

Name of work: Providing Initial repair of faulty fire fighting and fire detection equipments and AMC of Fire fighting / wetriser system and AFD system at TE KK Nagar, Chennai (SW:- Initial repair of Fire fighting and Fire detection system)



Bharat Sanchar Nigam Limited (Electrical Wing)

**O/o The Executive Engineer (E)
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E-TENDER DOCUMENT

NAME OF WORK: Providing Initial repair of faulty fire fighting and fire detection equipments and AMC of Fire fighting / wetriser system and AFD system at TE KK Nagar, Chennai (SW:- Initial repair of Fire fighting and Fire detection system)

NIT No: 21 / EEE/ED-I/CH/2023-24

This tender document contains **36 (Thirty six)** pages only.

For E Tender Helpdesk Pls Contact: [https:// etenders.gov.in](https://etenders.gov.in).

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INDEX

Sl.no	Description	Page no.
1	Front cover and Index	2
2	Notice Inviting Tender form - BSNL EW 6	3
3	General Instructions to the Bidders	9
4	Undertaking to abide by EW 6 & EW 8 (Form 'A') & EPF	11
5	Undertaking regarding ESI provisions (Form 'B')	12
6	Performance report of works (Form 'C') & No Near relative working certificate (Form 'D')	13
7	Model form of Bank Guarantee for EMD (Annexure-I)	14
8	Model form of Performance security Guarantee bond (Annexure-II)	15
9	Important Instructions to tenderer	16
10	Schedule of Quantities	18
11	Technical Specification	21
12	List of Approved Makes	31
13	List of relevant Indian Standards	33
14	Proforma Schedules	34
15	BSNL EW – 8 form	35

INFORMATION AND INSTRUCTIONS FOR BIDDERS FOR E-TENDERING FORMING PART OF NIT AND TO BE POSTED ON WEBSITE

The Executive Engineer (Elect), BSNL, **Electrical Division-I, Chennai** on behalf of the CMD, Bharat Sanchar Nigam Limited, invites online Item rate bids from eligible bidders in Single bid system for the following work:

1	Name of work	“Providing Initial repair of faulty fire fighting and fire detection equipments and AMC of Fire fighting / wetriser system and AFD system at TE KK Nagar, Chennai (SW:- Initial repair of Firefighting and Fire detection system)”
2	Estimated cost put to tender (Rs.)	Rs.7,25,636/- (incl GST)
3	Earnest Money (Rs.)	Rs.14,513/-
4	Period of completion	Two months
5	Last date & time for downloading of tender document by bidder	Up to 14:55 Hrs. on 19-07-2023
6	Last date & time for online submission of tender	Up to 15:00 Hrs. on 19-07-2023
7	Last date & time for submission of original Tender cost and EMD	Up to 15:00 Hrs. on 20-07-2023
8	Date and time for opening of tender	15:30 Hrs. on 20-07-2023
9	Tender cost (Non refundable)	Rs.500/- (+) GST 18%

ELIGIBILITY CRITERIA

(a) Financial Norms:

Average annual turnover during the last 3 years, ending 31st March of the previous financial year, should be at least 30% of the estimated cost put to tender.

(b) Physical Norms:

1) BSNL enlisted contractors in Electrical category of respective class as per their tendering limits.
(OR)

2) Experience of having successfully completed similar works in Central Government / State Government / Central Autonomous Body / Central Public Sector Undertaking during last 7 years ending last day of the month previous to the one in which applications are invited should be either of the following :-

- Three similar successfully completed works costing not less than the amount equal to 40% of the estimated cost put to tender.
(OR)
- Two similar successfully completed works costing not less than the amount equal to 60% of the estimated cost put to tender.
(OR)
- One similar successfully completed work costing not less than the amount equal to 80% of the estimated cost put to tender.

Note: - Similar work means “Repair/Replacement/Installation of Fire fighting /Wetriser system”.
Decision of the tender opening authority/committee is final

IMPORTANT NOTE:

1. The self-attested copies of the following documents shall be scanned and uploaded to the e-tendering website within the period of tender submission. Online bid documents submitted by intending bidders shall be opened only of those bidders, who have scanned and uploaded the following documents (and whose uploaded documents are found to be in order), otherwise the bid will not be opened and shall lead to disqualification.
 - a. Tender Fee in the prescribed format
 - b. EMD in the prescribed format (Declaration as per Annexure III)
 - c. Certificate of Financial Turnover from Chartered Accountant (Not applicable for BSNL enlisted Electrical contractors)
 - d. Documents fulfilling Eligibility criteria (Please note that in case the bidder is authorised by the manufacturer, the original authorisation letter is to be scanned and uploaded)
 - e. Enlistment certificate issued by BSNL, if applicable
 - f. Valid Electrical license issued by licensing authority, Govt. of Tamil Nadu (if applicable)
 - g. GST Registration Number Details, as applicable
 - h. PAN Card
 - i. EPF and ESI Registration certificate
 - j. Undertaking to abide by EW-6 and EW-8 (Form 'A')
 - k. Undertaking regarding EPF and ESI provisions (Form 'B')
 - l. Certificate of work experience issued by client department (Form 'C') if applicable
 - m. Undertaking regarding No Near relative working certificate (Form 'D')

Not uploading the above documents, (even if the documents are submitted physically) shall lead to disqualification.

2. The Physical Tender Fee, EMD, the original authorisation letter by the manufacturer (wherever applicable), (the scanned copies of which are uploaded) shall be deposited in the tender box available in the office of tender opening authority, by the bidder on or before 15.00 hours of the tender opening date, failing which the tender will not be considered for further processing.

BSNL EW-6

Bharat Sanchar Nigam Limited

Electrical Wing

NIT No: 21 / EEE/ED-I/CH/2023-24

Electrical Division: ED-I, Chennai

Sub Division: ESD III, Chennai

Item rate tenders on single bid system are invited on behalf of CMD,BSNL for the work

“Providing Initial repair of faulty fire fighting and fire detection equipments and AMC of Fire fighting / wetriser system and AFD system at TE KK Nagar, Chennai (SW:- Initial repair of Firefighting and Fire detection system” from the eligible bidders as per NIT notification. The enlistment of the bidders should be valid on the opening date of tender. In case the date of opening of tender is extended, the enlistment of bidder should be valid on the original date of opening of tender.

1. Intending bidder is eligible to submit the bid provided that he has definite proof from the appropriate authority, which shall be to the satisfaction of the competent authority as per the eligibility conditions mentioned in the NIT notification page.
2. The work is estimated to cost **Rs.7,25,636/- /-(incl GST)**
3. Agreement shall be drawn with the successful bidder on prescribed form as amended up to the date of opening of tender. Bidder 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 **Two months** from the 10th day after the date of written order to commence the work.
5. The site for the work is available / or the site for the works shall be made available in parts. The successful bidder shall execute the work in coordination with other agencies working in the campus.
6. The bid documents 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 and downloaded from website <https://etenders.gov.in> at free of cost. The BSNL EW-8 document can be seen from the web site www.chennai.bsnl.co.in at free of cost.
7. After submission of the bid, the bidder can re-submit revised bid any number of times but before last time and date of submission of tender as notified. While submitting the revised bid, bidder can revise the rate of one or more item(s) any number of times (he need not re-enter rate of all the items) but before last time and date of submission of tender as notified.
8. The Tender Fee in the form of Demand Draft issued by the Nationalized / Scheduled bank authorized by the Reserve Bank of India, drawn in favour of BSNL, CHENNAI TELPHONES payable at CHENNAI shall be scanned & uploaded in the e-tendering website within the period of tender submission. The validity of the tender cost in the form of DD shall be **60 days** from the date of opening.
9. The Earnest money deposit (EMD) in the form of Demand Draft / FDR / BG (BG is only for Air Conditioning, Diesel Engine Alternator, Lifts, and Sub Station works wherever the amount of EMD is more than Rs.20,000)/ CDR of a nationalized / scheduled bank authorized by the Reserve Bank of India, drawn in favour of BSNL, CHENNAI TELPHONES payable at CHENNAI shall be scanned & uploaded in the e-tendering website within the period of tender submission. The validity of the EMD in the form of DD shall be **60 days** from the date of

