



INDIAN INSTITUTE OF TECHNOLOGY DELHI HAUZ KHAS, NEW DELHI – 110016

NOTICE INVITING E-TENDER IITD/WORKS (SP-1370)/2017

Executive Engineer [Electrical], Indian Institute of Technology Delhi, Hauz Khas, New Delhi – 110016 [Phone No. 011-26591746] on behalf of Board of Governors invites online **Item Rate Tender** from OEM Schneider / ABB / P2Power / Powerware as per details given below:

1	Name of Work	:	S.I.T.C. of 1 x 500 KVA DVR & 100A AHF in L.T. Panel at IIT Delhi
2	NIT No.	:	9100/56/EW/IITD/17-18
3	Estimated cost	:	Rs. 16,00,484.00
4	Earnest Money	:	Rs. 32,010.00
5	Period of completion	:	60 days
6	Last date & time of bid submission	:	23/11/2017 upto 3:00 PM
7	Performance Bank Guarantee	:	5% of the tendered amount

F9852The 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 enroll / register before participating through the website <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 Delhi 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 and Financial should be submitted in the E-procurement portal).

Executive Engineer [E],

For & on Behalf of BOG, IIT Delhi

Ch. Head: PLN - 05
Work code- W02992

C.....Nil

I..... Nil

O..... Nil

D'Man /J.E.

A.E.E / A.E.

E.E.



Copy to: -

1. Assistant Executive Engineer [E]
2. D.A. (Works Accounts) - for opening of tenders in the office of D.R. [SPS]
3. A.E.E. (E) Plg.
4. D.R. (A/Cs)
5. D.R. [SPS]
6. Notice Boards.
7. Office Copy
8. Web site Administrator, IITD

C.....Nil

I..... Nil

O..... Nil

D'Man /J.E.

A.E.E / A.E.

E.E.



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**SCHEDULE**

1	Name of Organization	:	Indian Institute of Technology Delhi
2	Tender / Quotation Type [open / limited / EOI / auction / single]	:	Open
3	Tender / Quotation Category [services / goods / works]	:	Goods & Works
4	Type / Form of Contract [work / supply / auction / service / buy / empanelment / sell]	:	Work & Supply; IITD-8
5	Product Category [civil works / electrical works / fleet management / computer systems]	:	Electrical Works
6	Is Multi Currency Allowed?	:	No
7	Date of issue / publishing /start	:	15/11/2017 at 13:00 PM
8	Document download start date	:	15/11/2017 at 13:00 PM
9	Document download end date	:	23/11/2017 upto 3:00 PM
8	Last date & time of uploading of bids	:	23/11/2017 upto 3:00 PM
9	Date & time of opening of Technical Bids	:	24/11/2017 upto 3:00 PM
10	Tender fee	:	Free of cost
11	EMD	:	Rs.32,010.00 [For EMD] (To be paid through RTGS/NEFT. IIT Delhi Bank details are as under: Name of the Bank A/C : IITD Revenue Account SBI A/C No. : 10773572622 Name of the Bank : State Bank of India, IIT Delhi, Hauz Khas, New Delhi-110016 IFSC Code : SBIN0001077 MICR Code : 110002156 Swift No. : SBININBB547 (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-II)
12	No. of covers [1/2/3/4]	:	02
13	Address for communication	:	Executive Engineer [Electrical], Works Organization, Hauz Khas, IIT Delhi, New Delhi – 110016
14	Contact No.	:	011- 2659 1742
15	E-mail address	:	a26984@admin.iitd.ac.in ; a26335@admin.iitd.ac.in

C.....Nil

I..... Nil

O..... Nil



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 soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. 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 enroll 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 Enroll". 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 username and assign a password for their accounts.
- 3) Bidders are advised to register their valid email address and mobile numbers 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 II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized 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 the bidders are responsible to ensure that they do not lend their DSCs to others which may lead to misuse.
- 6) Bidder then logs in to the site through the secured log-in by entering their userID / password and the password of the DSC / e-Token.

SEARCHING FOR QUOTATION /TENDER DOCUMENTS

- 1) There are various search options built in the CPP Portal, to facilitate bidders to search active Quotations / Tender by several parameters. These parameters could include Quotation ID, organization name, location, date, value, etc. There is also an option of advanced search for Quotations, wherein the bidders may combine a number of search parameters such as organization name, form of contract, location, date, other keywords etc. to search for a Quotation published on the CPP Portal.
- 2) Once the bidders have selected the Quotations they are interested in, they may download the required documents / Quotation schedules. These Quotations can be moved to the respective 'My Quotations' folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the Quotation document.
- 3) The bidder should make a note of the unique Quotation ID assigned to each Quotation / Tender, 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 Quotation document before submitting their bids.

C.....Nil

I..... Nil

O..... Nil



- 2) Please go through the Quotation / Tender advertisement and the Quotation / Tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.
- 3) Bidder, in advance, should get ready the bid documents to be submitted as indicated in the Quotation document / schedule and generally, they can be in PDF / XLS / RAR / DWF formats. Bid documents may be scanned with 100 dpi with black and 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 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 Quotation document.
- 3) Bidder has to select the payment option as "offline" to pay the Quotation fee / EMD as applicable and enter details of the instrument.
- 4) A standard BoQ format has been provided with the Quotation 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 and submit 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 unauthorized 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 Quotation documents become readable only after the Quotation opening by the authorized 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.

C.....Nil

I..... Nil

O..... Nil



ASSISTANCE TO BIDDERS

- 1) Any queries relating to the Quotation document and the terms and conditions contained therein should be addressed to the Quotation Inviting Authority for a Quotation or the relevant contact person indicated in the Quotation.
- 2) Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk. The contact number for the helpdesk is 1800 233 7315.

GENERAL INSTRUCTIONS TO THE BIDDERS

- 1) The Quotations will be received online through portal <http://eprocure.gov.in/eprocure/app> . In the Technical Bids, the bidders are required to upload all the documents in .pdf format.
- 2) Possession of a Valid Class II/III Digital Signature Certificate (DSC) in the form of smart card/e-token in the company's name is a prerequisite for registration and participating in the bid submission activities through <https://eprocure.gov.in/eprocure/app> . Digital Signature Certificates can be obtained from the authorized certifying agencies, details of which are available in the web site <https://eprocure.gov.in/eprocure/app> under the link "Information about DSC".

Bidders are advised to follow the instructions provided in the 'Instructions to the Bidder' for the e-submission of the bids online through the Central Public Procurement Portal for e Procurement at <https://eprocure.gov.in/eprocure/app>



INFORMATION AND INSTRUCTIONS TO BIDDERS FOR E-TENDERING

Executive Engineer [Electrical], Indian Institute of Technology Delhi, Hauz Khas, New Delhi – 100016 [Phone No. 011-26591746] on behalf of Board of Governors invites online **Item Rate Tender** from OEM Schneider / ABB / P2Power / Powerware as per details given below:

Sl. No.	N.I.T. No.	Name of work & Location	Estimated cost put to bid	Earnest Money	Period of completion	Last date & time of submission of bid (online mode)	Time & date of opening of Technical Bid	Time & date of opening of Financial Bid
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
1	9100/56/EW/IITD/17-18	S.I.T.C. of 1 x 500 KVA DVR & 100A AHF in L.T. Panel at IIT Delhi.	Rs. 16,00,484.00	Rs.32,010.00	60 days	23/11/2017 upto 3:00 PM	24/11/2017 at 3:00PM	To be decided later

1. The successful bidders 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 60 days of issue of letter of intent before award of work. In case of failure by the OEM / contractor to submit the performance guarantee within the specified period, full earnest money will be forfeited and the tender shall be treated as null and void. **The performance guarantee shall be initially valid up to the stipulated date of completion plus 60 (Sixty) days beyond that.**

2. OEMs / contractors who fulfill the following requirements shall be eligible to apply. Joint ventures are not accepted.

i) Earnest Money of **Rs. 32,010.00** to be deposited on-line as indicated in Schedule

