

Bharat Sanchar Nigam Limited (Electrical Wing)

Office of Sub Divisional Engineer (E) BSNL Electrical Sub Division–IV, Kellys Telephone Exchange campus No 22 Kellys Road Chennai-600010 Phone: 26413434

NOTICE TENDER DOCUMENT

Name of Work: Comprehensive maintenance of 1.5TR/3TR Split/ductable type AC units in CGM office building. (For 2023-24)(Sw: CAMC of 3TR slim line and Ductable Ac units for the period from June 2023 to March 2024)

<u>NIT no: 12 /ED-I/CH/2023-24</u> Date of opening: 16-06-2023

This tender document contains pages (39) pages only

Name of the Agency

Address

.....

.....

Telephone No. of agency:

L	Ν	D	E	Х

SL.No	Description	Page no.
1	Front cover and Index	2
2	Information and Instructions for Bidders & Eligibility Criteria	3
3	Notice Inviting Tender form - BSNL EW6	6
4	General Instructions to the Bidders	10
5	Undertaking to abide by EW 6 & EW 8 (Form 'A')	12
6	Undertaking regarding EPF& ESI provisions (Form 'B')	13
7	Performance report of works (Form 'C')	14
8	No Near relative working certificate (Form 'D')	15
9	Model form of Bank Guarantee for EMD (Annexure-I)	16
10	Model form of Performance security Guarantee bond (Annexure-II)	17-18
11	Schedule of Quantities	19
12	Specification	21
13	Technical specification	32
14	List of Approved Makes	34
15	LIST OF INDIAN STANDARDS	36
16	Proforma of Schedules	37
17	BSNL EW -8	38

INFORMATION AND INSTRUCTIONS FOR BIDDERS

The Sub Divisional Engineer (Elect), BSNL, ESD-IV, Chennai-10 on behalf of the CMD, BSNL invites Item rate bids from eligible bidders in Single bid system for the following work:

1	Name of work	Name of Work: Comprehensive maintenance of 1.5TR/3TR Split/ductable type AC units in CGM office building. (For 2023-24)(Sw: CAMC of 3TR Slim line and Ductable Ac units for the period from June 2023 to March 2024)
2	Estimated cost put to	Rs.46,960/-
	tender	
3	Earnest Money	Rs.939/-
4	Period of completion	10 Months
5	Tender Fee(Non-refundable)	<mark>Rs.150 + 18% GST = 177/-</mark>
6	Last date & time for	Up to 15:00 Hrs. on 15-06-2023
	submission of tender	
7	Date and time for opening	15:30 Hrs. on 16-06-2023
	of tender	

ELIGIBILITY CRITERIA

The bidders satisfying the following conditions:

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.

AND

BSNL enlisted contractors in Electrical category of respective class as per their tendering limits.

OR

Experience of having successfully completed similar works in BSNL comprising of either substation or airconditioning service as part of scope of work 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.

NOTE: The estimated cost of one year shall be considered to evaluate the

(Similar works means "CAMC of split Ac units")

IMPORTANT INSTRUCTIONS TO BIDDERS DOWN LOADING THE TENDER DOCUMENT FROM WEB SITE

The bidders, who have down loaded the tenders from the web site, shall read the following important instructions carefully before quoting the rates and submitting the tender documents.

- 1. The tenderer should see carefully and ensure that the tender document containing all the pages as per the index has been down loaded for making required entries. The balance pages of Standard BSNL EW8 form will be attached with the agreement after the award of work.
- 2. A clear print out of tender document shall be taken on good quality A4 size paper and the printer settings, etc., shall be such that the document is printed as appearing in the web and without any change in format, number of pages, etc., and shall also ensure that no page is missing. Only original computer printout of the document shall be used. Photocopy shall not be accepted.
- 3. In case of any doubt in the downloaded tender, the same shall be got clarified from the Engineer in charge calling the NIT before submission.
- 4. The name of the bidder shall be filled on the relevant pages of tender document and all the pages shall be invariably signed. (With stamp)
- 5. The tenderer shall ensure that the downloaded tender document is properly stitched before submitting the document.
- 6. There shall be no correction / addition / alteration / omission made in the text of the downloaded tender document. If found otherwise, the same shall be treated as non-responsive and rejected.
- 7. The tenderer shall sign the declaration enclosed before submitting the tender.
- 8. The tenderer shall submit the tenders in 2 covers marked as No.1 and No.2. The tenderer shall submit the credentials for meeting the eligibility conditions along with the cost of the tender fee and EMD in the prescribed format as detailed in NIT, along with a covering letter on his printed letter head stating the details of enclosures in the first cover. The credentials shall be self-attested. The second cover shall contain the price bid. The rates and amounts should be filled in the schedule of work attached thereto.
- 9. The cover-1 shall contain the following.
- a. Tender Fee in the prescribed format
- b. EMD in the prescribed format
- c. Certificate of Financial Turnover from Chartered Accountant if applicable
- 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 TN Govt. if applicable
- g. GST Registration Number details

- h. PAN Card
- i. EPF and ESI Registration certificate if applicable
- j. Certificate of work experience issued by client department (Form 'C') if applicable

Not submitting the above documents in Cover-1, the Cover-2 will not opened

2. The Cover-1 and 2shall be deposited in the tender box available in the office of tender opening authority, by all the bidders 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-I, Chennai-10

Sub Division: IV ,Chennai-10

Item rate tenders on single bid system are invited on behalf of CMD,BSNL for the work Comprehensive maintenance of 1.5TR/3TR Split/ductable type AC units in CGM office building. (For 2023-24)(Sw: CAMC of 3TR Slim line and Ductable Ac units for the period from June 2023 to March 2024) 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. Tenders which should always be placed in sealed covers with the name of the work written on the envelope will be received and opened by the tender opening authority as per the date and time mentioned in INFORMATION AND INSTRUCTIONS FOR BIDDERS. Unsealed tenders will be summarily rejected.
- 2. 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.
- 3. The work is estimated to cost Rs 46,960/-. This estimate, however, is given merely as a rough guide.
- 4. 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.
- 5. The time allowed for carrying out the work will be $-\frac{10 \text{ Months}}{10 \text{ Months}}$ from the 10th day after the date of written order to commence the work.
- 6. 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.
- 7. 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.chennai.bsnl.co.in at free of cost. The BSNL EW-8 document can be seen from the web site www.tamilnadu.bsnl.co.inat free of cost.
- 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 BSNLCHENNAI TELEPHONES, payable at -CHENNAI. 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 BSNLCHENNAI TELEPHONES,

payable at -CHENNAL. 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. Exemption from payment of Tender Fee, Earnest Money and Security Deposit by any other unit/ department shall not hold good for BSNL.

- 10. The last date for submission of bid is 16-06-2023 up to 3:00 PM and the bid submitted shall be opened at 03:30 PM on the day. If a holiday is declared on the tender opening day, the tender will be opened on the next working day.
- 11. 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 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.
- 12. 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.
- 13. If it is found at any stage of tender scrutiny after submission of tender that the bidder has made any correction/addition/alteration/omission intender documents vis-à-vis tender documents available on the website /original Draft NIT in office, the bid shall be treated as non-responsive and shall be summarily rejected 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.
- 14. The Tender documents shall not be sent through the Courier/Post. Tender documents received through Courier/post shall not be opened/considered at all. All communication with the bidders shall be in writing. Fax / E-mail shall be covered under this category and considered as adequate means of communication.
- 15. 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.