- opening. If the EMD is in the form of CDR/FDR/BG, the validity shall be **180 days** from the date of opening. In case of L1 bidder, the validity of CDR/FDR/BG is to be extended up to the observation period as that of the Performance guarantee / Security deposit.
10. The Physical **TENDER COST** and **EMD** of which the scanned copy is uploaded shall be deposited by all the bidders before 3:00 PM on the tender opening date, failing which the tender shall not be opened.
 11. All the documents as specified in the tender document shall be scanned and uploaded to the e-Tendering website within the period of bid submission.
 12. Online bid documents submitted by intending bidders shall be opened only of those bidders, who have deposited e-Tender Processing Fee with M/s ITI Limited and Earnest Money Deposit and other documents fulfilling eligibility criteria, scanned and uploaded are found in order.
 13. The last date for online submission of bid is **20-07-2023 up to 3:00 PM** and the bid submitted shall be opened at **03:30 on PM 20-07-2023**. If a holiday is declared on the tender opening day, the tender will be opened on the next working day.
 14. The e-Tender processing fee is non-refundable.
 15. **Performance Guarantee:** The bidder is required to furnish Performance guarantee for an amount equal to 5% of the contract value in the form of bank guarantee/CDR/FDR/DD (of a nationalized/ Scheduled Bank in a standard format) within two weeks from the date of issue of acceptance letter. This period can be further extended by the Engineer-in-charge up to a maximum period of two weeks on written request of Bidder. The validity period of the performance security in the form of performance bank guarantee shall be: Three Months from the date of actual completion of work, for AMC works; and One year from the date of actual completion of work for all other works. **In case the bidder fails to deposit the said performance guarantee within the stipulated period, including the extended period if any, the Earnest Money deposited by the bidder shall be forfeited automatically without any notice to the bidder and the bidder will not be allowed to participate in the re tendering for the same work.**
 16. **Security Deposit:** In addition to Performance guarantee stated above, a sum @ 10% of the gross amount of the bill shall be deducted from each running bill of the contractor till the sum be deducted with the sum already deposited as earnest money, will amount to security deposit of 5% of the contract value of the work. **The security deposit shall be released after an observation period as follows: Three Months from the date of actual completion of work, for AMC works; and One year from the date of actual completion of work for all other works.**
 17. In case any discrepancy is noticed in the documents as uploaded at the time of submission of the bid online, then the bid submitted shall become invalid and the BSNL shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money as aforesaid. Further, the bidder shall not be allowed to participate in the retendering process of the work.
 18. Intending bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their tenders, 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 on 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 BSNL and local conditions and other factors having a bearing on the execution of the work.

19. The competent authority on behalf of the CMD 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. The competent authority on behalf of CMD reserves to himself the right of accepting the whole or any part of the tender and the bidder shall be bound to perform the same at the rate quoted.
20. Canvassing whether directly or indirectly, in connection with tenders is strictly prohibited and the tenders submitted by the bidders who resort to canvassing will be liable to rejection.
21. Agreement shall be drawn with the successful bidder on prescribed form. Bidder shall quote his rates as per various terms and conditions of the said form, which will form part of the agreement.
22. The bidder should give a certificate as per the following that none of his/her relative is employed in BSNL units as per **Form 'D'**. In case of proprietorship firm, certificate will be given by the proprietor and for partnership firm certificate will be given by all the Directors of the company.
 - a. Near relatives of all BSNL employees either directly recruited or on deputation are prohibited from participation in tenders and execution of works in the different units of BSNL. The near relatives for this purpose are defined as:
 - i. Members of a Hindu Undivided family.
 - ii. They are husband and wife.
 - iii. The one is related to the other in the manner as father, mother, son(s) & son's wife(daughter-in-law), Daughter(s) & daughter's husband(son-in-law), brother(s) & brother's wife, sister(s) & sister's husband(brother -in-law).
 - b. The company or firm or any other person is not permitted to tender for works in BSNL unit in which his near relative(s) is(are) posted. The unit is defined as SSA/Circle/Chief Engineer/Chief Archt./Corporate office for non-executive employees and all SSA in a circle including circle office/Chief Eng./Chief Archt./Corporate office for executive employees (including those called as Gazetted officers at present). The bidder should give a certificate that none of his/her such near relative is working in the units as defined above where he is going to apply for tender/work, for proprietorship, partnership firms and limited company certificate shall be given by the authorized signatory of the firm. Any breach of these conditions by the company or firm or any other person, the tender/work will be cancelled and earnest money/performance guarantee will be forfeited at any stage whenever it is so noticed. BSNL will not pay any damages to the

- company or firm or the concerned person. The company or firm or the person will also be debarred for further participation in the concerned unit.
- c. No employee in BSNL/ Govt. of India is allowed to work as a contractor for a period of two years of his retirement from service without the prior permission. The contract is liable to be cancelled if either the bidder or any of his employees is found at any time to be such a person who had not obtained the permission as aforesaid before submission of tender and engagement in the bidders service.
23. The tender for the work shall remain open for acceptance for a period of ninety (90) days from the date of opening of tenders. If any bidder 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 BSNL, then the BSNL 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.
24. The agency has to comply with the provisions of EPF and miscellaneous provisions Act-1952 and employees provident fund scheme-1952 as amended up to date in respect of labours/employees engaged by them for this work. Any consequence arising due to non-complying of provisions as specified above shall be the sole responsibility of the firm only. The agency shall give an undertaking to this effect as per **Form 'B'**.
25. **Extension of Validity of tender:** In case, where the letter of award of work cannot be placed within the validity period of the tender, the BSNL can request the bidder to extend the validity of their respective tenders and the Earnest Money deposit by a reasonable period. In such cases, extension of validity of Earnest Money deposit by 30 days beyond the extended validity date of tender should also be asked for. While BSNL can make the request for extension, the tenderer is free to either extend the validity or refuse the request to extend the validity.
26. Rates quoted by the contractor shall be firm and shall be valid for the currency of contract. No cost escalation shall be permitted during the currency of contract.
27. This notice inviting tender shall form a part of the contract document. The successful bidder, on acceptance of his tender by the Accepting Authority shall within 15 days from the stipulated date of start of the work, sign the contract consisting of:-
- 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, subsequent amendments issued and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.
 - Standard BSNL EW-8 form.

GENERAL INSTRUCTIONS TO THE BIDDERS

1. The intending bidder must read the terms and conditions of BSNL-EW 6 carefully. He should only submit his bid, if he considers himself eligible and he is in possession of all the documents required.
2. Information and instructions for bidders posted on website shall form part of bid document.
3. Applicants are advised to keep visiting the above mentioned website from time to time (till the deadline for bid submission) for any updates in respect of the tender documents, if any. Failure to do so shall not absolve the applicant of his liabilities to submit the applications complete in all respect including updates thereof, if any. An incomplete application may be liable for rejection.
4. Those bidders not registered on the website mentioned above, are required to get registered themselves beforehand. The intending bidder must have valid class-III digital signature to submit the bid.
5. On opening date, the bidder can login and see the bid opening process. After opening of bids he will receive the competitor bid sheets.
6. Bidder can upload eligibility documents in the form of JPG format or / and PDF format. Documents uploaded in any other format, which could not be opened may result in non opening of the bids.
7. Bidder must ensure to quote rate of each item. The column meant for quoting rate in figures appears in yellow colour. In addition to this, while selecting any of the cells a warning appears that if any cell is left blank the same shall be treated as "0". Therefore, if any cell is left blank and no rate is quoted by the bidder, rate of such item shall be treated as "0" (ZERO)
8. Even though any bidder may satisfy the above requirements, he would be liable to disqualification if he has:
 - a. Made misleading or false representation or deliberately suppressed the information in the forms, statements and enclosures required in the eligibility criteria document.
 - b. Record of poor performance such as abandoning work, not properly completing the contract, or financial failures / weaknesses etc.
9. If any information furnished by the bidder is found incorrect at a later stage, he shall be liable to be debarred from tendering/taking up of works in BSNL. The BSNL reserves the right to verify the particulars furnished by the applicant independently.
10. GST and any other tax applicable in respect of this contract as applicable shall be borne by the bidder himself. The bidder shall quote his rates considering all such taxes. The TDS as per the Govt. regulations will be recovered from the contractor.
11. **Tender Evaluation :**
 - (a) The evaluation and comparison of responsive bids shall be done on the basis of **Net cost to BSNL** on the prices offered inclusive of packing, forwarding, freight and insurance charges etc., but excluding GST. The bid with lowest net cost as elaborated above will be the L1 bidder.
 - (b) Vendors should furnish the correct GST Rate in the price schedule. If the Input Tax Credit is found to be not admissible at any stage subsequently owing to wrong furnishing of GST Rate, then the vendors will be liable to refund such non-admissible amount, if already paid, along with penalty if charged by the concerned authority.
12. However, pursuant to the constitution (Forty-sixth amendment) act, 1982, if any further tax or levy is imposed by statute, after the last date of receipt of tenders, and the contractors there upon necessarily and properly pays such taxes/ levies, the contractor shall be reimbursed the amount so paid, provided such payment, if any, is not in the opinion of Superintending engineer

(whose decision shall be final and binding) be attributable to delay in execution of work within the control of contractor.

13. The Contractor shall, within a period of 30 days of imposition of any further tax or levy in pursuant to the constitution of (Forty sixth amendment) act 1982 give a written notice thereof to the Engineer-in-charge that the same is given pursuant to this condition, together with all necessary information relating thereto.

14. Bye laws Indemnity against liabilities:

- a. The bidder shall comply with all by laws and regulations of the local and statutory authorities having jurisdiction over the works and shall be responsible for payment of all fees and other charges and giving and receiving all necessary notices and keep the Engineer-in-charge informed about the notices issued and received.
- b. The bidder shall indemnify the department against all claims in respect of patent rights design, trademark or name of other protected rights in respect of any plant, machine, work or materials used for or in connection with the works or temporary works and from and against all claims demands, proceedings, costs, charges and expenses whatsoever in respect of or in relation thereto.
- c. The bidder shall defend all actions arising from such claims and shall himself pay all royalties, License fees, damages, costs and charges of all and every sort that may be legally incurred in respect hereof shall be borne by the bidder.
- d. All liabilities / penal recoveries on matters arising out of tax/levies such as incorrect deductions discrepancies in the filing of returns, revised assessments by the concerned authorities etc., shall be borne by the bidder.

