-----NIL-----				

**SCHEDULE 'C'**

*Schedule of Tools and Plants to be hired to the contractor*

<i>S. No.</i>	<i>Description</i>	<i>Hire charges per day</i>	<i>Place of issue</i>
1	2	3	4
-----NIL-----			

**SCHEDULE 'D'**

*Extra schedule for specific requirements/document for the work, if any:*

**Addl. Specifications attached.**

## **SCHEDULE 'E'**

Reference to General Conditions of contract.

<b>Name of Work:</b>	<b>Operation &amp; Maintenance of Wet Riser, Sprinkler System and Automatic Fire Alarm System in Trauma Centre, IMS, BHU</b>
<b>Estimated cost of the work:</b>	<b>19,58,160.00</b>
<b>Earnest money</b>	<b>39,164.00</b>
<b>Performance Guarantee</b>	5% of the tendered value of the work
<b>Security Deposit</b>	Nil

## **SCHEDULE 'F'**

### **General rules and direction**

<i>Officer inviting tender</i>	<b>Professor In charge Trauma Centre IMS, BHU, Varanasi.</b>
<i>Maximum percentage of quantity of items of work to be executed beyond which rates are to be determined in accordance with Clause 12.2.&amp; 12.3</i>	<i>See at appropriate clause under definitions</i>

### **Definitions:**

2(v) <b>Engineer-in-Charge</b>	<b>Assistant Engineer (W/S) EWSS, BHU</b>
2(vii) <i>Accepting Authority</i>	<b>Professor In charge Trauma Centre IMS, BHU, Varanasi.</b>
2(x) <i>Percentage on cost of materials and labour to cover all overheads and profits</i>	15%
2(xi) <b>Standard Schedule of Rates:</b>	Market Rates
2(xii) <i>Department:</i>	<b>Trauma Centre, IMS, BHU , Varanasi</b>
9(ii) <i>Standard CPWD contract Form:</i>	<i>GCC 2014, CPWD form 8 as modified &amp; corrected up to date (Whether correction vide latest circulars are incorporated or not in this document).</i>
<b>Clause 1</b>	
i) <i>Time allowed for submission of Performance Guarantee from the date of issue of letter of acceptance</i>	15 Days
ii) <i>Maximum allowable extension</i>	

beyond the period as provided  
in i) above

7 Days

**Clause 2** Authority for fixing Compensation under Clause 2 **Professor In charge Trauma Centre IMS, BHU, Varanasi. Or successor thereof**

**Clause 2 A** Whether Clause 2A shall be applicable **No**

**Clause 5** Number of days from the date of issue of letter of acceptance for reckoning date of start **10 Days**

**Authority to decide** **Extension of time** **Professor In charge Trauma Centre IMS, BHU, Varanasi.**

**Rescheduling of mile stone** **Professor In charge Trauma Centre IMS, BHU, Varanasi.**

Time allowed for execution of work **12 Months**

**Clause 6, 6A** Clause applicable **Clause 6A**

**Clause 7** Gross work to be done together with net payment/Adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment **NA**



<b>Clause 10A</b>	<i>List of testing equipment to be provided by the contractor at site lab.</i>	1. Earth Tester, 2. Insulation Tester, 3. LT/HT, Tong Tester, 4. Multimeter 5. Lux Meter 6. Vernier Caliper 7. Wire Gauge 8. Cable Jacks.
<b>Clause 10 B (ii), (iii)</b>	<i>Whether clause 10-B (ii) and 10-B (iii) shall be applicable.</i>	No
<b>Clause 10 C</b>	<i>Component of labour expressed as percentage of value of work</i>	NA
<b>Clause 10 CA</b>	<i>Materials covered under this clause.</i>	<b>Nearest material (other than cement, reinforcement bars and structural steel) for which All India Whole sales price Index is to be followed.</b>
	<i>Nil</i>	<i>Nil</i>
<b>Clause 10 CC</b>	<i>Clause 10CC to be applicable in contracts with stipulated period of completion exceeding the period shown in next column</i>	<b>NA</b>
<b>Clause 11</b>	<b>Specification to be followed for execution of work:</b>	<i>CPWD General Specifications for, Internal E.I. 2013 with up to date correction slips.</i>
<b>Clause 12</b>		
12.2 & 12.3	<i>Deviation limit beyond which clause 12.2 &amp; 12.3 shall apply for building work</i>	<b>30%</b>
12.5	<i>Deviation limit beyond which clause 12.2 &amp; 12.3 shall apply for foundation work</i>	<b>NA</b>