C.....Nil

I..... Nil

O..... Nil



3. **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.
4. Information and Instructions for bidders posted on website shall form part of bid document.
5. 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.
6. But the bid can only be submitted after depositing requisite tender fee and EMD as specified in the schedule.
7. Copy of enlistment / Registration (with any other department) order [if any] and certificate of work experience [if any] and other documents as specified in the Press Notice / web notice shall be scanned and up-loaded to the e-Tendering website within the period of bid submission. However, certified / original copy of all the scanned and up-loaded documents as specified in press notice web / notice shall have to be submitted by the lowest bidder only within a week physically in the office of e-tendering authority.
8. Online bid documents submitted by intending bidders shall be opened only of those bidders, who has deposited requisite EMD and other documents scanned and uploaded are found in order.
9. 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.
10. Those OEMs / OEM / contractors not registered on the website mentioned above, are required to get registered beforehand. If needed they can be imparted training on online bidding process as per details available on the website.
11. 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.
12. The department reserves the right to reject any prospective application without assigning any reason and to restrict the list of qualified OEMs / OEM / contractors to any number deemed suitable by it, if too many bids are received satisfying the laid down criterion.
13. **The bid submitted shall become invalid if:**
 - a. The bidder is found ineligible.
 - b. The bidder does not upload all the documents (including service tax registration / VAT registration / Sales Tax registration) as stipulated in the bid document including the undertaking / declaration.
 - c. EMD not deposited as specified

C.....Nil

I..... Nil

O..... Nil



List of Documents to be scanned and uploaded within the period of bid submission:

1. Annexure – I duly filled in and got signed
2. Copy of similar type of work executed / Work Experience Certificate
3. Certificate of Registration for GSTIN
4. Affidavit as per Notice Inviting Tender Condition [IITD-6] 1.2.2 [To be submitted on stamp paper]
5. Acceptance to execute INTEGRITY PACT [see integrity pact]
6. IITD 7 / 8 duly signed
7. EPF & ESI Registration proof
8. Any other document as specified in the NIT

**Executive Engineer [Electrical]
For & on Behalf of BOG, IIT Delhi**

C.....Nil

I..... Nil

O..... Nil

D'Man /J.E.

A.E.E / A.E.

E.E.



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 Schneider / ABB / P2POWER / Powerware as per details given below for the work of **S.I.T.C. of 1 x 500 KVA DVR & 100A AHF in L.T. Panel at IIT Delhi**

1.1 The work is estimated to cost **Rs. 16, 00,484.00**. This estimate, however, is given merely as a rough guide

1.1.1 The authority competent to approve NIT for the combined cost and belonging to the major discipline will consolidate NITs for calling the bids. He will also nominate Division which will deal with all matters relating to the invitation of bids.

For composite bid, besides indicating the combined estimated cost put to tender, should clearly indicate the estimated cost of each component separately. The eligibility of bidders will correspond to the combined estimated cost of different components put to bid.

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:-

Criteria of eligibility for submission of bid documents.

1.2.1 **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 OEM / 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. **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. 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. The site for the work is available.

5. 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. After submission of the bid the OEM / contractor can re-submit revised bid any number of times but before last time and date of submission of tender as notified.

C.....Nil

I..... Nil

O..... Nil



7. While submitting the revised bid, OEM / 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. 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. Earnest Money as specified to be paid through RTGS / NEFT.
IIT Delhi Bank details are as under:
Name of the Bank A/C : IITD Revenue Account
SBI A/C No. : 10773572622
Name of the Bank : State Bank of India, IIT Delhi,
Hauz Khas, New Delhi-110016
IFSC Code : SBIN0001077
MICR Code : 110002156
Swift No. : SBININBB547
(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-II)

Interested OEMs / OEM / contractors who wish to participate in the bid has also to make up the following within the period of bid submission:

- (i) Copy of OEM Authorisation Certificate and certificate of work experience 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.
10. The bid submitted shall become invalid, if:
a) The bidder is found ineligible.
b) The bidder does not upload all the documents as stipulated in the bid document.
c) EMD not deposited as specified
11. The OEM / 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 Deposit at Call receipt of any scheduled bank / Banker' cheque of any scheduled bank/ Demand Draft of any scheduled bank/Pay order of any Scheduled Bank (in case guarantee amount is less than Rs.1,00,000/-) or Government Securities or Fixed Deposit Receipts or irrevocable Bank Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the prescribed form. In case the OEM / 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 OEM / contractor shall be forfeited automatically without any notice to the OEM / contractor.
12. 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.

C.....Nil

I..... Nil

O..... Nil



13. 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. Canvassing whether directly or indirectly, in connection with bidders is strictly prohibited and the bids submitted by the OEMs / contractors who resort to canvassing will be liable for rejection.
15. 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. The OEM / 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 OEM / contractor would render him liable to be debarred from bidding process in future in IIT Delhi.
17. 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 OEM / 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 OEM / 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 OEM / contractor's service.
18. The bid for the works shall remain open for acceptance for a period of **ninety days from the date of opening of financial bids**, if any bidder withdraws his bid before the said period or issue of letter of acceptance, whichever is earlier, or makes any modifications in the terms and conditions of the bid which are not acceptable to the department, then the IIT Delhi 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 re-bidding process of the work.
19. This notice inviting bid shall form a part of the contract document. The successful bidder / OEM / 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:-
 - a) 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.
 - b) Standard IITD Form -7/8 or other Standard IITD Form as applicable.
20. In case any discrepancy is noticed between the documents as uploaded at the time of submission of the bid online and hard copies as to be submitted physically in IIT Delhi, if so desired by the accepting authority, then the bid submitted shall become invalid and the IIT Delhi 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 bidding process of the work.

C.....Nil

I..... Nil

O..... Nil



INTEGRITY PACT

To

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.....,

.....

Sub: NIT No. **9100/56/EW/IITD/17-18** for the work of **S.I.T.C. of 1 x 500 KVA DVR & 100A AHF in L.T. Panel at IIT Delhi.**

Dear Sir,

It is here by declared that 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,

Executive Engineer

C.....Nil

I..... Nil

O..... Nil

D'Man /J.E.

A.E.E / A.E.

E.E.



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

To

Executive Engineer (Elect.),
IIT Delhi, Hauz Khas,
New Delhi – 110016

Subject: Submission of Bid for the work of **S.I.T.C. of 1 x 500 KVA DVR & 100A AHF in L.T. Panel at IIT Delhi.**

Dear Sir,

I / We acknowledge that IITD. 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 authorized signatory of the Bidder)

C.....Nil

I..... Nil

O..... Nil

D'Man /J.E.

A.E.E / A.E.

E.E.



[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.....

BETWEEN

The Board of Governors, IIT Delhi, Hauz Khas, New Delhi - 16 represented through **Executive Engineer (Elect.)**, IIT Delhi

....., (Hereinafter referred as the 'Principal/Owner',

(Address of Division)

'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/OEM / 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. **9100/56/EW/IITD/17-18**) (hereinafter referred to as "**Tender/Bid**") and intends to award, under laid down organizational procedure, contract for **S.I.T.C. of 1 x 500 KVA DVR & 100A AHF in L.T. Panel at 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 OEM / 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:
 - 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.
 - (a) 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

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which the Bidder(s) could obtain an advantage in relation to the Tender process or the Contract execution.

- (b) 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.
- 3) 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) / OEM / contractor(s)

- 1) It is required that each Bidder/OEM / 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)/OEM / 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:
- a) The Bidder(s)/OEM / 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.
- b) The Bidder(s)/OEM / 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.
- c) The Bidder(s) / OEM / contractor(s) will not commit any offence under the relevant IPC/PoC Act. Further the Bidder(s) / OEM / 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.
- d) The Bidder(s) / OEM / contractor(s) of foreign origin shall disclose the names and addresses of agents / representatives in India, if any. Similarly Bidder(s) / OEM / 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.

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- e) The Bidder(s)/OEM / 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)/OEM / contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.
- 4) The Bidder(s)/OEM / contractor(s) will not, directly or through any other person or firm indulge in fraudulent practices **means a willful 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)/OEM / 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)/OEM / contractor(s) and the Bidder/ OEM / contractor accepts and undertakes to respect and uphold the Principal/Owner's absolute right:

- 1) If the Bidder(s)/OEM / 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 OEM / contractor shall have powers to disqualify the Bidder(s)/OEM / contractor(s) from the Tender process or terminate/determine the Contract, if already executed or exclude the Bidder/OEM / 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/OEM / contractor.
- 3) **Criminal Liability:** If the Principal/Owner obtains knowledge of conduct a Bidder or OEM / contractor, or of an employee or a representative or an associate of a Bidder or OEM / 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.

