



# INDIAN INSTITUTE OF TECHNOLOGY DELHI

HAUZ KHAS, NEW DELHI – 110016

## AC DIVISION TENDER DOCUMENT

**NAME OF WORK** : Providing VFD Retrofitting in Blue Star Chiller AC Plant of CSC, IIT Delhi

**ESTIMATED COST ₹** : 19,32,840.00

**EMD ₹** : 38,657.00 (No exemption allowed)

**N.I.T. No.** : 78/0715/IITD/AC/2024-25

**Date of Opening** : 23-10-2024

NIT for the subject work has been prepared with the following:

|    |                                  |   |                         |
|----|----------------------------------|---|-------------------------|
| 1  | Amount of NIT (INR)              | : | 19,32,840.00            |
| 2  | Earnest money (INR)              | : | 38,657.00               |
| 3  | Completion time                  | : | 60 days                 |
| 4  | Last date of submission (online) | : | 22-10-2024 upto 3 PM    |
| 5  | Date of opening                  | : | 23-10-2024 after 3 PM   |
| 6  | Form of NIT                      | : | PWD / IITD – 8          |
| 7  | Schedule applicable              | : | Market Rate, DSR (E&M)  |
| 8  | Material stipulated              | : | As per Schedule of Work |
| 9  | Chargeable heads                 | : | 31.06.30                |
| 10 | Work code no.                    | : | 2021/006/0715           |
| 12 | NIT No.                          | : | 78/0715/IITD/AC/2024-25 |

Certified that this NIT contains 1 to 45 pages.  
NIT amounting to Rs.19,32,840.00 is approved.

**T.S. Plg.**

**Assistant Executive Engineer in-charge  
AC Division**

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# INDIAN INSTITUTE OF TECHNOLOGY DELHI

## AC DIVISION

### NOTICE INVITING E-TENDER

IITD/WORKS (SP-4775)/2024

**Assistant Executive Engineer-in-charge, AC Division**, Indian Institute of Technology Delhi, Hauz Khas, New Delhi – 110016, Ph. No. 011-2659 1746 on behalf of Board of Governors invites online **Item Rate Tender** from **OEM Blue Star or their Authorised Dealers** in two bid system as per details given below.

|   |                                    |   |  |
|---|------------------------------------|---|--|
| 1 | Name of work                       | : | Providing VFD Retrofitting in Blue Star Chiller AC Plant of CSC, IIT Delhi |
| 2 | NIT No.                            | : | 78/0715/IITD/AC/2024-25  |
| 3 | Estimated Cost (Rs.)               | : | 19,32,840.00   |
| 4 | Earnest Money Deposit (Rs.)        | : | 38,657.00 (No exemption allowed)   |
| 5 | Period of completion               | : | 60 days  |
| 6 | Last date & time of bid submission | : | Upto 3 PM of 22-10-2024  |
| 7 | Performance Bank Guarantee         | : | 5 percent of the tendered amount   |

The bid forms and other details may be downloaded from Central Public Procurement Portal (<http://eprocure.gov.in/eprocure/app>). Aspiring bidders who have not enrolled / registered in e-procurement should enrol / register themselves before participating through web site <http://eprocure.gov.in/eprocure/app>. The portal enrolment is free of cost. Bidders are advised to go through instructions provided at “Instructions for online bid submission.”

Bidders can access quotation / tender documents on the website (for searching in the NIC site), kindly go to quotation search option and type ‘IIT’. Thereafter, click on “GO” button to view all IIT quotations. Select the appropriate quotation / tender and fill them with all relevant information and submit the completed Quotation / Tender document online on the website <http://eprocure.gov.in/eprocure/app> as per the schedule given in the next page.

**No manual bids will be accepted. All bids (both Technical & Financial) should be submitted in the e-procurement portal.**

**Assistant Executive Engineer-in-charge, AC Division  
For & on behalf of BOG, IIT Delhi**

|          |   |          |            |           |   |               |
|----------|---|----------|------------|-----------|---|---------------|
| Ch. Head | : | 31.06.30 | <b>NPN</b> | Work Code | : | 2021/006/0715 |
|----------|---|----------|------------|-----------|---|---------------|

Copy to:-

1. A.R. (Works Accounts)
2. A.R. (A/C)
3. A.R. (Store Purchase Section)
4. Notice Board
5. Website Administrator, IIT Delhi
6. Office copy

## SCHEDULE

|           |   |          |   |
|-----------|---|----------|---|
| <b>1</b>  | <b>Name of organisation</b>   | <b>:</b> | <b>Indian Institute of Technology Delhi</b>   |
| <b>2</b>  | Tender / Quotation type (open / limited / EOI / auction / single)               | <b>:</b> | Open  |
| <b>3</b>  | Tender / Quotation category (services / goods / works)                          | <b>:</b> | Goods & Works   |
| <b>4</b>  | Type of Contract (work / supply / auction / service / buy / empanelment / sell) | <b>:</b> | Work & Supply   |
| <b>5</b>  | Form of contract (IITD – 7/8)   | <b>:</b> | IITD – 8  |
| <b>6</b>  | Work Category (civil / electrical / fleet management / computer systems)        | <b>:</b> | Electrical  |
| <b>7</b>  | Is multi-currency allowed?  | <b>:</b> | No  |
| <b>8</b>  | Date of publishing / issue / start  | <b>:</b> | 15-10-2024 AT 5.00 PM   |
| <b>9</b>  | Document download start date  | <b>:</b> | 15-10-2024 AT 5.00 PM   |
| <b>10</b> | Document download end date  | <b>:</b> | 22-10-2024 AT 5.00 PM   |
| <b>11</b> | Date & time of pre-bid meeting  | <b>:</b> | No pre-bid meeting be held  |
| <b>12</b> | Venue of pre-bid meeting  | <b>:</b> | Not applicable  |
| <b>13</b> | Last date & time of uploading of bids   | <b>:</b> | Upto 3 PM of 22-10-2024   |
| <b>14</b> | Date & time of opening of Technical Bids  | <b>:</b> | 23-10-2024 after 3 PM   |
| <b>15</b> | Tender fee  | <b>:</b> | Free of cost  |
| <b>16</b> | Earnest Money Deposit (EMD) Rs.   | <b>:</b> | <b>38,657.00 (No exemption allowed)</b>   |
| <b>17</b> | Mode of payment of EMD  | <b>:</b> | To be paid through online mode. IIT Delhi Bank details are as under:<br>Name of the Bank A/C : <b>IITD Revenue Account</b><br>SBI A/C No. : <b>10773572622</b><br>Name of the Bank : <b>State Bank of India, IIT Delhi, Hauz Khas, New Delhi-110016</b><br>IFSC Code : <b>SBIN0001077</b><br>MICR Code : <b>110002156</b><br>Swift No. : <b>SBININBB547</b> |

|    |   |   |  |
|----|---|---|--|
|    |   |   | (This is mandatory that UTR Number is provided in the on-line quotation/bid. (Kindly refer to the UTR Column of the Declaration Sheet at Annexure-I) |
| 17 | Bid without EMD / Non-submission of original DD | : | To be considered as UNRESPONSIVE and bid shall summarily be rejected   |
| 18 | No. of bids / covers (1 / 2 / 3 / 4)            | : | 2  |
| 19 | Address for communication                       | : | <b>Assistant Executive Engineer-in-charge, AC Division</b> , Works Department, IIT Delhi, Hauz Khas, New Delhi – 110016                              |
| 20 | Contact No.                                     | : | 011 2659 1746  |
| 21 | e-mail address for communication                | : | <a href="mailto:a26984@admin.iitd.ac.in">a26984@admin.iitd.ac.in</a> ;   |

## **INSTRUCTIONS FOR ONLINE BID SUBMISSION**

As per the directives of Department of Expenditure, this quotation / tender document has been published on the Central Public Procurement Portal (URL: <http://eprocure.gov.in/eprocure/app>). The bidders are required to submit softcopies of their bids electronically on the CPP portal, using valid Digital Signature Certificates (DSC). The instructions given below are meant to assist the bidders in registering on the CPP portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP portal.

More information useful for submitting online bids on the CPP portal may be obtained at <http://eprocure.gov.in/eprocure/app>

### **REGISTRATION**

1. Bidders are required to enrol on the e-procurement module of the Central Public Procurement portal (URL: <http://eprocure.gov.in/eprocure/app>) by clicking on the link, "click here to enrol". Enrolment on the CPP portal is free of charge.
2. As part of the enrolment process, the bidders will be required to choose a unique user name and assign a password for their accounts.
3. Bidders are advised to register their valid e-mail address and mobile number as part of the registration process. These would be used for any communication from the CPP Portal.

4. Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (class 2 or class 3 certificates with signing key usage) issued by any certifying authority recognised by CCA India (e.g. Sify / TCS / nCode / eMudhra etc.) with their profile.
5. Only one valid DSC should be registered by a bidder. Please note that bidders are responsible to ensure that they do not lend their DSCs to others which may lead to misuse.
6. Bidder then logs into the site through the secured log-in by entering their user ID / password and the password of the DSC / eToken.

### **SEARCHING FOR TENDER DOCUMENTS**

1. There are various search options built in the CPP portal to facilitate bidders to search active tenders by several parameters. These parameters could include tender ID, organisation name, location, date, value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as organisation name, form of contract, location, date, other keywords etc. to search for a tender published on the CPP portal.
2. Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. The tenders can be moved to the respective “My Tenders” folder. This would enable the CPP portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.
3. The bidder should make a note of the unique Tender ID assigned to each other, in case they want to obtain any clarification / help from the Helpdesk.

### **PREPARATION OF BIDS**

1. Bidder should take into account any corrigendum published on the tender document before submitting their bids.
2. Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bids. Please note the number of covers in which the bid documents have to be submitted. Any deviations from these may lead to rejection of the bids.
3. Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF formats. Bid documents may be scanned with 100 dpi with black & white option.
4. To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor’s certificates, etc.) has been provided to the bidders. Bidders can use “My Space” area available to them to upload such documents. These documents may be directly submitted from the “My Space” area while submitting a bid, and need



not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

### **SUBMISSION OF BIDS**

1. Bidder should log into the site well in advance for bid submission so that he / she upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
2. The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
3. Bidder has to select the payment option as “on-line” to pay the tender fee / EMD as applicable and enter details of the instrument. Whenever, EMD / Tender fees is sought, bidders need to pay the tender fee and EMD separately on-line through RTGS (Refer to Schedule, Page no. 3)
4. A standard BOQ Format has been provided with the tender document to be filled by all the bidders. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. Bidders are required to download the BOQ file, open it and complete the white coloured [unprotected] cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it online, without changing the filename. If the BOQ file is found to be modified by the bidder, the bid will be rejected.

OR

In some cases financial bids can be submitted in PDF format as well (in lieu of BOQ).

5. The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.
6. All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorised persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology. Data storage encryption of sensitive fields is done.
7. The uploaded tender documents become readable only after the tender opening by the authorised bid openers.
8. Upon the successful and timely submission of bids, the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.
9. Kindly add scanned PDF of all relevant documents in a single PDF file of compliance sheet.



## **INFORMATION & INSTRUCTION TO BIDDERS FOR E-TENDERING**

Assistant Executive Engineer-in-charge, AC Division, Indian Institute of Technology Delhi, Hauz Khas, New Delhi – 110016, Ph. No. 011-2659 1746 on behalf of Board of Governors invites online **Item Rate Tender** from OEM Blue Star or their Authorised Dealers in two bid system as per details given below:

| Sr. No. | NIT No.                 | Name of Work & Location  | Estimated cost put to bid (Rs.) | Earnest money (Rs.)              | Period of completion | Last date & time of submission of bid | Time & date of opening of Technical Bid | Time & date of opening of Financial Bid      |
|---------|-------------------------|--|---------------------------------|----------------------------------|----------------------|---------------------------------------|---|--|
| (1)     | (2)                     | (3)  | (4)                             | (5)                              | (6)                  | (7)                                   | (8)                                     | (9)  |
| 1       | 78/0715/IITD/AC/2024-25 | Providing VFD Retrofitting in Blue Star Chiller AC Plant of CSC, IIT Delhi | 19,32,840.00                    | 38,657.00 (No exemption allowed) | 60 days              | Upto 3 PM of 22-10-2024               | 23-10-2024 after 3 PM                   | To be decided after assessing Technical Bids |

1. The successful bidder shall be required to submit a performance guarantee of 5% of the tendered amount in the form of Bank Guarantee or F.D.R. from a Nationalized / Scheduled Bank within fifteen days of issue of letter of intent before award of work. In case of failure by the Contractor to submit the performance guarantee within the specified period, full earnest money will be forfeited by the Institute and the tender shall be treated as null and void. EMD shall be refunded after submission of PBG. **The performance guarantee shall be initially valid up to the stipulated date of completion (i.e. 60 days) plus sixty days beyond that.**
2. **Earnest money (EMD)** shall have to be deposited / submitted as stipulated in the schedule.
3. Contractors who fulfil the following requirements shall be eligible to apply. Joint ventures are not accepted.
  - a. Should have proper Authorisation from Blue Star Limited. **Original ink-signed authorisation letter has to be submitted by the bidder on demand after opening of Technical bid.**
  - b. **Both OEM and their Authorised Dealers can't participate simultaneously. In that case all bids shall become null and void.**
  - c. Should have satisfactorily completed the works as mentioned below during the last Seven years ending **last day of the month previous to one in which tenders are invited.**
    - i. **Three** similar works each costing not less than **Rs.7,73,000.00**, or **two** similar works each costing not less than **Rs.11,59,700.00**, or one similar work costing not less than **Rs.15,46,272.00**.
4. The value of executed work shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum; calculated from the date of completion to previous day of last day of submission of bids.
5. **Similar work means HVAC related Work.**
6. **Work means** work done with some Central Government Department / State Government Department / Central Autonomous Body / *State Autonomous Body* / Central Public Sector Undertaking / *State Public Sector Undertaking* / *City Development Authority* / *Municipal Corporation of City formed under any Act by Central / State Government and published in Central / State Gazette* / any Public Authority.
7. Completion certificates are required to be got issued by an officer not below the rank of Executive Engineer of similar works completed by the Firm. The work experience certificates submitted by the bidders shall clearly indicate that:
  - a. The similar work executed shall be **as per '5' above**
  - b. The completed cost of the work
  - c. Actual date of completion of the work
8. IITD is committed to follow the principle of transparency, equity, and competitiveness in public procurement. Before submission of bid, **each bidder should sign integrity pact at**

**respective places and submit the bid. If duly signed integrity pact is not submitted by bidder, such bid shall not be considered.**

9. **The intending bidder must read the terms and conditions [both commercial & Additional] & IITD - 6 carefully** which will be the part of the Contract. He should only submit his bid if he considers himself eligible and he is in possession of all the documents required.
10. Information and Instructions for bidders posted on website shall form part of bid document.
11. The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from website e-procure.gov.in free of cost.
12. But the bid can only be submitted after submission/uploading of EMD as prescribed in the schedule.
13. Copy of all mandatory documents as desired in the NIT shall be scanned and up-loaded to the e-Tendering website within the period of bid submission. During scrutiny of technical bids, if required, bidders may be asked to submit original documents for cross checking. However, certified / original copy of all the scanned and up-loaded documents shall have to be submitted by the lowest bidder only within a week physically in the office of the tender inviting authority.
14. Online bid documents submitted by intending bidders shall be opened only of those bidders, who has submitted prescribed EMD, and other documents scanned and uploaded are found in order.
15. Those contractors not registered on the website mentioned above, are required to get registered beforehand. Bidders should refer "Instruction for Online Bid Submission" given earlier for further assistance.
16. When bids are invited in two / three stages systems and if it is desired to submit revised financial bid it shall be mandatory to submit revised financial bid. If not submitted, then the bid submitted earlier shall become invalid.
17. The department reserves the right to reject any prospective application without assigning any reason and to restrict the list of qualified contractors to any number deemed suitable by it, if too many bids are received satisfying the laid down criterion.
18. Contractors must ensure to quote rate of each item.
19. **The bid submitted shall become invalid if:**
  - a. The bidder is found ineligible.
  - b. The bidder does not upload scanned copies of all the documents stipulated in the bid document.
  - c. If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted physically by the lowest bidder in the office of bid opening / accepting authority.
  - d. If a tenderer quotes nil rates against each item in item rate tender or does not quote any percentage above/below on the total amount of the tender or any section / sub head in

percentage rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.

- e. EMD not deposited as specified.
- 20.** Equipment to be supplied shall satisfy Class-1 criteria. 'Class – 1 Local Supplier' means a supplier or service provider, whose goods, services or works offered for procurement has local content equal to or more than 50% as defined under Order No. P-45021/2/2017-PP(BE-II) dated 04-06-2020 issued by Department for Promotion of Industry and Internal Trade (Public Procurement Section), Ministry of Commerce and Industry, Govt of India.
- a. 'Local Content' means the amount of value added in India which shall unless and otherwise prescribed by the nodal ministry, be the total value of the item procured (excluding net domestic indirect taxes) minus the value of imported content in the item (including all domestic duties) as a proportion of the total value, in percent.
- b. For the purpose of verification of 'Local Content', the Class-1 Local Supplier / Service Provider at the time of bidding, tender or solicitation shall be required to indicate percentage of local content and provide self-certification that the items offered meet the local content requirement for Class – 1 Local Supplier. They shall also give details of the location(s) at which the local value addition is made.
- c. In cases of procurement for a value in excess of 10 crore, the Class – 1 Local Supplier shall be required to provide a certificate from the statutory auditor or cost auditor of the company (in case of the companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.
- d. Nodal Ministries may constitute committees with internal and external experts for independent verification of self-certifications and auditor's / accountant's certificates on random basis and in the case of complaints.
- e. False declarations will be in breach of Code of Integrity under rule 175(1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for upto two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.