15. Termination of contract on death of contractor :

Without prejudice of any of the rights or remedies under this contract, if the contractor dies, the Engineer in charge on behalf of the BSNL shall have the option of terminating the contract without compensation to the contractor.

16. Indulging of contractor in criminal /antisocial activities and cases under investigation/charge sheeted by CBI or any other government agencies etc. :

If the CBI/Independent External Monitor (IEM) /Income tax/ Sales Tax /GST/Central Excise/Custom Departments recommend such a course - Action will be taken as per the directions of CBI or concerned department.

17. As a general notion, the terms and conditions/instructions contained in various pages of this document are addressed assuming the bidder as 'Male'. However, the same shall remain and assumed to be addressed in case of 'Female' bidder also, except for the gender centric words, which shall be 'female' centric at appropriate places.

18. **Factory Visit:** The contractor has to arrange for a factory visit by the DISCOM official accompanied by a BSNL representative. No extra charges for the same shall be paid.

FORM 'A'

Undertaking to abide by EW 6 & EW 8

"I.....Son of
.....Resident of hereby give an undertaking that I have read the complete bid document and I am aware of all the clauses and sub clauses of BSNL EW 6 & 8 forms and I confirm that I will abide by all the terms and conditions available in original standard BSNL EW 6 & 8 forms.

(Seal of the firm)

(Signature of Bidder)

FORM 'B'

Undertaking regarding EPF provisions

"I.....Son of
.....Resident of hereby give an undertaking that

* I/We have employed only ----- persons in our establishment and hence the EPF and Miscellaneous provisions Act, 1952 are not applicable to my / our establishment.

* I/ We have registered as per the EPF and Miscellaneous provisions Act, 1952 and our registration no is ----- . We undertake to keep it valid during the currency of contract.

In case at any stage, it is found that the information given by me is false / incorrect, BSNL shall have the absolute right to take any action as deemed fit/without any prior intimation to me".

* strike out whichever is not applicable

**Attach a self-attested photo copy of the above said EPF registration certificate.

(Seal of the firm)

(Signature of Bidder)

Undertaking regarding ESI provisions

"I..... Son of
.....Resident of hereby give an undertaking that

* I/We have employed only ----- persons in our establishment and hence the ESI and Miscellaneous provisions Act, 1948 is not applicable to my / our establishment.

* I/ We have registered as per the ESI and Miscellaneous provisions Act, 1948 and our registration no is ----- . We undertake to keep it valid during the currency of contract.

In case at any stage, it is found that the information given by me is false / incorrect, BSNL shall have the absolute right to take any action as deemed fit/without any prior intimation to me".

* strike out whichever is not applicable

** Attach a self-attested photo copy of the above said ESI registration certificate.

(Seal of the firm)

(Signature of Bidder)

FORM 'C'

Performance report of works

1. Name of work
2. Agreement no.
3. Final Value of Work Done
6. Date of start
7. Actual date of completion
8. Performance: Satisfactory / Not Satisfactory

Dated:

Executive Engineer or Equivalent /above

FORM 'D'

No Near relative working certificate

I..... Son of Shri.....Resident of..... hereby certify that none of my relative(s) as defined in the tender document is/are employed in BSNL unit as per details given in tender document. In case at any stage, it is found that the information given by me is false/incorrect, BSNL shall have the absolute right to take any action as deemed fit/without any prior intimation to me.

(Seal of the firm)

(Signature of Bidder)

ANNEXURE I

**MODEL FORM OF BANK GUARANTEE
(For submitting EMD)**

Whereas _____ (hereinafter called "the contractor(s)")
has submitted its Tender dated _____ for the work _____

KNOW ALL MEN by these presents that WE _____
OF _____ having our registered office
at _____ (hereinafter called "the Bank") are bound unto
_____ (hereinafter called "the BSNL") in the sum of
_____ for which payment will and truly to be made of the said BSNL,
the Bank binds itself, its successors and assigns by these presents.

THE CONDITIONS of the obligation are:

1. If the Contractor(s) withdraws its Tender during the period of Tender validity specified on the Tender Form: or
2. If the Contractor(s) having been notified of the acceptance of its Tender by the BSNL during the period of Tender validity.
 - (a) Fails or refuses to execute the Contract.
 - (b) Fails or refuses to furnish security Deposit in accordance with the conditions of Tender document.

We undertake to pay to the BSNL up to the above amount upon receipt of its first written demand, without the BSNL having to substantiate its demand, provided that in its demand, the BSNL will note that the amount claimed by it is due to it owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force as specified in the Tender Document up to and including Thirty (30) days after the period of the Tender validity and any demand in respect thereof should reach the Bank not later than the specified date/dates.

Signature of the Bank

Signature of the Witness

Name of Witness

Address of Witness

ANNEXURE II

PERFORMANCE SECURITY GUARANTEE BOND

In consideration of the CMD, BSNL (hereinafter called 'BSNL') having agreed to exempt _____ (hereinafter called 'the said bidder(s)') from the demand under the terms and conditions of an agreement/Advance Purchase Order No _____ dated _____ made between _____ and _____ for the supply of _____ (hereinafter called "the said agreement "), of security deposit for the due fulfillment by the said bidder (s) of the terms and conditions contained in the said Agreement, on production of the bank guarantee for _____ we, (name of the bank) _____ (hereinafter refer to as "the bank") at the request of _____ (bidder(s)) do hereby undertake to pay to the BSNL an amount not exceeding _____ against any loss or damage caused to or suffered or would be caused to or suffered by BSNL by reason of any breach by the said Bidder(s) of any of the terms or conditions contained in the said Agreement.

2. We (name of the bank) _____ do hereby undertake to pay the amounts due and payable under this guarantee without any demur, merely on a demand from the BSNL by reason of breach by the said bidder(s)' of any of the terms or conditions contained in the said Agreement or by reason of the bidders(s)' failure to perform the said Agreement. Any such demand made on the bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee where the decision of BSNL in these counts shall be final and binding on the bank. However, our liability under this guarantee shall be restricted to an amount not exceeding _____.

3. We under take to pay to the BSNL any money so demanded notwithstanding any dispute or disputes raised by the bidder(s)/supplier(s) in any suit or proceeding pending before any court or tribunal relating thereto our liability under this present being absolute and unequivocal. The payment so made by us under this bond shall be valid discharge of our liability for payment there under and the bidder(s)/supplier(s) shall have no claim against us for making such payment.

4. We(name of the bank)_____ further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the BSNL under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till _____ (office/BSNL) BSNL certifies that the terms and conditions of the said Agreement have been fully or properly carried out by the said bidder(s) and accordingly discharges this guarantee. Unless a demand or claim under this guarantee is made on us in writing on or before the expiry of TWO/TWO AND HALF/THREE YEARS (as specified in P.O) from the date hereof, we shall be discharged from all liabilities under this guarantee thereafter.

5. We (name of the bank)_____ further agree with the BSNL that the BSNL shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Agreement or to extend time of performance by the said bidder(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the BSNL against the said Bidder(s) and to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Bidder(s) or for any forbearance, act or omission on the part of the BSNL or any indulgence by the BSNL to the said Bidder(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

6. This guarantee will not be discharged due to the change in the constitution of the Bank or the Bidder(s)/supplier(s).

7. We (name of the bank) _____ lastly undertake not to revoke this guarantee during its currency except with the previous consent of the BSNL in writing.

Dated the _____ day of _____

for _____ (indicate the name of bank)

IMPORTANT INSTRUCTIONS TO THE TENDERERS

Please note that the offers, which do not comply the following, will not be considered and will be totally rejected. These instructions supersede the BSNL/EW 8 clauses in case of any Disparity.

1 (i) INCREASE /DECREASE OF TENDERED QUANTITY

- a) BSNL will have the right to increase or decrease up to 25% of the Contract value depending upon the requirement of goods and services specified in the schedule of items without any change in the unit price or other terms and conditions at the time of award of contract.
- b) In exceptional situation where the requirement is of an emergent nature and it is necessary to ensure continued supplies from the existing vendors, the purchaser reserves the right to place repeat orders up to 50% of the quantity of goods and services contained in the running tender/contract within a period of 12 months from date of award of work at the same rate or a rate negotiated (downwardly) with the existing vendors considering the reasonability of rates based on prevailing market conditions and the impact of reduction in duties and taxes etc.

1 (ii) CURTAILMENT OF QUANTITY:-

BSNL reserves the right to enforce curtailment in the assigned quantum of work for any contractor on the grounds of defaults/delay in regard to execution of the individual work assigned.

2) COMPLETION OF WORK:-

At the time of issuing NIT for a particular work, the time allowed for completion of work consistent with magnitude and urgency of work is specified. The time allowed for carrying out the work as entered in the contract is reckoned from the tenth day after the date on which the orders to commence the work are given to the Contractor.