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- 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/OEM / contractor as deemed fit by the Principal/ Owner.
- 3) If the Bidder/OEM / 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/OEMs / OEM / contractors/SubOEMs / OEM / contractors

- 1) The Bidder(s)/OEM / contractor(s) undertake(s) to demand from all subOEMs / OEM / contractors a commitment in conformity with this Integrity Pact. The Bidder/OEM / contractor shall be responsible for any violation(s) of the principles laid down in this agreement/Pact by any of its Sub-OEMs / OEM / contractors/sub-vendors.
- 2) The Principal/Owner will enter into Pacts on identical terms as this one with all Bidders and OEMs / OEM / 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

This Pact begins when both the parties have legally signed it. It expires for the OEM / 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.

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 IITD.

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 OEM / 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 intentions.
- 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

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

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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 / OEM / contractor)

WITNESSES:

1.
(signature, name and address)

2.
(signature, name and address)

Place:

Dated :

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A.E.E / A.E.

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

Percentage Rate Tender / Item Rate Tender & Contract for Works

Tender for the work of **S.I.T.C. of 1 x 500 KVA DVR & 100A AHF in L.T. Panel at IIT Delhi.**

(A) (I) To be submitted online by **23/11/2017 upto 3:00 PM**

(II) To be opened on **24/11/2017 at 3:00 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 (90) 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. 32,010.00** is hereby deposited in IIT Delhi Revenue Account No. 10773572622 as earnest money. 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 OEM / 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

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prejudicial to the safety of the State.

Dated:

Signature of OEM / 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

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

D'Man /J.E.

A.E.E / A.E.

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PROFORMA OF SCHEDULES

[Operative Schedules to be supplied separately to each intending tenderer]

SCHEDULE 'A'

Schedule of quantities (enclosed)

SCHEDULE 'B'

Schedule of materials to be issued to the OEM / contractor

S.No.	Description of item	Quantity	Rates in figures & words at which the material will be charged to the OEM / contractor	Place of issue
← Nil →				

SCHEDULE 'C'

Tools and plants to be hired to the OEM / contractor

S.No.	Description	Hire charges per day	Place of Issue
← Nil →			

SCHEDULE 'D'

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

----- Nil -----

SCHEDULE 'E'

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



Reference to General Conditions of contract [GCC]

1	Name of work	:	S.I.T.C. of 1 x 500 KVA DVR & 100A AHF in L.T. Panel at IIT Delhi.
2	Estimated cost of work	:	Rs.16,00,484.00
3	Earnest Money	:	Rs.32,010.00
4	Performance Guarantee	:	5 percent of tendered value
5	Security Deposit	:	5 percent of tendered value

SCHEDULE 'F'**GENERAL RULES & DIRECTIONS**

: Officer inviting tender

Maximum percentage for quantity of items of work to be executed beyond wh rates are to be determined in accordance with Clauses 12.2&12.3	:	See below
Definitions:		
2[v] Engineer – in - charge	:	Executive Engineer [Elect]
2[vi] Accepting Authority	:	Executive Engineer [Elect]
2[x] Percentage on cost of materials and labour to Cover all overheads and profits	:	15 percent
2[xi] Standard schedule of rates	:	Market Rate
2[xii] Department	:	E & W, IIT Delhi
9[ii] Standard IITD Contract Form	:	General Conditions of Contract 2010, IITD Form 7/8-2010 modified & Corrected up to date of submission of tender

Clause 1:		
[i] Time allowed for submission of Performance Guarantee from the date of issue of letter of acceptance	:	Fifteen days
[ii] Maximum allowable extension with late fees @ 0.1% per day of performance guarantee amount beyond the period provided in (i) above	:	1 to 60 days
Clause 2:		
Authority for fixing compensation under clause 2	:	Institute Engineer
Clause 2 A:		
Whether Clause 2A shall be applicable	:	No
Clause 5:		
Number of days from the date of issue of letter of award for reckoning date of start	:	10 [ten] days

Milestone(s) as per table given below:-

Sl. No.	Description of Milestone (Financial)	Time allowed in days (from date of start)	Amount to be with-held in case of non-achievement of mile stone
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	N O T A P P L I C A B L E		

Time allowed for execution of work	:	60 days
Authority to decide:		
Extension of time	:	Executive Engineer [Engineer-in-charge]
Rescheduling of mile stones	:	Institute Engineer
Clause Applicable 6 or 6A:	:	Clause 6 A
Clause 7:		
Gross work to be done together with net payment / adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment	:	Not Applicable
Clause 10 A:		
List of testing equipment to be provided by the OEM / contractor at site lab	:	As desired by the Engineer-in-charge relating to the work
Clause 10B(ii):		
Whether Clause 10 B (ii) shall be applicable	:	No
Clause 10C:		
Component of labour expressed as percent of value of work	:	15 percent

Clause 10CA:

S.N.	Material covered under this clause	Nearest Materials (other than cement, reinforcement bars and the structural steel) for which All India Wholesale Price Index to be followed	Base Price of all Materials covered under clause 10 CA*
1			
2			
3		Nil	
4			

* Base price of all the materials covered under clause 10 CA is to be mentioned at the time of approval of NIT.

Clause 10CC

Clause 10 CC to be applicable in contracts with stipulated period of completion exceeding the period shown in next column	:	18 months
Schedule of component of other Materials, Labour, POL etc. for		

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price escalation	
Component of civil (except materials covered under clause 10CA)/ Electrical construction Materials expressed as percent of total value of work	: X_m : 75 percent
Component of Labour expressed as percent of total value of work	: Y : 25 percent
Component of P.O.L. expressed as percent of total value of work	: Not Applicable

Clause 11

Specifications to be followed for execution of work	: Relevant CPWD General specifications for Electrical work Part – I to VII with upto date modifications & Manufacturer's recommendations and guidelines
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Clause 12

Type of work	: Maintenance works including works of up gradation, aesthetic, special repair, addition/ alteration
Clause 12.2. & 12.3	
Deviation Limit beyond which clauses 12.2 & 12.3 shall apply for building work	: 30 percent
Clause 12.5	
Deviation Limit beyond which clauses 12.2 & 12.3 shall apply for foundation work	: 100 percent

Clause 16

Competent Authority for deciding reduced rates	: Executive Engineer
--	-----------------------------

Clause 18

List of mandatory machinery, tools & plants to be deployed by the OEM / contractor at site:

1.....	2.....	3.....
4.....	5.....	6.....
7.....	8.....	9.....

Nil

Clause 36 (i)

Requirement of Technical Representative(s) and recovery Rate

S. No.	Minimum Qualification of Technical Representative	Discipline	Designation (Principal Technical/ Technical Representative)	Minimum Experience (Years)	Number	Rate at which recovery shall be made from the OEM / contractor in the event of not fulfilling provision of clause 36(i)	
						Figures	Words

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



	-----NIL-----	
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Assistant Engineers retired from Government services that are holding diploma will be treated at par with Graduate Engineers

C.....Nil

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O..... Nil

D'Man /J.E.

A.E.E / A.E.

E.E.



**<< 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	TIN number	:	
7	PAN number	:	
8	UTR no. [for payment of EMD]	:	
BANK DETAILS			
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	:	

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 of the bidder]

Name:

Seal of the bidder

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COMMERCIAL AND ADDITIONAL CONDITIONS

1 General

1.1 A good maintenance programme is the key to long generating set life. Maintenance & service should only be carried out by experienced and qualified technicians. The maintenance and service which are done must be recorded to the Maintenance Record Form for the following work:

1.11 **Name of work & location:** S.I.T.C. of 1 x 500 KVA DVR & 100A AHF in L.T. Panel at IIT Delhi.

1.2 The work shall be executed as per relevant CPWD General Specifications for Electrical works **Part I to VII** as amended up to date, relevant IE Rules, relevant IS, **DG Set manufacturer's recommendation** and as per directions of Engineer-in-charge. These additional specifications and conditions are to be read in conjunction with above and in case of variations, specifications given in the Additional specifications and conditions shall apply. However, nothing extra shall be paid on account of these as the same are to be read along with schedule of quantities for the work.