**List of MANDATORY DOCUMENTS to be scanned and uploaded within the period of bid submission:**

| Sr. No. | : | Details of Document   |
|---------|---|---|
| 1       | : | Annexure – 1 duly filled in and got signed by the bidder  |
| 2       | : | Proof of online EMD deposit   |
| 3       | : | OEM Authorisation Letter  |
| 4       | : | <p>Certificate of GST Registration, if already obtained by the bidder.</p> <p>If the bidder has not obtained GST registration as applicable, then he shall scan and upload following undertaking alongwith bid documents.<br/> <i>“If work is awarded to me, I/we shall obtain GST registration certificate as applicable within one month from the date of award letter or before release of any payment by IIT Delhi, whichever is earlier, failing which I/we shall be responsible for any delay in payments which will be due towards me/us on account of the work executed and/or for any action taken by IIT Delhi or GST department in this regard.”</i></p> |
| 5       | : | <p>Affidavit as per provision of the clause 1.2.2 of <b>IITD-6</b> vide in following page (To be submitted on <u>stamp paper</u> (not less than rupees ten) and <u>date of affidavit</u> and <u>purchase</u> of stamp paper <u>shall not be earlier</u> than the publication of NIT. <u>NIT number, Name of work</u> shall invariably be written on the <b>1<sup>st</sup> page</b> of the Stamp</p>   |

|    |   |  |
|----|---|--|
|    |   | <u>Paper)</u>  |
| 6  | : | Acceptance to execute INTEGRITY PACT (see integrity pact)  |
| 7  | : | IITD 7 / 8 duly signed   |
| 8  | : | EPFO & ESIC registration proof   |
| 9  | : | Valid Electrical Licence in the name of the contractor. <i>if the bidder does not possess electrical licence in his own name, he shall have to submit an undertaking on their letter head and the bidder shall scan and upload following undertaking along with other bid documents.</i><br><br>a. <i>"I/We undertake that, if I/we do not possess in my/our name a valid electrical license as required, I/we shall associate an agency having such a licence for execution of work which requires such a licence".</i> |
| 10 | : | Work Experience Certificate as desired (vide 3 to 7 as above)  |
| 11 | : | Any other document as specified  |

**Note:**

- Hard copies of documents are to be submitted as per clause 9.1 of IITD-6
- Original copies of documents are to be submitted for verifications as and when demanded by the tender inviting authority
- Bidders are advised to keep the Original Affidavit and other documents 'as it is' in safe custody till finalisation of bid

**Assistant Executive Engineer in-charge, AC Division  
For & on Behalf of BOG, IIT Delhi**



**CPWD/IITD – 6**

**INDIAN INSTITUTE OF TECHNOLOGY DELHI  
NOTICE INVITING E-TENDER**

- 1.0** Item rate tenders are invited on behalf of The Board of Governors, IIT Delhi, Hauz Khas, New Delhi - 110016 from OEM Blue Star or their Authorised Dealers in two bid system as per details given below for the work of **Providing VFD Retrofitting in Blue Star Chiller AC Plant of CSC, IIT Delhi**
- 1.1 The work is estimated to cost **Rs.19,32,840.00**. This estimate, however, is given merely as a rough guide.
- 1.2 Intending bidder is eligible to submit the bid provided he has definite proof from the appropriate authority, which shall be to the satisfaction of the competent authority, of having satisfactorily completed similar works of magnitude specified below:-
- 1.2.1 Criteria of eligibility for submission of bid documents: Conditions for intending bidders / contractors**
- 1.2.1.1 Should have proper Authorisation from Blue Star Limited. **Original ink-signed authorisation letter has to be submitted by the bidder on demand after opening of Technical bid.**

- 1.2.1.2 **Both OEM and their Authorised Dealers can't participate simultaneously. In that case all bids shall become null and void.**
- 1.2.2 **To become eligible for issue of bid, the bidders shall have to furnish an affidavit as under:** - *"I / We undertake and confirm that eligible similar works(s) has/have not been got executed through another contractor on back-to-back basis. Further that, if such a violation comes to the notice of Department, then I / we shall be debarred for bidding in IIT Delhi in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee (Scanned copy to be uploaded at the time of submission of bid)"*
- 2.0 Agreement shall be drawn with the successful bidders on prescribed Form No. IITD 7/8 which is available as IIT Delhi Publication. Bidders shall quote their rates as per various terms and conditions of the said form which will form part of the agreement.
- 3.0 The time allowed for carrying out the work will be **60 days** from the date of start as defined in schedule 'F' or from the first date of handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the bid documents.
- 4.0 The site for the work is available.
- 5.0 The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents except Standard General Conditions of Contract Form can be seen from the web Site **e-procure.gov.in**.
- 6.0 After submission of the bid the contractor can re-submit revised bid any number of times but before last time and date of submission of tender as notified.
- 7.0 While submitting the revised bid, contractor 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.
- 8.0 If it is desired to submit revised financial bid then it shall be mandatory to submit revised financial bid. If not submitted then the tender submitted earlier shall become invalid.
- 9.0 EMD shall have to be deposited as stipulated in the schedule of the NIT.
- 9.1 Copy of all 'mandatory documents' and other documents as specified in the press notice shall be scanned and uploaded to the e-tendering website within the period of bid submission. **However, original affidavit and certified copies of all the scanned and uploaded documents as specified in press notice shall have to be submitted by the lowest bidder within a week physically in the office of tender opening authority. Original copies of other documents are also to be shown for scrutiny and verifications by the tender opening / accepting authority.**
- 10.0 **The bid submitted shall become invalid if:**
- 10.1 The bidder is found ineligible.
- 10.2 The bidder does not upload scanned copies of all the documents stipulated in the bid document.

- 10.3 If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted physically by the lowest bidder in the office of bid opening / accepting authority.
- 10.4 If a tenderer quotes nil rates against each item in item rate tender or does not quote any percentage above/below on the total amount of the tender or any section / sub head in percentage rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.
- 10.5 EMD not deposited / submitted as specified.
- 11.0** The contractor whose bid is accepted will be required to furnish **performance guarantee** of 5% (Five Percent) of the bid amount within the period specified in Schedule F. This guarantee shall be in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt or Bank Guarantee from any of the Commercial Banks in accordance with the prescribed form. In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule 'F', including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor. The earnest money deposited along with bid shall be refunded only after receiving the aforesaid performance guarantee as per stipulation.
- 12.0** Intending Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their bids as to the nature of the ground and subsoil (so far as is practicable), the form and nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. 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 bidders 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 bid 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 Government and local conditions and other factors having a bearing on the execution of the work.
- 13.0** The competent authority on behalf of the Board of Governors does not bind itself to accept the lowest or any other bid and reserves to itself the authority to reject any or all the bids received without the assignment of any reason. All bids 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.
- 14.0** Canvassing whether directly or indirectly, in connection with bidders is strictly prohibited and the bids submitted by the contractors who resort to canvassing will be liable for rejection.
- 15.0** The competent authority on behalf of the Board of Governors reserves to himself the right of accepting the whole or any part of the bid and the bidder shall be bound to

perform the same at the rate quoted.