- 16. The competent authority on behalf of the CMD does not bind himself to accept the lowest or any other tender and reserves to himself 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.
- 17. 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.
- 18. 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.
- 19. 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.
- 20. 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.
- 21. The bidder 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 noncomplying 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'.
- 22. 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.
- 23. 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.
- 24. 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 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. 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.
- 5. 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.
- 6. GST and any other tax applicable in respect of this contract 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.
- 7. 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.
- 8. 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.

- 9. The Contractor shall, within a period of 30 days of imposition of any further tax or levy inpursuant to the constitution of (Forty sixth amendment) act 1982 give a written notice there of to the Engineer-in-charge that the same is given pursuant to this condition, together with all necessary information relating thereto.
- 10. Bye laws Indemnity against liabilities:
 - a. The bidder shall comply with all bylaws 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.
- 11. 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.

- 12. 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.
- 13. 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/Daughter 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 BSNL EW 6 & 8 forms.

(Seal of the firm)

(Signature of Bidder)

FORM 'B'

Undertaking regarding EPF provisions

"I......Resident ofResident of

* I/We have employed only ------ persons in our establishment and hence the EPF and Miscellaneous provisions Act, 1952 is 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.....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 Agency
- 2. Name of work
- 3. Agreement no.
- 4. Final Value of Work Done
- 5. Date of start of work
- 6. Actual date of completion
- 7. Performance: Satisfactory / Not Satisfactory

Dated:

Sub Divisional Engineer or Equivalent

FORM 'D' <u>No Near relative working certificate</u>

(Seal of the firm)

(Signature of Bidder)

Annexure I

MODEL FORM, OF BANK GUARANTEE FOR EMD

(For submitting EMD for Air Conditioning, Diesel Engine Alternator, Lifts, and Sub Station Works wherever the amount of EMD is more than Rs.20,000/-)

Whereas_____ (hereinafter called "the bidder(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 Bidder(s) withdraws its Tender during the period of Tender validity specified on the Tender Form: or

2. If the Bidder(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 _____ (hereinafter called "the said agreement "), of security supply of deposit for the due fulfilment by the said bidder (s) of the terms and conditions contained in the production of bank said Agreement, on the 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 undertake to pay to the BSNL any money so demanded notwithstanding any dispute or disputes raised by the bidder(s)/supplier(s) in any suit or proceeding pending before any court or tribunal relating thereto our liability under this present being absolute and unequivocal. The payment so made by us under this bond shall be valid discharge of our liability for payment there under and the bidder(s)/supplier(s) shall have no claim against us for making such payment.

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

5. We (name of the bank)_______ further agree with the BSNL that the BSNL shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Agreement or to extend time of performance by the said bidder(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the BSNL against the said Bidder(s) and to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Bidder(s) or for any forbearance, act or omission on the part of the BSNL or

any indulgence by the BSNL to the said Bidder(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

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

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

Dated the _____ day of _____

for_____ (indicate the name of bank)

Schedule of Quantities

Name of Work: Comprehensive maintenance of 1.5TR/3TR Split/ductable type AC units in CGM office building. (For 2023-24)(Sw: CAMC of 3TR Slim line and Ductable Ac units for the period from June 2023 to March 2024)

	e period from June 2023 to March 2024)	1	1	1	1	
SI No	Description of item	Qty	Rate	Unit	Amount	
1	Carrying out comprehensive annual maintenance of following types of AC units including all items in the refrigeration cycle viz compressor, condenser coil, condenser fan, Expansion valves / capillary tube, Evaporator coil, Blower fan, Thermostats, all valves wherever applicable and all interconnecting copper refrigerant piping etc as per the specifications / conditions of the contract and as per details given in relevant sections by deploying service staff when required i/c specialised man power and supplying and fixing required spares, refrigerant gas, tools and plants and other consumables viz lubrication oil and welding / pressure testing gases to keep the AC units and connected equipments operational upto the required standards as per the maintenance schedule detailed in the comprehensive maintenance document along with wiring-starters & stabilizers etc. as required.					
a)	3TR Slim line type	3Nos		Each		
	(Unit rate in words	I	,	J		
2	3TR Ductable split Ac unit	4Nos		Each		
	(Unit rate in words	1	<u></u>]		
	Total a	imount	for 1 r	month		
	Total amount for 10 months					
	Total					
	Add CGST 9% Add SGST 9%					
		(Grand	Total		
	say					

Sub Divisional Engineer (E)

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.

SPECIFICATIONS

<u>A. GENERAL</u>

1.0 SCOPE OF MAINTENANCE

- 1.1 Air conditioning Maintenance of the Technical/ Administrative/ Residential Building(s) as applicable in this contract means that all Services included in the schedule of work are kept in healthy clean and working condition. Specific details of maintenance activities required with regard to each service are detailed under sections pertaining to those service/technical specifications.
- 1.2 Air conditioning maintenance shall be carried out as per instructions contained herein. However all other forms & instructions to be used shall be as per works instructions / forms & checklists etc., issued by from time to time. Wherever the term maintenance appears in the technical specification, it refers to the service for which comprehensive maintenance is undertaken unless otherwise specified. However the services under operation shall be generally maintained clean.
- 1.3 For the installation where the operation is not carried out round the clock, the firm shall ensure that the installation/inventory under maintenance is intact and any discrepancy/theft are reported immediately to JTO(E)/SDE(E)/ any other authorities concerned with maintenance
- 1.4 After the contract period is over the installation has to be duly handed over to the new agency along with the record of test results of equipments & associated items, under supervision of SDE (E)/JTO (E) in charge. However installation is to be taken over by the new agency for Maintenance within 15 days of award of work.
- 2.0 METHODOLOGY
- 2.1 It is presumed that contractor will provide minimum qualified staff at the site, which will be adequate to perform routine maintenance functions.
- 2.2 In case of faults beyond the capacity of the staff provided as above, contractor shall immediately provide extra-specialized work force so as to attend to the fault in minimum reasonable time without any extra cost.
- 2.3 At the start of work, firm shall prepare an inventory of service under maintenance jointly with J.T.O (E)/SDE (E), concerned.
- 2.4 Before start of the work complete equipments/services under scope of maintenance shall be thoroughly examined by the agency jointly with SDE(E)/JTO(E) concerned. All Defects/discrepancies should be brought to the notice of the SDE(E)/JTO(E) in writing within first 15 days of award of work. Defects/discrepancies agreed upon by BSNL shall be got attended by the outgoing agency before handing over the site to the new agency. If the outgoing agency fails to correct the defects/discrepancies within 15 days, the same shall be got done by BSNL at the risk and cost of the outgoing agency.
- 2.5 However any defect pointed out beyond 15 days, the agency is responsible for attending to the defects / discrepancies. Where the maintenance is taken over, for the first time, the defects / discrepancies shall be got attended by BSNL.