1.3 The tenderer should in his own interest visit the site and get familiarized with the site conditions before tendering.

1.4 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 of Tender:-

Bidder shall submit the cost of tender documents, if any, e-tendering processing fee and earnest money, other documents, price bid in prescribed manner as indicated in "INFORMATION AND INSTRUCTIONS FOR OEMS / OEM / CONTRACTORS FOR e-TENDERING FORMING PART OF NIT AND TO BE POSTED ON WEBSITE"

2.3 The tenderers are advised not to deviate from the technical specifications / items, commercial terms and conditions of NIT like terms of payment, guarantee, arbitration clause, escalation etc.

2.4 **The department reserves the right to reject any or all the price bids and call for fresh price tenders as the case may be without assigning any reason.**

3.0 Validity

Tenders shall be valid for acceptance for a **period of 90 days from the date of opening of price bid.**

4.0 SAFETY CODES AND LABOUR REGULATIONS

(i) In respect of all labor employed directly or indirectly on the work for the performance of the OEM / contractor's part of work, the OEM / contractor at his own expense, will arrange for the safety provisions as per the statutory provisions, B.I.S. recommendations, factory act, workman's compensation act, CPWD code and instructions issued from time to time. Failure to provide such safety requirements would make the tenderer liable for **penalty as specified in applicable clause**. In addition the Engineer-In-Charge shall be at liberty to make arrangements and provide facilities as aforesaid and recover the cost from the OEM / contractor.

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- (ii) The OEM / contractor shall provide necessary barriers, warning signals and other safety measures while laying pipelines, cables etc. or wherever necessary so as to avoid accident. He shall also indemnify IITD against claims for compensation arising out of negligence in this respect. OEM / contractor shall be liable, in accordance with the Indian Law and Regulations for any accident occurring due to any cause. The department shall not be responsible for any accident occurred or damage incurred or claims arising there from during the execution of work. The OEM / contractor 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 OEM / contractor due to the above provisions thereof.

5.0 Payment Terms

- 5.1 Unless otherwise specified, in the additional conditions of the contract, the payment shall be made after successful supply, installation, testing & commissioning of the equipment.

6.0 Security Deposit

Security deposit shall be deducted from each running bill and the final bill to be the extent of 10 percent of the gross amount payable. However the maximum amount of security deposit will be 5 percent of the tendered value. The earnest money deposited shall be adjusted against this security deposit. The security deposit shall be released on the expiry of guarantee period stipulated in the contract. **Bank guarantee will not be accepted as security deposit.**

7.0 Performance Guarantee

The successful tenderer shall submit an irrevocable performance guarantee of 5 percent of the tendered amount in addition to other deposits mentioned elsewhere in the contract in the contract for his proper performance of the contract agreement within 90 days of issued of letter of acceptance of tender. This guarantee shall be in the form of Demand draft/ Pay order or irrevocable bank guarantee bond of any scheduled bank or the State Bank of India in the specified format or in the form of Government security, fixed deposit pledged in favour of Executive Engineer 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 60 days beyond.** This bank guarantee shall be kept valid till the recoding of completion certificate for the work by the competent authority.

8.0 Rates

- 8.1 **The rates quoted by the tenderer, shall be firm and inclusive of all taxes and all charges for packing forwarding, insurance, freight and delivery, installation, testing, commissioning etc. at site including risk, overhead charges, general liabilities / obligations and clearance from concerned authority, if any.**

9.0 STORAGE AND CUSTODY OF MATERIALS

The existing DG set room may be used for storage of materials and equipment in consultation of the E-in-C. No separate storage accommodation shall be provided by the department. Watch and ward of the stores and their safe custody shall be the responsibility of the OEM / contractor till the final taking over the installation by the department.

10.0 COMPLETION PERIOD

The completion period of **60 days** as indicated in the tender documents is for the entire work of routine maintenance and servicing including breakdown maintenance to the satisfaction of the Engineer-in-charge.

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11.0 CARE OF THE BUILDING

Care shall be taken by the OEM / 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.

12.0 Any item required for completion of the project but left inadvertently shall be executed with-in the quoted rate.

13.0 Compliance with Regulations and Indian Standards

13.1 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:

- [a] Factories Act
- [b] IE Rules
- [c] BIS and other standards as applicable
- [d] Workmen's Compensation Act
- [e] Statutory norms prescribed by local bodies like CEA, Power Supply Co. etc.

14.0 Mobilization Advance:

No mobilization advance shall be paid for this work.

15.0 Verification of correctness of Equipment at Destination:

The OEM / contractor shall have to produce all the relevant records to certify that the genuine equipment from the manufacturers has been supplied and erected.

16.0 CLEAN UP WORKS AT SITE

During maintenance the OEM / contractor shall at all times keep the working and storage areas free from waste or rubbish. On completion of maintenance / servicing he shall remove all temporary structures, debris and leave the premises clean to the full satisfaction of the department.

17.0 TERMS OF PAYMENT

The terms of payments shall be as indicated in General Conditions of Contract.

18.0 INTERPRETING SPECIFICATIONS

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

- [a] schedule of quantities
- [b] Technical specifications
- [c] Drawing [if any]
- [d] General specifications
- [d] Relevant BIS or other international code in case BIS code is not available

19.0 COOPERATION WITH OTHER AGENCIES

The successful tenderer shall co-ordinate with other OEMs / OEM / contractors and agencies in the site of work, if any, 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

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will be recovered from the successful tenderer if the restoration work to the original condition or specification of the dismantled portion of the work was not undertaken by the tenderer himself.

- 19.1 The work will be carried out with least disturbance to the Institute during maintenance, servicing and shutdown.
- 20.0 Apart from the above mentioned works, the firm /agency has to carry out the work as directed by the Engineer-In-Charge from time to time.

21.0 INDEMNITY

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 OEM / 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 equipment and ancillary equipments under the supervision of the successful tenderer in so far as the latter is responsible. The successful tenderer shall also provide all insurance as may be necessary to cover the risk. No extra payment would be made to the successful tenderer on account of the above.

22.0 ERECTION TOOLS

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

- 23.0 Taxes as applicable shall be deducted from the bill of the OEM / contractor.

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**IITD - 2010 CORRECTION SLIPS**

In General condition of contract for IIT Delhi works department 2010 –

Reference	Existing	Modified
Clause 10B (ii), Para-2	Before any installment of advance is released, the OEM / contractor shall execute a Bank Guarantee Bond from Scheduled Bank for the amount of advance & valid for the contract period. This shall be kept renewed from time to time to cover the balance amount and likely period of complete recovery, together with interest.	Before any installment of advance is released, the OEM / contractor shall execute a Bank Guarantee Bond from Scheduled Bank for the amount equal to 110% of the amount of advance and valid for the contract period. This (Bank Guarantee from Scheduled Bank for the amount equal to 110% of the balance amount of advance) shall be kept renewed from time to time to cover the balance amount and likely period of complete recovery.
Clause 3 (vii)	If the OEM / contractor shall obtain a contract with Government as a result of wrong tendering or other non-bonafide methods of competitive tendering.	If the OEM / contractor had secured the contract with Government as a result of wrong tendering or other non-bonafide methods of competitive tendering or commits breach of Integrity Agreement.