- 16.0** The contractor shall not be permitted to bid for works in the IITD responsible for award and execution of contracts, in which his near relative is posted a Divisional Accountant or as an officer in any capacity between the grades of Superintending Engineer and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any Gazetted officer in the IIT Delhi. Any breach of this condition by the contractor would render him liable to be debarred from bidding process in future in IIT Delhi.
- 17.0** No Engineer of Gazetted rank or other Gazetted Officer employed in Engineering or Administrative duties in an Engineering Department of the Government of India is allowed to work as a contractor for a period of one year after his retirement from Government service, without the prior permission of the Government of India in writing. This contract liable to be cancelled, if, either the contractor or any of his employees is found any time to be such a person who had not obtained the permission of the Government of India as aforesaid before submission of the bid or engagement in the contractor's service.
- 18.0** **The bids for the work shall remain open for acceptance for a period of 75 (seventy five) days from the date of opening of technical bids. Further**
- 18.1 If any tenderer withdraws his tender or makes any modification in the terms & conditions of the tender which is not acceptable to the department within 7 days after last date of submission of bids, then the Government shall without prejudice to any other right or remedy, be at liberty to forfeit 50% of the earnest money absolutely irrespective of letter of acceptance for the work is issued or not.
- 18.2 If any tenderer withdraws his tender or makes any modification in the terms & conditions of the tender which is not acceptable to the department after expiry of 7 days after last date of submission of bids, then the Government shall without prejudice to any other right or remedy, be at liberty to forfeit 100% of the earnest money absolutely irrespective of letter of acceptance for the work is issued or not.
- 18.3 In case of forfeiture of earnest money as prescribed in para (18.1) and (18.2) above, the bidders shall not be allowed to participate in the rebidding process of the same work.
- 19.0** This notice inviting bid shall form a part of the contract document. The successful bidder / contractor, on acceptance of his bid by the Accepting Authority shall **within fifteen days** from the stipulated date of start of the work, sign the contract consisting of:-
- 19.1 The Notice Inviting Bid, all the documents including additional conditions, specifications and drawings, if any, forming part of the bid as uploaded at the time of invitation of bid and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.
- 19.2 Standard IITD Form –7/8 or other Standard IITD Form as applicable.

**20.0 Integrity Pact:** The contractor shall download the Integrity Pact, which is a part of tender documents, affix his signature and upload the same while submitting online bids. In the event of his failure to sign and upload the Integrity Pact along with other bid documents, his bid shall be rejected.

**INTEGRITY PACT**

To

.....,  
.....,  
.....

Sub: NIT No. 78/0715/IITD/AC/2024-25 for the work of **“Providing VFD Retrofitting in Blue Star Chiller AC Plant of CSC, IIT Delhi”**

C ... Nil    I ..... Nil    O ..... Nil

Dear Sir,

It is hereby declared that IIT Delhi (IITD) is committed to follow the principle of transparency, equity and competitiveness in public procurement.

The subject Notice Inviting Tender (NIT) is an invitation to offer made on the condition that the Bidder will sign the Integrity Agreement, which is an integral part of the tender/bid documents, failing which the tender/bidder will stand disqualified from the tendering process and the bid of the bidder would be summarily rejected.

This declaration shall form part and parcel of the Integrity Agreement and signing of the same shall be deemed as acceptance and signing of the Integrity Agreement on behalf of the IITD.

Yours faithfully,

**Assistant Executive Engineer in-charge, AC Division  
For & on Behalf of BOG, IIT Delhi**

**[TO BE SUBMITTED DULY SIGNED BY THE BIDDER ALONGWITH BID DOCUMENTS]**

To

**Assistant Executive Engineer-in-charge, AC Division,  
IIT Delhi, Hauz Khas,  
New Delhi – 110016**

**Subject: Submission of Bid for the work of “Providing VFD Retrofitting in Blue Star Chiller AC Plant of CSC, IIT Delhi”**

Dear Sir,

I / We acknowledge that IIT Delhi is committed to follow the principles thereof as enumerated in the Integrity Agreement enclosed with the tender/bid document.

I / We agree that the Notice Inviting Tender (NIT) is an invitation to offer made on the condition that I / We will sign the enclosed integrity Agreement, which is an integral part of tender / bid documents, failing which I / We will stand disqualified from the tendering process. I / We acknowledge that THE MAKING OF THE BID SHALL BE REGARDED AS AN UNCONDITIONAL AND ABSOLUTE ACCEPTANCE of this condition of the NIT.

I / We confirm acceptance and compliance with the Integrity Agreement in letter and spirit and further agree that execution of the said Integrity Agreement shall be separate and distinct from the main contract, which will come into existence when tender/bid is finally accepted by IITD. I / We acknowledge and accept the duration of the Integrity Agreement, which shall be in the line with Article 1 of the enclosed Integrity Agreement.

I / We acknowledge that in the event of my/our failure to sign and accept the Integrity Agreement, while submitting the tender/bid, IITD shall have unqualified, absolute and unfettered right to disqualify the tenderer /bidder and reject the tender/bid in accordance with terms and conditions of the tender/bid.

Yours faithfully,

(Duly signed by authorized signatory of the Bidder)

(To be signed by the bidder and same signatory competent / authorized to sign the relevant contract on behalf of IITD)

## INTEGRITY AGREEMENT

This Integrity Agreement is made at ..... on this ..... day of.....  
20.....

C ... Nil    I ..... Nil    O ..... Nil

**BETWEEN**

The Board of Governors, IIT Delhi, Hauz Khas, New Delhi - 16 represented through **Assistant Executive Engineer-in-charge, AC Division**, IIT Delhi, (Hereinafter referred as the **'Principal/Owner'**, **'Principal/Owner'**, which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

**AND**

.....  
.....  
.....  
(Name and Address of the Individual/firm/Company)

Through.....  
..... (Hereinafter referred  
(Details of duly authorized signatory)

to as the **"Bidder/Contractor"** and which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

**PREAMBLE**

WHEREAS the Principal / Owner has floated the Tender (NIT No. 78/0715/IITD/AC/2024-25) (hereinafter referred to as **"Tender/Bid"**) and intends to award, under laid down organizational procedure, contract for **"Providing VFD Retrofitting in Blue Star Chiller AC Plant of CSC, IIT Delhi"** (Name of work) hereinafter referred to as the **"Contract"**.

AND WHEREAS the Principal/Owner values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness/transparency in its relation with its Bidder(s) and Contractor(s) AND WHEREAS to meet the purpose aforesaid both the parties have agreed to enter into this Integrity Agreement (hereinafter referred to as **"Integrity Pact"** or **"Pact"**), the terms and conditions of which shall also be read as integral part and parcel of the Tender/Bid documents and Contract between the parties.

NOW, THEREFORE, in consideration of mutual covenants contained in this Pact, the parties hereby agree as follows and this Pact witnesses as under:

**ARTICLE 1: COMMITMENT OF THE PRINCIPAL / OWNER**

- 1. The Principal/Owner commits itself to take all measures necessary to prevent corruption and to observe the following principles:
  - 1.1. No employee of the Principal / Owner, personally or through any of his / her family members, will in connection with the Tender, or the execution of the Contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
    - 1.1.1. The Principal/Owner will, during the Tender process, treat all Bidder(s) with equity and reason. The Principal/Owner will, in particular, before and during the Tender



process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the Tender process or the Contract execution.

- 1.1.2.** The Principal/Owner shall Endeavour to exclude from the Tender process any person, whose conduct in the past has been of biased nature.
- 2.** If the Principal/Owner obtains information on the conduct of any of its employees which is a criminal offence under the Indian Penal code (IPC)/Prevention of Corruption Act, 1988 (PoC Act) or is in violation of the principles herein mentioned or if there be a substantive suspicion in this regard, the Principal/Owner will inform the Chief Vigilance Officer and in addition can also initiate disciplinary actions as per its internal laid down policies and procedures.

## **ARTICLE 2: COMMITMENT OF THE BIDDER(S) / CONTRACTOR(S)**

- 1.** It is required that each Bidder/Contractor (including their respective officers, employees and agents) adhere to the highest ethical standards, and report to the Government / Department all suspected acts of **fraud or corruption or coercion or collusion** of which it has knowledge or becomes aware, during the tendering process and throughout the negotiation or award of a contract.
- 2.** The Bidder(s)/Contractor(s) commits himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the Tender process and during the Contract execution:
  - 2.1.** The Bidder(s)/Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal/Owner's employees involved in the Tender process or execution of the Contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the Tender process or during the execution of the Contract.
  - 2.2.** The Bidder(s)/Contractor(s) will not enter with other Bidder(s) into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to cartelize in the bidding process.
  - 2.3.** The Bidder(s) / Contractor(s) will not commit any offence under the relevant IPC/PoC Act. Further the Bidder(s) / Contractor(s) will not use improperly, (for the purpose of competition or personal gain), or pass on to others, any information or documents provided by the Principal / Owner as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
  - 2.4.** The Bidder(s) / Contractor(s) of foreign origin shall disclose the names and addresses of agents / representatives in India, if any. Similarly Bidder(s) / Contractor(s) of Indian Nationality shall disclose names and addresses of foreign agents/representatives, if any. Either the Indian agent on behalf of the foreign principal or the foreign principal directly could bid in a tender but not both. Further, in cases where an agent participate in a tender on behalf of one manufacturer, he shall not be allowed to quote on behalf of another manufacturer along with the first manufacturer in a subsequent/parallel tender for the same item.
  - 2.5.** The Bidder(s)/Contractor(s) will, when presenting his bid, disclose any and all payments

he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the Contract.