- 2.6 A complaint / fault Register as per annexure- IV shall be kept up-to-date at site by the firm and the same shall be available for checking & verification, wherever operation is also carried.
- 2.7 If during the period of contract, any of the window/Split units are added/ altered, all inclusive comprehensive maintenance of the same shall be done by the firm, and the rates will be regularized as per Clause -12 of EW 8. However in case of deletion of any AC unit similar recovery shall be made from the bill of the contractor.
- 2.8 The details in the annexure III are approximate to give an idea of services to be maintained. Any variation on higher or lower side shall deem to be included at the initial take over. However the renderers are advised to inspect the site (s) and make them acquainted before quoting.

3.0 MATERIALS AND TOOLS & PLANTS

(A) Material 3.1 wherever the scope of work includes comprehensive maintenance, such services, as per inventory shall be maintained on comprehensive basis i.e. no material will be supplied by the Department. The inventory shall be from BSNL approved make wherever applicable. Only replacement of major equipments as specified in Part-IV of relevant sections under technical specification which is required to be replaced as a whole after due scrapping shall be the responsibility of the BSNL. Till such time firm has to maintain the life expired equipment.

3.2 Contractor shall comply with any inclusion/exclusion in the above items and/or their quantity depending upon site requirements. The decision of the Engineer in charge shall be final in this regard.

3.3 The replacement of material shall be with the same rating and make as that of the original. The firm may also replace an item with energy efficient item wherever the same is available on intimation to JTO (E). However, in case of non-availability of a particular make, Engineer-in-charge will approve the alternate make.

3.4. Dismantled and unserviceable items for which a replacement is supplied, shall be removed from the site under intimation to the JTO (E).

3.5.All materials shall be of approved make, model and capacity and shall be matching to the system.

3.6 Supplier Invoice/Bill / Purchase particulars shall be produced in case of all major items such as compressor etc. as a proof of genuineness. For replacement compressor, the firm shall produce necessary documentary proof. Obsolete items not available in market can be repaired and re used. However efficiency of compressor shall be ensured to avoid penalty under relevant clauses.

3.7 The contractor shall maintain minimum inventories with them in addition to items/spares mentioned under specifications as section 4.1 above. However the items/ spares which are not relevant to particular site need not be maintained. These items shall be kept in a lockable trunk box made of non combustible material and storage location shall be arranged by SDE(E)/JTO(E).

(B) TOOLS & PLANTS:

3.8. All tools and plants, testing & safety equipments required for carrying out various tasks relevant to operation and maintenance have to be arranged by firm at its own cost.

- a. Wherever the firm is carrying out the Operation and maintenance of equipment, the firm shall possess the following minimum T&P at site(wherever operation is carried out).
- i. Insulated Screw Driver
- ii. Line Tester
- iii. Insulated Cutting Plier
- iv. Torch Light
- v. Waste Cloth
- vi. thermometer
- vii. Ring and adjustable spanner Set
- viii. Insulated Hand gloves
- ix. Test Lamps
- x. Pressure Guage.

b) In addition to the above, the firm shall generally posses the basic T & P at their maintenance office according to the services covered under the scope.

3.9 The above list is general and any other requirements for smooth maintenance of installation shall be contractor's responsibility and he shall not claim anything extra on this account.

3.10 The firm shall also coordinate with the JTO (E) / SDE (E) for carrying out energy audit/capacity test at site with respect to AC units, whenever it is required to do so.

3.11 The Firm/Contractor will provide the workers with necessary Testing and Safety Equipment.

Note:-1.The safety of stocking/ storing arrangement of minimum inventory and T&P shall be the responsibility of the firm.

CONTRACTOR

SUB DIVISIONAL ENGINEER (E)

4.0 COMMERCIAL.

- 4.1 The tender must obtain himself on his own expenses, all the information necessary for the purpose of tendering, inspect the site and acquaint himself with all the local conditions, means of access to work and nature of work etc. No claim shall be entertained on this account.
- 4.2 Payment shall be made on <u>quarterly basis</u> after completion of maintenance period and on submission of bill in printed letter head together with requisite certificate and documents as per Clause 14 of Important instructions to Contractors
- 4.3 The rates quoted must be full & final. Nothing extra is payable other than quoted rates. Clause10-CC shall not be applicable for this account.

5.0 DAMAGES TO BSNL INSTALLATION:

5.1 Any damage to the installation(s)/building during the maintenance period due to the carelessness on the part of maintenance staff shall be the responsibility of firm/contractor & shall be replaced/rectified by the firm without any extra cost.

5.2 Any accident or damage during maintenance/operation will be the responsibility of the firm/contractor & the Department will not entertain any claim, compensation, penalty etc. on this account or on account of non observance of any other requirement of law relevant to his work.

6.0 CURRENCY OF CONTRACT:

6.1 **The currency of contract shall be 10 months**. The Department reserves the right to terminate the contract by giving show cause notice of one-month duration at any time during the currency of the contract.

6.2The Department reserves the right to **extend the contract for a maximum period of six months** (three months at a time) at the same rates & conditions, without the consent of the firm and beyond this period with mutual consent.

7.0 TERMINATION OF CONTRACT:

7.1 Right is reserved by BSNL for terminating the contract due to serious default. This includes major break down or accident or loss due to negligence on the part of firm, failure to attend breakdown, disobedience and abandoning the site etc. In such a case, Full Performance Guarantee shall be forfeited to BSNL. The decision of Superintending Engineer (E) in this regard shall be final and binding.

7.2Right is reserved by BSNL for closure of the contract at any time by giving one month's notice for reasons not attributed to the Contractor. The decision of Executive Engineer shall be final and binding on the contractor for closure of contract and for which BSNL shall not entertain any claim.

8. PENALTY FOR DEFICIENCY IN SERVICE:

	SERVICE	SERVICE CONDITIONS	PENALTY FOR DEFICIENCY IN SERVICE
	Window/ Split AC units maintenance	i) Faults involving the following in the individual units shall be replaced within the time frame failing which penalty shall be imposed.	
		 Condenser coil & Evaporator coil leakage other than normal wear and tear in units of more than 6 years –Beyond one month. 	Rs.500/- per day per unit
		2. Compressor replacement –Beyond 3 weeks	Rs. 500/- per day per unit
		3.Blower fan/ motor, Condenser fan/ motor, MCB replacement – Beyond 15 days	Rs. 500/- per day per unit
		4. Others – Beyond one week.	Rs. 250/- per day per unit
	Energy efficiency of AC (all types)	 iii) Energy efficiency of AC: Shall be within benchmark value. Any reduction will lead to penalty. (Excluding deterioration due to ageing) 	Penalty proportionate to additional energy expenditure incurred due to reduced efficiency.

<u>Note</u>:-

1. The above penalty clauses are indicative in nature for specific service failures. In case contractor fails to comply with preventive/ periodical maintenance schedules, penalty of 25% of one month's bill amount shall be imposed. However for genuine reasons, which are beyond the scope of the contractor such as immediate non availability of particular spare due to discontinuance of model etc, the firm shall represent the specific case in writing seeking additional time with due reasons and possible time of completion against which the EE (E) shall sanction/approve additional time as required.

2. In case of a major accident/loss on account of negligence on the part of the contractor, the contract shall be terminated and 10% of the estimated cost shall be recovered. Decision of Executive Engineer (E) shall be final and binding on the contractor.

3. If the performance is found to be unsatisfactory (Such as non-recording of data, failure to carry out periodical maintenance in time, etc., penalty upto 25% of one month's bill for that service for that site shall be recovered. This is in addition to the penalty for specific deficiencies as per Clause 9 above.