3) EXTENSION OF TIME:-

If the contractor shall desire an extension of time for completion of work on the grounds of his having been unavoidably hindered in its execution or on any other grounds, he shall apply in writing to the Engineer in charge within 30 days of the hindrance on the account on which he desires such extension as aforesaid, and the Engineer in charge shall if in his opinion reasonable grounds to be shown therefore, authorize such provisional extension of time, if any as in his opinion be necessary are proper.

4) COMPENSATION FOR DELAY :

If the contractor fails to maintain the required progress or complete the work and clear the site on or before the contract or extended date of completion, he has to pay the compensation for delay which is limited to 0.5% per week of the tendered value for the first 10 weeks and 0.7% per week for next 10 weeks and thereafter subject to a maximum of 12% of the tendered value for the location where the work is delayed and the firm is found responsible for the same. The clause 2 of BSNL - 8 forms stands modified accordingly. Flow chart of the Procurement process/ contract shall be supplied by the contractor and approved by Executive Engineer concerned.

5) EPF PROVISIONS:-

The agency has to comply with the provisions of EPF and miscellaneous provisions Act-1952 and employees provident fund scheme-1952 as amended up to date in respect of labours /employees engaged by them for this work. Any consequence arising due to non- complying of provisions as specified above shall be the sole responsibility of the firm only.

Agency has to observe all the labour rules & regulation in force. Agency shall be fully responsible for any violation observed at any time.

6) STORES AND SAFETY

All the stores and materials required for the satisfactory completion of the work shall be arranged at work site by the contractor from his own source. Space for storing the same materials may be provided on request from the contractor. However safe custody of the material stores at site will be responsibility of the contractor.

7) CO-ORDINATION AT SITE

At the site of work more than one agency may be working. Full cooperation shall be extended to other agencies during the progress of work. Further work shall be carried out in such a way so that it may not cause abnormal noise and hindrance to the officers of the BSNL engaged in erection as well as to normal routine work.

8) CHANGES IN SPECIFICATIONS

The BSNL reserves the right to make changes in respect of specifications of work if in its opinion same is found necessary. However such alterations shall be made after mutual discussions and agreement between the BSNL and the contractor. Any price implications in this regard shall be mutually discussed and agreed upon in terms of clause 12 of EW forms. The BSNL as matter of principle will not permit modifications by the contractor in design /specifications of any document /material. However the same can be agreed upon by the BSNL under exceptional circumstances where

a) The same is necessitated due to non-availability of material/components of certain specifications/make.

(or)

b) Such alterations constitute an improvement in the opinion of BSNL.

Prior approval is necessary before undertaking any alteration/modification in the specifications of the equipment.

9) I.S. Standards:

The entire system shall conform to relevant BIS including safety standards as amended up to date. Where IS standards are not available the British standard(s) shall be followed. In case of conflict, the requirements of these specifications shall be given over-riding priority. The electrical and earthing work shall be carried out as per CPWD specifications for electrical works (internal) and electrical works (external) as amended up to date. A list of relevant standards, approved makes of equipment is furnished and forms part of the tender document.

Name of wok: Providing Initial repair of faulty fire fighting and fire detection equipments and AMC of Fire fighting / wetriser system and AFD system at TE KK Nagar, Chennai (SW:- Initial repair of Fire fighting and Fire detection system)

SCHEDULE OF WORK										
Name of Work : Providing Initial repair of faulty fire fighting and fire detection equipments and AMC of Fire fighting / wetriser system and AFD system at TE KK Nagar, Chennai (SW:- Initial repair of Firefighting and Fire detection system)										
S. no	Description of Item	Qty	Rate	Unit	Total Amount ex. GST	CGST		SGST		Total amount i/c GST
						%Rate	Amount	%Rate	Amount	
1	Supply and fixing of first aid hose reel with 180° swing, i/c suitable brackets for wall mounting with 30 mts long 20 mm dia heavy Duty, three Layered Braided Water Hose Pipe etc as reqd.(ISI Mark)	10nos		each						
2	Supply and fixing of weather proof hose cabinet fabricated from 18G MS sheet with glass door and locking arrangements with suitable hinge i/c pdg necessary locking arrangement etc as reqd.	2nos		each						
3	Supply and providing Reinforced rubber lined hose reel (RRL) fire hose 15 mts length, 65 mm dia with gunmetal male and female couplings etc as reqd. (ISI Mark)	7nos		each						
4	Supply and fixing of 150 mm dia MS pipe ERW 'C' class conforming to IS:1239. Part - 1 including cutting, welding, painting and providing necessary supports etc as reqd.(BSNL Approved make)	6Mtr		Mtr						
5	Supply and fixing PVC dummy cap with chain for hydrant etc as reqd.	7nos		each						
6	Oil servicing of 76 HP Diesel fire hydrant pump set i/c replacement of Lub oil, all filters both in oil & fuel circuits etc., complete as required.	1job		job						
7	Supply and fixing gun metal female Latch assembly for hydrant value etc as reqd.	1nos		each						
8	Supply and fixing Hydrant coupling washers for the existing hydrants etc as reqd.	20nos		each						
9	Supply and fixing Hose reel connection with suitable rubber hose with metallic braid and suitable supporting assembly in the existing first aid hose reel drum etc as reqd.	14nos		each						

Name of wok: Providing Initial repair of faulty fire fighting and fire detection equipments and AMC of Fire fighting / wetriser system and AFD system at TE KK Nagar, Chennai (SW:- Initial repair of Fire fighting and Fire detection system)

10	Supply and fixing 30 mts long 20 mm dia dia heavy Duty, three Layered Braided Water Hose Pipe in the existing hose reel drum i/c pdg necessary supporting assembly etc as reqd	7nos		each						
11	Supply and fixing 200 mm dia CI foot valve in the existing MS suction hydrant, i/c arranging to lift the suction pipe assembly to the floor level and refixing the assembly after the installation of the foot valve, minor civil works etc as reqd.	1nos		each						
12	S/F of 6" dia heavy duty MS pipe bend etc as reqd	2nos		each						
13	S/F of 6" dia heavy duty MS pipe flange etc as reqd	2nos		each						
14	Supplying and fixing 63mm dia gun metal nozzle for existing RRL fire hose (suitable for all RRL hoses) for external use etc as reqd	3nos		each						
15	Painting of existing MS hydrant pipe with double coat painting of approved colour as per existing IS standards etc as reqd.	180Mtr		Mtr						
16	Supply and fixing of 750 ltrs poly build, multiple layered, anti microbial water tank i/c dismantling and removal of old tank, providing necessary masonry pedestal etc as reqd.	1no		each						
17	Supply and fixing the following MS angle and flats i/c cutting, bending, welding, grouting and painting etc as reqd.									
a	35 x 35 x 5mm MS angle	10 Mtr		Mtr						
b	32 x 5mm MS flat	15 Mtr		Mtr						
18	Supply and laying 32mm "dia UPVC pipe on surface i/c providing all necessary accessories like bends, "T" joints, adapters and supporting clamps etc as reqd.	18 Mtr		Mtr						
19	Supply and fixing the following plumbing accessories i/c providing necessary supports etc as reqd.									
a	1 1/4" UPVC ball valve	3nos		each						
20	Refilling of 50ltrs foam type fire extinguisher i/c loading / unloading and transporting the same to factory and bring back to site etc as reqd	1nos		each						

Name of work: Providing Initial repair of faulty fire fighting and fire detection equipments and AMC of Fire fighting / wetriser system and AFD system at TE KK Nagar, Chennai (SW:- Initial repair of Fire fighting and Fire detection system)

21	Refilling of 4.5Kg CO2 type fire extinguisher i/c loading / unloading and transporting the same to factory and bring back to site etc as reqd	17nos		each						
22	Refilling of 2Kg ABC type fire extinguisher i/c loading / unloading and transporting the same to factory and bring back to site etc as reqd	5nos		each						
23	Refilling of 2Kg CO2 type fire extinguisher i/c loading / unloading and transporting the same to factory and bring back to site etc as reqd	4nos		each						
24	Refilling of 5Kg ABC type fire extinguisher i/c loading / unloading and transporting the same to factory and bring back to site etc as reqd	1nos		each						
25	Refilling of 5Kg DCP type fire extinguisher i/c loading / unloading and transporting the same to factory and bring back to site etc as reqd	1nos		each						
26	Supplying and fixing of Discharge hose with horn for 4.5kg CO2 type fire extinguisher with necessary tools and plants etc as reqd	5nos		each						
27	Supply and fixing Photo Electric type smoke detector with base for automatic fire alarm system i/c dismantling the faulty detector, providing necessary metal box, supports and accessories etc as reqd.	60nos		each						
28	Supply and fixing Manual call point for automatic fire alarm system etc as reqd.	5nos		each						
29	Supply and fixing Electronic hooter for automatic fire alarm systems etc as reqd.	15nos		each						
30	Troubleshooting of Faulty Microprocessor based Automatic fire detection control panel viz battery charging card, Zone card by replacement of faulty electronic components viz integrated circuits, transistors, diodes etc as reqd (5th floor)	1job		job						
31	Supply and fixing of LCD display board in the existing 16 zone micro processor based automatic fire alarm control panel (make: ravel, model no:RE150D) including removing the old faulty display and pdg necessary interconnections etc as reqd (Ground floor)	2job		job						

