

NAME OF WORK : Replacement of scrapped Automatic Wet Riser system for Haddows Road TE building, Chennai.



BHARAT SANCHAR NIGAM LIMITED

(A Govt of India Enterprise)
(Electrical Wing)

**O/o The Executive Engineer (E)
BSNL Electrical Division-III**

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E-TENDER DOCUMENT

**NAME OF WORK : Replacement of scrapped Automatic Wet Riser system for
Haddows Road TE building, Chennai.**

NIT No : 67 / EEE/ED-III/CH/2017-18

This tender document contains **48(forty eight)** pages only.

For E Tender Help Desk of M/s ITI Limited.Tel.No.011 49424365; or Shri. Dinesh , (Mobile: 9894191904), Shri Kirubakaran (Mobile No9962676264), Representatives of M/s ITI Limited & Mail Id : twhelpdesk680@gmail.com, bsnltwhelpdesk@gmail.com

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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-III, 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	"Replacement of scrapped Automatic Wet Riser system for Haddows Road TE building, Chennai."
2	Estimated cost put to tender (Rs.)	Rs.31,30,496/-
3	Earnest Money (Rs.)	Rs.62,610/-
4	Period of completion	Three months
5	Last date & time for downloading of tender document by bidder	Up to 14:55 Hrs. on 23-08-2017
6	Last date & time for online submission of tender	Up to 15:00 Hrs. on 23-08-2017
7	Last date & time for submission of original Tender cost and EMD	Up to 15:00 Hrs. on 23-08-2017
8	Date and time for opening of tender	15:30 Hrs. on 23-08-2017
9	Tender cost (Non refundable)	Rs.500/- (+) GST 5%=Rs 525/-
10	E-tender Processing fee (Non refundable)	0.05% of estimate cost subject to the minimum of Rs.500 and Maximum of Rs. 5000 plus GST

ELIGIBILITY CRITERIA

The bidders satisfying the following conditions:

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:*

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 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.*

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
 - 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. ~~Electrical license issued by Govt. of Tamil Nadu~~
 - g. GST Registration Number Details, as applicable
 - h. PAN Card
 - i. EPF and ESI Registration certificate (if applicable)
 - 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 before 3:00 PM on the tender opening date, failing which the tender shall not be opened.

BSNL EW-6
Bharat Sanchar Nigam Limited
Electrical Wing

Electrical Division: ED-III,Chennai

Sub Division: II, Chennai

Item rate tenders on single bid system are invited on behalf of CMD,BSNL for the work **"Replacement of scrapped Automatic Wet Riser system for Haddows Road TE building, Chennai."** 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.31,30,496/-** This estimate, however, is given merely as a rough guide.
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 **three 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 www.tenderwizard.com/BSNL 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. Interested bidder who wishes to participate in the bid shall pay the e-tender processing fee to M/s. ITI Limited through their e-gateway by credit / debit card / internet banking / RTGS / NEFT facility.
12. 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.
13. 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.
14. The last date for online submission of bid is **23-08-2017 up to 3:00 PM** and the bid submitted shall be opened at **03:30 on PM 23-08-2017**. If a holiday is declared on the tender opening day, the tender will be opened on the next working day.
15. The e-Tender processing fee is non-refundable.
16. **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.**
17. **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.**
18. 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.
19. 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.

20. 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.
21. 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.
22. 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.
23. 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.
24. 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.

25. 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'**.
26. **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.
27. 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.
28. 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:-
 - 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, subsequent amendments issued and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.
 - b. 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.

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

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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)

SCHEDULE OF QUANTITIES

Name of Work: Replacement of scrapped Automatic Wet Riser system for Haddows Road TE building, Chennai.

Sl. No	Description of itmes	Qty	Rate in Rs.	Rate in words	Unit	Amount in Rs.
1	Supplying, Installing, Testing and commissioning of electric driven Horizontal split case centrifugal fire pump with cast iron casing, Bronze impeller, stainless steel Shaft having capacity 2850 LPM at 70mtrs head and directly coupled with totally enclosed fan ventilated squirrel cage induction motor suitable for 3 phase 415V, 50HZ, 75HP with all accessories like common base frame, grouting bolts and nuts, coupling guard, anti-vibration mounting pads with all accessories on the existing foundation with minor modification of foundation as required for pump set including painting and sign writing etc., as required.(Make : Kirloskar Model No.DSM100-36 or Similar superior make)	1 set			Set	0
2	Supplying, Installing, testing and commissioning of Diesel engine driven horizontal split case standby centrifugal pump with cast iron Casing, bronze impeller, Stainless steel shaft having capacity 2850 LPM at 70mtrs head, directly coupled with water cooled diesel engine of not less than 75HP with all accessories like common base frame, coupling, anti-vibration mounting pads etc., including 12V 180 AH battery with leads, instrument panel, fuel tank, LLOP cut out, exhaust piping arrangement with glass wool insulation wherever necessary, fuel pipe line and hand fuel pump with hose , earthing the same on the existing foundation with minor modification of foundation if required for diesel engine driven pump set including painting and sign writing etc., as required. (Make : Kirloskar, pump model: UP100-38 and Engine Model: 4R1040T or similar superior make)	1 set			Set	0

3	SITC of cubicle control panel fabricated out of 16 SWG (1.6 mm thick) MS sheet, powder coating with PO RED colour, sign writing etc. , including busbars, control wiring with multi core copper conductor cable as required incorporating automatic starting signalled by pressure switches with Fully automatis Star Delta motor Starter 75 HP without No volt coil/SPP/Overload Relay (L&T make MN65 FASD) for Electric Motor Driven Pumpset having 200A Switch Disconnecter Fuse Unit as incoming and 1 no 125A SDF as outgoing (TPN) & 2 nos 63 A SDF (TPN) as outgoing switches with HRC fuses, ammeter, Voltmeter with selector switches, indicating lamps, alarms, auto/manual selector switch etc. as required	1 set		Set	0.00
4	SITC of cubicle control panel fabricated out of 16SWG(1.6mm thick) MS sheet, painting, sign writing etc., including bus bars, control Wiring and multi-core copper conductor cable as required for Engine control panel providing automatic starting signal to the diesel engine on receipt of command signal from pressure switch. The panel also includes main ON-OFF switch, main On indication, DC Circuit fuse, AC Circuit fuse, charging control (trickle / boost) selector switch, auto / manual battery charging voltmeter and ammeter, system ON indication, DC fuse blown Indicator, re-set switch, alarm cut-off switch, engine manual start switch, engine stop switch and indications for LLOP, HWT, HLOP, over speed shut down etc., as required.	1 set		Set	0.00
5	Providing Priming Water Tank of capacity 500 ltrs made of Sintex Plastic Loft Type with suitable pedestal , IN/OUT connections, drain / Overflow connections, manhole cover on top etc. as required. (SINTEX IWS 50.01 or similar superior)	1 set		Set	0
6	S/F of C.I. Foot valve conforming to IS: 4038 PN 0.2 with strainer with nuts, bolts, gaskets, washers etc for positive suction etc. complete as required (make: Kirloskar / Zoloto/Sant/Leader or Similar superior) a) 200mm dia Foot valve	2 Nos		each	0