**Clause 16**      **Competent Authority for Deciding reduced rates:**      **Professor In charge Trauma Centre IMS, BHU, Varanasi Or successor thereof.**

**Clause 18**      *List of mandatory machinery, tools & plants to be deployed by the contractor at site.*      **1. Drill Machine 2. Chase Cutting Machine 3. Crimping Tool Kit 4. Self Supporting Ladder-4 ft. 5. Ladder-20ft. 6. Electrical wiring drawing machine.**

**Clause 42**

- i) a) *Schedule/ statement for determining theoretical quantity of cement & bitumen on the basis of Delhi Schedule of Rates 2007 printed by CPWD*      **NA**
- ii) **Variations permissible on theoretical quantities**
  - a) *Cement for works with estimated cost put to tender not more than ` 5 lakhs.*      **NA**  
*For works with estimated cost put to Tender is more than ` 5 lakhs*      **NA**
  - b) *Bitumen all works*      **NA**
  - c) *Steel reinforcement and structural steel Sections for diameter, section and category.*      **NA**
  - d) *All other materials*      **NA**

**RECOVERY RATES FOR QUANTITIES BEYOND PERMISSIBLE VARIATION**

<b>Sl No</b>	<b>Description of items</b>	<b>Rates in figures and words at which recovery shall be made from the contractor</b>	
		<i>Excess beyond permissible variation</i>	<i>Less use beyond the permissible variation</i>
1.	<i>Cement (PPC)</i>	<b>N. A</b>	<b>NA</b>
2.	<i>Steel reinforcement (TMT Bars)</i>		<b>NA</b>

## **GENERAL CONDITIONS**

1. The maintenance of work shall be done as per CPWD's general specification for Electrical Works Part-I (Internal) 2013, Part-II (External) – 1994, Part –IV (Sub-Station)-2013, Part-V (Wet Riser system for Fire Fighting Installations) – 2006,Part-VI( Fire Alarm system) IE Rules, Indian Standards amended up to date and as per direction of Engineer-in-charge.
2. The maintenance of work shall be done as per rules and specification of CPWD and as Per Indian Electricity Rules & acts as amended up to date.
3. The contractor shall engage suitable qualified, experienced staff for services as per schedule of work. The contractor should ensure that persons engaged on duties have undergone necessary training as per specification/regulation of maintenance of Fire alarm/ fire-fighting system.
4. Contractor should provide a mobile connection with staff & the number to be intimated to department before start of work.
5. The firm will have to submit the name & Identity of the workers to be employed to the Engineer-in-charge or his authorized representative. He should maintain statutory requirement of employment as per existing labour laws.
6. Whenever the services are not attended immediately, than recovery shall be made as decided by Engineer-in-charge.
7. Payment of work shall be made on monthly / quarterly basis after verification of work and attendance of worker for the period, by the Engineer-in-charge of work.
8. The department shall be at liberty to terminate the contract without giving any notice if the contractor's working is found unsatisfactory and not in accordance with the schedule of work.
9. He contractor shall arrange his own T&P etc. He will also arrange petty material like Soap, Duster, fuse wire, HRC fuse up to 15 amp, indicating lamps, distilled water for battery, battery terminal, all control fuse, log books, register, etc. as required and as per Technical Condition for which nothing extra shall be paid.
10. A separate attendance register will also be maintained at site for the staff employed, which will be produced to the inspecting authority as & when reqd.
11. Necessary, entry passes has to be arranged by the contractor for the deployed staffs, with the help of Engineer-in-charge at site of work.
12. Safe custody of the equipments/installations and their accessories shall be responsibility of the contractors during the tenure of the contract. In case of theft or damage to any part of the store, machine/equipment the losses shall be made good by the contractor at his own risk & cost and for any penalty imposed by the labour officer shall be paid by the contractor.
13. The following minimum staff shall be provided for Maintenance of Installations. Contractor may have to deploy more staff at site for any specific work for which nothing extra shall be paid
14. The following recoveries shall be made from the bill of the contractor for the absence of the staff as under: -
  - (a) Mechanic / Sr. Mechanic/ Electrician/Technician/  
Wireman/ Operator/ Supervisor: Rs. 1,234/-Per visit/ Shift