3. The Bidder(s)/Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.
4. The Bidder(s)/Contractor(s) will not, directly or through any other person or firm indulge in fraudulent practices **means a wilful misrepresentation or omission of facts or submission of fake/forged documents in order to induce public official to act in reliance thereof, with the purpose of obtaining unjust advantage by or causing damage to justified interest of others and/or to influence the procurement process to the detriment of the Government interests.**
5. The Bidder(s)/Contractor(s) will not, directly or through any other person or firm use Coercive Practices (means the act of obtaining something, compelling an action or influencing a decision through intimidation, threat or the use of force directly or indirectly, where potential or actual injury may befall upon a person, his/ her reputation or property to influence their participation in the tendering process).

### **ARTICLE 3: CONSEQUENCES OF BREACH**

Without prejudice to any rights that may be available to the Principal / Owner under law or the Contract or its established policies and laid down procedures, the Principal/Owner shall have the following rights in case of breach of this Integrity Pact by the Bidder(s)/Contractor(s) and the Bidder/ Contractor accepts and undertakes to respect and uphold the Principal/Owner's absolute right:

1. If the Bidder(s)/Contractor(s), either before award or during execution of Contract has committed a transgression through a violation of Article 2 above or in any other form, such as to put his reliability or credibility in question, the Principal/Owner after giving 14 days' notice to the contractor shall have powers to disqualify the Bidder(s)/Contractor(s) from the Tender process or terminate/determine the Contract, if already executed or exclude the Bidder/Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of transgression and determined by the Principal/Owner. **Such exclusion may be forever or for a limited period as decided by the Principal/Owner.**
2. **Forfeiture of EMD/Performance Guarantee/Security Deposit:** If the Principal/Owner has disqualified the Bidder(s) from the Tender process prior to the award of the Contract or terminated/determined the Contract or has accrued the right to terminate/determine the Contract according to Article 3(1), the Principal/Owner apart from exercising any legal rights that may have accrued to the Principal/Owner, may in its considered opinion forfeit the entire amount of Earnest Money Deposit, Performance Guarantee and Security Deposit of the Bidder/Contractor.
3. **Criminal Liability:** If the Principal/Owner obtains knowledge of conduct a Bidder or Contractor, or of an employee or a representative or an associate of a Bidder or Contractor which constitutes corruption within the meaning of IPC Act, or if the Principal / Owner has substantive suspicion in this regard, the Principal/Owner will inform the same to law enforcing agencies for further investigation.

### **ARTICLE 4: PREVIOUS TRANSGRESSION**

1. The Bidder declares that no previous transgressions occurred in the last 5 years with any other Company in any country confirming to the anticorruption approach or with Central Government or State Government or any other Central/State Public Sector Enterprises in India that could justify his exclusion from the Tender process.
2. If the Bidder makes incorrect statement on this subject, he can be disqualified from the Tender process or action can be taken for banning of business dealings/ holiday listing of the Bidder/Contractor as deemed fit by the Principal/ Owner.
3. If the Bidder/Contractor can prove that he has resorted / recouped the damage caused by him and has installed a suitable corruption prevention system, the Principal/Owner may, at its own discretion, revoke the exclusion prematurely.

#### **ARTICLE 5: EQUAL TREATMENT OF ALL BIDDERS/CONTRACTORS/SUBCONTRACTORS**

1. The Bidder(s)/Contractor(s) undertake(s) to demand from all subcontractors a commitment in conformity with this Integrity Pact. The Bidder/Contractor shall be responsible for any violation(s) of the principles laid down in this agreement/Pact by any of its Sub-contractors/sub-vendors.
2. The Principal/Owner will enter into Pacts on identical terms as this one with all Bidders and Contractors.
3. The Principal/Owner will disqualify Bidders, who do not submit, the duly signed Pact between the Principal/Owner and the bidder, along with the Tender or violate its provisions at any stage of the Tender process, from the Tender process.

#### **ARTICLE 6: DURATION OF THE PACT**

1. This Pact begins when both the parties have legally signed it. It expires for the Contractor/Vendor 6 months after the completion of work under the contract or till the continuation of defect liability period, whichever is more and for all other bidders, till the Contract has been awarded.
2. If any claim is made/lodged during the time, the same shall be binding and continue to be valid despite the lapse of this Pacts as specified above, unless it is discharged/determined by the Competent Authority of IIT Delhi.

#### **ARTICLE 7: OTHER PROVISIONS**

1. This Pact is subject to Indian Law, place of performance and jurisdiction is the Head Quarters of the Division of the Principal/Owner, who has floated the Tender.
2. Changes and supplements need to be made in writing. Side agreements have not been made.
3. If the Contractor is a partnership or a consortium, this Pact must be signed by all the partners or by one or more partner holding power of attorney signed by all partners and consortium members. In case of a Company, the Pact must be signed by a representative duly authorized by Board Resolution.
4. Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement to their original

intensions.

- 5. It is agreed term and condition that any dispute or difference arising between the parties with regard to the terms of this Integrity Agreement / Pact, any action taken by the Owner/Principal in accordance with this Integrity Agreement/ Pact or interpretation thereof shall not be subject to arbitration.

**ARTICLE 8: LEGAL AND PRIOR RIGHTS**

- 1. All rights and remedies of the parties hereto shall be in addition to all the other legal rights and remedies belonging to such parties under the Contract and/or law and the same shall be deemed to be cumulative and not alternative to such legal rights and remedies aforesaid. For the sake of brevity, both the Parties agree that this Integrity Pact will have precedence over the Tender/Contact documents with regard any of the provisions covered under this Integrity Pact.

IN WITNESS WHEREOF the parties have signed and executed this Integrity Pact at the place and date first above mentioned in the presence of following witnesses:

.....  
(For and on behalf of Principal / Owner)

.....  
(For and on behalf of Bidder / Contractor)

WITNESSES:

1. ....  
(signature, name and address)

2. ....  
(signature, name and address)

Place:

Dated :

**INDIAN INSTITUTE OF TECHNOLOGY DELHI**  
**HAUZ KHAS, NEW DELHI - 110016**

**Percentage Rate Tender / Item Rate Tender & Contract for Works**

Tender for the work of “**Providing VFD Retrofitting in Blue Star Chiller AC Plant of CSC, IIT Delhi**”

1. To be submitted online by **Upto 3 PM of 22-10-2024**
2. To be opened on **23-10-2024 after 3 PM** online

**e-TENDER**

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

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

We agree to keep the tender open for ninety (75) days from the due date of its opening / ninety days from the date of opening of financial bid in case tenders are invited on 2/3 envelop system (**strike out as the case may be**) and not to make any modification in its terms and conditions.

A sum of **Rs. 38,657.00** is hereby deposited in IIT Delhi Revenue Account No. 10773572622 as earnest money with the Technical Bid. If I / We, fail to furnish the prescribed performance guarantee within prescribed period I / We agree that the said The Board of Governors, IIT Delhi, Hauz Khas, New Delhi - 16 or his successors, in office shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely. Further, if I / We fail to commence the work as specified, I / We agree that The Board of Governors, IIT Delhi, Hauz Khas, New Delhi - 16 or the successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said earnest money and the performance guarantee absolutely, otherwise the said earnest money shall be retained by him towards security deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause 12.2 and 12.3 of the tender form. Further, I / We agree that in case of forfeiture of Earnest Money & Performance Guarantee as aforesaid I / We shall be debarred for participation in the re-

tendering process of the work.

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

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

Dated:

Signature of Contractor

Witness:

Postal Address

Address:

Occupation:

**ACCEPTANCE**

The above tender (as modified by you as provided in the letters mentioned hereunder) is accepted by me for an on behalf of The Board of Governors, IIT Delhi, Hauz Khas, New Delhi - 110016 for a sum of (Rupees.....).

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

- (a)
- (b)
- (c)

For & on behalf of Board of Governors, IIT Delhi

Signature .....

Dated:

Designation .....