Unpriced Schedule

Name of wok: Providing Initial repair of faulty fire fighting and fire detection equipments and AMC of Fire fighting / wetriser system and AFD system at TE KK Nagar, Chennai (SW:- Initial repair of Fire fighting and Fire detection system)

32	Supply and fixing of LCD display board in the existing 24 zone micro processor based automatic fire alarm control panel (make: ravel, model no:RE150D) including removing the old faulty display and pdg necessary interconnections etc as reqd (1st floor)	2job		job						
33	Supply and fixing of 12 volts 26 AH capacity free maintenance Battery for automatic fire alarm systems with buy back of old battery etc as reqd(2,4,6th floor)	2nos		each						
34	Supply and fixing of 12 volts 7 AH capacity free maintenance Battery for automatic fire alarm systems with buy back of old battery etc as reqd (G/F, 5th floors)	8nos		each						
35	Supply and fixing 12 volts 180 AH capacity genset battery with buy back of old battery etc as reqd	1nos		each						
Total amount ex. GST										
Total amount i/c GST										

IMPORTANT NOTES:-

1	The firm shall be responsible to ensure that GST shown in the above columns is correct & Input Tax Credit for the amount shown above is admissible as per GST Act as amended up to date".
2	Invoice /Bill should be pre-printed as per the GST format.
3	The evaluation and comparison of responsive bids shall be done on the basis of Net cost to BSNL on the prices offered inclusive of packing, forwarding, freight and insurance charges etc. but excluding GST
4	The rates for all items of work shall, unless clearly specified otherwise, include cost of all labour, materials and other inputs involved in the execution of the terms as specified in the scope of work.
5	No advance payments can be made. Stipulations like levy of interest if payment is not made in a specified time are also not acceptable and the payment is governed by the normal BSNL practice.
6	Bidders must mandatorily quote for all GST components (CGST, SGST and IGST) as applicable.
7	Bidders must mandatorily mention correct HSN / SAC Codes

Contractor

Executive Engineer(E)

SPECIFICATION

FOR AUTOMATIC WET RISER SYSTEM

- 1. Fire pumpsets:**
1. Main electrical pump
 2. Standby engine pump
 3. Pressurization pump

2. Sequence of operation :-

All starting of the main fire pump & stand by engine pump shall be automatic through operation of the pressure switches and these two pumps are to be stopped manually. The operating pressure of the system is 7Kg/sq.cm. When there is a slow fall of pressure due to leakage of water the pressurization pump will start automatically on receiving signals from the pressure switch. When the pressure of the system builds up to normal value, the pressurization pump will stop automatically. During the operation of any hydrant valve, the sudden pressure drop will trigger the main electrical pump to start to maintain the operating pressure.

If the main pump fails due to mechanical failure or failure of electrical supply, the control panel locks out the main pump, and initiate the starting operation of the engine pump set after a preset time delay. Even if this also fails to start or fails to deliver adequate pressure, the system gives an audio visual alarm and indication at the control panel.

3. Electric fire pump :-

The pump shall have adequate capacity to deliver the required LPM. as specified in the schedule developing adequate head so as to ensure a minimum pressure of 3.5 Kg/sq.cm at the highest and the furthest outlet. The delivery pressure at the pump outlet shall be not less than 7 Kg/sq.cm in any case. The pump shall be of cast iron casing and parts like impeller shaft-sleeve, wearing ring etc shall be non-corrosive metal like bronze, brass, gun metal. The shaft shall be of stainless steel.

Bearings of the pump shall be effectively sealed to prevent loss of lubricant or entry of dust or water.

The pump casing shall be designed to withstand 1.5 times the working pressure. The motor shall be squirrel case induction type suitable for operation on 415 V, 3 phase, 50 Hz. System. The motor shall be screen protected drip proof. The class of insulation shall be 'B'. The motor shall be rated for continuous duty shall have a horse power rating necessary to the pump at 150 per cent of its rated discharge with at least 65 per cent rated head.

The starter shall be 75HP automatic Star Delta of type conforming to IS :1822.

The starter shall not incorporate under voltage, No Volt trip, Over load or SPP.

4. Diesel fire pump:

1. The pump shall be direct driven by means of flexible coupling with coupling guard. The speed shall be 1500 /1800 rpm or as per fire manual as required by the pump rating.
2. The specification of the pump shall conform to the same specification for electric pump except speed.
5. The engine shall be cold starting type. The engine shall be diesel injection multi-cylinder vertical 4 stroke, water cooled developing suitable HP at the operating speed specified to drive the pump. Continuous capacity available for the load shall be exclusive of the power requirement of the auxiliaries of the diesel engine and after correction for the altitude, ambient temperature, and humidity.

This shall be at least 20 % greater than the maximum HP required to drive the pump at its duty point. The engine shall be capable of continuous operation for 12 hours and shall have 10% over load capacity in any period of 12 hours run. The engine shall accept full load within 15 seconds from the receipt of signal to start.

The engine accessories includes,

- i) fly wheel ii) coupling with coupling guard iii) radiator with hoses, fan, water pump, and guard iv) air cleaner v) fuel tank with fuel oil filter with necessary piping
- vi) lub. oil pump and lub.oil filter vii) Starting battery viii) battery box and stand
- ix) Exhaust silencer with pipe works x) Governor xi) instrument panel with all gauges, starting switch, RPM/Hr meter, etc. xii) necessary safety controls & trips.

Suitable anti-vibration mountings shall be fixed to minimize transmission of vibration.

6. Pressurization pump.

The pump shall be centrifugal horizontal and directly coupled to the motor with coupling guard the casing shall be of cast iron, and parts like impeller, shaft sleeve, wearing etc. shall be of non-corrosive material like brass, bronze, or gun metal. The pump casing shall be designed to withstand 1.5 times the working pressure.

The motor shall be totally enclosed fan cooled, induction type, suitable for 415v, 50Hz, 3 phase, system. The insulation class shall be B or E. The starter shall be of 15HP DOL type with over load but without SPP/UV/NV trip. The starting and stopping of the pump shall be automatic with auto/ manual selector switch.

7. Piping work :

The wet riser piping system shall remain pressurized all times during operation as such the piping work shall be carried out to withstand the same.

GI pipes, fittings, and accessories, shall be of heavy class conforming to IS:1239 – part-I & II . Hot dip Galvanized Grade-I as per IS:4736-1968. The pipe shall be flanged with smooth faced flanges. CI pipes shall be used in locations where the pipes are buried under ground. CI pipes shall be of “class B” conforming to IS 1536 -1976 and fittings shall be of “Heavy grade” to IS 1538-1976 . The flanges shall be smooth faced.

GI pipes for automatic priming arrangement, overflow shall be heavy class to IS: 1239 part I 1974 and Part II - 1979

Sluice Valves above 63mm shall be of cast iron body and bronze / gunmetal seat conforming to IS:780-1980/IS:14846. Valves upto 63mm shall be of gunmetal construction/as specified in schedule. Non-return valves shall be of cast iron body and bronze/ gunmetal seat. They shall conform to class I of IS:5312 and have flanged ends. They shall be swing check type in horizontal runs, and lift check type in vertical runs of piping. They shall not be spring loaded type.

8. Yard hydrant:

External Yard hydrant shall be of Stand Post type conforming to IS:908-1975 and comprise Stand post for single outlet, duck foot bend, flange riser, and single headed Stainless steel valve conforming type A of IS:5290-1977. Ground hydrants have been provided along with M.S. stand post and sluice valves. The internal dia. at the top shall be at least 80 mm. The out let shall be angled towards ground, with instantaneous spring lock type female coupling of 63mm dia. for connecting hose pipe.

9. Internal hydrant:-

The internal hydrant outlet shall comprise double headed double outlet gunmetal landing valve conforming to type B of IS:5290-1977. Separate valves one on each of two heads shall form part of the landing valve construction.

A cap with chain is provided on one head of the outlet which will have an instantaneous female coupling to hose pipe & adopter on the other head for first aid hose reel connection. The landing valve shall be fitted to a Tee connection on the wet riser at the landing.

10. First aid hose reel: -.

The hose reel set consists of reel, hose guide, fixing bracket, hose tubing, globe valve, stop cock, and nozzle. This shall conform to IS:834-1969. The hose tube shall be 20mm dia. and 37m long. The nozzle and globe valve shall be 20mm dia. The fixing bracket shall be of swinging type.

11. Hose pipe:-

The hose pipe shall be 63mm dia, and conform to type II (Reinforced rubber lined) of IS:636. Each set shall be complete with necessary coupling at the ends to match with the landing valve /another run of hose pipe/ branch pipe. The coupling shall be instantaneous spring lock type.