Reference	Existing Provision	Modified Provision
Page 5, IITD 2010	Page 5, IITD 2010 4A. Applicable for Percentage Rate Tender only (IITD-7) In case of Percentage Rate Tenders, a tenderer shall fill up the usual printed form, stating at what percentage below/above (in figures as well as in words) the total estimated cost given in Schedule of Quantities at Schedule-A, he will be willing to execute the work. Tenders, which propose any alteration in the work specified in the said form of invitation to tender, or in the time allowed for carrying out the work, or which contain any other conditions of any sort including conditional rebates, will be summarily rejected. No single tender shall include more than one work, but OEMs / OEM / contractors who wish to tender for two or more works shall submit separate tender for each. Tender shall have the name and number of the works to which they refer, written on the envelopes.	Page 5, IITD 2010 4A. Applicable for Percentage Rate Tender only (IITD-7) In case of Percentage Rate Tenders, OEM / contractor shall fill up the usual printed form, stating at what percentage below/above (in figures as well as in words) the total estimated cost given in Schedule of Quantities at Schedule-A, he will be willing to execute the work. The tender submitted shall be treated as invalid if :- 1. The OEM / contractor does not quote percentage above/below on the total amount of tender or any section/sub head of the tender. 2. The percentage above/below is not quoted in figures & words both on the total amount of tender or any section/sub head of the tender. 3. The percentage quoted above/below is different in figures & words on the total amount of tender or any section/sub head of the tender: Tenders, which propose any

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		<p>alteration in the work specified in the said form of invitation to tender, or in the time allowed for carrying out the work, or which contain any other conditions of any sort including conditional rebates, will be summarily rejected. No single tender shall include more than one work, but OEMs / OEM / contractors who wish to tender for two or more works shall submit separate tender for each. Tender shall have the name and number of the works to which they refer, written on the envelopes.</p> <p>New Para 4B is added as below:</p> <p>4B: In case the lowest tendered amount (estimated cost + amount worked on the basis of percentage above/ below) of two or more OEMs / OEM / contractors is same, such lowest OEMs / OEM / contractors will be asked to submit sealed revised offer in the form of letter mentioning percentage above/below on estimated cost of tender including all sub sections/sub heads as the case may be, but the revised percentage quoted above/below on tendered cost or on each sub section/ sub head should not be higher than the percentage quoted at the time of submission of tender. The lowest tender shall be decided on the basis of revised offers.</p> <p>In case any of such OEM / contractor refuses to submit revised offer, then it shall be treated as withdrawal of his tender before acceptance and 50% of earnest money shall be forfeited.</p> <p>If the revised tendered amount of two more OEMs / OEM / contractors received in revised offer is again found to be equal , the lowest tender, among such OEMs / OEM / contractors, shall be decided by draw of lots in the presence of SE of the circle, EE(s) in-charge of major & minor component(s) (also DDH in case Horticulture work is also included in the tender), EE(P) or EE(HQ) of the circle & the lowest OEMs / OEM / contractors those have quoted equal amount of their tenders.</p> <p>In case all the lowest OEMs / OEM / contractors those have quoted same tendered amount, refuse to submit revised offers, then tenders are to be recalled after forfeiting 50% of EMD of each OEM / contractor.</p> <p>OEM / contractor(s), whose earnest money is forfeited because of non-submission of revised offer, shall not be allowed to participate in the re-tendering process of the</p>
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Reference	Existing Provision	Modified Provision
10A (page 6-7)	In case of Percentage Rate Tenders only percentage quoted shall be considered. Any tender containing item rates is liable to be rejected. Percentage quoted by the OEM / contractor in percentage rate tender shall be accurately filled in figures and words, so that there is no discrepancy. However if the OEM / contractor has worked out the amount of the tender and if any discrepancy is found in the percentage quoted in words and figures, the percentage which corresponds with the amount worked out by the OEM / contractor shall, unless otherwise proved, be taken as correct. If the amount of the tender is not worked out by the OEM / contractor or it does not correspond with the percentage written either in figures or in words, then the percentage quoted by the OEM / contractor in words shall be taken as correct. Where the percentage quoted by the OEM / contractor in figures and in words tally but the amount is not worked out correctly, the percentage quoted by the OEM / contractor will, unless otherwise proved, be taken as correct and not the amount.	In case of Percentage Rate Tenders only percentage quoted shall be considered. Any tender containing item rates is liable to be rejected. Percentage quoted by the OEM / contractor in percentage rate tender shall be accurately filled in figures and words, so that there is no discrepancy. (Remaining part deleted)
Reference	Existing Provisions	Modified Provisions
Deviations/ Variations Extent and Pricing	<u>CLAUSE 12</u> The Engineer-in-Charge shall have power (i) to make alteration in, omissions from, additions to, or substitutions for the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work, and (ii) to omit a part of the works in case of non-availability of a portion of the site or for any other reasons and the OEM / contractor shall be bound to carry out the works in accordance with any instructions given to him writing signed by the Engineer-in-Charge and such alterations, omissions, additions or substitutions shall form part of the contract as if originally provided therein and any altered,	<u>CLAUSE 12</u> The Engineer-in-Charge shall have power (i) to make alteration in, omissions from, additions to, or substitutions for the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work, and (ii) to omit a part of the works in case of non-availability of a portion of the site or for any other reasons and the OEM / contractor shall be bound to carry out the works in accordance with any instructions given to him writing signed by the Engineer-in-Charge and such alterations, omissions, additions or substitutions shall form part of the contract as if originally provided therein and any

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	<p>additional or substituted work which the OEM / contractor may be directed to do in the manner specified above as part of the works, shall be carried out by the OEM / contractor on the same conditions in all respects including price on which he agreed to do the main works except as hereafter provided.</p>	<p>altered, additional or substituted work which the OEM / contractor may be directed to do in the manner specified above as part of the works, shall be carried out by the OEM / contractor on the same conditions in all respects including price on which he agreed to do the main works except as hereafter provided.</p> <p>The completion cost of any agreement for Maintenance works including works of upgradation, aesthetic, special repair, addition/ alteration shall not exceed 1.25 times of Tendered amount.</p>
<p>Deviations, Extra Items, Pricing</p>	<p>12.2</p> <p>In the case of extra items (items that are completely new and are in addition to the items contained in the contract), the OEM / contractor may within 90 days of receipt of order or occurrence of the item(s) claim rate, supported by proper analysis, for the work and the Engineer-in-charge shall within one month of the receipt of the claims supported by analysis after giving considerations to the analysis of the rates submitted by the OEM / contractor, determined the rates on basis of market rates and the OEM / contractor shall be paid in accordance with the rates so determined.</p>	<p>12.2</p> <p>A. For Project and original works:</p> <p>In the case of extra items (items that are completely new and are in addition to the items contained in the contract), the OEM / contractor may within 90 days of receipt of order or occurrence of the item(s) claim rate, supported by proper analysis, for the work and the Engineer-in-charge shall within one month of the receipt of the claims supported by analysis after giving considerations to the analysis of the rates submitted by the OEM / contractor, determined the rates on basis of market rates and the OEM / contractor shall be paid in accordance with the rates so determined.</p> <p>B. For Maintenance including works of upgradation, aesthetic, special repair, addition/ alteration:</p> <p>In the case of Extra Item(s) being the schedule items (Delhi Schedule of Rates items), these shall be paid as per the schedule rate plus cost index (at the time of tender) plus/minus percentage above below quoted contract amount.</p> <p>Payment of Extra items in case of non-schedule items (Non-DSR items) shall be made as per the prevailing market rate.</p>

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<p>Deviation, Substituted Items, Pricing</p>	<p>In the case of substituted items (items that are taken up with partial substitution or lieu of items of work in the contract), the rate for the agreement item (to be substituted) and substituted item shall also be determined in the manner as mentioned in the following Para.</p> <p>(a) If The market rate for the substituted item so determined is more than the market rate of the agreement item (to be substituted), the rate payable to the OEM / contractor for the substituted item shall be the rate for the agreement item (to be substituted).</p> <p>(b) If the market rate for the substituted item so determined is less than the market rate of the agreement item (to be substituted), the rate payable to the OEM / contractor for the substituted item shall be the rate for the agreement item (to be substituted) so decreased to the extent of the difference between the market rates of substituted item and the agreement item (to be substituted)</p>	<p>A. For Project and original works:</p> <p>In the case of substituted items (items that are taken up with partial substitution or lieu of items of work in the contract), the rate for the agreement item (to be substituted) and substituted item shall also be determined in the manner as mentioned in the following Para.</p> <p>(a) If The market rate for the substituted item so determined is more than the market rate of the agreement item (to be substituted), the rate payable to the OEM / contractor for the substituted item shall be the rate for the agreement item (to be substituted).</p> <p>(b) If the market rate for the substituted item so determined is less than the market rate of the agreement item (to be substituted), the rate payable to the OEM / contractor for the substituted item shall be the rate for the agreement item (to be substituted) so decreased to the extent of the difference between the market rates of substituted item and the agreement item (to be substituted).</p> <p>For Maintenance including works of up gradation, aesthetic, special repair, addition/ alteration:</p> <p>In the case of Substitute Item(s) being the schedule items (Delhi Schedule of Rates items), these shall be paid as per the schedule rate plush cost index (at the time of tender) plus/minus percentage above below quoted contract amount.</p> <p>Payment of Extra items in case of non-schedule items (Non-DSR items) shall be made as per the prevailing market rate.</p>
<p>Deviation, Deviated Quantities,</p>	<p>In the case of contract items, substituted items, contract cum substituted items, which exceed the limits laid down in schedule F, the OEM / contractor may within fifteen days of receipt of</p>	<p>A. For Project and original works:</p> <p>In the case of contract items, substituted items, contract cum substituted items, which exceed the</p>