## PROFORMA OF SCHEDULES

### SCHEDULE "A"

Schedule of Quantities (PWD-3)

### SCHEDULE "D"

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

----- NIL -----

### SCHEDULE "E"

Reference to General Conditions of Contract: GCC of Maintenance Work 2023 published by CPWD as amended up to last date of submission of bid.

|           |                            |   |   |
|-----------|----------------------------|---|---|
| <b>1.</b> | <b>Name of work</b>        | : | Providing VFD Retrofitting in Blue Star Chiller AC Plant of CSC, IIT Delhi          |
| <b>2.</b> | Estimated cost of work (₹) | : | 19,32,840.00  |
| <b>3.</b> | Earnest Money (₹)          | : | 38,657.00 (to be refunded after receiving performance guarantee as per stipulation) |
| <b>4.</b> | Performance Guarantee      | : | 5 percent of tendered value   |
| <b>5.</b> | Security Deposit           | : | 2.5% (percent) of tendered value  |

### SCHEDULE "F"

#### GENERAL RULES & DIRECTIONS:

|  |   |  |
|--|---|--|
| Officer inviting tender  | : | <b>Assistant Executive Engineer in-charge, AC Division</b> |
| Maximum percentage for quantity of items of work to be executed beyond which rates are | : | <b>See below</b>   |

C ... Nil    I ..... Nil    O ..... Nil

|   |  |
|---|--|
| to be determined in accordance with Clauses 12.2 & 12.3 |  |
|---|--|

**DEFINITIONS:**

|          |   |   |   |
|----------|---|---|---|
| 2 (V)    | Engineer-in-charge  | : | <b>Assistant Executive Engineer in-charge, AC Division</b>  |
| 2 (viii) | Accepting authority   | : | <b>Assistant Executive Engineer in-charge, AC Division</b>  |
| 2 (x)    | Percentage on cost of materials and labour to cover all overheads and profits | : | 15 percent  |
| 2 (xi)   | Standard Schedule of Rates  | : | Market  |
| 2 (xii)  | Department  | : | Estate & Works, IIT Delhi   |
| 9 (ii)   | Reference to General condition of contract                                    | : | CPWD / IITD Form 7 / 8 as modified and corrected upto date, GCC 2023 for Maintenance work of CPWD with latest modifications |

**CLAUSE 1**

|     |   |   |         |
|-----|---|---|---------|
| i)  | Time allowed for submission of Performance Guarantee from the date of issue of letter of acceptance                       | : | 15 days |
| ii) | Maximum allowable extension beyond the period provided in (i) above with late fees @0.1% per day of performance guarantee | : | 10 days |

**CLAUSE 2**

|     |  |   |                    |
|-----|--|---|--------------------|
| (i) | Authority for fixing compensation under Clause 2 | : | Institute Engineer |
|-----|--|---|--------------------|

**CLAUSE 2A**

|     |                                       |   |    |
|-----|---------------------------------------|---|----|
| (i) | Whether Clause 2A shall be applicable | : | No |
|-----|---------------------------------------|---|----|



**CLAUSE 5**

|     |   |   |         |
|-----|---|---|---------|
| (i) | Number of days from the date of issue of letter of acceptance for reckoning date of start | : | 10 days |
|-----|---|---|---------|

**TABLE OF MILESTONE(S):**

| Sr. No. | Description of Milestone (physical) | Time allowed in days (from date of start) | Amount to be with-held in case of non-achievement of milestone |
|---------|-------------------------------------|---|--|
| (1)     | (2)                                 | (3)                                       | (4)  |
|         | --- NOT SPECIFIED ----              |   |  |

|   |   |         |
|---|---|---------|
| <b>Time allowed for execution of work</b> | : | 60 days |
|---|---|---------|

|                             |  |   |                    |
|-----------------------------|--|---|--------------------|
| <b>Authority to decide:</b> | <b>Extension of time</b>   | : | Engineer-in-charge |
|                             | Rescheduling of milestones   | : | Institute Engineer |
|                             | Shifting of date of start in case of delay in handing over of site | : | Engineer-in-charge |

**CLAUSE 5**

|                          |   |   |
|--------------------------|---|---|
| Clause applicable 5 / 5A | : | 5 |
|--------------------------|---|---|

**CLAUSE 6**

|  |   |     |
|--|---|-----|
| MB applicable: Computerised Measurement Book (CMB) / Electronic Measurement Book (EMB) | : | CMB |
|--|---|-----|

**CLAUSE 7**

|   |   |         |
|---|---|---------|
| Gross work to be done together with net payment / adjustment of advances for materials collected, if any, since the last such payment for being eligible to interim payment | : | 5 Lakhs |
|---|---|---------|

**CLAUSE 7A**

|                                       |   |    |
|---------------------------------------|---|----|
| Whether Clause 7A shall be applicable | : | No |
|---------------------------------------|---|----|

**CLAUSE 10A**

|  |                 |   |                    |   |     |
|--|-----------------|---|--------------------|---|-----|
| List of testing equipment to be provided by the contractor at site |                 |   |                    |   |     |
| 1  | 500 Volt Megger | 2 | Digital Multimeter | 3 | NIL |
| 4  | NIL             | 5 | NIL                | 6 | NIL |

**CLAUSE 10B (ii)**

|   |   |    |
|---|---|----|
| Whether Clause 10 B (ii) shall be applicable (Yes / No) | : | No |
|---|---|----|

**CLAUSE 10 C**

|   |   |            |
|---|---|------------|
| Component of labour expressed as percent of value of work | : | 15 Percent |
|---|---|------------|

**CLAUSE 10CC**

|   |   |                |
|---|---|----------------|
| Whether Clause 10CC shall be applicable | : | Not applicable |
|---|---|----------------|

**CLAUSE 11**

|  |   |   |
|--|---|---|
| Specification to be followed for execution of work | : | CPWD General Specifications for Electrical Works for HVAC Work with other relevant parts as amended upto date |
|--|---|---|

**CLAUSE 12**

|      |   |   |             |
|------|---|---|-------------|
| 12.2 | Deviation limit beyond which clauses 12.2 shall apply for building work / HVAC work | : | <b>100%</b> |
|------|---|---|-------------|

**CLAUSE 16**

|  |   |                    |
|--|---|--------------------|
| Competent authority for deciding reduced rates | : | Institute Engineer |
|--|---|--------------------|

**CLAUSE 18**

|  |     |   |     |   |     |
|--|-----|---|-----|---|-----|
| List of mandatory machinery, tools & plants to be deployed by the contractor at site |     |   |     |   |     |
| 1  | NIL | 2 | NIL | 3 | NIL |
| 4  | NIL | 5 | NIL | 6 | NIL |

**CLAUSE 19C**

|  |   |                    |
|--|---|--------------------|
| Authority to decide penalty for each default | : | Engineer-in-charge |
|--|---|--------------------|

**CLAUSE 19D**

|  |   |                    |
|--|---|--------------------|
| Authority to decide penalty for each default | : | Engineer-in-charge |
|--|---|--------------------|

**CLAUSE 19G**

|  |   |                    |
|--|---|--------------------|
| Authority to decide penalty for each default | : | Engineer-in-charge |
|--|---|--------------------|

**CLAUSE 19K**

|  |   |                |
|--|---|----------------|
| Authority to decide penalty for each default | : | Not applicable |
|--|---|----------------|

**CLAUSE 25****Constitution of Dispute Redressal Committee (DRC)**

|                                 |   |                             |
|---------------------------------|---|-----------------------------|
| Conciliator                     | : | Dean / Associate Dean Infra |
| Arbitrator Appointing Authority | : | Director                    |

|                      |   |           |
|----------------------|---|-----------|
| Place of Arbitration | : | IIT Delhi |
|----------------------|---|-----------|

**CLAUSE 32****Requirement of Technical Representative(s) and recovery rate**

| Sr. No | Minimum qualification of Technical Representative | Discipline               | Designation (Principal Technical / Technical representative) | Minimum experience                  | Number | Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 36 (i) |                  |
|--------|---|--------------------------|--|-------------------------------------|--------|--|------------------|
|        |   |                          |  |                                     |        | Figures  | Words            |
| (1)    | (2)   | (3)                      | (4)  | (5)                                 | (6)    | (7)  | (8)              |
| 1      | Graduate or Diploma Engg.                         | Electrical or Mechanical | Technical Representative                                     | 2 years Graduate or 5 years Diploma | 1      | Rs.15,000/- per month per Representative   | Fifteen Thousand |

Assistant Engineers retired from Govt. / IIT Delhi services that are holding Diploma will be treated at par with Graduate Engineers. Diploma holder with minimum 10-year relevant experience with a reputed construction co. can be treated at par with Graduate Engineers for the purpose of such deployment subject to the condition that such diploma holders should not exceed 50% of requirement of degree engineers.

**CLAUSE 38**

|                            |   |                |
|----------------------------|---|----------------|
| Applicability of Clause 38 | : | Not applicable |
|----------------------------|---|----------------|

## **COMMERCIAL AND ADDITIONAL CONDITIONS**

### **1. GENERAL**

- 1.1. This specification covers supply and delivery of materials at site, all preparatory work assembly and installation, commissioning and putting into operation of VSD retrofit systems & final testing & commissioning at site.
- 1.2. Location: **The equipment will be installed in CSC Chiller AC Plant at IIT Delhi**
- 1.3. The work shall be executed as per CPWD General Specifications for Electrical Works Part-I (Int.) 2013, Part-II (Ext.) 1994, HVAC Work 2017, as amended upto date, relevant I.E. Rules, BIS/IEC and as per directions of Engineer-in- Charge. These additional specifications/conditions are to be read in conjunction with above and in case of variations; specifications given in these additional conditions shall apply. However, nothing extra shall be paid on account of these additional specification and conditions, as the same are to be read along with schedule of quantities for the work.
- 1.4. The tenderer should in his own interest visit the site and get familiarized with the site conditions before tendering.
- 1.5. No T&P shall be issued by the Department and nothing extra shall be paid on account of this.