6. Repair etc. of faulty equipment for which comprehensive maintenance is included, if not done by the firm, will be got done at the risk & cost of firm, beyond 7 days of continuing failure(over and above the day's allowable as per above penalty clause table), without further notice. The decision of EE (E) shall be final in this regard.

7. Notwithstanding the compensation clause described above, BSNL reserves the right to take necessary steps for operation/ maintenance of the AC unit as applicable at the risk and cost of the contractor within a day's notice or as decided by the E-in-C, depending

upon the graveness of the situation attributed to the contractor. BSNL also reserves the right to carryout scheduled mtce activity, if not done the main form, at is risk & cost.

8. Executive Engineer(E) reserves the right to For delays due reasons such as non availability of suitable replacement and such other causes which beyond the possible efforts of the firm Penalty for d

9.GENERAL CONDITIONS:

The contractor has to keep all the equipments in optimum working conditions.

9.1Dates of maintenance and or breakdown calls shall be recorded in the relevant cards/registers

9.2Contractor shall have a round the clock communication landline/ Mobile telephone number at Chennai. A complaint register shall be maintained as per annexure - IV. Disposal of complaint shall be recorded and monthly report shall be submitted to the SDE (E) concerned.

- 9.3 The contractor shall not sublet the work or part thereof. However, services of specialized agencies for specific work can be obtained.
- 9.4 The contractor agrees that he shall at all times indemnify BSNL against all claims for compensation under the provisions of any law for the time being in force or in respect of any person employed by it in carrying out the contract. Further, such staff has no right to claim employment in BSNL.
- 9.5 The Contractor will provide the workers with necessary T & P, Testing & safety equipments.
- 9.6 Contractor has to observe all the labour rules and regulations in force & BSNL shall not be liable for any default
- 9.7 Firm is responsible to keep workable spares and consumables for due performance of the contract. For critical spare parts, firm shall have arrangement with dealers for prompt supply.
- 9.8 The material used/replaced by the firm for the work shall have same specification. Alternate Make shall be allowed only after prior approval of the Engineer-in-Charge.
- 9.9 As Air-conditioning services are of critical nature, the firm will ensure that the labourers engaged are well trained to take responsibility and initial steps under emergency situation.
- 9.10 In case of Emergency, contractor and/or his authorized engineer or supervisor shall be available at site on short notice from Engineer-in- charge and make all efforts to make the situation normal at the earliest

10.DOCUMENTS TO BE MAINTAINED AT SITE/MAINTENANCE OFFICE

The contractor shall maintain following documents,

A complaint / fault register as per format given in annexure- IV.

The <u>service/fault report card for Window/Split AC units shall be hanged near the AC</u> <u>units with the consent of the user. If otherwise the same shall be kept at conspicuous</u> <u>location as desired by the user</u>. The firm shall record all major breakdown maintenance carried out by the firm like rewinding of motor / replacement of compressor done, if any etc.

11.TEST CHECK BY THE FIELD ENGINEERS:

For the purpose of assessing the quality of service rendered by the firm against the above contract, the EE, SDE & JTO shall carryout inspection & test checks of the service/work under the contract periodically.

During these test checks they shall record any deficiency in the work. As per the principle of sampling, if service during sample test check is not found to be satisfactory, then penalty shall be imposed on the contractor as per the penalty clause.

12.0 Guarantee and Defect Liability

12.1 The guarantee for replaced components / equipments shall be valid for twelve months after successful commissioning. The contractor shall guarantee that all replaced components / equipments are free from any defects and also the equipments work with satisfactory performance and efficiency not less than the guaranteed values.

12.2 Any part found defective during Guarantee period shall be replaced free of cost by the contractor. The service of the contractor's personnel, if required during this period shall be made available free of cost to the BSNL.

12.3 In case the contractor fails to depute his representative to attend the fault within the time frame stipulated in various clauses or fails to cause remedial measure 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 right of the BSNL to recover such expenses.

13.0 ENERGY CONSERVATION

13.1 BSNL Electrical Wing, Chennai Telephones is committed to reduction in energy bills by the way of energy conservation over a year by 5%. The contractor shall continuously monitor energy conservation measures to save energy bills with suitable testing using energy monitoring instruments at his own cost to meet the Energy Conservation Building Code.

13.2 The contractors shall co-ordinate with the departmental SDEs / JTOs while conducting Energy auditing of the AC units under maintenance for effective Energy saving instructions such as temperature at which the AC to be operated shall be displayed on the AC units, wherever required.

13.3 Totally Burnt out motors shall not be repaired but replaced with higher efficiency motors of reputed make.

13.4 Energy efficiency of AC units, shall be maintained within the benchmark value. The benchmark value shall be assigned by JTO(E)/SDE(E) after testing, with respect to the present conditions within 2 months from the date of handing over the services for maintenance. A 10% allowance shall be given for ageing while setting the benchmark itself. Energy efficiency report shall be submitted once every 6 months by the contractor..

14. List of Annexures

SL NO	Description of Annexure	Annexure
1.	Model Form Of Bank Guarantee	I
2.	Performance Security Guarantee Bond	II
3.	Size Of Services To Be Maintained	
4.	Complaint cum Fault Register	IV
5.	Window/Split Ac Units Maintenance Card Format	V

ANNEXURE-III

SIZE OF SERVICES TO BE MAINTAINED

SRNO	NAME OF EXCHANGE	STAC LOCATION	NO OF STAC	CAPACITY TR	ТҮРЕ
1	CGM'S Office	CGM's Chamber	3	3	Slim line
		Conference hall li floor	4	3	Ductable split

DETAILS TO BE SUPPLIED BEFORE STARTING WORK WITHIN 15 DAYS

a) The following information to be be SUPPLIED WITHIN 15 DAYS of start of work. .

1.	Name of the Agency	
2	Address (of maintenance office)	
3.	Person to contact	
4.	Telephone No.	

ANNEXURE – IV

COMPLAINT / FAULT REGISTER (WHERE OPERATION IS ALSO FORMING PART OF WORK)

The following information shall be pasted in front cover of the register

Name of work:

Name of contractor:

Agreement No:

Name of Sub-Division:

Station/Exchanage/Bldg:

Register Format:

Complaint No.	Date & Time of compla int	Location of fault together	Complaint Lodged by / FAULT Observed by	Nature of complaint reported / Fault	Time & Date of attending complaint / Fault vide service report	Proposed action to avoid future complaint / Fault	Dated Signature of Firm's Representati ve	Test Check by SDE/JTO with date	Remarks
(1)	(FAULT) (2)	with unit No.	(3)	Observed (4)	no. (6)	(5)	(7)	(8)	(9)

(Annexure V)

WINDOW/SPLIT AC UNITS MAINTENANCE CARD/ SERVICE REPORT FORMAT

WINDOW/SPLIT AC UNITS MAINTENANCE CARD FORMAT (W-1)

FRONT SIDE OF CARD

EQUIPMENT:-
CAPACITY:-
MAKE & SL NO:-

FIRM'S PH NO:-JTO (E)'S PH NO:-SDE(E)'S PH NO:-

DATE	TYPE OF MAINTENANCE DONE	SIGN OF MECHANIC / ELECTRICIAN	SIGN OF USER/EXGE STAFF	REMARKS

BACK SIDE OF CARD

DATE	NATURE OF FAULT REPORTED TO		SIGN OF USER/ XGE INCHARGE	ATTENDED ON	SIGN OF ELECTRICIAN / MECHANIC	SIGN OF USER/ XGE STAFF	