15. Material will be supplied/ installed at site as per requirement time to time.
16. The agency will hand over the entire installations to the department in working position at the time of completion of stipulated time, as per agreement.
17. The department shall not be responsible for any labor claim and compensation during the course of the contract and cannot claim employment in the Govt. works.
18. Any worker found inefficient of indulging in undesired activity shall be immediately removed from the site and the decision of the Engineer in-charge in this regard shall be final and binding upon the contractor.
19. Timing of the shift can be changed by the department as per actual requirement at site.
20. In case of disobedience or misbehavior by the worker, Engineer in-charge may ask for removal of such person from the work.
21. The contractor is fully responsible for the safety of the worker employed by him on the work.
22. Any damage to man/machinery will be the full responsibility of the contractor.
23. The contractor will provide monogram badge "Fire Fighting Staff" shall be embossed on it.
24. The prescribe wages to the deployed staff shall be paid the presence of the Engineer in-charge.
25. All Labor rules shall be followed by the contractor for which nothing extra shall be paid by the Department.

# **SCOPE OF WORK & SPECIFICATIONS**

## **A - MAINTENANCE SCHEDULE FOR FIRE PROTECTION SYSTEMS**

### **Daily routine checks:-**

1. Keep the pump room Clean & dry. Wipe out dirt from external surface of equipments. See that the approach to pump room and ventilation openings in pump room are free.
2. Where a priming tank is provided, verify that it is full. If not, investigate the reason and rectify immediately.
3. Inspect the engine for any leakage of diesel oil, engine (lub.) oil, and coolant in the respective systems. Check the levels of diesel in daily service tank, lube oil in engine crank case, and water in radiator.
4. Check that the selector in control panel is in AUTO mode.
5. Record the readings of voltage of supply, battery voltage at engine and at control panel and pressure of water in the system at pump room and at the top most floor. Record also the current if any electric motor is run.
6. Observe whether there is any external sign of leakage in external piping and damage to yard hydrants and attend to the same immediately.

### **Weekly checks at pump room:-**

1. The starting and stopping of pressurization pump should be checked through operation of the test valve (so that water flows back to the pump). Record the pressure reading of both the operations.
2. Check the automatic starting of engine driven fire pump/ motor driven fire pump (where provided) in a similar manner and record the pressure reading at starting. If both types of drives are provided, check healthiness of sequence of operation by switching off the supply to motor and checking the starting of the engine. (If the pressure switch is sluggish in test above, attend to the same. Cleaning/ lubrication may be required)
3. While conducting this check, run the pumps one by one for 5 minutes each. Observe for any abnormality of noise, vibration, smell (from cable end), bearing surface (whether warm) etc. rectify deficiencies if any.
4. Check the alarm systems in the pump room.
5. Check the level of electrolyte in the battery of the engine. Top up with distilled water as necessary. Check specific gravity. If the battery needs charging (as can be judged by the cell voltage), arrange for its charging early and also examine whether trickle charger is defective.

### **Weekly checks of Wet Riser Components:-**

1. Clean the internal hydrant points in all floors. See that these spaces are not misused for dumping rubbish or for storage.
2. Look for damages to/ pilferages of components, including the front glass cover. Attend as required.