12. Branch pipe:-

Branch pipe shall be of SS 63mm dia. and externally threaded to receive the nozzle. It shall be complete with the coupling for connection to the hose pipe for quick coupling.

13. Nozzle:-

The nozzle shall be of SS / gunmetal, 20mm internal dia., the inlet threaded end matching with the threaded branch pipe.

14. Hose cabinet:-

The cabinet shall be made of FRP sheet of size 700x600x250mm with center opening lockable both side finish (Double). The cabinet shall accommodate 1. Two hoses of 7.5 /15 mt. long 2. A pair of couplings. 3. One nozzle 4. One branch pipe.

15. Fire brigade connections:-

Each fire brigade connection shall have 4 Nos. male inlet couplings, plugs and chain. The inlet pipe shall be 150mm dia. A 150mm dia. sluice valve and non-return valve shall be provided in the fire brigade connection to the wet risers. There shall be no valves in the fire brigade connection to the sump.

16. Control Panel for Electric Fire pump & Engine driven pump: -

The incoming and outgoing switches shall be as per schedule.

This comprises in addition to the switches:-

- i) Control system components and equipments such as relays, contactors, timers, etc
- ii) Starters, C.T.s, ammeters, voltmeters.
- iii) Audio/visual alarms, indications, control fuses, terminal blocks,
- iv) Push buttons, selector switches for auto/manual operation,
- v) Control wiring with cable glands, lugs, internal wiring.
- vi) Earthing.

17. Control Panel for pressurization pump : -

- i) TPN isolator,
- ii) Control system components such as relays, timers, contactors, etc for automatic start and stop of the pump
- iii) Auto/ manual selector switch,
- iv) Ammeter, voltmeter, audio/visual alarm, indications, fuses,
- v) Starter unit, push buttons, terminal block,
- vi) Control wiring, inter connection, cable glands, lugs, etc.

18. Annunciation Panel : -

- i) control components integrating various sections, so as to satisfy the functional requirement . It should have minimum 16 transparent windows. It should be of audio/visual Type. It should have following indication.
- ii) Three stage water level indication (FWL, 2/3rd Level, 1/3rd Level). Necessary Electronic Circuitry for water level indicator should be incorporated in this panel and sensors should be fixed in sump.
- iii) Indications for the three pump's operating stages like, ON, OFF, TRIP,
- iv) No Water flow etc.
- v) Jockey pump over load
- vi) Healthy test facility.
- vii) 24V 40 AH wet Battery and battery charger with boost/ trickle facility. (battery charger should be incorporated in this panel)

DESIGN REQUIREMENTS

- 1 The hydrant shall be of the Female oblique type with the outlet angled towards the ground.
- 2 The valve coupling must be of the spring lock type and the valve wheel shall be of the screw down type.
- 3 The hydrant valve coupling shall be of 63 mm size with the flange dimensions corresponding to that of 75 mm pipe in case of single hydrant.
- 4 The hydrant valve shall be of S.S construction (unless specified otherwise) with the body painted with fire red colour.
- 5 The hand wheel shall have an arrow head indicating the direction of rotation of the valve for open and close positions.
- 6 The flange drilling details, types of bolts, nuts and gaskets shall be as per ISI.
- 7 In case of multi storied buildings where the pressure at the hydrant (on lower floors) exceeds 5.5 kg/sq.cm, the hydrant valve shall be provided with an orifice or other suitable pressure reducing device to limit the operating pressure to 3.5kg/sq.cm.

19. Testing

It is to be done as per I.S. 3844- 1989 (Code of practice for Installation & maintenance of Internal fire hydrant and hose reel on premises.

The following tests shall be given by the contractor.

- 19.1 Automatic operation of all the pump sets with the help of By-Pass test inside the pump house.
- 19.2 Fire pump discharge of minimum 3.5-kg/cm sq at the top most hydrant point.
- 19.3 Water for testing shall be arranged by the department free of cost.

SPECIFICATION FOR FIRE DETECTION AND ALARM SYSTEM.

Basis of Design

1. C-DOT switch room OMC :- 1 detector per 10sqm. IOP on ceiling false ceiling / False flooring
2. Power room, Battery room :- 1 detector per 20sqm. A/C plant room, PCM, on ceiling Equipment room, MDF on ceiling
3. Lobby, corridor :- 1 detector per 40sqm. stair case on ceiling.

1) . It is proposed to installed automatic smoke detector system on the rooms as mentioned above with both audio and visual indications at important point where maintenance staff is available for 24 hours. In general, the smoke detectors shall be placed in switch hall on the ceiling (below false ceiling).

In addition detectors will also be placed in the AHU room. There will be interlocking between the AHU and the smoke detecting system.

Automatic smoke detector system should send an alarm signal the moment the smoke density rise in the area where it is installed. The alarm shall be visual as well as audible. As soon as, the contractor detects the smoke the control panel shall given as audio visual alarm indicators that there is a fire in the particular zone, it should automatically stop the working of air handling unit of that floor.

There may be false flooring at a height of approximately 600mm from the floor level in switch hall. Below the false flooring there will be Telecommunication cables and conditioned air for this area. There may be false ceiling provided at a height of 3 M from the false floor level. The floor is air conditioned and temperature inside the switch hall will be between 22 Smoke detectors shall be provided in switch room, below false floor and above false ceiling.

There should be minimum one detector per 20Sq. area in each detecting circuit in such away at least two ionization / optical type smoke detectors are provided in each row of cabinets as shown in the floor plan.

The control panel shall have the facility for cutting of supply to the AHU room by automatic closing of dampers in case of fire, by means of solenoid valve.

1.1 Testing Procedure:-

Installation testing the detectors shall be subjected to smoke detector aerosol tester or the standard fire test, as given in UL/FDC standards .Only these detectors which pass the test shall be installed.

Functional test:- Trigger a smoke detector from any one zone to ensure correct functioning of control panel.

Operate alarm silencing control to ensure correct functioning. Trigger another detector from another zone to ensure correct functioning in control panel. Operate "Reset" control to ensure correct functioning. Check the audible and visible warnings for AC / DC power supplies. Restore normal supply and check audible, visible, Alarms. Restore quiescent conditions.

Final acceptance testing.

Final acceptance testing will be done by Engineer in charge any other Departmental inspection authority. The following procedure will be followed for final testing.

FUNCTIONAL TEST:-

Smoke detector both ionization and optical & Response Indicators.

All the indicators like zone indicator, power failure indicator etc., on the control panel.

Hooters. & Standby battery.

2 TECHNICAL SPECIFICATIONS IONISATION TYPE DETECTOR:-

It should respond to smoke due to smouldering and open fire. It should have response indicator for quick identification of the fire location. Protection against reverse polarity and voltage surges and provisions for connecting remote response indicator shall also be available.

The detector shall not contain any moving part.

It shall consist of two ionization chambers containing Americium 241 or equivalent with circuit connection contacts to base so as to clean detector housing.

It shall consist of two ionization chambers containing Americium 241 or equivalent with circuit connection contacts to base so as to clean detector housing.

The detector shall be capable to work with photo electric/electronic detector with inter-chargeable base.

The detector shall be grouped in zones and connected to the control unit by twin wires.

The Detector shall be vibration and shock proof. The detector used shall be ensured by the tenderer for reliability and fire performance as per site environments.

The detector electronic circuit shall maintain the alarm signal until the system is reset at the control unit.

The detector shall be operated at 24V(MAX) and shall not be more than 1 micro curie. The detector shall be 100% solid state. The detector shall have dual chamber dual source & shall ensure stability during variation in temp, humidity and air velocity. The make of the base assembly of the detectors shall be the same of that of the head assembly of the detectors.

The detector shall be of the rotary plug-in type facilitating easy removal and mounting with hand.

It shall be listed in the BSNL approval list.

The coverage area of each detector shall be capable to cover approx. 80Sq.M.

2.1 PHOTO/ELECTRIC/ELECTRONIC DETECTOR.

It shall be based on light scattering principle

It shall comprise a solid state LED & High speed light sensing photodiode (PD) with a sensing chamber etc. Upon triggering alarm, the detector circuit should latch and the external LED shall glow continuously.

The detector shall be sensitive to detect the fire in the smouldering stages also. The detector shall be compatible to work with ionisation type detector and shall have inter changeable bases.

The detector shall be grouped in zones and connected to the control unit by twin wires.

The detector shall be vibration and shock proof.

The detectors used shall be ensured by the tenderer, for reliability stability and fine performance as per environments.

The detector shall be of non polarized type.

The detector shall have no moving part.

The detector shall be 100% solid state.

The detector shall be operated at 24Volt (Max) and shall be of low voltage type.

The detector shall be rotary plug-in type facilitating easy removal and mounting with hand.

It shall be listed in the DOT approval list.

The coverage area of each detector shall be approximately 80Sqm.

It shall have response indicator for quick identification of the fire location.

Protection against reverse polarity and voltage surges and provision for connecting remote response indicator shall also be available.

The make of the base assembly of the detectors shall be the same of that of the head assembly.