7	S/Fof dual plate non-return valve of following sizes confirming to IS: 5312 Part -I PN 1.6 complete with rubber gasket, bolts, nuts washers etc. as required. (Make : Kirloskar/Zoloto/sant/Leader or similar superior) a)200 mm dia Non return valve	2 Nos			each	0
8	Supplying of 'C' class heavy duty MS pipe conforming to IS:3589 Gr:330 including MS fittings like elbows,tees, flanges, tapers, nuts bolts, gaskets etc. on surface and providing cement concrete blocks as supports, and painting with two or more coats of synthetic enamel paint of required shade complete as required. (a) 200 mm Dia (wall thickness not less than 6.35 mm)	75 Mtrs			mtr	0
9	Supplying of 'C' class heavy duty MS pipe conforming to IS:1239 including MS fittings like elbows, tees, reducers, flanges, tapers, nuts bolts, gaskets etc., fixing the pipe on wall/ ceiling with suitable clamps, masonry support and painting with one coat metal primer and two or more coats of synthetic enamel 'Fire Red' paint of required shade complete as required. (a) 150 mm dia	250 Mtrs			mtr	0
10	Supplying,of following sizes double flanged sluice valves confirming to IS 14846 PN 1.6 rating with non rising spindle, bronze seat duly ISI marked, cast iron body, complete with gaskets, nuts, bolts and washers conforming to IS 780 etc. complete as required.(Make : kirloskar/Zoloto/Sant / Leader or Similar superior)					
	a) 200mm dia	2 Nos			each	0.00
	b) 150mm dia	8 Nos			each	0
11	Supply and fixing Industrial Pressure switch including necessary brass ball valve, couplings, etc., connected with electrical main control panel and set up at proper differential so as to auto start & auto stop the electrical motor, jockey motor i/c control wiring etc., as required. (Make: Indfoss/Danfoss Or Similar Superior)	3 Nos			each	0
12	Supply and fixing 150mm dial pressure gauge 0-14 kg/cm ² SS casing i/c necessary brass ball valve valve, milling thread MS coupling fixed at delivery pipe line, Connections as required.	2 Nos			each	0

13	Supply, installing, testing and commissioning of forged brass Air Release Valve of 20mm dia with forged brass ball valve so as to release air lock at top most wet riser in 100mm dia MS pipe Connection as i/c unnecessary brass ball valve etc. as required. (Make : Zoloto Or Simillar Superior)	2 Nos			each	0
14	Providing wrapping/coating anti-corrosive treatment for 150mm dia MS pipe in ground as per standard method of one coat metal primer, one coat Bitumen and tar felt over coating complete as per specification etc. as required.	25 Mtrs			mtr	0
15	Excavating trenches of required width for pipes, depth upto 1.2 m, including getting out the excavated soil, and then returning the soil as required, by ramming, watering, etc. and disposing of surplus excavated soil as directed by Engineer in charge 200mm/150mm dia pipe	75 Mtrs			mtr	0
16	Supply, installing, testing and commissioning of oblique type 63 mm dia stainless single outlet steel hydrant valve with oblique type instantaneous coupling with rotating wheel including MS flange complete as required	9Nos			each	0
17	Supply and fixing Reinforced Rubber lining hose of 63 mm dia of 15 mtrs length with 63mm dia Stainless steel male and female instantaneous fire fighting special coupling complete as required.	18Nos			each	0
18	Supply and fixing 63mm dia stainless steel short length branch pipe with spray nozzle of 15mm complete as required.	9Nos			each	0
19	Supply and fixing MS Fire Hose Box size 750 x 600 x 250 mm made of 18 SWG sheet with glass but with key, PO RED Powder coating, to accommodate 15 mtrs hoses 2 nos and 1 no branch pipe etc. complete as required.	9Nos			each	0
20	Supplying and fixing Fire Brigade Connection fabricated of Cast Iron body having four gun metal 63mm male instantaneous inlets conforming to IS 903 fitted with non return valves, flanges, outlet, rubber blank caps and chains etc. complete as required.	1Nos			each	0

				Total Amount -A	0.00
		SGST Rate %		SGST Amount (B)	
		CGST Rate %		CGST Amount (C)	
		IGST Rate %		IGST Amount (D)	
Grand Total (A+B+C+D)					0.00

IMPORTANT NOTE:

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.

Contractor

Executive Engineer(E)

IMPORTANT NOTE TO THE CONTRACTOR

1.TERMS AND DUTIES:

The firm shall quote rates for all items & GST as applicable. **No concessional form will be issued by the Department.**

2.TERMS OF PAYMENTS:

80% After supply of Control Panel & Pumps

10% After installation

5% After commissioning.

For remaining items on prorata basis as per progress of item. Final 5% after clearance of A/T and by Fire department in case of Wet riser (In case after inspection, approval is not accorded on account of items beyond the scope of contractor his work can be considered as cleared).

4.PROGRAMME FOR EXECUTION:

The firm shall supply detailed program to Engineer-in-charge for execution of contract within fifteen days of award of work. The program shall contain details about submission of drawing, supply of materials, Tentative dates for installation, commissioning shall be also submitted.

5.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 sources. Lockable space for storing the material may be provided on request from the contractor. However safe custody of the material stored at site will be responsibility of the contractor.

6.CO-ORDINATION AT SITE:

At the site of work more than one agency may be working. Full co-operation shall be extended to other agencies during 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 Department engaged in erection as well to normal routine work.