3. Look for leakages in the system within the building. Attend as required, for example bolts at joints may need tightening; gasket there may need replacement etc.
4. Visually inspect the roof tank and pump for down cover (if provided).

#### **Monthly checks on engine and pumps:-**

1. Check engine radiator for air restriction if any. Clean up. Check the condition of drive belts, hose and radiator cap.
2. Clean the battery terminals and apply grease to prevent corrosion. Check specific gravity of the electrolyte.
3. Check the exhaust system for leakage, corrosion and vibration. See whether the exhaust smoke is not very dark.
4. Check that there are no restrictions to air flow in air cleaner.
5. Check that oil heater is functional.
6. Check coupling with pumps for any sign of fatigue.
7. Lubricate bearings of motors and pumps as required. Check the gland, leakages and tighten as necessary.
8. Check also the water level in the static tank.

#### **Auto operation of wet riser**

1. All hydrants, internal and external, should be operated to check the operational readiness of the system. For this purpose, open the hydrant valve of one hydrant at a time and stop the pump after 1 or 2 minutes of operation. Take due precaution to see that there is no flooding of areas within the building during testing. Water should be directed towards drains. The test may be programmed on Saturdays when offices are closed.
2. While checking the internal hydrants, verify the free turning of First Aid hose reel at that location. Lubricate if necessary.

#### **Six monthly check on system components**

1. Roll out the hose pipes in an open space and test for leakage by filling with water. After the test, wash the hose and suspend free from an upper floor vertically in shade (not sunshine) so as to drain and dry evenly. When fully dry inside and outside, brush the external surface and roll up evenly, with the female coupling end at the centre, so that roll out for fire-fighting operation is quick without twisting. Alternatively the hose may be folded at mid length and rolled up evenly from the fold so that both the male and female couplings will be on the periphery.
2. Check the integrity of all gate valves, in the pump room, internal and external hydrants and elsewhere in the wet-riser/ sprinkler system. Lubricate if required.

3. Clean the sprinkler heads externally and also the sprinkler bulbs carefully, to be free from dirt. See that the sprinkler heads are correctly repositioned.
4. Look for corrosion of metallic surfaces including GI components used for earthing system. Clean up and treat with appropriate anti-corrosive paint.
5. Inspect the electrical control panel and starters to see that all power/control contacts are clean, all terminations are sound; and all fuses are intact.
6. Inspect all cable end terminations in the fire protection system, including control cables. Tighten as required.
7. Check and change filters of diesel oil, engine (lube) oil, coolant and air cleaner element of the engine after checking total hours of operation and manufacturer's recommendation.  
(Lube oil shall be supplied by department free of cost)

#### **Annual Checks**

1. Drain out static tank, clean and fill up with fresh water. If there is no sedimentation, algae etc., this can be done one in 2 years.
2. Flush out the entire piping in sprinkler system and check that the pipes are clear. Charge the system again.
3. Check condition of strainer, foot valve (where provided), suction line hardware etc. attend as required.
4. Check pump shaft alignment, and condition of anti-vibration mountings for all the pump sets (i.e. with their drives)
5. Inspect the fuel tank for any sedimentation. Clean up.
6. Conduct megger test on all cabling, mains and control wiring motors and earth test.  
(Earth test is to be done in summer and megger test during monsoon)
7. Replace the engine oil as per hours of operation and recommendation of the manufacturer.  
(Engine oil shall be supplied by department free of cost)

### **B – MAINTENANCE SCHEDULE FOR AUTOMATIC FIRE ALARM SYSTEM**

#### **Weekly inspection of Automatic FAS**

1. Clean all the control panels, sounders and call boxes.
2. While cleaning each panel, verify whether any fault indication lamp is on. If it is on with or without an alarm, investigate and rectify the fault.
3. Check whether all panel lamps are healthy by the “panel lamp test button” in each panel.
4. Check that the system operates under mains failure condition, by switching of the mains supply to the C&I panel and testing any zone for fault/ fire condition from the zonal panel. Confirm also that the audio

visual alarm comes up in the C&I panel. Restore mains supply after the test.