### **2. COMMERCIAL CONDITIONS:**

- 2.1. **Type of contract:** The work to be awarded by this tender shall be treated as indivisible works contract.
- 2.2. **Submission and opening of Tenders:**
  - 2.2.1. The tender is in two parts:
    - 2.2.1.1. Part-I -Technical cum Un-priced commercial Bid
    - 2.2.1.2. Part-II-Price Bid

- 2.3. The tender shall be submitted online, duly completed as per NIT conditions within period of bid submission.
- 2.4. The tenderers are advised not to deviate from the technical specifications / item, commercial terms and conditions of NIT like terms of payment, guarantee, arbitration clause, escalation etc.
- 2.5. Technical cum un-priced commercial bid only shall be opened on the due date and time in the presence of tenderers or their authorized representative who wish to remain present.
- 2.6. Scrutiny/evaluation of the technical-cum-commercial bid shall be done by the department. In case, it is found that the technical-cum-commercial bid of a tenderer is not in line with NIT specifications/requirements and/or contains too many deviations, the department reserves the right to reject the technical bid of such firms(s) without making any reference to the tenderer(s).
- 2.7. Necessary clarifications required by the department shall have to be furnished by the tenderer within the time given by the department for the same. The tenderer will have to depute his representative to discuss with the officer(s) of the department as and when so desired. In case, in the opinion of the department a tenderer is taking undue long time in furnishing the desired clarifications, his bid will be rejected without making any reference.
- 2.8. After obtaining clarification from all the tenders, the department will intimate the tenders whose technical cum commercial bids are acceptable.
- 2.9. The price bids of only those tenderers shall be opened whose technical bids are found to be technically acceptable. The time and date of opening of price bid shall be fixed after the technical cum unpriced commercial bid is accepted and intimated to them by post/Fax/e-mail.
- 2.10. The department reserves the right to reject any or all the price bids and call for fresh prices/tenders as the case may be without assigning any reason.

### 3. TERMS OF PAYMENTS

- 3.1. Payment shall be released after successful completion (Supply, Installation, Testing and satisfactory commissioning) of the work. Bidder should note that necessary documents (PAN card, cancelled cheque, GST Reg. proof and RTGS mandate form as per prescribed proforma of IIT Delhi) be submitted as soon as the work is awarded to them. Separate Contractor's Code shall be generated in IIT Delhi if the bidder is a new contractor to IIT Delhi ('Code' is perpetual in nature). Payment shall be processed after submission of Invoice and necessary documents / certificates (as mentioned in the NIT). There is a prevailing practice of pre-audit (for total tendered amount more than 6 lakhs) at IIT Delhi before releasing final payment. Bidder shall have to comply all necessary documents as outlined in the Contract as to be desired by the Auditor and or by the accountant. It may take one to two months in the whole process (from submission / acceptance of bill in CMB / MB by the contractor upto processing by Accounts section) to

release payment subject to quick compliance of all submittals by the contractor. Applicable Taxes shall be got deducted from the bill as per prevailing orders of the Government. 'GST part of the bill' shall be released after submission of proof of payment of GST, i.e., B2B challan, etc. as may be, by the contractor.

- 3.2. Income tax, GST, labour cess & other statutory deduction etc. shall be made at source as per the prevalent laws. The deduction of Security Deposit, Income Tax, etc., shall be done after calculation for the above due payment as per clause 3.1 above and net payment shall reduce accordingly.

#### 4. AWARD OF WORK

- 4.1. Work shall be awarded to the successful bidder only after concurrence of the **Auditor of the Internal Audit Section** of the IIT Delhi as per extant Rules of the Institute.

#### 5. SECURITY DEPOSIT

6. Security Deposit shall be deducted from bill to the extent of 2.5% of the tendered amount. **The security deposit shall be released after Defect Liability Period is Over.**

#### 7. PERFORMANCE GUARANTEE

- 7.1. The successful tenderer shall submit an irrevocable performance guarantee of 5% of the tendered amount in addition to other deposit mentioned elsewhere in the contract for his proper performance of the contract agreement within 15 days of issue of letter of acceptance of tender. This guarantee shall be in the form of Demand Draft/Pay order of irrevocable bank guarantee bond of any schedule bank or the State Bank of India in the specified perform a of Government Security, fixed deposit receipt pledged in favour of **Registrar, IIT Delhi** or as specified in the letter of acceptance of tender. The performance guarantee shall be initially valid up to the stipulated date of completion plus sixty days. This bank guarantee shall be kept valid till the recording of completion certificate for the work by the competent authority.

#### 8. RATES

- 8.1. The work shall be treated as on works contract basis and the rates tendered shall be for complete items of work (except the materials, if any, stipulated for supply by the department) inclusive of all taxes, GST (including works contract tax, if any), duties, and levies etc. and all charges for items contingent to the work, such as, packing, forwarding, insurance, freight and delivery at site for the materials to the supplied by the contractor, watch and ward of all materials (including those, if any, supplied by the department), post installation services till defect liability period etc. for the work at site etc.

#### 9. COMPLETENESS OF TENDER

- 9.1. All sundry equipments, fitting, unit assemblies, accessories, hardware items, foundation bolts, termination lugs for electrical connections and all other items which are useful and necessary for efficient assembly and installation of equipment and components of the

work shall be deemed to have been included in the tender irrespective of the fact whether such items are specially mentioned in the tender documents or not.

## **10. STORAGE AND CUSTODY OF MATERIAL**

**10.1.** The agency has to make his own arrangement for storage. No separate storage accommodation shall be provided by the department Watch and ward of the storage and their safe custody shall be responsibility till the final taking over of the installation by the department.

## **11. CARE OF THE BUILDING**

**11.1.** Care shall be taken by the contractor while handling and installing the various equipment and components of the work to avoid damage to the building. He shall be responsible for repairing all damages and restoring the same to their original finish at his cost. He shall also remove at his cost all unwanted and waste material arising out of the installation from the site of work.

## **12. COMPLETION PERIOD**

**12.1.** The completion period indicated in the tender documents is for the entire work of planning, designing, approval of drawings etc., arrangement of materials & equipments, delivery at site including transportation, installation, testing, commissioning and handing over of the entire system to the satisfaction of the Engineer-in-charge.

## **13. GUARANTEE**

**13.1.** The contractor shall guarantee all installation as per specifications both for components and for system as a whole. All equipments shall be guaranteed for the date of commissioning against unsatisfactory performance and / or breakdown due to defective design, workmanship or material upto one year. The equipment or component, or any part thereof, so found defective during guarantee period shall be forthwith replaced free of cost to the satisfaction of the Engineer-in-Charge. In case it is felt by the department that undue delay is being caused by the contractor in doing this, the same will be got done by the department at the risk and cost of the contractor. **Guarantee / Defect Liability Period of the entire system shall be upto 02 years after date of commissioning.**

**13.2.** The tenderer shall guarantee among other things, the following:

**13.2.1.** Quality, strength and performance of the material used as per manufacturer's standards.

**13.2.2.** Safe mechanical and electrical stress on all part under all specified conditions of operation.

## **14. POWER SUPPLY**

**14.1.** Power supply shall be made available by the department at one point near the location of installation free of cost, if required. Further, the arrangement for tapping power supply from this point shall be made by the contractor.



**15. EXTENT OF WORK**

- 15.1. The work shall comprise of entire labour including supervision and all material necessary to make a complete installation and such tests and adjustment and commissioning as may be required by the department. The term complete installation shall not only mean major items of the plant and equipment covered by the specification but all incidental sundry components necessary for complete execution and satisfactory performance of installation with all layout charts whether or not those have been mentioned in details in the tender documents in connection with this contract as this is a turnkey job.
- 15.2. In addition to supply, installation, testing and commissioning of split/window type AC system including wall mounted indoor units, following works shall be deemed to be included with the scope of work to be executed by the tenderer-
- 15.2.1. Minor building works necessary for installation of equipment, foundation making of opening in walls or in floors and restoring them to their original condition / finish and necessary grouting etc. as required.

**16. VALIDITY**

- 16.1. Tenders shall be valid for acceptance for a period 90 days of days from the last date of submission of bid.