7.TEST CERTIFICATES:

- The firm shall submit following test certificates on supply of the material at site.
- Manufacturer test certificates for Pumps, engine and motors.
- Control panels.

8.DATE OF COMPLETION:

Date of successful initial testing (performance testing) of the system shall be taken as date of completion of the work. Formalities like grant of EOT, completion certificate etc. shall be initiated immediately after this date. However these shall be subjected to successful A/T.

9.COMPLETION DRAWINGS:

- ❖ The firm shall supply three sets of drawings / documents after physical completion of the work but before the proposed date of initial testing.
- ❖ Installation drawing giving complete details of the entire equipments .
- ❖ Layout of risers, hydrants, panels and cables.
- ❖ Schematic control wiring diagram giving detailed sequence of operation.
- ❖ Service manuals of the fire fighting and detection system and salient features of the fire protection system.

10.GUARANTEE AND DEFECT LIABILITY:

The guarantee shall be valid for a period of 12 months after provisional taking over. The contractor shall guarantee that all equipments shall be free from any defect due to the defective materials and bad workmanship and that the equipment shall work satisfactorily and that the performance and efficiencies of the equipment shall be not less than the guaranteed value.

Any parts found defective, during the guarantee period shall be replaced by the Contractor without any charge whatsoever. The service of the Contractor's personnel if requisitioned during this period for such work shall be made available free of any cost to the Department.

11.TRAINING OF BSNL PERSONNEL:

The firm shall arrange training to the BSNL staff on following aspects before provisional take over of the system.

- ◆ Operation of the system.
- ◆ Adjustment and settings of control and protective gears.
- ◆ Preventive maintenance.
- ◆ Trouble shooting.

SCOPE OF INSTALLATION WORK

The scope of installation work shall include the following, whether or not, expressly mentioned in the schedule of work.

- 1) Modification in the existing Cement concrete foundation if required for all the pump sets.
- 2) Vibration isolation arrangement for all the pump sets.
- 3) Filling up the hole in flooring with cement concrete after laying the wet riser pipes.
- 4) Necessary supports in the pump room.
- 5) Necessary supports & clamps for the wet riser plumbing inside the building.
- 6) Supporting bracket frame work for the fuel tank of the engine.
- 7) Excavation of earth, consolidation and refilling after laying wet riser piping in ground.
- 8) Necessary anchor block of ample dimension in 1:2:4 cement concrete at all bends Tee-connections, foot of the wet risers, and other places as required to stand the pressure of the thrusting pipes.
- 9) Necessary masonry / steel works for supporting the hose cabinets near the external hydrants.
- 10) Cutting and making good the damages on walls / floors for installation of piping system.
- 11) All control cabling with copper conductor cables.
- 12) MS angle frame work to support the battery boxes.
- 13) Orifice plates at individual hydrant outlets as required.
- 14) All fuel and exhaust piping for diesel engine.
- 15) Approval by local bodies. It shall be the responsibility of the contractor to obtain the approval of the drawings and to get the installation inspected and passed by the concerned agencies as may be required as per local By-laws. Any fee payable to the local bodies for such activities shall also be borne by the contractor.
- 16) The contractor shall supply three copies of operating and maintenance manual.
- 17) Necessary diesel & lub oil shall be supplied by the contractor for A/T purpose.

No concessional form shall be supplied by the department.

CONTRACTOR

EXECUTIVE ENGINEER (E)

SPECIFICATION

SPECIFICATIONS FOR FIRE FIGHTING SYSTEM

The automatic wet riser shall be provided to meet with the requirement of current rules & regulations of Tamilnadu fire prevention wing. The Contractor shall carry out the work as per the specifications & requirements of Tamilnadu Fire prevention wing. The work also includes preparation of drawings, taking approval, arranging inspection and getting No Objection Certificate (NOC) of the installation from Fire Prevention Officer.

One electrical motor driven pump and One diesel engine driven pump of the same capacity shall be provided to provide protection in case of power failure/stand by for wet riser with necessary inter connection shall be provided to ensure 3.5 kgs./sq.cms. at the topmost hydrant. One jockey (Pressurization) Pump shall be provided for wet riser system.

The fire fighting arrangement is based on the guidelines of the Fire Brigade, on the basis of which only the tenderer should quote.

All manufactured items incorporated in the installation shall be of reputed quality and certified by approved test houses or institutions. (As specified in the list of applicable standards and makes).

Tenderer are advised to select these items judiciously from reputed manufacturers and proper sizes accepted for 1st. grade fire installation.

Availability of spares, prompt after sales service locally through manufacturer's representatives shall be the prime consideration in selecting these equipments.

Fire Hydrant System:

The hydrant system essentially consists of a large network of piping, both underground and above ground, which feeds pressurized water to a number of indoor and outdoor hydrant valves.

Ground hydrants have been provided along with M.S. stand post and sluice valves.

The underground network of piping shall be provided with M.S. Piping.

System Components:

For details of various components please refer attached sections as detailed below:

Section - 1 Centrifugal pumps

Section - 2 Motors

Section - 3 Diesel Engine and Accessories

Section - 4 Fire water Piping

Section - 5 Underground protections for piping

Section- 6 Fire protection equipment valves

SECTION – 1

HORIZONTAL CENTRIFUGAL PUMPS

1.0 SCOPE

1.1 This specification covers the design, performance, manufacture, construction features, testing and delivery to site of Centrifugal Pumps.

2.0 CODES & STANDARDS

2.1 The design, manufacture and performance of the "Centrifugal Pumps" shall comply with all currently applicable statutes, regulations and safety codes in the locality where the equipment will be installed.

3.0 DESIGN REQUIREMENTS

3.1 The equipment shall be capable of developing the required total head at rated capacity for continuous operation.

3.2 The total head capacity curve shall be continuously rising towards the shut-off with the highest at shut off.

3.3 Pumps of a particular category shall be identical. Identical pumps shall be suitable for parallel operation with equal load division. Impellers shall preferably be of non overloading type.

4.0 TESTS & INSPECTION

4.1.1 Necessary test certificates for the various tests shall be furnished by the contractor.

5.0 TENDER DRAWINGS

5.1 The following drawings shall be submitted by the Tenderer along with their bids.

5.2 Preliminary outline dimensional drawings showing the details of pump and motor. Suction, discharge connections and foundation details shall be indicated.