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Pricing	<p>order or occurrence of the excess, claim revision of the rates, supported by proper analysis for the work in excess of the above mentioned limits, provided that if the rates so claimed are in excess of the rates specified in the schedule of quantities, the Engineer-in-Charge shall within one month of receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the OEM / contractor, determine the rates on the basis of the market rates and the OEM / contractor shall be paid in accordance with the rates so determined.</p>	<p>limits laid down in schedule F, the OEM / contractor may within fifteen days of receipt of order or occurrence of the excess, claim revision of the rates, supported by proper analysis for the work in excess of the above mentioned limits, provided that if the rates so claimed are in excess of the rates specified in the schedule of quantities, the Engineer-in-Charge shall within one month of receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the OEM / contractor, determine the rates on the basis of the market rates and the OEM / contractor shall be paid in accordance with the rates so determined.</p> <p>B. For Maintenance including works of upgradation, aesthetic, special repair, addition/ alteration:</p> <p>In the case of contract items, which exceed the limit laid down in schedule F, the OEM / contractor shall be paid rates specified in the schedule of quantities.</p>
	<p>12.3 The provisions of the preceding paragraph shall also apply to the decrease in the rates of items for the work excess of the limits laid down in Schedule F, and the Engineer-in-Charge shall after giving notice to the OEM / contractor within one month of occurrence of the excess and after taking into consideration any reply received from him within fifteen days of the receipt of the notice, revise the rates for the work in question within one month of the expiry of the said period of fifteen days having regard to the market rates.</p>	<p>12.3 A. For Project and original works:</p> <p>The provisions of the preceding paragraph shall also apply to the decrease in the rates of items for the work excess of the limits laid down in Schedule F, and the Engineer-in-Charge shall after giving notice to the OEM / contractor within one month of occurrence of the excess and after taking into consideration any reply received from him within fifteen days of the receipt of the notice, revise the rates for the work in question within one month of the expiry of the said period of fifteen days having regard to the market rates.</p> <p>B. For Maintenance including works of upgradation, aesthetic, special repair, addition/ alteration:</p> <p>In the case of decrease in the rates Prevailing in the market of items for the the work excess of the limits laid down in</p>

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		<p>Schedule F, and the</p> <p>Engineer-in-Charge shall after giving notice to the OEM / contractor within one month of occurrence of the excess and after taking into consideration any reply received from him within fifteen days of the receipt of the notice, revise the rates for the work in question within one month of the expiry of the said period of fifteen days having regard to the market rates.</p>
Schedule F	Clause 12 No provision.	<p>Clause 12</p> <p>Type of work ___ *** _____</p> <p>*** To be filled by NIT approving authority either Project and original work or Maintenance works including works of upgradation, aesthetic, special repair, addition/ alteration.</p>



TECHNICAL SPECIFICATIONS

SPECIFICATIONS FOR PWM Dynamic Voltage Regulator

1. GENERAL:

- a. Voltage regulation shall be performed by IGBT driven PWM inverter operating at around 30kHz control frequency
 - b. Typical voltage correction reaction time should be <300 micro seconds
 - c. Voltage regulation shall be achieved by superimposition of PWM wave on incoming wave, without any brake in the power path.
 - d. The control algorithm must work in closed loop; sensing both the input and output voltages as feedback for best regulation
 - e. The control algorithm must sense the converter current at all times for better regulation and instantaneous over-load detection. The converter must detect overload and go to bypass mode and not rely solely on input MCCB and fuses for over load protection
 - f. The converter must use semi conductor fuses at input to protect the IGBT converter
 - g. PWM Static Voltage regulator shall use only static parts for real-time voltage correction. It shall not use any such moving part like relay or brush, which limit the rate of voltage regulation.
 - h. The converter must use IGBTs of reputed make like Semikron, Infineon or Mitsubishi
 - i. The IGBT drivers must employ the following (minimum) protections to ensure long operational life of the IGBTs
 - i. Active Clamping protection
 - ii. Output short circuit protection with soft turn off
 - iii. Vce saturation protection
 - iv. Must have isolated input and output power supplies for driving the IGBTsThe above mentioned protections are implemented in driver circuit to protect the IGBTs from any abnormal operation and protect the converter.
 - j. Nominal input & output shall be 3 phase wye, 240V/415VAC, 50Hz.
 - k. There shall be no switching, current interruption, transitions or step changes during voltage regulation.
 - l. The output voltage shall be duly free of harmful surges, spikes and EMI/ RFI noises.
2. Type :- Three phase, Unbalanced load
 3. Rating :- 500 KVA Three Phase
 4. Grid Frequency :- 45 - 55 Hz
 5. Full Regulation Range:
 - a. Input Voltage Range :- 240V +/-15% P-N
 - b. Output Voltage :- 240V \pm 1%
 6. Losses at reference temperature
 - a. No-Load loss at minimum rated input voltage shall be less than 1% of rated KW
 - b. Full Load Loss at minimum rated input voltage shall be less than 3% of rated KW
 7. Duty cycle :- Continuous
 8. Waveform distortion :- NIL
 9. Speed of correction :- Reaction time of <300 micro seconds.
:- Control frequency of close to 30kHz
 10. Reaction Time :- <300 micro seconds

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11. Overload capacity :- 125% of rated current (instantaneous)
12. Efficiency :- $\geq 97\%$ from 20% to 100% load.
13. Cooling :- Naturally Air cooled
14. Protections
 - 14.1 IGBTs :- Reputed make Semikron/Infineon/Mitsubishi
 - 14.2 IGBT Drivers :- Vce Saturation Protection
 - :- Short Circuit/Active Clamping Protection
 - :- Isolated DC-DC supply for IGBTs
 - 14.3 Switching deadband for complimentary IGBT devices to prevent short circuit
 - 14.4 MCCB at output for overload & short circuit protection
 - 14.5 MCCB at input(optional) and bypass(optional).
 - 14.6 Semiconductor fuses to protect IGBT stack
 - 14.7 Redundant internal bypass to ensure critical load is not interrupted by failure/overloading of the DVR
 - 14.8 Heavy-duty, three-stage AC surge protection circuits shall be installed separately for each phase.
 - 14.9 Noise filters shall be provided on input and output to protect against high frequency EMI/RFI noises.
15. Provision to Raise/Lower output set voltage using easy to access/use regulator knobs
16. Status Indications/Annunciation:
 1. LED for output healthy
 2. LED for bypass
 3. R,Y,B LEDs for three phases
 4. Input and Output digital multifunction meters must be provided for input/output current, voltage, power etc
 5. Input and Output digital multifunction meters must have RS485 compatibility
17. Environmental Protection :- IP 41 or better
18. Class of insulation :- Class H
- 19 Each PWM DVR unit shall be provided with a detailed operating manual with Installation, connection, turn-on, normal operation, maintenance & trouble-shooting instructions.
20. The system should be repairable at site. The components must be functionally segregated. In the rare event of a failure, only the affected part must be replaced without the need to replace healthy components/parts e.g: If there is a failure in IGBTs, then there must not be any need to replace control circuit elements like micro processor board. This is to ensure that maintenance cost is kept low for the end user.
21. Testing :-
 - 1) Regulation test
 - 2) Heat run test
 - 3) No load efficiency test



Specifications for Active Harmonic Filter [AHF]

Design, fabrication, assembling, wiring, testing, supply, and commissioning of active filter panel having IGBTs, microprocessors, capacitors, reactors and other associated accessories, as explained below.

The active filter panel shall be fabricated out of 14/16 gauge CRCA sheet steel in cubicle compartment, free-standing, floor-mounted, dust and vermin proof with reinforcement of suitable size, angle iron, channel, 'T' sections and/or flats wherever necessary. Pre-treatment of the panel shall be carried out before epoxy powder coating with at least eight tank process. The panel shall adhere to IP 41 protection standard.