AUTOMATIC FIRE DETECTION CONTROL PANEL

The panel shall be fabricated from 16gauge C.R.C. sheet, wall/ floors amounting type, completely dust and vermin proof, with neoprene gasket and as per relevant I.S specifications. The panel shall have a glass door with lock and key painted with enamel paint of the choices of Engineer in charge after suitable primer treatment.

Suitable gland knock-outs will be provided for cable connections. Each zone should have LED indicators for FIRE and FAULT signals. Twin LED, in parallel shall be used for FIRE and FAULT signals. The FIRE LED should be red colour and the FAULT LED should be of yellow colour. Each zone should have facility for isolation of the zone, test buttons for creating test fire alarm and test open circuit indication and test short circuit indication in addition to 'ON' and 'isolated' indications. The panel shall have as many numbers of zone modules as the number of zones of whole floor, each module shall have audible and visual indications and monitor the wiring to control panel continuously.

The control of each zone shall have following facilities, for testing the circuit for fire and fault conditions:

I. Test II. Normal III. Alarm acknowledgement IV. Fault test.

And it shall be designed in such a way that audio visible alarm is given when its position is changed from 'normal'.

The control panel shall have following supervisory facility for power supply.

**i. Main on load, ii. Main failure, iii. Battery on load,
iv. Battery discharge v. Fuse blown.**

Ammeter and voltmeter shall be provided for measuring the D.C. voltage and current and voltmeter or AC supply to measure AC voltage is to be provided.

The control panel shall have the following supervisory facility.

**i. Zone isolated ii. Accept test push button iii. Rest push button
iv. Lamp test push button.**

The control panel shall have the following salient features. The control panel shall continuously supervise open, short and earth fault in detector cabling with audio visual alarm distinct from fire and shall indicate the fault in corresponding zone. Each zone shall have facility to isolate leaving remaining zones in healthy condition to ensure that fire/fault is detected properly. Silencing of the sounder shall not switch off the indication for FIRE / FAULT. Receipt of fault signals (indicating test fire or fault signals) by the control panel, shall not prevent receipt of fire alarm from any other detector/MCP.

Circuits and mechanical designs of the panel shall be such that the operation failure of one indicator does not prevent the proper and separate operation of other indicators.

Double indicator lamp connected in parallel shall be provided for visual indicator for fire signal. Facility to test the alarm circuits and lamps shall be provided.

The circuitry of each zone shall be on the glass epoxy modular PCB and treated with a protective layer of special lacquer for protection against corrosion and shall be easily replaceable during maintenance.

The circuitry of each zone shall be designed in such a way that the response indicator of first detector detecting the fire gives the steady glow in order to indicate seat of fire. The detector detecting fire afterwards shall not give continuous glow in response indicator. The steady glow shall continue till the system is reset.

The primary alarm circuit shall be 100% solid state, without the use of any relay. The rotary switch shall be robust and shall have silver plated connects. The transistors used shall be derated by as much 50% and shall operate at only 25% of their load capacity to safeguard against thermal run away. The resistance shall be working at less than 1/3 rd of its rated capacity and shall give good stability & resistance to moisture, vibration, temperature and dust etc.,

POWER UNIT

The sources of electricity supply for the entire system shall be as follows. A secondary battery, continuously trickle/float charged from AC mains, with facility for automatic recharging the battery to supply the maximum system load at an adequate voltage for at least 2 hours. The normal voltage of the battery shall be 24volts. The capacity of battery shall be such that it is capable of maintaining the maximum load on the system at an adequate voltage for at least one hour plus the standing load or losses for at least 40 hours.

Means shall be provided to prevent secondary batteries from discharging through the charging equipment in the event of its break down or a failure in the supply and it should have fault signal in either event. In order to minimize the risk of failure, suitable over load protective device like fuses and circuit breakers shall be introduced. The protective devices shall be arranged to operate at suitable current higher than the maximum working current and to give an audible warning of their operation. The protective devices shall be inserted in the circuit at point as close as possible to the source of supply. The rating of fuses and the circuit breakers shall be clearly & permanently indicated on equipment.

HOOTER / SOUNDER

The hooter shall be totally solid state electronic type. The hooter shall have 4 watts output. The audible range of hooter shall be 80 db above any loud noise likely to persist more than 30 seconds and having frequency range of 500 Hz to 1000 Hz. The operating voltage shall be 24 volts DC. The hooter shall be mounted inside a metallic cover and shall be wall mounting type. The hooter shall be suitable for dual tone audible alarm. The hooter control shall be actuated by the control panel. The hooter shall be of dual tone. The intermittent tone with one second ON and one second OFF is for alert and the continuous tone is for evacuate signals.

MANUAL PUSH BUTTON STATION

The manual push button station shall be aluminium Die cast box mounted on an aluminium plate and shall be painted with epoxy resin paint having fire red finish.

The push button shall have one pair open and one pair closed contacts. The box shall be covered

with aluminium front cover hinged type & sealed by means of breakable glass and gasket to make it completely dust and vermin proof. The glass shall be provided mechanical protection without affecting basic purposes. The push button shall be in depressed condition so long as the glass front cover is in tact. The glass front cover shall read "In case of fire break the glass". On breaking the glass cover, in case of fire, the push button shall be released by spring action so that it gives fire indication on control panel. Within 100 ft from any point of the building there should be a manual call point.

ADDITIONAL SPECIFICATION FOR INSTALLATION

The system shall conform to relevant IS amended upto date.

The detectors shall be installed above the racks, beneath the raised floor above the false ceiling, and in other rooms .

The detectors shall be kept above the suits 4 Meter apart being high risk area. Beneath raised floor each detector capable of covering an area of 10sqm.shall be used being high risk area.

At the air extraction air duct detector may also be installed.

Above false floor area is air conditioned and each detector capable of covering 20sqm shall used. Only those detectors shall be installed which pass the acceptance.

The direction of built in response indicator in the detectors shall be towards the entrance of the room.

Each detector shall be numbered, zone-wise such as ZO9/N10 wherein ZO9 indicate zone number 9 and E 10 indicator detector number 10 of that zone.

The entire electrical cable shall be FRLS. The detector shall be connected by a two wire system. The cable connected to detectors shall be given 'S' loop for both sides of the detector, sounder panels, dampers etc. Appropriate glands & rubber gasket shall be provided where cable enters junction box. All cables and wires shall be tagged for proper identification of wires and shall be identified by ferrules.

The manual controls which shall be so located that no accidental operation takes place.

The manual controls which switch off/on main/standby power shall not be accessible to outsiders. Necessary provision shall be made accordingly by the contractor.

All manual controls shall be clearly labelled to indicate mode of operation and their function.

Main control panel shall be installed beyond the access of unauthorized person as approved by the Engineer in charge.

Name of work: Providing Initial repair of faulty fire fighting and fire detection equipments and AMC of Fire fighting / wetriser system and AFD system at TE KK Nagar, Chennai (SW:- Initial repair of Fire fighting and Fire detection system)

LIST OF APPROVED MAKES – BSNL ELECTRICAL WING

S.No.	Item	Makes
1	Engine	Ashok Leyland /Cummins/ Cater pillar /KOEL/ Volvo Penta / Mahindra & Mahindra (up to 200 KVA) /Escorts (up to 30 KVA)/ Eicher (up to 35 KVA)
2	Alternator(Brushless)	Crompton Greaves (AL. series) / KEC / Leroy Somer / Stamford/Jyoti Ltd
3	Battery (Lead Acid / Mntc. Free)	Amara Raja / AMCO / Farukawa / Hitachi / Exide/ Prestolite / Standard
4	HV Switchgear (Vacuum Circuit Breaker/SF6)*	Biecco Lawrie / Crompton / Kirloskar / MEI / Jyoti Ltd
5	Transformer (Oil filled / Dry type) a) Above 400 KVA	ABB / Schneider Electric /Andrew Yule / Bharat Bijlee / Crompton / EMCO /Kirloskar / Siemens
	b) Up to 400 KVA	In addition to above makes, Uttam/ Patson /Rajasthan Transformer and Switchgear
6	Air Circuit Breaker	L&T/ Schneider Electric / Siemens
7	MCCB(Ics=Icu)	L&T/ Schneider Electric / Siemens
8	SDF units	L&T/ Schneider Electric / Siemens/HPL/Havells
9	Power Contactors	L&T/ Schneider Electric / Siemens/ Lakshmi(LECS)
10	Change Over Switch	HPL / Havells / H-H Elcon
11	Intelligent APFC Relay	L&T/EPCOS(Siemens)/ Schneider Electric / Neptune Ducati/Syntron/ABB
12	Bus Bar Trunking/ Sandwiched Bus Duct	Moeller/L&T/Schneider Electric/ABB/ Legrand /Zeta
13	Power Capacitors (MPP/APP)	L&T/EPCOS(Siemens)/ABB/Crompton/ Schneider Electric / Neptune Ducati
14	Digital/ KWHr meter	Schneider Electric/ AE/ Digitron / IMP/Meco / Rishabh /Universal/HPL/L&T/ABB/Yokins
15	Cold shrink HT/LTCable Joint	Denson / 3M(M-Seal)/ Raychem
16	Rubber Matting	ISI mark
17	MCB/ Isolator /ELCB/RCCB/ Distribution Board	Crompton / Havells / Indokopp / MDS Legrand / L&T / Schneider Electric/ Siemens / Standard/ABB/HPL
18	MS/ PVC Conduit	ISI mark
19	Cable Tray	MEM/Bharti/Ratan/Slotco/Profab
20	HT/LT Cables	ISI mark
21	PVC insulated copper conductor wire	ISI mark
22	Centrifugal Pump	Amrut / BE / Beacon / Batliboi /Crompton / Jyoti / Kirloskar / KSB / Mather &platt / WASP/Grundfos
23	Submersible Pump	Crompton/Amrut / BE / Calama / Kirloskar / KSB
24	Motors	ABB/ Bharat Bijlee / Crompton Greaves /