5.3 Performance curves capacity vs. vital head, efficiency, NPSH and KW requirement ranging from run out to pump shut off.

SECTION – 2

MOTORS

1.0 SCOPE

1.1 This specification covers the design, material, construction features, manufacture, inspection and testing at the contractor's/Manufacturer's works, delivery to site and performance testing of three phase squirrel cage induction motors for firefighting purpose.

2.0 CODES AND STANDARDS

2.1 The design, material, construction, manufacture, inspection, testing and performance of induction motor shall comply with all currently applicable statutes, regulations and safety codes in the locality where the equipment will be installed. The equipment shall also conform to the latest applicable standards. Nothing in this specification shall be construed to relieve the contractor of this responsibility (IS-325)

3.0 PERFORMANCE AND CHARACTERISTICS

3.1 Motors shall be capable of giving rated output without reduction in the expected life span when operated continuously under variation of rated supply voltage and rated frequency.

3.2 Motors shall be suitable for full voltage direct-on-line starting or star-delta starting.

3.3 Motors shall be capable of starting and accelerating the load with the applicable method of starting, without exceeding acceptable winding temperatures, when the supply voltage is in the range 85% of the rated motor voltage to maximum permissible voltage specified.

3.4 The locked rotor current of the motor shall not exceed 600% of full load current (subject to tolerance as per the applicable standard) unless otherwise specified.

3.5 Motors shall be designed to withstand 125% of rated speed for two minutes without any mechanical damage, in either direction of rotation.

3.6 The motor vibrations shall be within the limits specified in applicable standard unless otherwise specified for the driven equipment.

3.7 Except as mentioned herein, the guaranteed performance of the motor shall be met with tolerances specified in applicable standard.

4.0 INSULATION

4.1 Any joints in the motor insulation such as at coil connections or between slot and end winding sections shall have strength equivalent to that of the slot sections of the coil.

4.2 The insulation shall be given tropical and fungicidal treatment for successful operation of the motor in hot, humid and tropical climate. The tropicalising treatment shall be as per the applicable standard.

5.0 TESTS

5.1 Motor shall be subjected to all the routine tests as per applicable standard and copies of test certificates of type and routine tests, as specified in the distribution schedule, shall be furnished to department. These tests are to be carried out at Manufacturer's factory.

6.0 Electric driven pump Requirements

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 cage induction type suitable for operation on 415 V, 3 phases, 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.

SECTION -3

DIESEL ENGINE AND ACCESSORIES

1.0 SCOPE

1.1 This specification covers the design manufacture, inspection at the contractor's/ Manufacturer's works delivery to site, commissioning and performance testing of Diesel engine and accessories.

2.0 CODES AND STANDARDS

2.1 The design, manufacture and performance of Diesel engine and accessories shall comply with all currently applicable statutes, regulations and safety codes in the locality as amended up to date where the Equipment will be installed.

3.0 DESIGN REQUIREMENT

3.1 Diesel Engine

3.1.1 The diesel engine shall be vertical single acting, mechanical injection type and shall be furnished with at least the minimum equipment according to standard practice. The horse power rating, required ancillaries, guarantees of fuel consumption, governor performance and vibration shall be in accordance with IS:10002/ISO:3046/BS:5514 as amended up to date.

3.2 Diesel system

3.2.1 The contractor shall supply an overhead diesel oil storage tank of 6 hours rated capacity to be installed with level indicator to indicate low and high levels.

3.2.2 An fuel oil pump shall take suction from a fuel oil head tank to deliver fuel oil to injectors through duplex filters or two 100% capacity filters.

3.3 Cooling system

Water cooled system shall be complete with Radiator.

3.4. Engine Starting system

3.4.1 Starting of the diesel engine shall be by means of a battery powered electric starter motor as specified in manual.

3.5 Diesel engine and accessories

3.5.1 The electric starting system shall comprise of starter motor, starter batteries and battery charger and all the required instruments and accessories. Necessary auto manual selector switch shall be provided on the diesel engine control panel. A voltmeter should be provided and installed so that the voltage of the batteries may be ascertained.

3.6 Air intake and Exhaust system

3.6.1 The contractor shall provide an air intake filter.

3.6.2 Exhaust manifold shall be cast iron and it shall be suitable lagged. Exhaust gas shall be led out through an exhaust silencer, necessary pipes, asbestos rope, etc, shall be provided by the contractor.

3.7 Governing System

3.7.1 The governor shall be of mechanical type.

4.0 CONTROL SYSTEM FOR DIESEL ENGINE

4.1 Unless otherwise specified tripping of the diesel set for a normal shutdown will be done manually by means of push buttons.

4.2 The diesel engine shall be tripped under the following abnormal conditions:

- a) Low lubricating oil pressure (LLOP).
- b) High water temperature (HWT).

5.0 CONTROL PANEL AND WIRING

5.1 Suitable control panel comprising of necessary auxiliary relays, push buttons, voltmeters, DC ammeters, DC motor starter, control switches, etc, with complete panel internal wiring shall be provided by the contractor. Once the start push button is pressed or starting impulse is given (in the case of automatic starting), complete starting sequence shall be automatic and the starting motors shall automatically disengage and stop after the engine picks up speed. When the engine stops, all the controls shall automatically be reset to its normal starting operation.

5.2 Instruments for Engine

5.2.1 The following instrumentation shall be provided:

5.2.2. Pressure switches shall be provided for lube oil system to give an alarm if the pressure falls below a preset value and subsequently trip the unit when the minimum safe pressure limit has been reached.

5.3.3. High Temperature switch shall be provided for water high temperature to give an alarm if the temperature goes higher than a present value and subsequently trip the unit when the maximum safe temperature limit has been reached.

5.4. Radiator Cooling

5.4.1 The radiator shall be fitted on engine for cooling lube oil and jacket water.

6.0 Engine Driven pump Requirements

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. The specification of the pump shall conform to the same specification for electric pump except speed. 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 include, 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 of minimize transmission vibration

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

SECTION – 4

FIRE PROTECTION EQUIPMENT FIRE WATER PIPING

1.0 SCOPE

This specification covers the technical requirements and essential particulars for supply, fabrication, erection, testing and commissioning of fire protection piping system.

2.0 CODES & STANDARDS

2.1 Compliance for all items hereinafter described with all currently applicable statutory regulations and safety codes applicable in the locality where the equipment is to be installed in mandatory.