MONTHLY SERVICE REPORT FOR WINDOW	V/SPLIT/SLIMLINE/CASSETTE TYPE AN UNITS

Monthly service details for the month of	ORT FOR WINDOW/SPLIT/SLIMLINE/CASSETTE TYPE AN UNITS
Floor	
Location	
Unit type	
Capacity	
Description	
Electrical System	
Plug & socket condition (OK/N ok)	
Current (amps)	
Condition of starting relay (OK)	
Condition of starting capacitor(Ok)	
Tightness of connections(OK)	
Earthing (Tight)	
Condition of starter & stabilizer (working/	
Not)	
Condition of remote (Available/ Not	
Available)(W orking/Not Working)	
Control system	
Thermostat(working	
temperature set(degrees)	
Refrigeration System	
Compressor (Working, Any noise)	
Condensor/cooling coil	
Capillary tube(OK/Not Ok)	
Gas leakage (observation)	
Air Circulation System	
Evaporator Fan (Ok/Not)	
Condensor fan(Ok/Not)	
Ventilation & Exhaust	
Filter/condition(Cleaned)	
Drain pipe (any loose connection/	
leakage)	
Damper Louvers condition(Firm)	
Overall Condition of the unit(satisfactory/	
Not satisfactoriy)	
Tonnage of AC units(periodicity as per	
specns)	

Sign of AC mechanic

Sign of Exchange in charge/jto(e)

TECHNICAL SPECIFICATIONS

PART I: SCOPE OF WORK FOR SPLIT / WINDOW AC UNITS

- a) Keep all the units in healthy working condition.
- b) Attending day to day faults promptly.
- c) Carrying out maintenance tasks as mentioned in Part-III.

PART II: TASKS TO BE PERFORMED WITHIN 15 DAYS

Following tasks should be carried out within 15 days.

- 1) Enquiry office shall be established and system shall be organized with the approval of Engineer-incharge so that complaints can be received and attended properly.
- 2) All maintenance documents/ registers shall be opened as per proforma.
- 3) The agency will familiarize with the installation and inspect the complete system and understand the requirements of installation. Any other relevant aspect which will come in the way of maintenance shall also be brought to the notice of Engineer in Charge.
- 4) Shall carry out tests as per test schedule before taking over the maintenance.
- 5) Upon successful taking over of the maintenance the agency will be responsible for the equipment and hand over the installation to the new agency in healthy condition after completion of the maintenance. In case the same agency continues for AMC, the agency will carry out these activities as per the prescribed maintenance schedule and will be responsible for rectification of defects and replacements of parts..
- 6) Prepare an inventory of materials/tools to be kept at site or to be in possession of the maintenance personnel, for prompt maintenance in consultation with Engineer-in-charge. Materials for all the services are to be considered. A tentative requirement of materials that are to be possessed with the
- 7) Shall collect information like the telephone numbers of the Exchange in charge, JTO(E), SDE(E),EE(E),Fire service, Supply Company, Local Hospitals, Emergency Services etc. and preserve it in the maintenance office.
- 8) Shall intimate the BSNL the list of staff to be employed at the site of work with all relevant particulars.

Part III – MAINTENANCE SCHEDULE TO BE FOLLOWED

WINDOW SPLIT AC UNITS:

Monthly

- 1. Check of air filters & clean them.
- 2. Checking of Electrical Connections
- 3. Check voltage stabilizer provided with A/C unit.
- 4. Check for leakage of condition air.
- 5. Check that fins are clean.

- 6. Check the window AC control unit.
- 7. Check for tripping of compressor by thermostat.
- 8. Check any combing is required in the fins at the back of the unit

Yearly

Testing

Detailed Testing of the installation shall be done once in a year to find out capacity and efficiency of various equipment with respect to their rating. The testing procedure shall be same as adopted at the time of original testing (but without involving the T&D persons.)

PART IV MATERIALS

All the materials required for carrying out routine maintenance with the **exception of following** shall be arranged by the contractor at his own cost.

1. Replacement of complete AC unit, Complete Condenser unit, complete cooling coil

However Refrigerant lost during the operation, oil, fan belt, & filter shall be firm's responsibility.

NOTE: - The replacement of material shall be with the same rating and make as that of the original. However, in case of non-availability of a particular make, the Engineer-in-charge will approve the alternate make.