Name of work: Providing Initial repair of faulty fire fighting and fire detection equipments and AMC of Fire fighting / wetriser system and AFD system at TE KK Nagar, Chennai (SW:- Initial repair of Fire fighting and Fire detection system)

		Schneider Electric / HBB / KEC / Siemens/Jyoti Ltd
25	Fresh Air Fans	GE / Khaitan/Almonard/Crompton
26	Starter	ABB / BCH / Schneider Electric / L&T / Siemens /
27	Single Phase Preventer	L&T / Minilec / Siemens / Zerotrip
28	GI/MS Pipe	ATC / ATL / BST / GSI / ITC / ITS / IIA / JST / Jindal / TTA / Tata/Zenith
29	Foot Valve	ISI mark
30	Gate Valve	Advance/Audco/Johnson Controls / Zoloto /Annapurna / Fountain /Kirloskar / Leader / Sant / Trishul
31	Compressors	Carrier/Emerson copeland/York/Danfoss (for chillers only)
32	Resin Bonded Glasswool	Fibre Glass / Pilkington / UP Twiga
33	Expanded Polystyrene	BASF(India) Ltd.
34	Gauge	Feibig / H.Guru / Pricol
35	Controls	FLICA / Honeywell / Indfoss / Penn- Danfoss / Ranco / Ranutrol / Sporland
36	Fine Filters	Anfiltra Effluent / ARW / Athlete/ Airtake / Dyna / Kirsloskar/ Puromatic/ Purafill/ Purolator / Tenacity
37	GI Sheet	HSU Jindal / National / Nippon Denro / Sail / Tata
38	Heat Detector	Appollo / Chemtron/ Edward / Fenwal/ Hochiki / Nitton /System Sensor/ Wormald/Honeywell Essar/Notifier
39	Ionization Detector	Appollo / Cerebrus / Edward/ /Fenwal / Hochiki / Nitton / System Sensor /Wormald
40	Photo Electric SmokeDetector	Appollo / Cerebrus / Edward / Fenwal/ Hochiki / Nitton / Wormald /System Sensor
41	Fire Panel(Microprocessor based)	Agni Instruments / Agni Devices/ Aruna Agencies / Carmel Sensor / Ravel Elect. / Honeywell Essar / Notifier / Navin Systems
42	Sprinkler/ Hose Reel &Hose Pipe	ISI mark
43	Fire Extinguisher	ISI mark

NOTE:

1. Any other make approved by PCE (E)/ CE (E) of this zone till date of opening of tender can also be used in this contract.
2. The accessories such as CT/PT/measuring instrument/relays provided by approved make in respect of Transformer/HT Panel/DG /AC Package Units as supplied by approved manufacturer along with the equipments are also acceptable in addition.
3. Any other makes which are approved by BSNL CO up to the last date of sale of tender can also be used in this contract.

RELEVANT IS STANDARDS

<u>STANDARDS</u>	<u>TITLE</u>
IS 11171- 1985	Dry type transformer
IS 10028 (Part-II & III)	Installation & Maintenance of Transformers
IS 2099:1986	Bushings
IS 2705	Current transformers
IS 3961 (Part-II)-1967	PVC insulated PVC sheathed Heavy duty cables
IS 2675-1983	HRC cartridge fuse links
IS 13118:1991 IEC 60056	High voltage alternating circuit breaker
IS 9920:2002	High voltage switches-PART-I . switches for rated voltage above 1 KV and less than 52 KV
IS 3427:1997	Ac metal enclosed switch gear and control gear for voltages above 1 KV and upto and including 52 KV
IS 694- 1990	PVC insulated cables for working voltages upto and including 1100 Volts
IS 1248	Electrical measuring instruments and accessories
IS 8130:1984	Conductors for insulated electric cables & flexible cords
IS:15652	Insulating mats

LIST OF SAFETY STANDARDS

I.S.618 Code of Practice for safety and health requirements in Electrical and Gas Welding and Cutting Operations.

I.S.659 Safety code for Air Conditioning.

I.S.660 Safety code for Mechanical Refrigeration.

I.S.3016 Code of Practice for Fire precautions in welding and cutting operations.

I.S.3210 Code for Safety procedures and practices in Electrical works.

I.S.3696 Safety for Scaffolds and Ladders.

Name of work: Providing Initial repair of faulty fire fighting and fire detection equipments and AMC of Fire fighting / wetriser system and AFD system at TE KK Nagar, Chennai (SW:- Initial repair of Fire fighting and Fire detection system)

PROFORMA OF SCHEDULES

(Operative Schedules to be supplied separately to each intending tenderer)

SCHEDULE 'A'

Schedule of quantities : Attached

SCHEDULE 'B'

Schedule of materials to be issued to the bidder: Nil

SCHEDULE 'C'

Tools and plants to be hired to the bidder: Nil

SCHEDULE 'D'

Extra schedule for specific requirements/documents for the work, if any: Nil

SCHEDULE 'E'

Schedule of components of Materials, Labour etc. for escalation: Nil

SCHEDULE 'F'

Reference to General Conditions of contract :

Name of work:	As per NIT notification page
Estimated cost of work:	
Earnest money:	
Security Deposit and performance Guarantee	

General Rules & Directions: Officer inviting tender:

Executive Engineer (E)
Electrical Division-I
Chennai

Definitions:

2(v) Engineer-in-Charge

Executive Engineer (E), ED-I,
Chennai

2(vi) Accepting Authority

SE (E), Electrical Circle-II, Chennai

2(x) Percentage on cost of materials
and labour to cover all
over heads and profits

10% (TEN)

CLAUSE 5

Time allowed for execution

Two Months

Authority to give fair and reasonable
extension of time for completion of work:

SE (E), EC-II, Chennai

Competent Authority for deciding reduced rates:

SE (E), EC-II, Chennai

Clause 25

Competent authority for conciliation:

SE (E) not in-charge of the work.

BSNL EW-8
Bharat Sanchar Nigam Limited
Electrical Wing

Electrical Division: I, Chennai

Sub Division: ESD III, Chennai

1. I/we have read and examined the notice inviting tender, schedule, specifications applicable, Drawings & Designs, General Rules and Directions, Conditions of Contract, clauses of contract, special conditions, Schedule of Rates and other documents and Rules referred to in the conditions of contract and all other contents in the tender document for the work.
2. I/We hereby tender for the execution of the work specified for BSNL within the time specified, schedule of quantities and in accordance in all respects with the specifications, designs, drawings and instructions and other documents and Rules referred to in the conditions of contract and all other contents in the tender document for the work.
3. I/We agree to keep the tender open for ninety (90) days from the due date of submission thereof and not to make any modifications in its terms and conditions.
4. If I/We, fail to commence the work specified, I/We agree that the said BSNL shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely and the same may at the option of the competent authority on behalf of BSNL be recovered without prejudice to any other right or remedy available in law out of the deposit in so far as the same may extend in terms of the said bond and in the event of deficiency out of any other money due to me/us under this contract or otherwise.
5. Should this tender be accepted, I/We agree 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 upto maximum of percentage mentioned in clause 12.3 of the tender form and those in excess of that limit at rates to be determined in accordance with provisions contained in clause 12.2.
6. I/we agree to furnish to BSNL, Deposit at Call receipt/FDR/ Bank guarantee of a Nationalized/ Scheduled Bank for an amount equal to 5% of the of the contract value in a standard format within two weeks from the date of issue of award letter. I/We agree to keep the performance bank guarantee valid as per the BSNL terms and conditions.
7. 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 there from to any person other than to whom I/We am/are authorized to communicate the same or use the information in any manner prejudicial to the safety or interest of BSNL.

Name of work: Providing Initial repair of faulty fire fighting and fire detection equipments and AMC of Fire fighting / wetriser system and AFD system at TE KK Nagar, Chennai (SW:- Initial repair of Fire fighting and Fire detection system)

<p>Signature of Witness (required in the case of bidder's thumb impression is given by the bidder in place of signature) Occupation of Witness :</p>	<p>(Signature of bidder) (Name & Postal address)</p> <p style="text-align: center;">Seal of Bidder</p> <p>Date:</p>
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Acceptance of Tender

The above tender (as modified by you as provided in the letters mentioned hereunder) is accepted by me for and on behalf of BSNL for a sum of Rs. _____
(Rupees_____)

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

- a)
- b)

For & on behalf of BSNL

Dated

Signature :
Designation :