3.0 DESIGN REQUIREMENTS

3.1 The piping shall follow the functional routing as per the drawing to be prepared by the contractor and to be approved by the department. However, deviations may be indicated, if any. Contractor is responsible for any deviation and/or deficiency from the point of view of fire insurance.

3.2 The piping shall be laid underground except where above ground piping is required to be laid.

3.3 Necessary flanged fittings with blind flanges, wherever indicated shall be provided for future expansion.

3.4 All above ground pipes shall be painted in accordance with the regulations of Fire Department.

4.0 PIPING

All necessary water piping and fittings for the complete fire protection system shall be of M.S. heavy duty pipes for Wet Riser for underground and aboveground pipes including flanged joints and welded joints as applicable. All M.S. fittings to be used in connection with M.S. pipelines shall be as per IS:1239 heavy grade. All underground pipes will be protected for anti-corrosive treatment. The pipes will be cleaned. One coat of primer paint will be applied on the pipes. One coat of bitumen and hessian cloth, one more coat of paint 'Black Japan'. The above ground pipes will be painted one coat of primer and two coats of post office fire red paint/blue shade.

- i. Pipes shall be securely fixed to walls/ ceiling as under:
- ii. MS angle and threaded U-shaped GI clamps shall be used for this purpose.
- iii. The angle shall be fixed to ceiling/ beam/ wall with the help of anchor fasteners and clamp shall be fixed to the angle with nuts.
- iv. Size of angle and diameter of U-clamp shall be as under:

Pipe size (mm)	Size of angle (mm)	Diameter of U-clamp (inch)	Maximum distance between two supports (Meters)	Minimum no. of anchor fasteners
25, 32, 40, 50	20x20x3	5/16"	3.5	2
65, 80, 100	25x25x4	3/8"	4	4
125, 150	40x40x5	3/8"	4	4

5.0 TESTS

5.1 All piping joints (above ground and underground) shall be tested to a minimum pressure equal to the pump operating pressure or the maximum head developed by the pump, whichever is higher, in the presence of departmental representative. Any leakage noted at the time of testing shall be rectified at no extra cost to the department and piping shall be tested to the pressure mentioned above till no leakage is noticed.

6.0 MODE OF MEASUREMENTS

a) All piping shall be measured in linear length along the center line of the pipeline including bend union, reducer etc. b) All non return valves, sluice valves, etc, shall be measured in numbers.

7.0 BID DRAWINGS

7.1 Contractor shall submit preliminary layout drawing indicating approximate rating and size of pipes.

SECTION – 5

UNDERGROUND PROTECTION FOR PIPING

1.0 SCOPE

1.1 The purpose of this specification is to describe the technical requirements for application of hot coal tar enamel.

2.0 GENERAL

2.1 The coating shall consist of one coat of black Japan anti-corrosive primer paint and one coat of bituminized hessian cloth and one final coat of black Japan primer paint.

3.0 SURFACE PREPARATION

3.1 Pipe surface shall be cleaned thoroughly either by mechanical process or by hand brush, so that it is completely free from rust and dirt. The cleaning shall be so carried out that it shall be free from mill scale, rust, oil, welding scale and other foreign materials.

4.0 PAINTING COAT

4.1 The priming paint shall be of 'Black Japan' anti-corrosive primer recommended by the manufacturer for the grade of enamel used and shall be thoroughly fixed before using by stirring or by rocking the drum to provide uniformity of material. The primer paint should be applied over a thoroughly clean and dry surface immediately following the cleaning operation and shall be applied with a uniform thickness on the top, sides and bottom of the pipe using quantity of primer recommended by manufacturer. The primer shall be thoroughly dry before the bituminised hessian cloth is wrapped.

SECTION – 6

FIRE PROTECTION EQUIPMENT VALVES

1.0 SCOPE

1.1 This specification covers the design, performance, manufacture, construction features, testing and delivery to site of hydrant valves for fire protection service.

2.0 CODES & STANDARDS

2.1 Compliance for all items hereinafter described with all currently applicable statutory regulations and safety codes applicable in the locality where the equipment is to be installed is mandatory. The system as well as individual items shall in particular comply fully with regulations of Tamilnadu Fire prevention authority. The system and its associated equipment shall also conform to the currently applicable Indian Standards. In the absence of Indian Standard, British and American or equivalent standards should be followed. For items not covered under any standard, Contractor shall indicate his practice.

3.0 VALVES

a) SLUICE VALVES

The sluice valves shall be provided at the required point to obtain best possible pressure at the seat of fire. Isolating valves are provided for maintenance purpose also. The sluice valves will be of C.I. flanged type conforming to IS: 780/IS: 14846, Class PN: 1.6 The body shall be of C.I. and the trim of gun metal. Valve hand wheel shall be marked with an arrow head engaged showing the turning direction for open and close. Valves up to 50mm size shall have screwed ends. Non-return valves shall be suitable for minimum shut- off head. The valves shall be swing check type with body, cover, door of C.I. and with body ring and bearing bush of gun metal. Valves up to 50mm. size shall have screwed ends, and 80mm. and above size valves shall have flanged connection.

NOTE: While following the Indian Standards mentioned in these specifications, the latest revision and amendments have to be considered for implementation.

CODES & STANDARDS

Compliance for all items hereinafter described with all currently applicable statutory regulations and safety codes applicable in the locality where the equipment is to be installed is mandatory. The system as well as individual items shall be in particular comply fully with regulations of Tamilnadu Fire prevention authority. The system and its associated equipment shall also conform to the currently applicable Indian Standards. In the absence of Indian Standards, British and American or equivalent standards should be followed. For items not covered under any standards, Contractor shall indicate his practice.

CONTROL CABINETS/PANEL

1.0 SCOPE

1.1 This specification covers the design, material, construction features, manufacture, inspection and testing at the contractor's works, delivery to site and performance testing of control cabinet including switchgear up to 415 V.

2.0 CODES & STANDARDS

2.1 Tamilnadu Fire prevention Authorities approval.

3.0 CONSTRUCTIONAL FEATURES

3.1 Control cabinets shall be sheet steel enclosed and shall be dust, weather and vermin proof. Sheet steel used shall be CRCA and at least 16 SWG. thick and properly braced to prevent wobbling.