Cable gland plates shall be provided on bottom (or as per client's requirements) of the panel. Lifting hooks shall also be provided at least on all four corners of the panel.

The panel shall be suitable for 415V, 3 phase, 4 wire, 50Hz supply system. The panel shall have a tolerance of 10% for the voltage and 5% for the frequency. Two numbers of earthing terminals shall be provided on either side of the panel.

Unless otherwise stated below, the active filter panel shall comply with the following standards (and their latest amendments):

- a. Semiconductor Converters: IEC 60146
- b. Semiconductor Converters: IEC 602040
- c. International Electro-technical Vocabulary : IEC 60050
- d. Environmental Testing: IEC 60068
- e. Harmonics and Interharmonics: IEC 61000
- f. Gate Driver Card: IEC 60068-1
- g. SMPS: UL1012, UL60950, TUV EN60950 approved
- h. Sensor: EN50178

The active filter panel shall, in its default configuration, implement the following:

- a) Harmonics Compensation up to 51st order (1st Priority)
- b) Step-less Power Factor Correction for both leading and lagging current (2nd priority)
- c) Load Current Balancing in the three phases (3rd priority)

The active filter panel shall comprise:

1. Incomer
 - a. Suitable rating MCCB having thermal magnetic based over-current and short-circuit protection and 36kA breaking capacity (Ics) as the incomer of the panel 100% Icu breakers shall be used.
2. Metering and Indication
 - a. Physical On/Off selector switch for the active filter
 - b. A 7" color touch-screen HMI (human machine interface) with communication ports
3. Power Circuit
 - a. A 100A three phase inverter stack
 - b. The inverter stack shall be rated for the full rating of active filter and shall have sufficient margin for safely overloading the filter
 - c. The inverter stack shall comprise suitable number and rating (with sufficient margin for overload) of IGBTs, DC Capacitors and IGBT driver circuits to meet the full power output of the inverter stack
 - d. Toroidal single phase inductor chokes of suitable rating (with sufficient margin for overload) for each of the three legs of the active filter
 - e. A 140A TP AC3 duty power contactor
 - f. Semi conductor fuses to protect the stack
 - g. Resistors, capacitors and other passive components of suitable rating (with sufficient margin) and quantity to continuously carry the full load of the filter

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- h. Cables, bus-bars and other associated hardware of suitable rating (with sufficient margin) to continuously carry the full load of the filter
 - i. Heavy duty exhaust fans and suitably placed ventilation louvers for proper heat dissipation from the inverter stacks and inductor choke shall be provided
 - j. Heavy duty capacitors, resistances to filter out the switching ripple from the filter output
4. Control Circuit
- a. Control MCB of rating 10A-FP-10kA-C Curve to provide power supply to the control circuit of the active filter
 - b. Advanced 32-bit DSP microprocessor controller which shall monitor the voltage and current in the three phases (Red, Yellow, Blue) to compute the exact power requirement in the three phases, and thus, implement the following features - harmonic compensation, step-less compensation of leading and lagging power factor and load balancing
 - c. Suitable number and rating of voltage and current sensing circuits
 - d. Necessary control and firing cards with proper wiring and lugs of required rating shall be provided
 - e. Suitable number and rating of any other items, e.g. relays, SMPS, etc.
5. The HMI (human machine interface) installed in the Active filter shall have the following features:
- a. A 7-inch, colored touchscreen LCD interface
 - b. It must at-least have Ethernet port, USB port and SD card port
 - c. It must support MODBUS TCP communication protocol
 - d. Start, stop and trip status (with trip code) on the home screen
 - e. Internal CAN communication with the DSP controller
 - f. The HMI must display the following (minimum) numerical parameters
 - i. Arms - All 3 phase currents + Neutral
 - ii. A1rms (Fundamental Current) - All 3 phase fundamental currents
 - iii. iTHD (%) - All 3 phase current harmonic distortion
 - iv. Aunb (%) - All 3 phase current unbalance
 - v. Vrms - All 3 phase voltages
 - vi. Urms - All 3 line voltages
 - vii. V1rms (Fundamental Voltage) - All 3 phase fundamental voltages
 - viii. vTHD (%) - All 3 phases voltage harmonic distortion
 - ix. Vunb (%) - All 3 phase voltage unbalance
 - x. Grid Frequency
 - xi. Active Power (kW) - All 3 phases + Total
 - xii. Reactive Power (kVAr) - All 3 phases + Total
 - xiii. Apparent Power (kVA) - All 3 phases + Total
 - xiv. Power Factor (PF) - All 3 phases + Total
 - xv. Displacement Power Factor (dPF) - All 3 phases + Total
 - xvi. Apk - Peak Current of 3 phases of power stack
 - xvii. Utilization (%) - Utilization percentage of 3 phases of power stack
 - xviii. Vdc - DC bus voltage of power stack
 - xix. Stack Temperature - Temperature of 3 phase IGBTs of power stack
 - xx. Control Card Temperature
 - xxi. System Running hours
 - xxii. Fan Running hours
 - g. Advanced logging capabilities
 - i. The HMI must save a minimum of 50,000 time stamped event logs
 - ii. The logs view must be password protected
 - iii. The logs should capture system events like System On/Off
 - iv. System trip event should be logged with associated trip code and time stamp
 - v. User entry into settings should get logged
 - vi. Any failed user login attempt (wrong password) should be logged
 - vii. Changes in user settings must be logged
 - viii. Logs must be accessible day-wise for ease of navigation
 - ix. Logs must be arranged in First In - Last Out fashion to display the latest events on top
 - x. User must be able to export the logs to an external USB storage device

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- xi. HMI must have provision for Ethernet communication
 - h. The HMI must provide graphical information for the following (minimum) data
 - i. Individual harmonic bar chart of 3 phase currents - upto 51st order
 - ii. Individual harmonic bar chart of 3 phase voltages - upto 51st order
 - iii. Simultaneous graphical display of 3 phase currents and 3 phase voltages on single window with user selectable options
6. The active filter panel shall have the following features, in addition to those already mentioned above:
- a. Panel shall be suitable for operation within an ambient temperature between 0°C and 45°C
 - b. Panel shall have an audible noise level lesser than 70db
 - c. Panel shall have a filtering efficiency of at least 98%
 - d. Panel shall have a reaction time of less than 200 micro-seconds
 - e. Priority selection between the three features - PF compensation, harmonics compensation and load balancing - of the filter shall be programmable using the HMI
 - f. In the default mode, harmonics compensation is set at 1st priority, PF compensation is set at 2nd priority and load balancing is set at 3rd priority
 - g. Panel shall also have provision for selection of individual harmonic orders for compensation in the harmonic compensation mode through the HMI
 - h. Panel shall only compensate the load balancing requirements arising from distributed loading in the three phases or due to two phase loads
 - i. Any compensation requirements arising due to the unbalanced current in the neutral shall not be compensated (a 4P/4W active filter will be required for such cases)
 - j. Auto fold-back of the active filter panel if total current requirement exceeds the rated capacity of the filter
 - k. Bus-bars or cables shall be suitably color coded and mounted using appropriate insulator supports
 - l. Suitable clearances shall be provided for the bus-bars and other live parts of the system as per international standards
 - m. All live parts of the system shall be properly shrouded
 - n. Inspection terminal strip, number ferruling, and other labeling shall be suitably provided
 - o. Stickers marked with "DANGER" shall be provided wherever required
 - p. Detailed drawings and manuals shall be provided wherever required
 - q. Following protections shall be provided:
 - i. Over voltage (AC) protection
 - ii. Over voltage (DC) protection
 - iii. Phase sequence protection
 - iv. Over current protection
 - v. One phase disconnection (double phasing) detection/protection
 - vi. Over temperature protection
 - vii. Temperature sensor abnormality detection
 - viii. Protection circuits for the IGBT stack and its components
 - r. Temperature based de-rating to protect the system and longer operational life
 - i. The system will de rate its capacity by sensing the control card temperature
 - ii. System will sense abnormally high stack temperature and trip itself to protect the converter with suitable error indication
 - iii. The system will sense abnormality with stack temperature sensing circuit and generate a suitable error indication
 - s. All components and wiring used in the system shall adhere to the relevant ISI and IEC standard
7. The active filter shall have the following settings options for the user
- a. Define priority between Harmonic, Reactive and Unbalance compensation e.g: User can easily choose to do only one of the three or a combination of the three. Filter will utilize its full capacity as per defined priority.
 - b. Individual harmonic selection
8. The active filter shall also have provision for some advanced modes like:
- a. MODE 1:- Fixed reactive power compensation mode with lead with/without CT feedback.
 - b. MODE 2:- Fixed reactive power compensation mode with lag with/without CT feedback.