5. If Lead Acid type battery is used for FAS system, check the electrolyte level (and top up with distilled water, as required) and specific gravity.

#### **Check on control panel operation**

1. All Zonal (sector) panels and C&I panel should be check once a month.
2. Repeater panels if any should also be checked once a month.
3. The check is to confirm operation of the system in each zone, through the test button in zonal (sector) panel. The check should confirm initiation of audio visual indication in the zonal (sector) panel concerned and in the C&I panel and also relevant sounders.
4. Check the talk back system from both ends and also PA system of C&I panel.
5. Check that the Air-conditioning/ ventilation blowers are automatically switched off, when fire condition is simulated by the Test button in the zonal (sector) panel.  
(It is likely the A/C system is not interconnected with the fire alarm system in many installations. Get the interconnection done up, in all such (sector) panel.
6. Check the battery condition if there is any problem. Check battery terminal and replace old grease with prevent corrosion. Consult manufacturer for replacement.

#### **Six monthly checks on FAS**

1. All fire detectors should be cleaned. Do no blow in heavily into the detector, use a proper suction device. Never leave a detector base without replacement of the detector. Restore the zonal panel, if it was switched off for this operation.
2. Check the satisfactory operation of the system by an artificial fire in a bucket keep necessary extinguishers with you, before this test, as abundant precaution.
3. Megger test the wiring of FAS.

#### **Check on associated items:**

1. Check all fire exit lights for satisfactory operation. Clean/ replace lamps as may be necessary.
2. Check whether the fire lift is operational and the Fireman's switch is intact.
3. Inspect the building that the following are coupled with viz. that:
  - i) There are no temporary wiring in the building.
  - ii) There are no joints in the supply cord for window type AC units or office equipment.
  - iii) There is no bare wiring (without metallic conduit or channel cover) over the flooring.



- iv) Heaters are not used in record rooms.
- v) The space in front of SDBs and other distribution switch boards is kept free.

(These checks are may be included in the schedule for EI as well. Check results may be recorded in Registers for both the services)

4. See if the system of switching of supply to the building in the evening (off) and mornings (on) is being followed strictly as fixed in consultation with user departments.
5. In single occupancy buildings, have a joint inspection of the installations with the authorized officer of the client department.

### **C – DEPLOYMENT OF MANPOWER**

<b>S.No.</b>	<b>Description of Work</b>	<b>Designation</b>	<b>Qualification</b>	<b>Quantity</b>
01	Operation and maintenance of Wet Riser and Sprinkler System	Operator cum Technician	ITI in Fitter/Electrician Trade with two year experience in relevant work	03 Nos. (One in Each Shift)
02	Operation and maintenance of Automatic Fire Alarm System	Operator cum Technician	ITI in Electronics/ Instrumentation/ Electrician Trade with two year experience in relevant work	03 Nos. (One in Each Shift)

**Professor In charge  
Trauma Centre, IMS, BHU,  
Varanasi.**

## Schedule of work

**Name of Work: - Operation & Maintenance of Wet riser, Sprinkler and automatic Fire alarm system in Trauma Centre, IMS, BHU**

S. No	Description of items	Qty	Unit	Rate	Amount
1	Providing Operation & Maintenance of the <b>Fire Fighting System</b> , installed at Trauma centre, IMS, BHU, Varanasi (U.P.) i/c provision of daily consumable items such as battery water, washer for coupling, landing valve, branch pipe, extinguishers etc., gaskets, nut-bolts, packing, glands, thimbles, ICs, fuses as required, and deployment of manpower i.e. <b>03 Nos. (One in Each Shift)</b>	12	Month		
2	Providing Operation & Maintenance of the <b>Fire Alarm System</b> , installed at Trauma centre IMS BHU, Varanasi (U.P.) i/c provision of daily consumable items such as battery water, IC wire tape etc. as required and deployment of the following manpower i.e. <b>03 Nos. (One in Each Shift)</b>	12	Month		
				<b>Total</b>	