Penta / Mahindra & Mahindra (up to 40 KVA) / Esco (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 / Jyo Ltd 5 Transformer (Oil filled / Dry type) BB / Schneider Electric / Andrew Yule / Bharat Bijl / Crompton / EMCO / Kirloskar / Siemens a) Above 400 KVA In addition to above makes, Uttam/Automatic Elect 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/ BSDF units 8 SDF units L&T/ Schneider Electric / Siemens/ Lakshmi(LECS 10 9 Power Contactors L&T/ Schneider Electric / Siemens/ Lakshmi(LECS 10 11 Intelligent APFC Relay L&T/EPCOS(Siemens)/ ABB/Crompton / Schneider Electric/Neptune Ducati 12 Bus Bar Trunking/ Moeller/L&T/Schneider Electric / AEB/Legrand/Zet Sandwiched Bus Duct Schneider Electric / AE/ Digitron / IMP/ Meco / Rishabh / Universal //HPL/L&T/ABB 13 Power Capacitors (MPP/APP) L&T/EPCOS(Siemens)/ ABB/Crompton / Schneider Electric/Neptune Ducati		<u>LIST OF APPRO</u>	OVED MAKES- BSNL ELECTRICAL WING
1 Engine Ashok Leyland /Cummins/ Cater pillar / KOEL/ Vol Penta / Mahindra & Mahindra (up to 40 KVA) / Esco (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 / Jyo Ltd 5 Transformer (Oil filled / Dry type) ABB / Schneider Electric / Andrew Yule / Bharat Bijl / Crompton / EMCO / Kirloskar / Siemens a) Above 400 KVA In addition to above makes, Uttam/Automatic Elect 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/ HPL/Havells 9 Power Contactors L&T/ Schneider Electric / Siemens/ Lakshmi(LECS 10 11 Intelligent APFC Relay L&T/EPCOS(Siemens)/ Schneider Electric / Neptur Ducati/Syntron/ABB 12 Bus Bar Trunking/ Sandwiched Bus Duct L&T/EPCOS(Siemens)/ABB/Crompton/ Schneider Electric/Neptune Ducati 13 Power Capacitors L&T/EPCOS(Siemens)/ABB/Crompton/ Schneider Electric/Neptune Ducati 14 Digital/ KWHr me		Item	Makes
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 / Jyo Ltd 5 Transformer (Oil Filled / Dry type) ABB / Schneider Electric / Andrew Yule / Bharat Bijl / Crompton / EMCO / Kirloskar / Siemens a) Above 400 KVA In addition to above makes, Uttam/Automatic Elect Gear (AEG)/Patson/Rajasthan Transformer and Switchgear 6 Air Circuit Breaker L&T/ Schneider Electric / Siemens 7 MCCB(Ics=1cu) L&T/ Schneider Electric / Siemens 8 SDF units L&T/ Schneider Electric / Siemens/ HPL/Havells 9 Power Contactors L&T/ Schneider Electric / Siemens/ HPL/Havells 10 Change Over Switch HPL / Havells / H-H Elcon 11 Intelligent APFC Relay L&T/EPCOS(Siemens)/ Schneider Electric / Neptur Ducati/Syntron/ABB 12 Bus Bar Trunking/ Sandwiched Bus Duct Kat/EPCOS(Siemens)/ABB/Crompton/ Schneider (MPP/APP) 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 Joint		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)
Free) Prestolite / Standard 4 HV Switchgear (Vacuum Circuit Breaker/SF6) Biecco Lawrie / Crompton / Kirloskar / MEI / Jyo Ltd 5 Transformer (Oil filled / Dry type) ABB / Schneider Electric /Andrew Yule / Bharat Bijl / Crompton / EMCO / Kirloskar / Siemens a) Above 400 KVA In addition to above makes, Uttam/Automatic Elect Gear(AEG)/Patson/Rajasthan Transformer and Switchgear 6 Air Circuit Breaker L&T/ Schneider Electric / Siemens 7 MCCB(Ics=Lcu) 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 / Neptur Ducati/Syntron/ABB 12 Bus Bar Trunking/ Sandwiched Bus Duct Moeller/L&T/Schneider Electric/ABB/Legrand/Zet Sandwiched Bus Duct 13 Power Capacitors (MPP/APP) L&T/EPCOS(Siemens)/ABB/Crompton/ Schneider Electric/Neptune Ducati 14 Digital/ KWHr meter Schneider Electric / Siemens / Standard/ Distribution Board Crompton / Havells / Indokopp / MDS Legrand/L& / Schneider Electric/ Siemens / Standard/ Distribution Board <	2	Alternator (Brushless)	Crompton Greaves (AL. series) / KEC / Leroy Somer / Stamford/Jyoti Ltd
Circuit Breaker/SF6) Ltd 5 Transformer (Oil filled / Dry type) ABB / Schneider Electric / Andrew Yule / Bharat Bijl / Crompton / EMCO / Kirloskar / Siemens a) Above 400 KVA In addition to above makes, Uttam/Automatic Elect 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 / Neptur Ducati/Syntron/ABB 12 Bus Bar Trunking/ Sandwiched Bus Duct Moeller/L&T/Schneider Electric/ABB/Legrand/Zet 13 Power Capacitors L&T/EPCOS(Siemens)/ABB/Crompton/ Schneider 14 Digital/ KWHr meter Schneider Electric / Siemen / IMP/ Meco / Rishabh / Universal/HPL/L&T/ABB 15 Cold shrink HT/LT Cable Denson / 3M(M-Seal)/ Raychem 16 Ruber Matting ISI mark 17 MCB/ Isolator Crompton / Havells / Indokopp / MDS Legrand/	3		Amara Raja / AMCO / Farukawa / Hitachi / Exide/ Prestolite / Standard
Dry type) / Crompton / EMCO / Kirloskar / Siemens a) Above 400 KVA In addition to above makes, Uttam/Automatic Elect Gear(AEG)/Patson/Rajasthan Transformer and Switchgear 6 Air Circuit Breaker L&T/ Schneider Electric / Siemens 7 MCCB(Ics=1cu) 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 / Neptur Ducati/Syntron/ABB 12 Bus Bar Trunking/ Sandwiched Bus Duct Moeller/L&T/Schneider Electric/ABB/Legrand/Zet Sandwiched Bus Duct 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 Crompton / Havells / Indokopp / MDS Legrand/L& / 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		Circuit Breaker/SF6)	
b) Up to 400 KVA In addition to above makes, Uttam/Automatic Elect 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/ HPL/Havells 10 Change Over Switch HPL / Havells / H-H Elcon 11 Intelligent APFC Relay L&T/EPCOS(Siemens)/ Schneider Electric / Neptur Ducati/Syntron/ABB 12 Bus Bar Trunking/ Sandwiched Bus Duct Moeller/L&T/Schneider Electric/ABB/Legrand/Zet 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 Denson / 3M(M-Seal)/ Raychem 16 Rubber Matting ISI mark 17 MCB/ Isolator / ELCB/RCCB/ Distribution Board Crompton / Havells / Indokopp / MDS Legrand / L& / Schneider Electric / Siemens / Standard/ C&S/ABB/HPL 18 MS/ PVC Conduit ISI mark 19 Cable Tray MEM/Bharti/Ratan/Slotco/Profab <td>5</td> <td>-</td> <td>ABB / Schneider Electric /Andrew Yule / Bharat Bijlee / Crompton / EMCO / Kirloskar / Siemens</td>	5	-	ABB / Schneider Electric /Andrew Yule / Bharat Bijlee / Crompton / EMCO / Kirloskar / Siemens
Gear(AEG)/Patson/Rajasthan Transformer and Switchgear Air Circuit Breaker L&T/ Schneider Electric / Siemens MCCB(Ics=Icu) L&T/ Schneider Electric / Siemens SDF units L&T/ Schneider Electric / Siemens/ HPL/Havells Power Contactors L&T/ Schneider Electric / Siemens/ Lakshmi(LECS Change Over Switch HPL / Havells / H-H Elcon Intelligent APFC Relay L&T/EPCOS(Siemens)/ Schneider Electric / Neptur Ducati/Syntron/ABB Bus Bar Trunking/ Sandwiched Bus Duct Moeller/L&T/Schneider Electric/ABB/Legrand/Zet Sandwiched Bus Duct Nower Capacitors L&T/EPCOS(Siemens)/ABB/Crompton/ Schneider Electric/Neptune Ducati H Digital/ KWHr meter Schneider Electric / AE / Digitron / IMP / Meco / Rishabh / Universal/HPL/L&T/ABB Sont Cold shrink HT/LT Cable Denson / 3M(M-Seal)/ Raychem Joint ISI mark Crompton / Havells / Indokopp / MDS Legrand / L& / ELCB/RCCB/ Distribution Board Crompton / Havells / Indokopp / MDS Legrand / L& / Schneider Electric/ Siemens / Standard/ Distribution Board Cable Tray MEM/Bharti/Ratan/Slotco/Profab ISI mark PVC insulated copper conductor wire ISI mark ISI mark PVC insulated copper conductor wire ISI mark ISI mark Sub Tray MEM/Bharti/Ratan/Slotco/Profab		a) Above 400 KVA	