3.2 Control cabinets shall be provided with hinged door (s) with padlocking arrangement.

3.3 All doors, removable covers and plates shall be gasket all around with neoprene gaskets. Louvers, when provided shall have screens and filters. The screens shall be of fine wire mesh made of brass or GI wire.

3.4 Suitable removable cable gland plate shall be provided on the cabinet. Necessary number of cable glands shall be supplied/fitted on to this gland plate. A cable gland shall be screwed-on type and made of brass.

3.5 All sheet steel work shall be degreased, pickled, and phosphated and then applied two coats of zinc chromate Primer and two coats of finishing synthetic enamel paint, both inside and outside.

4.0 OPERATION OF THE PUMPS

Operation of the pumps shall be automatic against constant build up of water pressure of 3.5 kg/sq.cm. at the top landing in the wet risers and any fall in pressure due to the operation of any hydrant valve shall actuate the fire pump. Air vessels with electrically operated pressure switches shall be provided to keep the system automatic. System shall be complete with necessary connections, pipe work, fittings, accessories, gauges, etc. as well as necessary controls and interconnected cable work to meet the functional requirements. All gauges and control connections shall have isolation valves. Air vessel shall be tested for double the working pressure. All the pumps shall have a common motor control panel. All the pumps shall also have the facility of manual starting/shut down from the pump house in addition to automatic starting control panel shall have automatic/manual change over facility in addition to various standard features.

4.1 In general the pressure switches shall be pre-set as under:

4.1.1 Jockey pump at pump house - START: 5.50 kg/sq.cm. STOP: 6.50 kg/sq.cm.

4.1.2 Main electric pump at pump house - START: 4.5 kg/sq.cm. STOP: Manually

4.1.3 Diesel engine pump at pump house - START: 3.5 kg/sq.cm. STOP: Manually

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.

GENERAL SPECIFICATION

1. The work shall be carried out as per the CPWD General specification for Electrical works Part V (Wet riser & Sprinkler Systems) 2006 amended up to date.
2. It shall be the responsibility of the contractor to obtain the approval of drawings and passed by the concerned agencies, as may be necessary as per local bye laws.
3. Data manuals and drawing to be furnished by contractor After Award of work: - The contractor shall submit the required drawings within three weeks time after award of work, for approval by the Engineer in charge. The above drawing shall be furnished in 5 sets each or as required by fire authority to process the NOC, wherever required.
4. When the drawing is completed in all respects, the agency shall arrange for inspection, if required by the local fire authorities to get the NOC, if applicable.
5. All wiring and earthing shall confirm to I.S. Rules Regulations amended upto date.
6. The supplier shall have to submit drawings for approval before starting the installation.
7. The suppliers have to obtain approval from concerned Fire Brigade authorities for major items, if required by the Department.
8. All minor building works, if any shall be done by the suppliers and if any damage to the building, instruments is caused during the execution of work that should also be made good at his cost and risk.
9. Within fifteen days of the date of the order, the contractor shall submit layout drawings in triplicate indicating the position and size of holes. If required, in the walls and floors those holes of course should be finalised after approval by Engineer-in-charge.
10. All building works such as construction of foundation for the equipment changes in the wall for conduits etc., if required shall be included in the tender.
11. Contractor shall be responsible for the removal of the debris and materials arising out of the work done by him from the site.
12. Prior approval of the Engineer-in-charge shall be obtained by the successful tenderer before commencing the installation of the system in all respects and the decision of the Engineer-in-charge shall be final and binding.
13. The Electrical load requirements for the equipment installed shall be indicated and also be furnished when the work is completed. All electrical wiring shall conform to I.S. specification and I.E.E. regulation. Earthing arrangements for the electrical panel shall be provided by the contractor.
14. Supplier shall guarantee of at least 12 months from the date of completion of work against any materials/ manufacturing defect.
15. During the installation period of the above system, the successful tenderer shall impart training to operational staff in the maintenance of the system.

SPECIAL CONDITIONS OF CONTRACT

TECHNICAL

Contractor

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Executive Engineer

1. I.S. STANDARDS

The Fire Fighting equipment and installation shall conform to various standards amended upto date wherever applicable.

2. PROGRAM FOR EXECUTION

The firm shall supply detailed program to Engineer-in-Charge for execution of contract within seven days of award of work. The program shall contain details about supply of materials etc. tentative dates for installation, testing, commissioning of the Fire fighting shall also be submitted.

3 CO-ORDINATION

Wherever work is being carried out by more than one agency, it should be the aim of different agencies that on their account the work of other agency/agencies is not delayed. Full cooperation and full coordination is to be extended during progress of work and at the time of testing by all the agencies.

4. INSPECTION AT CONTRACTOR'S/MANUFACTURER'S PREMISES

(i) The BSNL's authorized representative shall have full powers to inspect drawings of any portion of the work or examine the materials and workmanship of the plant at the contractor's works or at any other place from where the material or equipment is obtained. Acceptance of any material or equipment shall in no way relieve the contractor of his responsibility for meeting the requirement of the specifications but shall have to be replaced free of cost by the contractor in case the equipment of work is found defective or of inferior quality.

(ii) The BSNL reserves the right to send/depute its representative for inspection of material/equipment and witness the test at manufacturer's/supplier's premises before dispatch and firm should not demand any extra payment for this.

5. CHANGES IN SPECIFICATIONS

(i) BSNL reserves the right to make changes in the specifications of the work if in its opinion the same is found necessary. However such alterations shall be made after mutual discussion and agreement between BSNL and the contractor. Any price implication in this regard shall be mutually discussed and agreed upon, in terms of clause 12 of BSNLEW-8.

(ii) Modifications or alterations by the contractor in the design/specifications of any equipment/material will not be permitted by BSNL as a matter of principle. However the same can be agreed by BSNL under the exceptional circumstances

where:

a) The same is necessitated due to non-availability of material/component of certain specification or make.

OR

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

(iii) Prior written approval of BSNL is necessary before undertaking any alteration/

modification in the specifications of the equipments.

6. PACKING, FORWARDING, STORAGE & SAFETY

Before dispatch to site, the equipment/ component/ materials shall be properly packed so as to afford protection against transit damages and damages against storage in open areas either at transporter's premises or at work site. Special care shall be taken in respect of sensitive items like heat transfer surface of cooling coils, air cooled condenser etc. When storage in open area is inevitable proper water proof covering shall be provided to protect damages on account of rain water etc. However, damaged items shall be replaced as per the direction of Engineer-in-Charge. All the stores and materials required for the satisfactory completion of the work shall be arranged at site by the contractor from his own sources. Lockable space for storing the material may be provided on request, if available. However, safe custody of the material stored at site will be responsibility of the contractor till the completion/ handing over of the work.