**17. COMPLIANCE WITH REGULATIONS AND INDIAN STANDARDS**

- 17.1. All works shall be carried out in accordance with relevant regulation both statutory and those specified by the Indian Standards related to the works covered by this specification in particular, the equipment and installation will comply with the following:
- 17.1.1. Factories Act
- 17.1.2. Indian Electricity Rules
- 17.1.3. B.I.S. & other standards as applicable
- 17.1.4. Workmen's compensation Act
- 17.1.5. Statutory norms prescribed by local bodies like fire department, CEA, Power Supply Co. etc.

**18. INDEMNITY**

- 18.1. The successful tenderer shall at all times indemnify the department, consequent on this works contract. The successful tenderer shall be liable, in accordance with the Indian Law and Regulations for any accident occurring due to any cause and the contractor shall be responsible for any accident or damage incurred or claims arising there from during the period of erection, construction and putting into operation the equipments and ancillary equipment under the supervision of the successful tenderer in so far as the latter is responsible. The successful tenderer shall also provide all insurance including third

party insurance as may be necessary to cover the risk. No extra payment would be made to the successful tenderer on account of the above.

## 19. ERECTION TOOLS

19.1. No tools and tackles either for unloading or for shifting the equipments for erection purposes would be made available by the department. The successful tender shall make his arrangement for all these facilities.

## 20. COOPERATION WITH OTHER AGENCIES AND OCCUPANTS OF THE BUILDING

20.1. The successful tenderer shall co-ordinate with other working contractors, if any and other occupants of different offices / Labs, etc., and exchange freely all technical information so as to make the execution of this work / contract smooth. No remuneration should be claimed from the department for such technical cooperation. If any unreasonable hindrance is caused to other agencies and any completed portion of the work has to be dismantled and re-done for want of cooperation and coordination by the tenderer during the course of work, such expenditure incurred will be recovered from the successful tenderer if the restoration work to the original condition or specification of the dismantled portion of work was not under taken by the tenderer himself.

## 21. MOBILIZATION ADVANCE

21.1. No mobilization advance shall be paid for this work.

## 22. INTERPRETING SPECIFICATION

22.1. In interpreting the specification, the following order of decreasing importance shall be followed in case of contradictions:

22.1.1. Schedule of quantities

22.1.2. Technical Specification

22.1.3. Drawing (if any)

22.1.4. General Specification for Electrical Works of CPWD (relevant Parts)

22.1.5. Relevant BIS or other international code in case BIS code is not available.

## 23. POLICY OF THE INSTITUTE

23.1. Institute has a policy against **sexual harassment** and is committed to providing an environment free from **sexual harassment of women** at the workplace. Contractor shall have to abide by the policy of the Institute with due diligence. Any violation on the part of the contractor shall be dealt with the extant rules of the Institute.

## 24. QUALITY OF MATERIALS

24.1. All materials and equipment supplied by the contractor shall be new. They shall be of such design, size and materials as to satisfactorily function under the rated conditions of operation and to withstand the environmental conditions at site. **None of the material/**

**items/ equipment etc supplied shall be more than six months old from date of supply at site.** Copy of GST Gate Pass/ Invoice/ Shipment / Custom Clearance certificate/ details (in case of imported equipment) shall be submitted to prove the date of manufacture & genuineness of the equipment/ machines supplied.

## ANNEXURE - 1

### << Organization Letter Head >> DECLARATION

I / We, \_\_\_\_\_ hereby declare that all the information and data furnished by our organization with regard to this tender specification are true and complete to the best of our knowledge. I / we have gone through the specification, conditions and stipulations in details and agree to comply with the requirements and intent of specification.

|   |                                   |   |  |
|---|-----------------------------------|---|--|
| 1 | Name & Address of the bidder      | : |  |
| 2 | Phone                             | : |  |
| 3 | E-mail                            | : |  |
| 4 | Contact person name               | : |  |
| 5 | Mobile number                     | : |  |
| 6 | GSTIN number                      | : |  |
| 7 | PAN number                        | : |  |
| 8 | UTR no. for EMD                   | : |  |
| 9 | Date of deposit / submit of EMD   | : |  |
|   | <b>BANK DETAILS of the Bidder</b> |   |  |

|    |                                |   |  |
|----|--------------------------------|---|--|
| 10 | Bank name                      | : |  |
| 11 | Branch address                 | : |  |
| 12 | Branch telephone no.           | : |  |
| 13 | MICR Code of the bank          | : |  |
| 14 | IFSC code                      | : |  |
| 15 | Bank Account no.               | : |  |
| 16 | Type of account                | : |  |
| 17 | PI attach one cancelled cheque | : |  |

We further declare that our organization has not been blacklisted / delisted or put to any holiday by any Institutional agency / Govt. Department / Public Sector Undertaking in the last three years.

(Signature & name of the bidder)  
Seal of the bidder

## **BID SUBMISSION CHECK LIST**

### **ONLINE BID SUBMISSION:**

The bid (complete in all respect) must be uploaded online in **two** Envelops as explained below:-

| <b>Envelope – 1</b><br>(Following documents to be provided as single PDF file) |                      |  |            |
|--|----------------------|--|------------|
| Sl. No.  | Documents            | Content                                      | File Types |
| 1  | <b>Technical Bid</b> | Annexure - 1                                 | .PDF       |
| 2  |                      | EMD submission proof                         | .PDF       |
| 3  |                      | OEM Authorisation Certificate                | .PDF       |
| 4  |                      | Certificate of GST Registration              | .PDF       |
| 5  |                      | Affidavit as per provision on stamp paper    | .PDF       |
| 6  |                      | Acceptance to execute INTEGRITY PACT         | .PDF       |
| 7  |                      | IITD 7 / 8 duly signed                       | .PDF       |
| 8  |                      | EPFO & ESIC Registration proof               | .PDF       |
| 9  |                      | Valid Electrical Licence / Undertaking       | .PDF       |
| 10   |                      | Work Experience Certificate as desired       | .PDF       |
| 11   |                      | Any other document as specified in the NIT   | .PDF       |
| <b>Envelope – 2</b>  |                      |  |            |
| Sl. No.  | TYPES                | Content                                      |            |
| 1.   | <b>Financial Bid</b> | Price bid should be submitted in BOQ format. | .EXL       |

## SCHEDULE OF QUANTITY

**Name of work: Providing VFD Retrofitting in Blue Star Chiller AC Plant of CSC, IIT Delhi**

| Item No. | Description of items   | Qty. | Rate INR including all taxes | Unit | Amount |
|----------|--|------|------------------------------|------|--------|
| 1        | Supply, installation, retrofitting, testing and commissioning of HVAC Variable Speed Drive of capacity not less than 90 kW / 125 HP suitable for operation on 380 - 480 VAC for controlled operation of 110 TR Water Cooled Chiller AC (Blue Star make) bypassing and keeping standby mode of the existing star-delta drive (starter), complete package with necessary compatible MOBBUS Input / Output card, modification of software compatible to VSD with screw compressor, providing and making connections with communication cable, suitable size of tinned copper power cable (not less than 70 sqmm) of required length including other accessories like master control board (like MCS Magnum extension), control panel accessories including line reactor, transformer, electrical switchgears like DPMCB, control relay, power contactor, line choke, connecting copper cables as required with proper end terminations, solenoid valve, etc. complete as required. The complete package shall be housed in cubicle construction of size not less than 2000 mm x 900 mm x 900 mm fabricated out of 2 mm thick CRCA sheet with hinged lockable doors, dust and vermin proof powder coated of approved shade after 7 tank treatment process with proper forced ventilation arrangement for VF drive complete as required. Safety shutdowns with VSD shall include:<br>a) VSD shutdown - requesting fault data<br>b) VSD - stop contacts open | 2    | ***                          | Job  | ***    |

|  |   |  |  |  |     |
|--|---|--|--|--|-----|
|  | <p>c) VSD - 110% motor overload<br/> d) VSD - high phase A, B, C inverter heat-sink temperature<br/> e) VSD - high converter heat sink temperature</p> <p>The VSD starter will vary the compressor motor speed by controlling the frequency and voltage of electrical power to the motor. the adaptive capacity control logic shall automatically adjust motor speed and compressor pre-rotation vane position independently for maximum part-load efficiency by analysing information fed to it by sensors located throughout the chiller. The VSD shall restrict harmonic generation from VSD by providing Active Harmonic Filters as per IEEE 519. Drive shall be PWM (Pulse Width Modulation) type utilising IGBTs (Insulated Gate Bipolar Transistor) with a power factor of not less than 0.95 at all loads and speeds. [Suggested make of different accessories: VF Drive - Compatible with Blue Star Chiller (as recommended by OEM Blue Star as per global catalogue / practice), MCB, Contactors - Siemens / L&amp;T / Schneider, Cable - Finolex / Polycab / Havells / Gloster etc.]</p> |  |  |  |     |
|  | <b>Total</b>  |  |  |  | *** |

T.S. Plg.

AEE-in-charge AC Division