C.....Nil

I..... Nil

O..... Nil



- c. MODE 3:- Fixed reactive power compensation mode with user defined rating with/without CT feedback.
 - d. MODE 4:- Power factor correction based on CT feedback
 - e. MODE 5:- Harmonic compensation
 - f. MODE 6:- Load unbalance compensation
 - g. MODE 7:- Harmonic compensation with reactive power compensation for available power rating in lead
 - h. MODE 8:-Harmonic compensation with reactive power compensation for available power rating in lag
9. Mode selection shall be done by HMI with password protection.
10. Communication between drivers shall be optical.

C.....Nil

I..... Nil

O..... Nil

D'Man /J.E.

A.E.E / A.E.

E.E.



BID SUBMISSION

ONLINE BID SUBMISSION:

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

Envelope – 1 (Following documents to be provided as single PDF file)			
Sl. No.	Documents	Content	File Types
1.	Technical Bid	Organization Declaration Sheet as per Annexure - I	.PDF
2.		Certificate of work experience / Similar Work executed	.PDF
3.		Certificate of registration for GSTIN	.PDF
4.		Affidavit as per NIT condition 1.2.2 on stamp paper	.PDF
5.		OEM Product Brochure	.PDF
6.		Acceptance to execute integrity pact	.PDF
7.		IITD 7/8 duly signed by the bidder	.PDF
8.		Any other document as specified in the NIT	.PDF
9.		EPF / ESI Registration proof	.PDF
Envelope – 2			
Sl. No.	TYPES	Content	
1.	Financial Bid	Price bid should be submitted in BOQ format.	.EXL

**SCHEDULE OF QUANTITY****Name of work: S.I.T.C. of 1 x 500 KVA DVR & 100A AHF in L.T. Panel at IIT Delhi**

Item No.	Description of Item	Qty.	Rate	Unit	Amount
1	<p>Design , supply , installation , testing & commissioning of floor mounted free standing type with separation system as per IS : 8623 part-1 for 415 v , 50 Hz, 3 phase 4 wire supply , moisture, dust and vermin proof IP-41 with IGBT based step-less, instantaneous and independent voltage regulation of all phase voltage with programmable DSP controller , duly housed in epoxy powder coated 2 mm thick CRCA sheet steel compartmentalised enclosure free standing type with all supports, accessories, switch gears, control gears, protections, wiring, interconnections, control MCBS etc. as required complete in all respect & having its main components as below along with all other standard component, circuitry & specifications as required.</p> <p>DVR system shall have a rating of 500 KVA @415 V (P-P) +/- 15% The system shall be capable of providing independent regulation of three phase using IGBT technology.</p> <p>Incomer MCCB 1000 A , FP, 50 KA, 415 Volts – 02 nos with spreader links and rotatory handle and neutral link Provision for maintenance bypass MCCB 1000 A , FP, 50 KA, 415 V</p> <p>Display and indications Multifunction metres The metre will be provided for input and output side sowing parameters like voltage, current, power etc.</p> <p>IGBT based active technology – 1 no. a) IGBT – Infineon / Semikron make b) IGBT based stacks with forced cooling arrangement c) Interfacing and other control cards d) Sensor control card e) Heavy duty cooling blowers / fans with protection f) SMPS g) SPD Class C</p>	1 Job		Job	

C.....Nil

I..... Nil

O..... Nil



	<p>h) High frequency ripple filtering circuit i) MCCB 1000 A, FP, 50 KA , T/M – 03 Nos with spreader links k) MCB 10 A-FP-10 KA – C curve – 01 Nos. i) Contactors and Reactors – 06 Nos. m) Transformer (SP) – 03 Nos. n) interconnection with UNIVYNIN copper stranded wires, aluminium bus bar, danger notice boards, inscription plates, terminals for cable connections o) MCCB, contactor and fuse of applicable rating and protections shall be provided for DVR system p) All required hardware's, software's, protections, cards, inscription plates, danger notice board etc. as required to be provided to complete the system</p> <p>Targets to be achieved with the above Voltage regulation (P-N) 240V +/- 1%</p>				
2	<p>Design, supply, installation, testing & commissioning of the floor mounted free standing type with separation system as per IS : 8623 part-1 for 415 V , 50 Hz , 3 phase 4 wire supply, moisture, dust and vermin proof ip -41 with IGBT based intelligent active power filter with programmable DSP controller for harmonics compensation along with load balancing duly housed in epoxy powder coated 2 mm thick CRCA sheet steel compartmentalised enclosure free standing type with all supports, accessories, switch gears, control gears, protections, wiring, interconnections, control MCBs etc. as required complete in all respects & having its main components as below along with all other standard components, circuitry & specifications as required.</p> <p>Active power filter shall have a rating of 100 @ 415 V. The entire system shall be controlled through a single integrated controller for active and shall be able to control harmonic levels</p> <p>Incomer MCCB 160 A, TP , 36 KA, 415 Volt-01 Nos. with spreader links and extended rotary handle and neutral link</p>	1 Job		Job	

C.....Nil

I..... Nil

O..... Nil



<p>Display and indications 7 inch LCD touchscreen for all parameters related to IGBT based system -01 No The LCD should display all parameter like PF, THD, Load current, filter current etc. and also have the provision of proper fault log</p> <p>IGBT Based Active technology- 01 No.</p> <p>a) IGBT – Infineon / semikron make</p> <p>b) IGBT based stacks with complete forced cooling arrangement</p> <p>c) Interfacing and other control cards</p> <p>d) Sensor control card (AC voltage, DC voltage, Inverter and load current sensing)</p> <p>e) Precharge circuit</p> <p>f) High frequency ripple filtering circuit</p> <p>g) MCCB 160 A, TP , 36 KA, T/M -01 No. with spreader links</p> <p>h) MCB 10 A - FP- 10 KA – C curve – 01 No.</p> <p>i) Contactor 140A-TP-AC3 duty – 01 No.</p> <p>j) Inductor designed for high frequency application with noise level < 65db - 03 Nos.</p> <p>k) Interconnection with UNIVYNIN copper stranded wires, aluminium busbars , earth busbar, danger notice boards, inscription plates, terminals for incoming & outgoing cable connections.</p> <p>l) MCCB, contactor and fuses of application rating and protection shall be provided for active filter</p> <p>m) Remote sensing resin cast CTs shall be provided in main panel on common bus.</p> <p>n) All required hardware's, software's, protections, cards, inscription plates, danger notice board etc., as required to be provided to complete the system.</p> <p>Targets to be achieved with the above</p> <p>i) Instantaneous corrections in current THD level & maintain as per IEEE 519-2000 at main PCC</p> <p>ii) Reduction in voltage distortions as a result of reduction in ITHD.</p>				
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C.....Nil

I..... Nil

O..... Nil



3	Supplying and laying of following size PVC insulated XLPE armoured aluminium cable of 1.1 KV grade as required.				
3.1	3.5 x 240 sqmm	30 m		Metre	
3.2	3.5 x 50 sqmm	30 m		Metre	
4	Supplying and fixing of CT 200/5, class 0.5/1 of suitable VA burden including making connections etc. as required.	3 nos.		Each	
5	Supplying and laying of flexible copper control cable of 6 core x 205 sqmm size of 1.1 KV grade etc. as required.	30 m		Metre	
6	Supplying and making end termination with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.				
6.1	3.5 x 50 sqmm	8 nos.		Each	
6.2	3.5 x 240 sqmm	8 nos.		Each	
7	Providing and fixing 6 SWG dia. GI wire on surface or in recess for loop earthing as required.	150m		Metre	

Executive Engineer [E]

C.....Nil

I..... Nil

O..... Nil

D'Man /J.E.

A.E.E / A.E.

E.E.