7. REJECTION OF DEFECTIVE PLANTS

(a) If the completed plant or any portion thereof, before it is taken over, be found defective or fails to fulfill the intent of the specifications, the contractor shall on receipt of a written notice from the Engineer-in-charge, forthwith make good the defective plant.

(b) If the contractor fail to rectify the defects and or make good the defective plant within a stipulated time mentioned in the written notice or replace the plant at no extra cost, BSNL may make good, reject and/or replace at the risk and expenses of the contractor, the whole or any portion of the plant which is defective or fails to fulfill requirements of the contract.

(c) No payment will be made for goods rejected at the site on testing. Payment if made, for such items shall be recovered from subsequent bills.

8. COMPLETION OF WORK

On completion of the work of supply, installation, testing & commissioning of Automatic wet riser system as per agreement, the work shall be considered as completed only after successful and issuance of No Objection Certificate (NOC)/ clearance from concerned FIRE authorities of Government of Tamilnadu as per local bye law.

9. COMPLETION DRAWINGS AND OPERATING MANUAL

Three sets of completed drawings and operating shall be submitted by the contractor on completion of the work.

10. TESTING AND A/T

(a) The firm shall test the entire Automatic wet riser system as per the practice and before offering for acceptance test by BSNL/concerned Fire authority. All the relevant tests to check the performance of the set shall be conducted Fire Authority at site after installation as per the decision of Engineer-in-charge. All types necessary tools, plants, material, consumables and manpower is to be provided by the firm free of cost and nothing extra will be paid on this account.

The firm will immediately comply to the defects/discrepancy points if any after testing and

intimate the necessary compliance to the Engineer-in-charge in writing. Routine test certificates for the major components of the work shall be furnished along with supply of equipment.

(b) BSNL reserves the right to depute representative for inspection of material/equipment and witness the test at contractor's/ supplier's works and the firm shall be required to perform routine/ type test for unit of each type/ model of cassette unit in the presence of BSNL representative. At least one week's notice shall be given by the contractor to the BSNL for fixing up inspection and factory test.

(c) The contractor shall operate, test and adjust all major components provided in connection with this installation and shall make all necessary adjustments for the satisfactory performance of the system.

(d) A carefully recorded detailed record of the results of these adjustments shall be furnished to the Engineer-in-charge.

(e) After installation is completed physically and all adjustments as listed above are carried out, the system shall be subjected to trial run.

(f) All test equipment, the operating personnel, consumables required for testing shall be supplied by the contractor.

11. ELECTRIC POWER AND WATER

BSNL will provide free of cost electricity & water for commissioning and testing of equipment for erection if feasible. BSNL does not guarantee the continuity of supply and no compensation whatsoever shall be allowed on this account.

12. TAKING OVER OF INSTALLATION

The Automatic Wet riser shall be taken over by BSNL for the beneficial use, after successful completion the Acceptance Testing by competent authority and issuance No Objection Certificate (NOC)/clearance from concerned authorities of Government of Tamilnadu.

13. GUARANTEE AND DEFECTS LIABILITY

i) The guarantee shall be valid for a period of 12 months after initial provisional take over. The contractor shall guarantee that all equipments shall be free from any defect due to the defective material and / or bad workmanship and also the equipments shall work satisfactorily with performance and efficiencies not less than the guaranteed values.

ii) Any parts found defective during the guarantee period shall be replaced by the contractor without any charge whatsoever. The services of the contractor's personnel, if requisitioned during this period for such work, shall be made available free of any cost to the BSNL.

iii) The contractor shall depute his representative to the site within 72 hours of notification of defects by BSNL.

iv) A joint inspection report will be prepared by the representative of BSNL and firm regarding nature of defects and remedial action required and time schedule for the rectification/remedial action shall be finalized.

v) In case the contractor fails to depute his representative within 48 hours of notification of defects or fails to cause remedial action within reasonable time as decided during joint inspection, the BSNL may proceed to do so at the contractor's risk and expenses and without prejudice to any other right, to recover such expenses.

vi) The following aspects are, however, not covered under the purview of guarantee.

(a) Consequential losses and damages.

(b) Parts subject to normal wear and tear such as V-belts, air filters and electrical contacts.

(c) Deterioration or failure of equipment, controls and piping due to corrosive atmosphere.

(d) Supply of consumable items like refrigerant, oil unless the loss of refrigerant/oil is due to defective material/ workmanship.

14. TRAINING OF BSNL PERSONNEL:

The contractor shall arrange to impart the training to the BSNL personnel on the following aspects prior to provisional takeover of the plant:-

(a) Operation and petty maintenance of Wet riser system.

(b) Adjustments of settings for controls and protective devices.

(c) Preventive maintenance

15. BYE-LAWS, INDEMNITY AGAINST LIABILITIES

a) The contractor shall comply with all bye-laws and regulations of local and statutory authorities having jurisdiction over the works and shall be responsible for payment of all fees and other charges and giving/ receiving all necessary notices and keep the Engineer-in-charge informed about the notices issued and received.

b) The contractor shall indemnify the BSNL against all claims in respect of patent rights, design, trade mark or name of other protected rights in respect of any plant, machine, work or materials used for or in connection with the work or temporary works and from and against all claims, demands, proceedings, costs, charges and expenses whatsoever in respect of or in relation thereto. The contractor shall defend all actions arising from such claims and shall himself pay all royalties.

c) License fees, damages, cost and charges of all and every sort that may be legally incurred in respect thereof shall be borne by the contractor.

d) All liabilities/ penal recoveries on matters arising out of tax/ excise/ levies such as incorrect deductions, discrepancies in the filing of returns, revised assessment by the concerned authorities etc. shall be borne by the contractor.

e) It is contractor's liability to follow all safety procedures in accordance with relevant I.S. amended up to date during execution of work at site.

16. Tests:

The following tests shall be given by the contractor and all piping modifications/other arrangements shall be to contractor's account.

Automatic operation of all the pump sets with the help of By-Pass test inside the pump house.