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 / Neptur Ducati/Syntron/ABB 12 Bus Bar Trunking/ Sandwiched Bus Duct Moeller/L&T/Schneider Electric/ABB/Legrand/Zet Sandwiched Bus Duct 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& / 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		b) Up to 400 KVA	
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 / Neptur Ducati/Syntron/ABB 12 Bus Bar Trunking/ Sandwiched Bus Duct Moeller/L&T/Schneider Electric/ABB/Legrand/Zet 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& / 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	6	Air Circuit Breaker	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 / Neptur Ducati/Syntron/ABB 12 Bus Bar Trunking/ Sandwiched Bus Duct Moeller/L&T/Schneider Electric/ABB/Legrand/Zet 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& / 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	7	MCCB(Ics=Icu)	L&T/ Schneider Electric / Siemens
10Change Over SwitchHPL / Havells / H-H Elcon11Intelligent APFC RelayL&T/EPCOS(Siemens)/ Schneider Electric / Neptur Ducati/Syntron/ABB12Bus Bar Trunking/ Sandwiched Bus DuctMoeller/L&T/Schneider Electric/ABB/Legrand/Zet13Power Capacitors (MPP/APP)L&T/EPCOS(Siemens)/ABB/Crompton/ Schneider Electric/Neptune Ducati14Digital/ KWHr meterSchneider Electric/AE/ Digitron / IMP/ Meco / Rishabh / Universal/HPL/L&T/ABB15Cold shrink HT/LT Cable JointDenson / 3M(M-Seal)/ Raychem16Rubber MattingISI mark17MCB/ Isolator /ELCB/RCCB/ Distribution BoardCrompton / Havells / Indokopp / MDS Legrand/ L& / Schneider Electric/ Siemens / Standard/ C&S/ABB/HPL18MS/ PVC ConduitISI mark19Cable TrayMEM/Bharti/Ratan/Slotco/Profab20HT/LT CablesISI mark21PVC insulated copper conductor wireISI mark22Centrifugal PumpAmrut / BE / Beacon / Batliboi / Crompton / Jyoti	8		L&T/ Schneider Electric / Siemens/ HPL/Havells
10Change Over SwitchHPL / Havells / H-H Elcon11Intelligent APFC RelayL&T/EPCOS(Siemens)/ Schneider Electric / Neptur Ducati/Syntron/ABB12Bus Bar Trunking/ Sandwiched Bus DuctMoeller/L&T/Schneider Electric/ABB/Legrand/Zet13Power Capacitors (MPP/APP)L&T/EPCOS(Siemens)/ABB/Crompton/ Schneider Electric/Neptune Ducati14Digital/ KWHr meterSchneider Electric/AE/ Digitron / IMP/ Meco / Rishabh / Universal/HPL/L&T/ABB15Cold shrink HT/LT Cable JointDenson / 3M(M-Seal)/ Raychem16Rubber MattingISI mark17MCB/ Isolator /ELCB/RCCB/ Distribution BoardCrompton / Havells / Indokopp / MDS Legrand/ L& / Schneider Electric/ Siemens / Standard/ C&S/ABB/HPL18MS/ PVC ConduitISI mark19Cable TrayMEM/Bharti/Ratan/Slotco/Profab20HT/LT CablesISI mark21PVC insulated copper conductor wireISI mark22Centrifugal PumpAmrut / BE / Beacon / Batliboi / Crompton / Jyoti	9	Power Contactors	L&T/ Schneider Electric / Siemens/ Lakshmi(LECS)
Ducati/Syntron/ABB12Bus Bar Trunking/ Sandwiched Bus DuctMoeller/L&T/Schneider Electric/ABB/Legrand/Zet13Power Capacitors (MPP/APP)L&T/EPCOS(Siemens)/ABB/Crompton/ Schneider Electric/Neptune Ducati14Digital/ KWHr meterSchneider Electric/ AE/ Digitron / IMP/ Meco / Rishabh / Universal/HPL/L&T/ABB15Cold shrink HT/LT Cable JointDenson / 3M(M-Seal)/ Raychem16Rubber MattingISI mark17MCB/ Isolator /ELCB/RCCB/ Distribution BoardCrompton / Havells / Indokopp / MDS Legrand/ L& / Schneider Electric/ Siemens / Standard/ C&S/ABB/HPL18MS/ PVC ConduitISI mark19Cable TrayMEM/Bharti/Ratan/Slotco/Profab20HT/LT CablesISI mark21PVC insulated copper conductor wireISI mark22Centrifugal PumpAmrut / BE / Beacon / Batliboi / Crompton / Jyoti	10		· · ·
Sandwiched Bus Duct13Power Capacitors (MPP/APP)L&T/EPCOS(Siemens)/ABB/Crompton/ Schneider Electric/Neptune Ducati14Digital/ KWHr meter (MPP/APP)Schneider Electric/ AE/ Digitron / IMP/ Meco / Rishabh / Universal/HPL/L&T/ABB15Cold shrink HT/LT Cable JointDenson / 3M(M-Seal)/ Raychem16Rubber MattingISI mark17MCB/ Isolator /ELCB/RCCB/ Distribution BoardCrompton / Havells / Indokopp / MDS Legrand/ L& / Schneider Electric/ Siemens / Standard/ C&S/ABB/HPL18MS/ PVC ConduitISI mark19Cable TrayMEM/Bharti/Ratan/Slotco/Profab20HT/LT CablesISI mark21PVC insulated copper conductor wireISI mark22Centrifugal PumpAmrut / BE / Beacon / Batliboi / Crompton / Jyoti	11	Intelligent APFC Relay	L&T/EPCOS(Siemens)/ Schneider Electric / Neptune Ducati/Syntron/ABB
(MPP/APP)Electric/Neptune Ducati14Digital/ KWHr meterSchneider Electric/ AE/ Digitron / IMP/ Meco / Rishabh / Universal/HPL/L&T/ABB15Cold shrink HT/LT Cable JointDenson / 3M(M-Seal)/ Raychem16Rubber MattingISI mark17MCB/ Isolator /ELCB/RCCB/ Distribution BoardCrompton / Havells / Indokopp / MDS Legrand/ L& /Schneider Electric/ Siemens / Standard/ C&S/ABB/HPL18MS/ PVC ConduitISI mark19Cable TrayMEM/Bharti/Ratan/Slotco/Profab20HT/LT CablesISI mark21PVC insulated copper conductor wireISI mark22Centrifugal PumpAmrut / BE / Beacon / Batliboi / Crompton / Jyoti	12		Moeller/L&T/Schneider Electric/ABB/Legrand/Zeta
Rishabh / Universal/HPL/L&T/ABB15Cold shrink HT/LT Cable JointDenson / 3M(M-Seal)/ Raychem16Rubber MattingISI mark17MCB/ Isolator /ELCB/RCCB/ Distribution BoardCrompton / Havells / Indokopp / MDS Legrand/ L& / Schneider Electric/ Siemens / Standard/ C&S/ABB/HPL18MS/ PVC ConduitISI mark19Cable TrayMEM/Bharti/Ratan/Slotco/Profab20HT/LT CablesISI mark21PVC insulated copper conductor wireISI mark22Centrifugal PumpAmrut / BE / Beacon / Batliboi / Crompton / Jyoti	13	(MPP/APP)	L&T/EPCOS(Siemens)/ABB/Crompton/ Schneider Electric/Neptune Ducati
JointJoint16Rubber MattingISI mark17MCB/ Isolator /ELCB/RCCB/ Distribution BoardCrompton / Havells / Indokopp / MDS Legrand/ L& / Schneider Electric/ Siemens / Standard/ C&S/ABB/HPL18MS/ PVC ConduitISI mark19Cable TrayMEM/Bharti/Ratan/Slotco/Profab20HT/LT CablesISI mark21PVC insulated copper conductor wireISI mark22Centrifugal PumpAmrut / BE / Beacon / Batliboi / Crompton / Jyoti	14		
17MCB/ Isolator /ELCB/RCCB/ Distribution BoardCrompton / Havells / Indokopp / MDS Legrand/ L& / Schneider Electric/ Siemens / Standard/ C&S/ABB/HPL18MS/ PVC ConduitISI mark19Cable TrayMEM/Bharti/Ratan/Slotco/Profab20HT/LT CablesISI mark21PVC insulated copper conductor wireISI mark22Centrifugal PumpAmrut / BE / Beacon / Batliboi / Crompton / Jyoti		Joint	
/ELCB/RCCB/ Distribution Board/ Schneider Electric/ Siemens / Standard/ C&S/ABB/HPL18MS/ PVC ConduitISI mark19Cable TrayMEM/Bharti/Ratan/Slotco/Profab20HT/LT CablesISI mark21PVC insulated copper conductor wireISI mark22Centrifugal PumpAmrut / BE / Beacon / Batliboi / Crompton / Jyoti		•	
19Cable TrayMEM/Bharti/Ratan/Slotco/Profab20HT/LT CablesISI mark21PVC insulated copper conductor wireISI mark22Centrifugal PumpAmrut / BE / Beacon / Batliboi / Crompton / Jyoti	17	/ELCB/RCCB/ Distribution Board	C&S/ABB/HPL
20 HT/LT Cables ISI mark 21 PVC insulated copper conductor wire ISI mark 22 Centrifugal Pump Amrut / BE / Beacon / Batliboi / Crompton / Jyoti	18	MS/ PVC Conduit	ISI mark
21PVC insulated copper conductor wireISI mark22Centrifugal PumpAmrut / BE / Beacon / Batliboi / Crompton / Jyoti	19	Cable Tray	MEM/Bharti/Ratan/Slotco/Profab
conductor wire22Centrifugal PumpAmrut / BE / Beacon / Batliboi / Crompton / Jyoti	20	HT/LT Cables	ISI mark
5 1 5	21		ISI mark
	22	Centrifugal Pump	Amrut / BE / Beacon / Batliboi / Crompton / Jyoti / Kirloskar / KSB / Mather & platt / WASP/Grundfos

LIST OF APPROVED MAKES- BSNL ELECTRICAL WING

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 / Pilkingston / 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

<u>NOTE</u>:

- 1. In case of External / PMC works, the list of approved makes may be modified as per client's requirement.
- 2. The accessories such as CT/PT/measuring instrument/relays provided by approved make in respect of Transformer/HT Panel/DG /AC Package Units as supplied by approved manufacturer along with the equipments are also acceptable in addition.
- 3. Any additional makes may be approved by concerned PCEs/Sr CEs/CEs(Elect) for the work under his jurisdiction as already accorded vide letter no. 3-2-5/EW/VEP-1/2007 dated 05-07-2007.

1.1 LIST OF INDIAN STANDARDS

- I.S.277 Galvanized steel sheets.
- I.S.325 Three Phase Induction
- Motors I.S.655 Metal Air Ducts

I.S.732Code of Practice for Electrical Wiring and fittings forBuildings.I.S.778Gun Metal Gate, Globe and Check Valves for general

purposes.I.S.900 Code of Practice for Installation and Maintenance of Induction Motors.

I.S.996 Single Phase small AC and Universal Motors.

- I.S.1239 Mild Steel Tubes, G.I. Pipes, Tubular and other wrought steel fittings.
- I.S.1248 Direct Acting Electrical Indicating Instruments.
- I.S.1520 Horizontal Centrifugal Pumps for clear, cold and fresh water.
- I.S.1554 PVC Insulated (heavy duty) Electrical Cables

(Part-I) for working voltages upto and including 110 volts.

- I.S.2372 Timber for cooling
- towers. I.S.2516 AC Circuit

Breakers.

- I.S.2592 Recommendation for Methods of Measurements of Fluid flow by means of Orifice Plates and Nozzles.
- I.S.1822 Motor Starters of Voltage not exceeding 1000
- volts. I.S.2208 HRC Cartridge Fuse Links upto 650 volts.
- I.S.3589 Electrically welded steel pipes for water, gas and sewage.
- I.S.3624 Bourden Tube Pressure and Vacuum Gauges.
- I.S.4047 Heavy Duty air break switches and composite units of air break switches and fuses for voltage not exceeding 1000 volts.
- I.S.6392 Steel Pipe Flanges.
- I.S.7403 Code of Practice for Selection of Standard Worm and Helical Gear Boxes.
- I.S.8148 Specification for packaged air conditioning.CPWD General Specifications for Heating, Ventilation & Air conditioning (HVAC)-2004

1.2 IMPORTANT NOTE

All references to I.S.I. appearing in this specification may be read as Bureau of Indian Standards, Latest amended versions.

1.3 LIST OF SAFETY STANDARDS

- I.S.618 Code of Practice for safety and health requirements in Electrical
- and Gas Welding and Cutting Operations.
- I.S.659 Safety code for Air Conditioning.
- I.S.660 Safety code for Mechanical Refrigeration.

I.S.3016 Code of Practice for Fire precautions in welding and cutting operations.I.S.3210 Code for Safety procedures and practices in Electrical works.

I.S.3696 Safety for Scaffolds and Ladde

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:	
Estimated cost of work:	As per NIT notification page
Earnest money:	, le poi fui fiolateri page
Security Deposit and	
performance Guarantee	

General Rules & Directions: Officer inviting tender: Sub Divisional Engineer (E) ESD-IV, Chennai-10 Definitions:

2(v)	Engineer-in-Charge	Sub Divisiona	I Engineer (E), ESD-IV, Chennai-10
2(vi)	Accepting Authority	Sub Divisiona	I Engineer (E), ESD-IV, Chennai-10
2(x)	Percentage on cost of materials and labour to cover all overheads and profits		10%(TEN)
CLAUS	SE 5		
	Time allowed for execution Authority to give fair and reasonab	10Months <mark></mark> le extension of	
	time for completion of work		:EE (E),ED-I, Chennai-10
	Competent Authority for deciding re	educed rates	: EE (E) ED-I, Chennai-10
Clause	e 25		
	Competent authority for conciliation	:	: SE (E) not in-charge of the work.

BSNL EW-8 Bharat Sanchar Nigam Limited Electrical Wing

Electrical Division: ED-I, Chennai-10

Sub Division: IV, Chennai-10

- 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 contract value in a standard format within two weeks from the date of issue of award letter. I/We agree to keep the performance bank guarantee valid as per the BSNL terms and conditions.
- 7. I/We hereby declare that I/We shall treat the tender documents drawings and other records connected with the work as secret/confidential documents and shall not communicate information/derived there from to any person other than to whom I/We am/are authorized to communicate the same or use the information in any manner prejudicial to the safety or interest of BSNL.

Signature of Witness (required in the case of bidder's thumb impression is given by the bidder in place of signature) Occupation of Witness :	(Signature of bidder) (Name & Postal address)
	Seal of Bidder
	Date:

Acceptance of Tender

The	above	tender	(as mo	dified k	oy you as l	provid	ed in the	letters	men	tioned h	ereund	der) is a	ccepted
by	me	for	and	on	behalf	of	BSNL	for	а	sum	of	Rs.	
(Rupe	es)		
The le	etters re	eferred	to belo	w shal	I form part	t of th	is contrac	t Agree	emen	t.			
a)													
b)													

For & on behalf of BSNL

Dated Signature :

Designation