Fire pump discharge of minimum 3.5-kg/cm sq at the top most hydrant point.

Water for testing shall be arranged by the department free of cost.

Electric supply required for the installation of the system shall be provided at one point by the department free of cost if feasible. Decision of Engineer-in-charge will be final and binding.

Individual outlets opened flushed and closed, every isolation valve fully closed and opened under pressure to include conditions of water hammer similar to an emergency.(The tenderer shall include a write up on the method/instruments etc. he possess to apply to conduct the above tests).

Any other test may be considered necessary by the Fire Prevention authorities department for reliability of the system and for emergency.

17.Drawings:

The tender drawings accompanying these specifications are schematic and the Contractors shall follow these drawings as close as practical to do so and shall make his own working drawings. It shall be entirely the Contractor's responsibility to provide complete system as indicated and as required by applicable Fire Bye laws in the state of Tamilnadu. The Contractor shall visit the site to familiarise himself with the site conditions. The Contractor should complete the entire work as per tender specifications /Fire prevention authorities and arrange inspection visit of the Fire prevention Officer and obtain the satisfactory report on commissioning of entire Fire fighting system from the concerned Deptt. The necessary correspondence shall be done by the department as and when required.

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 40 KVA) /Escorts (up to 30 KVA)/ Eicher (up to 20 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)	ABB / Schneider Electric /Andrew Yule / Bharat Bijlee / Crompton / EMCO / Kirloskar / Siemens
	a) Above 400 KVA	
	b) Up to 400 KVA	In addition to above makes, Uttam/Automatic Electric Gear(AEG)/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
15	Cold shrink HT/LT Cable 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/ C&S/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 / 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 Glass wool	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 Smoke Detector	Appollo / Cerebrus / Edward / Fenwal/ Hochiki / Nitton / Wormald
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
44	Lift	OTIS, Kone, Mitsubishi , Schindler,Johnson

- a. Any other approved makes as approved till the date of opening of tender shall be included in the approved make.

Contractor

Executive Engineer(E)

LIST OF INDIAN STANDARDS FIRE FIGHTING WORKS	
IMPORTANT NOTE All references to I.S.I. appearing in this specification may be read as Bureau of Indian Standards, Latest amended versions.	
IS 1239-1968 (Part-I)	Specifications for mild steel tube, tubular and other steel pipe fittings.
IS 1239-1968 (Part-II)	Specifications for mild steel tube, tubular and other steel pipe fittings.
IS 1536-1976	Specification for centrifugally Cast (Spun) Iron pressure pipes with flanges for water, gas and sewage.
IS 1538 (Part 1 to 23)	Specification for Cast Iron fittings for pressure pipes for water, gas and sewage.
IS 1726-1960	Code for cast iron manhole frame and cover.
IS 3589-1981	Specification for electrically welded steel pipes for water, gas and sewage.
IS 4736-1986	Galvanizing G.I. Pipes
IS 636-1988	Non percolating flexible fire fighting delivery hose (third revision)
IS 694-1990	PVC insulated cables for working voltages upto and including 1.100 volts (third revision)
IS 778-1984	Copper alloy gate, globe and check valves for water works purposes (fourth revision) (Amendment 2)
IS 780-1984	Sluice valves for water works purposes (50 to 300 mm) size (sixth revision) (amendment 3)
IS 884-1985	Specification for first-aid hose-reel for fire fighting (for fixed installations) (first revision) (with amendment No.1)
IS 900-1992	Code of practice for installation and maintenance of induction motors (second revision)
IS 901-1988	Specification for couplings, double male and double female, instantaneous pattern for fire fighting (third revision)
IS 902-1992	Suction hose coupling for fire fighting of purposes (third revision)
IS 903-1984	Specification of fire hose delivery couplings branch pipe, nozzles and nozzle spanner (third revision) (Amendment 5)
IS 937-1981	Specification for washers for water fittings for fire fighting purposes (revised) (with amendment No, 1)
IS 1520-1980	Horizontal centrifugal pumps for clear cold, fresh water (second revision)
IS 1536-1976	Horizontally cast iron pressure pipes for water, gas & sewage (first revision) (with Amendments No. 1 to 4)
IS 1554-1988 Part I	PVC insulated (heavy duty) electric cables (working voltage upto and including 1100 volts (third revision)
IS 1554-1988 Part II	PVC insulated (heavy duty) electric cables (working voltage from 3.3 KV upto and including 11 KV (second revision)
IS 1648-1961	Code of practice for fire safety of buildings (General) Fire fighting equipment and its maintenance (with amendment No.1)
IS 3624-1987	Pressure and vacuum gauges (Second revision)
IS 4736-1968	Hot-dip zinc coatings on steel tubes (with Amendment No.1)
IS 5290-1983	Specification for landing valves (second revision) (with Amendments No.6)
IS 5312- 1984 Part I	Swing check type reflux (non return) valves Part I-single door pattern (with amendments nos. 1 & 2)
IS 5312- 1986 Part II	Swing check type reflux (non return) valves Part II-Multi door pattern (with amendments nos. 1 & 2)
IS 7285	Seamless cylinders for storage of gas at high pressure.

Executive Engineer(E)

Contractor

PROFORMA OF SCHEDULES (Operative Schedules to be supplied separately to each intending tenderer)	
<u>SCHEDULE 'A'</u> Schedule of quantities :	Attached
<u>SCHEDULE 'B'</u> Schedule of materials to be issued to the bidder:	Nil
<u>SCHEDULE 'C'</u> Tools and plants to be hired to the bidder:	Nil
<u>SCHEDULE 'D'</u> Extra schedule for specific requirements/documents for the work, if any:	Nil
<u>SCHEDULE 'E'</u> Schedule of components of Materials, Labour etc. for escalation:	Nil
<u>SCHEDULE 'F'</u> Reference to General Conditions of contract :	
Name of work:	As per NIT notification page No 3
Estimated cost of work:	
Earnest money:	
Security Deposit and performance Guarantee	
General Rules & Directions: Officer inviting tender:	Executive Engineer (E) Electrical Division-III, Chennai
Definitions:	
2(v) Engineer-in-Charge	Executive Engineer (E) Electrical Division-III Chennai
2(vi) Accepting Authority	Executive Engineer (E) Electrical Division-III 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	Three 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: III, Chennai

Sub Division: II, 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 up to 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 therefrom 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.

<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>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 :